WENCK File #1337-0072-01
January 2021

2020 Annual Landfill Report And Financial Report Clay County Sanitary Landfill, SW-34

Prepared for:

Clay County Solid Waste Department

Clay County Courthouse
807 11th Street North
Moorhead, MN 56560

WENCK
now part of
Stantec

Prepared by:

Stantec Consulting Services Inc.
3303 Fiechtner Drive
Fargo, ND 58103
Phone: 701-297-9600
Fax: 701-297-9601

Table of Contents

1.0 INTRODUCTION 1-1

1.1 2019 MPCA Annual Report Review Comments 1-1

2.0 BACKGROUND INFORMATION 2-1

3.0 OPERATIONS REVIEW 3-1

4.0 EVALUATION REPORTS 4-1

4.1 Inspection Reports 4-1
4.2 Training Reports 4-1
4.3 Emergency/Corrective Action Report 4-1
4.4 Construction Related Activities 4-1
4.5 Closure, Post-Closure, Contingency Action Plans 4-2
4.6 Updated Cost Estimates 4-2
4.7 Evaluation of ISWMP 4-2
4.8 Evaluation of Groundwater 4-2
4.9 Evaluation of Gas Monitoring Data 4-3
4.10 Evaluation of Leachate Management System 4-3
4.11 Site Survey 4-4
4.12 Solid Waste Capacity 4-4

5.0 LANDFILL GAS 5-1

5.1 Field Monitoring 5-1
5.2 Discussion of Monitoring Results 5-1
5.2.1 Remediation Wells/Gas Vents 5-1
5.2.2 Gas Probes 5-2
5.2.3 Active Gas Collection System 5-2

6.0 LEACHATE 6-1

6.1 Leachate Quality 6-1
6.1.1 Leachate - Metals 6-2
6.1.2 Leachate – COD, BOD and VOCs 6-3
6.2 Application Rate 6-4
6.3 Leachate Head Levels 6-4
6.4 Landfill Gas 6-4
6.5 Leachate Recirculation Costs 6-4
6.6 Settlement 6-5

Table of Contents (Cont.)

TABLES

Table 3-1: 2020 Landfill Facility Totals 3-1
Table 6-1: 2020 Untreated Leachate Analytical Results - MVTL 6-1
Table 6-2: 2020 Untreated Leachate Analytical Results – City of Fargo 6-2

FIGURES

1A 2020 Aerial Photograph
1B Site Map
2 2020 Annual Drone Survey
3 2020 Annual Waste Survey
4 Isopach Map – October 2019 to October 2020 Annual Waste Survey
5 Isopach Map – October 2020 – To Proposed Top of Waste

APPENDICES

A 2020 Annual Landfill Survey
B Inspection Reports
C Financial Assurance Plan - Updated
D Annual Water Quality Monitoring Report
E Landfill Gas Evaluation
F Leachate and Recirculation Volumes and Monitoring Data
G NMOC Calculations
H 2020 Re-TRAC Connect Survey

1.0 Introduction

The Clay County Landfill is required, under the terms of their solid waste permit, to submit each year to the Minnesota Pollution Control Agency (MPCA) an Annual Report summarizing the past year's operations and the environmental monitoring results. This report provides information on 2020 landfill activities, and is intended to meet the requirements of Minnesota Rules 7035.2815, subp. 14, item Q.

The 2020 Annual Report for the Clay County Landfill is organized as follows:

- Section 2.0 - Background Information.
- Section 3.0 - Operations Review: This section is intended to complement MPCA's Re-TRAC Connect Report.
- Section 4.0 - Evaluation Reports: This section is intended to complement MPCA's Re-TRAC Connect Report. Groundwater and leachate and lysimeter monitoring are also discussed.
- Section 5.0 - Landfill Gas: This section describes the results of the gas monitoring for 2020. This section is intended to complement MPCA's Re-TRAC Connect Report.
- Section 6.0 – Leachate Recirculation: This section summarizes 2020 leachate recirculation operations. This section is intended to complement MPCA's Re-TRAC Connect Report.

1.1 2019 MPCA ANNUAL REPORT REVIEW COMMENTS

Please also note that Clay County Sanitary Landfill acknowledges the receipt of a letter via e-mail from the MPCA dated June 5, 2020 titled "Clay County Sanitary Landfill, SW-34, 2019 Annual Report" Additional discussion has been incorporated into this annual report to suffice the applicable portions of the staff review comments, more specifically the following comments:

- *According to your annual report there are large areas of the fill area open and have not reached final elevation. Minn. R. 7035.2815, subp. 5 (B) requires filling in a manner to achieve final waste elevations as rapidly as possible. To minimize leachate generation and the potential for impacts to the environment, waste placement in 2020 should focus on bringing areas up to final elevations as quickly as possible so that final cover can be installed.*

  Clay County closed approximately 3.3 acres of landfill in 2020, but due to their long-term plans of the vertical expansion, they will have a large area open for many years now, but will do closures as sufficient area is brought up to grade.

- *Excessive odors have been observed at the landfill in recent visits by staff. We understand the County will be installing more gas extraction wells in an attempt to minimize the odors. If the odors persist after the well installation, more work may be necessary to minimize the odors.*

  The comment is noted.

- *After a brief review of the lysimeter and groundwater data, it looks like most detected organic compounds showed up either in groundwater samples or in lysimeter samples. Please review the data more thoroughly after the spring sample event to evaluate if the lysimeters are collecting only groundwater or if there is*

leachate in the lysimeters. In addition, the leachate and gas data were not submitted electronically to EQuIS. Please submit all environmental monitoring data, including leachate and landfill gas data, to EQuIS. If you need SYS_LOC_CODES, please contact Lisa Mojsiej.

The lysimeters periodically detect VOCs at the facility when there is sufficient volume to sample. Other times the lysimeters are dry and often rotate which locations have sufficient water to collect. Typically, and in recent years, only Lys III-P1 and III-P2 are able to be sampled event to event, whereas Lys III-P3 and IV-P1&2 are dry. It is important to note that Lys IV-P1&2 in the past has been over pumped by landfill staff and into the leachate tank. There is some level of contamination present in the lysimeters, but also are impacted by changes in underlying groundwater levels.

Clay County is actively working towards submitting historical data into EQuIS. The landfill has EQuIS identifiers for the EMS, including some that were provided in 2020 by MPCA staff and is working toward submitting this field data into the database. The landfill submitted several iterations of historical leachate lab data (converted into EQuIS EDDs) as well as submitted other more recent data for the EMS locations. Required field monitoring landfill gas data and other monitoring well purging data is still being formatted for submission.

- *In your 2019 annual report, you selected 'Other' as a waste type. Please check the dropdown list before using 'Other'. In future reports, please select the most appropriate waste type in the dropdown list. If there is not one that appropriately categorizes this waste type, please contact us so that we can modify the dropdown list to include this specific waste type.*

  The comment is noted.

- *The facility also reported using over 15,000 tons of waste as alternative daily cover (ADC). While the MPCA encourages the use of approved materials as ADC, this is almost 30% of the total waste received. The facility should not be using an excessive amount of waste materials as ADC. The MPCA and Department of Revenue recommend that no more than 20% of the waste received be used as ADC. Any waste material above the 20% may be subject to the solid waste tax.*

  The comment is noted and Clay County took additional measures not to accept contaminated soils.

- *The Annual Report compares groundwater analytical results to some outdated intervention limits (ILs). Examples of parameters with incorrect ILs include benzene, carbon tetrachloride, and toluene, among others. In future submittals, please compare analytical results to current ILs, calculated as one-quarter of the lowest criteria for the parameter (criteria used are MN Dept. of Health HRL, HBV, RAA; and EPA MCL). MDH values and EPA MCLs can be found at the following links: https://www.health.state.mn.us/communities/environment/risk/guidance/gw/table.html https://www.epa.gov/ground-water-and-drinking-water/national-primary-drinking-water-regulations*

  MPCA ILs and MDH performance criteria for some parameters were updated in the 2020 Annual Water Quality Report in Appendix D.

- *The Annual Report's trend graphs for parameters that exceed ILs do not include the facility's detection wells. Including detection wells on trend graphs would be useful because it could provide an early indication of any problematic trends in contaminants, before such trends appear in compliance wells. In future annual report submissions, please include detection wells on the trend graphs.*

  The contaminant plumes at the landfill have been well documented by Clay County over the last 25+ years, since substantial work has been undertaken to relocate waste from former Area I to lined Area IV, upgrading to an active gas collection system, phytoremediation plantings, landfill closures and other corrective actions to mitigate the effects of pre-Subtitle D operations. These measures have been completed due to very well-known groundwater impacts at these "detection" monitoring points over the landfill's history.

  As detailed in Section 1.2 of the Water Quality report, the landfill completed several rounds of monitoring well installations (in 2008/2009, 2010, & 2015) in very close conjunction with the MPCA site hydrogeologist to develop a new compliance boundary that effectively monitors both the upper and lower aquifers at the site. This was down to move out the former compliance boundary located near the present-day detection wells, due to the known contamination near these areas from Former Area I and existing (capped) Area II.

  Furthermore, as part of that repermitting of the compliance boundary around the north acreage and western wetlands with the MPCA, Clay County volunteered to continue periodically monitor the detection wells biannually with the intent to continue its long track record of contaminant cleanup progress and the effects of the mitigation actions completed. A small portion of the detection wells have intervention limits assigned, but namely compared to surface water criteria.

  The next round of detection well monitoring is planned for the Spring of 2021 with the rest of the EMS sampling. A new round of discussion on the detection well water quality and current trending will be provided in the 2021 Annual Water Quality Report.

- *Thank you for the description of the efforts to repair well W-203B. Please provide documentation of the restoration work performed at the well with the next groundwater sampling report submittal.*

  Please refer to Section 5.4 of the 2020 Annual Water Quality Report found in Appendix D.

- *The Annual Report notes that well W-1 was not sampled due to "unrepresentative conditions within the casing," and field forms indicate that the well's cap may need to be repaired or replaced. Please determine whether additional work at W-1 is needed to ensure that it can be sampled in future sampling events, and inform the MPCA of any work planned.*

  Please refer to Section 5.4 of the 2020 Annual Water Quality Report found in Appendix D.

- *The Annual Report states that concentrations of arsenic and manganese detected in the environmental monitoring system and drinking water wells are consistent with naturally occurring concentrations in the region of the facility. In future reports please provide additional support for this statement, for example by citing references that verify this.*

  Water quality in the nearby region can be ascertained from comparisons of upgradient wells vs. downgradient wells at the site. Upgradient wells W-12 and W-13, as well as side-gradient wells W-302A/B and W-102B, show concentrations above the manganese IL or even the HRLs in some cases. In addition, Clay County's sampling of nearby residential wells (i.e., Duetscher, Benesch, Weaver, among others) which are not influenced by the landfill due to their hydraulically upgradient or far distant locations, also historically show naturally elevated readings for manganese. This information when compared to hydraulically downgradient monitoring wells that ring the site provide additional context for the degree of manganese IL/HRL exceedances across the site, most of which are likely not associated with landfill related impacts, where others are (i.e., detection wells near Area I/II)

  It is also important to note that upwards flow across much of the site is well documented, and serves to protect deeper groundwater resources.

  Arsenic levels also appear to have a similar degree of natural fluctuation. These are sometimes found above the IL and sometimes below in the compliance wells. There are typically no HRL exceedances for arsenic at the site, with the exception of the detection wells. See Tables 5-6 of the 2020 Annual Water Quality Report in Appendix D for a summary of the compliance wells residential wells exceedances for arsenic and manganese in 2020.

2.0 Background Information

The Clay County landfill (Facility) is a mixed municipal solid waste (MSW) landfill, which has been in operation since 1973 under Minnesota Pollution Control Agency (MPCA) Solid Waste Permit SW-34. The Facility, as currently permitted, consists of a 275-acre site located approximately 17 miles east of Moorhead, Minnesota, and comprises most of the southern half of irregular Section 19, T 139N, R 45W in Hawley Township, Clay County Minnesota. The landfill is owned and operated by Clay County and is the only existing permitted MSW landfill within the County.

The landfill includes active and closed MSW disposal areas, site access and service roads, an office building, and equipment storage facility. The landfill consists of four areas (Former Area I and Areas II, III and IV). The site was permitted in October 2009 to allow an approximate 50-foot vertical expansion over existing permitted final grades on the north side and southeast side of the existing facility footprint, which increased the overall designed capacity to 6,284,963 cubic yards (See Design Report, Table 1) and leachate recirculation. The site was most recently permitted in October 2015 to allow surface application of leachate over the active working face. Waste that was previously placed in Area I, an unlined cell, was relocated in 2004 to a lined cell (Area IV Phases 1 and 2). The area previous occupied by waste in former Area I will be redeveloped into lined cells (Phases 3 – 6) of Area IV. Area II is a closed, unlined area and was used for MSW disposal from approximately 1982 through 1994. Area III is closed and consists of three lined cells (Phases 1 -3) and was used for MSW disposal from 1994 – 2004. Area IV, Phase 1 and 2 were constructed in 2004 and waste from former Area I was relocated to that portion of Area IV. Then in 2005 the eastern portion of Area IV, Phases 1 & 2 was closed, while later in 2006 Phase 3 of Area IV was constructed. In 2008, the passive gas vent system was upgraded to an active gas collection system with the gas being burned off in an enclosed flare. In 2010/11 the first phase of leachate recirculation was installed, and the active gas collection system was expanded into Area IV, Phases 1 & 2. In 2012 approximately four (4) acres of Area IV, Phase 4 was constructed and is known as North Portion Area IV, Phase 4. In 2020 Area IV, Phase 4 South was constructed, the active gas system was expanded into Area IV Phases 3 and 4 and the north slope of Area IV Phases 1-3 was final covered. Area IV, Phases 1-4 South are the current active portion of the landfill. The location of Areas II, III and IV are shown on Figures 1A and 1B.

The Clay County Sanitary Landfill is located on the eastern shoreline of ancient glacial Lake Agassiz. The lakebed lies to the west and consists of lake clays and lacustrine sand and silt deposits. The lake facies also contain sand bars, which developed in the near offshore environment. To the east is a morainal upland containing numerous lakes. The landfill itself lies in a transitional near shore environment consisting of interbedded lake and glacial deposits. The eastern portion of the site is used for waste disposal and is relatively high and well drained. The western half consists of permanent to seasonal wetlands and contains occasional granitic glacial erratics, often associated with small potholes.

Drainage ditches and sedimentation ponds located around the site perimeter collect and control runoff. The only outlet structure discharging off-site is the culvert in the southwest sedimentation pond which drains into the County Ditch and eventually discharges into the Buffalo River and finally into the Red River.

In May 2011, Clay County started leachate recirculation in Area IV, Phases 1 & 2. See Figure 1B for location of leachate recirculation trenches. Additional discussion on this can be found under Section 6.0.

3.0 Operations Review

Quantities of waste received during the 2020 calendar year are listed in the *Solid Waste Land Disposal Activity* form in Re-TRAC (See Appendix G). As of 2015, operation at the landfill shifted from a volume-based system, to the weight-based system used currently, after the installation of a scale.

The Clay County Landfill manages the following items that are temporarily stored in specified areas prior to being transferred off-site or recycled:

- Demolition waste
- Appliances
- Tires
- Scrap Metal
- Electronics
- Triple Rinsed Waste Pesticide Containers

The Clay County Landfill manages the following items that are disposed of in the MSW disposal area:

- Residential waste
- Agriculture waste
- Asbestos
- Contaminated soils – utilized as alternate daily cover (ADC)
- *Fines from Perham Resource Recovery Facility (RRF),* Coal ash from American Crystal Sugar Company, Moorhead's Facility and saw dust from Lund Boats in New York Mills - utilized as ADC
- Demolition waste (contaminated with MSW or with lead, asbestos or other items)

Table 3-1: 2020 Landfill Facility Totals

Type of Waste	Quantity Received in 2020
Ag Waste	*188.14 tons*
Appliances	*573 units*
Asbestos	*0.03 tons*
Ash	*2,190.64 tons*
Demolition	*2,962.16 tons*
Residential	*34,532.08 tons*
Contaminated Soil	2,914.99 *tons*
Tires	*3,084 units*
Rims	*195 units*
Mattresses/Furniture	*351 units*
Fines from Perham RRF	*7,289.77 tons*
Saw dust from Lund Boats in New York Mills	*364.83 tons*
City of Moorhead Yard Waste Composting Waste (Plastic bags)	*494.24 tons*
MSW shipped to Perham RRF	8,490.63 *tons*
Demo shipped to Clay Demo LF	620 CY

In 2020, Clay County placed 50,936.88 tons of incoming waste, which included 12,395.4 tons of alternate daily cover (ADC) material, which consisted of ash, contaminated soil, and fines in Area IV, Phases 1-4 South. The incoming waste along with daily, intermediate and final cover utilized 51,402 cubic yards of landfill airspace, which was determined by comparing the two most recent landfill drone surveys. See Figures 2 and 3 and Appendix A for the 2020 landfill annual survey. Based on a remaining ultimate operational volume (final cover subtracted out) of 2,797,298 cubic yards, the landfill has approximately 54.4 years of life remaining (based on 2020 acceptance rates). A summary of waste accepted at the landfill flows can be found in Table 3-1 above.

The tipping fees are as shown in the *Solid Waste Land Disposal Activity* form in Re-TRAC (See Appendix H).

4.0 Evaluation Reports

This section is intended to complement sections in the *Solid Waste Land Disposal Activity* form in Re-TRAC.

4.1 INSPECTION REPORTS

Monthly and quarterly inspections are conducted by the landfill operators and 2020 inspection reports can be found in Appendix B. General items the landfill inspects are as follows:

- Closed areas of the landfill for erosion or settlement
- Active landfill gas collection system
- Leachate pumping systems at each sump
- Leachate loadouts
- Leachate recirculation areas
- General site conditions – roads, signs, litter, odor, fugitive dusts, fence, etc.
- Surface water drainage controls and ponds
- Active portion of landfill

4.2 TRAINING REPORTS

Outside of MPCA training, all personnel have received training in emergency first aid and CPR. Landfill personnel are also trained to be familiar with the site-specific Landfill Permit and the Stormwater Permit for the Landfill. Additional training for emergency actions has also been completed. Additional/refresher training will be provided regularly to remain current in these areas. Training in 2020 was limited due to COVID 19 and took place on various dates throughout the year.

Details on each employee's training are included in the *Solid Waste Land Disposal Activity* form in Re-TRAC.

4.3 EMERGENCY/CORRECTIVE ACTION REPORT

Corrective measures in 2020 consisted removal of brush from landfill surface water management systems and removal of dead fall on the western phytoremediation area.

4.4 CONSTRUCTION RELATED ACTIVITIES

In 2020, the landfill completed the following landfill construction projects:

- Constructed Area IV, Phase 4 South (Approximately 2.8 Acres)
- Final covered north slope of Area IV, Phases 1-3 (Approximately 3.3 Acres)
- Expanded active gas collection system in Area IV, Phases 1-4 North
    - Installed 10 gas extraction wells
    - Extended gas header around the north side of landfill up to landfill office to the new boiler to heat building and to the new flare system
- Constructed new citizen drop-off area
- Planted approximately 113 trees, thinned out select trees, and cut down other damaged/dead trees.

In 2021, the landfill has no construction plans other than plans to replant damaged/dead trees throughout the phytoremediation area in 2021.

Attached in Appendix F is the invoice for jet cleaning the leachate collection lines in Area III and Area IV for the 2020 year.

4.5 CLOSURE, POST-CLOSURE, CONTINGENCY ACTION PLANS

The Closure, Post-Closure, and Contingency Action Plans were updated as part of the 2014 permit application and after review there were no changes required in 2020 based on operations.

4.6 UPDATED COST ESTIMATES

The updated cost estimates are included in the *Solid Waste Land Disposal Activity* form in Re-TRAC. See Appendix C for a breakdown of updated closure, post-closure and contingency action costs. In 2020, the closure cost estimate was revised based on 2020 construction projects.

4.7 EVALUATION OF ISWMP

Clay County submitted a revised Industrial Solid Waste Management Plan (ISWMP) to the MPCA, and it was approved by the MPCA on January 26, 2016. No additional changes were requested or required in 2020.

4.8 EVALUATION OF GROUNDWATER

The sampling events for the environmental management system (EMS) were conducted in the spring and fall of 2020. A summary of the current EMS and evaluation of 2020 monitoring data can be found in Appendix D. The electronic field and laboratory results have been submitted previously to the MPCA (They are also included in an appendix of the 2020 Annual Groundwater Report found in Appendix D). In 2020, field sampling was completed by Wenck Associates, Inc. and all of laboratory testing was completed by Pace Analytical Services, LLC.

Volatile organic compounds (VOCs) were only detected in western compliance well W-2 (water table) during the 2020 events. Vinyl chloride exceeded the MPCA intervention limit (IL) at low levels during both the spring and fall events. The detection of vinyl chloride at the compliance boundary is probably related to lower detection limits instituted in 2017 rather than to recent occurrence. A review of the past few sampling events indicates a slight upward trend in vinyl chloride.

Inorganic exceedances within the compliance wells were primarily for arsenic (5) and manganese (21). A nitrates exceedance also occurred for monitoring well C-11. The arsenic and manganese exceedances are a combination of natural origin and landfill impacts, as these occur in upgradient and downgradient wells alike. The nitrates are of agricultural origin. Monitoring well C-11 is downgradient of Area III and has shown no impacts to date other than exceedances of nitrates and one 2004 exceedance of manganese. The highest manganese concentration occurred within well W-6 (southwest of Area III) with a concentration of 351 µg/L, while the highest arsenic concentration was reported in W-106B (north acreage) at 9.7 µg/L. Inorganic and metals water quality exceedances will be further evaluated in 2020 for any new trending.

4.9 EVALUATION OF GAS MONITORING DATA

During 2020, twelve (12) gas probes (GP 1 - 12) at the landfill were monitored in January, April, July, and December. The landfill also monitors ten (10) remediation wells/gas vents (RW-vents) that were installed in late 2006 in Former Area I. The remediation wells/gas vents were monitored monthly for methane, carbon dioxide, and oxygen. See Figure 1B for location of gas probes and remediation wells/gas vents.

Additionally, the landfill operates an active gas collection system that collected gas from the closed areas of the landfill (Area II and Area III) and the active area from Area IV, Phases 1 & 2, which helps control odors emitting from the landfill.

The gas monitoring results are discussed in Section 5.0 and are included in Appendix E.

4.10 EVALUATION OF LEACHATE MANAGEMENT SYSTEM

A summary of leachate quantity and how the leachate was managed is summarized in *Solid Waste Land Disposal Activity* form in Re-TRAC (See Appendix G).

Leachate is collected at the base of the lined areas of the landfill and is pumped or gravity drains to leachate storage tanks. The landfill consists of Areas II, III, and IV. Of these areas, leachate collection systems are present in Area III Phase 1-3 and Area IV Phases 1-4 South. Areas II and III are final closed as well as portions of the east side of Area IV, Phases 1 and 2. The majority of the facility is composite-lined, except Area II which is unlined.

The leachate collection system in Area III, Phase 1 and 2 is a gravity flow system. The low point of this collection system is located on the west end of Phase 1. In 2001, in response to leachate head exceedances on the liner, a perforated standpipe was installed directly above the leachate collection line. Since the installation of the standpipe and closure of Area III, Phase 2 leachate exceedances have not occurred.

In Phase 3 of Area III, leachate is collected through a sump and slide slope riser and sent through a forcemain to the leachate storage tank. The submersible pump operates under the control of a transducer. The transducer actuates the pump prior to excessive leachate build-up in the sump, in effect continuously monitoring the leachate head. The riser pipe is fitted with a flow sensor (actuator) that provides the operator with a digital display to monitor flow (volume), thus assuring operation. This leachate is gravity drained and/or pumped to a 20,000-gallon underground storage tank for temporary storage prior to treatment at the wastewater treatment plant.

Area IV Phases 1-4 are constructed, and leachate is collected through a sump and side slope riser system. This leachate is pumped to a 40,000-gallon underground storage tank for temporary storage prior to treatment at the wastewater treatment plant.

Clay County disposes of leachate either by hauling from both storage tanks to a wastewater treatment plant or recirculates the leachate back into Area IV, Phases 1 & 2, from just the 40,000-gallon underground storage tank. The leachate recirculation system was installed in 2010 and became operational with regular use in late 2011. Note: the leachate recirculation system was not operated in 2020.

Clay County has a permit to dispose of leachate both with the Metropolitan Council Environmental Services (MCES) and with the City of Fargo. During 2020, 3,488,900 gallons of leachate was treated at the City of Fargo WWTP and 0 gallons were hauled and treated at MCES. No leachate was recirculated in 2020.

The leachate collection lines in Area III and Area IV Phases 1-3 were jetted (cleaned) on July 2, 2020 and a copy of the invoice/work order is provided in Appendix F as verification of this activity.

A summary of leachate analysis can be found in Appendix F.

4.11 SITE SURVEY

Wenck Associates, Inc. conducted the annual drone survey on October 16, 2020 (see Figures 2 and 3 and Appendix A).

4.12 SOLID WASTE CAPACITY

The Clay County Landfill has a permitted capacity of 4,000,000 cubic yards including final cover as of October 2015, [Note: Converting this to cubic meters (m^3) by multiplying by 0.7646 m^3/cy results in 3,058,400 m^3 of permitted air space including final cover.

Permitted Capacity (Airspace Including Final Cover): 4,000,000 yd^3
Permitted Capacity (Airspace Including Final Cover): 3,058,400 m^3

$$4{,}000{,}000\ yd^3 \times \frac{0.7646\ m^3}{1\ yd^3} = 3{,}058{,}400\ m^3$$

The Clay County permitted capacity of 3,058,400 m^3 is above the threshold of 2.5 million m^3.

In October 2017 Clay County submitted a Title V Air Permit Application to the MPCA to address the future proposed expansion for the permitted capacity volume and a permit was issued to the County in October 2018. During 2020, Clay County completed and prepared the following items:

- Completed initial notification and submitted Tier 1 NMOC Emission Rate Report to the MPCA on July 28, 2020.

- Submitted Tier 2 test plan for approval to MPCA on October 22, 2020 and the County completed Tier 2 sampling on November 18, 2020. Clay County submitted Tier 2 data along with site specific updated NMOC Emission Rate Report (e.g., with the Tier 2 results) to EPA in January 2021. NMOC emissions were estimated to be 7.17 Mg/yr for the year 2025, compared to the landfill gas control NSPS threshold of 34 Mg/yr. Based on those results, an active gas collection and control requirements are not yet regulatory triggered for the Clay County Landfill. See Appendix G for NMOC calculations.

5.0 Landfill Gas

5.1 FIELD MONITORING

The locations of all gas monitoring points can be found in Figure 1B.

During 2020, the twelve (12) gas probes (GP 1-12) at the landfill were monitored quarterly for concentrations of combustible gases, such as methane, using a Landtec GEM-2000 infrared gas monitor. Each probe was purged with the pump on the monitor for one minute (approximately four casing volumes) prior to collecting the sample for reading. The gas monitor was calibrated daily according to the manufacturer's specifications.

In addition to the 12 gas monitoring probes, the landfill monitored the ten (10) remediation well/gas vents in Former Area I for concentrations of combustible gases utilizing the Landtec GEM-2000 meter on a monthly basis.

Lastly, the landfill operates an active gas collection system that collects gas from both the closed areas of the landfill (Area II and Area III) and the active area from Area IV, Phases 1-4 North. The landfill monitors combustible gases at the flare and at the wellheads to ensure proper operation of the system.

5.2 DISCUSSION OF MONITORING RESULTS

5.2.1 Remediation Wells/Gas Vents

A review of the 2020 data collected shows methane concentrations in the remediation wells/ gas vents in Former Area I ranged from measurements of 0.0% to 11.1% (total methane). The highest recorded methane concentration was reported in RW-7 during the May 2020 monthly monitoring of the remediation wells.

To try to gain a better understanding of where and possibly why there is a broad range of methane levels, the monthly monitoring data was examined for each of the remediation wells. Wells RW1, RW7, and RW10 were determined to have the greatest ranges/differences in methane levels. The 2020 readings showed a similar trend to the previous years, but readings were down slightly compared to previous concentrations, especially with RW-7 and RW-10. As in past years, a well would have a relatively high methane reading for one month or two and then go back down to below 1% methane the next month. This was the case for RW-7 and RW-10 in 2019, and RW-7 typically reveals the greatest fluctuations of methane concentrations during monthly monitoring.

After 15 years of monitoring, the data does not show any particular trends or correlation between the varying methane levels in the three wells listed above. Some of the elevated levels at anyone testing time could be due to other environmental factors, such as weather, equipment calibration, groundwater elevation or background levels of methane interfering with the testing equipment. The wells are located adjacent to an active landfill cell, so this could also be influencing the measurements. Generally, remediation wells RW-2, RW-3, RW-4, RW-8, and RW-9 show relatively steady levels of methane between 0% and 2%.

Tables showing the 2020 monitoring results for each of the ten remediation wells for seven months can be found in Appendix E. For more detailed information about the monitoring wells located in former Area I (i.e., TW-1, TW-2, and TW-3), see Appendix D – Water Quality Monitoring Report.

5.2.2 Gas Probes

Methane concentrations at the perimeter probes (Gas Probes 1-12) were measured at 0% to 1.5% in 2020. Gas probes 1-2, 4AR-8A and 9-12 measured consistently 0% to 0.7% throughout the year but gas probe 3 measured 1.5% in the third quarter. The other three quarters it measured 0.1 to 0.7%. Gas probe 3 is located near the former landfill office and is within 50 feet of the waste mass, so a higher value is not out of the ordinary. Note the landfill has a methane monitor in the former office that will trigger a light on the outside of the building if methane gas is measured in the building. It was reported by Clay County that the light was not triggered at any point during 2020. During 2021 this gas probe will be watched closely to determine if there is any gas migration concern and for safety reasons. A summary of monthly gas probes readings can be found in Appendix E.

5.2.3 Active Gas Collection System

In 2008/2009 the Clay County Landfill upgraded their passive vent system in the closed areas of the landfill (Areas II and III), to an active gas collection system, where the landfill gas is collected and burned off in an enclosed fare. The gas system ran intermittently during this time due to insufficient gas generation to fuel the enclosed flare. This was even more apparent during the winter season when the landfill experienced lower gas generation rates.

In 2010 the landfill expanded the active gas collection system to the active area of Area IV, Phases 1 & 2 and the flare began running more consistently. Additionally, the landfill began leachate recirculation in May 2011 in Area IV, Phases 1 & 2. During the construction of leachate recirculation, Clay County added five gas collection wells to the active portion of the landfill adjacent to the leachate recirculation area. Since the installation of these wells the gas flow has risen, and the flare is operating more consistently than it did prior to leachate recirculation and the addition of the new gas wells.

During 2020, the gas system operated approximately 80% of the time with an average gas flow of 85 cfm at 50% methane concentrations.

The active gas collection system was improved in 2016 from previous years and this has started to decline a little in 2020. The well field has been optimized which allows for a greater amount of consistent and quality gas going to the flare. To help control odors and improve efficiency, the landfill installed an additional 10 gas extraction wells, a new flare near the office and a gas boiler to run off of landfill gas to heat the office/shop. The new flare and boiler will not be operational until February 2021. It is anticipated that the new wells in the newest waste will improve the overall system availability and operation.

All of the landfill gas in the leachate recirculation area and closed areas of the landfill is collected and burned in the enclosed flare. The current gas system is keeping odors to a minimum at the landfill as it operates periodically when sufficient gas builds back-up. When the flare is not operating, no gas is being passively vented from the gas wells as it all stays in a closed loop system, including the gas piping. A summary of the active gas collection system monitoring can be found in Appendix E.

6.0 Leachate

Clay County was permitted in October 2009 to implement leachate recirculation. Clay County continued leachate recirculation at their facility in Area IV, Phases 1 & 2 until April 9, 2014. No leachate was recirculated at the Clay County Landfill in 2020. See Figure 1B for location of leachate recirculation trenches.

6.1 LEACHATE QUALITY

Clay County Landfill has a long history of collecting leachate data. This long track record is useful to compare leachate quality prior to leachate recirculation operations to leachate quality after recirculation. Presently, Clay County samples their leachate monthly for routine laboratory analysis by MVTL for the following parameters: TSS, pH, and COD as well as by the City of Fargo Laboratory for: TSS, pH, COD, and BOD for comparison. Clay County does not include testing for specific conductance and total dissolved solids (TDS) as part of their routine (i.e., monthly) or quarterly sampling. The 2020 lab results are listed in Tables 6-1 and 6-2 below. In addition, leachate is also sampled quarterly by Clay County for an extended set of parameters. See Appendix F for the results of the 2020 quarterly samples.

Table 6-1: 2020 Untreated Leachate Analytical Results - MVTL

Date Sample Collected	Solids, Total Suspended (mg/L)	pH (SU)	Chemical Oxygen Demand (mg/L)
1/21/2020	*7*	*7.2*	*650*
2/10/2020	*19*	*7.4*	*645*
3/24/2020	*10*	*7.6*	*270*
4/27/2020	*30*	*7.3*	*428*
5/18/2020	*48*	*7.2*	*377*
6/8/2020	*59*	*7.3*	*406*
7/13/2020	*32*	*7.3*	*398*
8/18/2020	*41*	*7.6*	*2110*
9/8/2020	*23*	*7.7*	*1870*
10/28/2020	*44*	*7.5*	*1610*
*November**			
12/15/2020	*30*	*7.4*	*1370*

Note* The landfill inadvertently did not collect a monthly leachate sample for November 2020 to be shipped off to MVTL.

Table 6-2: 2020 Untreated Leachate Analytical Results – City of Fargo

Date Sample Collected	pH (SU)	Solids, Total Suspended (mg/L)	Chemical Oxygen Demand (mg/L	Biological Oxygen Demand (mg/L)
1/21/2020	*7.10*	*16.9*	*840*	*38.0*
2/10/2020	*7.38*	*36.0*	*677*	*37.6*
3/24/2020	*7.63*	*10.5*	*306*	*18.1*
4/27/2020	*7.00*	*15.0*	*547*	*33.9*
5/18/2020	*7.24*	*44.6*	*515*	*31.3*
6/8/2020	*7.21*	*60.0*	*446*	*23.6*
7/13/2020	*7.11*	*24.4*	*473*	*23.2*
8/19/2020	*7.62*	*17.0*	*2920*	*205*
9/29/2020	*7.60*	*10.4*	*1170*	*81.2*
10/26/2020	*7.71*	*16.5*	*1720*	*107*
11/30/2020	*7.74*	*22.0*	*1670*	*85.2*
12/31/2020	*7.45*	*31.7*	*1058*	*77.5*

Currently, Clay County Landfill has two leachate underground storage tanks. One tank that stores leachate from the closed Area III and the second tank that stores leachate from the Active Area IV. The tank that is utilized for Area III, has minimal leachate generation as all of Area III has been closed for 15 years. With the area being closed for so long the strength of the leachate has lessened and odors have diminished.

6.1.1 Leachate - Metals

The landfill analyzes leachate for metals on a quarterly basis. In 2020 the leachate results for metals were similar to 2019, with a total of 21 detections for metals. For comparison, there were 25 detections reported in 2019 for the winter, spring, summer and fall quarters. A summary of the total parameters reported above the laboratory reporting limit (RL) for each sample rounds are summarized below.

- Winter (February)- 4 Parameters
- Spring (April) - 1 Parameters
- Summer (August) - 10 Parameters
- Fall (November) - 6 Parameters

Arsenic was consistently reported above the laboratory RL in 2020. Antimony, cadmium, chromium, copper, lead, mercury, nickel, selenium and zinc represent the remainder of parameters above RLs. Of the 21 results above the RL for metals in 2020, only five parameters were detected above the established water quality standards applied for the landfill's groundwater monitoring network (i.e., antimony, arsenic, cadmium, chromium, and nickel). Please note that leachate is not groundwater; however, comparing it to water quality standards is useful. Arsenic was reported above the health risk limit (HRL) during all four quarters. Antimony, Cadmium, chromium and nickel were reported above the HRL during the summer and fall quarters. (see Table 2 in Appendix F for concentrations). The concentrations of metals in the leachate will continue to be watched closely to ensure leachate recirculation does not cause metal parameters to become too concentrated in the future, so as to allow for proper disposal and treatment at a municipal WWTP. These levels will be compared against the City of Fargo WTTP acceptance criteria, per the permit. See Figures 5A and 5B in Appendix F for metal trends back to 2010.

6.1.2 Leachate – COD, BOD and VOCs

Clay County samples and analyses the leachate for volatile organic compounds (VOCs) on a quarterly basis. VOC analysis is conducted in conjunction with metals analyses. Chemical oxygen demand (COD) and biological oxygen demand (BOD) are sampled and tested for on a monthly basis as part of the routine sampling of the leachate.

The landfill leachate revealed a total of 33 VOC detections for 16 different parameters in 2020. Tetrahydrofuran, ethyl ether and vinyl chloride were reported during all quarterly events; benzene was reported during the winter, spring, and fall quarterly events; 1,4-dichlorobenzene was reported during the winter and summer quarterly events; ethyl benzene, toluene, 1,2,4-trimethylbenze, m-& p-xylene, and o-xylene were reported during the summer and fall quarterly events; 1,2-dichloroethane, p-isopropyltoluene, methyl isobutyl ketone, bis(e-ethylhexyl)phthalate, and acetone were reported during the summer quarterly event; and methyl isobutyl ketone was reported during the fall quarterly event (see Table 2 in Appendix F for concentrations). Benzene and vinyl chloride were the only VOCs reported above established water quality criteria in 2020, when compared to groundwater standards.

In 2012 a slightly upward trend of COD was observed and in 2013 the trend continued in the upward direction. Since 2014 the trend appeared to go in the downward direction with a little trend of upward in 2017, back down in 2018, but in 2019 COD started to trend upward closer to 2017 concentrations. The first half of 2020 was similar to 2019, but in August COD spiked to a level not seen since 2014, but gradually dropping each month since. The spike could be related to construction and wet spring and summer. BOD and TSS continued to be similar to the past few years. In 2020, COD and BOD concentrations continued to be similar to 2015 -2019 levels. COD ranged from 306 to 2,920 mg/L and BOD ranged from 18.1 to 205 mg/L. Overall, TSS, COD and BOD showed concentrations slightly elevated and will continue to be watched in 2021. No significant changes have been recorded in pH values as they ranged from 7.0 to 7.74.

COD is the overall chemical oxygen demand of all chemicals (organics and inorganics) in the water/wastewater and BOD is the amount of oxygen that is required for the bacteria to degrade the organic components present in water/wastewater. With BOD being a percentage of COD, it was not unexpected to see BOD concentrations fluctuating relative to COD in 2020. The probable cause of the stabilization of concentrations since 2014, likely corresponds with the last leachate recirculation event happening in April 2014. The rate at which organics are breaking down had stabilized as Clay County was not seeing the increase of organics to the leachate tank as seen in the past couple of years. As mentioned, TSS concentrations have stabilized since 2014. Clay County will continue to monitor these parameters.

Comparing the monthly lab analysis from MVTL to the City of Fargo (Tables 6-1 and 6-2), some differences between the two results are apparent. This could be due to a number of factors. Leachate quality will have some degree of variability from sample to sample. Variations are noticed when sampling groundwater and collecting duplicate samples, and there are often times some discrepancies in these results, which are generally more stabilized than landfill leachate. Another explanation is that leachate has "debris" or chunks of material that can affect results one way or another. Samples may be collected in one bottle and transferred to another, resulting in heavier materials being kept in one bottle and not the other. This too can throw off an analysis each way. Lastly, changes in temperature driven by time can also cause discrepancies in the results. The City of Fargo sample is delivered directly to their lab within a few hours, whereas MVTL's sample is shipped overnight to their lab in New Ulm, Minnesota.

See Figures 6 and 7 in Appendix F for trending of these parameters in 2020.

6.2 APPLICATION RATE

In 2020, Clay County did not operate the leachate recirculation system. The maximum amount that Clay County can recirculate is 18,000 gallons/week. The last application date was April 9, 2014, as the waste in the recirculation area had a moisture content where further recirculation was not allowed and, therefore, leachate recirculation was suspended. See Table 1 in Appendix F for a summary of leachate recirculation volumes and dates.

In 2020 the waste moisture content has continued to go down since recirculation was stopped in 2014. The moisture contents are currently below the allowable 40 percent by the leachate recirculation guidance document. See Table 3 in Appendix F for a summary of waste moisture content calculations in the recirculation area.

6.3 LEACHATE HEAD LEVELS

Clay County utilizes a pressure transducer to monitor the leachate head and to control the operation of the leachate collection pump. Clay County Landfill Staff monitor the head readings at the control panels for each sump to verify the pumps are operational. There have not been any noticeable changes in leachate head since the start of leachate recirculation compared to now since the system was turned off.

6.4 LANDFILL GAS

During the construction of leachate recirculation, Clay County added five additional wells to the active portion of the landfill adjacent to the leachate recirculation area. Since the installation of the wells the gas flows have risen, and the flare is operating more consistently than it did prior to leachate recirculation.

During 2020, the gas system operated approximately 80% of the time with an average gas flow of 85 cfm at 50% methane concentrations.

The active gas collection system was improved in 2016 from previous years and this has started to decline a little in 2020. The well field has been optimized which allows for a greater amount of consistent and quality gas going to the flare. To help control odors and improve efficiency, the landfill installed an additional 10 gas extraction wells, a new flare near the office and a gas boiler to run off of landfill gas to heat the office/shop. The new flare and boiler will not be operational until February 2021. It is anticipated that the new wells in the newest waste will improve the overall system availability and operation.

All of the landfill gas in the leachate recirculation area and closed areas of the landfill is collected and burned in the enclosed flare. The current gas system is keeping odors to a minimum at the landfill as it operates at 80 percent. When the flare is not operating, no gas is being passively vented from the gas wells as it all stays in a closed loop system, including the gas piping.

6.5 LEACHATE RECIRCULATION COSTS

The Clay County Landfill is located near Hawley, MN, but there is no sanitary sewer line within the vicinity of the landfill that connects to a nearby wastewater treatment plant (WWTP). With no sanitary sewer line connection available, the landfill has to haul the leachate to the City of Fargo WWTP for treatment. Presently Clay County pays between $0.11 to $0.12 per gallon for hauling and treatment of leachate. In comparison, Clay County estimates leachate recirculation lowers the disposal cost to $0.05 to $0.06 per gallon including capital costs and operation and maintenance costs.

6.6 SETTLEMENT

Clay County continued placing waste and intermediate cover over the recirculation lines in 2020, minimal settlement (less than 1-foot) has been observed. It is anticipated that greater settlement will occur in the future. Please see Figure 4 to view the amount of change in waste grades from 2019 to 2020.

Figures

N

400 0 200 400

GRAPHIC SCALE IN FEET

LEGEND

- PROPERTY BOUNDARY
- PHASE BOUNDARY LINE
- C–13 EMS WELLS/PIEZOMETERS
- DEUTSHER RESIDENTIAL WELL
- S–1 SURFACE WATER POINT
- LYS IV–3 LANDFILL LYSIMETER
- GP–2 GAS PROBE
- RW–8 REMEDIATION WELL

WEAVER

W–112
W–109
NORTH ACREAGE
APPLIANCE STORAGE (APPROX. 15' X 22')
TIRE STORAGE (APPROX. 13' X 14')
DEMOLITION DUMPSTER (20 CY CONTAINER)
LANDFILL GAS BLOWER AND FLARE SKID
W–302A
GP–4AR
W–302B
LANDFILL OFFICE, ELECTRONIC STORAGE AND HIGHWAY DEPT. SHOP
LANDFILL TRUCK SCALE
EXISTING LEACHATE LOADOUT
W–301A
W–301B
W–104A
W–104B
W–106A
W–106B
W102B
W102A
METAL RECYCLING BIN (40 CY CONTAINER)
LANDFILL SHOP
GP–2
C–2
W–15
T2–C
T2–B
T2–A
GP–1
MAINTENANCE GARAGE & ELECTRONIC STORAGE
C–1
W–16
W–11
S–1
W–5
W–3
GP–3
J–2
EAST SEDIMENTATION POND
C–4
PP–2
PP–3
PP–1
C–3
LYS IV–3
LYS IV–1&2
RW–1
RW–2
RW–3
RW–4
RW–5
RW–6
RW–7
RW–8
RW–9
RW–10
TW–2
PUBLIC DROP OFF BINS (14 CY CONTAINERS)
TW–1
FUTURE AREA IV PHASE 5
AREA IV PHASE 3 (ACTIVE)
GP–5A
R. EKRE
TW–3
W201B
W–201A
S–2
W–10
WETLANDS
FUTURE AREA IV PHASE 6
NORTH HALF AREA IV PHASE 4 (ACTIVE)
GP–6A
C–8
SOUTH HALF AREA IV PHASE 4 (ACTIVE)
AREA IV PHASES I & 2 (ACTIVE)
C.S.A.H. NO. 23 /190TH ST S
C–12
C–13
GP–7A
W–2
W–2B
W–9
W–17
T1–C
T1–B
T1–A
C–9
AREA II (CLOSED)
AREA III PHASE 3 (CLOSED)
GP–8A
W202B
W–202A
ENCLOSED FLARE
AREA III PHASE 2 (CLOSED)
AREA III PHASE 1 (CLOSED)
W–13
C–10
LYS III–1
LYS III–2
LYS III–3
GP–9
GP–11
GP–10
W–12
W–203B
S–3
W–1
W–6
C–11
GP–12
SOUTHWEST SEDIMENTATION POND
DEUTSCHER
C.S.A.H. NO. 12

REV	REVISION DESCRIPTION	DWN	APP	REV DATE
A	ISSUED TO CLIENT	ANN	MPM	1/29/21

WENCK now part of Stantec

DWN BY	CHK'D	APP'D
ANN	AJF	MPM

DWG DATE JANUARY 2021

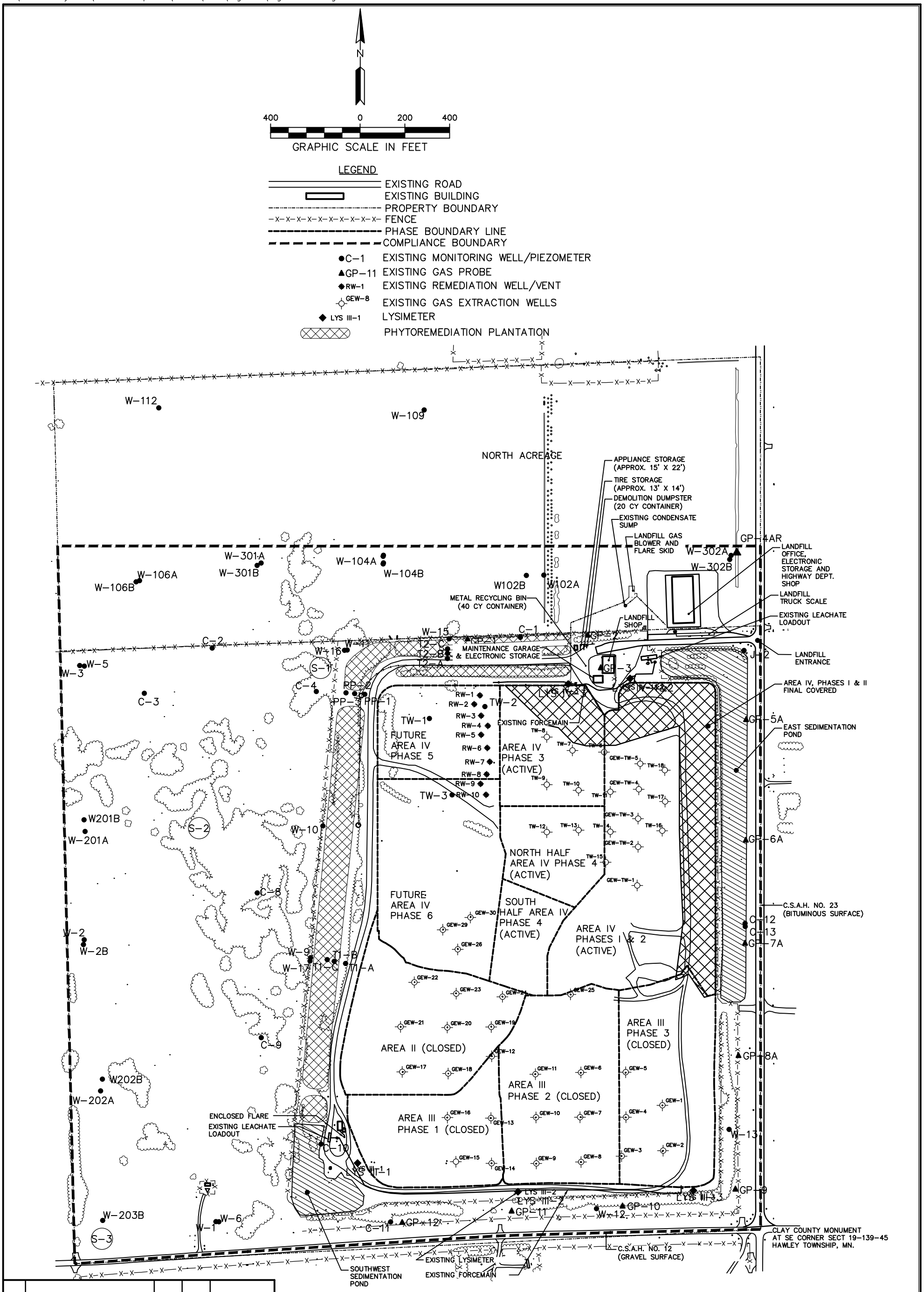
SCALE AS SHOWN

PROJECT CLAY COUNTY SANITARY LANDFILL 2020 ANNUAL LANDFILL REPORT

CLIENT CLAY COUNTY HAWLEY, MINNESOTA

SHEET TITLE 2020 AERIAL PHOTOGRAPH

PROJECT NO.	SHEET NO.	REV NO.
1337–0072	FIGURE 1A	A



REV	REVISION DESCRIPTION	DWN	APP	REV DATE
A	ISSUED TO CLIENT	ANN	MPM	1/29/21

WENCK now part of Stantec

DWN BY	CHK'D	APP'D
ANN	AJF	MPM

DWG DATE JANUARY 2021

SCALE AS SHOWN

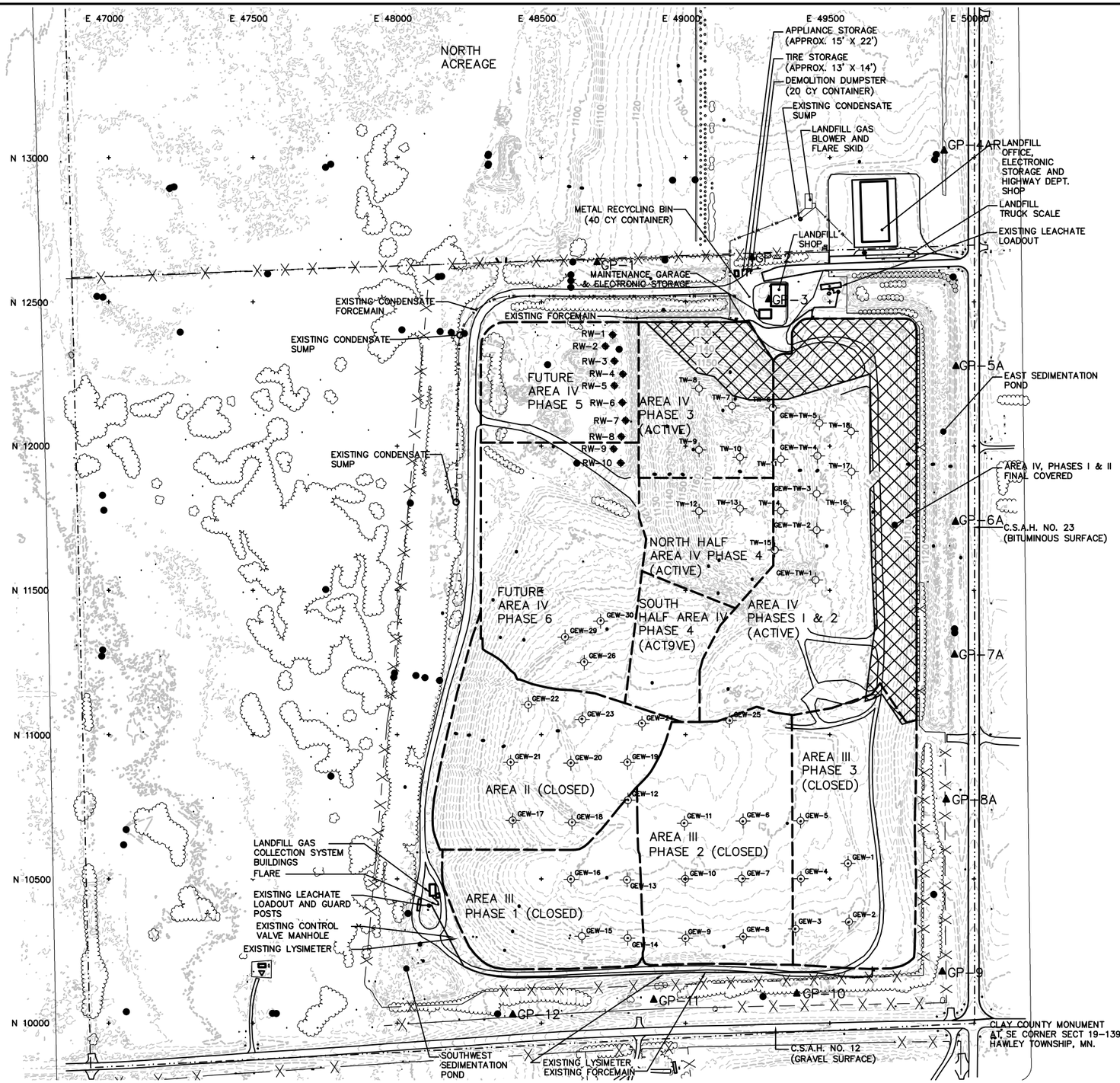
PROJECT CLAY COUNTY SANITARY LANDFILL 2020 ANNUAL REPORT

CLIENT CLAY COUNTY HAWLEY, MINNESOTA

SHEET TITLE SITE MAP

PROJECT NO.	SHEET NO.	REV NO.
1337-0072	FIGURE 1B	A

Plot Date & Time: 29 January 2021 9:12 AM



NOTE:
EXISTING CONDITIONS BASED ON OCTOBER 16, 2020 AERIAL SURVEY BY KBM, INC.

REV	REVISION DESCRIPTION	DWN	APP	REV DATE
A	ISSUED TO CLIENT	ANN	MPM	1/29/21

WENCK now part of Stantec
3303 FIECHTNER DR, SUITE 100
FARGO, NORTH DAKOTA 58103
(701) 297-9600
(701) 297-9601

DWN BY	CHK'D	APP'D
ANN	AJF	MPM

DWG DATE: JANUARY 2021
SCALE: AS NOTED

PROJECT: CLAY COUNTY SANITARY LANDFILL 2020 ANNUAL REPORT
CLIENT: CLAY COUNTY HAWLEY, MINNESOTA

SHEET TITLE: 2020 DRONE SURVEY

PROJECT NO.	SHEET NO.	REV NO.
1337-0072	FIGURE 2	A

T:\1337 Clay Co\Annual Reports\2020\CAD\Figures\Figure 2.dwg

Plot Date & Time: 29 January 2021 1:51 PM

FUTURE AREA IV PHASE 6

FUTURE AREA IV PHASE 5

SOUTH HALF AREA IV PHASE 4 (ACTIVE)

AREA IV PHASE 3 (ACTIVE)

NORTH HALF AREA V PHASE 4 (ACTIVE)

AREA IV PHASES I & 2 (ACTIVE)

AREA IV, PHASES I – III FINAL COVERED

EAST SEDIMENTATION POND

C.S.A.H. NO. 23 (BITUMINOUS SURFACE)

EXISTING CONDENSATE FORCEMAIN

EXISTING FORCEMAIN

MAINTENANCE GARAGE & ELECTRONICS STORAGE

METAL RECYCLING BIN (40 CY CONTAINER)

APPLIANCE STORAGE (APPROX. 15' X 22')

TIRE STORAGE (APPROX. 13' X 14')

DEMOLITION DUMPSTER (20 CY CONTAINER)

LANDFILL SHOP

EXISTING LEACHATE LOADOUT

EXISTING CONDENSATE SUMP

LANDFILL GAS BLOWER AND FLARE SKID

LANDFILL OFFICE, ELECTRONIC STORAGE AND HIGHWAY DEPT. SHOP

LANDFILL TRUCK SCALE

LANDFILL ENTRANCE

200 0 100 200
GRAPHIC SCALE IN FEET

LEGEND

- EXISTING CONTOURS
- TREE LINE
- TREE
- EXISTING ROAD
- EXISTING BUILDING
- PROPERTY BOUNDARY
- FENCE
- PHASE BOUNDARY LINE
- CLOSED LANDFILL AREA
- C–1 EXISTING MONITORING WELL
- GP–11 EXISTING GAS PROBE
- RW–1 EXISTING REMEDIATION WELL/VENT
- GEW–12 EXISTING GAS EXTRACTION WELL

NOTES:
EXISTING CONDITIONS BASED ON OCTOBER 16, 2020 DRONE SURVEY BY WENCK ASSOCIATES, INC.

FROM OCTOBER 25, 2019 TO OCTOBER 16, 2020 THE LANDFILL UTILIZED 51,402 CY OF LANDFILL CAPACITY.

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

PRINT NAME MARLON P. MACKOWICK

SIGNATURE

DATE 1/29/21 LICENSE # 46622

REV	REVISION DESCRIPTION	DWN	APP	REV DATE
A	ISSUED TO CLIENT	ANN	MPM	1/29/21

WENCK now part of Stantec
3303 FIECHTNER DR, SUITE 100
FARGO, NORTH DAKOTA 58103
(701) 297-9600
(701) 297-9601

DWN BY	CHK'D	APP'D
ANN	AJF	MPM

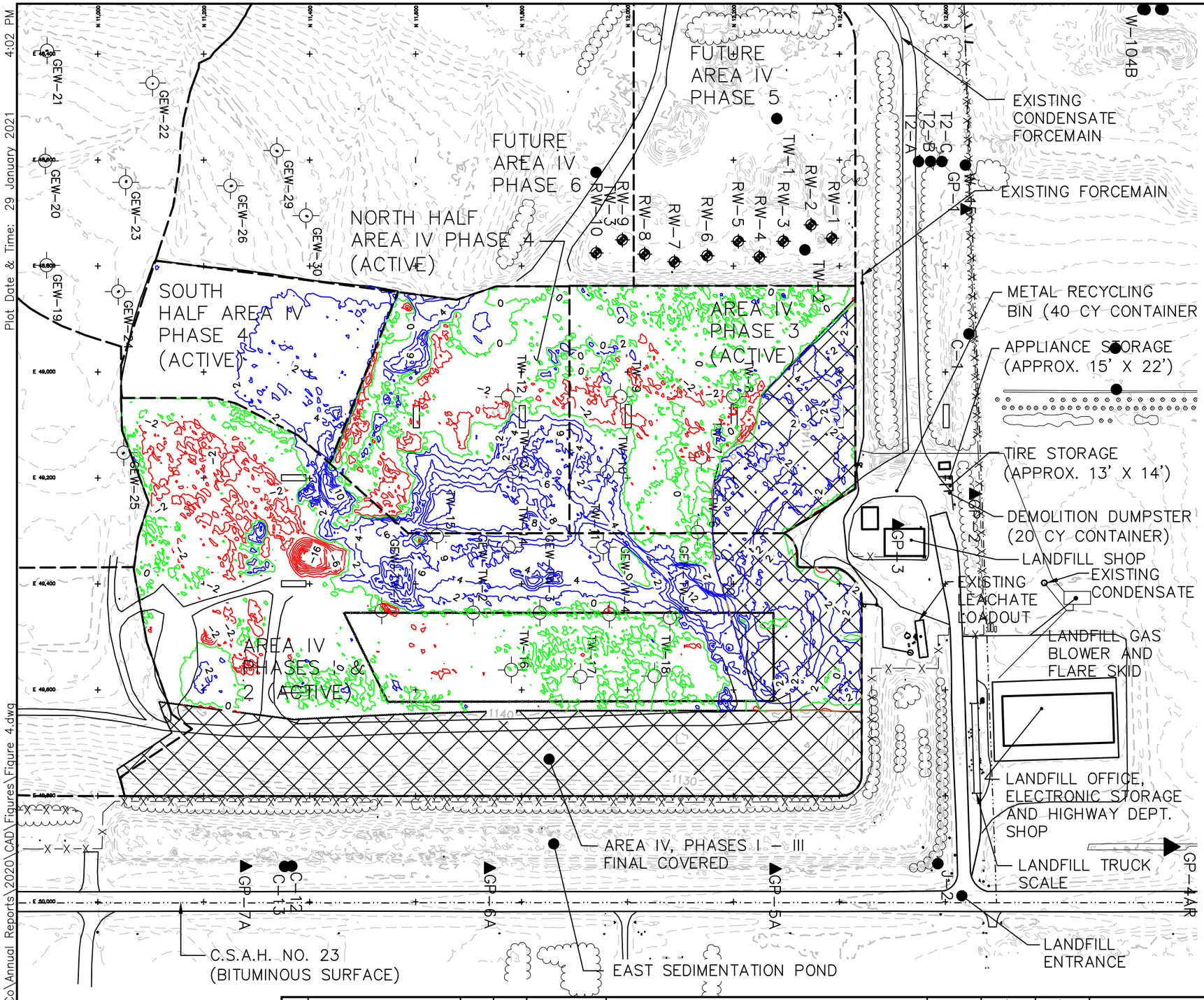
DWG DATE JANUARY 2021
SCALE AS NOTED

PROJECT CLAY COUNTY SANITARY LANDFILL 2020 ANNUAL REPORT
CLIENT CLAY COUNTY HAWLEY, MINNESOTA

SHEET TITLE 2020 ANNUAL WASTE SURVEY

PROJECT NO.	SHEET NO.	REV NO.
1337–0072	FIGURE 3	A

T:\1337 Clay Co\Annual Reports\2020\CAD\Figures\Figure 3.dwg



200 0 100 200

GRAPHIC SCALE IN FEET

LEGEND

- 1120 — OCTOBER 2020 CONTOURS
- TREE LINE
- TREE
- EXISTING ROAD
- EXISTING BUILDING
- PROPERTY BOUNDARY
- —X—X—X—X—X—X—X—X—X— FENCE
- PHASE BOUNDARY LINE
- ● C–1 EXISTING MONITORING WELL
- ▲ GP–11 EXISTING GAS PROBE
- ◈ RW–1 EXISTING REMEDIATION WELL/VENT
- GEW–12 EXISTING GAS EXTRACTION WELL
- 10 — WASTE/COVER FILLED IN 2020
- –2 — WASTE/COVER SETTLED/CUT IN 2020
- 0 — WASTE/COVER NO CHANGE IN 2020
- CLOSED LANDFILL AREA

NOTES:
EXISTING CONDITIONS BASED ON OCTOBER 16, 2020 DRONE SURVEY BY WENCK, ASSOCIATES, INC.

FROM OCTOBER 25, 2019 TO OCTOBER 16, 2020 THE LANDFILL UTILIZED THE FOLLOWING CAPACITY BELOW;

NET FILL – 51,402 CY

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

PRINT NAME MARLON P. MACKOWICK

SIGNATURE

DATE 1/29/21 LICENSE # 46622

REV	REVISION DESCRIPTION	DWN	APP	REV DATE
A	ISSUED TO CLIENT	MPM	MPM	1/29/21

WENCK now part of Stantec
3303 FIECHTNER DR, SUITE 100
FARGO, NORTH DAKOTA 58103
(701) 297-9600
(701) 297-9601

DWN BY	CHK'D	APP'D
MPM	AJF	MPM

DWG DATE JANUARY 2021

SCALE AS NOTED

PROJECT CLAY COUNTY SANITARY LANDFILL 2020 ANNUAL REPORT

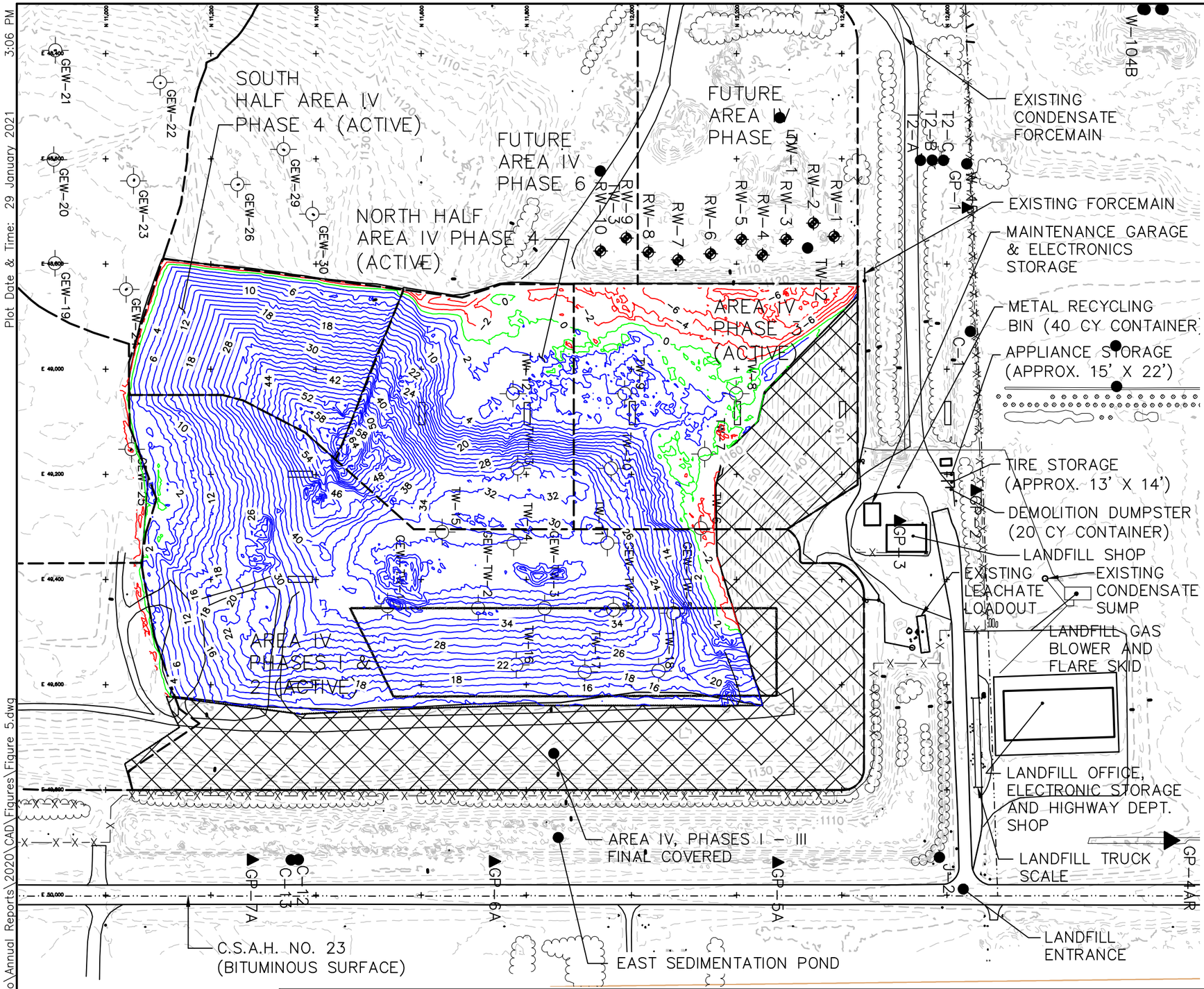
CLIENT CLAY COUNTY HAWLEY, MINNESOTA

SHEET TITLE ISOPACH MAP – OCT. 25, 2019 TO OCT. 16, 2020

PROJECT NO.	SHEET NO.	REV NO.
1337–0072	FIGURE 4	A

Plot Date & Time: 29 January 2021 4:02 PM

T:\1337 Clay Co\Annual Reports\2020\CAD\Figures\Figure 4.dwg



LEGEND

- 1120 — OCTOBER 2020 CONTOURS
- TREE LINE
- TREE
- EXISTING ROAD
- EXISTING BUILDING
- PROPERTY BOUNDARY
- X–X–X–X–X–X–X–X–X– FENCE
- PHASE BOUNDARY LINE
- ● C–1 EXISTING MONITORING WELL
- ▲ GP–11 EXISTING GAS PROBE
- ◆ RW–1 EXISTING REMEDIATION WELL/VENT
- GEW-12 EXISTING GAS EXTRACTION WELL
- 10 FILL CONTOUR TO PROPOSED TOP OF WASTE
- –2 CUT CONTOUR TO PROPOSED TOP OF WASTE
- 0 AT PROPOSED TOP OF WASTE
- CLOSED LANDFILL AREA

NOTES:
EXISTING CONDITIONS BASED ON OCTOBER 15, 2020 DRONE SURVEY BY WENCK ASSOCIATES, INC.

AS OF OCTOBER 15, 2020 THE LANDFILL HAS THE FOLLOWING REMAINING CONSTRUCTED OPERATIONAL WASTE VOLUME:

CUT VOLUME – 12,204 CY
FILL VOLUME – 666,373 CY

NET FILL – 654,169 CY

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

PRINT NAME MARLON P. MACKOWICK
SIGNATURE
DATE 1/29/21 LICENSE # 46622

REV	REVISION DESCRIPTION	DWN	APP	REV DATE
A	ISSUED TO CLIENT	MPM	MPM	1/29/21

WENCK now part of Stantec
3303 FIECHTNER DR, SUITE 100
FARGO, NORTH DAKOTA 58103
(701) 297-9600
(701) 297-9601

DWN BY	CHK'D	APP'D
MPM	AJF	MPM

DWG DATE JANUARY 2021
SCALE AS NOTED

PROJECT CLAY COUNTY SANITARY LANDFILL 2020 ANNUAL REPORT
CLIENT CLAY COUNTY HAWLEY, MINNESOTA

SHEET TITLE ISOPACH MAP – OCT. 2020 TO PROPOSED TOP OF WASTE

PROJECT NO.	SHEET NO.	REV NO.
1337–0072	FIGURE 5	A

Plot Date & Time: 29 January 2021 3:06 PM
T:\1337 Clay Co\Annual Reports\2020\CAD Figures\Figure 5.dwg

Appendix A

2020 Annual Landfill Survey



Control Point Table Clay co. NAD83(11)				
Point #	Northing	Easting	Elevation	Raw Description
1	10180.99	49815.81	1136.95	CP
2	10410.04	48076.20	1104.18	CP
4	12623.74	49939.56	1121.25	CP

GENERAL NOTES

1. *Date of photograph for topographic base map, October 16, 2020.*
2. *Site horizontal control and vertical control based upon control points and coordinates previously established by others. All coordinates are US survey feet.*
3. *Topographic contours are shown at a 2' contour interval*
4. *Elevation datum is based on previous site control.*

SURVEYORS CERTIFICATION:

This mapping has been produced according to procedures that have been demonstrated to comply with the ASPRS Positional Accuracy Standards for Digital Geospatial Data, 2014 for the 30cm horizontal accuracy class and the 20cm vertical accuracy class.

I hereby certify that this survey was completed by me or under my direct supervision and that I am a duly licensed land surveyor under the laws of the State of Minnesota.

Chris Ambourn
MN LS 43055

11/11/2020
Date

N

0 200 400
SCALE IN FEET

LEGEND

- FENCE LINE
- TREE LINE
- CONTROL POINT

WENCK ASSOCIATES
Responsive partner. Exceptional outcomes.
2080 WOODDALE DRIVE
WOODBURY, MN 55125
Ph: 651-395-5212

CLIENT NAME
CLAY COUNTY LANDFILL

PROJECT TITLE
OCTOBER 2020 EXISTING CONDITIONS

DWN BY	CHK'D	APP'D	DWG DATE 11-NOV-2020
LJL	CNA	CNA	SCALE 1" = 200'

PROJECT NO. 1337-20-500
SHEET NO. 1 OF 1

Plot Date & Time: 11 November 2020 7:29 AM

M:\1337\20-500 2020 Drone survey\SURVEY\DAD\1337-20-500 Drone topo.dwg

Appendix B

Inspection Reports

Clay County Sanitary
Landfill SW-34
Inspection Checklist

Inspector: Brett Rice
Date: 01/09/2020
Weather: Clear 19°F 5-10mph wind

	Condition Acceptable YES	NO	Comments
General Site/Exterior			
1. General Appearance Of Grounds/Landscape	X		
2. Building Exterior/Appearance	X		
3. Site Perimeter/Interior Fencing	X		
4. Litter	X		-picked
5. Access Road Condition Parking Areas	X		
6. Scale	X		
7. Signs	X		
8. Appliance/Used Oil Recycling Storage Area	X		
9. Public Drop-Off Area	X		> All good
10. Public Drop-Off Area	X		
Office/Maintenance			
Shop Equipment			
1 Portable Fire Extinguishers Kept at Designated Locations?	X		
-Are Annual & Monthly Inspections Documented on the Tag?	X		Checked + good
-Are the Extinguishers Free From Obstructions?	X		
2 First Aid Kits Available?	X		
3 Interior Lights in Working Order?	X		
4 Clear Working Space in Front of Electrical Panels and Boxes?	X		
5 Electric cords and Extension Cords in Good Condition?	X		
Any Temporary Wiring?	X		-battery chargers etc.
6 County, State & Federal Required Postings?	X		-random drug tests
-Commitment to Drug/Alcohol Free Workplace	X		
-Equal Employment Opportunity	X		
-Americans w/Disabilities Act Policy	X		
-Sexual Harassment Policy	X		
-First Aid Responders/CPR Trained Employees	X		every 2 yrs
-OSHA "It's the Law" Poster	X		

1/9/20

Office/Maintenance Shop/Equipment (continued)	Condition Acceptable YES	NO	Comments
-Emergency Contact Numbers	X		
-Family & Medical Leave Act	X		
-Fair Labor Standards Act	X		
-Workers Compensation Posted	X		
-State Wage & Hour (Minimum Wage Rate	X		
7 Records Present & Complete	X		
-OSHA Log	X		
-Safety Meeting/Training	X		
-Hazard Communication	X		
-Facility Permits	X		
-SPCC/SWPPP Plans	X		
-Accident/Injury Data	X		
-Facility Inspections	X		
8 No Smoking Signs Posted if Required By State and Local Law?	X		
9 Toilets/Washing Facilities Clean And Sanitary w/Warm Water and Soap And Means of Hand Drying?	X		
10 Is There a Supply of Safety Glasses Available at Shop Entrance?	X		- provided
11 Are Suitable Gloves, Hearing Protection And Protective Clothing Available to be Worn When Working in Shop Area?	X		- provided
12 Is There a Clean, Accessible, Functioning Eyewash Station in Any Area Where Hazardous or Corrosive Materials Are Used?	X		
13 Are Overhead Doors & Controls in Good Working Order?	X		
14 Grates/Covers Over Floor Drains Secure?	X		
15 Storage Areas Kept Free From Accumulation of Materials that Constitute Hazards From Tripping, Fire, Explosion or Harborage of Pests?	X		
16 Are Drums of Petroleum Products Kept In Secondary Containment?	X		
17 Does Equipment Have a Reverse Signal Alarm?	X		
18 Does Equipment Have a Working Seatbelt?	X		
19 Is Equipment Examined at Least Daily?	X		
20 Are Compactor Wheel Teeth Worn?	X		
21 Are All Required Fire Suppression Systems in Place?	X		

1/9/20

Office/Maintenance Shop/Equipment (continued)	Condition Acceptable YES	NO	Comments
-Emergency Contact Numbers	X		
-Family & Medical Leave Act	X		
-Fair Labor Standards Act	X		
-Workers Compensation Posted	X		
-State Wage & Hour (Minimum Wage Rate	X		
7 Records Present & Complete	X		
-OSHA Log	X		
-Safety Meeting/Training	X		
-Hazard Communication	X		
-Facility Permits	X		
-SPCC/SWPPP Plans	X		
-Accident/Injury Data	X		
-Facility Inspections	X		
8 No Smoking Signs Posted if Required By State and Local Law?	X		
9 Toilets/Washing Facilities Clean And Sanitary w/Warm Water and Soap And Means of Hand Drying?	X		
10 Is There a Supply of Safety Glasses Available at Shop Entrance?	X		- provided
11 Are Suitable Gloves, Hearing Protection And Protective Clothing Available to be Worn When Working in Shop Area?	X		- provided
12 Is There a Clean, Accessible, Functioning Eyewash Station in Any Area Where Hazardous or Corrosive Materials Are Used?	X		
13 Are Overhead Doors & Controls in Good Working Order?	X		
14 Grates/Covers Over Floor Drains Secure?	X		
15 Storage Areas Kept Free From Accumulation of Materials that Constitute Hazards From Tripping, Fire, Explosion or Harborage of Pests?	X		
16 Are Drums of Petroleum Products Kept In Secondary Containment?	X		
17 Does Equipment Have a Reverse Signal Alarm?	X		
18 Does Equipment Have a Working Seatbelt?	X		
19 Is Equipment Examined at Least Daily?	X		
20 Are Compactor Wheel Teeth Worn?	X		
21 Are All Required Fire Suppression Systems in Place?	X		

Clay County Sanitary
Landfill SW-34

Inspection Checklist

Inspector: Brett Rice
Date: 02/06/2020
Weather: 12°F, Clear, wind 10mph

	Condition Acceptable YES	NO	Comments
General Site/Exterior			
1. General Appearance Of Grounds/Landscape	X		-All grounds frozen
2. Building Exterior/Appearance	X		
3. Site Perimeter/Interior Fencing	X		
4. Litter	X		-picked daily
5. Access Road Condition Parking Areas	X		
6. Scale	X		
7. Signs	X		
8. Appliance/Used Oil Recycling Storage Area	X		all good, snow removed
9. Public Drop-Off Area	X		
10. Public Drop-Off Area	X		
Office/Maintenance			
Shop Equipment			
1 Portable Fire Extinguishers Kept at Designated Locations?	X		Checked all good,
-Are Annual & Monthly Inspections Documented on the Tag?	X		
-Are the Extinguishers Free From Obstructions?	X		
2 First Aid Kits Available?	X		
3 Interior Lights in Working Order?	X		
4 Clear Working Space in Front of Electrical Panels and Boxes?	X		
5 Electric cords and Extension Cords in Good Condition?	X		
Any Temporary Wiring?	X		
6 County, State & Federal Required Postings?	X		
-Commitment to Drug/Alcohol Free Workplace	X		-random drug tests
-Equal Employment Opportunity	X		
-Americans w/Disabilities Act Policy	X		
-Sexual Harassment Policy	X		
-First Aid Responders/CPR Trained Employees	X		every 2 yrs
-OSHA "It's the Law" Poster	X		

2/6/20

Office/Maintenance Shop/Equipment (continued)	Condition Acceptable YES	NO	Comments
-Emergency Contact Numbers	X		
-Family & Medical Leave Act	X		
-Fair Labor Standards Act	X		
-Workers Compensation Posted	X		
-State Wage & Hour (Minimum Wage Rate	X		
7 Records Present & Complete	X		
-OSHA Log	X		
-Safety Meeting/Training	X		
-Hazard Communication	X		
-Facility Permits	X		
-SPCC/SWPPP Plans	X		
-Accident/Injury Data	X		
-Facility Inspections	X		
8 No Smoking Signs Posted if Required By State and Local Law?	X		
9 Toilets/Washing Facilities Clean And Sanitary w/Warm Water and Soap And Means of Hand Drying?	X		
10 Is There a Supply of Safety Glasses Available at Shop Entrance?	X		provided
11 Are Suitable Gloves, Hearing Protection And Protective Clothing Available to be Worn When Working in Shop Area?	X		provided
12 Is There a Clean, Accessible, Functioning Eyewash Station in Any Area Where Hazardous or Corrosive Materials Are Used?	X		
13 Are Overhead Doors & Controls in Good Working Order?	X		
14 Grates/Covers Over Floor Drains Secure?	X		
15 Storage Areas Kept Free From Accumulation of Materials that Constitute Hazards From Tripping, Fire, Explosion or Harborage of Pests?	X		
16 Are Drums of Petroleum Products Kept In Secondary Containment?	X		
17 Does Equipment Have a Reverse Signal Alarm?	X		
18 Does Equipment Have a Working Seatbelt?	X		
19 Is Equipment Examined at Least Daily?	X		
20 Are Compactor Wheel Teeth Worn?	X		
21 Are All Required Fire Suppression Systems in Place?	X		

20 Are Compactor Wheel Teeth

2/6/20

MSW Active Area	Condition Acceptable YES	Condition Acceptable NO	Comments
1 Access Road	X		
2 Working Face Size (Length & Width)	X		- 40' x 10'
3 Working Face Slope	X		5-1
4 Proper Compaction Methods Compactor Not Spinning Wheels	X		

MSW Active Area (Continued)	Condition Acceptable YES	Condition Acceptable NO	Comments
5 Litter Fencing	X		- in place and moved as needed w/ wind
6 Daily Cover	X		
7 Intermediate Cover	X		
8 Surface Water Berms	X		
9 Vector Controlled	X		
10 Employees Wearing Proper PPE	X		
11 Leachate Systems in proper Working Order	X		- All in good winter condition
-Leachate Head Levels Checked & Recorded	X		
-Leachate Pumps in Proper Working Order	X		
-Annual Scheduled Leachate Line Cleaning Completed	X		
12 Gas System in Good Operating Condition	X		
-Gas Well Vertical Orientation (Not Tipped)	X		
-Kanaflex Tubing Connected/Not Damaged	X		- checked
-Flare in Good Operating Condition	X		
-Minimum of Daily Flare Readings Recorded	X		
13 Leachate Recirculation System Operation	X		- Not in use
-Valves Working Properly	X		
-Recirculation Pump Maintenance Complete	X		
-Leachate Seeps From Recirculation Operations	√	X	all good, not in use
-Excessive Odors Coming From Recirculation Area	√	X	
-Recirculation Area Parameters recorded For specified frequency	X		
-Daily Precipitation and Daily Waste Flows	X		
-Weekly Leachate Head on Liner	X		
-Monthly Leachate Generation Rates Per Sump Area	X		
-Quarterly Gas Monitoring Results and Surface Scan	X		
Final Cover			
1 Settlement	X		
2 Slope Erosion	X		
3 Seeps	√	X	All good for winter months
4 Vegetative Stress	X		
5 Vegetative Growth	X		
6 Surface Water Control Features and Sedimentation Ponds	X		

Clay County Sanitary
Landfill SW-34
Inspection Checklist

Inspector: Brett Rice
Date: 03/24/2020
Weather: 38°F, winds 18mph, clear

	Condition Acceptable YES	NO	Comments
General Site/Exterior			
1. General Appearance Of Grounds/Landscape	X		- good, frozen
2. Building Exterior/Appearance	X		
3. Site Perimeter/Interior Fencing	X		- litter picked
4. Litter	X		- litter picked daily
5. Access Road Condition Parking Areas	X		
6. Scale	X		
7. Signs:	X		
8. Appliance/Used Oil Recycling Storage Area	X		- public sites are clean from debris/snow
9. Public Drop-Off Area	X		- frozen
10. Public Drop-Off Area	√		
Office/Maintenance			
Shop Equipment			
1 Portable Fire Extinguishers Kept at Designated Locations?	√		
-Are Annual & Monthly Inspections Documented on the Tag?	√		checked and documented
-Are the Extinguishers Free From Obstructions?	√		
2 First Aid Kits Available?	√		
3 Interior Lights in Working Order?	√		
4 Clear Working Space in Front of Electrical Panels and Boxes?	√		
5 Electric cords and Extension Cords in Good Condition?	√		
Any Temporary Wiring?	√		
6 County, State & Federal Required Postings?	√		
-Commitment to Drug/Alcohol Free Workplace	√		- random drug tests
-Equal Employment Opportunity	√		
-Americans w/Disabilities Act Policy	√		
-Sexual Harassment Policy	√		
-First Aid Responders/CPR Trained Employees	√		every 2 yrs
-OSHA "It's the Law" Poster	√		

2/24/20

Office/Maintenance Shop/Equipment (continued)	Condition Acceptable YES	NO	Comments
-Emergency Contact Numbers	✓		
-Family & Medical Leave Act	✓		
-Fair Labor Standards Act	✓		
-Workers Compensation Posted	✓		
-State Wage & Hour (Minimum Wage Rate	✓		
7 Records Present & Complete	✓		
-OSHA Log	✓		
-Safety Meeting/Training	✓		
-Hazard Communication	✓		
-Facility Permits	✓		
-SPCC/SWPPP Plans	✓		
-Accident/Injury Data	✓		
-Facility Inspections	✓		
8 No Smoking Signs Posted if Required By State and Local Law?	✓		
9 Toilets/Washing Facilities Clean And Sanitary w/Warm Water and Soap And Means of Hand Drying?	✓		
10 Is There a Supply of Safety Glasses Available at Shop Entrance?	✓		- provided
11 Are Suitable Gloves, Hearing Protection And Protective Clothing Available to be Worn When Working in Shop Area?	✓		- provided
12 Is There a Clean, Accessible, Functioning Eyewash Station in Any Area Where Hazardous or Corrosive Materials Are Used?	✓		
13 Are Overhead Doors & Controls in Good Working Order?	✓		
14 Grates/Covers Over Floor Drains Secure?	✓		
15 Storage Areas Kept Free From Accumulation of Materials that Constitute Hazards From Tripping, Fire, Explosion or Harborage of Pests?	✓		
16 Are Drums of Petroleum Products Kept In Secondary Containment?	✓		
17 Does Equipment Have a Reverse Signal Alarm?	✓		
18 Does Equipment Have a Working Seatbelt?	✓		
19 Is Equipment Examined at Least Daily?	✓		
20 Are Compactor Wheel Teeth Worn?	✓		
21 Are All Required Fire Suppression Systems in Place?	✓		

3/24/20

MSW Active Area	Condition Acceptable YES	Condition Acceptable NO	Comments
1 Access Road	✓		
2 Working Face Size (Length & Width)	✓		- 40' x 10'
3 Working Face Slope	✓		- ~~40' x 40'~~ 5-1
4 Proper Compaction Methods Compactor Not Spinning Wheels	✓		

MSW Active Area (Continued)	Condition Acceptable YES	Condition Acceptable NO	Comments
5 Litter Fencing	✓		- in place & moved in conjunction w/ wind direction
6 Daily Cover	✓		
7 Intermediate Cover	✓		
8 Surface Water Berms	✓		
9 Vector Controlled	✓		
10 Employees Wearing Proper PPE	✓		
11 Leachate Systems in proper Working Order	✓		- in good winter condition
-Leachate Head Levels Checked & Recorded	✓		
-Leachate Pumps in Proper Working Order	✓		
-Annual Scheduled Leachate Line Cleaning Completed	✓		- in July
12 Gas System in Good Operating Condition	✓		
-Gas Well Vertical Orientation (Not Tipped)	✓		
-Kanaflex Tubing Connected/Not Damaged	✓		- checked
-Flare in Good Operating Condition	✓		
-Minimum of Daily Flare Readings Recorded	✓		
13 Leachate Recirculation System Operation	✓		- not in use
-Valves Working Properly	✓		
-Recirculation Pump Maintenance Complete	✓		
-Leachate Seeps From Recirculation Operations	✓		looks good, not in use
-Excessive Odors Coming From Recirculation Area	✓		
-Recirculation Area Parameters recorded For specified frequency	✓		
-Daily Precipitation and Daily Waste Flows	✓		
-Weekly Leachate Head on Liner	✓		- pumped as needed
-Monthly Leachate Generation Rates Per Sump Area	✓		
-Quarterly Gas Monitoring Results and Surface Scan	✓		- on file
Final Cover			
1 Settlement	✓		
2 Slope Erosion	✓		
3 Seeps	✓		condition acceptable
4 Vegetative Stress	✓		
5 Vegetative Growth	✓		
6 Surface Water Control Features and Sedimentation Ponds	✓		

Clay County Sanitary
Landfill SW-34
Inspection Checklist

Inspector: Brett Rice
Date: 04/21/2020
Weather: 26°F, clear, 10-15 mph wind

	Condition Acceptable YES	NO	Comments
General Site/Exterior			
1. General Appearance Of Grounds/Landscape	✓		
2. Building Exterior/Appearance	✓		
3. Site Perimeter/Interior Fencing	✓		
4. Litter	✓		- picked daily, spring clean up and bag
5. Access Road Condition Parking Areas	✓		
6. Scale	✓		
7. Signs	✓		
8. Appliance/Used Oil Recycling Storage Area	✓		
9. Public Drop-Off Area	✓		thawing slowly
10. Public Drop-Off Area	✓		
Office/Maintenance Shop Equipment			
1 Portable Fire Extinguishers Kept at Designated Locations?	✓		
-Are Annual & Monthly Inspections Documented on the Tag?	✓		
-Are the Extinguishers Free From Obstructions?	✓		
2 First Aid Kits Available?	✓		
3 Interior Lights in Working Order?	✓		
4 Clear Working Space in Front of Electrical Panels and Boxes?	✓		
5 Electric cords and Extension Cords in Good Condition?	✓		
Any Temporary Wiring?	✓		
6 County, State & Federal Required Postings?	✓		
-Commitment to Drug/Alcohol Free Workplace	✓		- random drug tests
-Equal Employment Opportunity	✓		
-Americans w/Disabilities Act Policy	✓		
-Sexual Harassment Policy	✓		
-First Aid Responders/CPR Trained Employees	✓		every 2 yrs
-OSHA "It's the Law" Poster	✓		

4/21/20

Office/Maintenance Shop/Equipment (continued)	Condition Acceptable YES	NO	Comments
-Emergency Contact Numbers	✓	—	
-Family & Medical Leave Act	✓	—	
-Fair Labor Standards Act	✓	—	
-Workers Compensation Posted	✓	—	
-State Wage & Hour (Minimum Wage Rate	✓	—	
7 Records Present & Complete	✓	—	
-OSHA Log	✓	—	
-Safety Meeting/Training	✓	—	
-Hazard Communication	✓	—	
-Facility Permits	✓	—	
-SPCC/SWPPP Plans	✓	—	
-Accident/Injury Data	✓	—	
-Facility Inspections	✓	—	
8 No Smoking Signs Posted if Required By State and Local Law?	✓	—	office/break room
9 Toilets/Washing Facilities Clean And Sanitary w/Warm Water and Soap And Means of Hand Drying?	✓	—	
10 Is There a Supply of Safety Glasses Available at Shop Entrance?	✓	—	
11 Are Suitable Gloves, Hearing Protection And Protective Clothing Available to be Worn When Working in Shop Area?	✓	—	provided
12 Is There a Clean, Accessible, Functioning Eyewash Station in Any Area Where Hazardous or Corrosive Materials Are Used?	✓	—	
13 Are Overhead Doors & Controls in Good Working Order?	✓	—	
14 Grates/Covers Over Floor Drains Secure?	✓	—	
15 Storage Areas Kept Free From Accumulation of Materials that Constitute Hazards From Tripping, Fire, Explosion or Harborage of Pests?	✓	—	
16 Are Drums of Petroleum Products Kept In Secondary Containment?	✓	—	
17 Does Equipment Have a Reverse Signal Alarm?	✓	—	
18 Does Equipment Have a Working Seatbelt?	✓	—	
19 Is Equipment Examined at Least Daily?	✓	—	
20 Are Compactor Wheel Teeth Worn?	✓	—	
21 Are All Required Fire Suppression Systems in Place?	✓	—	

4/21/20

MSW Active Area	Condition Acceptable YES	Condition Acceptable NO	Comments
1 Access Road	✓	—	
2 Working Face Size (Length & Width)	✓	—	40' x 40'
3 Working Face Slope	—	—	5-1
4 Proper Compaction Methods Compactor Not Spinning Wheels	✓	—	

MSW Active Area (Continued)	Condition Acceptable YES	Condition Acceptable NO	Comments
5 Litter Fencing	✓	—	-moved as needed
6 Daily Cover	✓	—	
7 Intermediate Cover	✓	—	
8 Surface Water Berms	✓	—	
9 Vector Controlled	✓	—	
10 Employees Wearing Proper PPE	✓	—	
11 Leachate Systems in proper Working Order	✓	—	
-Leachate Head Levels Checked & Recorded	✓	—	
-Leachate Pumps in Proper Working Order	✓	—	
-Annual Scheduled Leachate Line Cleaning Completed	✓	—	
12 Gas System in Good Operating Condition	✓	—	
-Gas Well Vertical Orientation (Not Tipped)	✓	—	
-Kanaflex Tubing Connected/Not Damaged	✓	—	
-Flare in Good Operating Condition	✓	—	
-Minimum of Daily Flare Readings Recorded	✓	—	
13 Leachate Recirculation System Operation	✓	—	- ~~recirculation~~ not in use
-Valves Working Properly	✓	—	
-Recirculation Pump Maintenance Complete	✓	—	
-Leachate Seeps From Recirculation Operations	✓	—	
-Excessive Odors Coming From Recirculation Area	✓	—	
-Recirculation Area Parameters recorded For specified frequency	✓	—	
-Daily Precipitation and Daily Waste Flows	✓	—	
-Weekly Leachate Head on Liner	✓	—	-pumped as needed
-Monthly Leachate Generation Rates Per Sump Area	✓	—	
-Quarterly Gas Monitoring Results and Surface Scan	✓	—	-on file
Final Cover			
1 Settlement	✓	—	all good
2 Slope Erosion	✓	—	
3 Seeps	✓	—	
4 Vegetative Stress	✓	—	
5 Vegetative Growth	✓	—	
6 Surface Water Control Features and Sedimentation Ponds	✓	—	

Clay County Sanitary
Landfill SW-34
Inspection Checklist

Inspector: Brett Rice
Date: 05/27/2020
Weather: 50°F, 15-20mph wind, clear

	Condition Acceptable YES	NO	Comments
General Site/Exterior			
1. General Appearance Of Grounds/Landscape	✓		- good
2. Building Exterior/Appearance	✓		
3. Site Perimeter/Interior Fencing	✓		
4. Litter	✓		- spring cleanup almost done
5. Access Road Condition Parking Areas	✓		
6. Scale	✓		
7. Signs	✓		
8. Appliance/Used Oil Recycling Storage Area	✓		drying nicely
9. Public Drop-Off Area	✓		
10. Public Drop-Off Area	✓		
Office/Maintenance			
Shop Equipment			
1 Portable Fire Extinguishers Kept at Designated Locations?	✓		
-Are Annual & Monthly Inspections Documented on the Tag?	✓		
-Are the Extinguishers Free From Obstructions?	✓		
2 First Aid Kits Available?	✓		
3 Interior Lights in Working Order?	✓		
4 Clear Working Space in Front of Electrical Panels and Boxes?	✓		
5 Electric cords and Extension Cords in Good Condition?	✓		
Any Temporary Wiring?	✓		
6 County, State & Federal Required Postings?	✓		- shop / break room / office
-Commitment to Drug/Alcohol Free Workplace	✓		- random drug tests
-Equal Employment Opportunity	✓		
-Americans w/Disabilities Act Policy	✓		
-Sexual Harassment Policy	✓		
-First Aid Responders/CPR Trained Employees	✓		every 2 yrs
-OSHA "It's the Law" Poster	✓		

5/27/20

Office/Maintenance Shop/Equipment (continued)	Condition Acceptable YES	NO	Comments
-Emergency Contact Numbers	✓		- office
-Family & Medical Leave Act	✓		office/breakroom/shop
-Fair Labor Standards Act	✓		
-Workers Compensation Posted	✓		
-State Wage & Hour (Minimum Wage Rate	✓		
7 Records Present & Complete	✓		
-OSHA Log	✓		
-Safety Meeting/Training	✓		
-Hazard Communication	✓		
-Facility Permits	✓		
-SPCC/SWPPP Plans	✓		
-Accident/Injury Data	✓		
-Facility Inspections	✓		
8 No Smoking Signs Posted if Required By State and Local Law?	✓		
9 Toilets/Washing Facilities Clean And Sanitary w/Warm Water and Soap And Means of Hand Drying?	✓		
10 Is There a Supply of Safety Glasses Available at Shop Entrance?	✓		provided
11 Are Suitable Gloves, Hearing Protection And Protective Clothing Available to be Worn When Working in Shop Area?	✓		
12 Is There a Clean, Accessible, Functioning Eyewash Station in Any Area Where Hazardous or Corrosive Materials Are Used?	✓		
13 Are Overhead Doors & Controls in Good Working Order?	✓		
14 Grates/Covers Over Floor Drains Secure?	✓		
15 Storage Areas Kept Free From Accumulation of Materials that Constitute Hazards From Tripping, Fire, Explosion or Harborage of Pests?	✓		
16 Are Drums of Petroleum Products Kept In Secondary Containment?	✓		
17 Does Equipment Have a Reverse Signal Alarm?	✓		
18 Does Equipment Have a Working Seatbelt?	✓		- by operators
19 Is Equipment Examined at Least Daily?	✓		
20 Are Compactor Wheel Teeth Worn?	✓		
21 Are All Required Fire Suppression Systems in Place?	✓		

5/27/20

MSW Active Area	Condition Acceptable YES	Condition Acceptable NO	Comments
1 Access Road	✓	—	
2 Working Face Size (Length & Width)	✓	—	30' x 50'
3 Working Face Slope	✓	—	5-1
4 Proper Compaction Methods Compactor Not Spinning Wheels	✓	—	

MSW Active Area (Continued)	Condition Acceptable YES	Condition Acceptable NO	Comments
5 Litter Fencing	✓	—	
6 Daily Cover	✓	—	
7 Intermediate Cover	✓	—	
8 Surface Water Berms	✓	—	
9 Vector Controlled	✓	—	
10 Employees Wearing Proper PPE	✓	—	
11 Leachate Systems in proper Working Order	✓	—	
-Leachate Head Levels Checked & Recorded	✓	—	
-Leachate Pumps in Proper Working Order	✓	—	
-Annual Scheduled Leachate Line Cleaning Completed	✓	—	
12 Gas System in Good Operating Condition	✓	—	
-Gas Well Vertical Orientation (Not Tipped)	✓	—	
-Kanaflex Tubing Connected/Not Damaged	✓	—	
-Flare in Good Operating Condition	✓	—	
-Minimum of Daily Flare Readings Recorded	✓	—	
13 Leachate Recirculation System Operation	✓	—	not in use
-Valves Working Properly	✓	—	
-Recirculation Pump Maintenance Complete	✓	—	
-Leachate Seeps From Recirculation Operations	—	✓	
-Excessive Odors Coming From Recirculation Area	—	✓	
-Recirculation Area Parameters recorded For specified frequency	✓	—	
-Daily Precipitation and Daily Waste Flows	✓	—	
-Weekly Leachate Head on Liner	✓	—	
-Monthly Leachate Generation Rates Per Sump Area	✓	—	
-Quarterly Gas Monitoring Results and Surface Scan	✓	—	
Final Cover			
1 Settlement	✓	✓	condition acceptable, all looks good
2 Slope Erosion	✓	✓	
3 Seeps	✓	✓	
4 Vegetative Stress	✓	✓	
5 Vegetative Growth	✓	✓	
6 Surface Water Control Features and Sedimentation Ponds	✓	—	

Clay County Sanitary
Landfill SW-34
Inspection Checklist

Inspector: Brett Rice
Date: 6/3/2020
Weather: 80°F, clear, 10mph wind

	Condition Acceptable YES	NO	Comments
General Site/Exterior			
1. General Appearance Of Grounds/Landscape	✓		Site looking very good, drying out nicely
2. Building Exterior/Appearance	✓		
3. Site Perimeter/Interior Fencing	✓		
4. Litter	✓		
5. Access Road Condition Parking Areas	✓		
6. Scale	✓		
7. Signs	✓		
8. Appliance/Used Oil Recycling Storage Area	✓		
9. Public Drop-Off Area	✓		
10. Public Drop-Off Area	✓		
Office/Maintenance			
Shop Equipment			
1 Portable Fire Extinguishers Kept at Designated Locations?	✓		
-Are Annual & Monthly Inspections Documented on the Tag?	✓		
-Are the Extinguishers Free From Obstructions?	✓		
2 First Aid Kits Available?	✓		
3 Interior Lights in Working Order?	✓		
4 Clear Working Space in Front of Electrical Panels and Boxes?	✓		
5 Electric cords and Extension Cords in Good Condition?	✓		
Any Temporary Wiring?	✓		
6 County, State & Federal Required Postings?	✓		- shop/breakroom/office
-Commitment to Drug/Alcohol Free Workplace	✓		
-Equal Employment Opportunity	✓		
-Americans w/Disabilities Act Policy	✓		
-Sexual Harassment Policy	✓		
-First Aid Responders/CPR Trained Employees	✓		every 2 years
-OSHA "It's the Law" Poster	✓		

6/3/20

Office/Maintenance Shop/Equipment (continued)	Condition Acceptable YES	NO	Comments
-Emergency Contact Numbers	✓		- office
-Family & Medical Leave Act	✓		
-Fair Labor Standards Act	✓		] office / breakroom / shop
-Workers Compensation Posted	✓		
-State Wage & Hour (Minimum Wage Rate	✓		
7 Records Present & Complete	✓		
-OSHA Log	✓		
-Safety Meeting/Training	✓		
-Hazard Communication	✓		
-Facility Permits	✓		] office / mezzanine
-SPCC/SWPPP Plans	✓		
-Accident/Injury Data	✓		
-Facility Inspections	✓		
8 No Smoking Signs Posted if Required By State and Local Law?	✓		- near entrance
9 Toilets/Washing Facilities Clean And Sanitary w/Warm Water and Soap And Means of Hand Drying?	✓		
10 Is There a Supply of Safety Glasses Available at Shop Entrance?	✓		] provided to employees
11 Are Suitable Gloves, Hearing Protection And Protective Clothing Available to be Worn When Working in Shop Area?	✓		provided to visitors
12 Is There a Clean, Accessible, Functioning Eyewash Station in Any Area Where Hazardous or Corrosive Materials Are Used?	✓		
13 Are Overhead Doors & Controls in Good Working Order?	✓		
14 Grates/Covers Over Floor Drains Secure?	✓		
15 Storage Areas Kept Free From Accumulation of Materials that Constitute Hazards From Tripping, Fire, Explosion or Harborage of Pests?	✓		
16 Are Drums of Petroleum Products Kept In Secondary Containment?	✓		
17 Does Equipment Have a Reverse Signal Alarm?	✓		
18 Does Equipment Have a Working Seatbelt?	✓		- by operators
19 Is Equipment Examined at Least Daily?	✓		
20 Are Compactor Wheel Teeth Worn?	✓		
21 Are All Required Fire Suppression Systems in Place?	✓		

6/3/20

MSW Active Area	Condition Acceptable YES	Condition Acceptable NO	Comments
1 Access Road	✓		
2 Working Face Size (Length & Width)	✓		
3 Working Face Slope	✓		
4 Proper Compaction Methods Compactor Not Spinning Wheels	✓		

MSW Active Area (Continued)	Condition Acceptable YES	Condition Acceptable NO	Comments
5 Litter Fencing	✓		
6 Daily Cover	✓		
7 Intermediate Cover	✓		
8 Surface Water Berms	✓		
9 Vector Controlled	✓		
10 Employees Wearing Proper PPE	U		
11 Leachate Systems in proper Working Order	✓		
-Leachate Head Levels Checked & Recorded	✓		
-Leachate Pumps in Proper Working Order	✓		
-Annual Scheduled Leachate Line Cleaning Completed	V		
12 Gas System in Good Operating Condition	✓		
-Gas Well Vertical Orientation (Not Tipped)	✓		
-Kanaflex Tubing Connected/Not Damaged	✓		
-Flare in Good Operating Condition	✓		
-Minimum of Daily Flare Readings Recorded	✓		
13 Leachate Recirculation System Operation	✓		
-Valves Working Properly	✓		
-Recirculation Pump Maintenance Complete	✓		
-Leachate Seeps From Recirculation Operations	✓		
-Excessive Odors Coming From Recirculation Area	✓		
-Recirculation Area Parameters recorded For specified frequency	✓		
-Daily Precipitation and Daily Waste Flows	✓		
-Weekly Leachate Head on Liner	✓		
-Monthly Leachate Generation Rates Per Sump Area	✓		
-Quarterly Gas Monitoring Results and Surface Scan	✓		
Final Cover			
1 Settlement	✓		
2 Slope Erosion	✓		
3 Seeps	✓		
4 Vegetative Stress	✓		
5 Vegetative Growth	✓		
6 Surface Water Control Features and Sedimentation Ponds	✓		

Clay County Sanitary
Landfill SW-34
Inspection Checklist

Inspector: Brett Rice
Date: 07/31/2020
Weather: 90°F, 15mph wind, clear

	Condition Acceptable YES	NO	Comments
General Site/Exterior			
1. General Appearance Of Grounds/Landscape	✓		-construction of new cell/final cover underway
2. Building Exterior/Appearance	✓		
3. Site Perimeter/Interior Fencing	✓		
4. Litter	✓		-well picked
5. Access Road Condition Parking Areas	✓		-changed access road after beginning final cover, going around perimeter
6. Scale	✓		
7. Signs	✓		
8. Appliance/Used Oil Recycling Storage Area	✓		
9. Public Drop-Off Area	✓		changed location of blue garbage bins when increased construction traffic (moved to west side of new office)
10. Public Drop-Off Area	✓		
Office/Maintenance			
Shop Equipment			
1 Portable Fire Extinguishers Kept at Designated Locations?	✓		
-Are Annual & Monthly Inspections Documented on the Tag?	✓		
-Are the Extinguishers Free From Obstructions?	✓		
2 First Aid Kits Available?	✓		
3 Interior Lights in Working Order?	✓		
4 Clear Working Space in Front of Electrical Panels and Boxes?	✓		
5 Electric cords and Extension Cords in Good Condition?	✓		
Any Temporary Wiring?	✓		
6 County, State & Federal Required Postings?	✓		
-Commitment to Drug/Alcohol Free Workplace	✓		-random drug tests
-Equal Employment Opportunity	✓		posted in office/breakroom/shop
-Americans w/Disabilities Act Policy	✓		
-Sexual Harassment Policy	✓		
-First Aid Responders/CPR Trained Employees	✓		
-OSHA "It's the Law" Poster	✓		

7/31/20

Office/Maintenance Shop/Equipment (continued)	Condition Acceptable YES	NO	Comments
-Emergency Contact Numbers	✓		- in office
-Family & Medical Leave Act	✓		office/breakroom/shop
-Fair Labor Standards Act	✓		
-Workers Compensation Posted	✓		
-State Wage & Hour (Minimum Wage Rate	✓		
7 Records Present & Complete	✓		
-OSHA Log	✓		
-Safety Meeting/Training	✓		
-Hazard Communication	✓		
-Facility Permits	✓		office/mezzanine
-SPCC/SWPPP Plans	✓		
-Accident/Injury Data	✓		
-Facility Inspections	✓		
8 No Smoking Signs Posted if Required By State and Local Law?	✓		- near site entrance
9 Toilets/Washing Facilities Clean And Sanitary w/Warm Water and Soap And Means of Hand Drying?	✓		
10 Is There a Supply of Safety Glasses Available at Shop Entrance?	✓		provided
11 Are Suitable Gloves, Hearing Protection And Protective Clothing Available to be Worn When Working in Shop Area?	✓		
12 Is There a Clean, Accessible, Functioning Eyewash Station in Any Area Where Hazardous or Corrosive Materials Are Used?	✓		
13 Are Overhead Doors & Controls in Good Working Order?	✓		
14 Grates/Covers Over Floor Drains Secure?	✓		
15 Storage Areas Kept Free From Accumulation of Materials that Constitute Hazards From Tripping, Fire, Explosion or Harborage of Pests?	✓		
16 Are Drums of Petroleum Products Kept In Secondary Containment?	✓		
17 Does Equipment Have a Reverse Signal Alarm?	✓		
18 Does Equipment Have a Working Seatbelt?	✓		
19 Is Equipment Examined at Least Daily?	✓		- by operators
20 Are Compactor Wheel Teeth Worn?	✓		
21 Are All Required Fire Suppression Systems in Place?	✓		

7/31/20

MSW Active Area	Condition Acceptable YES	NO	Comments
1 Access Road	✓		
2 Working Face Size (Length & Width)	✓		30'x40'
3 Working Face Slope	✓		5-1
4 Proper Compaction Methods Compactor Not Spinning Wheels	✓		

MSW Active Area (Continued)	Condition Acceptable YES	NO	Comments
5 Litter Fencing	✓		move paper catchers in conjunction w/ wind
6 Daily Cover	✓		
7 Intermediate Cover	✓		
8 Surface Water Berms	✓		
9 Vector Controlled	✓		
10 Employees Wearing Proper PPE	✓		
11 Leachate Systems in proper Working Order	✓		
-Leachate Head Levels Checked & Recorded	✓		
-Leachate Pumps in Proper Working Order	✓		
-Annual Scheduled Leachate Line Cleaning Completed	✓		-done 07/02/2020 by Jet-Way
12 Gas System in Good Operating Condition	✓		
-Gas Well Vertical Orientation (Not Tipped)	✓		
-Kanaflex Tubing Connected/Not Damaged	✓		
-Flare in Good Operating Condition	✓		
-Minimum of Daily Flare Readings Recorded	✓		
13 Leachate Recirculation System Operation	✓		-not used currently
-Valves Working Properly	✓		
-Recirculation Pump Maintenance Complete	✓		
-Leachate Seeps From Recirculation Operations	✓		
-Excessive Odors Coming From Recirculation Area	✓		
-Recirculation Area Parameters recorded For specified frequency	✓		
-Daily Precipitation and Daily Waste Flows	✓		
-Weekly Leachate Head on Liner	✓		
-Monthly Leachate Generation Rates Per Sump Area	✓		
-Quarterly Gas Monitoring Results and Surface Scan	✓		
Final Cover			
1 Settlement	✓		-minimal
2 Slope Erosion	✓		
3 Seeps	✓		-none
4 Vegetative Stress	✓		
5 Vegetative Growth	✓		All good
6 Surface Water Control Features and Sedimentation Ponds	✓		

Clay County Sanitary
Landfill SW-34
Inspection Checklist

Inspector: Brett Rice
Date: 08/17/2020
Weather: 75°F, clear, 5-10mph wind

	Condition Acceptable YES	NO	Comments
General Site/Exterior			
1. General Appearance Of Grounds/Landscape	√		-construction moving along, making force main connection, new cell is looking good
2. Building Exterior/Appearance	√		
3. Site Perimeter/Interior Fencing	√		
4. Litter	√		- staying on top of it
5. Access Road Condition Parking Areas	√		-good, using perimeter road
6. Scale	√		
7. Signs	√		
8. Appliance/Used Oil Recycling Storage Area	√		
9. Public Drop-Off Area	√		] when construction traffic increases, we move public drop-site for garbage
10. Public Drop-Off Area	√		
Office/Maintenance Shop Equipment			
1 Portable Fire Extinguishers Kept at Designated Locations?	√		
-Are Annual & Monthly Inspections Documented on the Tag?	√		
-Are the Extinguishers Free From Obstructions?	√		
2 First Aid Kits Available?	√		
3 Interior Lights in Working Order?	√		
4 Clear Working Space in Front of Electrical Panels and Boxes?	√		
5 Electric cords and Extension Cords in Good Condition?	√		
Any Temporary Wiring?	√		
6 County, State & Federal Required Postings?	√		in office / breakroom / shop
-Commitment to Drug/Alcohol Free Workplace	√		
-Equal Employment Opportunity	√		
-Americans w/Disabilities Act Policy	√		
-Sexual Harassment Policy	√		
-First Aid Responders/CPR Trained Employees	√		
-OSHA "It's the Law" Poster	√		

8/17/20

Office/Maintenance Shop/Equipment (continued)	Condition Acceptable YES	NO	Comments
-Emergency Contact Numbers	✓		- in office
-Family & Medical Leave Act	✓		in office/breakroom/shop
-Fair Labor Standards Act	✓		
-Workers Compensation Posted	✓		
-State Wage & Hour (Minimum Wage Rate	✓		
7 Records Present & Complete	✓		
-OSHA Log	✓		
-Safety Meeting/Training	✓		
-Hazard Communication	✓		
-Facility Permits	✓		
-SPCC/SWPPP Plans	✓		
-Accident/Injury Data	✓		
-Facility Inspections	✓		
8 No Smoking Signs Posted if Required By State and Local Law?	✓		
9 Toilets/Washing Facilities Clean And Sanitary w/Warm Water and Soap And Means of Hand Drying?	✓		
10 Is There a Supply of Safety Glasses Available at Shop Entrance?	✓		provided
11 Are Suitable Gloves, Hearing Protection And Protective Clothing Available to be Worn When Working in Shop Area?	✓		
12 Is There a Clean, Accessible, Functioning Eyewash Station in Any Area Where Hazardous or Corrosive Materials Are Used?	✓		
13 Are Overhead Doors & Controls in Good Working Order?	✓		
14 Grates/Covers Over Floor Drains Secure?	✓		
15 Storage Areas Kept Free From Accumulation of Materials that Constitute Hazards From Tripping, Fire, Explosion or Harborage of Pests?	✓		
16 Are Drums of Petroleum Products Kept In Secondary Containment?	✓		
17 Does Equipment Have a Reverse Signal Alarm?	✓		
18 Does Equipment Have a Working Seatbelt?	✓		- by operators
19 Is Equipment Examined at Least Daily?	✓		
20 Are Compactor Wheel Teeth Worn?	✓		
21 Are All Required Fire Suppression Systems in Place?	✓		

8/17/20

MSW Active Area	Condition Acceptable YES	Condition Acceptable NO	Comments
1 Access Road	✓		-good
2 Working Face Size (Length & Width)	✓		-40'x50'
3 Working Face Slope	✓		-5-1
4 Proper Compaction Methods Compactor Not Spinning Wheels	✓		
MSW Active Area (Continued)	**Condition Acceptable YES**	**Condition Acceptable NO**	**Comments**
5 Litter Fencing	✓		-paper catchers moved as necessary
6 Daily Cover	✓		
7 Intermediate Cover	✓		
8 Surface Water Berms	✓		
9 Vector Controlled	✓		
10 Employees Wearing Proper PPE	✓		
11 Leachate Systems in proper Working Order	✓		
-Leachate Head Levels Checked & Recorded	✓		
-Leachate Pumps in Proper Working Order	✓		
-Annual Scheduled Leachate Line Cleaning Completed	✓		-07/02/2020
12 Gas System in Good Operating Condition	✓		
-Gas Well Vertical Orientation (Not Tipped)	✓		
-Kanaflex Tubing Connected/Not Damaged	✓		-checked monthly
-Flare in Good Operating Condition	✓		
-Minimum of Daily Flare Readings Recorded	✓		
13 Leachate Recirculation System Operation	✓		-not in use
-Valves Working Properly	✓		
-Recirculation Pump Maintenance Complete	✓		
-Leachate Seeps From Recirculation Operations	✓		
-Excessive Odors Coming From Recirculation Area	✓		
-Recirculation Area Parameters recorded For specified frequency	✓		
-Daily Precipitation and Daily Waste Flows	✓		
-Weekly Leachate Head on Liner	✓		
-Monthly Leachate Generation Rates Per Sump Area	✓		
-Quarterly Gas Monitoring Results and Surface Scan	✓		
Final Cover			-minimal
1 Settlement	✓		
2 Slope Erosion	✓		
3 Seeps	✓		
4 Vegetative Stress	✓		-vegetation growing well
5 Vegetative Growth	✓		
6 Surface Water Control Features and Sedimentation Ponds	✓		

Clay County Sanitary
Landfill SW-34
Inspection Checklist

Inspector: Brett Rice
Date: 09/14/2020
Weather: 68°F, 15-20mph wind, clear

	Condition Acceptable YES	NO	Comments
General Site/Exterior			
1. General Appearance Of Grounds/Landscape	✓		-looks good, currently stock piling residential garbage (less bulky in order to push on to new cell)
2. Building Exterior/Appearance	✓		
3. Site Perimeter/Interior Fencing	✓		
4. Litter	✓		-good, utilizing paper catchers
5. Access Road Condition Parking Areas	✓		
6. Scale	✓		
7. Signs	✓		
8. Appliance/Used Oil Recycling Storage Area	✓		
9. Public Drop-Off Area	✓		] moving blue residential garbage drop-site bins when construction traffic increases
10. Public Drop-Off Area	✓		
Office/Maintenance			
Shop Equipment			
1 Portable Fire Extinguishers Kept at Designated Locations?	✓		
-Are Annual & Monthly Inspections Documented on the Tag?	✓		
-Are the Extinguishers Free From Obstructions?	✓		
2 First Aid Kits Available?	✓		
3 Interior Lights in Working Order?	✓		
4 Clear Working Space in Front of Electrical Panels and Boxes?	✓		
5 Electric cords and Extension Cords in Good Condition?	✓		
Any Temporary Wiring?	✓		
6 County, State & Federal Required Postings?	✓		
-Commitment to Drug/Alcohol Free Workplace	✓		
-Equal Employment Opportunity	✓		
-Americans w/Disabilities Act Policy	✓		
-Sexual Harassment Policy	✓		
-First Aid Responders/CPR Trained Employees	✓		
-OSHA "It's the Law" Poster	✓		

9/14/20

Office/Maintenance Shop/Equipment (continued)	Condition Acceptable YES	NO	Comments
-Emergency Contact Numbers	✓		in office/breakroom/shop
-Family & Medical Leave Act	✓		
-Fair Labor Standards Act	✓		
-Workers Compensation Posted	✓		
-State Wage & Hour (Minimum Wage Rate	✓		
7 Records Present & Complete	✓		
-OSHA Log	✓		
-Safety Meeting/Training	✓		
-Hazard Communication	✓		
-Facility Permits	✓		
-SPCC/SWPPP Plans	✓		
-Accident/Injury Data	✓		
-Facility Inspections	✓		
8 No Smoking Signs Posted if Required By State and Local Law?	✓		- by entrance
9 Toilets/Washing Facilities Clean And Sanitary w/Warm Water and Soap And Means of Hand Drying?	✓		
10 Is There a Supply of Safety Glasses Available at Shop Entrance?	✓		
11 Are Suitable Gloves, Hearing Protection And Protective Clothing Available to be Worn When Working in Shop Area?	✓		provided
12 Is There a Clean, Accessible, Functioning Eyewash Station in Any Area Where Hazardous or Corrosive Materials Are Used?	✓		
13 Are Overhead Doors & Controls in Good Working Order?	✓		
14 Grates/Covers Over Floor Drains Secure?	✓		
15 Storage Areas Kept Free From Accumulation of Materials that Constitute Hazards From Tripping, Fire, Explosion or Harborage of Pests?	✓		
16 Are Drums of Petroleum Products Kept In Secondary Containment?	✓		
17 Does Equipment Have a Reverse Signal Alarm?	✓		
18 Does Equipment Have a Working Seatbelt?	✓		- by operators
19 Is Equipment Examined at Least Daily?	✓		
20 Are Compactor Wheel Teeth Worn?	✓		
21 Are All Required Fire Suppression Systems in Place?	✓		

9/14/20

MSW Active Area	Condition Acceptable YES	Condition Acceptable NO	Comments
1 Access Road	✓		-perimeter road
2 Working Face Size (Length & Width)	✓		- 40'x80' (stockpiling)
3 Working Face Slope	✓		- 5-1
4 Proper Compaction Methods Compactor Not Spinning Wheels	✓		
MSW Active Area (Continued)	**Condition Acceptable YES**	**Condition Acceptable NO**	**Comments**
5 Litter Fencing	✓		-utilizing paper catchers
6 Daily Cover	✓		
7 Intermediate Cover	✓		- placed more intermediate cover on East face
8 Surface Water Berms	✓		
9 Vector Controlled	✓		
10 Employees Wearing Proper PPE	✓		
11 Leachate Systems in proper Working Order	✓		
-Leachate Head Levels Checked & Recorded	✓		
-Leachate Pumps in Proper Working Order	✓		
-Annual Scheduled Leachate Line Cleaning Completed	✓		-done 07/02/2020
12 Gas System in Good Operating Condition	✓		
-Gas Well Vertical Orientation (Not Tipped)	✓		
-Kanaflex Tubing Connected/Not Damaged	✓		
-Flare in Good Operating Condition	✓		
-Minimum of Daily Flare Readings Recorded	✓		
13 Leachate Recirculation System Operation	✓		-not used
-Valves Working Properly	✓		
-Recirculation Pump Maintenance Complete	✓		
-Leachate Seeps From Recirculation Operations	✓		
-Excessive Odors Coming From Recirculation Area	✓		
-Recirculation Area Parameters recorded For specified frequency	✓		
-Daily Precipitation and Daily Waste Flows	✓		
-Weekly Leachate Head on Liner	✓		-pumped as needed
-Monthly Leachate Generation Rates Per Sump Area	✓		
-Quarterly Gas Monitoring Results and Surface Scan	✓		-on file
Final Cover			
1 Settlement	✓		-minimal
2 Slope Erosion	✓		-none
3 Seeps	✓		
4 Vegetative Stress	✓		
5 Vegetative Growth	✓		
6 Surface Water Control Features and Sedimentation Ponds	✓		

Clay County Sanitary
Landfill SW-34
Inspection Checklist

Inspector: Brett Rice
Date: 10/20/2020
Weather: 55°F, 10mph wind, clear

	Condition Acceptable YES	NO	Comments
General Site/Exterior			
1. General Appearance Of Grounds/Landscape	✓		- good, construction progressing, pushing garbage into new cell, final cover project is progressing
2. Building Exterior/Appearance	✓		
3. Site Perimeter/Interior Fencing	✓		
4. Litter	✓		- looks good
5. Access Road Condition Parking Areas	✓		- using perimeter road
6. Scale	✓		
7. Signs	✓		
8. Appliance/Used Oil Recycling Storage Area	✓		
9. Public Drop-Off Area	✓		moving blue bins to keep public
10. Public Drop-Off Area	✓		
Office/Maintenance			
Shop Equipment			
1 Portable Fire Extinguishers Kept at Designated Locations?	✓		
-Are Annual & Monthly Inspections Documented on the Tag?	✓		
-Are the Extinguishers Free From Obstructions?	✓		
2 First Aid Kits Available?	✓		
3 Interior Lights in Working Order?	✓		
4 Clear Working Space in Front of Electrical Panels and Boxes?	✓		
5 Electric cords and Extension Cords in Good Condition?	✓		
Any Temporary Wiring?	✓		
6 County, State & Federal Required Postings?	✓		in office/shop/breakroom
-Commitment to Drug/Alcohol Free Workplace	✓		
-Equal Employment Opportunity	✓		
-Americans w/Disabilities Act Policy	✓		
-Sexual Harassment Policy	✓		
-First Aid Responders/CPR Trained Employees	✓		
-OSHA "It's the Law" Poster	✓		

10/20/20

Office/Maintenance Shop/Equipment (continued)	Condition Acceptable YES	NO	Comments
-Emergency Contact Numbers	✓	—	in office/breakroom/shop
-Family & Medical Leave Act	✓	—	
-Fair Labor Standards Act	✓	—	
-Workers Compensation Posted	✓	—	
-State Wage & Hour (Minimum Wage Rate	✓	—	
7 Records Present & Complete	✓	—	
-OSHA Log	✓	—	
-Safety Meeting/Training	✓	—	
-Hazard Communication	✓	—	
-Facility Permits	✓	—	office/mezzanine
-SPCC/SWPPP Plans	✓	—	
-Accident/Injury Data	✓	—	
-Facility Inspections	✓	—	
8 No Smoking Signs Posted if Required By State and Local Law?	✓	—	
9 Toilets/Washing Facilities Clean And Sanitary w/Warm Water and Soap And Means of Hand Drying?	✓	—	
10 Is There a Supply of Safety Glasses Available at Shop Entrance?	✓	—	provided
11 Are Suitable Gloves, Hearing Protection And Protective Clothing Available to be Worn When Working in Shop Area?	✓	—	
12 Is There a Clean, Accessible, Functioning Eyewash Station in Any Area Where Hazardous or Corrosive Materials Are Used?	✓	—	
13 Are Overhead Doors & Controls in Good Working Order?	✓	—	
14 Grates/Covers Over Floor Drains Secure?	✓	—	
15 Storage Areas Kept Free From Accumulation of Materials that Constitute Hazards From Tripping, Fire, Explosion or Harborage of Pests?	✓	—	
16 Are Drums of Petroleum Products Kept In Secondary Containment?	✓	—	
17 Does Equipment Have a Reverse Signal Alarm?	✓	—	
18 Does Equipment Have a Working Seatbelt?	✓	—	
19 Is Equipment Examined at Least Daily?	✓	—	- by operators
20 Are Compactor Wheel Teeth Worn?	✓	—	
21 Are All Required Fire Suppression Systems in Place?	✓	—	

10/20/20

MSW Active Area	Condition Acceptable YES	Condition Acceptable NO	Comments
1 Access Road	✓	—	- using perimeter road
2 Working Face Size (Length & Width)	✓	—	- 60' x 80', pushing garbage into new cell
3 Working Face Slope	✓	—	- 8-1
4 Proper Compaction Methods Compactor Not Spinning Wheels	✓	—	- using bulldozer until 5ft base of garbage on new cell

MSW Active Area (Continued)	Condition Acceptable YES	Condition Acceptable NO	Comments
5 Litter Fencing	✓	—	
6 Daily Cover	✓	—	
7 Intermediate Cover	✓	—	
8 Surface Water Berms	✓	—	
9 Vector Controlled	✓	—	
10 Employees Wearing Proper PPE	✓	—	
11 Leachate Systems in proper Working Order	✓	—	
-Leachate Head Levels Checked & Recorded	✓	—	- pumped / hauled as needed
-Leachate Pumps in Proper Working Order	✓	—	
-Annual Scheduled Leachate Line Cleaning Completed	✓	—	
12 Gas System in Good Operating Condition	✓	—	
-Gas Well Vertical Orientation (Not Tipped)	✓	—	] checked monthly
-Kanaflex Tubing Connected/Not Damaged	✓	—	
-Flare in Good Operating Condition	✓	—	
-Minimum of Daily Flare Readings Recorded	✓	—	
13 Leachate Recirculation System Operation	✓	—	- not in use
-Valves Working Properly	✓	—	
-Recirculation Pump Maintenance Complete	✓	—	
-Leachate Seeps From Recirculation Operations	✓	—	
-Excessive Odors Coming From Recirculation Area	✓	—	
-Recirculation Area Parameters recorded For specified frequency	✓	—	
-Daily Precipitation and Daily Waste Flows	✓	—	
-Weekly Leachate Head on Liner	✓	—	
-Monthly Leachate Generation Rates Per Sump Area	✓	—	
-Quarterly Gas Monitoring Results and Surface Scan	✓	—	
Final Cover			
1 Settlement	✓	—	
2 Slope Erosion	✓	—	
3 Seeps	✓	—	
4 Vegetative Stress	✓	—	
5 Vegetative Growth	✓	—	
6 Surface Water Control Features and Sedimentation Ponds	✓	—	

Clay County Sanitary
Landfill SW-34
Inspection Checklist

Inspector: Brett Rice
Date: 11/24/2020
Weather: 30°F, 20 mph wind, clear

	Condition Acceptable YES	NO	Comments
General Site/Exterior			
1. General Appearance Of Grounds/Landscape	✓		-construction coming along
2. Building Exterior/Appearance	✓		
3. Site Perimeter/Interior Fencing	✓		
4. Litter	✓		-maintained
5. Access Road Condition Parking Areas	✓		
6. Scale	✓		
7. Signs	✓		
8. Appliance/Used Oil Recycling Storage Area	✓		
9. Public Drop-Off Area	✓		keeping construction traffic away from public as much as possible
10. Public Drop-Off Area	✓		
Office/Maintenance			
Shop Equipment			
1 Portable Fire Extinguishers Kept at Designated Locations?	✓		
-Are Annual & Monthly Inspections Documented on the Tag?	✓		
-Are the Extinguishers Free From Obstructions?	✓		
2 First Aid Kits Available?	✓		
3 Interior Lights in Working Order?	✓		
4 Clear Working Space in Front of Electrical Panels and Boxes?	✓		
5 Electric cords and Extension Cords in Good Condition?	✓		
Any Temporary Wiring?	✓		
6 County, State & Federal Required Postings?	✓		breakroom/office/shop
-Commitment to Drug/Alcohol Free Workplace	✓		
-Equal Employment Opportunity	✓		
-Americans w/Disabilities Act Policy	✓		
-Sexual Harassment Policy	✓		
-First Aid Responders/CPR Trained Employees	✓		
-OSHA "It's the Law" Poster	✓		

11/24/20

Office/Maintenance Shop/Equipment (continued)	**Condition Acceptable** YES	NO	**Comments**
-Emergency Contact Numbers	✓	—	office/breakroom/shop
-Family & Medical Leave Act	✓	—	
-Fair Labor Standards Act	✓	—	
-Workers Compensation Posted	✓	—	
-State Wage & Hour (Minimum Wage Rate	✓	—	
7 Records Present & Complete	✓	—	
-OSHA Log	✓	—	
-Safety Meeting/Training	✓	—	
-Hazard Communication	✓	—	
-Facility Permits	✓	—	
-SPCC/SWPPP Plans	✓	—	
-Accident/Injury Data	✓	—	
-Facility Inspections	✓	—	
8 No Smoking Signs Posted if Required By State and Local Law?	✓	—	
9 Toilets/Washing Facilities Clean And Sanitary w/Warm Water and Soap And Means of Hand Drying?	✓	—	
10 Is There a Supply of Safety Glasses Available at Shop Entrance?	✓	—	provided
11 Are Suitable Gloves, Hearing Protection And Protective Clothing Available to be Worn When Working in Shop Area?	✓	—	
12 Is There a Clean, Accessible, Functioning Eyewash Station in Any Area Where Hazardous or Corrosive Materials Are Used?	✓	—	
13 Are Overhead Doors & Controls in Good Working Order?	✓	—	
14 Grates/Covers Over Floor Drains Secure?	✓	—	
15 Storage Areas Kept Free From Accumulation of Materials that Constitute Hazards From Tripping, Fire, Explosion or Harborage of Pests?	✓	—	
16 Are Drums of Petroleum Products Kept In Secondary Containment?	✓	—	
17 Does Equipment Have a Reverse Signal Alarm?	✓	—	
18 Does Equipment Have a Working Seatbelt?	✓	—	
19 Is Equipment Examined at Least Daily?	✓	—	- by operators
20 Are Compactor Wheel Teeth Worn?	✓	—	
21 Are All Required Fire Suppression Systems in Place?	✓	—	

11/24/20

MSW Active Area	Condition Acceptable YES	Condition Acceptable NO	Comments
1 Access Road	√		-around perimeter
2 Working Face Size (Length & Width)	√		- 80' x 80' (covering new cell complete, now applying ADC)
3 Working Face Slope	√		-8-1
4 Proper Compaction Methods Compactor Not Spinning Wheels	√		-utilizing dozer/loader to spread ADC, good compaction to the north
MSW Active Area (Continued)	**Condition Acceptable YES**	**Condition Acceptable NO**	**Comments**
5 Litter Fencing	√		-using paper catchers where needed
6 Daily Cover	√		-covering as ADC is available
7 Intermediate Cover			-applied 1800 yds on West/Southwest slope
8 Surface Water Berms	√		
9 Vector Controlled	√		
10 Employees Wearing Proper PPE	√		
11 Leachate Systems in proper Working Order	√		
-Leachate Head Levels Checked & Recorded	√		
-Leachate Pumps in Proper Working Order	√		
-Annual Scheduled Leachate Line Cleaning Completed	√		-checked monthly
12 Gas System in Good Operating Condition	√		
-Gas Well Vertical Orientation (Not Tipped)	√		
-Kanaflex Tubing Connected/Not Damaged	√		
-Flare in Good Operating Condition	√		
-Minimum of Daily Flare Readings Recorded	√		
13 Leachate Recirculation System Operation	√		-not in use
-Valves Working Properly	√		
-Recirculation Pump Maintenance Complete	√		
-Leachate Seeps From Recirculation Operations	√		
-Excessive Odors Coming From Recirculation Area	√		
-Recirculation Area Parameters recorded For specified frequency	√		
-Daily Precipitation and Daily Waste Flows	√		
-Weekly Leachate Head on Liner	√		
-Monthly Leachate Generation Rates Per Sump Area	√		
-Quarterly Gas Monitoring Results and Surface Scan	√		
Final Cover			
1 Settlement	√		minimal settlement
2 Slope Erosion	√		-none
3 Seeps	√		-none
4 Vegetative Stress	√		-none
5 Vegetative Growth	√		
6 Surface Water Control Features and Sedimentation Ponds	√		

Clay County Sanitary
Landfill SW-34
Inspection Checklist

Inspector: Brett Rice
Date: 12/15/2020
Weather: clear, 22°F, 15mph wind

	Condition Acceptable YES	NO	Comments
General Site/Exterior			
1. General Appearance Of Grounds/Landscape	√		- construction wrapping up on cell, new public drop-site underway
2. Building Exterior/Appearance	√		
3. Site Perimeter/Interior Fencing	√		
4. Litter	√		- maintained
5. Access Road Condition Parking Areas	√		
6. Scale	√		
7. Signs	√		
8. Appliance/Used Oil Recycling Storage Area	√		
9. Public Drop-Off Area	√		separating public from construction traffic
10. Public Drop-Off Area	√		
Office/Maintenance Shop Equipment			
1 Portable Fire Extinguishers Kept at Designated Locations?	√		
-Are Annual & Monthly Inspections Documented on the Tag?	√		
-Are the Extinguishers Free From Obstructions?	√		
2 First Aid Kits Available?	√		
3 Interior Lights in Working Order?	√		
4 Clear Working Space in Front of Electrical Panels and Boxes?	√		
5 Electric cords and Extension Cords in Good Condition?	√		
Any Temporary Wiring?	√		
6 County, State & Federal Required Postings?	√		posted in office/breakroom/shop
-Commitment to Drug/Alcohol Free Workplace	√		
-Equal Employment Opportunity	√		
-Americans w/Disabilities Act Policy	√		
-Sexual Harassment Policy	√		
-First Aid Responders/CPR Trained Employees	√		
-OSHA "It's the Law" Poster	√		

Clay County Sanitary
Landfill SW-34
Inspection Checklist

Inspector: Brett Rice
Date: 12/15/2020
Weather: clear, 22°F, 15mph wind

	Condition Acceptable YES	NO	Comments
General Site/Exterior			
1. General Appearance Of Grounds/Landscape	√		- construction wrapping up on cell, new public drop-site underway
2. Building Exterior/Appearance	√		
3. Site Perimeter/Interior Fencing	√		
4. Litter	√		- maintained
5. Access Road Condition Parking Areas	√		
6. Scale	√		
7. Signs	√		
8. Appliance/Used Oil Recycling Storage Area	√		
9. Public Drop-Off Area	√		separating public from construction traffic
10. Public Drop-Off Area	√		
Office/Maintenance Shop Equipment			
1 Portable Fire Extinguishers Kept at Designated Locations?	√		
-Are Annual & Monthly Inspections Documented on the Tag?	√		
-Are the Extinguishers Free From Obstructions?	√		
2 First Aid Kits Available?	√		
3 Interior Lights in Working Order?	√		
4 Clear Working Space in Front of Electrical Panels and Boxes?	√		
5 Electric cords and Extension Cords in Good Condition?	√		
Any Temporary Wiring?	√		
6 County, State & Federal Required Postings?	√		posted in office/breakroom/shop
-Commitment to Drug/Alcohol Free Workplace	√		
-Equal Employment Opportunity	√		
-Americans w/Disabilities Act Policy	√		
-Sexual Harassment Policy	√		
-First Aid Responders/CPR Trained Employees	√		
-OSHA "It's the Law" Poster	√		

12/15/20

MSW Active Area	Condition Acceptable YES	Condition Acceptable NO	Comments
1 Access Road	✓		
2 Working Face Size (Length & Width)	✓		60'x80'
3 Working Face Slope	✓		5-1
4 Proper Compaction Methods Compactor Not Spinning Wheels	✓		

MSW Active Area (Continued)	Condition Acceptable YES	Condition Acceptable NO	Comments
5 Litter Fencing	✓		-moving paper catchers w/ wind
6 Daily Cover	✓		-applying as ADC comes in
7 Intermediate Cover	✓		
8 Surface Water Berms	✓		
9 Vector Controlled	✓		
10 Employees Wearing Proper PPE	✓		
11 Leachate Systems in proper Working Order	✓		
-Leachate Head Levels Checked & Recorded	✓		
-Leachate Pumps in Proper Working Order	✓		
-Annual Scheduled Leachate Line Cleaning Completed	✓		
12 Gas System in Good Operating Condition	✓		
-Gas Well Vertical Orientation (Not Tipped)	✓		
-Kanaflex Tubing Connected/Not Damaged	✓		
-Flare in Good Operating Condition	✓		
-Minimum of Daily Flare Readings Recorded	✓		
13 Leachate Recirculation System Operation	✓		-not in use
-Valves Working Properly	✓		
-Recirculation Pump Maintenance Complete	✓		
-Leachate Seeps From Recirculation Operations	✓		
-Excessive Odors Coming From Recirculation Area	✓		
-Recirculation Area Parameters recorded For specified frequency	✓		
-Daily Precipitation and Daily Waste Flows	✓		
-Weekly Leachate Head on Liner	✓		
-Monthly Leachate Generation Rates Per Sump Area	✓		
-Quarterly Gas Monitoring Results and Surface Scan	✓		
Final Cover			
1 Settlement	✓		-minimal
2 Slope Erosion	✓		-none
3 Seeps	✓		-none
4 Vegetative Stress	✓		-none
5 Vegetative Growth	✓		-good looks good
6 Surface Water Control Features and Sedimentation Ponds	✓		

Appendix C

Financial Assurance Plan - Updated

FA-1 ASSUMPTIONS

ISSUE NAME
Clay County
***** Based on Inflated/Discounted Calculations-Interest Earnings Retained in FA Account *****

LANDFILL OPEN AND CLOSE DATES

Current Year Ending Date (Dec 31):	2021		1/24/2021
Fiscal Period End Date:	31-Dec	30-Year Period End Date	2051
Post Closure Period per Permitted Area:	20	years	

Closure Dates:	Open Date	Closed Date Info only	Final Post Closure Dates Info Only
Area III Phase II - Closed		2001	2021
Area III Phase III - Closed	2001	2004	2024
Area IV, Phases 1 & 2	2004	0	0
Area IV, Phase 3	2006	0	0
Area IV, Phase 4-N	2012	0	0
Area IV, Phase 4-S	2020	0	0
Area IV, Phase 5	2030	0	0
Area IV, Phase 6	2041	0	0
Area III, Phase 5	2055	0	0
Area III, Phase 5A	2058	0	0
Area III, Phase 4	2051	0	0

Remaining Life (YRS)	46.87	120.000 MONTHS
Months to End PostClosure	360.00	

INVESTMENT RATES

Investment Rate		0.72%	
Estimated Prior Period Ending Balance:	$	4,030,541.00	Unaudited
Prior Period Ending Date:		12/31/2020	

INFLATION AND DISCOUNT RATES

		Subsequent Yr Rates
Inflation Rate	0.6028%	0.6028%
Discount Rate	0.2500%	0.2500%

Contingency Percent - various **60.00%** 60% on Non Activated; 100% on Activated Items

METHOD OF CALCULATION

Method Calc Used (1=Inflated, 2-Discounted): 2

Prior Period Ending Balance information is estimated based upon the note above. The actual amount is not available at the time of submission of this Financial Assurance Report.

FA-2 FINANCIAL ASSURANCE PLAN - CLAY COUNTY

Scenario/Date FY 2021 24-Jan-21

******* Based on Inflated/Discounted Calculations-Interest Earnings Retained in FA Account *******

2021 **Monthly Payment: $ 9,957.11** **Est. Cost: $ 2,168,984 $112,962 $897,721**

Contingency adj % *60.00%*

Calculation Type: Inflated/Discounted *Contingency Adjusted $ Activated & NonActivated* $720,019

Fiscal Period Ending 31-Dec		Financial Assurance Beg. Fund Balance	Interest Income Accrued on FA	Annual County Payment to FA Fund	Additional County FA Contributions	Interest Income Transfered to GF	Less Closure Fund Releases	Less: PostClosure Fund Releases	Less: Contingency Fund Releases	As Of Jan 1 Excess FB over Req.	Ending FA Fund Balance	FA COST Requirement	Summary Schedule of FA Annual Action Payouts
2020											$ 4,030,541		
2021	1	$ 4,030,541.00	$ 29,572.75	$ 119,485.37	$ -	$ -	$ -	$ -	$ -	$ -	$ 4,179,599	$ 5,225,395	$ -
2022	2	$ 4,179,599.12	$ 30,603.63	$ 106,536.53	$ -	$ -	$ -	$ -	$ -	$ -	$ 4,316,739	$ 5,244,964	$ -
2023	3	$ 4,316,739.28	$ 31,552.73	$ 94,800.27	$ -	$ -	$ -	$ -	$ -	$ -	$ 4,443,092	$ 5,264,742	$ -
2024	4	$ 4,443,092.28	$ 32,427.81	$ 84,163.79	$ -	$ -	$ -	$ -	$ -	$ -	$ 4,559,684	$ 5,284,730	$ -
2025	5	$ 4,559,683.87	$ 33,235.92	$ 74,524.81	$ -	$ -	$ -	$ -	$ -	$ -	$ 4,667,445	$ 5,304,932	$ -
2026	6	$ 4,667,444.61	$ 33,983.46	$ 65,790.59	$ -	$ -	$ -	$ -	$ -	$ -	$ 4,767,219	$ 5,325,351	$ -
2027	7	$ 4,767,218.65	$ 34,676.22	$ 57,877.01	$ -	$ -	$ -	$ -	$ -	$ -	$ 4,859,772	$ 5,345,989	$ -
2028	8	$ 4,859,771.88	$ 35,319.46	$ 50,707.80	$ -	$ -	$ -	$ -	$ -	$ -	$ 4,945,799	$ 5,366,850	$ -
2029	9	$ 4,945,799.14	$ 35,917.96	$ 44,213.78	$ -	$ -	$ -	$ -	$ -	$ -	$ 5,025,931	$ 5,387,937	$ -
2030	10	$ 5,025,930.87	$ 36,337.48	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 5,062,268	$ 4,831,627	$ -
2031	11	$ 5,062,268.35	$ 36,600.20	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 5,098,869	$ 4,853,175	$ -
2032	12	$ 5,098,868.55	$ 36,864.82	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 5,135,733	$ 4,874,960	$ -
2033	13	$ 5,135,733.37	$ 37,131.35	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 5,172,865	$ 4,896,983	$ -
2034	14	$ 5,172,864.72	$ 37,399.81	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 5,210,265	$ 4,919,249	$ -
2035	15	$ 5,210,264.54	$ 37,670.21	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 5,247,935	$ 4,941,761	$ -
2036	16	$ 5,247,934.75	$ 37,942.57	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 5,285,877	$ 4,964,522	$ -
2037	17	$ 5,285,877.32	$ 38,216.89	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 5,324,094	$ 4,987,536	$ -
2038	18	$ 5,324,094.21	$ 38,493.20	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 5,362,587	$ 5,010,807	$ -
2039	19	$ 5,362,587.41	$ 38,771.51	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 5,401,359	$ 5,034,339	$ -
2040	20	$ 5,401,358.92	$ 39,051.82	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 5,440,411	$ 5,058,134	$ -
2041	21	$ 5,440,410.74	$ 39,334.17	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 5,479,745	$ 5,082,197	$ -
2042	22	$ 5,479,744.91	$ 39,618.56	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 5,519,363	$ 5,091,018	$ -
2043	23	$ 5,519,363.47	$ 39,905.00	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 5,559,268	$ 3,808,416	$ -
2044	24	$ 5,559,268.47	$ 40,193.51	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 5,599,462	$ 3,686,378	$ -
2045	25	$ 5,599,461.98	$ 40,484.11	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 5,639,946	$ 3,563,909	$ -
2046	26	$ 5,639,946.09	$ 40,776.81	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 5,680,723	$ 3,441,010	$ -
2047	27	$ 5,680,722.90	$ 41,071.63	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 5,721,795	$ 3,323,769	$ -
2048	28	$ 5,721,794.52	$ 41,368.57	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 5,763,163	$ 3,200,003	$ -
2049	29	$ 5,763,163.10	$ 41,667.67	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 5,804,831	$ 3,075,802	$ -
2050	30	$ 5,804,830.77	$ 41,968.93	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 5,846,800	$ 2,951,164	$ -
2051	31	$ 5,846,799.69	$ 42,272.36	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 5,889,072	$ 2,389,629	$ -
			$ 1,160,431.12	$ 698,099.94	$ -	$ -	$ -	$ -	$ -	$ -			

Fiscal Period End Date:	31-Dec
Final FA Plan Date:	2051
PostClosure Date:	2021
Remaining Landfill Life:	46.87
Investment Rate:	0.72%
Discount Rate:	0.25%
Inflation Rate:	0.60%

NOTES:

1. Final FA Plan Date refers to the last date of this analyses.
2. PostClosure Date refers to the 20 year period from current year. This plan actually incorporates postclosure costs for the entire Plan period.
3. Closure Costs as defined by MPCA in letter Jan 8, 2003 is the amount of the greatest during the development phase.

FA-3 Postclosure Cost Detail

Clay County, Minnesota

Scenario/Date 24-Jan-21

NO RATE INCREASES

Administrative Services									
	Landfill Supervisor		160	HR	$	25.00	$	4,000	
	Clerical		24	HR	$	10.00	$	240	
	Subtotal								$ 4,240
Erosion Repair									
	Soil Replacement	Assume 0.5 Acres	800	CY	$	2.00	$	1,600	
	Revegetation		0.5	AC	$	1,000.00	$	500	
	Labor		40	HR	$	25.00	$	1,000	
	Subtotal								$ 3,100
Grass Mowing									
	Lump Sum for Two Events		1	LS	$	250.00	$	250	
	Subtotal								$ 250
Inspections									
	Landfill Supervisor	8 Hrs./Qtr. x 4 Qtr.	32	HR	$	25.00	$	800	
	Technician	8 Hrs./Qtr. x 4 Qtr.	32	HR	$	15.00	$	480	
	Subtotal								$ 1,280
Leachate Treatment & Disposal									
	Disposal/Treatment Costs		600,000	Gallons	$	0.035	$	21,000	
	Transportation to Leachate Treatment Facility		600,000	Gallons	$	0.03	$	18,000	
	Cleaning of System	Assume 2,000 Linear Feet	2,000	LF	$	0.50	$	1,000	
	Subtotal								$ 40,000
Lanfill Gas Management System									
	Blower and Flare Replacements		1	LS	$	5,000.00	$	5,000	
	Flare and Generator Maintenance		1	LS	$	1,000.00	$	1,000	
	System Operation	Electricl and 200 hours of pe	1	LS	$	10,000.00	$	10,000	
	Collection System Replacement	1 well 60' dp and wellhead/2	0.5	LS	$	6,800.00	$	3,400	
	Emissions Testing		1	LS	$	1,500.00	$	1,500	
	Reporting		1	LS	$	2,000.00	$	2,000	
	Subtotal								$ 22,900
Monitoring & Testing									
	Well Monitoring	Assume a total of 25 wells	25	LS	$	115.00	$	2,875	
	Well Testing	Assume a total of 25 wells	25	LS	$	425.00	$	10,625	
	Leachate Analysis	Analysis required once/quar	4	LS	$	350.00	$	1,400	
	Gas Monitoring	Analysis required once/quar	4	LS	$	350.00	$	1,400	
	Subtotal								$ 16,300
Routine Maintenance									
	Fertilizing	Assume 1.0 Acres	1.0	AC	$	100.00	$	100	
	Cover Revegetation	Assume 0.5 Acres	0.5	AC	$	1,000.00	$	500	
	Security System	Assume 100 LF of fencing	100	LF	$	1.00	$	100	
	Access Road Maintenance		1	LS	$	500.00	$	500	
	Phytoremediation		1	LS	$	5,000.00	$	5,000	
	Rodent Control		15	HR	$	20.00	$	300	
	Subtotal								$ 6,500

FA-3 Postclosure Cost Detail

Clay County, Minnesota

Scenario/Date **24-Jan-21**

NO RATE INCREASES

Vector Control							
	Lump Sum Contract	1	LS	$	200.00	$ 200	
	Subtotal						$ 200
Well Maintenance							
	Bi-Annually	2	LS	$	2,100.00	$ 4,200	
	Subtotal						$ 4,200
Final Report		1	LS	$	5,000.00	$ 5,000	$ 5,000

Total Cost Estimate for PostClosure - Base Cost	2014			**$ 103,970**
Adjusted Cost Base for Inflation to Current Year Using MPCA Inflation Rates	2021			**$ 114,939**
Prior Year Approved annual Post Closure cost Est. Inflated, Not Discounted	2021			**$ 114,939**
Discounted Cost Value to Base Cost Year	2021	7	0.25%	**$ 112,962**

FA-4 MPCA -- PAYMENT RATE ESTIMATING TABLE

2021 | 24-Jan-21

Name: **NO RATE INCREASES**

Project: Clay County, SW-34

Projected Costs Over Post-Closure Care Period			as of	1-Jan	2021
Current Year:	2021				
Prior Year Inflated Postclosure Cost Estimate (REFER TO TABLE "FA Postclosure Cost Detail")					$ 114,939
Inflation Factor =	0.60%	Current Yr.			
Discount Rate =	0.25%	Current Yr.			
Current Year Discounted Postclosure Cost Estimate (REFER TO TABLE "FA Postclosure Cost Detail")					$ 112,962

Year	n	Inflated Annual Cost	Inflated and Discounted Annual Cost
2021	0	$ 114,939	$ 112,962
2022	1	$ 113,643	$ 113,360
2023	2	$ 114,328	$ 113,758
2024	3	$ 115,017	$ 114,159
2025	4	$ 115,710	$ 114,561
2026	5	$ 116,408	$ 114,964
2027	6	$ 117,110	$ 115,368
2028	7	$ 117,816	$ 115,774
2029	8	$ 118,526	$ 116,182
2030	9	$ 119,240	$ 116,591
2031	10	$ 119,959	$ 117,001
2032	11	$ 120,682	$ 117,413
2033	12	$ 121,410	$ 117,826
2034	13	$ 122,142	$ 118,241
2035	14	$ 122,878	$ 118,657
2036	15	$ 123,619	$ 119,074
2037	16	$ 124,364	$ 119,493
2038	17	$ 125,113	$ 119,914
2039	18	$ 125,868	$ 120,336
2040	19	$ 126,626	$ 120,759
Totals		$ 2,395,396.49	$ 2,336,391.31

NOTE: The costs for Postclosure, Closure and Contigency Action have been adjusted to 2013 costs

Current Value = Inflated, not discounted | Present Value = Inflated then discounted

Basis for this years payments	**Inflated Value**	**Discounted Value**	
Closure Cost Escalated Estimate (enter in column F)	$ 2,218,278	$ 2,168,984	
Postclosure Care Cost Escalated Estimate	$ 2,395,396	$ 2,336,391	
Contigency Action (CA) Cost Estimate (enter in column F)	$ 720,019	$ 720,019	
TOTAL (Present Value total includes current CA Cost Est.)	**$ 5,333,693**	**$ 5,225,395**	
2020 Account Balance on December 31 (enter in column G) =		**$ 4,030,541**	*(estimated)*
EXCESS FA FUND BALANCE as of JANUARY 1 2021		**$ (1,194,854)**	
Operating Life in Months - never > 120 months (enter in column G) =		120.00	months (rounded)
2021 Your Monthly payment if not discounting =		N/A	
2021 Your Monthly payment if discounted should =		$9,957.11	

MPCA - Adjusted Worksheet to 'PAYMENT RATE ESTIMATING TABLE'

2021 | 24-Jan-21

Cost Estimate	2020 ADJUSTED PER MPCA		2021 Adjusted Current Costs Inflated		2021 Present Value Costs Discounted	
	Adjusted Per MPCA Cost	Effective Year	Cost		Cost	Submitted Date
CLOSURE -	$ 1,724,870	2020	$ 2,218,278		$ 2,168,984	2021
- Current Year Annual Postclosure	$ 111,209	2020	$ 114,939		$ 112,962	2021
TOTAL POSTCLOSURE	$ 2,074,462	2020	$ 2,395,396		$ 2,336,391	2021
CONTINEGENCY ACTION	$ 708,847	2020	$ 720,019		$ 720,019	2021
TOTAL COST ESTIMATE	$ 4,508,179	2020	$ 5,333,693		$ 5,225,395	2021
No. of Months	120.00					
Beg. Year Fund Balance	$ 4,030,541					
Monthly Payment (Average with Adjustments)	$ 3,980.32					
Total Annual Payment Prior Year	$ 47,763.84					

Financial Assurance Mechanism Status	List Amounts	
Current Yr Financial Assurance Requirements	$ 5,225,395	per MPCA Form
Account Ending Balance on prior December 31	$ 4,030,541	unaudited
Net Current Yr Financial Assurance Requirmt	$ 1,194,854	(excess account fund balance)
Number of Remaining Months	120.00	
Current Yr Monthly Payment Amount	$ 9,957.11	
Total Annual Payment Current Year	$ 119,485.37	
Remaining Permited Landfill Life in Years	46.87	Years

Manual input from prio year submission (last year's FA-2)

FA-5 Life Detail

Clay County, Minnesota

NO RATE INCREASES **FY 2021** 24-Jan-21

	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
FY Ending Dec 31										
BEGINNING LANDFILL CAPACITY IN CUBIC YARDS	2,754,528	2,699,443	2,643,806	2,587,614	2,530,859	2,473,537	2,415,642	2,357,168	2,298,109	2,238,459
Less: Volume Used (CY)	55,085	55,636	56,193	56,755	57,322	57,895	58,474	59,059	59,650	60,246
Plus: Expansions (see detail below)	-	-	-	-	-	-	-	-	-	-
Landfill Expansion volumes included in beginning balance	-	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-	-
ENDING LANDFILL CAPACITY IN CUBIC YARDS	2,699,443	2,643,806	2,587,614	2,530,859	2,473,537	2,415,642	2,357,168	2,298,109	2,238,459	2,178,213
Landfill Life on Annual Basis	41.75	40.92	40.08	39.22	38.36	37.49	36.62	35.73	34.84	33.93
Compaction Calculations:										
Annual Est. Gross Uncompacted Volume (CY)	89,172	89,172	89,172	89,172	89,172	89,172	89,172	89,172	89,172	89,172
Plus: Gross Reclaimed Waste Volume - Area I - Ph I	-	-	-	-	-	-	-	-	-	-
Plus: Gross Reclaimed Waste Volume - Area I - Ph II	-	-	-	-	-	-	-	-	-	-
Subttotal Reclaimed Waste Volume - Area I	-	-	-	-	-	-	-	-	-	-
Less: Reclaimed Cover Materials	-	-	-	-	-	-	-	-	-	-
Less: Reclaimed Screened Materials at LF	-	-	-	-	-	-	-	-	-	-
Net Waste Volume from Reclamation Area I	-	-	-	-	-	-	-	-	-	-
Gross Waste Delivered to the Facility	89,172	89,172	89,172	89,172	89,172	89,172	89,172	89,172	89,172	89,172
Less: Waste Processed at Facility	-	-	-	-	-	-	-	-	-	-
Net Gross Uncompacted Waste Volume	89,172	89,172	89,172	89,172	89,172	89,172	89,172	89,172	89,172	89,172
Compaction Rate:	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69
Net Annual Compacted Volume (CY) Per Year	61,654	61,654	61,654	61,654	61,654	61,654	61,654	61,654	61,654	61,654
Plus: Other Compacted Waste Volume in CY per year	-	-	-	-	-	-	-	-	-	-
Plus: Additional Compacted Waste Received (CY)	-	-	-	-	-	-	-	-	-	-
Ratio Cover to Waste	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07
Cover Volume (incl 50% ash vol for cover)	4,316	4,316	4,316	4,316	4,316	4,316	4,316	4,316	4,316	4,316
Total Annual Volume Used (including both compacted and cover)	65,970	65,970	65,970	65,970	65,970	65,970	65,970	65,970	65,970	65,970
Operating Life - Years Remaining	46.8725	45.8725	44.8725	44.1120	42.8780	42.1071	40.8834	39.8834	38.8834	37.8834
Operating Life - Months Remaining	562.471	550.471	538.471	529.345	514.536	505.285	490.601	478.601	466.601	454.601
New Construction in Acres	0	0	0	0	0	0	0	0	0	0

Operating Life Calculation per MR 7035.2720

DC= Design Capacity	3,092,192	3,026,222	2,960,252	2,894,281	2,828,669	2,762,699	2,697,088	2,631,118	2,565,147	2,499,177
divided by : A x W x (1+B) (Plus add in compacted waste vol)	65,970	65,970	65,970	65,612	65,970	65,611	65,970	65,970	65,970	65,970
Operating Life (Years)	46.8725	45.8725	44.8725	44.1120	42.8780	42.1071	40.8834	39.8834	38.8834	37.8834
Operating Life (Months)	562.4705	550.4705	538.4705	529.3446	514.5357	505.2848	490.6010	478.6010	466.6010	454.6010
A= Ratio of loose to compacted waste volume achieved at the site	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69
B= The ratio of the volume of cover material to waste receipts at site	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07
W= Weight five-year moving average of annual waste receipts	89,172	89,172	89,172	88,688	89,172	88,687	89,172	89,172	89,172	89,172
Compacted Waste Volumes (ash)	-	-	-	-	-	-	-	-	-	-

FA-5 Life Detail

NO RATE INCREASES **FY 2021** 24-Jan-21

Clay County, Minnesota

	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040
FY Ending Dec 31										
BEGINNING LANDFILL CAPACITY IN CUBIC YARDS	2,178,213	2,117,364	2,055,907	1,993,836	1,931,143	1,867,824	1,803,872	1,739,280	1,674,042	1,608,152
Less: Volume Used (CY)	60,849	61,457	62,072	62,692	63,319	63,952	64,592	65,238	65,890	66,549
Plus: Expansions (see detail below)	-	-	-	-	-	-	-	-	-	-
Landfill Expansion volumes included in beginning balance	-	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-	-
ENDING LANDFILL CAPACITY IN CUBIC YARDS	2,117,364	2,055,907	1,993,836	1,931,143	1,867,824	1,803,872	1,739,280	1,674,042	1,608,152	1,541,602
Landfill Life on Annual Basis	33.02	32.10	31.16	30.22	29.27	28.31	27.34	26.36	25.38	24.38
Compaction Calculations:										
Annual Est. Gross Uncompacted Volume (CY)	89,172	89,172	89,172	89,172	89,172	89,172	89,172	89,172	89,172	89,172
Plus: Gross Reclaimed Waste Volume - Area I - Ph I	-	-	-	-	-	-	-	-	-	-
Plus: Gross Reclaimed Waste Volume - Area I - Ph II	-	-	-	-	-	-	-	-	-	-
Subttotal Reclaimed Waste Volume - Area I	-	-	-	-	-	-	-	-	-	-
Less: Reclaimed Cover Materials	-	-	-	-	-	-	-	-	-	-
Less: Reclaimed Screened Materials at LF	-	-	-	-	-	-	-	-	-	-
Net Waste Volume from Reclamation Area I	-	-	-	-	-	-	-	-	-	-
Gross Waste Delivered to the Facility	89,172	89,172	89,172	89,172	89,172	89,172	89,172	89,172	89,172	89,172
Less: Waste Processed at Facility	-	-	-	-	-	-	-	-	-	-
Net Gross Uncompacted Waste Volume	89,172	89,172	89,172	89,172	89,172	89,172	89,172	89,172	89,172	89,172
Compaction Rate:	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69
Net Annual Compacted Volume (CY) Per Year	61,654	61,654	61,654	61,654	61,654	61,654	61,654	61,654	61,654	61,654
Plus: Other Compacted Waste Volume in CY per year	-	-	-	-	-	-	-	-	-	-
Plus: Additional Compacted Waste Received (CY)	-	-	-	-	-	-	-	-	-	-
Ratio Cover to Waste	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07
Cover Volume (incl 50% ash vol for cover)	4,316	4,316	4,316	4,316	4,316	4,316	4,316	4,316	4,316	4,316
Total Annual Volume Used (including both compacted and cover)	65,970	65,970	65,970	65,970	65,970	65,970	65,970	65,970	65,970	65,970
Operating Life - Years Remaining	36.8834	35.8834	34.8834	33.8834	32.8834	31.8834	30.8834	29.8834	28.8834	27.8834
Operating Life - Months Remaining	442.601	430.601	418.601	406.601	394.601	382.601	370.601	358.601	346.601	334.601
New Construction in Acres	7	0	0	0	0	0	0	3.5	0	0

Operating Life Calculation per MR 7035.2720

DC= Design Capacity	2,433,207	2,367,237	2,301,266	2,235,296	2,169,326	2,103,356	2,037,386	1,971,415	1,905,445	1,839,475
divided by : A x W x (1+B) (Plus add in compacted waste vol)	65,970	65,970	65,970	65,970	65,970	65,970	65,970	65,970	65,970	65,970
Operating Life (Years)	36.8834	35.8834	34.8834	33.8834	32.8834	31.8834	30.8834	29.8834	28.8834	27.8834
Operating Life (Months)	442.6010	430.6010	418.6010	406.6010	394.6010	382.6010	370.6010	358.6010	346.6010	334.6010
A= Ratio of loose to compacted waste volume achieved at the site	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69
B= The ratio of the volume of cover material to waste receipts at site	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07
W= Weight five-year moving average of annual waste receipts	89,172	89,172	89,172	89,172	89,172	89,172	89,172	89,172	89,172	89,172
Compacted Waste Volumes (ash)	-	-	-	-	-	-	-	-	-	-

FA-6 Contingency/Remedial Action Detail

Scenario/Date: 24-Jan-21

Clay County, Minnesota

NO RATE INCREASES

Item	Unit		Cost/Unit	Extension	Subtotals
Repair Liner					
Liner	2,000	SQFT	$ 0.40	$ 800	
Sand	250	CY	$ 6.00	$ 1,500	
Excavation	6,000	CY	$ 10.00	$ 60,000	
Contingency (10%)				$ 6,230	
Subtotal					$ 68,530
Assessment Monitoring					
Sample Collection	8	Locations	$ 50.00	$ 400	
Sample Analysis	8	Samples	$ 2,500.00	$ 20,000	
QC Samples	2	Samples	$ 2,500.00	$ 5,000	
Reporting	2	LS	$ 500.00	$ 1,000	
Treatment & Disposal	10,000	Gallons	$ 0.065	$ 650	
Subtotal					$ 27,050
Groundwater Contamination Analysis & Remedial Investigation/Feasibility Study - Activated					
Work Plan	1	LS	$ 30,000.00	$ 30,000	
Install Additional Wells	8	EA	$ 4,000.00	$ 32,000	
Sample Collection	3	Event	$ 500.00	$ 1,500	
Sample Analysis	24	EA	$ 600.00	$ 14,400	
Contingency (10%)				$ 7,790	
Evaluation and Report	1	LS	$ 25,000.00	$ 25,000	
Subtotal					$ 110,690
Groundwater Treatment System					
Install Collector Trench	1,000	LF	$ 25.00	$ 25,000	
Lift Station, Piping, Appurtenances	1	LS	$ 50,000.00	$ 50,000	
Electrical Power	1,000	LF	$ 5.00	$ 5,000	
On Site Treatment Facility	1	LS	$ 65,000.00	$ 65,000	
Monitoring	10	Event	$ 1,000.00	$ 10,000	
10 Years O&M (Assume 6 pumps)	60	EA	$ 1,500.00	$ 90,000	
Contingency (10%)				$ 24,500	
System Design and Specs	1	LS	$ 30,000.00	$ 30,000	
Subtotal					$ 299,500
Repair Erosion					
600' x 100' = 60,000 sq. ft. 40 mil. VLDPE	60,000	SQFT	$ 0.40	$ 24,000	
600' x 100' x 0.5' = 1,100 cu yds of Sand	1,100	CY	$ 6.00	$ 6,600	
600' x 100' x 1.0' = 2,200 cu yds of Subsoil	2,200	CY	$ 3.00	$ 6,600	
600' x 100' x 0.5' = 1,100 cu yds of Topsoil	1,100	CY	$ 6.00	$ 6,600	
Seed and Mulch	1.5	Acres	$ 2,000.00	$ 3,000	
Riprap Spillway	100	LF	$ 50.00	$ 5,000	
Contingency (10%)				$ 5,180	
Subtotal					$ 56,980
Methane Gas Migration					
Emergency Ventilation and Temporary Remediation	1	LS	$ 8,000.00	$ 8,000	
Install Additional Gas Monitoring Probes	6	ea	$ 1,200.00	$ 7,200	
Install Additional Gass Extraction Wells	3	ea	$ 10,000.00	$ 30,000	
Additional Flare Evaluation	1	LS	$ 34,800.00	$ 34,800	
Contingency (10%)				$ 8,000	
Subtotal					$ 88,000
Repair Leachate Conveyance Piping					
Install Leachate Extraction Well	3	EA	$ 10,000.00	$ 30,000	
Pump and Controls	1	LS	$ 5,000.00	$ 5,000	
Contingency (10%)				$ 3,500	
Subtotal					$ 38,500
Replace Leachate Storage Tank					
20,000 Gallon Double-Walled Tank	1	EA	$ 25,000.00	$ 25,000	
Removal/Installation	1	LS	$ 25,000.00	$ 25,000	
Contingency (10%)				$ 5,000	
Subtotal					$ 55,000
Repair Leachate Seep					
2,000 sq ft. x 0.5 ft = 40 CY of Sand	40	CY	$ 6.00	$ 240	
2,000 sq ft. x 0.5 ft=40 CY of Subsoil	40	CY	$ 3.00	$ 120	
2,000 sq ft. x 0.5 ft = 40 CY of Topsoil	40	CY	$ 6.00	$ 240	
Seed and Mulch	2	LS	$ 500.00	$ 1,000	
Toe Drain	1	each	$ 35,000.00	$ 35,000	
Contingency				$ 200	
Subtotal					$ 36,800
On-Site Leachate Spill					
Excavate and transport 300 CY	300	CY	$ 10.00	$ 3,000	
Temporary Containment Using Berms by Site Operator	1	LS	$ 500.00	$ 500	
Contingency (10%)				$ 350	
Subtotal					$ 3,850
Vandalism					
Repair fencing, gate, wells, etc.	1	LS	$ 10,500.00	$ 10,500	
Subtotal					$ 10,500
Grass Fire and Revegetation					
Fire Fighting	8	HR	$ 500.00	$ 4,000	
Revegation	2	Acres	$ 1,000.00	$ 2,000	
Contingency				$ 1,000	
Subtotal					$ 7,000

FA-6 Contingency/Remedial Action Detail

Clay County, Minnesota

Scenario/Date 24-Jan-21

NO RATE INCREASES

Item	Unit		Cost/Unit	Extension	Subtotals
Subsurface Fire/Explosion					
Fire Fighting	3	Days	$ 1,800.00	$ 5,400	
Leachate Treatment	50,000	Gallons	$ 0.065	$ 3,250	
Contingency				$ 1,000	
Subtotal					$ 9,650
Total Base $ Est for Contingency Action as of year	2014				**$ 812,050**
Inflated $ current year	2021			**inflated # from chart below**	**$ 897,721**
Adjusted Cost Base at 60% on non-activated costs				60%	**$ 538,633**
Cost Value Not Allowed Regulations Cost Adjusted per MPCA	This amount reported on FA Plan				**$ 720,019**
Percentage Activated	**50.51%**				
Contigency costs	Inflated $	$ 897,721	Discounted $	n/a	
Amount Activated at activation percentage	Inflated	$ 453,465	Discounted Activated		
Net costs at 60%	Inflated	$ 266,554	Discounted at 60%		
Contigency costs		$ 720,019			

FA-7 Closure Costs Detail

Clay County, Minnesota — NO RATE INCREASES — 24-Jan-21

Sp #	Description	Unit	Quanity	Unit Price	Total Price
	Field Engineering	L.S.	1	$ 1,200.00	$ 1,200.00
	Mobilization	L.S.	1	$ 1,400.00	$ 1,400.00
	Temp Construction Facilities	L.S.	1	$ 3,500.00	$ 3,500.00
	Site Preparation and Grading	Ac.	1	$ 1,300.00	$ 1,300.00
	Haul Road Maintenance	L.S.	0	$ -	$ -
	Granular Drainage Layer (P)	C.Y.	1,613	$ 18.00	$ 29,000.00
	Rooting Zone Layer	C.Y.	2,420	$ 5.00	$ 12,100.00
	Surface water control swales, diversion structures piping catch basins, etct	L.S.	1	$ 6,000.00	$ 6,000.00
	18-inch CPEP Culvert with end sections	L.F.	0	$ -	$ -
	24-inch CPEP Culvert with end sections	L.F.	0	$ -	$ -
	Settling Basin	C.Y.	0	$ -	$ -
	Temporary Berm	L.F.	400	$ 5.10	$ 2,000.00
	Riprap	C.Y.	0	$ -	$ -
	Topsoil	C.Y.	806	$ 7.00	$ 5,600.00
	Turf Restoration	Units	1	$ 1,200.00	$ 1,200.00
	Access Road	L.F.	200	$ 15.00	$ 3,000.00
	Landfill Gas extraction system	L.S.	1	$ 10,000.00	$ 10,000.00
	Perforated PVC Drain Pipe	L.F.	200	$ 8.00	$ 1,600.00
	40-mil LLDPE Liner	S.F.	43,560	$ 0.40	$ 17,400.00
	Contigency of construction costs		$ 95,700.00	3%	$ 2,900.00
	Base Closure Construction Cost Estimate	**2021**	**1**	**Per Acre**	$ 98,200
	Inflation Amount to Current Year	2.50%	Inf Rate:		
	Inflated Cost per acre				**$98,200**
	Inflated Cost per acre				
	Per FA Formula Largest Open Area in Acres				
	Per FA Formula Largest Open Area Closure Cost				
	Install Additional Gas Wells				
	Final Closure Design Eng	Per Acre		$ -	
	Final Closure CQA	Per Acre		$ -	
	Misc.	Per Acre		$ -	
	Base Constuction Cost Total for Entire Permitted Area:				**$0**
	Inflated Closure Cost to Year of Construction:			**0.60%**	$ -
	-- Inflated $ Grouped by Open Cell Structures for FA --			**acres**	
	- Years to Closure as of Jan 1				
	If Discounted, Discounted Closure Cost:			**0.25%**	$ -
	-- Discounted Costs Group by Open Cell Structures for FA --				
	Current Cost Per Acre in Current ($'s)			**2021**	**$ 98,200**

NO RATE INCREASES — Scenario/Date — 24-Jan-21

	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Inflated Cost per acre	$ 100,655	$ 103,171	$ 105,751	$ 108,394	$ 111,104	$ 113,882	$ 116,729	$ 119,647	$ 122,638	$ 125,704
Inflated Cost per acre	$ 100,655	$ 103,171	$ 105,751	$ 108,394	$ 111,104	$ 113,882	$ 116,729	$ 119,647	$ 122,638	$ 125,704
Per FA Formula Largest Open Area in Acres	-	-	-	-	-	-	-	-	*21.40*	-
Per FA Formula Largest Open Area Closure Cost	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	*2,101,480.00*	$ -
Install Additional Gas Wells	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Final Closure Design Eng	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Final Closure CQA	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Misc.	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Base Constuction Cost Total for Entire Permitted Area:	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 2,101,480**	**$ -**
	1	2	3	4	5	6	7	8	9	10
Inflated Closure Cost to Year of Construction:	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 2,218,278**	**$ -**
-- Inflated $ Grouped by Open Cell Structures for FA --	*$ 2,218,278*	*$ 2,218,278*	*$ 2,218,278*	*$ 2,218,278*	*$ 2,218,278*	*$ 2,218,278*	*$ 2,218,278*	*$ 2,218,278*	*$ 2,218,278*	*$ 1,681,219*
- Years to Closure as of Jan 1	*46.90*	*45.90*	*44.90*	*44.10*	*42.90*	*42.10*	*40.90*	*39.90*	*38.90*	*37.90*
If Discounted, Discounted Closure Cost:	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$2,168,984**	**$0**
-- Discounted Costs Group by Open Cell Structures for FA --	*$ 2,168,984*	*$ 2,168,984*	*$ 2,168,984*	*$ 2,168,984*	*$ 2,168,984*	*$ 2,168,984*	*$ 2,168,984*	*$ 2,168,984*	*$ 2,168,984*	*$ 1,591,358*

FA-7 Closure Costs Detail

Clay County, Minnesota — NO RATE INCREASES — 24-Jan-21

Sp #	Description	Unit	Quanity	Unit Price	Total Price
	Field Engineering	L.S.	1	$ 1,200.00	$ 1,200.00
	Mobilization	L.S.	1	$ 1,400.00	$ 1,400.00
	Temp Construction Facilities	L.S.	1	$ 3,500.00	$ 3,500.00
	Site Preparation and Grading	Ac.	1	$ 1,300.00	$ 1,300.00
	Haul Road Maintenance	L.S.	0	$ -	$ -
	Granular Drainage Layer (P)	C.Y.	1,613	$ 18.00	$ 29,000.00
	Rooting Zone Layer	C.Y.	2,420	$ 5.00	$ 12,100.00
	Surface water control swales, diversion structures piping catch basins, etct	L.S.	1	$ 6,000.00	$ 6,000.00
	18-inch CPEP Culvert with end sections	L.F.	0	$ -	$ -
	24-inch CPEP Culvert with end sections	L.F.	0	$ -	$ -
	Settling Basin	C.Y.	0	$ -	$ -
	Temporary Berm	L.F.	400	$ 5.10	$ 2,000.00
	Riprap	C.Y.	0	$ -	$ -
	Topsoil	C.Y.	806	$ 7.00	$ 5,600.00
	Turf Restoration	Units	1	$ 1,200.00	$ 1,200.00
	Access Road	L.F.	200	$ 15.00	$ 3,000.00
	Landfill Gas extraction system	L.S.	1	$ 10,000.00	$ 10,000.00
	Perforated PVC Drain Pipe	L.F.	200	$ 8.00	$ 1,600.00
	40-mil LLDPE Liner	S.F.	43,560	$ 0.40	$ 17,400.00
	Contigency of construction costs		$ 95,700.00	3%	$ 2,900.00
	Base Closure Construction Cost Estimate	**2021**	**1**	**Per Acre**	$ 98,200
	Inflation Amount to Current Year	2.50%	Inf Rate:		
	Inflated Cost per acre				**$98,200**
	Inflated Cost per acre				
	Per FA Formula Largest Open Area in Acres				
	Per FA Formula Largest Open Area Closure Cost				
	Install Additional Gas Wells				
	Final Closure Design Eng	Per Acre	$ -		
	Final Closure CQA	Per Acre	$ -		
	Misc.	Per Acre	$ -		
	Base Constuction Cost Total for Entire Permitted Area:				**$0**
	Inflated Closure Cost to Year of Construction:			**0.60%**	$ -
	-- Inflated $ Grouped by Open Cell Structures for FA --			**acres**	
	- Years to Closure as of Jan 1				
	If Discounted, Discounted Closure Cost:			**0.25%**	$ -
	-- Discounted Costs Group by Open Cell Structures for FA --				
	Current Cost Per Acre in Current ($'s)			**2021**	**$ 98,200**

NO RATE INCREASES — Scenario/Date — 24-Jan-21

	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040
Inflated Cost per acre	$ 128,847	$ 132,068	$ 135,370	$ 138,754	$ 142,223	$ 145,778	$ 149,423	$ 153,158	$ 156,987	$ 160,912
Inflated Cost per acre	$ 128,847	$ 132,068	$ 135,370	$ 138,754	$ 142,223	$ 145,778	$ 149,423	$ 153,158	$ 156,987	$ 160,912
Per FA Formula Largest Open Area in Acres	-	-	-	-	-	-	-	-	-	-
Per FA Formula Largest Open Area Closure Cost	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Install Additional Gas Wells	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Final Closure Design Eng	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Final Closure CQA	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Misc.	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Base Constuction Cost Total for Entire Permitted Area:	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**
	11	12	13	14	15	16	17	18	19	20
Inflated Closure Cost to Year of Construction:	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**
-- Inflated $ Grouped by Open Cell Structures for FA --	*$ 1,681,219*	*$ 1,681,219*	*$ 1,681,219*	*$ 1,681,219*	*$ 1,681,219*	*$ 1,681,219*	*$ 1,681,219*	*$ 1,681,219*	*$ 1,681,219*	*$ 1,681,219*
- Years to Closure as of Jan 1	*36.90*	*35.90*	*34.90*	*33.90*	*32.90*	*31.90*	*30.90*	*29.90*	*28.90*	*27.90*
If Discounted, Discounted Closure Cost:	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**
-- Discounted Costs Group by Open Cell Structures for FA --	*$ 1,591,358*	*$ 1,591,358*	*$ 1,591,358*	*$ 1,591,358*	*$ 1,591,358*	*$ 1,591,358*	*$ 1,591,358*	*$ 1,591,358*	*$ 1,591,358*	*$ 1,591,358*

Appendix D

Annual Water Quality Monitoring Report

WENCK File #1337-15-072
January 2021

2020 Annual Water Quality Report
Clay County Sanitary Landfill, SW-34

Prepared for:

Clay County Solid Waste Department

807 11th Street North
P.O. Box 280
Moorhead, MN 56561

WENCK
now part of
Stantec

Prepared by:

Stantec Consulting Services Inc.
3303 Fiechtner Drive
Fargo, ND 58103
Phone: 701-297-9600
Fax: 701-297-9601

Table of Contents

CERTIFICATION PAGE 1

1.0 INTRODUCTION 1-1

1.1 Purpose 1-1
1.2 Background 1-1

2.0 GROUNDWATER MONITORING SYSTEM 2-1

2.1 Environmental Monitoring System (EMS) 2-1

3.0 SITE HYDROGEOLOGY 3-1

3.1 Geology 3-1
3.2 Groundwater 3-1

4.0 WATER QUALITY 4-1

4.1 Background 4-1
4.2 Water Quality Monitoring System Results 4-1
4.2.1 Volatile Organic Compounds 4-1
4.2.2 Inorganic & Metals Parameters 4-2

5.0 CONCLUSIONS 5-1

5.1 Water Quality Summary 5-1
5.1.1 Compliance Wells 5-1
5.1.2 Detection Wells 5-1
5.1.3 Lysimeters 5-3
5.1.4 Surface Water 5-3
5.1.5 Residential Water Supply Wells 5-3
5.2 Remediation Evaluation 5-4
5.2.1 Methodology 5-4
5.3 Discussion 5-4
5.3.1 VOC Trends 5-4
5.3.2 Piezometer Results 5-5
5.3.3 Summary 5-5
5.4 Monitoring Well Conditions Review 5-6

Table of Contents (Cont.)

TABLES

1. Well Summary
2. Historical Vertical Gradients
3. Historical Water Level Data Summary
4. Summary of 2020 Detected VOCs
5. Summary of 2020 Inorganic & Metals Exceedances
6. Summary of 2020 Residential Well Water Quality Results
7. Summary of 2020 Lysimeter Water Quality Results
8. Summary of 2020 Surface Water Results
9. 2020 VOCs Results
10. 2020 Inorganics & Metals Results

FIGURES

1. Site Location Map
2. 2020 Aerial Photograph
3. Old Landfill Area Boundaries
4A. 2020 Spring Groundwater Flow – Water Table
4B. 2020 Fall Groundwater Flow – Water Table
5A. 2020 Spring Groundwater Flow – Lower Aquifer
5B. 2020 Fall Groundwater Flow – Lower Aquifer
6. Hydrographs – W-9, W-112, W-106A, W-202A, W-302A & C-12
7. Hydrographs – W-106B, W-202B, W-302B, C-11 & C-13
8. Vinyl Chloride Concentration Trend Graph
9. Arsenic Concentration Trend Graph
10. Manganese Concentration Trend Graph
11. Nitrates Concentration Trend Graph

APPENDICES

A Environmental Monitoring System Summary
B 2020 Field Data and Laboratory Reports

Certification Page

I hereby certify that this report was prepared by me or under my direct supervision and that I am knowledgeable in the field of hydrogeology.

Date: January 31, 2021



Andrew J. Feia
Environmental Scientist

1.0 Introduction

1.1 PURPOSE

This submittal presents the 2020 Annual Water Quality Monitoring Report for the Clay County Sanitary Landfill, Permit SW-34, as required under Minnesota Pollution Control Agency (MPCA) Rules pt. 7035.2815, Subp. 14, Item Q. The results of the 2020 groundwater quality are compared with previous five years of historical data (i.e., 2016-2020). This report will evaluate water quality and water level trends, and review the hydrogeologic setting. The impact of the landfill on local groundwater quality and the effectiveness of remediation efforts will also be evaluated within this report.

1.2 BACKGROUND

The Clay County Sanitary Landfill operates under MPCA solid waste disposal permit SW-34, originally issued in May 1971. The facility is located in irregular Section 19, T139N, R45W, approximately 16 miles east of Moorhead, Minnesota, see Figure 1. The site is located on the shoreline of Lake Agassiz, an ancient glacial lake that covered much of northwestern Minnesota during the Wisconsin glaciation period. The lakebed lies to the west and morainal uplands to the east. Regional groundwater flow is to the west from the recharge areas of the uplands toward the lakebed. Much of the groundwater is discharged in low lying wetlands along the base of the upland areas and the remainder flows beneath the lake sediments to be discharged into the Red River of the North.

The Clay County Sanitary Landfill was included on the State of Minnesota's Permanent List of Priorities in 1984 with a Hazard Ranking Score of 17 out of a possible 100 and removed from the list in 1997. A groundwater quality investigation, initiated in 1993, determined that leachate was impacting groundwater beyond the landfill boundary. During 1994, waste was relocated to approximately 200 feet from the northern property boundary, gas vents were installed, and a cap meeting current rules was applied to the previously closed Area I as part of the County's effort to remediate the site. During 1994, the Federal Subtitle D regulations, as administered by the MPCA, became effective at the landfill. As a result, assessment monitoring was initiated in Spring 1995. The results were documented in Assessment Monitoring Report, Clay County Sanitary Landfill, 1995 and submitted to the MPCA in July 1995. A second round of assessment monitoring was conducted in the spring of 1996 and a report submitted to the MPCA in July of that year.

Partial closure of Area II was completed in 1994 and the remainder was closed as Area III was developed. The first lined cell, Phase 1, in Area III began receiving waste in 1995 and was closed in 1998, when the Phase 2 cell became operational. Phase 2 was closed in 2001 and Phase 3 closed in 2004. At this time, the closure of Area II was completed.

In 2002, the County purchased approximately 10 acres east of Area I (Area IV) for expansion of the permitted site. A hydrogeologic evaluation was conducted during 2002 and 2003. Reports for Phases I (September 2002), II (June 2003), III (December 2003), and IV (January 2004) of the hydrogeologic evaluation were submitted to the MPCA. Relocation of waste from Area I to Area IV commenced in the fall of 2004 and was completed in the spring of 2005. All of Area I has been incorporated into Area IV which also overlaps Area II.

Upon completion of waste removal, an investigation of Area I was initiated in 2005. This included conducting soil borings, soil sampling, installing three temporary wells and

investigating landfill gas encountered during these operations. A report of investigation was submitted to the MPCA in 2006. Subsequently, the installation of ten gas vents within the area of gas detection was completed in the fall of 2006. During 2008, Clay County acquired 86.6 acres of land adjoining the landfill to the north and a groundwater investigation was initiated on this "North Acreage" property and in the western wetlands west of the permitted waste disposal area. This investigation was completed in early 2009 and involved the installation of 8 additional wells. Gas extraction wells were installed in the southern portion of the site in 2008 as well. Three more wells were installed in the fall of 2009. During 2010, two lower aquifer wells, W-2B nested with W-2 and W-203B in the southwest corner of the site, were installed. The most recent wells were installed in Summer 2015, two additional well nests, W-301A/B and W-302A/B, were installed and the compliance boundary modified as shown in the current site map (Figure 2).

Figure 3 shows the pre-expansion waste boundaries. These are the contaminant source areas that will be referenced in this report. Currently, Area IV Phases 1 through 4 are being developed.

2.0 Groundwater Monitoring System

Table 1 summarizes the water quality monitoring wells and domestic wells which are monitored at the site. In addition to these monitoring points, three surface water sites and 5 lysimeters were sampled.

Note that under the permit, the detection wells are only monitored in odd years and, therefore, were not sampled during the Spring 2020 event. These wells were part of the EMS prior to the acquisition of additional acreage to the east (2002) and north (2008) followed by hydrogeological investigations and the establishment of a modified compliance boundary in 2015 as noted above. The old northern and western EMS wells have since become detection wells for the known impacted groundwater plume at the landfill. The old western EMS wells (W-9, W-10, W-11, W-16 & W-17) are now assigned Class 2D aquatic standard intervention limits. The MPCA indicated that sampling the old northern EMS wells and the three temporary wells (TW-1, TW-2 & TW-3) was no longer required but Clay County wanted to retain them to track remediation efforts. For this reason, no intervention limits are assigned to W-15, C-1, C-10, TW-1, TW-2, or TW-3.

Table 1 also contains the riser elevations for all the monitoring wells and piezometers.

2.1 ENVIRONMENTAL MONITORING SYSTEM (EMS)

The existing EMS at the Clay County Sanitary Landfill is quite complex and monitors two distinct hydrogeologic units, an upper and lower aquifer zones. These zones are monitored by an outer ring of compliance boundary wells, an inner transect of detection monitoring wells, surface water monitoring points, and water level only wells to help characterize the site hydrogeology. Please refer to Appendix A for the EMS and Figure 2 for the location of all EMS points at the landfill. Please note that the 24 compliance boundary wells are further separated into two groups based on their screened well depth into either just the upper aquifer or fully into the lower aquifer. Furthermore, the detection monitoring wells are also split into two subgroups, including the extended parameter list wells and the routine parameter list wells, based on the former compliance boundary and groundwater impacts over this area. The landfill property also has a wetland area located immediately west of the landfill footprint that is monitored for surface water quality at three specific locations. One is located in a more upgradient location, but immediately downgradient of the landfill, another is near the center of the wetlands area, and a third point is situated near the wetlands discharge area.

Compliance Boundary Wells: A total of 24 compliance boundary wells ring the site and are located in both the upper and lower aquifer units. The ten (10) upper aquifer/water table wells are sampled semiannually in the spring for the extended parameter list (i.e., low-level VOCs, geochemicals and dissolved metals, and field parameters), and in the fall for the routine parameter list (i.e., low-level VOCs, field parameters, and static water levels). The upper aquifer (downgradient) monitoring points include W-106A, W-301A, W-104A, W-102A, W-302A, W-6, W-202A, W-2, W-201A, and W-5. The 12 lower aquifer compliance boundary wells and two (2) existing upgradient compliance boundary wells are sampled annually in the spring for the extended parameter list (i.e., low-level VOCs, groundwater geochemicals and dissolved metals, and field parameters), and are measured for water levels only during the fall event. The lower aquifer monitoring points include W-106B, W-301B, W-104B, W-102B, W-302B, W-13 (upgradient), W-12 (upgradient), C-11, W-1, W-203B, W-202B, W-2B, W-201B, and W-3.

Detection Wells: The fourteen (14) detection monitoring wells are sampled biannually in the spring of odd years only and are measured for static water levels during all other sampling events. The eight (8) extended parameter list wells are sampled for low-level VOCs, surface water geochemicals and total metals, and field parameters. These wells include W-17, W-9, W-10, W-16, W-11, C-4, C-8, and C-9. The remaining six (6) routine parameter list detection wells are sampled only for low-level VOCs, field parameters, and static water levels. This list includes W-15, C-1, C-10, TW-1, TW-2, and TW-3. Low-level mercury sampling is conducted according to EPA Method 1669 and lab analysis using EPA Method 1631.

Water Level Only Wells: There are a total of 16 monitoring points around the site that are monitored only for static groundwater elevation to aid in calculating flow direction in the upper and lower aquifers. No other field testing or sampling is required at these monitoring points. These well locations include W-112, W-109, T2-A, T2-B, T2-C, J-2, C-12, C-13, T1-A, T1-B, T1-C, PP-1, PP-2, PP-3, C-3, and C-2.

Off-Site Residential Wells: The Clay County Landfill monitors water quality typically in three offsite wells surrounding the landfill property, but has occasionally sampled other nearby residences. When given access by the landowners, the residential wells are sampled annually during the spring event only for the extended parameter list (i.e., low-level VOCs, groundwater geochemicals and dissolved metals, and field parameters). Water levels are not collected at these locations during either event.

Surface Water: The landfill's three (3) surface water monitoring points are monitored semiannually at the landfill. All three locations are sampled in the spring for the extended list (i.e., low-level VOCs, surface water geochemicals and total metals, and field parameters). During the fall sampling event, only locations SW-1 and SW-3 are sampled for the routine list (i.e., low-level VOCs and field parameters). Low-level mercury sampling is also conducted according to EPA Method 1669 and lab analysis using EPA Method 1631 during the spring event only.

3.0 Site Hydrogeology

3.1 GEOLOGY

The Clay County Sanitary Landfill is located on the eastern shoreline of ancient glacial Lake Agassiz. The lakebed lies to the west and consists of lake clays and lacustrine sand and silt deposits. The lake facies also contain sand bars which developed in the near offshore environment. To the east is a morainal upland containing numerous lakes. The landfill itself lies in a transitional near-shore environment consisting of interbedded lake and glacial deposits. The eastern portion of the site is used for waste disposal and is relatively high and well drained. The western half consists of permanent to seasonal wetlands and contains occasional granitic glacial erratics, often associated with small potholes.

The water table (upper) aquifer at the site is relatively shallow and, in general, consists of sand and silty sand containing small amounts of gravel. The sands of the upper aquifer are represented by a sand and gravel beach ridge in the southeast corner of the site and become finer and contain less gravel as one moves from east (upland) to west (lakebed). These sands rest upon, and are interbedded with, a dense sandy clay till which forms the lower confining layer. Within parts of the wetlands west of the disposal area and in portions of Area I, the lower confining layer is thinner or absent altogether.

Underlying the sediments described above are lacustrine deposits of interbedded silts and fine-grained sands. This facie contains little or no gravel and grades from poorly graded (well sorted) sand in the eastern portion of the site to silt with interbedded sand to the west. These sands and silts comprise the lower aquifer and are underlain by a sandy clay till similar to the lower confining layer of the upper aquifer.

3.2 GROUNDWATER

A map of the water table surface and lower aquifer, based on measurements made in May 2020 and October 2020, is presented on Figures 4A and 4B (Upper Aquifer) and Figures 5A and 5B (Lower Aquifer). In general, groundwater flow is westward toward the old lakebed for both aquifers. Vertical gradient measurements indicate that the upland (eastern) portion of the landfill site is a region of groundwater recharge and the wetland to the west of the fill area is a region of groundwater discharge with local areas of recharge (downward gradient). The demarcation between the general recharge and discharge regimes apparently occurs near the western waste disposal boundary where the vertical gradient measured in well nests W-9/W-17 and W-11/W-16 have varied between slightly upward to slightly downward over time. Well nests to the northwest of these wells have exhibited variable but often downward gradients, while the gradients in the southwest portion of the site exhibit generally upward (discharge) gradients.

Table 2 presents the vertical gradients for each of the well nests calculated from water level measurements collected during 2020. A summary of historical water level measurements since 2002 is presented in Table 3. Water elevation trends for the last five years of selected wells are presented in Figures 6 (Water Table Aquifer) and 7 (Lower Aquifer).

4.0 Water Quality

4.1 BACKGROUND

The groundwater monitoring system at the Clay County Sanitary Landfill was sampled in May and October of 2020 by Wenck Associates, Inc. and analyzed by Pace Analytical Services, LLC. All samples collected during the two rounds were analyzed according to the sampling and analysis plan for the site (Wenck, April 2018). The results of these analyses are compared with the MPCA Intervention Limits (IL) as mandated under the facility's permit for the compliance boundary wells. Select detection wells and surface water sites S-1, S-2 and S-3 are evaluated using a combination of surface water and groundwater standards. In addition, samples were collected from the lysimeters and from the nearby residential water supply wells at the Benesch residence, Deutscher residence, J. Ekre residence. Access to sample the Weaver and R. Ekre water supply wells was denied in 2020.

4.2 WATER QUALITY MONITORING SYSTEM RESULTS

4.2.1 Volatile Organic Compounds

The compliance wells were the only monitoring wells sampled during the 2020 events. The last time the full set of monitoring wells (compliance and detections wells) were sampled was in Spring 2019. The detections wells were not sampled in 2020 in accordance with the current EMS, requiring them to only be sampled during odd numbered years. Table 4 shows a summary of VOCs detected in 2020, while Table 9 shows the historical VOC results in the site. Vinyl chloride was the only low-level VOC detected at the site and was present in monitoring well W-2 above the MPCA IL of 0.05 ug/L during the 2020 sampling events.

4.2.1.1 Compliance Wells

The IL of 0.05 ug/L for vinyl chloride was exceeded in Upper Aquifer compliance well W-2 during both the spring and the fall sampling events at levels of 0.061 ug/L and 0.075 ug/L, respectively. Vinyl chloride concentrations in W-2 appear to be trending slightly upward, but concentrations still remain well below the HRL of 0.2 ug/L. In the past, W-104B had shown exceedances of the vinyl chloride IL criteria. However, vinyl chloride was not present in W-14B above the laboratory reporting limit (RL) for either 2020 sampling event. No other VOCs were detected in the monitoring wells during the 2020 sampling events.

Figure 8 presents vinyl chloride concentration trending in W-2 and W-102B through 2020.

4.2.1.2 Lysimeters

The Area III Lysimeters for Phases 1, 2 and 3 and Lysimeter Area IV for Phases 1, 2 and 3 were monitored during 2020. Table 7 presents these summary results. During 2020, only Lysimeter III-1 and Lysimeter III-2 were able to be sampled. Lysimeters III-3, and IV-1&2, were reported as dry during both the spring and the fall sampling events, while Lysimeter IV-3 was not sampled due to access obstructed from the ongoing site expansion construction project. Between Lysimeter III-1 and III-2, only Lysimeter III-2 detected VOCs, which only occurred during the Fall 2020 sampling event. These detections were for ethylbenzene, p-isopropyltoluene, toluene, and total xylenes. Of these detections, ethylbenzene exceeded the IL of 10 µg/L with a concentration of 27.8 µg/L, which is slightly

higher than concentrations reported in 2019. Likewise, total xylenes also exceeded its respective IL of 75 µg/L with a concentration of 168 µg/L.

4.2.1.3 Surface Water

Samples were collected from the three surface water sites within the western portion of the landfill property during the 2020 sampling events. These sites are shown in Figure 2 and designated as S-1, S-2, and S-3. S-1 and S-2 are located within the wetlands west of the waste fill (near former Area I and existing Area II), and S-3 is located in the southwest corner of the property where the water table surface is often higher than the ground surface. S-3 is also within the drainage way that runs to the south along the western property line.

Table 8 presents the results for the surface sites; standards for these sites are Aquatic Class 2D surface water standards. S-1, S-2 and S-3 were all sampled during the spring event. During the fall event a sample was obtained only for S-3, due to S-1 being dry at that time.

VOCs were detected in all three surface water monitoring locations during 2020. The VOCs detected and their concentrations in S-1 during the spring sampling event were for ethyl ether at 11.6 µg/L and vinyl chloride at 0.2 µg/L. Between S-1 and S-2 only ethyl ether was detected in both samples during the spring event. Ethyl ether was detected in S-2 at a concentration of 22 µg/L. Additionally detections in S-2 showed acetone at a concentration of 22.5 µg/L and tetrahydrofuran at a concentration of 74.4 µg/L. These were both less than the IL surface water standards. No VOCs were detected during the spring event in S-3, but a single low-level detection for toluene (0.52 µg/L) was present during the fall event.

4.2.1.4 Detection Wells

The detection wells are sampled biannually in the spring of odd years only, therefore these locations were not sampled during the 2020 events. These detection monitoring wells will be sampled again during the Spring 2021 event.

4.2.2 Inorganic & Metals Parameters

4.2.2.1 Compliance Wells

Table 5 summarizes the 2020 inorganic results. Manganese exceeded the 25 ug/L IL in 21 compliance wells during the spring of 2020. Of these 21 wells, 11 of them had exceedances above the MDH HRL of 100 ug/L. These 11 wells and their concentrations of manganese are as follows: W-3, 122 ug/L; W-6, 351 ug/L; W-12, 244 ug/L; W-102B, 174 ug/L; W-104A, 266 ug/L; W-104B, 228 ug/L; W-106B, 129 ug/L; W-201A, 317 ug/L; W-301B, 116 ug/L; W-302A, 206 ug/L; and W-302B, 215 ug/L. The 10 wells that only exceeded the IL for manganese and their respective concentrations are as follows: W-1, 52.3 ug/L; W-2, 52.3 ug/L; W-2B, 98.7 ug/L; W-5, 48.9 ug/L; W-13, 85.9 ug/L; W-106A, 41.6 ug/L; W-201B, 93.3 ug/L; W-202A, 65.1 ug/L; W-202B, 50.8 ug/L; and W-203B, 43.6 ug/L. This region is characteristically known for naturally elevated levels of manganese, including upgradient wells W-12 and W-13 making it difficult to attribute these exceedances solely to current landfill activities. However, wells located near former disposal Area I have generally shown higher levels of manganese, boron, arsenic, and occasionally barium in the water table wells near the unlined waste areas. This indicates that the landfill still has residual contamination and impacts in the vicinity of former Area I. See Sections 5.1.2 and 5.2 - 5.3 for additional discussion on historical plumes.

Arsenic also exceeded the IL of 2.5 ug/L in five wells. These compliance wells included W-2B with a concentration of 5.8 ug/L, W-104B with a concentration of 8.6 ug/L, W-106B with a concentration of 9.7 ug/L, W-201A with a concentration of 2.8 ug/L, and W-201B with a concentration of 4.8 ug/L.

Aside from manganese and arsenic, nitrates were the only other inorganic exceedance detected above water quality criteria limit during the 2020 sampling events. Nitrates exceeded the 2.5 ug/L IL in C-11 with a concentration of 8.6 ug/L. The 2020 nitrates concentration in C-11 is the lowest reported in several years, as nitrates have historically been reported above the HRL of 10 ug/L in this well.

Figures 9 through 11 present arsenic, manganese, and nitrates concentration trends for those compliance wells that have recently exceeded IL or HRL criteria as shown on Tables 3 and 10. There does not appear to be a consistent relationship between the water table and lower aquifer concentrations of these parameters.

4.2.2.2 Residential Water Supply Wells

Access to sample the Weaver and R. Ekre residences was denied during the Spring 2020 sampling event. No VOCs were detected in the Deutscher, Benesch, or J. Ekre residential wells. Manganese exceeded the IL of 25 µg/L in the Benesch well with a concentration of 39.5 µg/L. The manganese HRL of 100 µg/L was exceeded in the Deutscher well with a concentration of 430 µg/L during the spring sampling event. These results are consistent with past sampling results. Table 6 presents these results.

4.2.2.3 Lysimeters

Lysimeters III-1 and III-2 had inorganic exceedances during the spring sampling event. Arsenic was detected above the HRL of 10 µg/L in both Lysimeter III-1 and III-2 with concentrations of 57.7 µg/L and 107 µg/L, respectively. Manganese exceeded the IL of 25 µg/L in Lysimeter III-2 with a concentration of 107 µg/L, while the manganese concentration in Lysimeter III-1 exceeded the 100 µg/L HRL with a concentration of 1,050 µg/L. The 125 µg/L IL for Boron was exceeded in Lysimeter III-2 with a concentration of 214 µg/L.

4.2.2.4 Surface Water

There were inorganic exceedances for arsenic, lead, manganese, and mercury at the three surface water sampling locations during the spring sampling event in 2020. Manganese was detected above the HRL of 100 µg/L in S-1 with a concentration of 1,010 µg/L. Lead was also detected above the IL of 3.2 µg/L in S-1 at a concentration of 3.6 µg/L. Arsenic was detected above the 212 µg/L HRL in S-2 at a concentration of 3,700 µg/L. S-2 also showed and exceedances for mercury above the HRL of 27.6 ng/L with a concentration of 37.4 ng/L and for manganese above the 100 µg/L HRL with a concentration of 3,320 µg/L. Similar to surface water exceedances shown for S-1 and S-2, S-3 showed lower exceedances for manganese (46.3 µg/ vs. IL of 25 µg/L) and for mercury (6.9 ng/L vs. IL of 6.9 ng/L) during the spring event.

5.0 Conclusions

5.1 WATER QUALITY SUMMARY

5.1.1 Compliance Wells

VOCs were only detected in western compliance well W-2 (water table) during the 2020 events. Vinyl chloride exceeded the IL at low levels during both the spring and fall events. As previously noted, the detection of vinyl chloride at the compliance boundary is probably related to lower detection limits instituted in 2017 rather than to recent occurrence. Review here does show a slight upward trend, as shown on Figure 8. No other IL or HRL VOC exceedances occurred within the compliance wells.

Inorganic exceedances within the compliance wells were primarily for arsenic (5) and manganese (21). A nitrates exceedance also occurred for monitoring well C-11. The arsenic and manganese exceedances are probably a combination of natural origin and landfill impacts, whereas the nitrates are of agricultural origin. Monitoring well C-11 is downgradient of Area III and has shown no impacts to date other than exceedances of nitrates and one 2004 exceedance of manganese. The highest manganese concentration occurred within well W-6 (southwest of Area III) with a concentration of 351 µg/L, while the highest arsenic concentration was reported in W-106B (north acreage) at 9.7 µg/L.

5.1.2 Detection Wells

As noted above, none of the detection wells were sampled in 2020. The following discussion is based on results through 2019.

5.1.2.1 Area I

W-11 has historically been the most impacted well within the Area I plume. A downward trend in VOC concentrations was apparent through 2003, followed by upward trend in concentrations from 2003 until 2010. After 2010, VOC concentrations have remained steady. The 2019 values have generally shown a slight decrease in concentration for most parameters. Eight (8) low-level VOCs were detected in W-11 in 2019, but all remained below Class 2D aquatic standards. A single inorganic/metal IL exceedance occurred for arsenic, but concentrations remained below 2017 concentrations. The Area I investigation wells (TW-1, TW-2, and TW-3) once again revealed numerous VOC detections, although these wells are not subject to established IL/HRL standards since they are not part of the EMS. Overall, VOC concentrations for TW-1, TW-2, and TW-3 appear to be on the decline for most parameters.

Adjacent to W-11, lower aquifer well W-16 has shown a slight increase in detected VOCs in 2019. W-16 reached peak VOC detections in 2005 and declined in detection until 2009 when the detections began to remain steady. The trends in concentration levels in the lower aquifer may be related, in part, to changes in groundwater elevations and associated changes in vertical gradients. Also, soil borings in 2005 indicated a lack of separation between the upper and lower aquifers in portions of Area I and the presence of pressurized landfill gas in the upper aquifer which may have driven the downward migration of leachate. The decline from historic highs may be related in part to the venting of gas in the old Area I. The delay between the appearance of VOC contaminants in the upper and lower aquifer in

the well nest may be due to slower migration of contaminants in the relatively low hydraulic conductivity environment of the lower aquifer.

Monitoring wells C-1 and W-15, along the northern edge of the Area I fill area, also have no established IL/HRLs. Historically, these wells have exhibited a few VOC detections. The 2019 sampling event revealed the detection of six (6) low-level VOCs in C-1 and three (3) low-level VOCs in W-15. Most detections were consistent with historical concentrations.

5.1.2.2 Area II

The second plume, detected in W-9, is associated with Area II. VOC concentrations have shown a continuous and rapid decline between 1991 and 1994. Between 1996 and the end of 2000, a high amplitude peak occurred in the level of tetrahydrofuran. Tetrahydrofuran levels have fallen to zero or near zero since. Other parameters have reflected the trend of the tetrahydrofuran peak in a suppressed form or shown little change in their trends. It is probable that the increases noted between 1995 and 2001 are related to contact of groundwater with waste and/or contaminated soils previously within the unsaturated zone due to historical high-water levels. Current levels of VOCs in W-9 appear to be stabilizing. There were no exceedances in this well in 2019 which is down from one exceedance for mercury in 2017 (surface water standard).

The lower aquifer well, W-17, adjacent to W-9 showed a trend of increasing VOCs from 1999 through 2007 followed by a significant decline. Since 2011 the trend has been flat although vinyl chloride levels continue decline. There is little information about a confining layer between the upper and lower aquifers in Area II.

Well C-9 installed downgradient of the waste site in the wetland showed only minor VOC impacts prior to 2003. Vinyl chloride levels in C-9 peaked in 2004 and are currently flat following a sharp decline. The last time vinyl chloride was detected in C-9 was the spring of 2012. However, in 2019 vinyl chloride was detected at a concentration of 0.11 ug/L. C-10 exhibited a rapid decline in VOCs detected between 1995 and 1999 followed by gradually increasing levels through 2007. VOCs continue to decline in this well as there were no detections in 2019. A decline from 1 detection of ethyl ether in 2017.

In general, it appears that upper aquifer groundwater quality in W-9 has stabilized at a very low level of contamination with the exception of ethyl ether as noted above. The timing of the appearance of VOCs in wells C-9 and C-10 may be related to delayed interception of the plume due to the length of the flow path from the contaminant source to C-9 and the fact that the C-10 is not directly downgradient of the unlined portion of the landfill. VOCs in C-9 may also be related to discharge from the lower aquifer into the upper aquifer.

The hydrology of the site suggests that most of contaminants originating in Area I and Area II remain relatively shallow in the groundwater flow regime and are discharged in the wetlands west of the fill areas. However, relatively low levels, albeit greater than the IL of 0.05 µg/L, of vinyl chloride have been detected in W-2, indicating some transport further than previously thought.

5.1.2.3 Area III

The wells that are downgradient to Area III include C-10 and C-11. Well C-10, is also affected by Area II, is discussed above. Well C-11 which is obliquely downgradient of Area III has shown no impacts to date other than exceedances of nitrates and one 2004 exceedance of manganese.

5.1.2.4 Area IV

Monitoring wells in Area IV also monitor old Area I and are discussed above.

Since the detection wells are only sampled during the spring event of odd years, the next sampling event scheduled for the detection wells will occur in Spring 2021.

5.1.3 Lysimeters

Lysimeters III-1 and III-2 were sampled during the 2020 events, whereas Lysimeters III-3 and IV-1,2were both dry, and Lysimeter IV-3 was obstructed during the 2020 sampling events. No VOCs were detected within the lysimeters during the Spring 2020 event. Lysimeter III-2 revealed four VOCs detections during the fall sampling event with only two IL standard exceedances for ethylbenzene and total xylenes.

The inorganic exceedances present in Lysimeter III-1 and Lysimeter III-2 are for arsenic boron, or manganese. Arsenic and manganese have historically been present in excess of the HRL and is not uncommon to see again for these locations. Also, as previously stated, this region is characteristically known for naturally high levels of manganese which could explain these exceedances.

Boron in excess of the IL in Lysimeter III-2 has also been present since 2017. Between 2012 to 2017 Lysimeter III-2 was dry and no sample could be collected. Prior to 2012, the parameter was not analyzed for. Its presence will continue to be monitored to determine significance.

5.1.4 Surface Water

All three surface water samples were collected in Spring 2020. Only S-3 was sampled in the fall, as S-1 was dry, and S-2 is only sampled during the spring sampling event. A total of 5 different VOCs were detected between S-1, S-2, and S-3, and all below surface water criteria. Vinyl chloride was only present in S-1. Ethyl ether was present in both S-1 and S-2 in the spring. Acetone and tetrahydrofuran were found only in S-2. . S-3 revealed a detection for toluene during the fall event only.

Inorganic exceedances were present in all three surface water locations in 2020. Arsenic exceeded the IL in S-2, while manganese was present above the HRL in S-1 and S-2 and above the IL in S-3. Similarly, low-level mercury was also present in all three surface water sampling locations, but only exceeding the IL at S-3 and the HRL at S-2. Lead was also detected above the IL in S-1.

5.1.5 Residential Water Supply Wells

The manganese present in the Deutscher and Benesch 2020 sample results is likely of natural origin, as the Deutscher well is upgradient to side-gradient of the landfill and the Benesch well is well removed from the landfill. In 2020, no VOCs were detected above their reporting limits for any of the residential wells. No other residential wells were sampled in 2020, due to access not being given for sample collection.

5.2 REMEDIATION EVALUATION

5.2.1 Methodology

Clay County has initiated a number of remedial actions at the landfill. Corrective measures consisting of relocating waste, upgrading the cap, and adding gas vents were performed during 1994 to reduce leachate production contributing to the contaminant plume emanating from Area I. Phytoremediation was initiated in 1998 with the planting of 200 poplar trees. This was followed with the planting of 300 trees in 2000, 3000 trees in 2001 and 1000 trees in 2002. Commencing in the fall of 2004 and continuing into the spring of 2005, waste was removed from Area I and relocated to a lined cell in Area IV. Gas vents were installed in the waste removal area in 2006.

In 2008/2009 the Clay County Landfill upgraded their passive vent system in the closed areas of the landfill (Areas II and III), to an active gas collection system, where the landfill gas is burned off in an enclosed fare. The gas system became fully functional in January 2009. The gas system had been running intermittently due to insufficient gas generation to fuel the enclosed flare. Additional wells were added to the system during 2010 and most recently in 2020 resulting in improved operations.

In an attempt to monitor the effectiveness of the phytoremediation effort, three piezometers were installed across the tree belt (PP-1, 2 & 3) west of Area I in 2004. Water levels were measured monthly to detect any lowering of the water table due to water take-up by the trees.

5.3 DISCUSSION

5.3.1 VOC Trends

In Area I the moving average VOC trend in well W-11 apparently began declining after the initial waste relocation, followed by an increase beginning fall 2005. A significant increase and subsequent decline in groundwater elevations represented by the water level plot for well W-15 occurred during the period when phytoremediation was being implemented with the increase in VOCs near the end of that period which may be related to mobilization of contaminants because of increased infiltration due to the removal of waste and cover in Area I. This also coincides with an increase in water levels. Active gas extraction may be having some effect as well as lower water levels in the recent declines. The VOC trends for well W-16, a lower aquifer well adjacent to W-11, are currently relatively flat.

In well W-9 (Area II) the VOC trend line had declined sharply prior to the original waste move which likely had no effect on contaminants in Area II. During the period of tree planting there was a sharp increase in the trend corresponding to the increasing groundwater levels. Starting about 2001 VOC trends show a sharp decline again mirroring the water level trend. VOC levels have been rising since reaching an all-time low in 2010. Most of the rise can be attributed to increasing levels of ethyl ether.

Well W-17, a lower aquifer well adjacent to W-9, has exhibited falling levels of VOCs since 2007 and the levels appear to be currently stable. They do not appear to be correlated to either remediation efforts or groundwater elevations. There is no confining layer between the upper and lower aquifers in this well and the presence or absence of a confining layer in the contaminant source area (Area II) is uncertain.

5.3.2 Piezometer Results

Relating water levels in the piezometers to water uptake in the phytoremediation trees is difficult. There is evidence that measured water levels are lower on a recurring basis during the summer growing season, but this pattern has been interrupted on occasion by high precipitation levels, such as those observed in 2019. Because the water table is near the surface, direct evaporation, precipitation, temperature, and the overall site water level all have an effect.

5.3.3 Summary

The following points are based on the foregoing discussion as well as on the groundwater data presented in this report.

1. As would be expected, the waste relocation in Area I in 1994 appears to have initiated a decline in contaminant levels in W-11, but had little effect on the Area II contaminants (W-9) which had been in steep decline prior to the relocation.

2. Groundwater elevation appears to have had a strong influence at times on water table contaminant levels in Area I and Area II. At its highest level, the water table probably intersected the waste in some parts of Area II. Also, contaminants adsorbed within soils in the previously unsaturated zone may have been mobilized once the soils were saturated. VOC trends have generally reflected water level trends in Area I since about 2005. While VOC trends have tracked water levels in Area II prior to 2009, but not since that time. Current increases in VOCs in W-9 are due to increasing levels of ethyl ether, while other VOCs remain at low levels.

3. The evaluation of remediation in Area I is complicated, there had been increasing levels of VOCs in W-11 from about 2005 to a peak in 2009. The VOC levels after 2005 appear to follow groundwater levels which probably mask the effects of remediation. Trends for most parameters are declining along with the groundwater levels. Area II trends in W-9 had been downward for several years, but currently appear to be rising although most individual parameters other than ethyl ether are stable at low levels or declining.

4. As of 2019, levels of most VOCs had declined significantly from initial readings in the temporary wells installed in Area I. This may be due to degassing by the wells themselves, which have been described as "active" in field reports, and from the gas vents.

5. A definitive conclusion as to the effectiveness of any one of the remediation measures is difficult to determine. The contaminant levels are very low and there are several processes operating simultaneously, including the effects of the original waste relocation, the probable natural attenuation occurring within the plume, the effects of the phytoremediation program, the effects of later waste removal, the effects of groundwater levels and the effects of gas vents/active collection. On the whole, it appears that contaminant levels are in decline.

6. The presence of VOCs at the compliance boundary, including vinyl chloride exceedances in W-2 (water table) detected recently due to lower

detection/reporting limits attained by the laboratory, indicates that the contaminants travel somewhat further than previously thought although at a very low level.

7. The origin of the vinyl chloride in W-2 is difficult to isolate due to the variation in water table configuration over time and the dispersal of dissolved chemicals over distance. The most likely source is old Area II, but Area I may contribute.

5.4 MONITORING WELL CONDITIONS REVIEW

The damaged well casing for compliance well W-203B (Lower Aquifer) was repaired by an MDH-certified well driller on October 8, 2019. It was determined that the casing was pinched several feet below the top of casing. During the repairs on the PVC well casing, soil was removed from around the monitoring well steel protective casing to allow the repairs (cutting of pipe below pinched area). The area around the well casing annulus was then filled in on April 24, 2020. A sample was collected during the normal spring event in 2020.

Due to the current monitoring well condition and the wells history of freeze thaw cycle, additional monitoring well protection measures may be required in 2021. The well top of casing currently sits a few inches above the ground surface. The water in this well has historically shown upwards artesian flow, so the PVC riser of this monitoring well might be extended in order to decrease the amount of water flowing out of the top. However, the casing was previously extended in the past in attempts to mitigate the cycle. All efforts will be presented to the MPCA as to the status of the monitoring well and included in the 2021 groundwater reports.

Lower Aquifer well W-1 is located in the southwest portion of the landfill's western extent. This location is a near flush-mount well and situated in the portion of the site that can be prone to surface water ponding. MW-1 was able to be readily sampled in the Spring of 2020 and provided a representative sample that compared well to historical concentrations and ranges. Nonetheless, the W-1 well casing will also be evaluated by the county in 2021 for extension.

Tables

1. Well Summary
2. Historical Vertical Gradients
3. Historical Water Level Data Summary
4. Summary of 2020 Detected VOCs
5. Summary of 2020 Inorganic & Metals Exceedances
6. Summary of 2020 Residential Well Water Quality Results
7. Summary of 2020 Lysimeter Water Quality Results
8. Summary of 2020 Surface Water Results
9. 2020 VOCs Results
10. 2020 Inorganics & Metals Results

Table 1
Clay County Sanitary Landfill
Hawley, Minnesota

Well Summary

Monitoring Point	Top of Riser Elevation (Ft.-NGVD)	Screen Interval (Ft.-NGVD)	Frequency	Description
Compliance Wells (Upper Aquifer)				
W-2 #117051	1091.51	1063.1 - 1069.1	2x/yr Spring & Fall	Downgradient, center of western property line.
W-5 #222010	1093.16	1080.7 - 1086.7	2x/yr Spring & Fall	Downgradient, adjacent to W-3.
W-6 #222012	1094.41	1078.3 - 1084.3	2x/yr Spring & Fall	Downgradient, adjacent W-1.
C-11 #670505	1112.65	1090.7 - 1100.7	1x/yr Spring	Downgradient, south of Area III, phase 1.
W-12 #458868	1139.12	1091.2 - 1101.4	1x/yr Spring	Upgradient, east end of southern site boundary.
W-13 #458867	1133.14	1080.2 - 1090.4	1x/yr Spring	Upgradient near south end of eastern site boundary.
W102A #670532	1127.35	1107.0 - 1117.0	2x/yr Spring & Fall	Side Gradient, north of Area I/IV.
W-104A #763237	1098.10	1080.8 - 1085.8	2x/yr Spring & Fall	Side Gradient, north of W-11.
W-106A #763239	1094.64	1076.6 - 1081.6	2x/yr Spring & Fall	Downgradient, northeast of well nest W-3/5.
W-201A #763243	1092.60	1074.7 - 1079.7	2x/yr Spring & Fall	Downgradient, near west prop boundary, between well nest W-3/5 and well W-2. Nested with W-201B.
W-202A #763244	1090.45	1077.0 - 1082.0	2x/yr Spring	Downgradient, near west prop boundary, between well nest W-1/6 and well W-2. Nested with W-202B.
W-301A #778496	1094.23	1077.4 - 1087.4	2x/yr Spring & Fall	Northern compliance boundary.
W-302A #778498	1120.60	1088.0 - 1098.0	2x/yr Spring & Fall	Northern compliance boundary.
Compliance Wells (Lower Aquifer)				
W-1 #117057	1094.79	1022.2 - 1028.2	1x/yr Spring	Downgradient near southern boundary, west of fill area.
W-2B #582746	1091.04	1042.9 - 1047.9	1x/yr Spring	Downgradient, nested with W-2.
W-3 #117059	1092.87	1020.3 - 1026.3	1x/yr Spring	Downgradient, NW corner of site.
W-102B #670533	1127.48	1082.6 - 1087.6	1x/yr Spring	Side Gradient, north of Area I/IV. Nested with W-102A.
W-104B #763238	1098.08	1054.1 - 1064.1	1x/yr Spring	Side Gradient, north of W-11. Nested with W-104A.
W-106B #763240	1094.21	1038.9 - 1048.9	1x/yr Spring	Downgradient, northeast of well nest W-3/5. Nested with W-106A.
W-201B #670534	1092.59	1050.7 - 1055.7	1x/yr Spring	Downgradient, near west prop boundary, between well nest W-3/5 and well W-2. Nested with W-201A.
W-202B #670535	1090.24	1048.3 - 1053.3	1x/yr Spring	Downgradient, near west prop boundary, between well nest W-1/6 and well W-2. Nested with W-202A.
W-203B #582747	1088.59	1048.9 - 1053.9	1x/yr Spring	Downgradient, SW corner of landfill property.
W-301B #778497	1094.14	1042.4 - 1047.4	1x/yr Spring	Northern compliance boundary. Nested with W-301A.
W-302B #778499	1120.85	1059.3 - 1064.3	1x/yr Spring	Northern compliance boundary. Nested with W-302A.
Detection Wells (Upper Aquifer) - Odd Years				
C-1 #527905	1124.03	1092.0 - 1102.0	1x/2yr Spring	Side Gradient, northern site boundary, east of W-15.
C-4 #533339	1098.87	1078.2 - 1088.2	1x/2yr Spring	Downgradient, in wetland, SW of W-11.
C-8 #533340	1096.98	1078.2 - 1088.2	1x/2yr Spring	Downgradient, in wetland, NW of W-9.
C-9 #533341	1098.88	1078.8 - 1088.8	1x/2yr Spring	Downgradient, in wetland. SW of W-9.
C-10 #526826	1103.99	1081.7 - 1091.7	1x/2yr Spring	Downgradient, west of Area III.
TW-1 #680892	1104.73	1085.8 - 1095.8	1x/2yr Spring	Located in Area I/IV, temporary non-EMS well.
TW-2 #680893	1107.54	1088.7 -1098.7	1x/2yr Spring	Located in Area I/IV, temporary non-EMS well.
TW-3 #680894	1103.59	1084.6 - 1094.6	1x/2yr Spring	Located in Area I/IV, temporary non-EMS well.

WENCK now part of Stantec

Table 1
Clay County Sanitary Landfill
Hawley, Minnesota

Well Summary

Monitoring Point	Top of Riser Elevation (Ft.-NGVD)	Screen Interval (Ft.-NGVD)	Frequency	Description
Detection Wells (Upper Aquifer) - Odd Years (Cont.)				
W-9 #246303	1097.37	1080.3 - 1084.3	1x/2yr Spring	Downgradient, on western edge of fill area.
W-10 #246304	1096.01	1081.0 - 1087.0	1x/2yr Spring	Downgradient, on western edge of fill area.
W-11 #246305	1097.05	1082.4 - 1087.9	1x/2yr Spring	Downgradient, NW corner of Area I/IV.
W-15 #486362	1112.70	1083.7 - 1093.7	1x/2yr Spring	Side-gradient, northern edge of Area I/IV.
Detection Wells (Lower Aquifer) - Odd Years				
W-16 #486363	1096.39	1054.3 - 1059.3	1x/2yr Spring	Downgradient, nested with W-11.
W-17 #486364	1097.57	1056.5 - 1061.5	1x/2yr Spring	Downgradient, nested with W-9.
Residential Wells				
Benesch Well #480968	--	--	1x/yr Spring	Residential well: northwest of landfill (spring).
J. Ekre Well #639667	--	--	1x/yr Spring	Residential well: north/northwest of landfill (spring).
R. Ekre Well #639667	--	--	1x/yr Spring	Residential well: east of landfill (spring).
Deutscher Well #ZW00200	--	--	1x/yr Spring	Residential well: south of landfill (spring)
Weaver Well #ZW03948	--	--	1x/yr Spring	Residential well: northeast of landfill (spring)
Water Level Wells & Piezometers				
W-109 #763241	1099.10	1078.1 - 1088.1	2x/yr Spring & Fall	Side gradient, near northern property boundary, north of W-104A/B. Upper aquifer.
W-112 #763242	1091.15	1071.0 - 1076.0	2x/yr Spring & Fall	Down gradient, near northern property boundary, north of W-106A/B. Upper aquifer
C-2 #527906	1093.97	1076.4 - 1086.4	2x/yr Spring & Fall	Downgradient, west of Area I/IV. Upper aquifer.
C-3 #527907	1093.68	1076.0 - 1086.0	2x/yr Spring & Fall	Downgradient, west of Area I/IV, SW of C-2. Upper aquifer
C-12 #670526	1113.07	1096.6 - 1106.6	2x/yr Spring & Fall	Upgradient, nested with C-13. Upper aquifer
C-13 #670527	1113.27	1062.1 -1067.1	2x/yr Spring & Fall	Upgradient, nested with C-12. Lower aquifer.
J-2 #670504	1119.65	1096.1 -1106.1	2x/yr Spring & Fall	Upgradient, northeast corner of site. Upper aquifer.
PP-1 ZW03955	1098.38	--	2x/yr Spring & Fall	Piezometer transect across north end of western phytoremediation plantation
PP-2 ZW03956	1097.66	--	2x/yr Spring & Fall	Piezometer transect across north end of western phytoremediation plantation
PP-3 ZW03957	1096.22	--	2x/yr Spring & Fall	Piezometer transect across north end of western phytoremediation plantation
T1-A ZW03949	1104.75	1093.6 - 1096.6	2x/yr Spring & Fall	Piezometer transect across western phytoremediation plantation
T1-B ZW03950	1102.90	1091.7 - 1094.7	2x/yr Spring & Fall	Piezometer transect across western phytoremediation plantation
T1-C ZW03951	1101.81	1090.6 - 1093.6	2x/yr Spring & Fall	Piezometer transect across western phytoremediation plantation
T2-A ZW03952	1111.98	--	2x/yr Spring & Fall	Piezometer transect across northern phytoremediation plantation
T2-B ZW03953	1110.82	--	2x/yr Spring & Fall	Piezometer transect across northern phytoremediation plantation
T2-C ZW03954	1113.10	--	2x/yr Spring & Fall	Piezometer transect across northern phytoremediation plantation

= Sampled every other year on odd years

WENCK now part of Stantec

Table 2
Clay County Sanitary Landfill
Hawley, Minnesota

Historical Vertical Gradients

Well Nests	May-20	Oct-20
	FT/FT	FT/FT
W-5/W-3	0.0088	-0.0056
W-11/W-16	0.1587	-0.0797
W-9/W-17	-0.0069	-0.0167
W-6/W-1	-0.0693	-0.0916
C-12/C-13	0.0873	0.0750
W-104A/W-104B	-0.0643	0.1020
W-106A/W-106B	0.0266	0.0074
W-201A/W-201B	0.0150	0.0113
W-202A/W-202B	-0.0530	-0.0739
W-2/W-2B	-0.0040	-0.0101
W-301A/W-301B	-0.0243	-0.0480
W-302A/W-302B	0.0981	0.1186

= (water elev. in screen)
= (middle of screen elev.)

Note: Negative values indicate upwards flow

Well ID	Top of Screen	Middle of Screen
W-1	1028.20	1025.20
W-2	1069.10	1066.10
W-2B	1048.80	1046.30
W-3	1026.30	1023.30
W-5	1086.70	1083.70
W-6	1084.30	1081.30
W-9	1084.30	1082.30
W-11	1087.90	1085.15
W-16	1059.30	1056.80
W-17	1061.50	1059.00
W-104A	1085.80	1083.30
W-104B	1062.80	1057.80
W-106A	1081.60	1079.10
W-106B	1047.60	1042.60
W-201A	1079.60	1077.10
W-201B	1055.60	1053.10
W-202A	1082.00	1079.50
W-202B	1053.30	1050.80
C-12	1106.60	1101.60
C-13	1062.10	1064.60
301A	1087.40	1082.40
301B	1047.40	1044.90
302A	1098.00	1093.00
302B	1064.30	1061.80

WENCK now part of Stantec

Table 3
Clay County Sanitary Landfill
Hawley, Minnesota

Historical Water Level Data Summary

Date	W-1	W-2	W-2B	W-3	W-5	W-6	W-9	W-10	W-11	W-12	W-13	W-15	W-16	W-17	W-102A	W-102B	W-104A	W-104B	W-106A	W-106B	W-109	W-112	W-201A	W-201B	W-202A	W-202B	W-203B
TOC*	1094.79	1091.51	1091.04	1092.87	1093.16	1094.41	1097.37	1096.01	1097.05	1139.12	1133.14	1112.70	1096.39	1097.57	1127.35	1127.48	1098.10	1098.08	1094.64	1094.41	1099.10	1091.15	1092.60	1092.59	1090.45	1090.24	1088.59
Aquifer Zone	LA	WT	LA	LA	WT	WT	WT	WT	WT	WT	WT	WT	LA	LA	WT	LA	WT	LA	WT	LA	WT	WT	WT	LA	WT	LA	LA
Apr-02	1094.70	NA	NA	1089.14	1088.55	1091.14	1091.43	1094.32	1090.57	1102.97	1102.63	1094.32	1094.67	1094.33	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Jul-02	1094.71	1086.79	NA	1089.29	1087.80	1090.52	1089.37	1092.27	1092.62	1103.47	1102.71	1097.21	1094.31	1092.64	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Oct-02	1094.67	1087.88	NA	1088.85	1088.49	1089.62	1092.97	1093.32	1092.55	1102.25	1104.04	1095.20	1094.14	1093.26	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Oct-12	1091.84	1081.76	1080.26	1083.46	1081.05	1085.23	1089.20	1089.98	1087.79	1100.42	1101.63	1091.35	1090.68	1088.87	Dry	1096.00	1087.54	1090.69	1082.03	1083.38	1085.85	1081.89	1082.33	1081.68	1079.90	1081.63	1081.59
May-13	1094.69	1088.35	1086.07	1089.09	1090.40	1087.79	1094.15	1094.10	1093.73	1101.37	1103.93	1093.09	1094.80	1094.22	Dry	1096.96	1092.32	1094.39	1088.75	1089.01	1093.35	1087.96	1089.07	1088.04	1087.72	1087.65	1086.11
Nov-13	1094.44	1087.81	1086.61	1088.99	1089.61	1090.61	1093.43	1093.49	1092.82	1101.23	1103.87	1095.32	1094.36	1093.62	Dry	1096.51	1091.83	1093.93	1088.25	1088.53	1092.88	1087.48	1088.48	1087.57	1086.77	1086.68	1085.74
May-14	1094.48	1088.53	1087.59	1089.84	1090.87	1091.93	1094.79	1095.32	1094.40	1101.34	1104.16	1098.12	1095.64	1094.89	Dry	1097.97	1094.00	1095.00	1092.35	1090.30	1093.84	1088.42	1089.56	1089.17	1087.89	1087.38	1086.52
Oct-14	1093.39	1084.98	1085.46	1086.76	1085.97	1087.44	1092.01	1092.70	1090.87	1102.22	1104.84	1094.84	1092.18	1092.47	Dry	1099.83	1090.32	1093.64	1085.96	1086.89	1091.20	1084.91	1085.69	1085.79	1083.24	1085.54	1084.41
May-15	1094.59	1088.99	1089.16	1089.53	1090.11	1092.02	1094.12	1094.09	1093.60	1101.16	1102.68	1094.88	1094.70	1095.54	Dry	1097.53	1093.33	1094.29	1091.24	1089.63	1093.16	1087.78	1090.17	1089.38	1087.97	1088.42	1086.44
Nov-15	1092.07	1083.63	1084.17	1085.27	1083.22	1085.95	1091.02	1091.70	1089.52	1100.70	1102.10	1092.51	1091.94	1091.38	Dry	1096.71	1088.84	1091.82	1084.04	1085.14	1088.69	1080.60	1084.25	1084.31	1081.76	1084.14	1083.31
May-16	1093.46	1087.60	1087.25	1088.28	1088.23	1089.99	NA	NA	NA	1099.90	1101.20	NA	NA	NA	Dry	NA	1091.37	1092.74	1088.69	1087.00	Lost Data	1086.23	1088.24	1087.84	1086.48	1086.27	1086.05
Oct-16	1092.68	1086.59	1086.87	1087.12	1087.63	1089.85	1091.84	1092.24	1090.73	1099.44	1101.09	1092.65	1092.27	1092.09	Dry	1095.78	1090.26	1091.95	1087.58	1086.87	1089.95	1084.82	1086.85	1086.74	1084.31	1086.37	1084.89
May-17	1093.49	1087.81	1087.85	1088.59	1089.83	1090.47	1093.04	1093.06	1092.51	1099.36	1101.14	1094.30	1093.30	1093.15	Dry	1095.97	1091.85	1092.72	1090.03	1088.57	1092.21	1086.87	1088.37	1088.16	1086.85	1088.26	1086.28
Nov-17	NA	1086.06	1086.22	1086.59	1087.26	1088.80	1091.31	1090.55	1090.19	1097.97	1100.30	1092.27	1091.66	1091.54	Dry	1095.34	1089.75	1091.13	1087.41	1086.45	1089.57	1084.34	1086.34	1086.14	1084.52	1086.26	NA
May-18	1093.29	1087.96	1088.10	1088.46	1089.51	1090.91	1092.78	1092.69	1092.21	1098.58	1100.04	1093.35	1092.74	1092.94	Dry	1094.98	1091.60	1092.04	1089.36	1088.24	1091.77	1086.43	1088.44	1088.16	1087.13	1088.37	1086.29
Oct-18	1093.02	1087.42	1087.51	1087.81	1088.80	1090.38	1091.91	1092.07	1091.04	1098.38	1100.03	1092.52	1092.11	1092.12	1107.21	1094.71	1090.44	1091.33	1088.84	1087.54	1089.88	1085.21	1087.97	1087.65	1086.24	1087.67	1086.00
Apr-19	1094.73	1088.41	1088.50	1089.15	1090.56	1091.70	1093.82	1093.69	1093.39	1098.71	1100.95	1096.11	1093.89	1093.87	1113.81	1105.08	1092.83	1093.07	1091.11	1089.31	1093.11	1087.17	1089.14	1088.53	1087.66	1088.84	1084.95
Oct-19	1094.79	1088.22	1088.30	1089.18	1090.05	1091.30	1093.38	1093.33	1092.59	1099.88	1103.40	1095.55	1094.12	1093.56	1108.79	1098.05	1092.22	1093.69	1090.59	1089.38	1092.41	1087.40	1088.73	1088.37	1087.35	1088.72	NA
May-20	1094.59	1088.14	1088.22	1089.28	1089.81	1090.70	1093.66	1093.59	1093.11	1100.95	1104.43	1097.56	1088.61	1093.82	1111.15	1099.61	1092.59	1094.23	1090.45	1089.48	1093.23	1087.34	1088.80	1088.44	1087.16	1088.68	1088.59+
Oct-20	1093.28	1085.98	1086.18	1087.43	1087.09	1088.14	1092.11	1092.59	1091.01	1100.91	1103.79	1094.44	1093.27	1092.50	1107.19	1098.52	1093.18	1090.58	1087.50	1087.23	1090.86	1085.03	1086.68	1086.41	1084.22	1086.34	1088.59+

Notes:

TOC= Top Of Casing
LA = Lower Aquifer
WT = Water Table (Upper) Aquifer

WENCK now part of Stantec

Table 3
Clay County Sanitary Landfill
Hawley, Minnesota

Historical Water Level Data Summary

Date	W-301A	W-301B	W-302A	W-302B	C-1	C-2	C-3	C-4	C-8	C-9	C-10	C-11	C-12	C-13	J-2	TW-1	TW-2	TW-3	PP-1	PP-2	PP-3	T1-A	T1-B	T1-C	T2-A	T2-B	T2-C
TOC*	1094.23	1094.14	1120.60	1120.85	1124.03	1093.97	1093.68	1098.87	1096.98	1098.88	1103.99	1112.65	1113.07	1113.27	1119.65	1104.73	1107.54	1103.59	1098.38	1097.66	1096.22	1104.75	1102.90	1101.81	1111.98	1110.82	1113.10
Aquifer Zone	WT	LA	WT	LA	WT	WT	WT	WT	WT	WT	WT	WT	WT	LA	WT	WT	WT	WT	WT	WT	WT	WT	WT	WT	WT	WT	WT
Apr-02	NA	NA	NA	NA	1098.49	1092.06	1090.10	1093.55	1092.54	1092.28	1095.07	1097.93	NA	NA	NA	NA	NA	NA	NA	NA	NA						
Jul-02	NA	NA	NA	NA	1101.56	1088.45	1089.55	1092.97	1092.92	1092.63	1094.42	1112.67	NA	NA	NA	NA	NA	NA	NA	NA	NA						
Oct-02	NA	NA	NA	NA	1098.67	1090.43	1089.08	1093.00	1091.71	1092.63	1094.70	1097.76	NA	NA	NA	NA	NA	NA	NA	NA	NA						
Oct-12	NA	NA	NA	NA	1095.47	1084.48	1083.46	1089.07	1087.04	1088.02	1090.41	1095.46	1101.36	1098.28	1099.51	1092.39	1095.56	1091.90	1090.05	1089.25	1089.11						
May-13	NA	NA	NA	NA	1097.24	1091.14	1089.99	1093.52	1092.03	1093.03	1102.03	1097.75	1105.31	1101.16	1102.73	1095.42	1098.59	1096.75	1094.78	1094.15	1094.06						
Nov-13	NA	NA	NA	NA	1097.94	1090.93	1089.62	1093.23	1088.54	1089.49	1094.99	1095.33	1101.54	1097.43	1101.47	1092.57	1095.75	1093.89	1094.14	1093.50	1093.38						
May-14	NA	NA	NA	NA	1099.94	1091.33	1090.20	1093.72	1092.12	1096.30	1095.49	1099.19	1101.92	1097.82	1101.85	1094.12	1097.32	1095.42	1095.20	1094.38	1094.25						
Oct-14	NA	NA	NA	NA	1100.18	1087.72	1086.47	1091.90	1086.78	1090.92	1093.85	1098.55	1104.50	1101.93	1102.74	1090.87	1094.06	1092.15	1092.96	1092.11	1091.99						
May-15	1090.91	1091.55	1099.68	1096.85	1097.46	1090.68	1090.03	1093.07	1091.42	1093.37	1094.80	1097.34	1101.24	1097.18	1100.54	1095.76	1097.58	1094.76	1094.61	1093.98	1093.83						
Nov-15	1084.73	1088.04	1098.85	1095.46	1096.36	1086.24	1084.96	1090.75	1089.12	1090.09	1092.34	1096.77	1101.97	1097.93	1099.58	1095.13	1096.93	1094.12	1098.38	1097.66	1096.22						
May-16	1089.78	1089.95	1097.82	1095.15	NA	1090.40	1088.67	NA	NA	NA	NA	1097.01	1101.76	1099.13	1098.84	NA	NA	NA	NA	NA	NA						
Oct-16	1087.98	1089.10	1097.37	1094.30	1095.77	1088.79	1087.99	1091.92	1091.46	1091.79	1093.83	1096.50	1101.60	1098.50	1098.72	1093.25	1095.60	1094.96	1092.27	1092.03	1091.91	1095.79	1091.83	1091.68	1096.04	DRY	DRY
May-17	1090.08	1090.08	1097.17	1094.63	1096.25	1089.86	1087.75	1092.91	1091.67	1092.60	1094.88	1096.26	1101.93	1098.62	1098.46	1094.72	1096.72	1095.97	1093.44	1093.08	1092.95	1097.40	1093.43	1093.27	1096.17	1095.44	DRY
Nov-17	1087.47	1088.22	1096.71	1093.53	1095.16	1088.20	1086.85	1091.02	1091.01	1090.79	1093.35	1096.21	1100.05	1097.63	1096.81	1092.71	1098.01	1090.95	1091.60	1091.22	1091.11	1095.49	1091.69	1091.26	1096.15	1094.90	1094.72
May-18	1090.27	1089.62	1096.45	1093.31	1095.09	1090.86	1088.95	1092.78	1091.69	1092.55	1094.77	1096.48	1101.82	1097.82	1097.42	1094.00	1095.51	1094.90	1093.03	1092.87	1092.76	1095.79	1092.99	1092.89	1096.15	1094.86	DRY
Oct-18	1088.83	1088.78	1096.07	1094.12	1094.89	1089.37	1088.04	1091.65	1091.33	1091.76	1094.39	1096.52	1100.37	1097.42	1097.41	1093.84	1095.69	1095.89	1092.17	1091.83	1091.70	1096.69	1091.85	1091.90	1096.22	1094.82	DRY
Apr-19	1090.42	1089.97	1098.44	1094.72	1095.70	1091.09	1089.16	1093.32	1091.80	1093.01	1094.96	1097.31	1103.83	1098.73	1101.64	1096.00	1097.39	1097.67	1094.23	1093.90	1093.77	1097.71	1094.13	1093.97	1102.45	1102.41	1096.92
Oct-19	1090.14	1090.72	1099.06	1096.03	1098.55	1090.94	1088.95	1092.99	1091.83	1092.92	1094.96	1098.40	1103.68	1100.00	1101.22	1095.73	1098.51	1097.57	1093.89	1093.22	1093.09	1097.85	1093.61	1093.47	1097.16	1097.88	1096.01
May-20	1090.08	1090.99	1100.07	1097.01	1101.24	1090.95	1088.83	1093.30	1091.87	1092.95	1095.01	1099.20	1104.32	1100.91	1101.35	1096.17	1099.05	1097.49	1094.28	1093.60	1093.47	1097.95	1093.96	1093.79	1102.59	1102.03	1098.41
Oct-20	1087.40	1089.20	1100.38	1096.68	1098.65	1088.44	1086.55	1091.95	1091.65	1091.33	1094.12	1097.83	1103.51	1100.58	1101.60	1094.48	1097.76	1095.86	1092.63	1092.13	1092.00	1096.22	1092.23	1092.11	1096.44	1096.30	1095.15

Notes:

TOC= Top Of Casing
LA = Lower Aquifer
WT = Water Table (Upper) Aquifer

WENCK now part of Stantec

Table 4
Clay County Sanitary Landfill
Hawley, Minnesota

Summary of 2020 Detected VOCs

Parameter	Units	HRL	IL	May-20	Oct-20
Environmental Monitoring System					
W-2	Water table	**Compliance Well**			
Vinyl chloride	ug/L	0.2	0.05	**0.061**	**0.075**

Bold values > IL, Underlined values > MDH Standard/MCL
NS - Not Sampled

WENCK now part of Stantec

Table 5
Clay County Sanitary Landfill
Hawley, Minnesota

Summary of 2020 Inorganic & Metals Exceedances

Parameter	Units	HRL	IL	May-20
Environmental Monitoring System				
W-1	Water table	**Compliance Well**		
Manganese	ug/L	100	25	**52.3**
W-2	Water table	**Compliance Well**		
Manganese	ug/L	100	25	**52.3**
W-2B	Lower Aquifer	**Compliance Well**		
Arsenic	ug/L	10	2.5	**5.8**
Manganese	ug/L	100	25	**98.7**
W-3	Lower Aquifer	**Compliance Well**		
Manganese	ug/L	100	25	**122**
W-5	Water Table	**Compliance Well**		
Manganese	ug/L	100	25	**48.9**
W-6	Water Table	**Compliance Well**		
Manganese	ug/L	100	25	**351**
W-12	Water Table	**Compliance Well**		
Manganese	ug/L	100	25	**244**
W-13	Water Table	**Compliance Well**		
Manganese	ug/L	100	25	**85.9**
W-102B	Lower Aquifer	**Compliance Well**		
Manganese	ug/L	100	25	**174**
W-104A	Water Table	**Compliance Well**		
Manganese	ug/L	100	25	**266**
W-104B	Lower Aquifer	**Compliance Well**		
Arsenic	ug/L	10	2.5	**8.6**
Manganese	ug/L	100	25	**228**
W-106A	Water Table	**Compliance Well**		
Manganese	ug/L	100	25	**41.5**
W-106B	Water Table	**Compliance Well**		
Arsenic	ug/L	10	2.5	**9.7**
Manganese	ug/L	100	25	**129**
W-201A	Water table	**Compliance Well**		
Arsenic	ug/L	10	2.5	**2.8**
Manganese	ug/L	100	25	**317**
W-201B	Lower Aquifer	**Compliance Well**		
Arsenic	ug/L	10	2.5	**4.8**
Manganese	ug/L	100	25	**93.3**
W-202A	Lower Aquifer	**Compliance Well**		
Manganese	ug/L	100	25	**65.1**
W-202B	Lower Aquifer	**Compliance Well**		
Manganese	ug/L	100	25	**50.8**
W-203B	Lower Aquifer	**Compliance Well**		
Manganese	ug/L	100	25	**43.6**
W-301B	Water Table	**Compliance Well**		
Manganese	ug/L	100	25	**116**
W-302A	Water Table	**Compliance Well**		
Manganese	ug/L	100	25	**206**
W-302B	Lower Aquifer	**Compliance Well**		
Manganese	ug/L	100	25	**215**
C-11	Water table	**Compliance Well**		
Nitrogen, Nitrate + Nitrite	mg/L	10	2.5	**8.6**

Bold values > IL, Underlined values > MDH Standard/MCL

WENCK now part of Stantec

Table 6
Clay County Sanitary Landfill
Hawley, Minnesota

Summary of 2020 Residential Well Water Quality Results

Parameter	Units	HRL	IL	Deutscher May-20	R. Ekre May-20	J. Ekre May-20	Weaver May-20	Benesch May-20
Detected Volatile Organic Compounds								
None				--	No Access	--	No Access	--
Inorganics	**Units**	**HRL**	**IL**					
Manganese	ug/L	100	25	**<u>430</u>**		0.99		**39.5**

Bold values > IL, Underlined values > MDH Standard/MCL

WENCK now part of Stantec

Table 7
Clay County Sanitary Landfill
Hawley, Minnesota

Summary of 2020 Lysimeter Water Quality Results

Parameter				Lys III-1		Lys III-2		Lys III-3		Lys IV-1&2		Lys IV-3	
				May-20	Oct-20	May-20	Oct-20	May-20	Oct-20	May-20	Oct-20	May-20	Oct-20
Detected Volatile Organic Compounds													
	Units	**HRL**	**IL**					Dry	Dry	Dry	Dry	Obstructed	Obstructed
Ethylbenzene	ug/L	40	10	<0.4	<0.4	<0.4	**27.8**						
p-Isopropyltoluene	ug/L			<0.4	<0.4	<0.4	0.88						
Toluene	ug/L	70	17.5	<0.4	<0.4	<0.4	0.95						
Xylene (Total)	ug/L	300	75	<1.2	<1.2	<1.2	**168**						
Xylene (m & p)	ug/L	300	75	<0.8	<0.8	<0.8	**81.3**						
o-Xylene	ug/L	300	75	<0.4	<0.4	<0.4	**86.4**						
Inorganics	**Units**	**HRL**	**IL**										
Arsenic	ug/L	10	2.5	**<u>57.7</u>**	NS	**<u>107</u>**	NS						
Boron	ug/L	500	125	35.2	NS	**214**	NS						
Manganese	ug/L	100	25	**<u>1050</u>**	NS	**54.4**	NS						

[NA] = Not analyzed, [NS] = Not sampled, [NE] = Not established
Bold values > IL, Underlined values > MDH Standard/MCL

WENCK now part of Stantec

Table 8
Clay County Sanitary Landfill
Hawley, Minnesota

Summary of 2020 Surface Water Results

Parameter	Units	HRL	IL	S-1 (West of W-16) May-20	S-1 (West of W-16) Oct-20	S-2 (West of W-10) May-20	S-2 (West of W-10) Oct-20	S-3 (SW Corner) May-20	S-3 (SW Corner) Oct-20
Detected Volatile Organic Compounds									
Acetone	ug/L			<20	Dry	22.5	NS	<20	<20
Ethyl Ether	ug/L	200	50	11.6		22	NS	<4.0	<4.0
Tetrahydrofuran	ug/L			<10		74.4	NS	<10	<10
Toluene	ug/L	1012	253	<0.4		<0.4	NS	<0.4	0.52
Vinyl chloride	ug/L	36.8	9.2	0.2		<0.05	NS	<0.05	<0.05
Inorganics	**Units**	**HRL**	**IL**						
Arsenic	ug/L	212	53	22.1		**3700**	NS	3.6	NS
Lead	ug/L	12.8	3.2	**3.6**		0.79	NS	<0.1	NS
Manganese	ug/L	100	25	**1010**		**3320**	NS	**46.3**	NS
Mercury	ng/L	27.6	6.9	3.68		**37.4**	NS	**13.9**	NS

[NA] = Not analyzed, [NS] = Not sampled, [NE] = Not established
Bold values > IL, Underlined values > MDH Standard/MCL

WENCK now part of Stantec

Table 9
Clay County Sanitary Landfill
Hawley, Minnesota

VOCs

W-1
Lower Aquifer

ORGANIC PARAMETERS ug/L	HRL	IL	May-16	May-17	May-18	May-19	May-20
Acetone	3000	750	--	--	<20	Well Not Sampled Due to Unrepresentative Conditions Within the Casing	<20
Allyl chloride	30	7.5	--	--	<4.0		<4.0
Benzene	2.0	0.5	--	--	0.21		<0.2
Bromobenzene			--	--	<0.4		<0.4
Bromochloromethane			--	--	<1.0		<1.0
Bromodichloromethane	3.0	0.75	--	--	<0.4		<0.4
Bromoform	40	10	--	--	<1.0		<1.0
Bromomethane	10	2.5	--	--	<1.0		<1.0
n-Butylbenzene			--	--	<0.4		<0.4
sec-Butylbenzene			--	--	<0.4		<0.4
tert-Butylbenzene			--	--	<0.4		<0.4
Carbon tetrachloride	1.0	0.25	--	--	<0.05		<0.05
Chlorobenzene	100	25	--	--	<0.4		<0.4
Chlorodibromomethane	10	2.5	--	--	<0.4		<0.4
Chloroethane			--	--	<1.0		<1.0
Chloroform	20	5.0	--	--	<1.0		<1.0
Chloromethane			--	--	<1.0		<1.0
2-Chlorotoluene			--	--	<0.4		<0.4
4-Chlorotoluene			--	--	<0.4		<0.4
Cumene (*isopropylbenzene*)	300	75	--	--	<0.4		<0.4
1,2-Dibromo-3-chloropropane			--	--	<0.12		<0.12
1,2-Dibromoethane	0.004	0.001	--	--	<0.05		<0.05
Dibromomethane			--	--	<1.0		<1.0
1,2-Dichlorobenzene	600	150	--	--	<0.4		<0.4
1,3-Dichlorobenzene			--	--	<0.4		<0.4
1,4-Dichlorobenzene	10	2.5	--	--	<0.4		<0.4
Dichlorodifluoromethane	500	125	--	--	<1.0		<1.0
1,1-Dichloroethane	80	20	--	--	<0.4		<0.4
1,2-Dichloroethane	1.0	0.25	--	--	<0.2		<0.2
1,1-Dichloroethylene	200	50	--	--	<0.4		<0.4
cis-1,2-Dichloroethylene	6.0	1.5	--	--	<0.4		<0.4
trans-1,2-Dichloroethylene	9.0	2.25	--	--	<0.4		<0.4
Dichlorofluoromethane	20	5.0	--	--	<1.0		<1.0
1,2-Dichloropropane	5.0	1.25	--	--	<0.4		<0.4
1,3-Dichloropropane			--	--	<0.4		<0.4
2,2-Dichloropropane			--	--	<1.0		<1.0
1,1-Dichloropropene			--	--	<0.4		<0.4
cis-1,3-Dichloro-1-propene			--	--	<0.4		<0.4
trans-1,3-Dichloro-1-propene			--	--	<0.4		<0.4
Ethyl benzene	40	10	--	--	<0.4		<0.4
Ethyl ether	200	50	--	--	<4.0		<4.0
Hexachlorobutadiene	1.0	0.25	--	--	<0.1		<0.1
p-Isopropyltoluene			--	--	<0.4		<0.4
Methyl ethyl ketone	4000	1000	--	--	<5.0		<5.0
Methyl isobutyl ketone	300	75	--	--	<5.0		<5.0
Methyl tert-butyl ether	700	175	--	--	<0.4		<0.4
Methylene chloride	5.0	1.25	--	--	<1.0		<1.0
Naphthalene	70	17.5	--	--	<1.0		<1.0
n-Propylbenzene			--	--	<0.4		<0.4
Styrene			--	--	<0.4		<0.4
1,1,1,2-Tetrachloroethane	70	17.5	--	--	<0.4		<0.4
1,1,2,2-Tetrachloroethane	2.0	0.5	--	--	<0.4		<0.4
1,1,2,2-Tetrachloroethylene			--	--	<0.4		<0.4
Tetrahydrofuran	600	150	--	--	<10		<10
Toluene	70	17.5	--	--	<0.4		<0.4
1,2,3-Trichlorobenzene			--	--	<0.4		<0.4
1,2,4-Trichlorobenzene	4.0	1.0	--	--	<0.4		<0.4
1,1,1-Trichloroethane	5000	1250	--	--	<0.4		<0.4
1,1,2-Trichloroethane	3.0	0.75	--	--	<0.4		<0.4
1,1,2-Trichloroethylene	0.4	0.1	--	--	<0.05		<0.05
Trichlorofluoromethane	2000	500	--	--	<0.4		<0.4
1,2,3-Trichloropropane	7.0	1.75	--	--	<0.01		<0.01
1,1,2-Trichlorotrifluoroethane			--	--	<1.0		<1.0
1,2,4-Trimethylbenzene	30	7.5	--	--	<1.0		<1.0
1,3,5-Trimethylbenzene	30	7.5	--	--	<0.4		<0.4
Vinyl chloride	0.2	0.05	--	--	<0.05		<0.05
TOTAL Xylenes	300	75	--	--	<2.4		<1.2
[m & p-Xylene]	300	75	--	--	<2.0		<0.8
[o-Xylene]	300	75	--	--	<0.4		<0.4

-- = Not Detected
Gray-shaded entries represent detections.
Yellow-shaded entries represent IL exceedances for water quality performance standards.
Blue-shaded entries represent HRL exceedances for water quality performance standards.

WENCK now part of Stantec

Table 9
Clay County Sanitary Landfill
Hawley, Minnesota

VOCs

W-2
Upper Aquifer

ORGANIC PARAMETERS ug/L	HRL	IL	May-16	Oct-16	May-17	Nov-17	May-18	Oct-18	May-19	Oct-19	May-20	Oct-20
Acetone	3000	750	--	--	--	--	<20	<20	<20	<20	<20	<20
Allyl chloride	30	7.5	--	--	--	--	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0
Benzene	2.0	0.5	--	--	--	--	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Bromobenzene			--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Bromochloromethane			--	--	--	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromodichloromethane	3.0	0.75	--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Bromoform	40	10	--	--	--	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromomethane	10	2.5	--	--	--	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
n-Butylbenzene			--	--	--	--	<0.4	<1.0	<0.4	<0.4	<0.4	<0.4
sec-Butylbenzene			--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
tert-Butylbenzene			--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Carbon tetrachloride	1.0	0.25	--	--	--	--	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Chlorobenzene	100	25	--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Chlorodibromomethane	10	2.5	--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Chloroethane			--	--	--	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chloroform	20	5.0	--	--	--	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chloromethane			--	--	--	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
2-Chlorotoluene			--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
4-Chlorotoluene			--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Cumene (*isopropylbenzene*)	300	75	--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,2-Dibromo-3-chloropropane			--	--	--	--	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12
1,2-Dibromoethane	0.004	0.001	--	--	--	--	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Dibromomethane			--	--	--	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dichlorobenzene	600	150	--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,3-Dichlorobenzene			--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,4-Dichlorobenzene	10	2.5	--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Dichlorodifluoromethane	500	125	--	--	--	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1-Dichloroethane	80	20	--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,2-Dichloroethane	1.0	0.25	--	--	--	--	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
1,1-Dichloroethylene	200	50	--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<1.0
cis-1,2-Dichloroethylene	6.0	1.5	--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
trans-1,2-Dichloroethylene	9.0	2.25	--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Dichlorofluoromethane	20	5.0	--	--	--	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dichloropropane	5.0	1.25	--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,3-Dichloropropane			--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
2,2-Dichloropropane			--	--	--	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1-Dichloropropene			--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
cis-1,3-Dichloro-1-propene			--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
trans-1,3-Dichloro-1-propene			--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Ethyl benzene	40	10	--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Ethyl ether	200	50	--	--	1.1	1.18	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0
Hexachlorobutadiene	1.0	0.25	--	--	--	--	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
p-Isopropyltoluene			--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Methyl ethyl ketone	4000	1000	--	--	--	--	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Methyl isobutyl ketone	300	75	--	--	--	--	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Methyl tert-butyl ether	700	175	--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Methylene chloride	5.0	1.25	--	--	--	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Naphthalene	70	17.5	--	--	--	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
n-Propylbenzene			--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Styrene			--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,1,1,2-Tetrachloroethane	70	17.5	--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,1,2,2-Tetrachloroethane	2.0	0.5	--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,1,2,2-Tetrachloroethylene			--	--	--	--	<0.4	<1.0	<0.4	<0.4	<0.4	<0.4
Tetrahydrofuran	600	150	--	--	--	--	<10	<10	<10	<10	<10	<10
Toluene	70	17.5	--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,2,3-Trichlorobenzene			--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,2,4-Trichlorobenzene	4.0	1.0	--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,1,1-Trichloroethane	5000	1250	--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<1.0
1,1,2-Trichloroethane	3.0	0.75	--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,1,2-Trichloroethylene	0.4	0.1	--	--	--	--	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Trichlorofluoromethane	2000	500	--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,2,3-Trichloropropane	7.0	1.75	--	--	--	--	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
1,1,2-Trichlorotrifluoroethane			--	--	--	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2,4-Trimethylbenzene	30	7.5	--	--	--	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,3,5-Trimethylbenzene	30	7.5	--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Vinyl chloride	0.2	0.05	--	--	0.04	0.05	0.07	0.069	0.076	0.082	0.061	0.075
TOTAL Xylenes	300	75	--	--	--	--	<2.4	<1.2	<1.2	<1.2	<1.2	<1.2
[m & p-Xylene]	300	75	--	--	--	--	<2.0	<0.8	<0.8	<0.8	<0.8	<0.8
[o-Xylene]	300	75	--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4

-- = Not Detected
Gray-shaded entries represent detections.
Yellow-shaded entries represent IL exceedances for water quality performance standards.
Blue-shaded entries represent HRL exceedances for water quality performance standards.

WENCK now part of Stantec

Table 9
Clay County Sanitary Landfill
Hawley, Minnesota

VOCs

W-2B
Lower Aquifer

ORGANIC PARAMETERS ug/L	HRL	IL	May-16	May-17	May-18	May-19	May-20
Acetone	3000	750	--	--	<20	<20	<20
Allyl chloride	30	7.5	--	--	<4.0	<4.0	<4.0
Benzene	2.0	0.5	--	--	<0.2	<0.2	<0.2
Bromobenzene			--	--	<0.4	<0.4	<0.4
Bromochloromethane			--	--	<1.0	<1.0	<1.0
Bromodichloromethane	3.0	0.75	--	--	<0.4	<0.4	<0.4
Bromoform	40	10	--	--	<1.0	<1.0	<1.0
Bromomethane	10	2.5	--	--	<1.0	<1.0	<1.0
n-Butylbenzene			--	--	<1.0	<0.4	<0.4
sec-Butylbenzene			--	--	<0.4	<0.4	<0.4
tert-Butylbenzene			--	--	<0.4	<0.4	<0.4
Carbon tetrachloride	1.0	0.25	--	--	<0.05	<0.05	<0.05
Chlorobenzene	100	25	--	--	<0.4	<0.4	<0.4
Chlorodibromomethane	10	2.5	--	--	<0.4	<0.4	<0.4
Chloroethane			--	--	<1.0	<1.0	<1.0
Chloroform	20	5.0	--	--	<1.0	<1.0	<1.0
Chloromethane			--	--	<1.0	<1.0	<1.0
2-Chlorotoluene			--	--	<0.4	<0.4	<0.4
4-Chlorotoluene			--	--	<0.4	<0.4	<0.4
Cumene (*isopropylbenzene*)	300	75	--	--	<0.4	<0.4	<0.4
1,2-Dibromo-3-chloropropane			--	--	<0.12	<0.12	<0.12
1,2-Dibromoethane	0.004	0.001	--	--	<0.05	<0.05	<0.05
Dibromomethane			--	--	<1.0	<1.0	<1.0
1,2-Dichlorobenzene	600	150	--	--	<0.4	<0.4	<0.4
1,3-Dichlorobenzene			--	--	<0.4	<0.4	<0.4
1,4-Dichlorobenzene	10	2.5	--	--	<0.4	<0.4	<0.4
Dichlorodifluoromethane	500	125	--	--	<1.0	<1.0	<1.0
1,1-Dichloroethane	80	20	--	--	<0.4	<0.4	<0.4
1,2-Dichloroethane	1.0	0.25	--	--	<0.2	<0.2	<0.2
1,1-Dichloroethylene	200	50	--	--	<0.4	<0.4	<0.4
cis-1,2-Dichloroethylene	6.0	1.5	--	--	<0.4	<0.4	<0.4
trans-1,2-Dichloroethylene	9.0	2.25	--	--	<0.4	<0.4	<0.4
Dichlorofluoromethane	20	5.0	--	--	<1.0	<1.0	<1.0
1,2-Dichloropropane	5.0	1.25	--	--	<0.4	<0.4	<0.4
1,3-Dichloropropane			--	--	<0.4	<0.4	<0.4
2,2-Dichloropropane			--	--	<1.0	<1.0	<1.0
1,1-Dichloropropene			--	--	<0.4	<0.4	<0.4
cis-1,3-Dichloro-1-propene			--	--	<0.4	<0.4	<0.4
trans-1,3-Dichloro-1-propene			--	--	<0.4	<0.4	<0.4
Ethyl benzene	40	10	--	--	<4.0	<0.4	<0.4
Ethyl ether	200	50	--	--	<0.4	<4.0	<4.0
Hexachlorobutadiene	1.0	0.25	--	--	<0.1	<0.1	<0.1
p-Isopropyltoluene			--	--	<0.4	<0.4	<0.4
Methyl ethyl ketone	4000	1000	--	--	<5.0	<5.0	<5.0
Methyl isobutyl ketone	300	75	--	--	<5.0	<5.0	<5.0
Methyl tert-butyl ether	700	175	--	--	<0.4	<0.4	<0.4
Methylene chloride	5.0	1.25	--	--	<1.0	<1.0	<1.0
Naphthalene	70	17.5	--	--	<1.0	<1.0	<1.0
n-Propylbenzene			--	--	<0.4	<0.4	<0.4
Styrene			--	--	<0.4	<0.4	<0.4
1,1,1,2-Tetrachloroethane	70	17.5	--	--	<0.4	<0.4	<0.4
1,1,2,2-Tetrachloroethane	2.0	0.5	--	--	<0.4	<0.4	<0.4
1,1,2,2-Tetrachloroethylene			--	--	<1.0	<0.4	<0.4
Tetrahydrofuran	600	150	--	--	<10	<10	<10
Toluene	70	17.5	--	--	<0.4	<0.4	<0.4
1,2,3-Trichlorobenzene			--	--	<0.4	<0.4	<0.4
1,2,4-Trichlorobenzene	4.0	1.0	--	--	<0.4	<0.4	<0.4
1,1,1-Trichloroethane	5000	1250	--	--	<0.4	<0.4	<0.4
1,1,2-Trichloroethane	3.0	0.75	--	--	<0.4	<0.4	<0.4
1,1,2-Trichloroethylene	0.4	0.1	--	--	<0.05	<0.05	<0.05
Trichlorofluoromethane	2000	500	--	--	<0.4	<0.4	<0.4
1,2,3-Trichloropropane	7.0	1.75	--	--	<0.01	<0.01	<0.01
1,1,2-Trichlorotrifluoroethane			--	--	<1.0	<1.0	<1.0
1,2,4-Trimethylbenzene	30	7.5	--	--	<1.0	<1.0	<1.0
1,3,5-Trimethylbenzene	30	7.5	--	--	<1.0	<0.4	<0.4
Vinyl chloride	0.2	0.05	--	--	<0.05	<0.05	<0.05
TOTAL Xylenes	300	75	--	--	<1.2	<1.2	<1.2
[m & p-Xylene]	300	75	--	--	<0.8	<0.8	<0.8
[o-Xylene]	300	75	--	--	<0.4	<0.4	<0.4

-- = Not Detected
Gray-shaded entries represent detections.
Yellow-shaded entries represent IL exceedances for water quality performance standards.
Blue-shaded entries represent HRL exceedances for water quality performance standards.

WENCK now part of Stantec

Table 9
Clay County Sanitary Landfill
Hawley, Minnesota

VOCs

W-3
Lower Aquifer

ORGANIC PARAMETERS ug/L	HRL	IL	May-16	May-17	May-18	May-19	May-19 (DUP)	May-20
Acetone	3000	750	--	--	<20	<20	Results Not Obtained Due to Lab Complications	<20
Allyl chloride	30	7.5	--	--	<4.0	<4.0		<4.0
Benzene	2.0	0.5	--	--	<0.2	<0.2		<0.2
Bromobenzene			--	--	<0.4	<0.4		<0.4
Bromochloromethane			--	--	<1.0	<1.0		<1.0
Bromodichloromethane	3.0	0.75	--	--	<0.4	<0.4		<0.4
Bromoform	40	10	--	--	<1.0	<1.0		<1.0
Bromomethane	10	2.5	--	--	<1.0	<1.0		<1.0
n-Butylbenzene			--	--	<0.4	<0.4		<0.4
sec-Butylbenzene			--	--	<0.4	<0.4		<0.4
tert-Butylbenzene			--	--	<0.4	<0.4		<0.4
Carbon tetrachloride	1.0	0.25	--	--	<0.05	<0.05		<0.05
Chlorobenzene	100	25	--	--	<0.4	<0.4		<0.4
Chlorodibromomethane	10	2.5	--	--	<0.4	<0.4		<0.4
Chloroethane			--	--	<1.0	<1.0		<1.0
Chloroform	20	5.0	--	--	<1.0	<1.0		<1.0
Chloromethane			--	--	<1.0	<1.0		<1.0
2-Chlorotoluene			--	--	<0.4	<0.4		<0.4
4-Chlorotoluene			--	--	<0.4	<0.4		<0.4
Cumene (*isopropylbenzene*)	300	75	--	--	<0.4	<0.4		<0.4
1,2-Dibromo-3-chloropropane			--	--	<0.12	<0.12		<0.12
1,2-Dibromoethane	0.004	0.001	--	--	<0.05	<0.05		<0.05
Dibromomethane			--	--	<1.0	<1.0		<1.0
1,2-Dichlorobenzene	600	150	--	--	<0.4	<0.4		<0.4
1,3-Dichlorobenzene			--	--	<0.4	<0.4		<0.4
1,4-Dichlorobenzene	10	2.5	--	--	<0.4	<0.4		<0.4
Dichlorodifluoromethane	500	125	--	--	<1.0	<1.0		<1.0
1,1-Dichloroethane	80	20	--	--	<0.4	<0.4		<0.4
1,2-Dichloroethane	1.0	0.25	--	--	<0.2	<0.2		<0.2
1,1-Dichloroethylene	200	50	--	--	<0.4	<0.4		<0.4
cis-1,2-Dichloroethylene	6.0	1.5	--	--	<0.4	<0.4		<0.4
trans-1,2-Dichloroethylene	9.0	2.25	--	--	<0.4	<0.4		<0.4
Dichlorofluoromethane	20	5.0	--	--	<1.0	<1.0		<1.0
1,2-Dichloropropane	5.0	1.25	--	--	<0.4	<0.4		<0.4
1,3-Dichloropropane			--	--	<0.4	<0.4		<0.4
2,2-Dichloropropane			--	--	<1.0	<1.0		<1.0
1,1-Dichloropropene			--	--	<0.4	<0.4		<0.4
cis-1,3-Dichloro-1-propene			--	--	<0.4	<0.4		<0.4
trans-1,3-Dichloro-1-propene			--	--	<0.4	<0.4		<0.4
Ethyl benzene	40	10	--	--	<0.4	<0.4		<0.4
Ethyl ether	200	50	--	--	<4.0	<4.0		<4.0
Hexachlorobutadiene	1.0	0.25	--	--	<0.1	<0.1		<0.1
p-Isopropyltoluene			--	--	<0.4	<0.4		<0.4
Methyl ethyl ketone	4000	1000	--	--	<5.0	<5.0		<5.0
Methyl isobutyl ketone	300	75	--	--	<5.0	<5.0		<5.0
Methyl tert-butyl ether	700	175	<0.4	--	<0.4	<0.4		<0.4
Methylene chloride	5.0	1.25	--	--	<1.0	<1.0		<1.0
Naphthalene	70	17.5	--	--	<1.0	<1.0		<1.0
n-Propylbenzene			--	--	<0.4	<0.4		<0.4
Styrene			--	--	<0.4	<0.4		<0.4
1,1,1,2-Tetrachloroethane	70	17.5	--	--	<0.4	<0.4		<0.4
1,1,2,2-Tetrachloroethane	2.0	0.5	--	--	<0.4	<0.4		<0.4
1,1,2,2-Tetrachloroethylene			--	--	<0.4	<0.4		<0.4
Tetrahydrofuran	600	150	--	--	<10	<10		<10
Toluene	70	17.5	--	--	<0.4	<0.4		<0.4
1,2,3-Trichlorobenzene			--	--	<0.4	<0.4		<0.4
1,2,4-Trichlorobenzene	4.0	1.0	--	--	<0.4	<0.4		<0.4
1,1,1-Trichloroethane	5000	1250	--	--	<0.4	<0.4		<0.4
1,1,2-Trichloroethane	3.0	0.75	--	--	<0.4	<0.4		<0.4
1,1,2-Trichloroethylene	0.4	0.1	--	--	<0.05	<0.05		<0.05
Trichlorofluoromethane	2000	500	--	--	<0.4	<0.4		<0.4
1,2,3-Trichloropropane	7.0	1.75	--	--	<0.01	<0.01		<0.01
1,1,2-Trichlorotrifluoroethane			--	--	<1.0	<1.0		<1.0
1,2,4-Trimethylbenzene	30	7.5	--	--	<1.0	<1.0		<1.0
1,3,5-Trimethylbenzene	30	7.5	--	--	<0.4	<0.4		<0.4
Vinyl chloride	0.2	0.05	--	--	<0.05	<0.05		<0.05
TOTAL Xylenes	300	75	--	--	<2.4	<1.2		<1.2
[m & p-Xylene]	300	75	--	--	<2.0	<0.8		<0.8
[o-Xylene]	300	75	--	--	<0.4	<0.4		<0.4

-- = Not Detected
Gray-shaded entries represent detections.
Yellow-shaded entries represent IL exceedances for water quality performance standards.
Blue-shaded entries represent HRL exceedances for water quality performance standards.

WENCK now part of Stantec

Table 9
Clay County Sanitary Landfill
Hawley, Minnesota

VOCs

W-5
Upper Aquifer

ORGANIC PARAMETERS ug/L	HRL	IL	May-16	Oct-16	May-17	Nov-17	May-18	Oct-18	May-19	Oct-19	May-20	Oct-20
Acetone	3000	750	--	--	--	--	<20	<20	<20	<20	<20	<20
Allyl chloride	30	7.5	--	--	--	--	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0
Benzene	2.0	0.5	--	--	--	--	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Bromobenzene			--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Bromochloromethane			--	--	--	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromodichloromethane	3.0	0.75	--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Bromoform	40	10	--	--	--	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromomethane	10	2.5	--	--	--	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
n-Butylbenzene			--	--	--	--	<0.4	<1.0	<0.4	<0.4	<0.4	<0.4
sec-Butylbenzene			--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
tert-Butylbenzene			--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Carbon tetrachloride	1.0	0.25	--	--	--	--	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Chlorobenzene	100	25	--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Chlorodibromomethane	10	2.5	--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Chloroethane			--	--	--	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chloroform	20	5.0	--	--	--	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chloromethane			--	--	--	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
2-Chlorotoluene			--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
4-Chlorotoluene			--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Cumene (*isopropylbenzene*)	300	75	--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,2-Dibromo-3-chloropropane			--	--	--	--	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12
1,2-Dibromoethane	0.004	0.001	--	--	--	--	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Dibromomethane			--	--	--	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dichlorobenzene	600	150	--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,3-Dichlorobenzene			--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,4-Dichlorobenzene	10	2.5	--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Dichlorodifluoromethane	500	125	--	--	--	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1-Dichloroethane	80	20	--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,2-Dichloroethane	1.0	0.25	--	--	--	--	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
1,1-Dichloroethylene	200	50	--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<1.0
cis-1,2-Dichloroethylene	6.0	1.5	--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
trans-1,2-Dichloroethylene	9.0	2.25	--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Dichlorofluoromethane	20	5.0	--	--	--	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dichloropropane	5.0	1.25	--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,3-Dichloropropane			--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
2,2-Dichloropropane			--	--	--	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1-Dichloropropene			--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
cis-1,3-Dichloro-1-propene			--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
trans-1,3-Dichloro-1-propene			--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Ethyl benzene	40	10	--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Ethyl ether	200	50	--	--	--	--	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0
Hexachlorobutadiene	1.0	0.25	--	--	--	--	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
p-Isopropyltoluene			--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Methyl ethyl ketone	4000	1000	--	--	--	--	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Methyl isobutyl ketone	300	75	--	--	--	--	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Methyl tert-butyl ether	700	175	--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Methylene chloride	5.0	1.25	--	--	--	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Naphthalene	70	17.5	--	--	--	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
n-Propylbenzene			--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Styrene			--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,1,1,2-Tetrachloroethane	70	17.5	--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,1,2,2-Tetrachloroethane	2.0	0.5	--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,1,2,2-Tetrachloroethylene			--	--	--	--	<0.4	<1.0	<0.4	<0.4	<0.4	<0.4
Tetrahydrofuran	600	150	--	--	--	--	<10	<10	<10	<10	<10	<10
Toluene	70	17.5	--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,2,3-Trichlorobenzene			--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,2,4-Trichlorobenzene	4.0	1.0	--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,1,1-Trichloroethane	5000	1250	--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<1.0
1,1,2-Trichloroethane	3.0	0.75	--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,1,2-Trichloroethylene	0.4	0.1	--	--	--	--	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Trichlorofluoromethane	2000	500	--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,2,3-Trichloropropane	7.0	1.75	--	--	--	--	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
1,1,2-Trichlorotrifluoroethane			--	--	--	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2,4-Trimethylbenzene	30	7.5	--	--	--	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,3,5-Trimethylbenzene	30	7.5	--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Vinyl chloride	0.2	0.05	--	--	--	--	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
TOTAL Xylenes	300	75	--	--	--	--	<2.4	<1.2	<1.2	<1.2	<1.2	<1.2
[m & p-Xylene]	300	75	--	--	--	--	<2.0	<0.8	<0.8	<0.8	<0.8	<0.8
[o-Xylene]	300	75	--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4

-- = Not Detected
Gray-shaded entries represent detections.
Yellow-shaded entries represent IL exceedances for water quality performance standards.
Blue-shaded entries represent HRL exceedances for water quality performance standards.

WENCK now part of Stantec

Table 9
Clay County Sanitary Landfill
Hawley, Minnesota

VOCs

W-6
Upper Aquifer

ORGANIC PARAMETERS ug/L	HRL	IL	May-16	Oct-16	May-17	Nov-17	May-18	Oct-18	May-19	Oct-19	May-20	Oct-20
Acetone	3000	750	--	--	--	--	<20	<20	<20	<20	<20	<20
Allyl chloride	30	7.5	--	--	--	--	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0
Benzene	2.0	0.5	--	--	--	--	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Bromobenzene			--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Bromochloromethane			--	--	--	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromodichloromethane	3.0	0.75	--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Bromoform	40	10	--	--	--	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromomethane	10	2.5	--	--	--	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
n-Butylbenzene			--	--	--	--	<0.4	<1.0	<0.4	<0.4	<0.4	<0.4
sec-Butylbenzene			--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
tert-Butylbenzene			--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Carbon tetrachloride	1.0	0.25	--	--	--	--	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Chlorobenzene	100	25	--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Chlorodibromomethane	10	2.5	--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Chloroethane			--	--	--	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chloroform	20	5.0	--	--	--	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chloromethane			--	--	--	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
2-Chlorotoluene			--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
4-Chlorotoluene			--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Cumene (*isopropylbenzene*)	300	75	--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,2-Dibromo-3-chloropropane			--	--	--	--	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12
1,2-Dibromoethane	0.004	0.001	--	--	--	--	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Dibromomethane			--	--	--	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dichlorobenzene	600	150	--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,3-Dichlorobenzene			--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,4-Dichlorobenzene	10	2.5	--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Dichlorodifluoromethane	500	125	--	--	--	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1-Dichloroethane	80	20	--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,2-Dichloroethane	1.0	0.25	--	--	--	--	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
1,1-Dichloroethylene	200	50	--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<1.0
cis-1,2-Dichloroethylene	6.0	1.5	--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
trans-1,2-Dichloroethylene	9.0	2.25	--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Dichlorofluoromethane	20	5.0	--	--	--	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dichloropropane	5.0	1.25	--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,3-Dichloropropane			--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
2,2-Dichloropropane			--	--	--	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1-Dichloropropene			--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
cis-1,3-Dichloro-1-propene			--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
trans-1,3-Dichloro-1-propene			--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Ethyl benzene	40	10	--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Ethyl ether	200	50	--	--	--	--	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0
Hexachlorobutadiene	1.0	0.25	--	--	--	--	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
p-Isopropyltoluene			--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Methyl ethyl ketone	4000	1000	--	--	--	--	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Methyl isobutyl ketone	300	75	--	--	--	--	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Methyl tert-butyl ether	700	175	--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Methylene chloride	5.0	1.25	--	--	--	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Naphthalene	70	17.5	--	--	--	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
n-Propylbenzene			--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Styrene			--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,1,1,2-Tetrachloroethane	70	17.5	--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,1,2,2-Tetrachloroethane	2.0	0.5	--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,1,2,2-Tetrachloroethylene			--	--	--	--	<0.4	<1.0	<0.4	<0.4	<0.4	<0.4
Tetrahydrofuran	600	150	--	--	--	--	<10	<10	<10	<10	<10	<10
Toluene	70	17.5	--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,2,3-Trichlorobenzene			--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,2,4-Trichlorobenzene	4.0	1.0	--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,1,1-Trichloroethane	5000	1250	--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<1.0
1,1,2-Trichloroethane	3.0	0.75	--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,1,2-Trichloroethylene	0.4	0.1	--	--	--	--	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Trichlorofluoromethane	2000	500	--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,2,3-Trichloropropane	7.0	1.75	--	--	--	--	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
1,1,2-Trichlorotrifluoroethane			--	--	--	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2,4-Trimethylbenzene	30	7.5	--	--	--	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,3,5-Trimethylbenzene	30	7.5	--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Vinyl chloride	0.2	0.05	--	--	--	--	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
TOTAL Xylenes	300	75	--	--	--	--	<2.4	<1.2	<1.2	<1.2	<1.2	<1.2
[m & p-Xylene]	300	75	--	--	--	--	<2.0	<0.8	<0.8	<0.8	<0.8	<0.8
[o-Xylene]	300	75	--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4

-- = Not Detected
Gray-shaded entries represent detections.
Yellow-shaded entries represent IL exceedances for water quality performance standards.
Blue-shaded entries represent HRL exceedances for water quality performance standards.

WENCK now part of Stantec

Table 9
Clay County Sanitary Landfill
Hawley, Minnesota

VOCs

W-9
Upper Aquifer
Spring of Odd Years
Aquatic Standard

ORGANIC PARAMETERS ug/L	HRL	IL	May-15	May-17	Apr-19
Acetone			--	--	<20
Allyl chloride			--	--	<4.0
Benzene	392	98	--	1.5	1.2
Bromobenzene			--	--	<0.4
Bromochloromethane			--	--	<1.0
Bromodichloromethane			--	--	<0.4
Bromoform			--	--	<1.0
Bromomethane			--	--	<1.0
n-Butylbenzene			--	--	<0.4
sec-Butylbenzene			--	--	<0.4
tert-Butylbenzene			--	--	<0.4
Carbon tetrachloride	23.6	5.9	--	--	<0.05
Chlorobenzene	80	20	--	--	<0.4
Chlorodibromomethane			--	--	<0.4
Chloroethane			1.1	1.3	1.1
Chloroform	620	155	--	--	<1.0
Chloromethane			--	--	1.2
2-Chlorotoluene			--	--	<0.4
4-Chlorotoluene			--	--	<0.4
Cumene (*isopropylbenzene*)			--	--	<0.4
1,2-Dibromo-3-chloropropane			--	--	<0.12
1,2-Dibromoethane			--	--	<0.05
Dibromomethane			--	--	<1.0
1,2-Dichlorobenzene			--	--	<0.4
1,3-Dichlorobenzene			--	--	<0.4
1,4-Dichlorobenzene			--	--	<0.4
Dichlorodifluoromethane			--	--	<1.0
1,1-Dichloroethane			--	0.61	0.54
1,2-Dichloroethane	760	190	--	--	<0.2
1,1-Dichloroethylene			--	--	<0.4
cis-1,2-Dichloroethylene			--	--	0.75
trans-1,2-Dichloroethylene			--	--	<0.4
Dichlorofluoromethane			--	0.82	1.1
1,2-Dichloropropane			--	0.68	0.42
1,3-Dichloropropane			--	--	<0.4
2,2-Dichloropropane			--	--	<1.0
1,1-Dichloropropene			--	--	<0.4
cis-1,3-Dichloro-1-propene			--	--	<0.4
trans-1,3-Dichloro-1-propene			--	--	<0.4
Ethyl benzene	272	68	--	--	<0.4
Ethyl ether			52.6	81.8	72.5
Hexachlorobutadiene			--	--	<0.1
p-Isopropyltoluene			--	--	<0.4
Methyl ethyl ketone			--	--	<5.0
Methyl isobutyl ketone			--	--	<5.0
Methyl tert-butyl ether			--	1.0	0.9
Methylene chloride	7760	1940	--	--	<1.0
Naphthalene	324	81	--	--	<1.0
n-Propylbenzene			--	--	<0.4
Styrene			--	--	<0.4
1,1,1,2-Tetrachloroethane			--	--	<0.4
1,1,2,2-Tetrachloroethane	52	13	--	--	<0.4
1,1,2,2-Tetrachloroethylene	35.6	8.9	--	--	<0.4
Tetrahydrofuran			--	--	<10
Toluene	1012	253	--	--	<0.4
1,2,3-Trichlorobenzene			--	--	<0.4
1,2,4-Trichlorobenzene			--	--	<0.4
1,1,1-Trichloroethane	1316	329	--	--	<0.4
1,1,2-Trichloroethane			--	--	<0.4
1,1,2-Trichloroethylene	480	120	--	0.25	0.2
Trichlorofluoromethane			--	--	<0.4
1,2,3-Trichloropropane			--	--	<0.01
1,1,2-Trichlorotrifluoroethane			--	--	<1.0
1,2,4-Trimethylbenzene			--	--	<1.0
1,3,5-Trimethylbenzene			--	--	<0.4
Vinyl chloride	36.8	9.2	--	0.28	0.37
TOTAL Xylenes	664	166	--	--	<1.2
[m & p-Xylene]			--	--	<0.8
[o-Xylene]			--	--	<0.4

-- = Not Detected
Gray-shaded entries represent detections.
Yellow-shaded entries represent IL exceedances for water quality performance standards.
Blue-shaded entries represent HRL exceedances for water quality performance standards.

WENCK now part of Stantec

Table 9
Clay County Sanitary Landfill
Hawley, Minnesota

VOCs

W-10
Upper Aquifer
Spring of Odd Years
Aquatic Standard

ORGANIC PARAMETERS ug/L	HRL	IL	May-15	May-17	May-19
Acetone			--	--	<20
Allyl chloride			--	--	<4.0
Benzene	392	98	--	--	<0.2
Bromobenzene			--	--	<0.4
Bromochloromethane			--	--	<1.0
Bromodichloromethane			--	--	<0.4
Bromoform			--	--	<1.0
Bromomethane			--	--	<1.0
n-Butylbenzene			--	--	<0.4
sec-Butylbenzene			--	--	<0.4
tert-Butylbenzene			--	--	<0.4
Carbon tetrachloride	23.6	5.9	--	--	<0.05
Chlorobenzene	80	20	--	--	<0.4
Chlorodibromomethane			--	--	<0.4
Chloroethane			--	--	<1.0
Chloroform	620	155	--	--	<1.0
Chloromethane			--	--	1.1
2-Chlorotoluene			--	--	<0.4
4-Chlorotoluene			--	--	<0.4
Cumene (*isopropylbenzene*)			--	--	<0.4
1,2-Dibromo-3-chloropropane			--	--	<0.12
1,2-Dibromoethane			--	--	<0.05
Dibromomethane			--	--	<1.0
1,2-Dichlorobenzene			--	--	<0.4
1,3-Dichlorobenzene			--	--	<0.4
1,4-Dichlorobenzene			--	--	<0.4
Dichlorodifluoromethane			--	--	<1.0
1,1-Dichloroethane			--	--	<0.4
1,2-Dichloroethane	760	190	--	--	<0.2
1,1-Dichloroethylene			--	--	<0.4
cis-1,2-Dichloroethylene			--	--	<0.4
trans-1,2-Dichloroethylene			--	--	<0.4
Dichlorofluoromethane			--	--	<1.0
1,2-Dichloropropane			--	--	<0.4
1,3-Dichloropropane			--	--	<0.4
2,2-Dichloropropane			--	--	<1.0
1,1-Dichloropropene			--	--	<0.4
cis-1,3-Dichloro-1-propene			--	--	<0.4
trans-1,3-Dichloro-1-propene			--	--	<0.4
Ethyl benzene	272	68	--	--	<0.4
Ethyl ether			5.0	2.3	<4.0
Hexachlorobutadiene			--	--	<0.1
p-Isopropyltoluene			--	--	<0.4
Methyl ethyl ketone			--	--	<5.0
Methyl isobutyl ketone			--	--	<5.0
Methyl tert-butyl ether			--	--	<0.4
Methylene chloride	7760	1940	--	--	<1.0
Naphthalene	324	81	--	--	<1.0
n-Propylbenzene			--	--	<0.4
Styrene			--	--	<0.4
1,1,1,2-Tetrachloroethane			--	--	<0.4
1,1,2,2-Tetrachloroethane	52	13	--	--	<0.4
1,1,2,2-Tetrachloroethylene	35.6	8.9	--	--	<0.4
Tetrahydrofuran			--	--	<10
Toluene	1012	253	--	--	<0.4
1,2,3-Trichlorobenzene			--	--	<0.4
1,2,4-Trichlorobenzene			--	--	<0.4
1,1,1-Trichloroethane	1316	329	--	--	<0.4
1,1,2-Trichloroethane			--	--	<0.4
1,1,2-Trichloroethylene	480	120	--	--	<0.05
Trichlorofluoromethane			--	--	<0.4
1,2,3-Trichloropropane			--	--	<0.01
1,1,2-Trichlorotrifluoroethane			--	--	<1.0
1,2,4-Trimethylbenzene			--	--	<1.0
1,3,5-Trimethylbenzene			--	--	<0.4
Vinyl chloride	36.8	9.2	--	0.17	<0.05
TOTAL Xylenes	664	166	--	--	<1.2
[m & p-Xylene]			--	--	<0.8
[o-Xylene]			--	--	<0.4

-- = Not Detected
Gray-shaded entries represent detections.
Yellow-shaded entries represent IL exceedances for water quality performance standards.
Blue-shaded entries represent HRL exceedances for water quality performance standards.

WENCK now part of Stantec

Table 9
Clay County Sanitary Landfill
Hawley, Minnesota

VOCs

W-11
Upper Aquifer
Spring of Odd Years
Aquatic Standard

ORGANIC PARAMETERS ug/L	HRL	IL	May-15	May-17	Apr-19
Acetone			--	--	<20
Allyl chloride			--	--	<4.0
Benzene	392	98	1.3	2.5	2.5
Bromobenzene			--	--	<0.4
Bromochloromethane			--	--	<1.0
Bromodichloromethane			--	--	<0.4
Bromoform			--	--	<1.0
Bromomethane			--	--	<1.0
n-Butylbenzene			--	--	<0.4
sec-Butylbenzene			--	--	<0.4
tert-Butylbenzene			--	--	<0.4
Carbon tetrachloride	23.6	5.9	--	--	<0.05
Chlorobenzene	80	20	--	--	<0.4
Chlorodibromomethane			--	--	<0.4
Chloroethane			--	--	<1.0
Chloroform	620	155	--	--	<1.0
Chloromethane			--	--	1.3
2-Chlorotoluene			--	--	<0.4
4-Chlorotoluene			--	--	<0.4
Cumene (*isopropylbenzene*)			--	--	0.44
1,2-Dibromo-3-chloropropane			--	--	<0.12
1,2-Dibromoethane			--	--	<0.05
Dibromomethane			--	--	<1.0
1,2-Dichlorobenzene			--	--	<0.4
1,3-Dichlorobenzene			--	--	<0.4
1,4-Dichlorobenzene			--	--	<0.4
Dichlorodifluoromethane			--	--	<1.0
1,1-Dichloroethane			--	0.46	0.48
1,2-Dichloroethane	760	190	--	--	<0.2
1,1-Dichloroethylene			--	--	<0.4
cis-1,2-Dichloroethylene			--	--	<0.4
trans-1,2-Dichloroethylene			--	--	<0.4
Dichlorofluoromethane			--	1.4	1.3
1,2-Dichloropropane			--	2.1	1.9
1,3-Dichloropropane			--	--	<0.4
2,2-Dichloropropane			--	--	<1.0
1,1-Dichloropropene			--	--	<0.4
cis-1,3-Dichloro-1-propene			--	--	<0.4
trans-1,3-Dichloro-1-propene			--	--	<0.4
Ethyl benzene	272	68	--	--	<0.4
Ethyl ether			17.8	40.5	40.1
Hexachlorobutadiene			--	--	<0.1
p-Isopropyltoluene			--	--	<0.4
Methyl ethyl ketone			--	--	<5.0
Methyl isobutyl ketone			--	--	<5.0
Methyl tert-butyl ether			--	--	<0.4
Methylene chloride	7760	1940	--	--	<1.0
Naphthalene	324	81	--	--	<1.0
n-Propylbenzene			--	--	<0.4
Styrene			--	--	<0.4
1,1,1,2-Tetrachloroethane			--	--	<0.4
1,1,2,2-Tetrachloroethane	52	13	--	--	<0.4
1,1,2,2-Tetrachloroethylene	35.6	8.9	--	--	<0.4
Tetrahydrofuran			23.1	--	<10
Toluene	1012	253	--	--	<0.4
1,2,3-Trichlorobenzene			--	--	<0.4
1,2,4-Trichlorobenzene			--	--	<0.4
1,1,1-Trichloroethane	1316	329	--	--	<0.4
1,1,2-Trichloroethane			--	--	<0.4
1,1,2-Trichloroethylene	480	120	--	--	<0.05
Trichlorofluoromethane			--	--	<0.4
1,2,3-Trichloropropane			--	--	<0.01
1,1,2-Trichlorotrifluoroethane			--	--	<1.0
1,2,4-Trimethylbenzene			--	--	<1.0
1,3,5-Trimethylbenzene			--	--	<0.4
Vinyl chloride	36.8	9.2	0.44	0.74	1.0
TOTAL Xylenes	664	166	--	--	<1.2
[m & p-Xylene]			--	--	<0.8
[o-Xylene]			--	--	<0.4

-- = Not Detected
Gray-shaded entries represent detections.
Yellow-shaded entries represent IL exceedances for water quality performance standards.
Blue-shaded entries represent HRL exceedances for water quality performance standards.

WENCK now part of Stantec

Table 9
Clay County Sanitary Landfill
Hawley, Minnesota

VOCs

W-12
Upper Aquifer

ORGANIC PARAMETERS ug/L	HRL	IL	May-16	May-17	May-18	May-19	May-20
Acetone	3000	750	--	--	<20	<20	<20
Allyl chloride	30	7.5	--	--	<4.0	<4.0	<4.0
Benzene	2.0	0.5	--	--	<0.2	<0.2	<0.2
Bromobenzene			--	--	<0.4	<0.4	<0.4
Bromochloromethane			--	--	<1.0	<1.0	<1.0
Bromodichloromethane	3.0	0.75	--	--	<0.4	<0.4	<0.4
Bromoform	40	10	--	--	<1.0	<1.0	<1.0
Bromomethane	10	2.5	--	--	<1.0	<1.0	<1.0
n-Butylbenzene			--	--	<0.4	<0.4	<0.4
sec-Butylbenzene			--	--	<0.4	<0.4	<0.4
tert-Butylbenzene			--	--	<0.4	<0.4	<0.4
Carbon tetrachloride	1.0	0.25	--	--	<0.05	<0.05	<0.05
Chlorobenzene	100	25	--	--	<0.4	<0.4	<0.4
Chlorodibromomethane	10	2.5	--	--	<0.4	<0.4	<0.4
Chloroethane			--	--	<1.0	<1.0	<1.0
Chloroform	20	5.0	--	--	<1.0	<1.0	<1.0
Chloromethane			--	--	<1.0	<1.0	<1.0
2-Chlorotoluene			--	--	<0.4	<0.4	<0.4
4-Chlorotoluene			--	--	<0.4	<0.4	<0.4
Cumene (*isopropylbenzene*)	300	75	--	--	<0.4	<0.4	<0.4
1,2-Dibromo-3-chloropropane			--	--	<0.12	<0.12	<0.12
1,2-Dibromoethane	0.004	0.001	--	--	<0.05	<0.05	<0.05
Dibromomethane			--	--	<1.0	<1.0	<1.0
1,2-Dichlorobenzene	600	150	--	--	<0.4	<0.4	<0.4
1,3-Dichlorobenzene			--	--	<0.4	<0.4	<0.4
1,4-Dichlorobenzene	10	2.5	--	--	<0.4	<0.4	<0.4
Dichlorodifluoromethane	500	125	--	--	<1.0	<1.0	<1.0
1,1-Dichloroethane	80	20	--	--	<0.4	<0.4	<0.4
1,2-Dichloroethane	1.0	0.25	--	--	<0.2	<0.2	<0.2
1,1-Dichloroethylene	200	50	--	--	<0.4	<0.4	<0.4
cis-1,2-Dichloroethylene	6.0	1.5	--	--	<0.4	<0.4	<0.4
trans-1,2-Dichloroethylene	9.0	2.25	--	--	<0.4	<0.4	<0.4
Dichlorofluoromethane	20	5.0	--	--	<1.0	<1.0	<1.0
1,2-Dichloropropane	5.0	1.25	--	--	<0.4	<0.4	<0.4
1,3-Dichloropropane			--	--	<0.4	<0.4	<0.4
2,2-Dichloropropane			--	--	<1.0	<1.0	<1.0
1,1-Dichloropropene			--	--	<0.4	<0.4	<0.4
cis-1,3-Dichloro-1-propene			--	--	<0.4	<0.4	<0.4
trans-1,3-Dichloro-1-propene			--	--	<0.4	<0.4	<0.4
Ethyl benzene	40	10	--	--	<0.4	<0.4	<0.4
Ethyl ether	200	50	--	--	<4.0	<4.0	<4.0
Hexachlorobutadiene	1.0	0.25	--	--	<0.1	<0.1	<0.1
p-Isopropyltoluene			--	--	<0.4	<0.4	<0.4
Methyl ethyl ketone	4000	1000	--	--	<5.0	<5.0	<5.0
Methyl isobutyl ketone	300	75	--	--	<5.0	<5.0	<5.0
Methyl tert-butyl ether	700	175	--	--	<0.4	<0.4	<0.4
Methylene chloride	5.0	1.25	--	--	<1.0	<1.0	<1.0
Naphthalene	70	17.5	--	--	<1.0	<1.0	<1.0
n-Propylbenzene			--	--	<0.4	<0.4	<0.4
Styrene			--	--	<0.4	<0.4	<0.4
1,1,1,2-Tetrachloroethane	70	17.5	--	--	<0.4	<0.4	<0.4
1,1,2,2-Tetrachloroethane	2.0	0.5	--	--	<0.4	<0.4	<0.4
1,1,2,2-Tetrachloroethylene			--	--	<0.4	<0.4	<0.4
Tetrahydrofuran	600	150	--	--	<10	<10	<10
Toluene	70	17.5	--	--	<0.4	<0.4	<0.4
1,2,3-Trichlorobenzene			--	--	<0.4	<0.4	<0.4
1,2,4-Trichlorobenzene	4.0	1.0	--	--	<0.4	<0.4	<0.4
1,1,1-Trichloroethane	5000	1250	--	--	<0.4	<0.4	<0.4
1,1,2-Trichloroethane	3.0	0.75	--	--	<0.4	<0.4	<0.4
1,1,2-Trichloroethylene	0.4	0.1	--	--	<0.05	<0.05	<0.05
Trichlorofluoromethane	2000	500	--	--	<0.4	<0.4	<0.4
1,2,3-Trichloropropane	7.0	1.75	--	--	<0.01	<0.01	<0.01
1,1,2-Trichlorotrifluoroethane			--	--	<1.0	<1.0	<1.0
1,2,4-Trimethylbenzene	30	7.5	--	--	<1.0	<1.0	<1.0
1,3,5-Trimethylbenzene	30	7.5	--	--	<0.4	<0.4	<0.4
Vinyl chloride	0.2	0.05	--	--	<0.05	<0.05	<0.05
TOTAL Xylenes	300	75	--	--	<2.4	<1.2	<1.2
[m & p-Xylene]	300	75	--	--	<2.0	<0.8	<0.8
[o-Xylene]	300	75	--	--	<0.4	<0.4	<0.4

-- = Not Detected
Gray-shaded entries represent detections.
Yellow-shaded entries represent IL exceedances for water quality performance standards.
Blue-shaded entries represent HRL exceedances for water quality performance standards.

WENCK now part of Stantec

Table 9
Clay County Sanitary Landfill
Hawley, Minnesota

VOCs

W-13
Upper Aquifer

ORGANIC PARAMETERS ug/L	HRL	IL	May-16	May-17	May-18	May-19	May-20	May-20 (DUP)
Acetone	3000	750	--	--	<20	<20	<20	<20
Allyl chloride	30	7.5	--	--	<4.0	<4.0	<4.0	<4.0
Benzene	2.0	0.5	--	--	<0.2	<0.2	<0.2	<0.2
Bromobenzene			--	--	<0.4	<0.4	<0.4	<0.4
Bromochloromethane			--	--	<1.0	<1.0	<1.0	<1.0
Bromodichloromethane	3.0	0.75	--	--	<0.4	<0.4	<0.4	<0.4
Bromoform	40	10	--	--	<1.0	<1.0	<1.0	<1.0
Bromomethane	10	2.5	--	--	<1.0	<1.0	<1.0	<1.0
n-Butylbenzene			--	--	<0.4	<0.4	<0.4	<0.4
sec-Butylbenzene			--	--	<0.4	<0.4	<0.4	<0.4
tert-Butylbenzene			--	--	<0.4	<0.4	<0.4	<0.4
Carbon tetrachloride	1.0	0.25	--	--	<0.05	<0.05	<0.05	<0.05
Chlorobenzene	100	25	--	--	<0.4	<0.4	<0.4	<0.4
Chlorodibromomethane	10	2.5	--	--	<0.4	<0.4	<0.4	<0.4
Chloroethane			--	--	<1.0	<1.0	<1.0	<1.0
Chloroform	20	5.0	--	--	<1.0	<1.0	<1.0	<1.0
Chloromethane			--	--	<1.0	<1.0	<1.0	<1.0
2-Chlorotoluene			--	--	<0.4	<0.4	<0.4	<0.4
4-Chlorotoluene			--	--	<0.4	<0.4	<0.4	<0.4
Cumene (*isopropylbenzene*)	300	75	--	--	<0.4	<0.4	<0.4	<0.4
1,2-Dibromo-3-chloropropane			--	--	<0.12	<0.12	<0.12	<0.12
1,2-Dibromoethane	0.004	0.001	--	--	<0.05	<0.05	<0.05	<0.05
Dibromomethane			--	--	<1.0	<1.0	<1.0	<1.0
1,2-Dichlorobenzene	600	150	--	--	<0.4	<0.4	<0.4	<0.4
1,3-Dichlorobenzene			--	--	<0.4	<0.4	<0.4	<0.4
1,4-Dichlorobenzene	10	2.5	--	--	<0.4	<0.4	<0.4	<0.4
Dichlorodifluoromethane	500	125	--	--	<1.0	<1.0	<1.0	<1.0
1,1-Dichloroethane	80	20	--	--	<0.4	<0.4	<0.4	<0.4
1,2-Dichloroethane	1.0	0.25	--	--	<0.2	<0.2	<0.2	<0.2
1,1-Dichloroethylene	200	50	--	--	<0.4	<0.4	<0.4	<0.4
cis-1,2-Dichloroethylene	6.0	1.5	--	--	<0.4	<0.4	<0.4	<0.4
trans-1,2-Dichloroethylene	9.0	2.25	--	--	<0.4	<0.4	<0.4	<0.4
Dichlorofluoromethane	20	5.0	--	--	<1.0	<1.0	<1.0	<1.0
1,2-Dichloropropane	5.0	1.25	--	--	<0.4	<0.4	<0.4	<0.4
1,3-Dichloropropane			--	--	<0.4	<0.4	<0.4	<0.4
2,2-Dichloropropane			--	--	<1.0	<1.0	<1.0	<1.0
1,1-Dichloropropene			--	--	<0.4	<0.4	<0.4	<0.4
cis-1,3-Dichloro-1-propene			--	--	<0.4	<0.4	<0.4	<0.4
trans-1,3-Dichloro-1-propene			--	--	<0.4	<0.4	<0.4	<0.4
Ethyl benzene	40	10	--	--	<0.4	<0.4	<0.4	<0.4
Ethyl ether	200	50	--	--	<4.0	<4.0	<4.0	<4.0
Hexachlorobutadiene	1.0	0.25	--	--	<0.1	<0.1	<0.1	<0.1
p-Isopropyltoluene			--	--	<0.4	<0.4	<0.4	<0.4
Methyl ethyl ketone	4000	1000	--	--	<5.0	<5.0	<5.0	<5.0
Methyl isobutyl ketone	300	75	--	--	<5.0	<5.0	<5.0	<5.0
Methyl tert-butyl ether	700	175	--	--	<0.4	<0.4	<0.4	<0.4
Methylene chloride	5.0	1.25	--	--	<1.0	<1.0	<1.0	<1.0
Naphthalene	70	17.5	--	--	<1.0	<1.0	<1.0	<1.0
n-Propylbenzene			--	--	<0.4	<0.4	<0.4	<0.4
Styrene			--	--	<0.4	<0.4	<0.4	<0.4
1,1,1,2-Tetrachloroethane	70	17.5	--	--	<0.4	<0.4	<0.4	<0.4
1,1,2,2-Tetrachloroethane	2.0	0.5	--	--	<0.4	<0.4	<0.4	<0.4
1,1,2,2-Tetrachloroethylene			--	--	<0.4	<0.4	<0.4	<0.4
Tetrahydrofuran	600	150	--	--	<10	<10	<10	<10
Toluene	70	17.5	--	--	<0.4	<0.4	<0.4	<0.4
1,2,3-Trichlorobenzene			--	--	<0.4	<0.4	<0.4	<0.4
1,2,4-Trichlorobenzene	4.0	1.0	--	--	<0.4	<0.4	<0.4	<0.4
1,1,1-Trichloroethane	5000	1250	--	--	<0.4	<0.4	<0.4	<0.4
1,1,2-Trichloroethane	3.0	0.75	--	--	<0.4	<0.4	<0.4	<0.4
1,1,2-Trichloroethylene	0.4	0.1	--	--	<0.05	<0.05	<0.05	<0.05
Trichlorofluoromethane	2000	500	--	--	<0.4	<0.4	<0.4	<0.4
1,2,3-Trichloropropane	7.0	1.75	--	--	<0.01	<0.01	<0.01	<0.01
1,1,2-Trichlorotrifluoroethane			--	--	<1.0	<1.0	<1.0	<1.0
1,2,4-Trimethylbenzene	30	7.5	--	--	<1.0	<1.0	<1.0	<1.0
1,3,5-Trimethylbenzene	30	7.5	--	--	<0.4	<0.4	<0.4	<0.4
Vinyl chloride	0.2	0.05	--	--	<0.05	<0.05	<0.05	<0.05
TOTAL Xylenes	300	75	--	--	<2.4	<1.2	<1.2	<1.2
[m & p-Xylene]	300	75	--	--	<2.0	<0.8	<0.8	<0.8
[o-Xylene]	300	75	--	--	<0.4	<0.4	<0.4	<0.4

-- = Not Detected
Gray-shaded entries represent detections.
Yellow-shaded entries represent IL exceedances for water quality performance standards.
Blue-shaded entries represent HRL exceedances for water quality performance standards.

WENCK now part of Stantec

Table 9
Clay County Sanitary Landfill
Hawley, Minnesota

VOCs

W-15
Upper Aquifer
Spring of Odd Years

ORGANIC PARAMETERS ug/L	May-15	May-17	Apr-19
Acetone	--	--	<20
Allyl chloride	--	--	<4.0
Benzene	--	0.98	1.8
Bromobenzene	--	--	<0.4
Bromochloromethane	--	--	<1.0
Bromodichloromethane	--	--	<0.4
Bromoform	--	--	<1.0
Bromomethane	--	--	<1.0
n-Butylbenzene	--	--	<0.4
sec-Butylbenzene	--	--	<0.4
tert-Butylbenzene	--	--	<0.4
Carbon tetrachloride	--	--	<0.2
Chlorobenzene	--	--	<0.4
Chlorodibromomethane	--	--	<0.4
Chloroethane	--	--	<1.0
Chloroform	--	--	<1.0
Chloromethane	--	--	<1.0
2-Chlorotoluene	--	--	<0.4
4-Chlorotoluene	--	--	<0.4
Cumene (*isopropylbenzene*)	--	--	<0.4
1,2-Dibromo-3-chloropropane	--	--	<0.12
1,2-Dibromoethane	--	--	<0.05
Dibromomethane	--	--	<1.0
1,2-Dichlorobenzene	--	--	0.47
1,3-Dichlorobenzene	--	--	<0.4
1,4-Dichlorobenzene	--	--	<0.4
Dichlorodifluoromethane	--	--	<1.0
1,1-Dichloroethane	--	--	<0.4
1,2-Dichloroethane	--	--	<0.2
1,1-Dichloroethylene	--	--	<0.4
cis-1,2-Dichloroethylene	--	--	<0.4
trans-1,2-Dichloroethylene	--	--	<0.4
Dichlorofluoromethane	--	--	<1.0
1,2-Dichloropropane	--	--	<0.4
1,3-Dichloropropane	--	--	<0.4
2,2-Dichloropropane	--	--	<1.0
1,1-Dichloropropene	--	--	<0.4
cis-1,3-Dichloro-1-propene	--	--	<0.4
trans-1,3-Dichloro-1-propene	--	--	<0.4
Ethyl benzene	--	--	<0.4
Ethyl ether	--	--	<4.0
Hexachlorobutadiene	--	--	<0.2
p-Isopropyltoluene	--	--	<0.4
Methyl ethyl ketone	--	--	<5.0
Methyl isobutyl ketone	--	--	<5.0
Methyl tert-butyl ether	--	--	<0.4
Methylene chloride	--	--	<1.0
Naphthalene	--	--	<1.0
n-Propylbenzene	--	--	<0.4
Styrene	--	--	<0.4
1,1,1,2-Tetrachloroethane	--	--	<0.4
1,1,2,2-Tetrachloroethane	--	--	<0.4
1,1,2,2-Tetrachloroethylene	--	--	<0.4
Tetrahydrofuran	--	--	<10
Toluene	--	--	<0.4
1,2,3-Trichlorobenzene	--	--	<0.4
1,2,4-Trichlorobenzene	--	--	<0.4
1,1,1-Trichloroethane	--	--	<0.4
1,1,2-Trichloroethane	--	--	<0.4
1,1,2-Trichloroethylene	--	--	<0.02
Trichlorofluoromethane	--	--	<0.4
1,2,3-Trichloropropane	--	--	<0.01
1,1,2-Trichlorotrifluoroethane	--	--	<1.0
1,2,4-Trimethylbenzene	--	--	<1.0
1,3,5-Trimethylbenzene	--	--	<0.4
Vinyl chloride	--	0.27	0.42
TOTAL Xylenes	--	--	<1.2
[m & p-Xylene]	--	--	<0.8
[o-Xylene]	--	--	<0.4

-- = Not Detected
Gray-shaded entries represent detections.

WENCK now part of Stantec

Table 9
Clay County Sanitary Landfill
Hawley, Minnesota

VOCs

W-16
Lower Aquifer
Spring of Odd Years
Aquatic Standard

ORGANIC PARAMETERS ug/L	HRL	IL	May-15	May-17	Apr-19
Acetone			--	--	<20
Allyl chloride			--	--	<4.0
Benzene	392	98	--	0.79	1.3
Bromobenzene			--	--	<0.4
Bromochloromethane			--	--	<1.0
Bromodichloromethane			--	--	<0.4
Bromoform			--	--	<1.0
Bromomethane			--	--	<1.0
n-Butylbenzene			--	--	<0.4
sec-Butylbenzene			--	--	<0.4
tert-Butylbenzene			--	--	<0.4
Carbon tetrachloride	23.6	5.9	--	--	<0.05
Chlorobenzene	80	20	--	--	<0.4
Chlorodibromomethane			--	--	<0.4
Chloroethane			--	--	<1.0
Chloroform	620	155	--	--	<1.0
Chloromethane			--	--	1.0
2-Chlorotoluene			--	--	<0.4
4-Chlorotoluene			--	--	<0.4
Cumene (*isopropylbenzene*)			--	--	<0.4
1,2-Dibromo-3-chloropropane			--	--	<0.12
1,2-Dibromoethane			--	--	<0.05
Dibromomethane			--	--	<1.0
1,2-Dichlorobenzene			--	--	<0.4
1,3-Dichlorobenzene			--	--	<0.4
1,4-Dichlorobenzene			--	--	<0.4
Dichlorodifluoromethane			--	--	<1.0
1,1-Dichloroethane			--	--	0.59
1,2-Dichloroethane	760	190	--	--	<0.2
1,1-Dichloroethylene			--	--	<0.4
cis-1,2-Dichloroethylene			--	--	<0.4
trans-1,2-Dichloroethylene			--	--	<0.4
Dichlorofluoromethane			1.6	1.3	3.2
1,2-Dichloropropane			--	--	<0.4
1,3-Dichloropropane			--	--	<0.4
2,2-Dichloropropane			--	--	<1.0
1,1-Dichloropropene			--	--	<0.4
cis-1,3-Dichloro-1-propene			--	--	<0.4
trans-1,3-Dichloro-1-propene			--	--	<0.4
Ethyl benzene	272	68	--	--	0.47
Ethyl ether			8.0	10.3	20.9
Hexachlorobutadiene			--	--	<0.1
p-Isopropyltoluene			--	--	<0.4
Methyl ethyl ketone			--	--	<5.0
Methyl isobutyl ketone			--	--	<5.0
Methyl tert-butyl ether			--	--	<0.4
Methylene chloride	7760	1940	--	--	<1.0
Naphthalene	324	81	--	--	<1.0
n-Propylbenzene			--	--	<0.4
Styrene			--	--	<0.4
1,1,1,2-Tetrachloroethane			--	--	<0.4
1,1,2,2-Tetrachloroethane	52	13	--	--	<0.4
1,1,2,2-Tetrachloroethylene	35.6	8.9	--	--	<0.4
Tetrahydrofuran			--	--	12.8
Toluene	1012	253	--	--	<0.4
1,2,3-Trichlorobenzene			--	--	<0.4
1,2,4-Trichlorobenzene			--	--	<0.4
1,1,1-Trichloroethane	1316	329	--	--	<0.4
1,1,2-Trichloroethane			--	--	<0.4
1,1,2-Trichloroethylene	480	120	--	--	<0.05
Trichlorofluoromethane			--	--	<0.4
1,2,3-Trichloropropane			--	--	<0.01
1,1,2-Trichlorotrifluoroethane			--	--	<1.0
1,2,4-Trimethylbenzene			--	--	<1.0
1,3,5-Trimethylbenzene			--	--	<0.4
Vinyl chloride	36.8	9.2	0.46	0.36	1.1
TOTAL Xylenes	664	166	--	--	<1.2
[m & p-Xylene]			--	--	<0.8
[o-Xylene]			--	--	<0.4

-- = Not Detected
Gray-shaded entries represent detections.
Yellow-shaded entries represent IL exceedances for water quality performance standards.
Blue-shaded entries represent HRL exceedances for water quality performance standards.

WENCK now part of Stantec

Table 9
Clay County Sanitary Landfill
Hawley, Minnesota

VOCs

W-17
Lower Aquifer
Spring of Odd Years
Aquatic Standard

ORGANIC PARAMETERS ug/L	HRL	IL	May-15	May-17	Apr-19
Acetone			--	--	<20
Allyl chloride			--	--	<4.0
Benzene	392	98	--	0.41	0.53
Bromobenzene			--	--	<0.4
Bromochloromethane			--	--	<1.0
Bromodichloromethane			--	--	<0.4
Bromoform			--	--	<1.0
Bromomethane			--	--	<1.0
n-Butylbenzene			--	--	<0.4
sec-Butylbenzene			--	--	<0.4
tert-Butylbenzene			--	--	<0.4
Carbon tetrachloride	23.6	5.9	--	--	<0.05
Chlorobenzene	80	20	--	--	<0.4
Chlorodibromomethane			--	--	<0.4
Chloroethane			--	--	1.2
Chloroform	620	155	--	--	<1.0
Chloromethane			--	--	<1.0
2-Chlorotoluene			--	--	<0.4
4-Chlorotoluene			--	--	<0.4
Cumene (*isopropylbenzene*)			--	--	<0.4
1,2-Dibromo-3-chloropropane			--	--	<0.12
1,2-Dibromoethane			--	--	<0.05
Dibromomethane			--	--	<1.0
1,2-Dichlorobenzene			--	--	<0.4
1,3-Dichlorobenzene			--	--	<0.4
1,4-Dichlorobenzene			--	--	<0.4
Dichlorodifluoromethane			--	--	<1.0
1,1-Dichloroethane			1.1	1.2	1.6
1,2-Dichloroethane	760	190	--	--	<0.2
1,1-Dichloroethylene			--	--	<0.4
cis-1,2-Dichloroethylene			--	--	0.77
trans-1,2-Dichloroethylene			--	--	<0.4
Dichlorofluoromethane			4.5	3.7	5.1
1,2-Dichloropropane			--	--	<0.4
1,3-Dichloropropane			--	--	<0.4
2,2-Dichloropropane			--	--	<1.0
1,1-Dichloropropene			--	--	<0.4
cis-1,3-Dichloro-1-propene			--	--	<0.4
trans-1,3-Dichloro-1-propene			--	--	<0.4
Ethyl benzene	272	68	--	--	<0.4
Ethyl ether			44.5	52.4	71.7
Hexachlorobutadiene			--	--	<0.1
p-Isopropyltoluene			--	--	<0.4
Methyl ethyl ketone			--	--	<5.0
Methyl isobutyl ketone			--	--	<5.0
Methyl tert-butyl ether			--	0.52	0.84
Methylene chloride	7760	1940	--	--	<1.0
Naphthalene	324	81	--	--	<1.0
n-Propylbenzene			--	--	<0.4
Styrene			--	--	<0.4
1,1,1,2-Tetrachloroethane			--	--	<0.4
1,1,2,2-Tetrachloroethane	52	13	--	--	<0.4
1,1,2,2-Tetrachloroethylene	35.6	8.9	--	--	<0.4
Tetrahydrofuran			--	--	<10
Toluene	1012	253	--	--	<0.4
1,2,3-Trichlorobenzene			--	--	<0.4
1,2,4-Trichlorobenzene			--	--	<0.4
1,1,1-Trichloroethane	1316	329	--	--	<0.4
1,1,2-Trichloroethane			--	--	<0.4
1,1,2-Trichloroethylene	480	120	--	--	<0.05
Trichlorofluoromethane			--	--	<0.4
1,2,3-Trichloropropane			--	--	<0.01
1,1,2-Trichlorotrifluoroethane			--	--	<1.0
1,2,4-Trimethylbenzene			--	--	<1.0
1,3,5-Trimethylbenzene			--	--	<0.4
Vinyl chloride	36.8	9.2	0.75	0.57	1.2
TOTAL Xylenes	664	166	--	--	<1.2
[m & p-Xylene]			--	--	<0.8
[o-Xylene]			--	--	<0.4

-- = Not Detected
Gray-shaded entries represent detections.
Yellow-shaded entries represent IL exceedances for water quality performance standards.
Blue-shaded entries represent HRL exceedances for water quality performance standards.

WENCK now part of Stantec

Table 9
Clay County Sanitary Landfill
Hawley, Minnesota

VOCs

W-102A
Upper Aquifer

ORGANIC PARAMETERS ug/L	HRL	IL	May-16	May-17	May-18	May-19	Oct-19	May-20	Oct-20
Acetone	3000	750	Dry	Dry	Dry	<20	<20	<20	Dry
Allyl chloride	30	7.5				<4.0	<4.0	<4.0	
Benzene	2.0	0.5				<0.2	<0.2	<0.2	
Bromobenzene						<0.4	<0.4	<0.4	
Bromochloromethane						<1.0	<1.0	<1.0	
Bromodichloromethane	3.0	0.75				<0.4	<0.4	<0.4	
Bromoform	40	10				<1.0	<1.0	<1.0	
Bromomethane	10	2.5				<1.0	<1.0	<1.0	
n-Butylbenzene						<0.4	<0.4	<0.4	
sec-Butylbenzene						<0.4	<0.4	<0.4	
tert-Butylbenzene						<0.4	<0.4	<0.4	
Carbon tetrachloride	1.0	0.25				<0.05	<0.05	<0.05	
Chlorobenzene	100	25				<0.4	<0.4	<0.4	
Chlorodibromomethane	10	2.5				<0.4	<0.4	<0.4	
Chloroethane						<1.0	<1.0	<1.0	
Chloroform	20	5.0				<1.0	<1.0	<1.0	
Chloromethane						<1.0	<1.0	<1.0	
2-Chlorotoluene						<0.4	<0.4	<0.4	
4-Chlorotoluene						<0.4	<0.4	<0.4	
Cumene (*isopropylbenzene*)	300	75				<0.4	<0.4	<0.4	
1,2-Dibromo-3-chloropropane						<0.12	<0.12	<0.12	
1,2-Dibromoethane	0.004	0.001				<0.05	<0.05	<0.05	
Dibromomethane						<1.0	<1.0	<1.0	
1,2-Dichlorobenzene	600	150				<0.4	<0.4	<0.4	
1,3-Dichlorobenzene						<0.4	<0.4	<0.4	
1,4-Dichlorobenzene	10	2.5				<0.4	<0.4	<0.4	
Dichlorodifluoromethane	500	125				<1.0	<1.0	<1.0	
1,1-Dichloroethane	80	20				<0.4	<0.4	<0.4	
1,2-Dichloroethane	1.0	0.25				<0.2	<0.2	<0.2	
1,1-Dichloroethylene	200	50				<0.4	<0.4	<0.4	
cis-1,2-Dichloroethylene	6.0	1.5				<0.4	<0.4	<0.4	
trans-1,2-Dichloroethylene	9.0	2.25				<0.4	<0.4	<0.4	
Dichlorofluoromethane	20	5.0				<1.0	<1.0	<1.0	
1,2-Dichloropropane	5.0	1.25				<0.4	<0.4	<0.4	
1,3-Dichloropropane						<0.4	<0.4	<0.4	
2,2-Dichloropropane						<1.0	<1.0	<1.0	
1,1-Dichloropropene						<0.4	<0.4	<0.4	
cis-1,3-Dichloro-1-propene						<0.4	<0.4	<0.4	
trans-1,3-Dichloro-1-propene						<0.4	<0.4	<0.4	
Ethyl benzene	40	10				<0.4	<0.4	<0.4	
Ethyl ether	200	50				<4.0	<4.0	<4.0	
Hexachlorobutadiene	1.0	0.25				<0.1	<0.1	<0.1	
p-Isopropyltoluene						<0.4	<0.4	<0.4	
Methyl ethyl ketone	4000	1000				<5.0	<5.0	<5.0	
Methyl isobutyl ketone	300	75				<5.0	<5.0	<5.0	
Methyl tert-butyl ether	700	175				<0.4	<0.4	<0.4	
Methylene chloride	5.0	1.25				<1.0	<1.0	<1.0	
Naphthalene	70	17.5				<1.0	<1.0	<1.0	
n-Propylbenzene						<0.4	<0.4	<0.4	
Styrene						<0.4	<0.4	<0.4	
1,1,1,2-Tetrachloroethane	70	17.5				<0.4	<0.4	<0.4	
1,1,2,2-Tetrachloroethane	2.0	0.5				<0.4	<0.4	<0.4	
1,1,2,2-Tetrachloroethylene						<0.4	<0.4	<0.4	
Tetrahydrofuran	600	150				<10	<10	<10	
Toluene	70	17.5				<0.4	<0.4	<0.4	
1,2,3-Trichlorobenzene						<0.4	<0.4	<0.4	
1,2,4-Trichlorobenzene	4.0	1.0				<0.4	<0.4	<0.4	
1,1,1-Trichloroethane	5000	1250				<0.4	<0.4	<0.4	
1,1,2-Trichloroethane	3.0	0.75				<0.4	<0.4	<0.4	
1,1,2-Trichloroethylene	0.4	0.1				<0.05	<0.05	<0.05	
Trichlorofluoromethane	2000	500				<0.4	<0.4	<0.4	
1,2,3-Trichloropropane	7.0	1.75				<0.01	<0.01	<0.01	
1,1,2-Trichlorotrifluoroethane						<1.0	<1.0	<1.0	
1,2,4-Trimethylbenzene	30	7.5				<1.0	<1.0	<1.0	
1,3,5-Trimethylbenzene	30	7.5				<0.4	<0.4	<0.4	
Vinyl chloride	0.2	0.05				<0.05	<0.05	<0.05	
TOTAL Xylenes	300	75				<1.2	<1.2	<1.2	
[m & p-Xylene]	300	75				<0.8	<0.8	<0.8	
[o-Xylene]	300	75				<0.4	<0.4	<0.4	

-- = Not Detected
Gray-shaded entries represent detections.
Yellow-shaded entries represent IL exceedances for water quality performance standards.
Blue-shaded entries represent HRL exceedances for water quality performance standards.

WENCK now part of Stantec

Table 9
Clay County Sanitary Landfill
Hawley, Minnesota

VOCs

W-102B
Lower Aquifer
Spring Event

ORGANIC PARAMETERS (ug/L)	HRL	IL	May-16	May-17	May-18	May-19	May-20
Acetone	3000	750	Well Obstructed	--	<20	<20	<20
Allyl chloride	30	7.5		--	<4.0	<4.0	<4.0
Benzene	2.0	0.5		--	<0.2	<0.2	<0.2
Bromobenzene				--	<0.4	<0.4	<0.4
Bromochloromethane				--	<1.0	<1.0	<1.0
Bromodichloromethane	3.0	0.75		--	<0.4	<0.4	<0.4
Bromoform	40	10		--	<1.0	<1.0	<1.0
Bromomethane	10	2.5		--	<1.0	<1.0	<1.0
n-Butylbenzene				--	<0.4	<0.4	<0.4
sec-Butylbenzene				--	<0.4	<0.4	<0.4
tert-Butylbenzene				--	<0.4	<0.4	<0.4
Carbon tetrachloride	1.0	0.25		--	<0.05	<0.05	<0.05
Chlorobenzene	100	25		--	<0.4	<0.4	<0.4
Chlorodibromomethane	10	2.5		--	<0.4	<0.4	<0.4
Chloroethane				--	<1.0	<1.0	<1.0
Chloroform	20	5.0		--	<1.0	<1.0	<1.0
Chloromethane				--	<1.0	<1.0	<1.0
2-Chlorotoluene				--	<0.4	<0.4	<0.4
4-Chlorotoluene				--	<0.4	<0.4	<0.4
Cumene (*isopropylbenzene*)	300	75		--	<0.4	<0.4	<0.4
1,2-Dibromo-3-chloropropane				--	<0.12	<0.12	<0.12
1,2-Dibromoethane	0.004	0.001		--	<0.05	<0.05	<0.05
Dibromomethane				--	<1.0	<1.0	<1.0
1,2-Dichlorobenzene	600	150		--	<0.4	<0.4	<0.4
1,3-Dichlorobenzene				--	<0.4	<0.4	<0.4
1,4-Dichlorobenzene	10	2.5		--	<0.4	<0.4	<0.4
Dichlorodifluoromethane	500	125		--	<1.0	<1.0	<1.0
1,1-Dichloroethane	80	20		--	<0.4	<0.4	<0.4
1,2-Dichloroethane	1.0	0.25		--	<0.2	<0.2	<0.2
1,1-Dichloroethylene	200	50		--	<0.4	<0.4	<0.4
cis-1,2-Dichloroethylene	6.0	1.5		--	<0.4	<0.4	<0.4
trans-1,2-Dichloroethylene	9.0	2.25		--	<0.4	<0.4	<0.4
Dichlorofluoromethane	20	5.0		--	<1.0	<1.0	<1.0
1,2-Dichloropropane	5.0	1.25		--	<0.4	<0.4	<0.4
1,3-Dichloropropane				--	<0.4	<0.4	<0.4
2,2-Dichloropropane				--	<1.0	<1.0	<1.0
1,1-Dichloropropene				--	<0.4	<0.4	<0.4
cis-1,3-Dichloro-1-propene				--	<0.4	<0.4	<0.4
trans-1,3-Dichloro-1-propene				--	<0.4	<0.4	<0.4
Ethyl benzene	40	10		--	<0.4	<0.4	<0.4
Ethyl ether	200	50		--	<4.0	<4.0	<4.0
Hexachlorobutadiene	1.0	0.25		--	<0.1	<0.1	<0.1
p-Isopropyltoluene				--	<0.4	<0.4	<0.4
Methyl ethyl ketone	4000	1000		--	<5.0	<5.0	<5.0
Methyl isobutyl ketone	300	75		--	<5.0	<5.0	<5.0
Methyl tert-butyl ether	700	175		--	<0.4	<0.4	<0.4
Methylene chloride	5.0	1.25		--	<1.0	<1.0	<1.0
Naphthalene	70	17.5		--	<1.0	<1.0	<1.0
n-Propylbenzene				--	<0.4	<0.4	<0.4
Styrene				--	<0.4	<0.4	<0.4
1,1,1,2-Tetrachloroethane	70	17.5		--	<0.4	<0.4	<0.4
1,1,2,2-Tetrachloroethane	2.0	0.5		--	<0.4	<0.4	<0.4
1,1,2,2-Tetrachloroethylene				--	<0.4	<0.4	<0.4
Tetrahydrofuran	600	150		--	<10	<10	<10
Toluene	70	17.5		--	<0.4	<0.4	<0.4
1,2,3-Trichlorobenzene				--	<0.4	<0.4	<0.4
1,2,4-Trichlorobenzene	4.0	1.0		--	<0.4	<0.4	<0.4
1,1,1-Trichloroethane	5000	1250		--	<0.4	<0.4	<0.4
1,1,2-Trichloroethane	3.0	0.75		--	<0.4	<0.4	<0.4
1,1,2-Trichloroethylene	0.4	0.1		--	<0.05	<0.05	<0.05
Trichlorofluoromethane	2000	500		--	<0.4	<0.4	<0.4
1,2,3-Trichloropropane	7.0	1.75		--	<0.01	<0.01	<0.01
1,1,2-Trichlorotrifluoroethane				--	<1.0	<1.0	<1.0
1,2,4-Trimethylbenzene	30	7.5		--	<1.0	<1.0	<1.0
1,3,5-Trimethylbenzene	30	7.5		--	<0.4	<0.4	<0.4
Vinyl chloride	0.2	0.05		--	<0.05	<0.05	<0.05
TOTAL Xylenes	300	75		--	<2.4	<1.2	<1.2
[m & p-Xylene]	300	75		--	<2.0	<0.8	<0.8
[o-Xylene]	300	75		--	<0.4	<0.4	<0.4

-- = Not Detected
Gray-shaded entries represent detections.
Yellow-shaded entries represent IL exceedances for water quality performance standards.
Blue-shaded entries represent HRL exceedances for water quality performance standards.

WENCK now part of Stantec

Table 9
Clay County Sanitary Landfill
Hawley, Minnesota

VOCs

W-104A
Upper Aquifer

ORGANIC PARAMETERS ug/L	HRL	IL	May-16	Oct-16	May-17	Nov-17	May-18	Oct-18	May-19	Oct-19	May-20	Oct-20
Acetone	3000	750	--	--	--	--	<20	<20	<20	<20	<20	<20
Allyl chloride	30	7.5	--	--	--	--	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0
Benzene	2.0	0.5	--	--	--	--	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Bromobenzene			--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Bromochloromethane			--	--	--	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromodichloromethane	3.0	0.75	--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Bromoform	40	10	--	--	--	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromomethane	10	2.5	--	--	--	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
n-Butylbenzene			--	--	--	--	<0.4	<1.0	<0.4	<0.4	<0.4	<0.4
sec-Butylbenzene			--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
tert-Butylbenzene			--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Carbon tetrachloride	1.0	0.25	--	--	--	--	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Chlorobenzene	100	25	--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Chlorodibromomethane	10	2.5	--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Chloroethane			--	--	--	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chloroform	20	5.0	--	--	--	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chloromethane			--	--	--	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
2-Chlorotoluene			--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
4-Chlorotoluene			--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Cumene (*isopropylbenzene*)	300	75	--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,2-Dibromo-3-chloropropane			--	--	--	--	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12
1,2-Dibromoethane	0.004	0.001	--	--	--	--	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Dibromomethane			--	--	--	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dichlorobenzene	600	150	--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,3-Dichlorobenzene			--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,4-Dichlorobenzene	10	2.5	--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Dichlorodifluoromethane	500	125	--	--	--	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1-Dichloroethane	80	20	--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,2-Dichloroethane	1.0	0.25	--	--	--	--	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
1,1-Dichloroethylene	200	50	--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<1.0
cis-1,2-Dichloroethylene	6.0	1.5	--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
trans-1,2-Dichloroethylene	9.0	2.25	--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Dichlorofluoromethane	20	5.0	--	--	--	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dichloropropane	5.0	1.25	--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,3-Dichloropropane			--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
2,2-Dichloropropane			--	--	--	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1-Dichloropropene			--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
cis-1,3-Dichloro-1-propene			--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
trans-1,3-Dichloro-1-propene			--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Ethyl benzene	40	10	--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Ethyl ether	200	50	--	--	--	--	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0
Hexachlorobutadiene	1.0	0.25	--	--	--	--	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
p-Isopropyltoluene			--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Methyl ethyl ketone	4000	1000	--	--	--	--	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Methyl isobutyl ketone	300	75	--	--	--	--	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Methyl tert-butyl ether	700	175	--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Methylene chloride	5.0	1.25	--	--	--	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Naphthalene	70	17.5	--	--	--	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
n-Propylbenzene			--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Styrene			--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,1,1,2-Tetrachloroethane	70	17.5	--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,1,2,2-Tetrachloroethane	2.0	0.5	--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,1,2,2-Tetrachloroethylene			--	--	--	--	<0.4	<1.0	<0.4	<0.4	<0.4	<0.4
Tetrahydrofuran	600	150	--	--	--	--	<10	<10	<10	<10	<10	<10
Toluene	70	17.5	--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,2,3-Trichlorobenzene			--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,2,4-Trichlorobenzene	4.0	1.0	--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,1,1-Trichloroethane	5000	1250	--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<1.0
1,1,2-Trichloroethane	3.0	0.75	--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,1,2-Trichloroethylene	0.4	0.1	--	--	--	--	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Trichlorofluoromethane	2000	500	--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,2,3-Trichloropropane	7.0	1.75	--	--	--	--	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
1,1,2-Trichlorotrifluoroethane			--	--	--	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2,4-Trimethylbenzene	30	7.5	--	--	--	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,3,5-Trimethylbenzene	30	7.5	--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Vinyl chloride	0.2	0.05	--	--	--	--	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
TOTAL Xylenes	300	75	--	--	--	--	<2.4	<1.2	<1.2	<1.2	<1.2	<1.2
[m & p-Xylene]	300	75	--	--	--	--	<2.0	<0.8	<0.8	<0.8	<0.8	<0.8
[o-Xylene]	300	75	--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4

-- = Not Detected
Gray-shaded entries represent detections.
Yellow-shaded entries represent IL exceedances for water quality performance standards.
Blue-shaded entries represent HRL exceedances for water quality performance standards.

WENCK now part of Stantec

Table 9
Clay County Sanitary Landfill
Hawley, Minnesota

VOCs

W-104B
Lower Aquifer

ORGANIC PARAMETERS ug/L	HRL	IL	May-16	May-17	Nov-17	May-18	Oct-18	May-19	May-20
Acetone	3000	750	--	--	--	<20	<20	<20	<20
Allyl chloride	30	7.5	--	--	--	<4.0	<4.0	<4.0	<4.0
Benzene	2.0	0.5	--	--	--	<0.2	<0.2	<0.2	<0.2
Bromobenzene			--	--	--	<0.4	<0.4	<0.4	<0.4
Bromochloromethane			--	--	--	<1.0	<1.0	<1.0	<1.0
Bromodichloromethane	3.0	0.75	--	--	--	<0.4	<0.4	<0.4	<0.4
Bromoform	40	10	--	--	--	<1.0	<1.0	<1.0	<1.0
Bromomethane	10	2.5	--	--	--	<1.0	<1.0	<1.0	<1.0
n-Butylbenzene			--	--	--	<0.4	<1.0	<0.4	<0.4
sec-Butylbenzene			--	--	--	<0.4	<0.4	<0.4	<0.4
tert-Butylbenzene			--	--	--	<0.4	<0.4	<0.4	<0.4
Carbon tetrachloride	1.0	0.25	--	--	--	<0.05	<0.05	<0.05	<0.05
Chlorobenzene	100	25	--	--	--	<0.4	<0.4	<0.4	<0.4
Chlorodibromomethane	10	2.5	--	--	--	<0.4	<0.4	<0.4	<0.4
Chloroethane			--	--	--	<1.0	<1.0	<1.0	<1.0
Chloroform	20	5.0	--	--	--	<1.0	<1.0	<1.0	<1.0
Chloromethane			--	--	--	<1.0	<1.0	<1.0	<1.0
2-Chlorotoluene			--	--	--	<0.4	<0.4	<0.4	<0.4
4-Chlorotoluene			--	--	--	<0.4	<0.4	<0.4	<0.4
Cumene (*isopropylbenzene*)	300	75	--	--	--	<0.4	<0.4	<0.4	<0.4
1,2-Dibromo-3-chloropropane			--	--	--	<0.12	<0.12	<0.12	<0.12
1,2-Dibromoethane	0.004	0.001	--	--	--	<0.05	<0.05	<0.05	<0.05
Dibromomethane			--	--	--	<1.0	<1.0	<1.0	<1.0
1,2-Dichlorobenzene	600	150	--	--	--	<0.4	<0.4	<0.4	<0.4
1,3-Dichlorobenzene			--	--	--	<0.4	<0.4	<0.4	<0.4
1,4-Dichlorobenzene	10	2.5	--	--	--	<0.4	<0.4	<0.4	<0.4
Dichlorodifluoromethane	500	125	--	--	--	<1.0	<1.0	<1.0	<1.0
1,1-Dichloroethane	80	20	--	--	--	<0.4	<0.4	<0.4	<0.4
1,2-Dichloroethane	1.0	0.25	--	--	--	<0.2	<0.2	<0.2	<0.2
1,1-Dichloroethylene	200	50	--	--	--	<0.4	<0.4	<0.4	<0.4
cis-1,2-Dichloroethylene	6.0	1.5	--	--	--	<0.4	<0.4	<0.4	<0.4
trans-1,2-Dichloroethylene	9.0	2.25	--	--	--	<0.4	<0.4	<0.4	<0.4
Dichlorofluoromethane	20	5.0	--	--	--	<1.0	<1.0	<1.0	<1.0
1,2-Dichloropropane	5.0	1.25	--	--	--	<0.4	<0.4	<0.4	<0.4
1,3-Dichloropropane			--	--	--	<0.4	<0.4	<0.4	<0.4
2,2-Dichloropropane			--	--	--	<1.0	<1.0	<1.0	<1.0
1,1-Dichloropropene			--	--	--	<0.4	<0.4	<0.4	<0.4
cis-1,3-Dichloro-1-propene			--	--	--	<0.4	<0.4	<0.4	<0.4
trans-1,3-Dichloro-1-propene			--	--	--	<0.4	<0.4	<0.4	<0.4
Ethyl benzene	40	10	--	--	--	<0.4	<0.4	<0.4	<0.4
Ethyl ether	200	50	--	--	--	<4.0	<4.0	<4.0	<4.0
Hexachlorobutadiene	1.0	0.25	--	--	--	<0.1	<0.1	<0.1	<0.1
p-Isopropyltoluene			--	--	--	<0.4	<0.4	<0.4	<0.4
Methyl ethyl ketone	4000	1000	--	--	--	<5.0	<5.0	<5.0	<5.0
Methyl isobutyl ketone	300	75	--	--	--	<5.0	<5.0	<5.0	<5.0
Methyl tert-butyl ether	700	175	--	--	--	<0.4	<0.4	<0.4	<0.4
Methylene chloride	5.0	1.25	--	--	--	<1.0	<1.0	<1.0	<1.0
Naphthalene	70	17.5	--	--	--	<1.0	<1.0	<1.0	<1.0
n-Propylbenzene			--	--	--	<0.4	<0.4	<0.4	<0.4
Styrene			--	--	--	<0.4	<0.4	<0.4	<0.4
1,1,1,2-Tetrachloroethane	70	17.5	--	--	--	<0.4	<0.4	<0.4	<0.4
1,1,2,2-Tetrachloroethane	2.0	0.5	--	--	--	<0.4	<0.4	<0.4	<0.4
1,1,2,2-Tetrachloroethylene			--	--	--	<0.4	<1.0	<0.4	<0.4
Tetrahydrofuran	600	150	--	--	--	<10	<10	<10	<10
Toluene	70	17.5	--	--	--	<0.4	<0.4	<0.4	<0.4
1,2,3-Trichlorobenzene			--	--	--	<0.4	<0.4	<0.4	<0.4
1,2,4-Trichlorobenzene	4.0	1.0	--	--	--	<0.4	<0.4	<0.4	<0.4
1,1,1-Trichloroethane	5000	1250	--	--	--	<0.4	<0.4	<0.4	<0.4
1,1,2-Trichloroethane	3.0	0.75	--	--	--	<0.4	<0.4	<0.4	<0.4
1,1,2-Trichloroethylene	0.4	0.1	--	--	--	<0.05	<0.05	<0.05	<0.05
Trichlorofluoromethane	2000	500	--	--	--	<0.4	<0.4	<0.4	<0.4
1,2,3-Trichloropropane	7.0	1.75	--	--	--	<0.01	<0.01	<0.01	<0.01
1,1,2-Trichlorotrifluoroethane			--	--	--	<1.0	<1.0	<1.0	<1.0
1,2,4-Trimethylbenzene	30	7.5	--	--	--	<1.0	<1.0	<1.0	<1.0
1,3,5-Trimethylbenzene	30	7.5	--	--	--	<0.4	<0.4	<0.4	<0.4
Vinyl chloride	0.2	0.05	--	0.058	0.05	0.067	0.055	<0.05	<0.05
TOTAL Xylenes	300	75	--	--	--	<2.4	<1.2	<1.2	<1.2
[m & p-Xylene]	300	75	--	--	--	<2.0	<0.8	<0.8	<0.8
[o-Xylene]	300	75	--	--	--	<0.4	<0.4	<0.4	<0.4

-- = Not Detected
Gray-shaded entries represent detections.
Yellow-shaded entries represent IL exceedances for water quality performance standards.
Blue-shaded entries represent HRL exceedances for water quality performance standards.

WENCK now part of Stantec

Table 9
Clay County Sanitary Landfill
Hawley, Minnesota

VOCs

W-106A
Upper Aquifer

ORGANIC PARAMETERS ug/L	HRL	IL	May-16	Oct-16	May-17	Nov-17	May-18	Oct-18	May-19	Oct-19	May-20	Oct-20	Oct-20 (DUP)
Acetone	3000	750	--	--	--	--	<20	<20	Results Not Obtained Due to Lab Complications	<20	<20	<20	<20
Allyl chloride	30	7.5	--	--	--	--	<4.0	<4.0		<4.0	<4.0	<4.0	<4.0
Benzene	2.0	0.5	--	--	--	--	<0.2	<0.2		<0.2	<0.2	<0.2	<0.5
Bromobenzene			--	--	--	--	<0.4	<0.4		<0.4	<0.4	<0.4	<0.5
Bromochloromethane			--	--	--	--	<1.0	<1.0		<1.0	<1.0	<1.0	<1.0
Bromodichloromethane	3.0	0.75	--	--	--	--	<0.4	<0.4		<0.4	<0.4	<0.4	<0.5
Bromoform	40	10	--	--	--	--	<1.0	<1.0		<1.0	<1.0	<1.0	<4.0
Bromomethane	10	2.5	--	--	--	--	<1.0	<1.0		<1.0	<1.0	<1.0	<4.0
n-Butylbenzene			--	--	--	--	<0.4	<1.0		<0.4	<0.4	<0.4	<0.5
sec-Butylbenzene			--	--	--	--	<0.4	<0.4		<0.4	<0.4	<0.4	<0.5
tert-Butylbenzene			--	--	--	--	<0.4	<0.4		<0.4	<0.4	<0.4	<0.5
Carbon tetrachloride	1.0	0.25	--	--	--	--	<0.05	<0.05		<0.05	<0.05	<0.05	<0.5
Chlorobenzene	100	25	--	--	--	--	<0.4	<0.4		<0.4	<0.4	<0.4	<0.5
Chlorodibromomethane	10	2.5	--	--	--	--	<0.4	<0.4		<0.4	<0.4	<0.4	<0.5
Chloroethane			--	--	--	--	<1.0	<1.0		<1.0	<1.0	<1.0	<1.0
Chloroform	20	5.0	--	--	--	--	<1.0	<1.0		<1.0	<1.0	<1.0	<1.0
Chloromethane			--	--	--	--	<1.0	<1.0		<1.0	<1.0	<1.0	<4.0
2-Chlorotoluene			--	--	--	--	<0.4	<0.4		<0.4	<0.4	<0.4	<0.5
4-Chlorotoluene			--	--	--	--	<0.4	<0.4		<0.4	<0.4	<0.4	<0.5
Cumene (*isopropylbenzene*)	300	75	--	--	--	--	<0.4	<0.4		<0.4	<0.4	<0.4	<0.5
1,2-Dibromo-3-chloropropane			--	--	--	--	<0.12	<0.12		<0.12	<0.12	<0.12	<4.0
1,2-Dibromoethane	0.004	0.001	--	--	--	--	<0.05	<0.05		<0.05	<0.05	<0.05	<0.5
Dibromomethane			--	--	--	--	<1.0	<1.0		<1.0	<1.0	<1.0	<1.0
1,2-Dichlorobenzene	600	150	--	--	--	--	<0.4	<0.4		<0.4	<0.4	<0.4	<0.5
1,3-Dichlorobenzene			--	--	--	--	<0.4	<0.4		<0.4	<0.4	<0.4	<0.5
1,4-Dichlorobenzene	10	2.5	--	--	--	--	<0.4	<0.4		<0.4	<0.4	<0.4	<0.5
Dichlorodifluoromethane	500	125	--	--	--	--	<1.0	<1.0		<1.0	<1.0	<1.0	<1.0
1,1-Dichloroethane	80	20	--	--	--	--	<0.4	<0.4		<0.4	<0.4	<0.4	<0.5
1,2-Dichloroethane	1.0	0.25	--	--	--	--	<0.2	<0.2		<0.2	<0.2	<0.2	<0.5
1,1-Dichloroethylene	200	50	--	--	--	--	<0.4	<0.4		<0.4	<0.4	<1.0	<1.0
cis-1,2-Dichloroethylene	6.0	1.5	--	--	--	--	<0.4	<0.4		<0.4	<0.4	<0.4	<0.5
trans-1,2-Dichloroethylene	9.0	2.25	--	--	--	--	<0.4	<0.4		<0.4	<0.4	<0.4	<0.5
Dichlorofluoromethane	20	5.0	--	--	--	--	<1.0	<1.0		<1.0	<1.0	<1.0	<1.0
1,2-Dichloropropane	5.0	1.25	--	--	--	--	<0.4	<0.4		<0.4	<0.4	<0.4	<4.0
1,3-Dichloropropane			--	--	--	--	<0.4	<0.4		<0.4	<0.4	<0.4	<0.5
2,2-Dichloropropane			--	--	--	--	<1.0	<1.0		<1.0	<1.0	<1.0	<1.0
1,1-Dichloropropene			--	--	--	--	<0.4	<0.4		<0.4	<0.4	<0.4	<0.5
cis-1,3-Dichloro-1-propene			--	--	--	--	<0.4	<0.4		<0.4	<0.4	<0.4	<0.5
trans-1,3-Dichloro-1-propene			--	--	--	--	<0.4	<0.4		<0.4	<0.4	<0.4	<0.5
Ethyl benzene	40	10	--	--	--	--	<0.4	<0.4		<0.4	<0.4	<0.4	<0.5
Ethyl ether	200	50	--	--	--	--	<4.0	<4.0		<4.0	<4.0	<4.0	<4.0
Hexachlorobutadiene	1.0	0.25	--	--	--	--	<0.1	<0.1		<0.1	<0.1	<0.1	<1.0
p-Isopropyltoluene			--	--	--	--	<0.4	<0.4		<0.4	<0.4	<0.4	<0.5
Methyl ethyl ketone	4000	1000	--	--	--	--	<5.0	<5.0		<5.0	<5.0	<5.0	<5.0
Methyl isobutyl ketone	300	75	--	--	--	--	<5.0	<5.0		<5.0	<5.0	<5.0	<5.0
Methyl tert-butyl ether	700	175	--	--	--	--	<0.4	<0.4		<0.4	<0.4	<0.4	<0.5
Methylene chloride	5.0	1.25	--	--	--	--	<1.0	<1.0		<1.0	<1.0	<1.0	<4.0
Naphthalene	70	17.5	--	--	--	--	<1.0	<1.0		<1.0	<1.0	<1.0	<1.0
n-Propylbenzene			--	--	--	--	<0.4	<0.4		<0.4	<0.4	<0.4	<0.5
Styrene			--	--	--	--	<0.4	<0.4		<0.4	<0.4	<0.4	<0.5
1,1,1,2-Tetrachloroethane	70	17.5	--	--	--	--	<0.4	<0.4		<0.4	<0.4	<0.4	<0.5
1,1,2,2-Tetrachloroethane	2.0	0.5	--	--	--	--	<0.4	<0.4		<0.4	<0.4	<0.4	<0.5
1,1,2,2-Tetrachloroethylene			--	--	--	--	<0.4	<1.0		<0.4	<0.4	<0.4	<0.5
Tetrahydrofuran	600	150	--	--	--	--	<10	<10		<10	<10	<10	<10
Toluene	70	17.5	--	--	--	--	<0.4	<0.4		<0.4	<0.4	<0.4	<0.5
1,2,3-Trichlorobenzene			--	--	--	--	<0.4	<0.4		<0.4	<0.4	<0.4	<0.5
1,2,4-Trichlorobenzene	4.0	1.0	--	--	--	--	<0.4	<0.4		<0.4	<0.4	<0.4	<0.5
1,1,1-Trichloroethane	5000	1250	--	--	--	--	<0.4	<0.4		<0.4	<0.4	<1.0	<0.5
1,1,2-Trichloroethane	3.0	0.75	--	--	--	--	<0.4	<0.4		<0.4	<0.4	<0.4	<0.5
1,1,2-Trichloroethylene	0.4	0.1	--	--	--	--	<0.05	<0.05		<0.05	<0.05	<0.05	<0.4
Trichlorofluoromethane	2000	500	--	--	--	--	<0.4	<0.4		<0.4	<0.4	<0.4	<0.5
1,2,3-Trichloropropane	7.0	1.75	--	--	--	--	<0.01	<0.01		<0.01	<0.01	<0.01	<4.0
1,1,2-Trichlorotrifluoroethane			--	--	--	--	<1.0	<1.0		<1.0	<1.0	<1.0	<1.0
1,2,4-Trimethylbenzene	30	7.5	--	--	--	--	<1.0	<1.0		<1.0	<1.0	<1.0	<0.5
1,3,5-Trimethylbenzene	30	7.5	--	--	--	--	<0.4	<0.4		<0.4	<0.4	<0.4	<0.5
Vinyl chloride	0.2	0.05	--	--	--	--	<0.05	<0.05		<0.05	<0.05	<0.05	<0.2
TOTAL Xylenes	300	75	--	--	--	--	<2.4	<1.2		<1.2	<1.2	<1.2	<1.5
[m & p-Xylene]	300	75	--	--	--	--	<2.0	<0.8		<0.8	<0.8	<0.8	<1.0
[o-Xylene]	300	75	--	--	--	--	<0.4	<0.4		<0.4	<0.4	<0.4	<0.5

-- = Not Detected
Gray-shaded entries represent detections.
Yellow-shaded entries represent IL exceedances for water quality performance standards.
Blue-shaded entries represent HRL exceedances for water quality performance standards.

WENCK now part of Stantec

Table 9
Clay County Sanitary Landfill
Hawley, Minnesota

VOCs

W-106B
Lower Aquifer

ORGANIC PARAMETERS ug/L	HRL	IL	May-16	May-17	May-18	May-19	Oct-19	Oct-19 (DUP)	May-20
Acetone	3000	750	--	--	<20	Results Not Obtained Due to Lab complications	<20	<20	<20
Allyl chloride	30	7.5	--	--	<4.0		<4.0	<4.0	<4.0
Benzene	2.0	0.5	--	--	<0.2		<0.2	<0.2	<0.2
Bromobenzene			--	--	<0.4		<0.4	<0.4	<0.4
Bromochloromethane			--	--	<1.0		<1.0	<1.0	<1.0
Bromodichloromethane	3.0	0.75	--	--	<0.4		<0.4	<0.4	<0.4
Bromoform	40	10	--	--	<1.0		<1.0	<1.0	<1.0
Bromomethane	10	2.5	--	--	<1.0		<1.0	<1.0	<1.0
n-Butylbenzene			--	--	<0.4		<0.4	<0.4	<0.4
sec-Butylbenzene			--	--	<0.4		<0.4	<0.4	<0.4
tert-Butylbenzene			--	--	<0.4		<0.4	<0.4	<0.4
Carbon tetrachloride	1.0	0.25	--	--	<0.05		<0.05	<0.05	<0.05
Chlorobenzene	100	25	--	--	<0.4		<0.4	<0.4	<0.4
Chlorodibromomethane	10	2.5	--	--	<0.4		<0.4	<0.4	<0.4
Chloroethane			--	--	<1.0		<1.0	<1.0	<1.0
Chloroform	20	5.0	--	--	<1.0		<1.0	<1.0	<1.0
Chloromethane			--	--	<1.0		<1.0	<1.0	<1.0
2-Chlorotoluene			--	--	<0.4		<0.4	<0.4	<0.4
4-Chlorotoluene			--	--	<0.4		<0.4	<0.4	<0.4
Cumene (*isopropylbenzene*)	300	75	--	--	<0.4		<0.4	<0.4	<0.4
1,2-Dibromo-3-chloropropane			--	--	<0.12		<0.12	<0.12	<0.12
1,2-Dibromoethane	0.004	0.001	--	--	<0.05		<0.05	<0.05	<0.05
Dibromomethane			--	--	<1.0		<1.0	<1.0	<1.0
1,2-Dichlorobenzene	600	150	--	--	<0.4		<0.4	<0.4	<0.4
1,3-Dichlorobenzene			--	--	<0.4		<0.4	<0.4	<0.4
1,4-Dichlorobenzene	10	2.5	--	--	<0.4		<0.4	<0.4	<0.4
Dichlorodifluoromethane	500	125	--	--	<1.0		<1.0	<1.0	<1.0
1,1-Dichloroethane	80	20	--	--	<0.4		<0.4	<0.4	<0.4
1,2-Dichloroethane	1.0	0.25	--	--	<0.2		<0.2	<0.2	<0.2
1,1-Dichloroethylene	200	50	--	--	<0.4		<0.4	<0.4	<0.4
cis-1,2-Dichloroethylene	6.0	1.5	--	--	<0.4		<0.4	<0.4	<0.4
trans-1,2-Dichloroethylene	9.0	2.25	--	--	<0.4		<0.4	<0.4	<0.4
Dichlorofluoromethane	20	5.0	--	--	<1.0		<1.0	<1.0	<1.0
1,2-Dichloropropane	5.0	1.25	--	--	<0.4		<0.4	<0.4	<0.4
1,3-Dichloropropane			--	--	<0.4		<0.4	<0.4	<0.4
2,2-Dichloropropane			--	--	<1.0		<1.0	<1.0	<1.0
1,1-Dichloropropene			--	--	<0.4		<0.4	<0.4	<0.4
cis-1,3-Dichloro-1-propene			--	--	<0.4		<0.4	<0.4	<0.4
trans-1,3-Dichloro-1-propene			--	--	<0.4		<0.4	<0.4	<0.4
Ethyl benzene	40	10	--	--	<0.4		<0.4	<0.4	<0.4
Ethyl ether	200	50	--	--	<4.0		<4.0	<4.0	<4.0
Hexachlorobutadiene	1.0	0.25	--	--	<0.1		<0.1	<0.1	<0.1
p-Isopropyltoluene			--	--	<0.4		<0.4	<0.4	<0.4
Methyl ethyl ketone	4000	1000	--	--	<5.0		<5.0	<5.0	<5.0
Methyl isobutyl ketone	300	75	--	--	<5.0		<5.0	<5.0	<5.0
Methyl tert-butyl ether	700	175	--	--	<0.4		<0.4	<0.4	<0.4
Methylene chloride	5.0	1.25	--	--	<1.0		<1.0	<1.0	<1.0
Naphthalene	70	17.5	--	--	<1.0		<1.0	<1.0	<1.0
n-Propylbenzene			--	--	<0.4		<0.4	<0.4	<0.4
Styrene			--	--	<0.4		<0.4	<0.4	<0.4
1,1,1,2-Tetrachloroethane	70	17.5	--	--	<0.4		<0.4	<0.4	<0.4
1,1,2,2-Tetrachloroethane	2.0	0.5	--	--	<0.4		<0.4	<0.4	<0.4
1,1,2,2-Tetrachloroethylene			--	--	<0.4		<0.4	<0.4	<0.4
Tetrahydrofuran	600	150	--	--	<10		<10	<10	<10
Toluene	70	17.5	--	--	<0.4		<0.4	<0.4	<0.4
1,2,3-Trichlorobenzene			--	--	<0.4		<0.4	<0.4	<0.4
1,2,4-Trichlorobenzene	4.0	1.0	--	--	<0.4		<0.4	<0.4	<0.4
1,1,1-Trichloroethane	5000	1250	--	--	<0.4		<0.4	<0.4	<0.4
1,1,2-Trichloroethane	3.0	0.75	--	--	<0.4		<0.4	<0.4	<0.4
1,1,2-Trichloroethylene	0.4	0.1	--	--	<0.05		<0.05	<0.05	<0.05
Trichlorofluoromethane	2000	500	--	--	<0.4		<0.4	<0.4	<0.4
1,2,3-Trichloropropane	7.0	1.75	--	--	<0.01		<0.01	<0.01	<0.01
1,1,2-Trichlorotrifluoroethane			--	--	<1.0		<1.0	<1.0	<1.0
1,2,4-Trimethylbenzene	30	7.5	--	--	<1.0		<1.0	<1.0	<1.0
1,3,5-Trimethylbenzene	30	7.5	--	--	<0.4		<0.4	<0.4	<0.4
Vinyl chloride	0.2	0.05	--	--	<0.05		<0.05	<0.05	<0.05
TOTAL Xylenes	300	75	--	--	<2.4		<1.2	<1.2	<1.2
[m & p-Xylene]	300	75	--	--	<2.0		<0.8	<0.8	<0.8
[o-Xylene]	300	75	--	--	<0.4		<0.4	<0.4	<0.4

-- = Not Detected
Gray-shaded entries represent detections.
Yellow-shaded entries represent IL exceedances for water quality performance standards.
Blue-shaded entries represent HRL exceedances for water quality performance standards.

WENCK now part of Stantec

Table 9
Clay County Sanitary Landfill
Hawley, Minnesota

VOCs

W-201A
Upper Aquifer

ORGANIC PARAMETERS ug/L	HRL	IL	May-16	Oct-16	May-17	Nov-17	May-18	Oct-18	May-19	Oct-19	May-20	May-20 (DUP)	Oct-20
Acetone	3000	750	--	--	--	--	<20	<20	<20	<20	<20	<20	<20
Allyl chloride	30	7.5	--	--	--	--	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0
Benzene	2.0	0.5	--	--	--	--	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Bromobenzene			--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Bromochloromethane			--	--	--	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromodichloromethane	3.0	0.75	--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Bromoform	40	10	--	--	--	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromomethane	10	2.5	--	--	--	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
n-Butylbenzene			--	--	--	--	<0.4	<1.0	<0.4	<0.4	<0.4	<0.4	<0.4
sec-Butylbenzene			--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
tert-Butylbenzene			--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Carbon tetrachloride	1.0	0.25	--	--	--	--	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Chlorobenzene	100	25	--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Chlorodibromomethane	10	2.5	--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Chloroethane			--	--	--	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chloroform	20	5.0	--	--	--	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chloromethane			--	--	--	--	<1.0	<1.0	1.1	<1.0	<1.0	<1.0	<1.0
2-Chlorotoluene			--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
4-Chlorotoluene			--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Cumene (*isopropylbenzene*)	300	75	--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,2-Dibromo-3-chloropropane			--	--	--	--	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12
1,2-Dibromoethane	0.004	0.001	--	--	--	--	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Dibromomethane			--	--	--	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dichlorobenzene	600	150	--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,3-Dichlorobenzene			--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,4-Dichlorobenzene	10	2.5	--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Dichlorodifluoromethane	500	125	--	--	--	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1-Dichloroethane	80	20	--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,2-Dichloroethane	1.0	0.25	--	--	--	--	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
1,1-Dichloroethylene	200	50	--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<1.0
cis-1,2-Dichloroethylene	6.0	1.5	--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
trans-1,2-Dichloroethylene	9.0	2.25	--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Dichlorofluoromethane	20	5.0	--	--	--	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dichloropropane	5.0	1.25	--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,3-Dichloropropane			--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
2,2-Dichloropropane			--	--	--	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1-Dichloropropene			--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
cis-1,3-Dichloro-1-propene			--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
trans-1,3-Dichloro-1-propene			--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Ethyl benzene	40	10	--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Ethyl ether	200	50	--	--	--	--	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0
Hexachlorobutadiene	1.0	0.25	--	--	--	--	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
p-Isopropyltoluene			--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Methyl ethyl ketone	4000	1000	--	--	--	--	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Methyl isobutyl ketone	300	75	--	--	--	--	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Methyl tert-butyl ether	700	175	--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Methylene chloride	5.0	1.25	--	--	--	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Naphthalene	70	17.5	--	--	--	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
n-Propylbenzene			--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Styrene			--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,1,1,2-Tetrachloroethane	70	17.5	--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,1,2,2-Tetrachloroethane	2.0	0.5	--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,1,2,2-Tetrachloroethylene			--	--	--	--	<0.4	<1.0	<0.4	<0.4	<0.4	<0.4	<0.4
Tetrahydrofuran	600	150	--	--	--	--	<10	<10	<10	<10	<10	<10	<10
Toluene	70	17.5	--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,2,3-Trichlorobenzene			--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,2,4-Trichlorobenzene	4.0	1.0	--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,1,1-Trichloroethane	5000	1250	--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<1.0
1,1,2-Trichloroethane	3.0	0.75	--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,1,2-Trichloroethylene	0.4	0.1	--	--	--	--	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Trichlorofluoromethane	2000	500	--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,2,3-Trichloropropane	7.0	1.75	--	--	--	--	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
1,1,2-Trichlorotrifluoroethane			--	--	--	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2,4-Trimethylbenzene	30	7.5	--	--	--	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,3,5-Trimethylbenzene	30	7.5	--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Vinyl chloride	0.2	0.05	--	--	--	--	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
TOTAL Xylenes	300	75	--	--	--	--	<2.4	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2
[m & p-Xylene]	300	75	--	--	--	--	<2.0	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8
[o-Xylene]	300	75	--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4

-- = Not Detected
Gray-shaded entries represent detections.
Yellow-shaded entries represent IL exceedances for water quality performance standards.
Blue-shaded entries represent HRL exceedances for water quality performance standards.

WENCK now part of Stantec

Table 9
Clay County Sanitary Landfill
Hawley, Minnesota

VOCs

W-201B
Lower Aquifer

ORGANIC PARAMETERS ug/L	HRL	IL	May-16	May-17	May-18	May-19	May-20
Acetone	3000	750	--	--	<20	<20	<20
Allyl chloride	30	7.5	--	--	<4.0	<4.0	<4.0
Benzene	2.0	0.5	--	--	<0.2	<0.2	<0.2
Bromobenzene			--	--	<0.4	<0.4	<0.4
Bromochloromethane			--	--	<1.0	<1.0	<1.0
Bromodichloromethane	3.0	0.75	--	--	<0.4	<0.4	<0.4
Bromoform	40	10	--	--	<1.0	<1.0	<1.0
Bromomethane	10	2.5	--	--	<1.0	<1.0	<1.0
n-Butylbenzene			--	--	<0.4	<0.4	<0.4
sec-Butylbenzene			--	--	<0.4	<0.4	<0.4
tert-Butylbenzene			--	--	<0.4	<0.4	<0.4
Carbon tetrachloride	1.0	0.25	--	--	<0.05	<0.05	<0.05
Chlorobenzene	100	25	--	--	<0.4	<0.4	<0.4
Chlorodibromomethane	10	2.5	--	--	<0.4	<0.4	<0.4
Chloroethane			--	--	<1.0	<1.0	<1.0
Chloroform	20	5.0	--	--	<1.0	<1.0	<1.0
Chloromethane			--	--	<1.0	<1.0	<1.0
2-Chlorotoluene			--	--	<0.4	<0.4	<0.4
4-Chlorotoluene			--	--	<0.4	<0.4	<0.4
Cumene (*isopropylbenzene*)	300	75	--	--	<0.4	<0.4	<0.4
1,2-Dibromo-3-chloropropane			--	--	<0.12	<0.12	<0.12
1,2-Dibromoethane	0.004	0.001	--	--	<0.05	<0.05	<0.05
Dibromomethane			--	--	<1.0	<1.0	<1.0
1,2-Dichlorobenzene	600	150	--	--	<0.4	<0.4	<0.4
1,3-Dichlorobenzene			--	--	<0.4	<0.4	<0.4
1,4-Dichlorobenzene	10	2.5	--	--	<0.4	<0.4	<0.4
Dichlorodifluoromethane	500	125	--	--	<1.0	<1.0	<1.0
1,1-Dichloroethane	80	20	--	--	<0.4	<0.4	<0.4
1,2-Dichloroethane	1.0	0.25	--	--	<0.2	<0.2	<0.2
1,1-Dichloroethylene	200	50	--	--	<0.4	<0.4	<0.4
cis-1,2-Dichloroethylene	6.0	1.5	--	--	<0.4	<0.4	<0.4
trans-1,2-Dichloroethylene	9.0	2.25	--	--	<0.4	<0.4	<0.4
Dichlorofluoromethane	20	5.0	--	--	<1.0	<1.0	<1.0
1,2-Dichloropropane	5.0	1.25	--	--	<0.4	<0.4	<0.4
1,3-Dichloropropane			--	--	<0.4	<0.4	<0.4
2,2-Dichloropropane			--	--	<1.0	<1.0	<1.0
1,1-Dichloropropene			--	--	<0.4	<0.4	<0.4
cis-1,3-Dichloro-1-propene			--	--	<0.4	<0.4	<0.4
trans-1,3-Dichloro-1-propene			--	--	<0.4	<0.4	<0.4
Ethyl benzene	40	10	--	--	<0.4	<0.4	<0.4
Ethyl ether	200	50	--	--	<4.0	<4.0	<4.0
Hexachlorobutadiene	1.0	0.25	--	--	<0.1	<0.1	<0.1
p-Isopropyltoluene			--	--	<0.4	<0.4	<0.4
Methyl ethyl ketone	4000	1000	--	--	<5.0	<5.0	<5.0
Methyl isobutyl ketone	300	75	--	--	<5.0	<5.0	<5.0
Methyl tert-butyl ether	700	175	--	--	<0.4	<0.4	<0.4
Methylene chloride	5.0	1.25	--	--	<1.0	<1.0	<1.0
Naphthalene	70	17.5	--	--	<1.0	<1.0	<1.0
n-Propylbenzene			--	--	<0.4	<0.4	<0.4
Styrene			--	--	<0.4	<0.4	<0.4
1,1,1,2-Tetrachloroethane	70	17.5	--	--	<0.4	<0.4	<0.4
1,1,2,2-Tetrachloroethane	2.0	0.5	--	--	<0.4	<0.4	<0.4
1,1,2,2-Tetrachloroethylene			--	--	<0.4	<0.4	<0.4
Tetrahydrofuran	600	150	--	--	<10	<10	<10
Toluene	70	17.5	--	--	<0.4	<0.4	<0.4
1,2,3-Trichlorobenzene			--	--	<0.4	<0.4	<0.4
1,2,4-Trichlorobenzene	4.0	1.0	--	--	<0.4	<0.4	<0.4
1,1,1-Trichloroethane	5000	1250	--	--	<0.4	<0.4	<0.4
1,1,2-Trichloroethane	3.0	0.75	--	--	<0.4	<0.4	<0.4
1,1,2-Trichloroethylene	0.4	0.1	--	--	<0.05	<0.05	<0.05
Trichlorofluoromethane	2000	500	--	--	<0.4	<0.4	<0.4
1,2,3-Trichloropropane	7.0	1.75	--	--	<0.01	<0.01	<0.01
1,1,2-Trichlorotrifluoroethane			--	--	<1.0	<1.0	<1.0
1,2,4-Trimethylbenzene	30	7.5	--	--	<1.0	<1.0	<1.0
1,3,5-Trimethylbenzene	30	7.5	--	--	<0.4	<0.4	<0.4
Vinyl chloride	0.2	0.05	--	--	<0.05	<0.05	<0.05
TOTAL Xylenes	300	75	--	--	<2.4	<1.2	<1.2
[m & p-Xylene]	300	75	--	--	<2.0	<0.8	<0.8
[o-Xylene]	300	75	--	--	<0.4	<0.4	<0.4

-- = Not Detected
Gray-shaded entries represent detections.
Yellow-shaded entries represent IL exceedances for water quality performance standards.
Blue-shaded entries represent HRL exceedances for water quality performance standards.

WENCK now part of Stantec

Table 9
Clay County Sanitary Landfill
Hawley, Minnesota

VOCs

W-202A
Upper Aquifer

ORGANIC PARAMETERS ug/L	HRL	IL	May-16	Oct-16	May-17	Nov-17	May-18	Oct-18	May-19	Oct-19	Oct-19 (DUP)	May-20	Oct-20
Acetone	3000	750	--	--	--	--	<20	<20	<20	<20	<20	<20	<20
Allyl chloride	30	7.5	--	--	--	--	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0
Benzene	2.0	0.5	--	--	--	--	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Bromobenzene			--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Bromochloromethane			--	--	--	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromodichloromethane	3.0	0.75	--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Bromoform	40	10	--	--	--	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromomethane	10	2.5	--	--	--	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
n-Butylbenzene			--	--	--	--	<0.4	<1.0	<0.4	<0.4	<0.4	<0.4	<0.4
sec-Butylbenzene			--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
tert-Butylbenzene			--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Carbon tetrachloride	1.0	0.25	--	--	--	--	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Chlorobenzene	100	25	--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Chlorodibromomethane	10	2.5	--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Chloroethane			--	--	--	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chloroform	20	5.0	--	--	--	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chloromethane			--	--	--	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
2-Chlorotoluene			--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
4-Chlorotoluene			--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Cumene (*isopropylbenzene*)	300	75	--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,2-Dibromo-3-chloropropane			--	--	--	--	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12
1,2-Dibromoethane	0.004	0.001	--	--	--	--	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Dibromomethane			--	--	--	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dichlorobenzene	600	150	--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,3-Dichlorobenzene			--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,4-Dichlorobenzene	10	2.5	--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Dichlorodifluoromethane	500	125	--	--	--	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1-Dichloroethane	80	20	--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,2-Dichloroethane	1.0	0.25	--	--	--	--	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
1,1-Dichloroethylene	200	50	--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<1.0
cis-1,2-Dichloroethylene	6.0	1.5	--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
trans-1,2-Dichloroethylene	9.0	2.25	--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Dichlorofluoromethane	20	5.0	--	--	--	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dichloropropane	5.0	1.25	--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,3-Dichloropropane			--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
2,2-Dichloropropane			--	--	--	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1-Dichloropropene			--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
cis-1,3-Dichloro-1-propene			--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
trans-1,3-Dichloro-1-propene			--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Ethyl benzene	40	10	--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Ethyl ether	200	50	--	--	--	--	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0
Hexachlorobutadiene	1.0	0.25	--	--	--	--	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
p-Isopropyltoluene			--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Methyl ethyl ketone	4000	1000	--	--	--	--	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Methyl isobutyl ketone	300	75	--	--	--	--	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Methyl tert-butyl ether	700	175	--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Methylene chloride	5.0	1.25	--	--	--	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Naphthalene	70	17.5	--	--	--	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
n-Propylbenzene			--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Styrene			--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,1,1,2-Tetrachloroethane	70	17.5	--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,1,2,2-Tetrachloroethane	2.0	0.5	--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,1,2,2-Tetrachloroethylene			--	--	--	--	<0.4	<1.0	<0.4	<0.4	<0.4	<0.4	<0.4
Tetrahydrofuran	600	150	--	--	--	--	<10	<10	<10	<10	<10	<10	<10
Toluene	70	17.5	--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,2,3-Trichlorobenzene			--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,2,4-Trichlorobenzene	4.0	1.0	--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,1,1-Trichloroethane	5000	1250	--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<1.0
1,1,2-Trichloroethane	3.0	0.75	--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,1,2-Trichloroethylene	0.4	0.1	--	--	--	--	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Trichlorofluoromethane	2000	500	--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,2,3-Trichloropropane	7.0	1.75	--	--	--	--	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
1,1,2-Trichlorotrifluoroethane			--	--	--	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2,4-Trimethylbenzene	30	7.5	--	--	--	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,3,5-Trimethylbenzene	30	7.5	--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Vinyl chloride	0.2	0.05	--	--	--	--	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
TOTAL Xylenes	300	75	--	--	--	--	<2.4	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2
[m & p-Xylene]	300	75	--	--	--	--	<2.0	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8
[o-Xylene]	300	75	--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4

-- = Not Detected

Gray-shaded entries represent detections.
Yellow-shaded entries represent IL exceedances for water quality performance standards.
Blue-shaded entries represent HRL exceedances for water quality performance standards.

WENCK now part of Stantec

Table 9
Clay County Sanitary Landfill
Hawley, Minnesota

VOCs

W-202B
Lower Aquifer

ORGANIC PARAMETERS ug/L	HRL	IL	May-16	May-17	May-18	May-19	May-20
Acetone	3000	750	--	--	<20	<20	<20
Allyl chloride	30	7.5	--	--	<4.0	<4.0	<4.0
Benzene	2.0	0.5	--	--	<0.2	<0.2	<0.2
Bromobenzene			--	--	<0.4	<0.4	<0.4
Bromochloromethane			--	--	<1.0	<1.0	<1.0
Bromodichloromethane	3.0	0.75	--	--	<0.4	<0.4	<0.4
Bromoform	40	10	--	--	<1.0	<1.0	<1.0
Bromomethane	10	2.5	--	--	<1.0	<1.0	<1.0
n-Butylbenzene			--	--	<0.4	<0.4	<0.4
sec-Butylbenzene			--	--	<0.4	<0.4	<0.4
tert-Butylbenzene			--	--	<0.4	<0.4	<0.4
Carbon tetrachloride	1.0	0.25	--	--	<0.05	<0.05	<0.05
Chlorobenzene	100	25	--	--	<0.4	<0.4	<0.4
Chlorodibromomethane	10	2.5	--	--	<0.4	<0.4	<0.4
Chloroethane			--	--	<1.0	<1.0	<1.0
Chloroform	20	5.0	--	--	<1.0	<1.0	<1.0
Chloromethane			--	--	<1.0	<1.0	<1.0
2-Chlorotoluene			--	--	<0.4	<0.4	<0.4
4-Chlorotoluene			--	--	<0.4	<0.4	<0.4
Cumene (*isopropylbenzene*)	300	75	--	--	<0.4	<0.4	<0.4
1,2-Dibromo-3-chloropropane			--	--	<0.12	<0.12	<0.12
1,2-Dibromoethane	0.004	0.001	--	--	<0.05	<0.05	<0.05
Dibromomethane			--	--	<1.0	<1.0	<1.0
1,2-Dichlorobenzene	600	150	--	--	<0.4	<0.4	<0.4
1,3-Dichlorobenzene			--	--	<0.4	<0.4	<0.4
1,4-Dichlorobenzene	10	2.5	--	--	<0.4	<0.4	<0.4
Dichlorodifluoromethane	500	125	--	--	<1.0	<1.0	<1.0
1,1-Dichloroethane	80	20	--	--	<0.4	<0.4	<0.4
1,2-Dichloroethane	1.0	0.25	--	--	<0.2	<0.2	<0.2
1,1-Dichloroethylene	200	50	--	--	<0.4	<0.4	<0.4
cis-1,2-Dichloroethylene	6.0	1.5	--	--	<0.4	<0.4	<0.4
trans-1,2-Dichloroethylene	9.0	2.25	--	--	<0.4	<0.4	<0.4
Dichlorofluoromethane	20	5.0	--	--	<1.0	<1.0	<1.0
1,2-Dichloropropane	5.0	1.25	--	--	<0.4	<0.4	<0.4
1,3-Dichloropropane			--	--	<0.4	<0.4	<0.4
2,2-Dichloropropane			--	--	<1.0	<1.0	<1.0
1,1-Dichloropropene			--	--	<0.4	<0.4	<0.4
cis-1,3-Dichloro-1-propene			--	--	<0.4	<0.4	<0.4
trans-1,3-Dichloro-1-propene			--	--	<0.4	<0.4	<0.4
Ethyl benzene	40	10	--	--	<0.4	<0.4	<0.4
Ethyl ether	200	50	--	--	<4.0	<4.0	<4.0
Hexachlorobutadiene	1.0	0.25	--	--	<0.1	<0.1	<0.1
p-Isopropyltoluene			--	--	<0.4	<0.4	<0.4
Methyl ethyl ketone	4000	1000	--	--	<5.0	<5.0	<5.0
Methyl isobutyl ketone	300	75	--	--	<5.0	<5.0	<5.0
Methyl tert-butyl ether	700	175	--	--	<0.4	<0.4	<0.4
Methylene chloride	5.0	1.25	--	--	<1.0	<1.0	<1.0
Naphthalene	70	17.5	--	--	<1.0	<1.0	<1.0
n-Propylbenzene			--	--	<0.4	<0.4	<0.4
Styrene			--	--	<0.4	<0.4	<0.4
1,1,1,2-Tetrachloroethane	70	17.5	--	--	<0.4	<0.4	<0.4
1,1,2,2-Tetrachloroethane	2.0	0.5	--	--	<0.4	<0.4	<0.4
1,1,2,2-Tetrachloroethylene			--	--	<0.4	<0.4	<0.4
Tetrahydrofuran	600	150	--	--	<10	<10	<10
Toluene	70	17.5	--	--	<0.4	<0.4	<0.4
1,2,3-Trichlorobenzene			--	--	<0.4	<0.4	<0.4
1,2,4-Trichlorobenzene	4.0	1.0	--	--	<0.4	<0.4	<0.4
1,1,1-Trichloroethane	5000	1250	--	--	<0.4	<0.4	<0.4
1,1,2-Trichloroethane	3.0	0.75	--	--	<0.4	<0.4	<0.4
1,1,2-Trichloroethylene	0.4	0.1	--	--	<0.05	<0.05	<0.05
Trichlorofluoromethane	2000	500	--	--	<0.4	<0.4	<0.4
1,2,3-Trichloropropane	7.0	1.75	--	--	<0.01	<0.01	<0.01
1,1,2-Trichlorotrifluoroethane			--	--	<1.0	<1.0	<1.0
1,2,4-Trimethylbenzene	30	7.5	--	--	<1.0	<1.0	<1.0
1,3,5-Trimethylbenzene	30	7.5	--	--	<0.4	<0.4	<0.4
Vinyl chloride	0.2	0.05	--	--	<0.05	<0.05	<0.05
TOTAL Xylenes	300	75	--	--	<2.4	<1.2	<1.2
[m & p-Xylene]	300	75	--	--	<2.0	<0.8	<0.8
[o-Xylene]	300	75	--	--	<0.4	<0.4	<0.4

-- = Not Detected
Gray-shaded entries represent detections.
Yellow-shaded entries represent IL exceedances for water quality performance standards.
Blue-shaded entries represent HRL exceedances for water quality performance standards.

WENCK now part of Stantec

Table 9
Clay County Sanitary Landfill
Hawley, Minnesota

VOCs

W-203B
Lower Aquifer

ORGANIC PARAMETERS ug/L	HRL	IL	May-16	May-17	May-18	May-19	May-20
Acetone	3000	750	--	--	Well Obstructed	Well Access Obstructed	<20
Allyl chloride	30	7.5	--	--			<4.0
Benzene	2.0	0.5	--	--			<0.2
Bromobenzene			--	--			<0.4
Bromochloromethane			--	--			<1.0
Bromodichloromethane	3.0	0.75	--	--			<0.4
Bromoform	40	10	--	--			<1.0
Bromomethane	10	2.5	--	--			<1.0
n-Butylbenzene			--	--			<0.4
sec-Butylbenzene			--	--			<0.4
tert-Butylbenzene			--	--			<0.4
Carbon tetrachloride	1.0	0.25	--	--			<0.05
Chlorobenzene	100	25	--	--			<0.4
Chlorodibromomethane	10	2.5	--	0.62			<0.4
Chloroethane			--	--			<1.0
Chloroform	20	5.0	--	--			<1.0
Chloromethane			--	--			<1.0
2-Chlorotoluene			--	--			<0.4
4-Chlorotoluene			--	--			<0.4
Cumene (*isopropylbenzene*)	300	75	--	--			<0.4
1,2-Dibromo-3-chloropropane			--	--			<0.12
1,2-Dibromoethane	0.004	0.001	--	--			<0.05
Dibromomethane			--	--			<1.0
1,2-Dichlorobenzene	600	150	--	--			<0.4
1,3-Dichlorobenzene			--	--			<0.4
1,4-Dichlorobenzene	10	2.5	--	--			<0.4
Dichlorodifluoromethane	500	125	--	--			<1.0
1,1-Dichloroethane	80	20	--	--			<0.4
1,2-Dichloroethane	1.0	0.25	--	--			<0.2
1,1-Dichloroethylene	200	50	--	--			<0.4
cis-1,2-Dichloroethylene	6.0	1.5	--	--			<0.4
trans-1,2-Dichloroethylene	9.0	2.25	--	--			<0.4
Dichlorofluoromethane	20	5.0	--	--			<1.0
1,2-Dichloropropane	5.0	1.25	--	--			<0.4
1,3-Dichloropropane			--	--			<0.4
2,2-Dichloropropane			--	--			<1.0
1,1-Dichloropropene			--	--			<0.4
cis-1,3-Dichloro-1-propene			--	--			<0.4
trans-1,3-Dichloro-1-propene			--	--			<0.4
Ethyl benzene	40	10	--	--			<0.4
Ethyl ether	200	50	--	--			<4.0
Hexachlorobutadiene	1.0	0.25	--	--			<0.1
p-Isopropyltoluene			--	--			<0.4
Methyl ethyl ketone	4000	1000	--	--			<5.0
Methyl isobutyl ketone	300	75	--	--			<5.0
Methyl tert-butyl ether	700	175	--	--			<0.4
Methylene chloride	5.0	1.25	--	--			<1.0
Naphthalene	70	17.5	--	--			<1.0
n-Propylbenzene			--	--			<0.4
Styrene			--	--			<0.4
1,1,1,2-Tetrachloroethane	70	17.5	--	--			<0.4
1,1,2,2-Tetrachloroethane	2.0	0.5	--	--			<0.4
1,1,2,2-Tetrachloroethylene			--	--			<0.4
Tetrahydrofuran	600	150	--	--			<10
Toluene	70	17.5	--	--			<0.4
1,2,3-Trichlorobenzene			--	--			<0.4
1,2,4-Trichlorobenzene	4.0	1.0	--	--			<0.4
1,1,1-Trichloroethane	5000	1250	--	--			<0.4
1,1,2-Trichloroethane	3.0	0.75	--	--			<0.4
1,1,2-Trichloroethylene	0.4	0.1	--	--			<0.05
Trichlorofluoromethane	2000	500	--	--			<0.4
1,2,3-Trichloropropane	7.0	1.75	--	--			<0.01
1,1,2-Trichlorotrifluoroethane			--	--			<1.0
1,2,4-Trimethylbenzene	30	7.5	--	--			<1.0
1,3,5-Trimethylbenzene	30	7.5	--	--			<0.4
Vinyl chloride	0.2	0.05	--	--			<0.05
TOTAL Xylenes	300	75	--	--			<1.2
[m & p-Xylene]	300	75	--	--			<0.8
[o-Xylene]	300	75	--	--			<0.4

-- = Not Detected
Gray-shaded entries represent detections.
Yellow-shaded entries represent IL exceedances for water quality performance standards.
Blue-shaded entries represent HRL exceedances for water quality performance standards.

WENCK now part of Stantec

Table 9
Clay County Sanitary Landfill
Hawley, Minnesota

VOCs

W-301A
Upper Aquifer

ORGANIC PARAMETERS ug/L	HRL	IL	May-16	Oct-16	May-17	Nov-17	May-18	Oct-18	May-19	Oct-19	May-20	Oct-20
Acetone	3000	750	--	--	--	--	<20	<20	<20	<20	<20	<20
Allyl chloride	30	7.5	--	--	--	--	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0
Benzene	2.0	0.5	--	--	--	--	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Bromobenzene			--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Bromochloromethane			--	--	--	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromodichloromethane	3.0	0.75	--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Bromoform	40	10	--	--	--	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromomethane	10	2.5	--	--	--	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
n-Butylbenzene			--	--	--	--	<0.4	<1.0	<0.4	<0.4	<0.4	<0.4
sec-Butylbenzene			--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
tert-Butylbenzene			--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Carbon tetrachloride	1.0	0.25	--	--	--	--	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Chlorobenzene	100	25	--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Chlorodibromomethane	10	2.5	--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Chloroethane			--	--	--	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chloroform	20	5.0	--	--	--	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chloromethane			--	--	--	--	<1.0	<1.0	1.2	<1.0	<1.0	<1.0
2-Chlorotoluene			--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
4-Chlorotoluene			--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Cumene (*isopropylbenzene*)	300	75	--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,2-Dibromo-3-chloropropane			--	--	--	--	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12
1,2-Dibromoethane	0.004	0.001	--	--	--	--	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Dibromomethane			--	--	--	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dichlorobenzene	600	150	--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,3-Dichlorobenzene			--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,4-Dichlorobenzene	10	2.5	--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Dichlorodifluoromethane	500	125	--	--	--	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1-Dichloroethane	80	20	--	--	--	0.73	<0.4	0.4	<0.4	0.59	<0.4	<0.4
1,2-Dichloroethane	1.0	0.25	--	--	--	--	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
1,1-Dichloroethylene	200	50	--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<1.0
cis-1,2-Dichloroethylene	6.0	1.5	--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
trans-1,2-Dichloroethylene	9.0	2.25	--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Dichlorofluoromethane	20	5.0	--	--	--	0.69	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dichloropropane	5.0	1.25	--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,3-Dichloropropane			--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
2,2-Dichloropropane			--	--	--	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1-Dichloropropene			--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
cis-1,3-Dichloro-1-propene			--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
trans-1,3-Dichloro-1-propene			--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Ethyl benzene	40	10	--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Ethyl ether	200	50	--	--	--	--	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0
Hexachlorobutadiene	1.0	0.25	--	--	--	--	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
p-Isopropyltoluene			--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Methyl ethyl ketone	4000	1000	--	--	--	--	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Methyl isobutyl ketone	300	75	--	--	--	--	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Methyl tert-butyl ether	700	175	--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Methylene chloride	5.0	1.25	--	--	--	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Naphthalene	70	17.5	--	--	--	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
n-Propylbenzene			--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Styrene			--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,1,1,2-Tetrachloroethane	70	17.5	--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,1,2,2-Tetrachloroethane	2.0	0.5	--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,1,2,2-Tetrachloroethylene			--	--	--	--	<0.4	<1.0	<0.4	<0.4	<0.4	<0.4
Tetrahydrofuran	600	150	--	--	--	--	<10	<10	<10	<10	<10	<10
Toluene	70	17.5	--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,2,3-Trichlorobenzene			--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,2,4-Trichlorobenzene	4.0	1.0	--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,1,1-Trichloroethane	5000	1250	--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<1.0
1,1,2-Trichloroethane	3.0	0.75	--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,1,2-Trichloroethylene	0.4	0.1	--	--	--	--	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Trichlorofluoromethane	2000	500	--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,2,3-Trichloropropane	7.0	1.75	--	--	--	--	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
1,1,2-Trichlorotrifluoroethane			--	--	--	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2,4-Trimethylbenzene	30	7.5	--	--	--	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,3,5-Trimethylbenzene	30	7.5	--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Vinyl chloride	0.2	0.05	--	--	--	--	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
TOTAL Xylenes	300	75	--	--	--	--	<2.4	<1.2	<1.2	<1.2	<1.2	<1.2
[m & p-Xylene]	300	75	--	--	--	--	<2.0	<0.8	<0.8	<0.8	<0.8	<0.8
[o-Xylene]	300	75	--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4

-- = Not Detected
Gray-shaded entries represent detections.
Yellow-shaded entries represent IL exceedances for water quality performance standards.
Blue-shaded entries represent HRL exceedances for water quality performance standards.

WENCK now part of Stantec

Table 9
Clay County Sanitary Landfill
Hawley, Minnesota

VOCs

W-301B
Lower Aquifer

ORGANIC PARAMETERS ug/L	HRL	IL	May-16	May-17	May-18	May-19	May-20
Acetone	3000	750	--	--	<20	<20	<20
Allyl chloride	30	7.5	--	--	<4.0	<4.0	<4.0
Benzene	2.0	0.5	--	--	<0.2	<0.2	<0.2
Bromobenzene			--	--	<0.4	<0.4	<0.4
Bromochloromethane			--	--	<1.0	<1.0	<1.0
Bromodichloromethane	3.0	0.75	--	--	<0.4	<0.4	<0.4
Bromoform	40	10	--	--	<1.0	<1.0	<1.0
Bromomethane	10	2.5	--	--	<1.0	<1.0	<1.0
n-Butylbenzene			--	--	<0.4	<0.4	<0.4
sec-Butylbenzene			--	--	<0.4	<0.4	<0.4
tert-Butylbenzene			--	--	<0.4	<0.4	<0.4
Carbon tetrachloride	1.0	0.25	--	--	<0.05	<0.05	<0.05
Chlorobenzene	100	25	--	--	<0.4	<0.4	<0.4
Chlorodibromomethane	10	2.5	--	--	<0.4	<0.4	<0.4
Chloroethane			--	--	<1.0	<1.0	<1.0
Chloroform	20	5.0	--	--	<1.0	<1.0	<1.0
Chloromethane			--	--	<1.0	1.4	<1.0
2-Chlorotoluene			--	--	<0.4	<0.4	<0.4
4-Chlorotoluene			--	--	<0.4	<0.4	<0.4
Cumene (*isopropylbenzene*)	300	75	--	--	<0.4	<0.4	<0.4
1,2-Dibromo-3-chloropropane			--	--	<0.12	<0.12	<0.12
1,2-Dibromoethane	0.004	0.001	--	--	<0.05	<0.05	<0.05
Dibromomethane			--	--	<1.0	<1.0	<1.0
1,2-Dichlorobenzene	600	150	--	--	<0.4	<0.4	<0.4
1,3-Dichlorobenzene			--	--	<0.4	<0.4	<0.4
1,4-Dichlorobenzene	10	2.5	--	--	<0.4	<0.4	<0.4
Dichlorodifluoromethane	500	125	--	--	<1.0	<1.0	<1.0
1,1-Dichloroethane	80	20	--	--	<0.4	<0.4	<0.4
1,2-Dichloroethane	1.0	0.25	--	--	<0.2	<0.2	<0.2
1,1-Dichloroethylene	200	50	--	--	<0.4	<0.4	<0.4
cis-1,2-Dichloroethylene	6.0	1.5	--	--	<0.4	<0.4	<0.4
trans-1,2-Dichloroethylene	9.0	2.25	--	--	<0.4	<0.4	<0.4
Dichlorofluoromethane	20	5.0	--	--	<1.0	<1.0	<1.0
1,2-Dichloropropane	5.0	1.25	--	--	<0.4	<0.4	<0.4
1,3-Dichloropropane			--	--	<0.4	<0.4	<0.4
2,2-Dichloropropane			--	--	<1.0	<1.0	<1.0
1,1-Dichloropropene			--	--	<0.4	<0.4	<0.4
cis-1,3-Dichloro-1-propene			--	--	<0.4	<0.4	<0.4
trans-1,3-Dichloro-1-propene			--	--	<0.4	<0.4	<0.4
Ethyl benzene	40	10	--	--	<0.4	<0.4	<0.4
Ethyl ether	200	50	--	--	<4.0	<4.0	<4.0
Hexachlorobutadiene	1.0	0.25	--	--	<0.1	<0.1	<0.1
p-Isopropyltoluene			--	--	<0.4	<0.4	<0.4
Methyl ethyl ketone	4000	1000	--	--	<5.0	<5.0	<5.0
Methyl isobutyl ketone	300	75	--	--	<5.0	<5.0	<5.0
Methyl tert-butyl ether	700	175	--	--	<0.4	<0.4	<0.4
Methylene chloride	5.0	1.25	--	--	<1.0	<1.0	<1.0
Naphthalene	70	17.5	--	--	<1.0	<1.0	<1.0
n-Propylbenzene			--	--	<0.4	<0.4	<0.4
Styrene			--	--	<0.4	<0.4	<0.4
1,1,1,2-Tetrachloroethane	70	17.5	--	--	<0.4	<0.4	<0.4
1,1,2,2-Tetrachloroethane	2.0	0.5	--	--	<0.4	<0.4	<0.4
1,1,2,2-Tetrachloroethylene			--	--	<0.4	<0.4	<0.4
Tetrahydrofuran	600	150	--	--	<10	<10	<10
Toluene	70	17.5	--	--	<0.4	<0.4	<0.4
1,2,3-Trichlorobenzene			--	--	<0.4	<0.4	<0.4
1,2,4-Trichlorobenzene	4.0	1.0	--	--	<0.4	<0.4	<0.4
1,1,1-Trichloroethane	5000	1250	--	--	<0.4	<0.4	<0.4
1,1,2-Trichloroethane	3.0	0.75	--	--	<0.4	<0.4	<0.4
1,1,2-Trichloroethylene	0.4	0.1	--	--	<0.05	<0.05	<0.05
Trichlorofluoromethane	2000	500	--	--	<0.4	<0.4	<0.4
1,2,3-Trichloropropane	7.0	1.75	--	--	<0.01	<0.01	<0.01
1,1,2-Trichlorotrifluoroethane			--	--	<1.0	<1.0	<1.0
1,2,4-Trimethylbenzene	30	7.5	--	--	<1.0	<1.0	<1.0
1,3,5-Trimethylbenzene	30	7.5	--	--	<0.4	<0.4	<0.4
Vinyl chloride	0.2	0.05	--	--	<0.05	<0.05	<0.05
TOTAL Xylenes	300	75	--	--	<2.4	<1.2	<1.2
[m & p-Xylene]	300	75	--	--	<2.0	<0.8	<0.8
[o-Xylene]	300	75	--	--	<0.4	<0.4	<0.4

-- = Not Detected
Gray-shaded entries represent detections.
Yellow-shaded entries represent IL exceedances for water quality performance standards.
Blue-shaded entries represent HRL exceedances for water quality performance standards.

WENCK now part of Stantec

Table 9
Clay County Sanitary Landfill
Hawley, Minnesota

VOCs

W-302A
Upper Aquifer

ORGANIC PARAMETERS ug/L	HRL	IL	May-16	Oct-16	May-17	Nov-17	May-18	Oct-18	Apr-19	Apr-19 (DUP)	Oct-19	May-20	Oct-20
Acetone	3000	750	--	--	--	--	<20	<20	<20	<20	<20	<20	<20
Allyl chloride	30	7.5	--	--	--	--	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0
Benzene	2.0	0.5	--	--	--	--	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Bromobenzene			--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Bromochloromethane			--	--	--	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromodichloromethane	3.0	0.75	--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Bromoform	40	10	--	--	--	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromomethane	10	2.5	--	--	--	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
n-Butylbenzene			--	--	--	--	<1.0	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
sec-Butylbenzene			--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
tert-Butylbenzene			--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Carbon tetrachloride	1.0	0.25	--	--	--	--	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Chlorobenzene	100	25	--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Chlorodibromomethane	10	2.5	--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Chloroethane			--	--	--	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chloroform	20	5.0	--	--	--	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chloromethane			--	--	--	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
2-Chlorotoluene			--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
4-Chlorotoluene			--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Cumene (*isopropylbenzene*)	300	75	--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,2-Dibromo-3-chloropropane			--	--	--	--	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12
1,2-Dibromoethane	0.004	0.001	--	--	--	--	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Dibromomethane			--	--	--	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dichlorobenzene	600	150	--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,3-Dichlorobenzene			--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,4-Dichlorobenzene	10	2.5	--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Dichlorodifluoromethane	500	125	--	--	--	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1-Dichloroethane	80	20	--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,2-Dichloroethane	1.0	0.25	--	--	--	--	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
1,1-Dichloroethylene	200	50	--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<1.0
cis-1,2-Dichloroethylene	6.0	1.5	--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
trans-1,2-Dichloroethylene	9.0	2.25	--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Dichlorofluoromethane	20	5.0	--	--	--	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dichloropropane	5.0	1.25	--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,3-Dichloropropane			--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
2,2-Dichloropropane			--	--	--	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1-Dichloropropene			--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
cis-1,3-Dichloro-1-propene			--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
trans-1,3-Dichloro-1-propene			--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Ethyl benzene	40	10	--	--	--	--	<4.0	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Ethyl ether	200	50	--	--	--	--	<0.4	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0
Hexachlorobutadiene	1.0	0.25	--	--	--	--	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
p-Isopropyltoluene			--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Methyl ethyl ketone	4000	1000	--	--	--	--	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Methyl isobutyl ketone	300	75	--	--	--	--	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Methyl tert-butyl ether	700	175	--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Methylene chloride	5.0	1.25	--	--	--	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Naphthalene	70	17.5	--	--	--	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
n-Propylbenzene			--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Styrene			--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,1,1,2-Tetrachloroethane	70	17.5	--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,1,2,2-Tetrachloroethane	2.0	0.5	--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,1,2,2-Tetrachloroethylene			--	--	--	--	<1.0	<1.0	<0.4	<0.4	<0.4	<0.4	<0.4
Tetrahydrofuran	600	150	--	--	--	--	<10	<10	<10	<10	<10	<10	<10
Toluene	70	17.5	--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,2,3-Trichlorobenzene			--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,2,4-Trichlorobenzene	4.0	1.0	--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,1,1-Trichloroethane	5000	1250	--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<1.0
1,1,2-Trichloroethane	3.0	0.75	--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,1,2-Trichloroethylene	0.4	0.1	--	--	--	--	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Trichlorofluoromethane	2000	500	--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,2,3-Trichloropropane	7.0	1.75	--	--	--	--	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
1,1,2-Trichlorotrifluoroethane			--	--	--	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2,4-Trimethylbenzene	30	7.5	--	--	--	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,3,5-Trimethylbenzene	30	7.5	--	--	--	--	<1.0	<0.40	<0.4	<0.4	<0.4	<0.4	<0.4
Vinyl chloride	0.2	0.05	--	--	--	--	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
TOTAL Xylenes	300	75	--	--	--	--	<1.2	<2.4	<1.2	<1.2	<1.2	<1.2	<1.2
[m & p-Xylene]	300	75	--	--	--	--	<0.8	<2.0	<0.8	<0.8	<0.8	<0.8	<0.8
[o-Xylene]	300	75	--	--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4

-- = Not Detected
Gray-shaded entries represent detections.
Yellow-shaded entries represent IL exceedances for water quality performance standards.
Blue-shaded entries represent HRL exceedances for water quality performance standards.

WENCK now part of Stantec

Table 9
Clay County Sanitary Landfill
Hawley, Minnesota

VOCs

W-302B
Lower Aquifer

ORGANIC PARAMETERS ug/L	HRL	IL	May-16	May-17	May-18	May-19	May-20
Acetone	3000	750	--	--	<20	<20	<20
Allyl chloride	30	7.5	--	--	<4.0	<4.0	<4.0
Benzene	2.0	0.5	--	--	<0.2	<0.2	<0.2
Bromobenzene			--	--	<0.4	<0.4	<0.4
Bromochloromethane			--	--	<1.0	<1.0	<1.0
Bromodichloromethane	3.0	0.75	--	--	<0.4	<0.4	<0.4
Bromoform	40	10	--	--	<1.0	<1.0	<1.0
Bromomethane	10	2.5	--	--	<1.0	<1.0	<1.0
n-Butylbenzene			--	--	<1.0	<0.4	<0.4
sec-Butylbenzene			--	--	<0.4	<0.4	<0.4
tert-Butylbenzene			--	--	<0.4	<0.4	<0.4
Carbon tetrachloride	1.0	0.25	--	--	<0.05	<0.05	<0.05
Chlorobenzene	100	25	--	--	<0.4	<0.4	<0.4
Chlorodibromomethane	10	2.5	--	--	<0.4	<0.4	<0.4
Chloroethane			--	--	<1.0	<1.0	<1.0
Chloroform	20	5.0	--	--	<1.0	<1.0	<1.0
Chloromethane			--	--	<1.0	<1.0	<1.0
2-Chlorotoluene			--	--	<0.4	<0.4	<0.4
4-Chlorotoluene			--	--	<0.4	<0.4	<0.4
Cumene (*isopropylbenzene*)	300	75	--	--	<0.4	<0.4	<0.4
1,2-Dibromo-3-chloropropane			--	--	<0.12	<0.12	<0.12
1,2-Dibromoethane	0.004	0.001	--	--	<0.05	<0.05	<0.05
Dibromomethane			--	--	<1.0	<1.0	<1.0
1,2-Dichlorobenzene	600	150	--	--	<0.4	<0.4	<0.4
1,3-Dichlorobenzene			--	--	<0.4	<0.4	<0.4
1,4-Dichlorobenzene	10	2.5	--	--	<0.4	<0.4	<0.4
Dichlorodifluoromethane	500	125	--	--	<1.0	<1.0	<1.0
1,1-Dichloroethane	80	20	--	--	<0.4	<0.4	<0.4
1,2-Dichloroethane	1.0	0.25	--	--	<0.2	<0.2	<0.2
1,1-Dichloroethylene	200	50	--	--	<0.4	<0.4	<0.4
cis-1,2-Dichloroethylene	6.0	1.5	--	--	<0.4	<0.4	<0.4
trans-1,2-Dichloroethylene	9.0	2.25	--	--	<0.4	<0.4	<0.4
Dichlorofluoromethane	20	5.0	--	--	<1.0	<1.0	<1.0
1,2-Dichloropropane	5.0	1.25	--	--	<0.4	<0.4	<0.4
1,3-Dichloropropane			--	--	<0.4	<0.4	<0.4
2,2-Dichloropropane			--	--	<1.0	<1.0	<1.0
1,1-Dichloropropene			--	--	<0.4	<0.4	<0.4
cis-1,3-Dichloro-1-propene			--	--	<0.4	<0.4	<0.4
trans-1,3-Dichloro-1-propene			--	--	<0.4	<0.4	<0.4
Ethyl benzene	40	10	--	--	<4.0	<0.4	<0.4
Ethyl ether	200	50	--	--	<0.4	<4.0	<4.0
Hexachlorobutadiene	1.0	0.25	--	--	<0.1	<0.1	<0.1
p-Isopropyltoluene			--	--	<0.4	<0.4	<0.4
Methyl ethyl ketone	4000	1000	--	--	<5.0	<5.0	<5.0
Methyl isobutyl ketone	300	75	--	--	<5.0	<5.0	<5.0
Methyl tert-butyl ether	700	175	--	--	<0.4	<0.4	<0.4
Methylene chloride	5.0	1.25	--	--	<1.0	<1.0	<1.0
Naphthalene	70	17.5	--	--	<1.0	<1.0	<1.0
n-Propylbenzene			--	--	<0.4	<0.4	<0.4
Styrene			--	--	<0.4	<0.4	<0.4
1,1,1,2-Tetrachloroethane	70	17.5	--	--	<0.4	<0.4	<0.4
1,1,2,2-Tetrachloroethane	2.0	0.5	--	--	<0.4	<0.4	<0.4
1,1,2,2-Tetrachloroethylene			--	--	<1.0	<0.4	<0.4
Tetrahydrofuran	600	150	--	--	<10	<10	<10
Toluene	70	17.5	--	--	<0.4	<0.4	<0.4
1,2,3-Trichlorobenzene			--	--	<0.4	<0.4	<0.4
1,2,4-Trichlorobenzene	4.0	1.0	--	--	<0.4	<0.4	<0.4
1,1,1-Trichloroethane	5000	1250	--	--	<0.4	<0.4	<0.4
1,1,2-Trichloroethane	3.0	0.75	--	--	<0.4	<0.4	<0.4
1,1,2-Trichloroethylene	0.4	0.1	--	--	<0.05	<0.05	<0.05
Trichlorofluoromethane	2000	500	--	--	<0.4	<0.4	<0.4
1,2,3-Trichloropropane	7.0	1.75	--	--	<0.01	<0.01	<0.01
1,1,2-Trichlorotrifluoroethane			--	--	<1.0	<1.0	<1.0
1,2,4-Trimethylbenzene	30	7.5	--	--	<1.0	<1.0	<1.0
1,3,5-Trimethylbenzene	30	7.5	--	--	<1.0	<0.4	<0.4
Vinyl chloride	0.2	0.05	--	--	<0.05	<0.05	<0.05
TOTAL Xylenes	300	75	--	--	<1.2	<1.2	<1.2
[m & p-Xylene]	300	75	--	--	<0.8	<0.8	<0.8
[o-Xylene]	300	75	--	--	<0.4	<0.4	<0.4

-- = Not Detected
Gray-shaded entries represent detections.
Yellow-shaded entries represent IL exceedances for water quality performance standards.
Blue-shaded entries represent HRL exceedances for water quality performance standards.

WENCK now part of Stantec

Table 9
Clay County Sanitary Landfill
Hawley, Minnesota

VOCs

C-1
Upper Aquifer
Spring of Odd Years

ORGANIC PARAMETERS ug/L	May-15	May-17	Apr-19
Acetone	80.1	--	<20
Allyl chloride	--	--	<4.0
Benzene	--	--	0.21
Bromobenzene	--	--	<0.4
Bromochloromethane	--	--	<1.0
Bromodichloromethane	--	--	<0.4
Bromoform	--	--	<1.0
Bromomethane	--	--	<1.0
n-Butylbenzene	--	--	<0.4
sec-Butylbenzene	--	--	<0.4
tert-Butylbenzene	--	--	<0.4
Carbon tetrachloride	--	--	<0.2
Chlorobenzene	--	--	<0.4
Chlorodibromomethane	--	--	<0.4
Chloroethane	--	--	<1.0
Chloroform	--	--	<1.0
Chloromethane	--	--	<1.0
2-Chlorotoluene	--	--	<0.4
4-Chlorotoluene	--	--	<0.4
Cumene (*isopropylbenzene*)	--	--	<0.4
1,2-Dibromo-3-chloropropane	--	--	<0.12
1,2-Dibromoethane	--	--	<0.05
Dibromomethane	--	--	<1.0
1,2-Dichlorobenzene	--	--	<0.4
1,3-Dichlorobenzene	--	--	<0.4
1,4-Dichlorobenzene	--	--	<0.4
Dichlorodifluoromethane	--	--	<1.0
1,1-Dichloroethane	--	--	0.51
1,2-Dichloroethane	--	--	<0.2
1,1-Dichloroethylene	--	--	<0.4
cis-1,2-Dichloroethylene	--	1.3	2.9
trans-1,2-Dichloroethylene	--	--	<0.4
Dichlorofluoromethane	--	0.84	1.9
1,2-Dichloropropane	--	--	<0.4
1,3-Dichloropropane	--	--	<0.4
2,2-Dichloropropane	--	--	<1.0
1,1-Dichloropropene	--	--	<0.4
cis-1,3-Dichloro-1-propene	--	--	<0.4
trans-1,3-Dichloro-1-propene	--	--	<0.4
Ethyl benzene	--	--	<0.4
Ethyl ether	--	--	<4.0
Hexachlorobutadiene	--	--	<0.2
p-Isopropyltoluene	--	--	<0.4
Methyl ethyl ketone	--	--	<5.0
Methyl isobutyl ketone	--	--	<5.0
Methyl tert-butyl ether	--	--	<0.4
Methylene chloride	--	--	<1.0
Naphthalene	--	--	<1.0
n-Propylbenzene	--	--	<0.4
Styrene	--	--	<0.4
1,1,1,2-Tetrachloroethane	--	--	<0.4
1,1,2,2-Tetrachloroethane	--	--	<0.4
1,1,2,2-Tetrachloroethylene	--	--	<0.4
Tetrahydrofuran	--	--	<10
Toluene	--	--	<0.4
1,2,3-Trichlorobenzene	--	--	<0.4
1,2,4-Trichlorobenzene	--	--	<0.4
1,1,1-Trichloroethane	--	--	<0.4
1,1,2-Trichloroethane	--	--	<0.4
1,1,2-Trichloroethylene	0.84	0.7	0.79
Trichlorofluoromethane	--	--	<0.4
1,2,3-Trichloropropane	--	--	<0.01
1,1,2-Trichlorotrifluoroethane	--	--	<1.0
1,2,4-Trimethylbenzene	--	--	<1.0
1,3,5-Trimethylbenzene	--	--	<0.4
Vinyl chloride	--	0.27	0.42
TOTAL Xylenes	--	--	<1.2
[m & p-Xylene]	--	--	<0.8
[o-Xylene]	--	--	<0.4

-- = Not Detected
Gray-shaded entries represent detections.

WENCK now part of Stantec

Table 9
Clay County Sanitary Landfill
Hawley, Minnesota

VOCs

C-4
Upper Aquifer
Spring of Odd Years
Aquatic Standards

ORGANIC PARAMETERS ug/L	HRL	IL	May-15	May-17	Apr-19	Apr-19 (DUP)
Acetone			--	--	<20	<20
Allyl chloride			--	--	<4.0	<4.0
Benzene	392	98	--	--	<0.2	<0.2
Bromobenzene			--	--	<0.4	<0.4
Bromochloromethane			--	--	<1.0	<1.0
Bromodichloromethane			--	--	<0.4	<0.4
Bromoform			--	--	<1.0	<1.0
Bromomethane			--	--	<1.0	<1.0
n-Butylbenzene			--	--	<0.4	<0.4
sec-Butylbenzene			--	--	<0.4	<0.4
tert-Butylbenzene			--	--	<0.4	<0.4
Carbon tetrachloride	23.6	5.9	--	--	<0.05	<0.05
Chlorobenzene	80	20	--	--	<0.4	<0.4
Chlorodibromomethane			--	--	<0.4	<0.4
Chloroethane			--	--	<1.0	<1.0
Chloroform	620	155	--	--	<1.0	<1.0
Chloromethane			--	--	<1.0	<1.0
2-Chlorotoluene			--	--	<0.4	<0.4
4-Chlorotoluene			--	--	<0.4	<0.4
Cumene (*isopropylbenzene*)			--	--	<0.4	<0.4
1,2-Dibromo-3-chloropropane			--	--	<0.12	<0.12
1,2-Dibromoethane			--	--	<0.05	<0.05
Dibromomethane			--	--	<1.0	<1.0
1,2-Dichlorobenzene			--	--	<0.4	<0.4
1,3-Dichlorobenzene			--	--	<0.4	<0.4
1,4-Dichlorobenzene			--	--	<0.4	<0.4
Dichlorodifluoromethane			--	--	<1.0	<1.0
1,1-Dichloroethane			--	--	<0.4	<0.4
1,2-Dichloroethane	760	190	--	--	<0.2	<0.2
1,1-Dichloroethylene			--	--	<0.4	<0.4
cis-1,2-Dichloroethylene			--	--	<0.4	<0.4
trans-1,2-Dichloroethylene			--	--	<0.4	<0.4
Dichlorofluoromethane			1.7	1.7	2.2	2.0
1,2-Dichloropropane			--	--	<0.4	<0.4
1,3-Dichloropropane			--	--	<0.4	<0.4
2,2-Dichloropropane			--	--	<1.0	<1.0
1,1-Dichloropropene			--	--	<0.4	<0.4
cis-1,3-Dichloro-1-propene			--	--	<0.4	<0.4
trans-1,3-Dichloro-1-propene			--	--	<0.4	<0.4
Ethyl benzene	272	68	--	--	<0.4	<0.4
Ethyl ether			7.7	9.2	9.5	9.5
Hexachlorobutadiene			--	--	<0.1	<0.1
p-Isopropyltoluene			--	--	<0.4	<0.4
Methyl ethyl ketone			--	--	<5.0	<5.0
Methyl isobutyl ketone			--	--	<5.0	<5.0
Methyl tert-butyl ether			--	--	<0.4	<0.4
Methylene chloride	7760	1940	--	--	<1.0	<1.0
Naphthalene	324	81	--	--	<1.0	<1.0
n-Propylbenzene			--	--	<0.4	<0.4
Styrene			--	--	<0.4	<0.4
1,1,1,2-Tetrachloroethane			--	--	<0.4	<0.4
1,1,2,2-Tetrachloroethane	52	13	--	--	<0.4	<0.4
1,1,2,2-Tetrachloroethylene	35.6	8.9	--	--	<0.4	<0.4
Tetrahydrofuran			11.4	--	<10	<10
Toluene	1012	253	--	--	<0.4	<0.4
1,2,3-Trichlorobenzene			--	--	<0.4	<0.4
1,2,4-Trichlorobenzene			--	--	<0.4	<0.4
1,1,1-Trichloroethane	1316	329	--	--	<0.4	<0.4
1,1,2-Trichloroethane			--	--	<0.4	<0.4
1,1,2-Trichloroethylene	480	120	--	--	<0.05	<0.05
Trichlorofluoromethane			--	--	<0.4	<0.4
1,2,3-Trichloropropane			--	--	<0.01	<0.01
1,1,2-Trichlorotrifluoroethane			--	--	<1.0	<1.0
1,2,4-Trimethylbenzene			--	--	<1.0	<1.0
1,3,5-Trimethylbenzene			--	--	<0.4	<0.4
Vinyl chloride	36.8	9.2	--	0.32	0.47	0.45
TOTAL Xylenes	664	166	--	--	<1.2	<1.2
[m & p-Xylene]			--	--	<0.8	<0.8
[o-Xylene]			--	--	<0.4	<0.4

-- = Not Detected
Gray-shaded entries represent detections.
Yellow-shaded entries represent IL exceedances for water quality performance standards.
Blue-shaded entries represent HRL exceedances for water quality performance standards.

WENCK now part of Stantec

Table 9
Clay County Sanitary Landfill
Hawley, Minnesota

VOCs

C-8
Upper Aquifer
Spring of Odd Years
Aquatic Standards

ORGANIC PARAMETERS ug/L	HRL	IL	May-15	May-17	Apr-19	Oct-19
Acetone			Not Sampled	--	Results Not Obtained Due to Lab Complications	<20
Allyl chloride				--		<4.0
Benzene	392	98		--		<0.2
Bromobenzene				--		<0.4
Bromochloromethane				--		<1.0
Bromodichloromethane				--		<0.4
Bromoform				--		<1.0
Bromomethane				--		<1.0
n-Butylbenzene				--		<0.4
sec-Butylbenzene				--		<0.4
tert-Butylbenzene				--		<0.4
Carbon tetrachloride	23.6	5.9		--		<0.05
Chlorobenzene	80	20		--		<0.4
Chlorodibromomethane				--		<0.4
Chloroethane				--		<1.0
Chloroform	620	155		--		<1.0
Chloromethane				--		<1.0
2-Chlorotoluene				--		<0.4
4-Chlorotoluene				--		<0.4
Cumene (*isopropylbenzene*)				--		<0.4
1,2-Dibromo-3-chloropropane				--		<0.12
1,2-Dibromoethane				--		<0.05
Dibromomethane				--		<1.0
1,2-Dichlorobenzene				--		<0.4
1,3-Dichlorobenzene				--		<0.4
1,4-Dichlorobenzene				--		<0.4
Dichlorodifluoromethane				--		<1.0
1,1-Dichloroethane				--		<0.4
1,2-Dichloroethane	760	190		--		<0.2
1,1-Dichloroethylene				--		<0.4
cis-1,2-Dichloroethylene				--		<0.4
trans-1,2-Dichloroethylene				--		<0.4
Dichlorofluoromethane				0.44		<1.0
1,2-Dichloropropane				--		<0.4
1,3-Dichloropropane				--		<0.4
2,2-Dichloropropane				--		<1.0
1,1-Dichloropropene				--		<0.4
cis-1,3-Dichloro-1-propene				--		<0.4
trans-1,3-Dichloro-1-propene				--		<0.4
Ethyl benzene	272	68		--		<0.4
Ethyl ether				4.2		4.3
Hexachlorobutadiene				--		<0.1
p-Isopropyltoluene				--		<0.4
Methyl ethyl ketone				--		<5.0
Methyl isobutyl ketone				--		<5.0
Methyl tert-butyl ether				--		<0.4
Methylene chloride	7760	1940		--		<1.0
Naphthalene	324	81		--		<1.0
n-Propylbenzene				--		<0.4
Styrene				--		<0.4
1,1,1,2-Tetrachloroethane				--		<0.4
1,1,2,2-Tetrachloroethane	52	13		--		<0.4
1,1,2,2-Tetrachloroethylene	35.6	8.9		--		<0.4
Tetrahydrofuran				--		<10
Toluene	1012	253		--		<0.4
1,2,3-Trichlorobenzene				--		<0.4
1,2,4-Trichlorobenzene				--		<0.4
1,1,1-Trichloroethane	1316	329		--		<0.4
1,1,2-Trichloroethane				--		<0.4
1,1,2-Trichloroethylene	480	120		--		<0.05
Trichlorofluoromethane				--		<0.4
1,2,3-Trichloropropane				--		<0.01
1,1,2-Trichlorotrifluoroethane				--		<1.0
1,2,4-Trimethylbenzene				--		<1.0
1,3,5-Trimethylbenzene				--		<0.4
Vinyl chloride	36.8	9.2		0.049		0.058
TOTAL Xylenes	664	166		--		<1.2
[m & p-Xylene]				--		<0.8
[o-Xylene]				--		<0.4

-- = Not Detected
Gray-shaded entries represent detections.
Yellow-shaded entries represent IL exceedances for water quality performance standards.
Blue-shaded entries represent HRL exceedances for water quality performance standards.

WENCK now part of Stantec

Table 9
Clay County Sanitary Landfill
Hawley, Minnesota

VOCs

C-9
Upper Aquifer
Spring of Odd Years
Aquatic Standards

ORGANIC PARAMETERS ug/L	HRL	IL	May-15	May-17	May-19
Acetone			--	--	<20
Allyl chloride			--	--	<4.0
Benzene	392	98	--	--	<0.2
Bromobenzene			--	--	<0.4
Bromochloromethane			--	--	<1.0
Bromodichloromethane			--	--	<0.4
Bromoform			--	--	<1.0
Bromomethane			--	--	<1.0
n-Butylbenzene			--	--	<0.4
sec-Butylbenzene			--	--	<0.4
tert-Butylbenzene			--	--	<0.4
Carbon tetrachloride	23.6	5.9	--	--	<0.05
Chlorobenzene	80	20	--	--	<0.4
Chlorodibromomethane			--	--	<0.4
Chloroethane			--	--	<1.0
Chloroform	620	155	--	--	<1.0
Chloromethane			--	--	1.8
2-Chlorotoluene			--	--	<0.4
4-Chlorotoluene			--	--	<0.4
Cumene (*isopropylbenzene*)			--	--	<0.4
1,2-Dibromo-3-chloropropane			--	--	<0.12
1,2-Dibromoethane			--	--	<0.05
Dibromomethane			--	--	<1.0
1,2-Dichlorobenzene			--	--	<0.4
1,3-Dichlorobenzene			--	--	<0.4
1,4-Dichlorobenzene			--	--	<0.4
Dichlorodifluoromethane			--	--	<1.0
1,1-Dichloroethane			--	--	0.55
1,2-Dichloroethane	760	190	--	--	<0.2
1,1-Dichloroethylene			--	--	<0.4
cis-1,2-Dichloroethylene			--	--	0.42
trans-1,2-Dichloroethylene			--	--	<0.4
Dichlorofluoromethane			--	--	<1.0
1,2-Dichloropropane			--	--	<0.4
1,3-Dichloropropane			--	--	<0.4
2,2-Dichloropropane			--	--	<1.0
1,1-Dichloropropene			--	--	<0.4
cis-1,3-Dichloro-1-propene			--	--	<0.4
trans-1,3-Dichloro-1-propene			--	--	<0.4
Ethyl benzene	272	68	--	--	<0.4
Ethyl ether			33.1	29.2	29.5
Hexachlorobutadiene			--	--	<0.1
p-Isopropyltoluene			--	--	<0.4
Methyl ethyl ketone			--	--	<5.0
Methyl isobutyl ketone			--	--	<5.0
Methyl tert-butyl ether			--	0.6	0.83
Methylene chloride	7760	1940	--	--	<1.0
Naphthalene	324	81	--	--	<1.0
n-Propylbenzene			--	--	<0.4
Styrene			--	--	<0.4
1,1,1,2-Tetrachloroethane			--	--	<0.4
1,1,2,2-Tetrachloroethane	52	13	--	--	<0.4
1,1,2,2-Tetrachloroethylene	35.6	8.9	--	--	<0.4
Tetrahydrofuran			--	--	<10
Toluene	1012	253	--	--	<0.4
1,2,3-Trichlorobenzene			--	--	<0.4
1,2,4-Trichlorobenzene			--	--	<0.4
1,1,1-Trichloroethane	1316	329	--	--	<0.4
1,1,2-Trichloroethane			--	--	<0.4
1,1,2-Trichloroethylene	480	120	--	--	<0.05
Trichlorofluoromethane			--	--	<0.4
1,2,3-Trichloropropane			--	--	<0.01
1,1,2-Trichlorotrifluoroethane			--	--	<1.0
1,2,4-Trimethylbenzene			--	--	<1.0
1,3,5-Trimethylbenzene			--	--	<0.4
Vinyl chloride	36.8	9.2	--	--	0.11
TOTAL Xylenes	664	166	--	--	<1.2
[m & p-Xylene]			--	--	<0.8
[o-Xylene]			--	--	<0.4

-- = Not Detected
Gray-shaded entries represent detections.
Yellow-shaded entries represent IL exceedances for water quality performance standards.
Blue-shaded entries represent HRL exceedances for water quality performance standards.

WENCK now part of Stantec

Table 9
Clay County Sanitary Landfill
Hawley, Minnesota

VOCs

C-10
Upper Aquifer
Spring of Odd Years

ORGANIC PARAMETERS ug/L	May-15	May-17	Apr-19
Acetone	--	--	<20
Allyl chloride	--	--	<4.0
Benzene	--	--	<0.2
Bromobenzene	--	--	<0.4
Bromochloromethane	--	--	<1.0
Bromodichloromethane	--	--	<0.4
Bromoform	--	--	<1.0
Bromomethane	--	--	<1.0
n-Butylbenzene	--	--	<0.4
sec-Butylbenzene	--	--	<0.4
tert-Butylbenzene	--	--	<0.4
Carbon tetrachloride	--	--	<0.05
Chlorobenzene	--	--	<0.4
Chlorodibromomethane	--	--	<0.4
Chloroethane	--	--	<1.0
Chloroform	--	--	<1.0
Chloromethane	--	--	<1.0
2-Chlorotoluene	--	--	<0.4
4-Chlorotoluene	--	--	<0.4
Cumene (*isopropylbenzene*)	--	--	<0.4
1,2-Dibromo-3-chloropropane	--	--	<0.12
1,2-Dibromoethane	--	--	<0.05
Dibromomethane	--	--	<1.0
1,2-Dichlorobenzene	--	--	<0.4
1,3-Dichlorobenzene	--	--	<0.4
1,4-Dichlorobenzene	--	--	<0.4
Dichlorodifluoromethane	--	--	<1.0
1,1-Dichloroethane	--	--	<0.4
1,2-Dichloroethane	--	--	<0.2
1,1-Dichloroethylene	--	--	<0.4
cis-1,2-Dichloroethylene	--	--	<0.4
trans-1,2-Dichloroethylene	--	--	<0.4
Dichlorofluoromethane	--	--	<1.0
1,2-Dichloropropane	--	--	<0.4
1,3-Dichloropropane	--	--	<0.4
2,2-Dichloropropane	--	--	<1.0
1,1-Dichloropropene	--	--	<0.4
cis-1,3-Dichloro-1-propene	--	--	<0.4
trans-1,3-Dichloro-1-propene	--	--	<0.4
Ethyl benzene	--	--	<0.4
Ethyl ether	6.4	4.5	<4.0
Hexachlorobutadiene	--	--	<0.1
p-Isopropyltoluene	--	--	<0.4
Methyl ethyl ketone	--	--	<5.0
Methyl isobutyl ketone	--	--	<5.0
Methyl tert-butyl ether	--	--	<0.4
Methylene chloride	--	--	<1.0
Naphthalene	--	--	<1.0
n-Propylbenzene	--	--	<0.4
Styrene	--	--	<0.4
1,1,1,2-Tetrachloroethane	--	--	<0.4
1,1,2,2-Tetrachloroethane	--	--	<0.4
1,1,2,2-Tetrachloroethylene	--	--	<0.4
Tetrahydrofuran	--	--	<10
Toluene	--	--	<0.4
1,2,3-Trichlorobenzene	--	--	<0.4
1,2,4-Trichlorobenzene	--	--	<0.4
1,1,1-Trichloroethane	--	--	<0.4
1,1,2-Trichloroethane	--	--	<0.4
1,1,2-Trichloroethylene	--	--	<0.05
Trichlorofluoromethane	--	--	<0.4
1,2,3-Trichloropropane	--	--	<0.01
1,1,2-Trichlorotrifluoroethane	--	--	<1.0
1,2,4-Trimethylbenzene	--	--	<1.0
1,3,5-Trimethylbenzene	--	--	<0.4
Vinyl chloride	--	--	<0.05
TOTAL Xylenes	--	--	<1.2
[m & p-Xylene]	--	--	<0.8
[o-Xylene]	--	--	<0.4

-- = Not Detected
Gray-shaded entries represent detections.

WENCK now part of Stantec

Table 9
Clay County Sanitary Landfill
Hawley, Minnesota

VOCs

C-11
Upper Aquifer

ORGANIC PARAMETERS ug/L	HRL	IL	May-16	May-17	May-18	May-19	May-19 (DUP)	May-20
Acetone	3000	750	--	--	<20	<20	<20	<20
Allyl chloride	30	7.5	--	--	<4.0	<4.0	<4.0	<4.0
Benzene	2.0	0.5	--	--	<0.2	<0.2	<0.2	<0.2
Bromobenzene			--	--	<0.4	<0.4	<0.4	<0.4
Bromochloromethane			--	--	<1.0	<1.0	<1.0	<1.0
Bromodichloromethane	3.0	0.75	--	--	<0.4	<0.4	<0.4	<0.4
Bromoform	40	10	--	--	<1.0	<1.0	<1.0	<1.0
Bromomethane	10	2.5	--	--	<1.0	<1.0	<1.0	<1.0
n-Butylbenzene			--	--	<1.0	<0.4	<0.4	<0.4
sec-Butylbenzene			--	--	<0.4	<0.4	<0.4	<0.4
tert-Butylbenzene			--	--	<0.4	<0.4	<0.4	<0.4
Carbon tetrachloride	1.0	0.25	--	--	<0.05	<0.05	<0.05	<0.05
Chlorobenzene	100	25	--	--	<0.4	<0.4	<0.4	<0.4
Chlorodibromomethane	10	2.5	--	--	<0.4	<0.4	<0.4	<0.4
Chloroethane			--	--	<1.0	<1.0	<1.0	<1.0
Chloroform	20	5.0	--	--	<1.0	<1.0	<1.0	<1.0
Chloromethane			--	--	<1.0	<1.0	1.3	<1.0
2-Chlorotoluene			--	--	<0.4	<0.4	<0.4	<0.4
4-Chlorotoluene			--	--	<0.4	<0.4	<0.4	<0.4
Cumene (*isopropylbenzene*)	300	75	--	--	<0.4	<0.4	<0.4	<0.4
1,2-Dibromo-3-chloropropane			--	--	<0.12	<0.12	<0.12	<0.12
1,2-Dibromoethane	0.004	0.001	--	--	<0.05	<0.05	<0.05	<0.05
Dibromomethane			--	--	<1.0	<1.0	<1.0	<1.0
1,2-Dichlorobenzene	600	150	--	--	<0.4	<0.4	<0.4	<0.4
1,3-Dichlorobenzene			--	--	<0.4	<0.4	<0.4	<0.4
1,4-Dichlorobenzene	10	2.5	--	--	<0.4	<0.4	<0.4	<0.4
Dichlorodifluoromethane	500	125	--	--	<1.0	<1.0	<1.0	<1.0
1,1-Dichloroethane	80	20	--	--	<0.4	<0.4	<0.4	<0.4
1,2-Dichloroethane	1.0	0.25	--	--	<0.2	<0.2	<0.2	<0.2
1,1-Dichloroethylene	200	50	--	--	<0.4	<0.4	<0.4	<0.4
cis-1,2-Dichloroethylene	6.0	1.5	--	--	<0.4	<0.4	<0.4	<0.4
trans-1,2-Dichloroethylene	9.0	2.25	--	--	<0.4	<0.4	<0.4	<0.4
Dichlorofluoromethane	20	5.0	--	--	<1.0	<1.0	<1.0	<1.0
1,2-Dichloropropane	5.0	1.25	--	--	<0.4	<0.4	<0.4	<0.4
1,3-Dichloropropane			--	--	<0.4	<0.4	<0.4	<0.4
2,2-Dichloropropane			--	--	<1.0	<1.0	<1.0	<1.0
1,1-Dichloropropene			--	--	<0.4	<0.4	<0.4	<0.4
cis-1,3-Dichloro-1-propene			--	--	<0.4	<0.4	<0.4	<0.4
trans-1,3-Dichloro-1-propene			--	--	<0.4	<0.4	<0.4	<0.4
Ethyl benzene	40	10	--	--	<4.0	<0.4	<0.4	<0.4
Ethyl ether	200	50	--	--	<0.4	<4.0	<4.0	<4.0
Hexachlorobutadiene	1.0	0.25	--	--	<0.1	<0.1	<0.1	<0.1
p-Isopropyltoluene			--	--	<0.4	<0.4	<0.4	<0.4
Methyl ethyl ketone	4000	1000	--	--	<5.0	<5.0	<5.0	<5.0
Methyl isobutyl ketone	300	75	--	--	<5.0	<5.0	<5.0	<5.0
Methyl tert-butyl ether	700	175	--	--	<0.4	<0.4	<0.4	<0.4
Methylene chloride	5.0	1.25	--	--	<1.0	<1.0	<1.0	<1.0
Naphthalene	70	17.5	--	--	<1.0	<1.0	<1.0	<1.0
n-Propylbenzene			--	--	<0.4	<0.4	<0.4	<0.4
Styrene			--	--	<0.4	<0.4	<0.4	<0.4
1,1,1,2-Tetrachloroethane	70	17.5	--	--	<0.4	<0.4	<0.4	<0.4
1,1,2,2-Tetrachloroethane	2.0	0.5	--	--	<0.4	<0.4	<0.4	<0.4
1,1,2,2-Tetrachloroethylene			--	--	<1.0	<0.4	<0.4	<0.4
Tetrahydrofuran	600	150	--	--	<10	<10	<10	<10
Toluene	70	17.5	--	--	<0.4	<0.4	<0.4	<0.4
1,2,3-Trichlorobenzene			--	--	<0.4	<0.4	<0.4	<0.4
1,2,4-Trichlorobenzene	4.0	1.0	--	--	<0.4	<0.4	<0.4	<0.4
1,1,1-Trichloroethane	5000	1250	--	--	<0.4	<0.4	<0.4	<0.4
1,1,2-Trichloroethane	3.0	0.75	--	--	<0.4	<0.4	<0.4	<0.4
1,1,2-Trichloroethylene	0.4	0.1	--	--	<0.05	<0.05	<0.05	<0.05
Trichlorofluoromethane	2000	500	--	--	<0.4	<0.4	<0.4	<0.4
1,2,3-Trichloropropane	7.0	1.75	--	--	<0.01	<0.01	<0.01	<0.01
1,1,2-Trichlorotrifluoroethane			--	--	<1.0	<1.0	<1.0	<1.0
1,2,4-Trimethylbenzene	30	7.5	--	--	<1.0	<1.0	<1.0	<1.0
1,3,5-Trimethylbenzene	30	7.5	--	--	<1.0	<0.4	<0.4	<0.4
Vinyl chloride	0.2	0.05	--	--	<0.05	<0.05	<0.05	<0.05
TOTAL Xylenes	300	75	--	--	<1.2	<1.2	<1.2	<1.2
[m & p-Xylene]	300	75	--	--	<0.8	<0.8	<0.8	<0.8
[o-Xylene]	300	75	--	--	<0.4	<0.4	<0.4	<0.4

-- = Not Detected

Gray-shaded entries represent detections.
Yellow-shaded entries represent IL exceedances for water quality performance standards.
Blue-shaded entries represent HRL exceedances for water quality performance standards.

WENCK now part of Stantec

Table 9
Clay County Sanitary Landfill
Hawley, Minnesota

VOCs

TW-1
Upper Aquifer
Spring of Odd Years

ORGANIC PARAMETERS ug/L	May-15	May-17	Apr-19
Acetone	--	--	<20
Allyl chloride	--	--	<4.0
Benzene	6.3	6.8	1.9
Bromobenzene	--	--	<0.4
Bromochloromethane	--	--	<1.0
Bromodichloromethane	--	--	<0.4
Bromoform	--	--	<1.0
Bromomethane	--	--	<1.0
n-Butylbenzene	--	--	<0.4
sec-Butylbenzene	--	--	<0.4
tert-Butylbenzene	--	--	<0.4
Carbon tetrachloride	--	--	<0.05
Chlorobenzene	--	--	<0.4
Chlorodibromomethane	--	--	<0.4
Chloroethane	3.0	--	<1.0
Chloroform	--	--	<1.0
Chloromethane	--	--	1.2
2-Chlorotoluene	--	--	<0.4
4-Chlorotoluene	--	--	<0.4
Cumene (*isopropylbenzene*)	2.5	1.6	0.52
1,2-Dibromo-3-chloropropane	--	--	<0.12
1,2-Dibromoethane	--	--	<0.05
Dibromomethane	--	--	<1.0
1,2-Dichlorobenzene	--	--	<0.4
1,3-Dichlorobenzene	--	--	<0.4
1,4-Dichlorobenzene	1.4	1.7	0.86
Dichlorodifluoromethane	--	--	<1.0
1,1-Dichloroethane	1.4	1.2	0.42
1,2-Dichloroethane	--	--	<0.2
1,1-Dichloroethylene	--	--	<0.4
cis-1,2-Dichloroethylene	--	--	<0.4
trans-1,2-Dichloroethylene	--	--	<0.4
Dichlorofluoromethane	6.8	2.7	<1.0
1,2-Dichloropropane	--	2.6	0.49
1,3-Dichloropropane	--	--	<0.4
2,2-Dichloropropane	--	--	<1.0
1,1-Dichloropropene	--	--	<0.4
cis-1,3-Dichloro-1-propene	--	--	<0.4
trans-1,3-Dichloro-1-propene	--	--	<0.4
Ethyl benzene	9.7	--	<0.4
Ethyl ether	48.2	121	22.4
Hexachlorobutadiene	--	--	<0.1
p-Isopropyltoluene	1.5	1.6	<0.4
Methyl ethyl ketone	--	--	<5.0
Methyl isobutyl ketone	--	--	<5.0
Methyl tert-butyl ether	--	--	<0.4
Methylene chloride	--	--	<1.0
Naphthalene	--	--	<1.0
n-Propylbenzene	--	--	<0.4
Styrene	--	--	<0.4
1,1,1,2-Tetrachloroethane	--	--	<0.4
1,1,2,2-Tetrachloroethane	--	--	<0.4
1,1,2,2-Tetrachloroethylene	--	--	<0.4
Tetrahydrofuran	110	182	14.6
Toluene	--	--	<0.4
1,2,3-Trichlorobenzene	--	--	<0.4
1,2,4-Trichlorobenzene	--	--	<0.4
1,1,1-Trichloroethane	--	--	<0.4
1,1,2-Trichloroethane	--	--	<0.4
1,1,2-Trichloroethylene	--	--	<0.05
Trichlorofluoromethane	--	--	<0.4
1,2,3-Trichloropropane	--	--	<0.01
1,1,2-Trichlorotrifluoroethane	--	--	<1.0
1,2,4-Trimethylbenzene	--	--	<1.0
1,3,5-Trimethylbenzene	--	--	<0.4
Vinyl chloride	3.6	4.2	1.4
TOTAL Xylenes	--	--	<1.2
[m & p-Xylene]	--	--	<0.8
[o-Xylene]	--	--	<0.4

-- = Not Detected
Gray-shaded entries represent detections.

WENCK now part of Stantec

Table 9
Clay County Sanitary Landfill
Hawley, Minnesota

VOCs

TW-2
Upper Aquifer
Spring of Odd Years

ORGANIC PARAMETERS ug/L	May-15	May-17	Apr-19
Acetone	--	--	<20
Allyl chloride	--	--	<4.0
Benzene	4.7	3.8	3.7
Bromobenzene	--	--	<0.4
Bromochloromethane	--	--	<1.0
Bromodichloromethane	--	--	<0.4
Bromoform	--	--	<1.0
Bromomethane	--	--	<1.0
n-Butylbenzene	--	--	<0.4
sec-Butylbenzene	--	--	<0.4
tert-Butylbenzene	--	--	<0.4
Carbon tetrachloride	--	--	<0.05
Chlorobenzene	--	--	<0.4
Chlorodibromomethane	--	--	<0.4
Chloroethane	--	--	<1.0
Chloroform	--	--	<1.0
Chloromethane	--	--	<1.0
2-Chlorotoluene	--	--	<0.4
4-Chlorotoluene	--	--	<0.4
Cumene (*isopropylbenzene*)	--	--	0.67
1,2-Dibromo-3-chloropropane	--	--	<0.12
1,2-Dibromoethane	--	--	<0.05
Dibromomethane	--	--	<1.0
1,2-Dichlorobenzene	--	--	<0.4
1,3-Dichlorobenzene	--	--	<0.4
1,4-Dichlorobenzene	--	1.2	1.1
Dichlorodifluoromethane	--	--	<1.0
1,1-Dichloroethane	2.3	1.8	1.3
1,2-Dichloroethane	--	--	<0.2
1,1-Dichloroethylene	--	--	<0.4
cis-1,2-Dichloroethylene	--	--	<0.4
trans-1,2-Dichloroethylene	--	--	<0.4
Dichlorofluoromethane	13.1	7.8	7.4
1,2-Dichloropropane	--	0.82	0.45
1,3-Dichloropropane	--	--	<0.4
2,2-Dichloropropane	--	--	<1.0
1,1-Dichloropropene	--	--	<0.4
cis-1,3-Dichloro-1-propene	--	--	<0.4
trans-1,3-Dichloro-1-propene	--	--	<0.4
Ethyl benzene	--	0.44	<0.4
Ethyl ether	21	7.5	<4.0
Hexachlorobutadiene	--	--	<0.1
p-Isopropyltoluene	--	--	<0.4
Methyl ethyl ketone	--	--	<5.0
Methyl isobutyl ketone	--	--	<5.0
Methyl tert-butyl ether	--	--	<0.4
Methylene chloride	--	--	<1.0
Naphthalene	--	--	<1.0
n-Propylbenzene	--	--	<0.4
Styrene	--	--	<0.4
1,1,1,2-Tetrachloroethane	--	--	<0.4
1,1,2,2-Tetrachloroethane	--	--	<0.4
1,1,2,2-Tetrachloroethylene	--	--	<0.4
Tetrahydrofuran	--	--	<10
Toluene	--	--	<0.4
1,2,3-Trichlorobenzene	--	--	<0.4
1,2,4-Trichlorobenzene	--	--	<0.4
1,1,1-Trichloroethane	--	--	<0.4
1,1,2-Trichloroethane	--	--	<0.4
1,1,2-Trichloroethylene	--	0.052	0.051
Trichlorofluoromethane	--	--	<0.4
1,2,3-Trichloropropane	--	--	<0.01
1,1,2-Trichlorotrifluoroethane	--	--	<1.0
1,2,4-Trimethylbenzene	--	--	<1.0
1,3,5-Trimethylbenzene	--	--	<0.4
Vinyl chloride	3.1	3.7	4.9
TOTAL Xylenes	--	--	<1.2
[m & p-Xylene]	--	--	<0.8
[o-Xylene]	--	--	<0.4

-- = Not Detected
Gray-shaded entries represent detections.

WENCK now part of Stantec

Table 9
Clay County Sanitary Landfill
Hawley, Minnesota

VOCs

TW-3
Upper Aquifer
Spring of Odd Years

ORGANIC PARAMETERS ug/L	May-15	May-17	Apr-19
Acetone	--	--	<20
Allyl chloride	--	--	<4.0
Benzene	1.2	0.34	1.2
Bromobenzene	--	--	<0.4
Bromochloromethane	--	--	<1.0
Bromodichloromethane	--	--	<0.4
Bromoform	--	--	<1.0
Bromomethane	--	--	<1.0
n-Butylbenzene	--	--	<0.4
sec-Butylbenzene	--	--	<0.4
tert-Butylbenzene	--	--	<0.4
Carbon tetrachloride	--	--	<0.05
Chlorobenzene	--	--	<0.4
Chlorodibromomethane	--	--	<0.4
Chloroethane	--	--	<1.0
Chloroform	--	--	<1.0
Chloromethane	--	--	<1.0
2-Chlorotoluene	--	--	<0.4
4-Chlorotoluene	--	--	<0.4
Cumene (*isopropylbenzene*)	--	--	0.74
1,2-Dibromo-3-chloropropane	--	--	<0.12
1,2-Dibromoethane	--	--	<0.05
Dibromomethane	--	--	<1.0
1,2-Dichlorobenzene	--	--	<0.4
1,3-Dichlorobenzene	--	--	<0.4
1,4-Dichlorobenzene	1.6	1.6	0.53
Dichlorodifluoromethane	--	--	<1.0
1,1-Dichloroethane	--	--	0.41
1,2-Dichloroethane	--	--	<0.2
1,1-Dichloroethylene	--	--	<0.4
cis-1,2-Dichloroethylene	--	--	<0.4
trans-1,2-Dichloroethylene	--	--	<0.4
Dichlorofluoromethane	--	--	<1.0
1,2-Dichloropropane	--	--	<0.4
1,3-Dichloropropane	--	--	<0.4
2,2-Dichloropropane	--	--	<1.0
1,1-Dichloropropene	--	--	<0.4
cis-1,3-Dichloro-1-propene	--	--	<0.4
trans-1,3-Dichloro-1-propene	--	--	<0.4
Ethyl benzene	--	--	<0.4
Ethyl ether	6.2	1.8	6.4
Hexachlorobutadiene	--	--	<0.1
p-Isopropyltoluene	1.0	1.1	<0.4
Methyl ethyl ketone	--	--	<5.0
Methyl isobutyl ketone	--	--	<5.0
Methyl tert-butyl ether	--	--	<0.4
Methylene chloride	--	--	<1.0
Naphthalene	--	--	<1.0
n-Propylbenzene	--	--	<0.4
Styrene	--	--	<0.4
1,1,1,2-Tetrachloroethane	--	--	<0.4
1,1,2,2-Tetrachloroethane	--	--	<0.4
1,1,2,2-Tetrachloroethylene	--	--	<0.4
Tetrahydrofuran	12.8	--	<10
Toluene	--	--	<0.4
1,2,3-Trichlorobenzene	--	--	<0.4
1,2,4-Trichlorobenzene	--	--	<0.4
1,1,1-Trichloroethane	--	--	<0.4
1,1,2-Trichloroethane	--	--	<0.4
1,1,2-Trichloroethylene	--	--	<0.05
Trichlorofluoromethane	--	--	<0.4
1,2,3-Trichloropropane	--	--	<0.01
1,1,2-Trichlorotrifluoroethane	--	--	<1.0
1,2,4-Trimethylbenzene	--	--	<1.0
1,3,5-Trimethylbenzene	--	--	<0.4
Vinyl chloride	--	0.12	0.33
TOTAL Xylenes	--	--	<1.2
[m & p-Xylene]	--	--	<0.8
[o-Xylene]	--	--	<0.4

-- = Not Detected
Gray-shaded entries represent detections.

WENCK now part of Stantec

Table 9
Clay County Sanitary Landfill
Hawley, Minnesota

VOCs

Lysimeter III-P1

ORGANIC PARAMETERS ug/L	HRL	IL	May-16	Oct-16	May-17	Nov-17	May-18	Oct-18	Apr-19	Oct-19	May-20	Oct-20	Oct-20 (DUP)
Acetone	3000	750	Dry	--	--	--	<20	<20	<20	<20	<20	<20	<20
Allyl chloride	30	7.5		--	--	--	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0
Benzene	2.0	0.5		--	--	--	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.5
Bromobenzene				--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.5
Bromochloromethane				--	--	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromodichloromethane	3.0	0.75		--	--	--	<0.4	<0.4	<0.4	1.4	<0.4	<0.4	<0.5
Bromoform	40	10		--	--	--	<1.0	<1.0	<1.0	6.9	<1.0	<1.0	<4.0
Bromomethane	10	2.5		--	--	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<4.0
n-Butylbenzene				--	--	--	<0.4	<1.0	<0.4	<0.4	<0.4	<0.4	<0.5
sec-Butylbenzene				--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.5
tert-Butylbenzene				--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.5
Carbon tetrachloride	1.0	0.25		--	--	--	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.5
Chlorobenzene	100	25		--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.5
Chlorodibromomethane	10	2.5		--	--	--	<0.4	<0.4	<0.4	2.8	<0.4	<0.4	<0.5
Chloroethane				--	--	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chloroform	20	5.0		--	--	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chloromethane				--	--	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<4.0
2-Chlorotoluene				--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.5
4-Chlorotoluene				--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.5
Cumene (*isopropylbenzene*)	300	75		--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.5
1,2-Dibromo-3-chloropropane				--	--	--	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<4.0
1,2-Dibromoethane	0.004	0.001		--	--	--	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.5
Dibromomethane				--	--	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dichlorobenzene	600	150		--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.5
1,3-Dichlorobenzene				--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.5
1,4-Dichlorobenzene	10	2.5		--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.5
Dichlorodifluoromethane	500	125		--	--	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1-Dichloroethane	80	20		--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.5
1,2-Dichloroethane	1.0	0.25		--	--	--	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.5
1,1-Dichloroethylene	200	50		--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<1.0	<1.0
cis-1,2-Dichloroethylene	6.0	1.5		--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.5
trans-1,2-Dichloroethylene	9.0	2.25		--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.5
Dichlorofluoromethane	20	5.0		--	--	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dichloropropane	5.0	1.25		--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<4.0
1,3-Dichloropropane				--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.5
2,2-Dichloropropane				--	--	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1-Dichloropropene				--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.5
cis-1,3-Dichloro-1-propene				--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.5
trans-1,3-Dichloro-1-propene				--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.5
Ethyl benzene	40	10		--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.5
Ethyl ether	200	50		--	--	2.31	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0
Hexachlorobutadiene	1.0	0.25		--	--	--	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1.0
p-Isopropyltoluene				--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.5
Methyl ethyl ketone	4000	1000		--	--	--	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Methyl isobutyl ketone	300	75		--	--	--	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Methyl tert-butyl ether	700	175		--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.5
Methylene chloride	5.0	1.25		--	--	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<4.0
Naphthalene	70	17.5		--	--	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
n-Propylbenzene				--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.5
Styrene				--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.5
1,1,1,2-Tetrachloroethane	70	17.5		--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.5
1,1,2,2-Tetrachloroethane	2.0	0.5		--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.5
1,1,2,2-Tetrachloroethylene				--	--	--	<0.4	<1.0	<0.4	<0.4	<0.4	<0.4	<0.5
Tetrahydrofuran	600	150		--	--	--	<10	<10	<10	<10	<10	<10	<10
Toluene	70	17.5		--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.5
1,2,3-Trichlorobenzene				--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.5
1,2,4-Trichlorobenzene	4.0	1.0		--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.5
1,1,1-Trichloroethane	5000	1250		--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<1.0	<0.5
1,1,2-Trichloroethane	3.0	0.75		--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.5
1,1,2-Trichloroethylene	0.4	0.1		--	--	--	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.4
Trichlorofluoromethane	2000	500		--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.5
1,2,3-Trichloropropane	7.0	1.75		--	--	--	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<4.0
1,1,2-Trichlorotrifluoroethane				--	--	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2,4-Trimethylbenzene	30	7.5		--	--	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5
1,3,5-Trimethylbenzene	30	7.5		--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.5
Vinyl chloride	0.2	0.05		--	--	--	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2
TOTAL Xylenes	300	75		--	--	--	<2.4	<1.2	<1.2	<1.2	<1.2	<1.2	<1.5
[m & p-Xylene]	300	75		--	--	--	<2.0	<0.8	<0.8	<0.8	<0.8	<0.8	<1.0
[o-Xylene]	300	75		--	--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.5

-- = Not Detected

Gray-shaded entries represent detections.
Yellow-shaded entries represent IL exceedances for water quality performance standards.
Blue-shaded entries represent HRL exceedances for water quality performance standards.

WENCK now part of Stantec

Table 9
Clay County Sanitary Landfill
Hawley, Minnesota

VOCs

Lysimeter III-P2

ORGANIC PARAMETERS ug/L	HRL	IL	May-16	Oct-16	May-17	Nov-17	May-18	Oct-18	Apr-19	Oct-19	May-20	Oct-20
Acetone	3000	750	Dry	Dry	--	--	<20	<20	<20	<20	<20	<20
Allyl chloride	30	7.5			--	--	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0
Benzene	2.0	0.5			--	--	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Bromobenzene					--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Bromochloromethane					--	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromodichloromethane	3.0	0.75			--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Bromoform	40	10			--	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromomethane	10	2.5			--	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
n-Butylbenzene					--	--	<0.4	<1.0	<0.4	<0.4	<0.4	<0.4
sec-Butylbenzene					--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
tert-Butylbenzene					--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Carbon tetrachloride	1.0	0.25			--	--	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Chlorobenzene	100	25			--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Chlorodibromomethane	10	2.5			--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Chloroethane					--	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chloroform	20	5.0			--	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chloromethane					--	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
2-Chlorotoluene					--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
4-Chlorotoluene					--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Cumene (*isopropylbenzene*)	300	75			--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,2-Dibromo-3-chloropropane					--	--	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12
1,2-Dibromoethane	0.004	0.001			--	--	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Dibromomethane					--	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dichlorobenzene	600	150			--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,3-Dichlorobenzene					--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,4-Dichlorobenzene	10	2.5			--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Dichlorodifluoromethane	500	125			--	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1-Dichloroethane	80	20			--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,2-Dichloroethane	1.0	0.25			--	--	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
1,1-Dichloroethylene	200	50			--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<1.0
cis-1,2-Dichloroethylene	6.0	1.5			--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
trans-1,2-Dichloroethylene	9.0	2.25			--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Dichlorofluoromethane	20	5.0			--	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dichloropropane	5.0	1.25			--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,3-Dichloropropane					--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
2,2-Dichloropropane					--	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1-Dichloropropene					--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
cis-1,3-Dichloro-1-propene					--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
trans-1,3-Dichloro-1-propene					--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Ethyl benzene	40	10			--	--	<0.4	39.1	<0.4	25	<0.4	27.8
Ethyl ether	200	50			--	--	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0
Hexachlorobutadiene	1.0	0.25			--	--	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
p-Isopropyltoluene					--	--	<0.4	<0.4	<0.4	<0.4	<0.4	0.88
Methyl ethyl ketone	4000	1000			--	--	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Methyl isobutyl ketone	300	75			--	--	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Methyl tert-butyl ether	700	175			--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Methylene chloride	5.0	1.25			--	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Naphthalene	70	17.5			--	--	<1.0	1.3	<1.0	<1.0	<1.0	<1.0
n-Propylbenzene					--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Styrene					--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,1,1,2-Tetrachloroethane	70	17.5			--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,1,2,2-Tetrachloroethane	2.0	0.5			--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,1,2,2-Tetrachloroethylene					--	--	<0.40	<1.0	<0.4	<0.4	<0.4	<0.4
Tetrahydrofuran	600	150			--	--	<10	<10	<10	<10	<10	<10
Toluene	70	17.5			--	--	<0.4	3.5	<0.4	1.7	<0.4	0.95
1,2,3-Trichlorobenzene					--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,2,4-Trichlorobenzene	4.0	1.0			--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,1,1-Trichloroethane	5000	1250			--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<1.0
1,1,2-Trichloroethane	3.0	0.75			--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,1,2-Trichloroethylene	0.4	0.1			--	--	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Trichlorofluoromethane	2000	500			--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,2,3-Trichloropropane	7.0	1.75			--	--	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
1,1,2-Trichlorotrifluoroethane					--	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2,4-Trimethylbenzene	30	7.5			--	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,3,5-Trimethylbenzene	30	7.5			--	--	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Vinyl chloride	0.2	0.05			--	--	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
TOTAL Xylenes	300	75			--	3.97	<2.4	189	<1.2	136	<1.2	168
[m & p-Xylene]	300	75			--	3.97	<2.0	70.8	<0.8	41.7	<0.8	81.3
[o-Xylene]	300	75			--	--	<0.4	118	<0.4	94.6	<0.4	86.4

-- = Not Detected

Gray-shaded entries represent detections.

Yellow-shaded entries represent IL exceedances for water quality performance standards.

Blue-shaded entries represent HRL exceedances for water quality performance standards.

WENCK now part of Stantec

Table 9
Clay County Sanitary Landfill
Hawley, Minnesota

VOCs

Lysimeter III-P3

ORGANIC PARAMETERS ug/L	HRL	IL	May-16	Oct-16	May-17	Nov-17	May-18	Oct-18	Apr-19	Oct-19	May-20	Oct-20
Acetone	3000	750	Dry	Dry	--	--	--	--	Dry	Dry	Dry	Dry
Allyl chloride	30	7.5			--	--	--	--				
Benzene	2.0	0.5			--	--	--	--				
Bromobenzene					--	--	--	--				
Bromochloromethane					--	--	--	--				
Bromodichloromethane	3.0	0.75			--	--	--	--				
Bromoform	40	10			--	--	--	--				
Bromomethane	10	2.5			--	--	--	--				
n-Butylbenzene					--	--	--	--				
sec-Butylbenzene					--	--	--	--				
tert-Butylbenzene					--	--	--	--				
Carbon tetrachloride	1.0	0.25			--	--	--	--				
Chlorobenzene	100	25			--	--	--	--				
Chlorodibromomethane	10	2.5			--	--	--	--				
Chloroethane					--	--	--	--				
Chloroform	20	5.0			--	--	--	--				
Chloromethane					--	--	--	--				
2-Chlorotoluene					--	--	--	--				
4-Chlorotoluene					--	--	--	--				
Cumene (*isopropylbenzene*)	300	75			--	--	--	--				
1,2-Dibromo-3-chloropropane					--	--	--	--				
1,2-Dibromoethane	0.004	0.001			--	--	--	--				
Dibromomethane					--	--	--	--				
1,2-Dichlorobenzene	600	150			--	--	--	--				
1,3-Dichlorobenzene					--	--	--	--				
1,4-Dichlorobenzene	10	2.5			--	--	--	--				
Dichlorodifluoromethane	500	125			--	--	--	--				
1,1-Dichloroethane	80	20			--	--	--	--				
1,2-Dichloroethane	1.0	0.25			--	--	--	--				
1,1-Dichloroethylene	200	50			--	--	--	--				
cis-1,2-Dichloroethylene	6.0	1.5			--	--	--	--				
trans-1,2-Dichloroethylene	9.0	2.25			--	--	--	--				
Dichlorofluoromethane	20	5.0			--	--	--	--				
1,2-Dichloropropane	5.0	1.25			--	--	--	--				
1,3-Dichloropropane					--	--	--	--				
2,2-Dichloropropane					--	--	--	--				
1,1-Dichloropropene					--	--	--	--				
cis-1,3-Dichloro-1-propene					--	--	--	--				
trans-1,3-Dichloro-1-propene					--	--	--	--				
Ethyl benzene	40	10			--	--	--	--				
Ethyl ether	200	50			--	--	--	--				
Hexachlorobutadiene	1.0	0.25			--	--	--	--				
p-Isopropyltoluene					--	--	--	--				
Methyl ethyl ketone	4000	1000			--	--	--	--				
Methyl isobutyl ketone	300	75			--	--	--	--				
Methyl tert-butyl ether	700	175			--	--	--	--				
Methylene chloride	5.0	1.25			--	--	--	--				
Naphthalene	70	17.5			--	--	--	--				
n-Propylbenzene					--	--	--	--				
Styrene					--	--	--	--				
1,1,1,2-Tetrachloroethane	70	17.5			--	--	--	--				
1,1,2,2-Tetrachloroethane	2.0	0.5			--	--	--	--				
1,1,2,2-Tetrachloroethylene					--	--	--	--				
Tetrahydrofuran	600	150			--	--	--	--				
Toluene	70	17.5			--	--	--	--				
1,2,3-Trichlorobenzene					--	--	--	--				
1,2,4-Trichlorobenzene	4.0	1.0			--	--	--	--				
1,1,1-Trichloroethane	5000	1250			--	--	--	--				
1,1,2-Trichloroethane	3.0	0.75			--	--	--	--				
1,1,2-Trichloroethylene	0.4	0.1			--	--	--	--				
Trichlorofluoromethane	2000	500			--	--	--	--				
1,2,3-Trichloropropane	7.0	1.75			--	--	--	--				
1,1,2-Trichlorotrifluoroethane					--	--	--	--				
1,2,4-Trimethylbenzene	30	7.5			--	--	--	--				
1,3,5-Trimethylbenzene	30	7.5			--	--	--	--				
Vinyl chloride	0.2	0.05			--	--	--	--				
TOTAL Xylenes	300	75			--	3.97	--	--				
[m & p-Xylene]	300	75			--	3.97	--	--				
[o-Xylene]	300	75			--	--	--	--				

-- = Not Detected

Gray-shaded entries represent detections.
Yellow-shaded entries represent IL exceedances for water quality performance standards.
Blue-shaded entries represent HRL exceedances for water quality performance standards.

WENCK now part of Stantec

Table 9
Clay County Sanitary Landfill
Hawley, Minnesota

VOCs

Lysimeter IV-P1&2

ORGANIC PARAMETERS ug/L	HRL	IL	May-16	Oct-16	May-17	Nov-17	May-18	Oct-18	Apr-19	Oct-19	May-20	Oct-20
Acetone	3000	750	Obstructed	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry
Allyl chloride	30	7.5										
Benzene	2.0	0.5										
Bromobenzene												
Bromochloromethane												
Bromodichloromethane	3.0	0.75										
Bromoform	40	10										
Bromomethane	10	2.5										
n-Butylbenzene												
sec-Butylbenzene												
tert-Butylbenzene												
Carbon tetrachloride	1.0	0.25										
Chlorobenzene	100	25										
Chlorodibromomethane	10	2.5										
Chloroethane												
Chloroform	20	5.0										
Chloromethane												
2-Chlorotoluene												
4-Chlorotoluene												
Cumene (*isopropylbenzene*)	300	75										
1,2-Dibromo-3-chloropropane												
1,2-Dibromoethane	0.004	0.001										
Dibromomethane												
1,2-Dichlorobenzene	600	150										
1,3-Dichlorobenzene												
1,4-Dichlorobenzene	10	2.5										
Dichlorodifluoromethane	500	125										
1,1-Dichloroethane	80	20										
1,2-Dichloroethane	1.0	0.25										
1,1-Dichloroethylene	200	50										
cis-1,2-Dichloroethylene	6.0	1.5										
trans-1,2-Dichloroethylene	9.0	2.25										
Dichlorofluoromethane	20	5.0										
1,2-Dichloropropane	5.0	1.25										
1,3-Dichloropropane												
2,2-Dichloropropane												
1,1-Dichloropropene												
cis-1,3-Dichloro-1-propene												
trans-1,3-Dichloro-1-propene												
Ethyl benzene	40	10										
Ethyl ether	200	50										
Hexachlorobutadiene	1.0	0.25										
p-Isopropyltoluene												
Methyl ethyl ketone	4000	1000										
Methyl isobutyl ketone	300	75										
Methyl tert-butyl ether	700	175										
Methylene chloride	5.0	1.25										
Naphthalene	70	17.5										
n-Propylbenzene												
Styrene												
1,1,1,2-Tetrachloroethane	70	17.5										
1,1,2,2-Tetrachloroethane	2.0	0.5										
1,1,2,2-Tetrachloroethylene												
Tetrahydrofuran	600	150										
Toluene	70	17.5										
1,2,3-Trichlorobenzene												
1,2,4-Trichlorobenzene	4.0	1.0										
1,1,1-Trichloroethane	5000	1250										
1,1,2-Trichloroethane	3.0	0.75										
1,1,2-Trichloroethylene	0.4	0.1										
Trichlorofluoromethane	2000	500										
1,2,3-Trichloropropane	7.0	1.75										
1,1,2-Trichlorotrifluoroethane												
1,2,4-Trimethylbenzene	30	7.5										
1,3,5-Trimethylbenzene	30	7.5										
Vinyl chloride	0.2	0.05										
TOTAL Xylenes	300	75										
[m & p-Xylene]	300	75										
[o-Xylene]	300	75										

-- = Not Detected

Gray-shaded entries represent detections.
Yellow-shaded entries represent IL exceedances for water quality performance standards.
Blue-shaded entries represent HRL exceedances for water quality performance standards.

WENCK now part of Stantec

Table 9
Clay County Sanitary Landfill
Hawley, Minnesota

VOCs

Lysimeter IV-P3

ORGANIC PARAMETERS	HRL	IL	May-16	Oct-16	May-17	Nov-17	May-17	May-18	Apr-19	Oct-19	May-20	Oct-20
ug/L												
Acetone	3000	750	Dry	Dry	Dry	Dry	Dry	Obstructed	Obstructed	Obstructed	Obstructed	Obstructed
Allyl chloride	30	7.5										
Benzene	2.0	0.5										
Bromobenzene												
Bromochloromethane												
Bromodichloromethane	3.0	0.75										
Bromoform	40	10										
Bromomethane	10	2.5										
n-Butylbenzene												
sec-Butylbenzene												
tert-Butylbenzene												
Carbon tetrachloride	1.0	0.25										
Chlorobenzene	100	25										
Chlorodibromomethane	10	2.5										
Chloroethane												
Chloroform	20	5.0										
Chloromethane												
2-Chlorotoluene												
4-Chlorotoluene												
Cumene (*isopropylbenzene*)	300	75										
1,2-Dibromo-3-chloropropane												
1,2-Dibromoethane	0.004	0.001										
Dibromomethane												
1,2-Dichlorobenzene	600	150										
1,3-Dichlorobenzene												
1,4-Dichlorobenzene	10	2.5										
Dichlorodifluoromethane	500	125										
1,1-Dichloroethane	80	20										
1,2-Dichloroethane	1.0	0.25										
1,1-Dichloroethylene	200	50										
cis-1,2-Dichloroethylene	6.0	1.5										
trans-1,2-Dichloroethylene	9.0	2.25										
Dichlorofluoromethane	20	5.0										
1,2-Dichloropropane	5.0	1.25										
1,3-Dichloropropane												
2,2-Dichloropropane												
1,1-Dichloropropene												
cis-1,3-Dichloro-1-propene												
trans-1,3-Dichloro-1-propene												
Ethyl benzene	40	10										
Ethyl ether	200	50										
Hexachlorobutadiene	1.0	0.25										
p-Isopropyltoluene												
Methyl ethyl ketone	4000	1000										
Methyl isobutyl ketone	300	75										
Methyl tert-butyl ether	700	175										
Methylene chloride	5.0	1.25										
Naphthalene	70	17.5										
n-Propylbenzene												
Styrene												
1,1,1,2-Tetrachloroethane	70	17.5										
1,1,2,2-Tetrachloroethane	2.0	0.5										
1,1,2,2-Tetrachloroethylene												
Tetrahydrofuran	600	150										
Toluene	70	17.5										
1,2,3-Trichlorobenzene												
1,2,4-Trichlorobenzene	4.0	1.0										
1,1,1-Trichloroethane	5000	1250										
1,1,2-Trichloroethane	3.0	0.75										
1,1,2-Trichloroethylene	0.4	0.1										
Trichlorofluoromethane	2000	500										
1,2,3-Trichloropropane	7.0	1.75										
1,1,2-Trichlorotrifluoroethane												
1,2,4-Trimethylbenzene	30	7.5										
1,3,5-Trimethylbenzene	30	7.5										
Vinyl chloride	0.2	0.05										
TOTAL Xylenes	300	75										
[m & p-Xylene]	300	75										
[o-Xylene]	300	75										

-- = Not Detected

Gray-shaded entries represent detections.
Yellow-shaded entries represent IL exceedances for water quality performance standards.
Blue-shaded entries represent HRL exceedances for water quality performance standards.

WENCK now part of Stantec

Table 9
Clay County Sanitary Landfill
Hawley, Minnesota

VOCs

R. Ekre
Residence
Spring Event

ORGANIC PARAMETERS ug/L	HRL	IL	May-16	May-17	May-18	May-19	May-20
Acetone	3000	750	Not Sampled - Access Not Granted	Not Sampled - Access Not Granted	Not Sampled - Access Not Granted	Not Sampled - Access Not Granted	Not Sampled - Access Not Granted
Allyl chloride	30	7.5					
Benzene	2.0	0.5					
Bromobenzene							
Bromochloromethane							
Bromodichloromethane	3.0	0.75					
Bromoform	40	10					
Bromomethane	10	2.5					
n-Butylbenzene							
sec-Butylbenzene							
tert-Butylbenzene							
Carbon tetrachloride	1.0	0.25					
Chlorobenzene	100	25					
Chlorodibromomethane	10	2.5					
Chloroethane							
Chloroform	20	5.0					
Chloromethane							
2-Chlorotoluene							
4-Chlorotoluene							
Cumene (*isopropylbenzene*)	300	75					
1,2-Dibromo-3-chloropropane							
1,2-Dibromoethane	0.004	0.001					
Dibromomethane							
1,2-Dichlorobenzene	600	150					
1,3-Dichlorobenzene							
1,4-Dichlorobenzene	10	2.5					
Dichlorodifluoromethane	500	125					
1,1-Dichloroethane	80	20					
1,2-Dichloroethane	1.0	0.25					
1,1-Dichloroethylene	200	50					
cis-1,2-Dichloroethylene	6.0	1.5					
trans-1,2-Dichloroethylene	9.0	2.25					
Dichlorofluoromethane	20	5.0					
1,2-Dichloropropane	5.0	1.25					
1,3-Dichloropropane							
2,2-Dichloropropane							
1,1-Dichloropropene							
cis-1,3-Dichloro-1-propene							
trans-1,3-Dichloro-1-propene							
Ethyl benzene	40	10					
Ethyl ether	200	50					
Hexachlorobutadiene	1.0	0.25					
p-Isopropyltoluene							
Methyl ethyl ketone	4000	1000					
Methyl isobutyl ketone	300	75					
Methyl tert-butyl ether	700	175					
Methylene chloride	5.0	1.25					
Naphthalene	70	17.5					
n-Propylbenzene							
Styrene							
1,1,1,2-Tetrachloroethane	70	17.5					
1,1,2,2-Tetrachloroethane	2.0	0.5					
1,1,2,2-Tetrachloroethylene							
Tetrahydrofuran	600	150					
Toluene	70	17.5					
1,2,3-Trichlorobenzene							
1,2,4-Trichlorobenzene	4.0	1.0					
1,1,1-Trichloroethane	5000	1250					
1,1,2-Trichloroethane	3.0	0.75					
1,1,2-Trichloroethylene	0.4	0.1					
Trichlorofluoromethane	2000	500					
1,2,3-Trichloropropane	7.0	1.75					
1,1,2-Trichlorotrifluoroethane							
1,2,4-Trimethylbenzene	30	7.5					
1,3,5-Trimethylbenzene	30	7.5					
Vinyl chloride	0.2	0.05					
TOTAL Xylenes	300	75					
[m & p-Xylene]	300	75					
[o-Xylene]	300	75					

Gray-shaded entries represent detections.
Yellow-shaded entries represent IL exceedances for water quality performance standards.
Blue-shaded entries represent HRL exceedances for water quality performance standards.

WENCK now part of Stantec

Table 9
Clay County Sanitary Landfill
Hawley, Minnesota

VOCs

J. Ekre
Residence
Spring Event

ORGANIC PARAMETERS ug/L	HRL	IL	May-18	May-19	May-20
Acetone	3000	750	<20	Not Sampled - Access Not Granted	<20
Allyl chloride	30	7.5	<4.0		<4.0
Benzene	2.0	0.5	<0.2		<0.2
Bromobenzene			<0.4		<0.4
Bromochloromethane			<1.0		<1.0
Bromodichloromethane	3.0	0.75	<0.4		<0.4
Bromoform	40	10	<1.0		<1.0
Bromomethane	10	2.5	<1.0		<1.0
n-Butylbenzene			<0.4		<0.4
sec-Butylbenzene			<0.4		<0.4
tert-Butylbenzene			<0.4		<0.4
Carbon tetrachloride	1.0	0.25	<0.05		<0.05
Chlorobenzene	100	25	<0.4		<0.4
Chlorodibromomethane	10	2.5	<0.4		<1.0
Chloroethane			<1.0		<1.0
Chloroform	20	5.0	<1.0		<1.0
Chloromethane			<1.0		<0.4
2-Chlorotoluene			<0.4		<0.4
4-Chlorotoluene			<0.4		<0.4
Cumene (*isopropylbenzene*)	300	75	<0.4		<0.12
1,2-Dibromo-3-chloropropane			<0.12		<0.4
1,2-Dibromoethane	0.004	0.001	<0.05		<0.05
Dibromomethane			<1.0		<1.0
1,2-Dichlorobenzene	600	150	<0.4		<0.4
1,3-Dichlorobenzene			<0.4		<0.4
1,4-Dichlorobenzene	10	2.5	<0.4		<0.4
Dichlorodifluoromethane	500	125	<1.0		<1.0
1,1-Dichloroethane	80	20	<0.4		<0.4
1,2-Dichloroethane	1.0	0.25	<0.2		<0.2
1,1-Dichloroethylene	200	50	<0.4		<0.4
cis-1,2-Dichloroethylene	6.0	1.5	<0.4		<0.4
trans-1,2-Dichloroethylene	9.0	2.25	<0.4		<0.4
Dichlorofluoromethane	20	5.0	<1.0		<1.0
1,2-Dichloropropane	5.0	1.25	<0.4		<0.4
1,3-Dichloropropane			<0.4		<0.4
2,2-Dichloropropane			<1.0		<1.0
1,1-Dichloropropene			<0.4		<0.4
cis-1,3-Dichloro-1-propene			<0.4		<0.4
trans-1,3-Dichloro-1-propene			<0.4		<0.4
Ethyl benzene	40	10	<0.4		<0.4
Ethyl ether	200	50	<4.0		<4.0
Hexachlorobutadiene	1.0	0.25	<0.1		<0.1
p-Isopropyltoluene			<0.4		<0.4
Methyl ethyl ketone	4000	1000	<5.0		<5.0
Methyl isobutyl ketone	300	75	<5.0		<5.0
Methyl tert-butyl ether	700	175	<0.4		<0.4
Methylene chloride	5.0	1.25	<1.0		<1.0
Naphthalene	70	17.5	<1.0		<1.0
n-Propylbenzene			<0.4		<0.4
Styrene			<0.4		<0.4
1,1,1,2-Tetrachloroethane	70	17.5	<0.4		<0.4
1,1,2,2-Tetrachloroethane	2.0	0.5	<0.4		<0.4
1,1,2,2-Tetrachloroethylene			<0.4		<0.4
Tetrahydrofuran	600	150	<10		<10
Toluene	70	17.5	<0.4		<0.4
1,2,3-Trichlorobenzene			<0.4		<0.4
1,2,4-Trichlorobenzene	4.0	1.0	<0.4		<0.4
1,1,1-Trichloroethane	5000	1250	<0.4		<0.4
1,1,2-Trichloroethane	3.0	0.75	<0.4		<0.4
1,1,2-Trichloroethylene	0.4	0.1	<0.05		<0.05
Trichlorofluoromethane	2000	500	<0.4		<0.4
1,2,3-Trichloropropane	7.0	1.75	<0.01		<0.01
1,1,2-Trichlorotrifluoroethane			<1.0		<1.0
1,2,4-Trimethylbenzene	30	7.5	<1.0		<1.0
1,3,5-Trimethylbenzene	30	7.5	<0.4		<0.4
Vinyl chloride	0.2	0.05	<0.05		<0.05
TOTAL Xylenes	300	75	<2.4		<1.2
[m & p-Xylene]	300	75	<2.0		<0.8
[o-Xylene]	300	75	<0.4		<0.4

Gray-shaded entries represent detections.
Yellow-shaded entries represent IL exceedances for water quality performance standards.
Blue-shaded entries represent HRL exceedances for water quality performance standards.

WENCK now part of Stantec

Table 9
Clay County Sanitary Landfill
Hawley, Minnesota

VOCs

Deutscher
Residence
Spring Event

ORGANIC PARAMETERS ug/L	HRL	IL	May-16	May-17	May-18	May-19	May-20
Acetone	3000	750	--	--	<20	<20	<20
Allyl chloride	30	7.5	--	--	<4.0	<4.0	<4.0
Benzene	2.0	0.5	--	--	<0.2	<0.2	<0.2
Bromobenzene			--	--	<0.4	<0.4	<0.4
Bromochloromethane			--	--	<1.0	<1.0	<1.0
Bromodichloromethane	3.0	0.75	--	--	<0.4	<0.4	<0.4
Bromoform	40	10	--	--	<1.0	<1.0	<1.0
Bromomethane	10	2.5	--	--	<1.0	<1.0	<1.0
n-Butylbenzene			--	--	<0.4	<0.4	<0.4
sec-Butylbenzene			--	--	<0.4	<0.4	<0.4
tert-Butylbenzene			--	--	<0.4	<0.4	<0.4
Carbon tetrachloride	1.0	0.25	--	--	<0.05	<0.05	<0.05
Chlorobenzene	100	25	--	--	<0.4	<0.4	<0.4
Chlorodibromomethane	10	2.5	--	--	<0.4	<0.4	<1.0
Chloroethane			--	--	<1.0	<1.0	<1.0
Chloroform	20	5.0	--	--	<1.0	<1.0	<1.0
Chloromethane			--	--	<1.0	<1.0	<0.4
2-Chlorotoluene			--	--	<0.4	<0.4	<0.4
4-Chlorotoluene			--	--	<0.4	<0.4	<0.4
Cumene (*isopropylbenzene*)	300	75	--	--	<0.4	<0.4	<0.12
1,2-Dibromo-3-chloropropane			--	--	<0.12	<0.12	<0.4
1,2-Dibromoethane	0.004	0.001	--	--	<0.05	<0.05	<0.05
Dibromomethane			--	--	<1.0	<1.0	<1.0
1,2-Dichlorobenzene	600	150	--	--	<0.4	<0.4	<0.4
1,3-Dichlorobenzene			--	--	<0.4	<0.4	<0.4
1,4-Dichlorobenzene	10	2.5	--	--	<0.4	<0.4	<0.4
Dichlorodifluoromethane	500	125	--	--	<1.0	<1.0	<1.0
1,1-Dichloroethane	80	20	--	--	<0.4	<0.4	<0.4
1,2-Dichloroethane	1.0	0.25	--	--	<0.2	<0.2	<0.2
1,1-Dichloroethylene	200	50	--	--	<0.4	<0.4	<0.4
cis-1,2-Dichloroethylene	6.0	1.5	--	--	<0.4	<0.4	<0.4
trans-1,2-Dichloroethylene	9.0	2.25	--	--	<0.4	<0.4	<0.4
Dichlorofluoromethane	20	5.0	--	--	<1.0	<1.0	<1.0
1,2-Dichloropropane	5.0	1.25	--	--	<0.4	<0.4	<0.4
1,3-Dichloropropane			--	--	<0.4	<0.4	<0.4
2,2-Dichloropropane			--	--	<1.0	<1.0	<1.0
1,1-Dichloropropene			--	--	<0.4	<0.4	<0.4
cis-1,3-Dichloro-1-propene			--	--	<0.4	<0.4	<0.4
trans-1,3-Dichloro-1-propene			--	--	<0.4	<0.4	<0.4
Ethyl benzene	40	10	--	--	<0.4	<0.4	<0.4
Ethyl ether	200	50	--	--	<4.0	<4.0	<4.0
Hexachlorobutadiene	1.0	0.25	--	--	<0.1	<0.1	<0.1
p-Isopropyltoluene			--	--	<0.4	<0.4	<0.4
Methyl ethyl ketone	4000	1000	--	--	<5.0	<5.0	<5.0
Methyl isobutyl ketone	300	75	--	--	<5.0	<5.0	<5.0
Methyl tert-butyl ether	700	175	--	--	<0.4	<0.4	<0.4
Methylene chloride	5.0	1.25	--	--	<1.0	<1.0	<1.0
Naphthalene	70	17.5	--	--	<1.0	<1.0	<1.0
n-Propylbenzene			--	--	<0.4	<0.4	<0.4
Styrene			--	--	<0.4	<0.4	<0.4
1,1,1,2-Tetrachloroethane	70	17.5	--	--	<0.4	<0.4	<0.4
1,1,2,2-Tetrachloroethane	2.0	0.5	--	--	<0.4	<0.4	<0.4
1,1,2,2-Tetrachloroethylene			--	--	<0.4	<0.4	<0.4
Tetrahydrofuran	600	150	--	--	<10	<10	<10
Toluene	70	17.5	--	--	<0.4	<0.4	<0.4
1,2,3-Trichlorobenzene			--	--	<0.4	<0.4	<0.4
1,2,4-Trichlorobenzene	4.0	1.0	--	--	<0.4	<0.4	<0.4
1,1,1-Trichloroethane	5000	1250	--	--	<0.4	<0.4	<0.4
1,1,2-Trichloroethane	3.0	0.75	--	--	<0.4	<0.4	<0.4
1,1,2-Trichloroethylene	0.4	0.1	--	--	<0.05	<0.05	<0.05
Trichlorofluoromethane	2000	500	--	--	<0.4	<0.4	<0.4
1,2,3-Trichloropropane	7.0	1.75	--	--	<0.01	<0.01	<0.01
1,1,2-Trichlorotrifluoroethane			--	--	<1.0	<1.0	<1.0
1,2,4-Trimethylbenzene	30	7.5	--	--	<1.0	<1.0	<1.0
1,3,5-Trimethylbenzene	30	7.5	--	--	<0.4	<0.4	<0.4
Vinyl chloride	0.2	0.05	--	--	<0.05	<0.05	<0.05
TOTAL Xylenes	300	75	--	--	<2.4	<1.2	<1.2
[m & p-Xylene]	300	75	--	--	<2.0	<0.8	<0.8
[o-Xylene]	300	75	--	--	<0.4	<0.4	<0.4

-- = Not Detected
Gray-shaded entries represent detections.
Yellow-shaded entries represent IL exceedances for water quality performance standards.
Blue-shaded entries represent HRL exceedances for water quality performance standards.

WENCK now part of Stantec

Table 9
Clay County Sanitary Landfill
Hawley, Minnesota

VOCs

Weaver
Residence
Spring Event

ORGANIC PARAMETERS ug/L	HRL	IL	May-16	May-17	May-18	May-19	May-20
Acetone	3000	750	--	Not Sampled - Access Not Granted	Not Sampled - Access Not Granted	Not Sampled - Access Not Granted	Not Sampled - Access Not Granted
Allyl chloride	30	7.5	--				
Benzene	2.0	0.5	--				
Bromobenzene			--				
Bromochloromethane			--				
Bromodichloromethane	3.0	0.75	--				
Bromoform	40	10	--				
Bromomethane	10	2.5	--				
n-Butylbenzene			--				
sec-Butylbenzene			--				
tert-Butylbenzene			--				
Carbon tetrachloride	1.0	0.25	--				
Chlorobenzene	100	25	--				
Chlorodibromomethane	10	2.5	--				
Chloroethane			--				
Chloroform	20	5.0	--				
Chloromethane			--				
2-Chlorotoluene			--				
4-Chlorotoluene			--				
Cumene (*isopropylbenzene*)	300	75	--				
1,2-Dibromo-3-chloropropane			--				
1,2-Dibromoethane	0.004	0.001	--				
Dibromomethane			--				
1,2-Dichlorobenzene	600	150	--				
1,3-Dichlorobenzene			--				
1,4-Dichlorobenzene	10	2.5	--				
Dichlorodifluoromethane	500	125	--				
1,1-Dichloroethane	80	20	--				
1,2-Dichloroethane	1.0	0.25	--				
1,1-Dichloroethylene	200	50	--				
cis-1,2-Dichloroethylene	6.0	1.5	--				
trans-1,2-Dichloroethylene	9.0	2.25	--				
Dichlorofluoromethane	20	5.0	--				
1,2-Dichloropropane	5.0	1.25	--				
1,3-Dichloropropane			--				
2,2-Dichloropropane			--				
1,1-Dichloropropene			--				
cis-1,3-Dichloro-1-propene			--				
trans-1,3-Dichloro-1-propene			--				
Ethyl benzene	40	10	--				
Ethyl ether	200	50	--				
Hexachlorobutadiene	1.0	0.25	--				
p-Isopropyltoluene			--				
Methyl ethyl ketone	4000	1000	--				
Methyl isobutyl ketone	300	75	--				
Methyl tert-butyl ether	700	175	--				
Methylene chloride	5.0	1.25	--				
Naphthalene	70	17.5	--				
n-Propylbenzene			--				
Styrene			--				
1,1,1,2-Tetrachloroethane	70	17.5	--				
1,1,2,2-Tetrachloroethane	2.0	0.5	--				
1,1,2,2-Tetrachloroethylene			--				
Tetrahydrofuran	600	150	--				
Toluene	70	17.5	--				
1,2,3-Trichlorobenzene			--				
1,2,4-Trichlorobenzene	4.0	1.0	--				
1,1,1-Trichloroethane	5000	1250	--				
1,1,2-Trichloroethane	3.0	0.75	--				
1,1,2-Trichloroethylene	0.4	0.1	--				
Trichlorofluoromethane	2000	500	--				
1,2,3-Trichloropropane	7.0	1.75	--				
1,1,2-Trichlorotrifluoroethane			--				
1,2,4-Trimethylbenzene	30	7.5	--				
1,3,5-Trimethylbenzene	30	7.5	--				
Vinyl chloride	0.2	0.05	--				
TOTAL Xylenes	300	75	--				
[m & p-Xylene]	300	75	--				
[o-Xylene]	300	75	--				

Gray-shaded entries represent detections.
Yellow-shaded entries represent IL exceedances for water quality performance standards.
Blue-shaded entries represent HRL exceedances for water quality performance standards.

WENCK now part of Stantec

Table 9
Clay County Sanitary Landfill
Hawley, Minnesota

VOCs

Benesch
Residence
Spring Event

ORGANIC PARAMETERS ug/L	HRL	IL	May-18	May-19	May-20	May-20 (DUP)
Acetone	3000	750	<20	Not Sampled - Access Not Granted	<20	<20
Allyl chloride	30	7.5	<4.0		<4.0	<4.0
Benzene	2.0	0.5	<0.2		<0.2	<0.2
Bromobenzene			<0.4		<0.4	<0.4
Bromochloromethane			<1.0		<1.0	<1.0
Bromodichloromethane	3.0	0.75	<0.4		<0.4	<0.4
Bromoform	40	10	<1.0		<1.0	<1.0
Bromomethane	10	2.5	<1.0		<1.0	<1.0
n-Butylbenzene			<0.4		<0.4	<0.4
sec-Butylbenzene			<0.4		<0.4	<0.4
tert-Butylbenzene			<0.4		<0.4	<0.4
Carbon tetrachloride	1.0	0.25	<0.05		<0.05	<0.05
Chlorobenzene	100	25	<0.4		<0.4	<0.4
Chlorodibromomethane	10	2.5	<0.4		<1.0	<1.0
Chloroethane			<1.0		<1.0	<1.0
Chloroform	20	5.0	<1.0		<1.0	<1.0
Chloromethane			<1.0		<0.4	<0.4
2-Chlorotoluene			<0.4		<0.4	<0.4
4-Chlorotoluene			<0.4		<0.4	<0.4
Cumene (*isopropylbenzene*)	300	75	<0.4		<0.12	<0.12
1,2-Dibromo-3-chloropropane			<0.12		<0.4	<0.4
1,2-Dibromoethane	0.004	0.001	<0.05		<0.05	<0.05
Dibromomethane			<1.0		<1.0	<1.0
1,2-Dichlorobenzene	600	150	<0.4		<0.4	<0.4
1,3-Dichlorobenzene			<0.4		<0.4	<0.4
1,4-Dichlorobenzene	10	2.5	<0.4		<0.4	<0.4
Dichlorodifluoromethane	500	125	<1.0		<1.0	<1.0
1,1-Dichloroethane	80	20	<0.4		<0.4	<0.4
1,2-Dichloroethane	1.0	0.25	<0.2		<0.2	<0.2
1,1-Dichloroethylene	200	50	<0.4		<0.4	<0.4
cis-1,2-Dichloroethylene	6.0	1.5	<0.4		<0.4	<0.4
trans-1,2-Dichloroethylene	9.0	2.25	<0.4		<0.4	<0.4
Dichlorofluoromethane	20	5.0	<1.0		<1.0	<1.0
1,2-Dichloropropane	5.0	1.25	<0.4		<0.4	<0.4
1,3-Dichloropropane			<0.4		<0.4	<0.4
2,2-Dichloropropane			<1.0		<1.0	<1.0
1,1-Dichloropropene			<0.4		<0.4	<0.4
cis-1,3-Dichloro-1-propene			<0.4		<0.4	<0.4
trans-1,3-Dichloro-1-propene			<0.4		<0.4	<0.4
Ethyl benzene	40	10	<0.4		<0.4	<0.4
Ethyl ether	200	50	<4.0		<4.0	<4.0
Hexachlorobutadiene	1.0	0.25	<0.1		<0.1	<0.1
p-Isopropyltoluene			<0.4		<0.4	<0.4
Methyl ethyl ketone	4000	1000	<5.0		<5.0	<5.0
Methyl isobutyl ketone	300	75	<5.0		<5.0	<5.0
Methyl tert-butyl ether	700	175	<0.4		<0.4	<0.4
Methylene chloride	5.0	1.25	<1.0		<1.0	<1.0
Naphthalene	70	17.5	<1.0		<1.0	<1.0
n-Propylbenzene			<0.4		<0.4	<0.4
Styrene			<0.4		<0.4	<0.4
1,1,1,2-Tetrachloroethane	70	17.5	<0.4		<0.4	<0.4
1,1,2,2-Tetrachloroethane	2.0	0.5	<0.4		<0.4	<0.4
1,1,2,2-Tetrachloroethylene			<0.4		<0.4	<0.4
Tetrahydrofuran	600	150	<10		<10	<10
Toluene	70	17.5	<0.4		<0.4	<0.4
1,2,3-Trichlorobenzene			<0.4		<0.4	<0.4
1,2,4-Trichlorobenzene	4.0	1.0	<0.4		<0.4	<0.4
1,1,1-Trichloroethane	5000	1250	<0.4		<0.4	<0.4
1,1,2-Trichloroethane	3.0	0.75	<0.4		<0.4	<0.4
1,1,2-Trichloroethylene	0.4	0.1	<0.05		<0.05	<0.05
Trichlorofluoromethane	2000	500	<0.4		<0.4	<0.4
1,2,3-Trichloropropane	7.0	1.75	<0.01		<0.01	<0.01
1,1,2-Trichlorotrifluoroethane			<1.0		<1.0	<1.0
1,2,4-Trimethylbenzene	30	7.5	<1.0		<1.0	<1.0
1,3,5-Trimethylbenzene	30	7.5	<0.4		<0.4	<0.4
Vinyl chloride	0.2	0.05	<0.05		<0.05	<0.05
TOTAL Xylenes	300	75	<2.4		<1.2	<1.2
[m & p-Xylene]	300	75	<2.0		<0.8	<0.8
[o-Xylene]	300	75	<0.4		<0.4	<0.4

Gray-shaded entries represent detections.
Yellow-shaded entries represent IL exceedances for water quality performance standards.
Blue-shaded entries represent HRL exceedances for water quality performance standards.

WENCK now part of Stantec

Table 9
Clay County Sanitary Landfill
Hawley, Minnesota

VOCs

S-1
Surface Water
(West of W-16)
Aquatic Standards

ORGANIC PARAMETERS ug/L	HRL	IL	Oct-16	May-17	Nov-17	May-18	Oct-18	Apr-19	Oct-19	May-20	Oct-20
Acetone			DRY	DRY	DRY	<20	DRY	<20	DRY	<20	DRY
Allyl chloride						<4.0		<4.0		<4.0	
Benzene	392	98				<0.2		0.33		<0.2	
Bromobenzene						<0.4		<0.4		<0.4	
Bromochloromethane						<1.0		<1.0		<1.0	
Bromodichloromethane						<0.4		<0.4		<0.4	
Bromoform						<1.0		<1.0		<1.0	
Bromomethane						<1.0		<1.0		<1.0	
n-Butylbenzene						<0.4		<0.4		<0.4	
sec-Butylbenzene						<0.4		<0.4		<0.4	
tert-Butylbenzene						<0.4		<0.4		<0.4	
Carbon tetrachloride	23.6	5.9				<0.05		<0.05		<0.05	
Chlorobenzene	80	20				<0.4		<0.4		<0.4	
Chlorodibromomethane						<0.4		<0.4		<1.0	
Chloroethane						<1.0		<1.0		<1.0	
Chloroform	620	155				<1.0		<1.0		<1.0	
Chloromethane						<1.0		<1.0		<0.4	
2-Chlorotoluene						<0.4		<0.4		<0.4	
4-Chlorotoluene						<0.4		<0.4		<0.4	
Cumene (*isopropylbenzene*)						<0.4		<0.4		<0.4	
1,2-Dibromo-3-chloropropane						<0.12		<0.12		<0.12	
1,2-Dibromoethane						<0.05		<0.05		<0.05	
Dibromomethane						<1.0		<1.0		<1.0	
1,2-Dichlorobenzene						<0.4		<0.4		<0.4	
1,3-Dichlorobenzene						<0.4		<0.4		<0.4	
1,4-Dichlorobenzene						<0.4		<0.4		<0.4	
Dichlorodifluoromethane						<1.0		<1.0		<1.0	
1,1-Dichloroethane						<0.4		0.46		<0.4	
1,2-Dichloroethane	760	190				<0.2		<0.2		<0.2	
1,1-Dichloroethylene						<0.4		<0.4		<0.4	
cis-1,2-Dichloroethylene						<0.4		<0.4		<0.4	
trans-1,2-Dichloroethylene						<0.4		<0.4		<0.4	
Dichlorofluoromethane						<1.0		1.2		<1.0	
1,2-Dichloropropane						<0.4		<0.4		<0.4	
1,3-Dichloropropane						<0.4		<0.4		<0.4	
2,2-Dichloropropane						<1.0		<1.0		<1.0	
1,1-Dichloropropene						<0.4		<0.4		<0.4	
cis-1,3-Dichloro-1-propene						<0.4		<0.4		<0.4	
trans-1,3-Dichloro-1-propene						<0.4		<0.4		<0.4	
Ethyl benzene	272	68				<0.4		<0.4		<0.4	
Ethyl ether						<4.0		21		11.6	
Hexachlorobutadiene						<0.1		<0.1		<0.1	
p-Isopropyltoluene						<0.4		<0.4		<0.4	
Methyl ethyl ketone						<5.0		<5.0		<5.0	
Methyl isobutyl ketone						<5.0		<5.0		<5.0	
Methyl tert-butyl ether						<0.4		<0.4		<0.4	
Methylene chloride	7760	1940				<1.0		<1.0		<1.0	
Naphthalene	324	81				<1.0		<1.0		<1.0	
n-Propylbenzene						<0.4		<0.4		<0.4	
Styrene						<0.4		<0.4		<0.4	
1,1,1,2-Tetrachloroethane						<0.4		<0.4		<0.4	
1,1,2,2-Tetrachloroethane	52	13				<0.4		<0.4		<0.4	
1,1,2,2-Tetrachloroethylene	35.6	8.9				<0.4		<0.4		<0.4	
Tetrahydrofuran						<10		<10		<10	
Toluene	1012	253				1.6		<0.4		<0.4	
1,2,3-Trichlorobenzene						<0.4		<0.4		<0.4	
1,2,4-Trichlorobenzene						<0.4		<0.4		<0.4	
1,1,1-Trichloroethane	1316	329				<0.4		<0.4		<0.4	
1,1,2-Trichloroethane						<0.4		<0.4		<0.4	
1,1,2-Trichloroethylene	480	120				<0.05		<0.05		<0.05	
Trichlorofluoromethane						<0.4		<0.4		<0.4	
1,2,3-Trichloropropane						<0.01		<0.01		<0.01	
1,1,2-Trichlorotrifluoroethane						<1.0		<1.0		<1.0	
1,2,4-Trimethylbenzene						<1.0		<1.0		<1.0	
1,3,5-Trimethylbenzene						<0.4		<0.4		<0.4	
Vinyl chloride	36.8	9.2				<0.05		0.24		0.2	
TOTAL Xylenes	664	166				<2.4		<1.2		<1.2	
[m & p-Xylene]						<2.0		<0.8		<0.8	
[o-Xylene]						<0.4		<0.4		<0.4	

-- Not Detected
Gray-shaded entries represent detections.
Yellow-shaded entries represent IL exceedances for water quality performance standards.
Blue-shaded entries represent HRL exceedances for water quality performance standards.

WENCK now part of Stantec

Table 9
Clay County Sanitary Landfill
Hawley, Minnesota

VOCs

S-2 Surface Water (West of W-10) Aquatic Standards							
ORGANIC PARAMETERS ug/L	**HRL**	**IL**	**May-16**	**Nov-17**	**May-18**	**Apr-19**	**May-20**
Acetone			--	--	<20	<20	22.5
Allyl chloride			--	--	<4.0	<4.0	<4.0
Benzene	392	98	--	--	<0.2	<0.2	<0.2
Bromobenzene			--	--	<0.4	<0.4	<0.4
Bromochloromethane			--	--	<1.0	<1.0	<1.0
Bromodichloromethane			--	--	<0.4	<0.4	<0.4
Bromoform			--	--	<1.0	<1.0	<1.0
Bromomethane			--	--	<1.0	<1.0	<1.0
n-Butylbenzene			--	--	<0.4	<0.4	<0.4
sec-Butylbenzene			--	--	<0.4	<0.4	<0.4
tert-Butylbenzene			--	--	<0.4	<0.4	<0.4
Carbon tetrachloride	23.6	5.9	--	--	<0.05	<0.05	<0.05
Chlorobenzene	80	20	--	--	<0.4	<0.4	<0.4
Chlorodibromomethane			--	--	<0.4	<0.4	<1.0
Chloroethane			--	--	<1.0	<1.0	<1.0
Chloroform	620	155	--	--	<1.0	<1.0	<1.0
Chloromethane			--	--	<1.0	1.2	<0.4
2-Chlorotoluene			--	--	<0.4	<0.4	<0.4
4-Chlorotoluene			--	--	<0.4	<0.4	<0.4
Cumene (*isopropylbenzene*)			--	--	<0.4	<0.4	<0.4
1,2-Dibromo-3-chloropropane			--	--	<0.12	<0.12	<0.12
1,2-Dibromoethane			--	--	<0.05	<0.05	<0.05
Dibromomethane			--	--	<1.0	<1.0	<1.0
1,2-Dichlorobenzene			--	--	<0.4	<0.4	<0.4
1,3-Dichlorobenzene			--	--	<0.4	<0.4	<0.4
1,4-Dichlorobenzene			--	--	<0.4	<0.4	<0.4
Dichlorodifluoromethane			--	--	<1.0	<1.0	<1.0
1,1-Dichloroethane			--	--	<0.4	<0.4	<0.4
1,2-Dichloroethane	760	190	--	--	<0.2	<0.2	<0.2
1,1-Dichloroethylene			--	--	<0.4	<0.4	<0.4
cis-1,2-Dichloroethylene			--	--	<0.4	<0.4	<0.4
trans-1,2-Dichloroethylene			--	--	<0.4	<0.4	<0.4
Dichlorofluoromethane			--	--	<1.0	<1.0	<1.0
1,2-Dichloropropane			--	--	<0.4	<0.4	<0.4
1,3-Dichloropropane			--	--	<0.4	<0.4	<0.4
2,2-Dichloropropane			--	--	<1.0	<1.0	<1.0
1,1-Dichloropropene			--	--	<0.4	<0.4	<0.4
cis-1,3-Dichloro-1-propene			--	--	<0.4	<0.4	<0.4
trans-1,3-Dichloro-1-propene			--	--	<0.4	<0.4	<0.4
Ethyl benzene	272	68	--	--	<0.4	<0.4	<0.4
Ethyl ether			--	1.4	5.6	4.6	22
Hexachlorobutadiene			--	--	<0.1	<0.1	<0.1
p-Isopropyltoluene			--	--	<0.4	<0.4	<0.4
Methyl ethyl ketone			--	--	<5.0	<5.0	<5.0
Methyl isobutyl ketone			--	--	<5.0	<5.0	<5.0
Methyl tert-butyl ether			--	--	<0.4	<0.4	<0.4
Methylene chloride	7760	1940	--	--	<1.0	<1.0	<1.0
Naphthalene	324	81	--	--	<1.0	<1.0	<1.0
n-Propylbenzene			--	--	<0.4	<0.4	<0.4
Styrene			--	--	<0.4	<0.4	<0.4
1,1,1,2-Tetrachloroethane			--	--	<0.4	<0.4	<0.4
1,1,2,2-Tetrachloroethane	52	13	--	--	<0.4	<0.4	<0.4
1,1,2,2-Tetrachloroethylene	35.6	8.9	--	--	<0.4	<0.4	<0.4
Tetrahydrofuran			--	--	<10	<10	74.4
Toluene	1012	253	--	--	<0.4	<0.4	<0.4
1,2,3-Trichlorobenzene			--	--	<0.4	<0.4	<0.4
1,2,4-Trichlorobenzene			--	--	<0.4	<0.4	<0.4
1,1,1-Trichloroethane	1316	329	--	--	<0.4	<0.4	<0.4
1,1,2-Trichloroethane			--	--	<0.4	<0.4	<0.4
1,1,2-Trichloroethylene	480	120	--	--	<0.05	<0.05	<0.05
Trichlorofluoromethane			--	--	<0.4	<0.4	<0.4
1,2,3-Trichloropropane			--	--	<0.01	<0.01	<0.01
1,1,2-Trichlorotrifluoroethane			--	--	<1.0	<1.0	<1.0
1,2,4-Trimethylbenzene			--	--	<1.0	<1.0	<1.0
1,3,5-Trimethylbenzene			--	--	<0.4	<0.4	<0.4
Vinyl chloride	36.8	9.2	--	--	0.055	<0.05	<0.05
TOTAL Xylenes	664	166	--	--	<2.4	<1.2	<1.2
[m & p-Xylene]			--	--	<2.0	<0.8	<0.8
[o-Xylene]			--	--	<0.4	<0.4	<0.4

-- Not Detected

Gray-shaded entries represent detections.
Yellow-shaded entries represent IL exceedances for water quality performance standards.
Blue-shaded entries represent HRL exceedances for water quality performance standards.

WENCK now part of Stantec

Table 9
Clay County Sanitary Landfill
Hawley, Minnesota

VOCs

S-3
Surface Water
(SW Corner)
Aquatic Standards

ORGANIC PARAMETERS ug/L	HRL	IL	Oct-16	May-17	Nov-17	May-18	Oct-18	May-19	Oct-19	May-20	Oct-20
Acetone			--	DRY	DRY	<20	<20	<20	<20	<20	<20
Allyl chloride			--			<4.0	<4.0	<4.0	<4.0	<4.0	<4.0
Benzene	392	98	--			<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Bromobenzene			--			<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Bromochloromethane			--			<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromodichloromethane			--			<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Bromoform			--			<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromomethane			--			<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
n-Butylbenzene			--			<0.4	<1.0	<0.4	<0.4	<0.4	<0.4
sec-Butylbenzene			--			<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
tert-Butylbenzene			--			<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Carbon tetrachloride	23.6	5.9	--			<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Chlorobenzene	80	20	--			<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Chlorodibromomethane			--			<0.4	<0.4	<0.4	<0.4	<1.0	<0.4
Chloroethane			--			<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chloroform	620	155	--			<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chloromethane			--			<1.0	<1.0	<1.0	<1.0	<0.4	<1.0
2-Chlorotoluene			--			<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
4-Chlorotoluene			--			<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Cumene (*isopropylbenzene*)			--			<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,2-Dibromo-3-chloropropane			--			<0.12	<0.12	<0.12	<0.12	<0.12	<0.12
1,2-Dibromoethane			--			<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Dibromomethane			--			<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dichlorobenzene			--			<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,3-Dichlorobenzene			--			<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,4-Dichlorobenzene			--			<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Dichlorodifluoromethane			--			<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1-Dichloroethane			--			<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,2-Dichloroethane	760	190	--			<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
1,1-Dichloroethylene			--			<0.4	<0.4	<0.4	<0.4	<0.4	<1.0
cis-1,2-Dichloroethylene			--			<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
trans-1,2-Dichloroethylene			--			<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Dichlorofluoromethane			--			<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dichloropropane			--			<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,3-Dichloropropane			--			<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
2,2-Dichloropropane			--			<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1-Dichloropropene			--			<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
cis-1,3-Dichloro-1-propene			--			<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
trans-1,3-Dichloro-1-propene			--			<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Ethyl benzene	272	68	--			<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Ethyl ether			--			<4.0	<4.0	<4.0	<4.0	<4.0	<4.0
Hexachlorobutadiene			--			<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
p-Isopropyltoluene			--			<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Methyl ethyl ketone			--			<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Methyl isobutyl ketone			--			<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Methyl tert-butyl ether			--			<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Methylene chloride	7760	1940	--			<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Naphthalene	324	81	--			<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
n-Propylbenzene			--			<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Styrene			--			<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,1,1,2-Tetrachloroethane			--			<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,1,2,2-Tetrachloroethane	52	13	--			<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,1,2,2-Tetrachloroethylene	35.6	8.9	--			<0.4	<1.0	<0.4	<0.4	<0.4	<0.4
Tetrahydrofuran			--			<10	<10	<10	<10	<10	<10
Toluene	1012	253	--			<0.4	<0.4	<0.4	<0.4	<0.4	0.52
1,2,3-Trichlorobenzene			--			<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,2,4-Trichlorobenzene			--			<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,1,1-Trichloroethane	1316	329	--			<0.4	<0.4	<0.4	<0.4	<0.4	<1.0
1,1,2-Trichloroethane			--			<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,1,2-Trichloroethylene	480	120	--			<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Trichlorofluoromethane			--			<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,2,3-Trichloropropane			--			<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
1,1,2-Trichlorotrifluoroethane			--			<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2,4-Trimethylbenzene			--			<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,3,5-Trimethylbenzene			--			<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Vinyl chloride	36.8	9.2	--			<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
TOTAL Xylenes	664	166	--			<2.4	<1.2	<1.2	<1.2	<1.2	<1.2
[m & p-Xylene]			--			<2.0	<0.80	<0.8	<0.8	<0.8	<0.8
[o-Xylene]			--			<0.4	<0.4	<0.4	<0.4	<0.4	<0.4

-- Not Detected
Gray-shaded entries represent detections.
Yellow-shaded entries represent IL exceedances for water quality performance standards.
Blue-shaded entries represent HRL exceedances for water quality performance standards.

WENCK now part of Stantec

Table 10
Clay County Sanitary Landfill
Hawley, Minnesota

Inorganics & Metals Results

W-1
Lower Aquifer

		HRL	IL	May-16	May-17	May-18	May-19	May-20
Alkalinity	mg/L			240	241	239	Well Not Sampled Due to Unrepresentative Conditions Within the Casing	238
Arsenic	ug/L	10	2.5	--	--	<0.5		<0.5
Barium	ug/L	2000	500	104	101	103		114
Boron	ug/L	500	125	--	27.2	27.9		29.1
Cadmium	ug/L	0.5	0.125	--	--	<0.08		<0.08
Calcium	mg/L			52.2	45.6	52.7		56.2
Chloride	mg/L			--	--	<1.2		<1.2
Chromium	ug/L	100	25	--	--	<0.5		<0.5
Copper	ug/L	1300	325	--	--	<1.0		<1.0
Iron	ug/L			--	123	64.4		94.6
Lead	ug/L	15	3.75	--	1.0	0.35		0.46
Magnesium	ug/L			26000	25600	26500		28100
Manganese	ug/L	100	25	46.9	48.3	42.5		52.3
Mercury	ug/L	2.0	0.5	--	0.000789	<0.2		<0.2
Nickel	ug/L	100	25	--	--	<0.5		<0.5
Nitrogen, Ammonia	mg/L			--	0.22	<0.1		<0.1
Nitrogen, Nitrate + Nitrite	mg/L	10	2.5	--	--	<2.0		<0.1
Potassium	ug/L			2800	2600	2690		3030
Selenium	ug/L	30	7.5	--	--	<0.5		<0.5
Sodium	ug/L			4500	4050	4410		4720
Sulfate	mg/L			2.2	3.8	5.4		4.9
Zinc	ug/L	2000	500	348	617	340		349
Total Dissolved Solids	mg/L			287	238	236		233
Total Suspended Solids	mg/L			32.4	111	45		32
Cation/Anion Balance	%							5.59
Anion Summation	meq/L							4.9
Cation Sumation	meq/L							5.4
Specific Conductance, Lab	umhos/cm							455
pH, Lab	SU							8.1

X = Not Analyzed -- = Not Detected

Yellow-shaded entries represent IL exceedances for water quality performance standards.
Blue-shaded entries represent HRL exceedances for water quality performance standards.

WENCK now part of Stantec

Table 10
Clay County Sanitary Landfill
Hawley, Minnesota

Inorganics & Metals Results

W-2
Upper Aquifer

		HRL	IL	May-16	May-17	May-18	May-19	Oct-19	May-20	Oct-20
Alkalinity	mg/L			276	264	282	269	x	280	x
Arsenic	ug/L	10	2.5	1.2	1.2	1.4	1.6	x	1.5	x
Barium	ug/L	2000	500	140	178	145	145	x	144	x
Boron	ug/L	500	125	--	37.5	36.2	36.8	x	36.1	x
Cadmium	ug/L	0.5	0.125	--	--	<0.08	<0.08	x	<0.08	x
Calcium	mg/L			71.2	58.3	73.1	69.6	x	74.3	x
Chloride	mg/L			9.9	9.1	10.3	12.4	x	10.9	x
Chromium	ug/L	100	25	--	--	<0.5	<0.5	x	<0.5	x
Copper	ug/L	1300	325	--	--	<1.0	<1.0	x	<1.0	x
Iron	ug/L			962	2170	858	829	x	830	x
Lead	ug/L	15	3.75	--	0.78	0.17	<0.1	x	0.19	x
Magnesium	ug/L			32200	29200	29900	31100	x	35400	x
Manganese	ug/L	100	25	56.1	58.7	52.5	54.7	x	49.6	x
Mercury	ug/L	2.0	0.5	--	--	<0.2	<0.2	x	<0.2	x
Nickel	ug/L	100	25	--	1.6	1.9	2.6	x	2.8	x
Nitrogen, Ammonia	mg/L			0.19	0.96	0.24	0.18	x	0.19	x
Nitrogen, Nitrate + Nitrite	mg/L	10	2.5	--	--	<2.0	<0.1	x	<0.1	x
Potassium	ug/L			2900	2620	2590	2850	x	2860	x
Selenium	ug/L	30	7.5	--	--	<0.5	<0.5	x	<0.5	x
Sodium	ug/L			6400	5760	5640	6060	x	6200	x
Sulfate	mg/L			11.9	12	14.6	13.7	x	11.2	x
Zinc	ug/L	2000	500	187	574	100	160	x	234	x
Total Dissolved Solids	mg/L			317	412	349	309	x	322	x
Total Suspended Solids	mg/L			6.2	785	49	19	x	<10	x
Cation/Anion Balance	%						2.98	x	6.47	x
Anion Summation	meq/L						6.0	x	6.1	x
Cation Sumation	meq/L						6.4	x	7.0	x
Specific Conductance, Lab	umhos/cm						586	595	607	564
pH, Lab	SU						7.6	7.2	8.0	7.8

X = Not Analyzed -- = Not Detected

Yellow-shaded entries represent IL exceedances for water quality performance standards.
Blue-shaded entries represent HRL exceedances for water quality performance standards.

WENCK now part of Stantec

Table 10
Clay County Sanitary Landfill
Hawley, Minnesota

Inorganics & Metals Results

W-2B
Lower Aquifer

		HRL	IL	May-16	May-17	May-18	May-19	May-20
Alkalinity	mg/L			266	267	265	277	280
Arsenic	ug/L	10	2.5	4.1	5.9	5.3	6.2	5.8
Barium	ug/L	2000	500	126	139	122	140	137
Boron	ug/L	500	125	--	39.8	38.3	38.6	38.4
Cadmium	ug/L	0.5	0.125	--	--	<0.08	<0.08	<0.08
Calcium	mg/L			70.1	59.6	71.4	68.8	71.9
Chloride	mg/L			2.3	2.3	2.5	2.4	1.6
Chromium	ug/L	100	25	--	--	<0.5	<0.5	<0.5
Copper	ug/L	1300	325	--	--	<1.0	<1.0	<1.0
Iron	ug/L			467	384	483	398	398
Lead	ug/L	15	3.75	--	--	<0.1	<0.1	<0.1
Magnesium	ug/L			25700	24700	25400	25400	26600
Manganese	ug/L	100	25	94.1	97.4	94.9	102	98.7
Mercury	ug/L	2.0	0.5	--	--	<0.2	<0.2	<0.2
Nickel	ug/L	100	25	--	0.86	<0.5	0.77	0.68
Nitrogen, Ammonia	mg/L			--	0.31	0.23	0.25	0.23
Nitrogen, Nitrate + Nitrite	mg/L	10	2.5	--	--	<2.0	<0.1	<0.1
Potassium	ug/L			2800	2720	2620	2830	3030
Selenium	ug/L	30	7.5	--	--	<0.5	<0.5	<0.5
Sodium	ug/L			7400	7020	6240	6880	7710
Sulfate	mg/L			18.4	17.4	17.6	16.9	13.4
Zinc	ug/L	2000	500	--	--	<5.0	<5.0	<5.0
Total Dissolved Solids	mg/L			331	297	330	294	279
Total Suspended Solids	mg/L			28.7	256	12	3260	80
Cation/Anion Balance	%						-0.36	2.42
Anion Summation	meq/L						6.0	5.9
Cation Sumation	meq/L						5.9	6.2
Specific Conductance, Lab	umhos/cm						533	535
pH, Lab	SU						7.7	8.0

X = Not Analyzed -- = Not Detected

Yellow-shaded entries represent IL exceedances for water quality performance standards.
Blue-shaded entries represent HRL exceedances for water quality performance standards.

WENCK now part of Stantec

Table 10
Clay County Sanitary Landfill
Hawley, Minnesota

Inorganics & Metals Results

W-3
Lower Aquifer

		HRL	IL	May-16	May-17	May-18	May-19	May-19 (Dup)	May-20
Alkalinity	mg/L			276	280	278	255	266	244
Arsenic	ug/L	10	2.5	3.0	2.1	1.8	2.4	2.3	2.3
Barium	ug/L	2000	500	191	174	171	174	165	156
Boron	ug/L	500	125	--	26.8	31.1	29.8	26.6	28.8
Cadmium	ug/L	0.5	0.125	--	--	<0.08	<0.08	<0.08	0.12
Calcium	mg/L			78.7	75	69.3	72.3	65.2	67.1
Chloride	mg/L			3.0	3.4	2.6	2.4	2.1	1.6
Chromium	ug/L	100	25	--	--	<0.5	<0.5	<0.5	<0.5
Copper	ug/L	1300	325	--	--	<1.0	<1.0	<1.0	<1.0
Iron	ug/L			697	673	571	669	597	683
Lead	ug/L	15	3.75	--	--	<0.1	0.11	<0.1	1.1
Magnesium	ug/L			33900	33400	30400	30800	28900	30500
Manganese	ug/L	100	25	143	135	122	141	127	122
Mercury	ug/L	2.0	0.5	--	--	<0.2	<0.2	<0.2	<0.2
Nickel	ug/L	100	25	--	--	<0.5	<0.5	<0.5	<0.5
Nitrogen, Ammonia	mg/L			0.13	0.24	0.19	0.12	0.12	0.18
Nitrogen, Nitrate + Nitrite	mg/L	10	2.5	--	--	<0.1	<0.1	<0.1	<0.1
Potassium	ug/L			2800	2440	2300	2410	2250	2550
Selenium	ug/L	30	7.5	--	--	<0.5	<0.5	<0.5	<0.5
Sodium	ug/L			5900	4960	4720	5170	4710	5020
Sulfate	mg/L			51.8	48.3	46.9	41.7	40.2	32.2
Zinc	ug/L	2000	500	--	33.4	<5.0	8.0	9.3	417
Total Dissolved Solids	mg/L			450	355	332	326	322	299
Total Suspended Solids	mg/L			17.3	17	101	16	10	<10
Cation/Anion Balance	%						3.39	-2.43	4.8
Anion Summation	meq/L						6.0	6.2	5.6
Cation Sumation	meq/L						6.5	5.9	6.2
Specific Conductance, Lab	umhos/cm						577	558	565
pH, Lab	SU						7.2	7.5	7.7

X = Not Analyzed -- = Not Detected

Yellow-shaded entries represent IL exceedances for water quality performance standards.
Blue-shaded entries represent HRL exceedances for water quality performance standards.

WENCK now part of Stantec

Table 10
Clay County Sanitary Landfill
Hawley, Minnesota

Inorganics & Metals Results

W-5
Upper Aquifer

		HRL	IL	May-16	May-17	May-18	May-19	Oct-19	May-20	Oct-20
Alkalinity	mg/L			289	283	222	264	x	441	x
Arsenic	ug/L	10	2.5	2.8	0.54	1.5	0.82	x	0.86	x
Barium	ug/L	2000	500	67.5	44.3	38.8	37.5	x	63.7	x
Boron	ug/L	500	125	--	23.1	28.6	21.2	x	26.5	x
Cadmium	ug/L	0.5	0.125	--	--	<0.08	<0.08	x	<0.08	x
Calcium	mg/L			85.7	66.5	52.7	58.2	x	102	x
Chloride	mg/L			--	--	<1.2	<1.2	x	<1.2	x
Chromium	ug/L	100	25	--	--	<0.5	0.76	x	<0.5	x
Copper	ug/L	1300	325	--	--	<1.0	<1.0	x	<1.0	x
Iron	ug/L			3340	1320	2360	1090	x	1950	x
Lead	ug/L	15	3.75	--	--	<0.1	<0.1	x	<0.1	x
Magnesium	ug/L			37200	35700	26700	30700	x	56500	x
Manganese	ug/L	100	25	208	71.3	95.2	37.1	x	48.9	x
Mercury	ug/L	2.0	0.5	--	--	<0.2	<0.2	x	<0.2	x
Nickel	ug/L	100	25	--	0.8	0.87	1.3	x	0.81	x
Nitrogen, Ammonia	mg/L			--	--	<0.1	<0.1	x	<0.1	x
Nitrogen, Nitrate + Nitrite	mg/L	10	2.5	--	0.026	<100	<0.1	x	<0.1	x
Potassium	ug/L			3600	2510	2250	2050	x	2680	x
Selenium	ug/L	30	7.5	--	1.9	0.96	1.6	x	0.8	x
Sodium	ug/L			13100	13800	9780	9780	x	14000	x
Sulfate	mg/L			88.7	48.4	40	26.1	x	17	x
Zinc	ug/L	2000	500	65.4	105	<5.0	102	x	134	x
Total Dissolved Solids	mg/L			493	340	274	281	x	443	x
Total Suspended Solids	mg/L			18.3	--	12	<10	x	11	x
Cation/Anion Balance	%						0.79	x	6.37	x
Anion Summation	meq/L						5.8	x	9.2	x
Cation Sumation	meq/L						5.9	x	10.4	x
Specific Conductance, Lab	umhos/cm						545	723	802	786
pH, Lab	SU						7.4	7.0	7.8	7.6

X = Not Analyzed -- = Not Detected

Yellow-shaded entries represent IL exceedances for water quality performance standards.
Blue-shaded entries represent HRL exceedances for water quality performance standards.

WENCK now part of Stantec

Table 10
Clay County Sanitary Landfill
Hawley, Minnesota

Inorganics & Metals Results

W-6
Upper Aquifer

		HRL	IL	May-16	May-17	May-18	May-19	Oct-19	May-20	Oct-20
Alkalinity	mg/L			273	308	323	305	x	405	x
Arsenic	ug/L	10	2.5	4.7	0.96	1.4	1.2	x	1.4	x
Barium	ug/L	2000	500	107	88.8	91.9	88.1	x	111	x
Boron	ug/L	500	125	--	26.2	25.1	20	x	25.9	x
Cadmium	ug/L	0.5	0.125	--	--	<0.08	<0.08	x	<0.08	x
Calcium	mg/L			77.7	74.3	90.6	92.4	x	113	x
Chloride	mg/L			1.4	3.4	3.3	3.2	x	1.8	x
Chromium	ug/L	100	25	--	--	<0.5	<0.5	x	<0.5	x
Copper	ug/L	1300	325	--	--	<1.0	<1.0	x	<1.0	x
Iron	ug/L			1380	3700	2690	2760	x	5220	x
Lead	ug/L	15	3.75	--	--	<0.1	<0.1	x	<0.1	x
Magnesium	ug/L			24800	28000	29200	30500	x	38000	x
Manganese	ug/L	100	25	233	305	202	201	x	351	x
Mercury	ug/L	2.0	0.5	--	--	<0.2	<0.2	x	<0.2	x
Nickel	ug/L	100	25	--	--	<0.5	0.6	x	<0.5	x
Nitrogen, Ammonia	mg/L			--	0.11	<0.1	<0.1	x	<0.1	x
Nitrogen, Nitrate + Nitrite	mg/L	10	2.5	--	0.066	<0.1	<0.1	x	<0.1	x
Potassium	ug/L			2900	1820	1850	1640	x	2160	x
Selenium	ug/L	30	7.5	--	0.54	<0.5	<0.5	x	<0.5	x
Sodium	ug/L			6300	4140	4300	4190	x	5520	x
Sulfate	mg/L			16.5	23.8	23.4	27.6	x	22.7	x
Zinc	ug/L	2000	500	78.6	45.5	53.8	46.1	x	56.1	x
Total Dissolved Solids	mg/L			351	334	314	362	x	438	x
Total Suspended Solids	mg/L			32.5	10	<10	11	x	21	x
Cation/Anion Balance	%						4.31	x	2.82	x
Anion Summation	meq/L						6.8	x	8.6	x
Cation Sumation	meq/L						7.4	x	9.1	x
Specific Conductance, Lab	umhos/cm						664	719	783	736
pH, Lab	SU						7.3	7.0	7.8	7.5

X = Not Analyzed -- = Not Detected

Yellow-shaded entries represent IL exceedances for water quality performance standards.
Blue-shaded entries represent HRL exceedances for water quality performance standards.

WENCK now part of Stantec

Table 10
Clay County Sanitary Landfill
Hawley, Minnesota

Inorganics & Metals Results

W-9
Upper Aquifer

Odd Years Aquatic Standard		HRL	IL	May-15	May-17	Apr-19
Alkalinity	mg/L			464	546	453
Arsenic	ug/L	212	53	3.4	24.9	49.1
Barium	ug/L			428	x	x
Boron	ug/L			--	197	136
Cadmium	ug/L	4.4	1.1	--	--	<0.08
Calcium	mg/L			144	137	86.8
Chloride	mg/L	920	230	86.1	134	77.8
Chromium	ug/L			--	x	x
Copper	ug/L			--	--	x
Iron	ug/L			--	x	x
Lead	ug/L	12.8	3.2	--	--	<0.1
Magnesium	ug/L			51500	58300	53300
Manganese	ug/L			2450	1860	548
Mercury	ug/L			--	0.0082	x
Nickel	ug/L			34.9	x	x
Nitrogen, Ammonia	mg/L			--	x	x
Nitrogen, Nitrate + Nitrite	mg/L			--	x	x
Potassium	ug/L			1700	x	x
Selenium	ug/L			x	x	x
Sodium	ug/L			29900	x	x
Sulfate	mg/L			17.7	x	x
Zinc	ug/L			--	x	x
Total Dissolved Solids	mg/L			710	740	590
Total Suspended Solids	mg/L			41.3	27	27
Cation/Anion Balance	%					-12.27
Anion Summation	meq/L					11.3
Cation Summation	meq/L					8.8
Specific Conductance, Lab	umhos/cm					1070
pH, Lab	SU					7.3
Mercury, Low-Level	ng/L	27.6	6.9			3.53

X = Not Analyzed -- = Not Detected

Yellow-shaded entries represent IL exceedances for water quality performance standards.
Blue-shaded entries represent HRL exceedances for water quality performance standards.

WENCK now part of Stantec

Table 10
Clay County Sanitary Landfill
Hawley, Minnesota

Inorganics & Metals Results

W-10
Upper Aquifer

Odd Years Aquatic Standards		HRL	IL	May-12	May-13	May-14	May-15	May-17	Apr-19
Alkalinity	mg/L			579	573	265	578	436	188
Arsenic	ug/L	212	53	--	--	--	--	0.82	<0.5
Barium	ug/L			82.3	74.6	38.8	80.1	x	x
Boron	ug/L			--	--	--	--	28.7	13.1
Cadmium	ug/L	4.4	1.1	--	--	--	--	--	<0.08
Calcium	mg/L			171	161	82.7	178	155	50.7
Chloride	mg/L	920	230	15	18.5	8.8	15.6	13.2	7.1
Chromium	ug/L			--	--	--	--	x	x
Copper	ug/L			--	--	--	--	--	x
Iron	ug/L			9150	5800	153	--	x	x
Lead	ug/L	12.8	3.2	--	--	--	--	3.0	0.47
Magnesium	ug/L			60900	56500	2600	59400	48400	16700
Manganese	ug/L			383	1170	435	1060	1180	306
Mercury	ug/L			--	--	--	--	--	x
Nickel	ug/L			5.9	11.4	--	11.2	x	x
Nitrogen, Ammonia	mg/L			--	--	--	--	x	x
Nitrogen, Nitrate + Nitrite	mg/L			100	--	--	--	x	x
Potassium	ug/L			1470	1200	720	1500	x	x
Selenium	ug/L			x	x	x	x	x	x
Sodium	ug/L			5870	5700	7000	6800	x	x
Sulfate	mg/L			23.3	53.7	38.5	54.4	x	x
Zinc	ug/L			274	306	90.7	232	x	x
Total Dissolved Solids	mg/L			652	699	322	720	581	233
Total Suspended Solids	mg/L			35	33	12.4	43.3	13	<10
Cation/Anion Balance	%								-0.33
Anion Summation	meq/L								4.0
Cation Summation	meq/L								3.9
Specific Conductance, Lab	umhos/cm								438
pH, Lab	SU								7.5
Mercury, Low-Level	ng/L	27.6	6.9						3.04

X = Not Analyzed -- = Not Detected
Yellow-shaded entries represent IL exceedances for water quality performance standards.
Blue-shaded entries represent HRL exceedances for water quality performance standards.

WENCK now part of Stantec

Table 10
Clay County Sanitary Landfill
Hawley, Minnesota

Inorganics & Metals Results

W-11
Upper Aquifer

Odd Years Aquatic Standard		HRL	IL	May-15	May-17	Apr-19
Alkalinity	mg/L			409	629	613
Arsenic	ug/L	212	53	34.4	117	80.9
Barium	ug/L			480	x	x
Boron	ug/L			165	160	155
Cadmium	ug/L	4.4	1.1	--	--	<0.08
Calcium	mg/L			85.7	123	115
Chloride	mg/L	920	230	31.8	49.5	46
Chromium	ug/L			--	x	x
Copper	ug/L			--	--	x
Iron	ug/L			182	x	x
Lead	ug/L	12.8	3.2	--	--	<0.1
Magnesium	ug/L			52200	78500	73400
Manganese	ug/L			447	541	443
Mercury	ug/L			--	x	x
Nickel	ug/L			11	x	x
Nitrogen, Ammonia	mg/L			0.14	x	x
Nitrogen, Nitrate + Nitrite	mg/L			--	x	x
Potassium	ug/L			2400	x	x
Selenium	ug/L			x	x	x
Sodium	ug/L			35500	x	x
Sulfate	mg/L			25.6	x	x
Zinc	ug/L			--	x	x
Total Dissolved Solids	mg/L			555	650	679
Total Suspended Solids	mg/L			39.3	42	32
Cation/Anion Balance	%					-6.64
Anion Summation	meq/L					13.6
Cation Summation	meq/L					11.9
Specific Conductance, Lab	umhos/cm					1180
pH, Lab	SU					7.2
Mercury, Low-Level	ng/L	27.6	6.9			0.727

X = Not Analyzed -- = Not Detected

Yellow-shaded entries represent IL exceedances for water quality performance standards.
Blue-shaded entries represent HRL exceedances for water quality performance standards.

WENCK now part of Stantec

Table 10
Clay County Sanitary Landfill
Hawley, Minnesota

Inorganics & Metals Results

W-12
Upper Aquifer

		HRL	IL	May-16	May-17	May-18	May-19	May-20
Alkalinity	mg/L			586	494	462	442	542
Arsenic	ug/L	10	2.5	--	--	<0.5	<0.5	<0.5
Barium	ug/L	2000	500	212	221	196	190	228
Boron	ug/L	500	125	--	19.1	15	17.8	22.2
Cadmium	ug/L	0.5	0.125	--	--	<0.08	<0.08	<0.08
Calcium	mg/L			136	131	126	118	145
Chloride	mg/L			1.1	--	<1.2	<1.2	<1.2
Chromium	ug/L	100	25	--	--	<0.5	<0.5	<0.5
Copper	ug/L	1300	325	--	--	<1.0	<1.0	<1.0
Iron	ug/L			1280	1270	536	60.8	121
Lead	ug/L	15	3.75	--	--	<0.1	<0.1	<0.1
Magnesium	ug/L			72000	51700	47100	50600	62400
Manganese	ug/L	100	25	256	673	550	308	244
Mercury	ug/L	2.0	0.5	--	--	<0.2	<0.2	<0.2
Nickel	ug/L	100	25	--	1.7	1.3	2.0	2.5
Nitrogen, Ammonia	mg/L			--	0.19	<0.1	<0.1	<0.1
Nitrogen, Nitrate + Nitrite	mg/L	10	2.5	1.5	1.0	2.4	3.9	2.4
Potassium	ug/L			3400	3490	3020	3010	4740
Selenium	ug/L	30	7.5	--	--	<0.5	<0.5	<0.5
Sodium	ug/L			5000	3860	2880	2800	6710
Sulfate	mg/L			27.3	22.2	27.2	23.4	29.5
Zinc	ug/L	2000	500	--	--	<5.0	5.5	7.1
Total Dissolved Solids	mg/L			662	512	410	492	566
Total Suspended Solids	mg/L			4.1	26	<10	<10	<10
Cation/Anion Balance	%						4.76	5.62
Anion Summation	meq/L						9.3	11.5
Cation Sumation	meq/L						10.3	12.8
Specific Conductance, Lab	umhos/cm						858	988
pH, Lab	SU						6.9	7.3

X = Not Analyzed -- = Not Detected

Yellow-shaded entries represent IL exceedances for water quality performance standards.
Blue-shaded entries represent HRL exceedances for water quality performance standards.

WENCK now part of Stantec

Table 10
Clay County Sanitary Landfill
Hawley, Minnesota

Inorganics & Metals Results

W-13
Upper Aquifer

		HRL	IL	May-16	May-17	May-18	May-19	May-20	May-20 (Dup)
Alkalinity	mg/L			364	375	379	347	360	421
Arsenic	ug/L	10	2.5	--	3.3	1.7	<0.5	1.7	1.3
Barium	ug/L	2000	500	143	165	147	76.2	178	151
Boron	ug/L	500	125	--	23.4	27	21.5	25.9	23.3
Cadmium	ug/L	0.5	0.125	--	--	<0.08	<0.08	<0.08	<0.08
Calcium	mg/L			84	83.2	85.3	53.5	90.6	81.1
Chloride	mg/L			1.5	1.4	1.4	1.3	<1.2	<1.2
Chromium	ug/L	100	25	--	8.3	<0.5	<0.5	<0.5	<0.5
Copper	ug/L	1300	325	--	--	<1.0	<1.0	<1.0	<1.0
Iron	ug/L			568	546	375	3590	534	523
Lead	ug/L	15	3.75	--	--	<0.1	<0.1	<0.1	<0.1
Magnesium	ug/L			43300	42600	43400	35200	47400	41900
Manganese	ug/L	100	25	97.7	81.2	83.3	123	85.9	75.2
Mercury	ug/L	2.0	0.5	--	--	<0.2	<0.2	<0.2	<0.2
Nickel	ug/L	100	25	--	5.4	0.93	0.69	5.4	4.0
Nitrogen, Ammonia	mg/L			--	0.097	<0.1	<0.1	<0.1	<0.1
Nitrogen, Nitrate + Nitrite	mg/L	10	2.5	--	60	<100	<0.1	<0.1	<0.1
Potassium	ug/L			2200	2300	2170	3100	2620	2170
Selenium	ug/L	30	7.5	--	--	<0.5	<0.5	1.2	0.6
Sodium	ug/L			5100	5310	5290	10900	5420	4800
Sulfate	mg/L			15.6	19.3	17.2	18	15.3	16
Zinc	ug/L	2000	500	--	--	<5.0	7.2	<5.0	<5.0
Total Dissolved Solids	mg/L			406	385	354	360	359	364
Total Suspended Solids	mg/L			146	400	75	600	146	139
Cation/Anion Balance	%						-8.99	7.49	-5.88
Anion Summation	meq/L						7.3	7.5	8.7
Cation Sumation	meq/L						6.1	8.7	7.8
Specific Conductance, Lab	umhos/cm						660	685	673
pH, Lab	SU						7.2	7.6	7.6

X = Not Analyzed -- = Not Detected

Yellow-shaded entries represent IL exceedances for water quality performance standards.
Blue-shaded entries represent HRL exceedances for water quality performance standards.

WENCK now part of Stantec

Table 10
Clay County Sanitary Landfill
Hawley, Minnesota

Inorganics & Metals Results

W-15
Upper Aquifer

Odd Years		May-15	May-17	Apr-19
Alkalinity	mg/L	Not Sampled	Not Sampled	x
Arsenic	ug/L			x
Barium	ug/L			x
Boron	ug/L			x
Cadmium	ug/L			x
Calcium	mg/L			x
Chloride	mg/L			x
Chromium	ug/L			x
Copper	ug/L			x
Iron	ug/L			x
Lead	ug/L			x
Magnesium	ug/L			x
Manganese	ug/L			x
Mercury	ug/L			x
Nickel	ug/L			x
Nitrogen, Ammonia	mg/L			x
Nitrogen, Nitrate + Nitrite	ug/L			x
Potassium	ug/L			x
Sodium	ug/L			x
Sulfate	mg/L			x
Zinc	ug/L			x
Total Dissolved Solids	mg/L			x
Total Suspended Solids	mg/L			x
Cation/Anion Balance	%			x
Anion Summation	meq/L			x
Cation Summation	meq/L			x
Specific Conductance, Lab	umhos/cm			798
pH, Lab	SU			6.9
Mercury, Low-Level	ng/L			x

X = Not Analyzed -- = Not Detected

WENCK now part of Stantec

Table 10
Clay County Sanitary Landfill
Hawley, Minnesota

Inorganics & Metals Results

W-16
Lower Aquifer

Aquatic Standard		HRL	IL	May-15	May-17	Apr-19
Alkalinity	mg/L			335	377	407
Arsenic	ug/L	212	53	--	1.7	2.4
Barium	ug/L			270	x	x
Boron	ug/L			--	34.2	34.9
Cadmium	ug/L	4.4	1.1	--	--	<0.08
Calcium	mg/L			83.7	102	170
Chloride	mg/L	920	230	19.1	20.8	21.8
Chromium	ug/L			--	x	x
Copper	ug/L			--	x	x
Iron	ug/L			--	x	x
Lead	ug/L	12.8	3.2	--	0.45	1.5
Magnesium	ug/L			39600	44100	58500
Manganese	ug/L			106	169	377
Mercury	ug/L			--	0.000516	x
Nickel	ug/L			--	x	x
Nitrogen, Ammonia	mg/L			--	x	x
Nitrogen, Nitrate + Nitrite	mg/L			--	x	x
Potassium	ug/L			2900	x	x
Selenium	ug/L			x	x	x
Sodium	ug/L			8500	x	x
Sulfate	mg/L			--	x	x
Zinc	ug/L			--	x	x
Total Dissolved Solids	mg/L			408	382	410
Total Suspended Solids	mg/L			26.8	43	122
Cation/Anion Balance	%					20.66
Anion Summation	meq/L					8.8
Cation Summation	meq/L					13.3
Specific Conductance, Lab	umhos/cm					785
pH, Lab	SU					7.2
Mercury, Low-Level	ng/L	27.6	6.9			2.52

X = Not Analyzed -- = Not Detected

Yellow-shaded entries represent IL exceedances for water quality performance standards.
Blue-shaded entries represent HRL exceedances for water quality performance standards.

WENCK now part of Stantec

Table 10
Clay County Sanitary Landfill
Hawley, Minnesota

Inorganics & Metals Results

W-17
Lower Aquifer

Aquatic Standard		HRL	IL	May-15	May-17	Apr-19
Alkalinity	mg/L			NA	456	410
Arsenic	ug/L	212	53	NA	0.78	0.76
Barium	ug/L			NA	x	x
Boron	ug/L			NA	129	114
Cadmium	ug/L	4.4	1.1	NA	--	<0.08
Calcium	mg/L			NA	120	104
Chloride	mg/L	920	230	NA	89.4	81.9
Chromium	ug/L			NA	x	x
Copper	ug/L			NA	x	x
Iron	ug/L			NA	x	x
Lead	ug/L	12.8	3.2	NA	0.39	0.16
Magnesium	ug/L			NA	59200	55100
Manganese	ug/L			NA	109	93.9
Mercury	ug/L			NA	0.000822	x
Nickel	ug/L			NA	x	x
Nitrogen, Ammonia	mg/L			NA	x	x
Nitrogen, Nitrate + Nitrite	mg/L			NA	x	x
Potassium	ug/L			NA	x	x
Selenium	ug/L			NA	x	x
Sodium	ug/L			NA	x	x
Sulfate	mg/L			NA	x	x
Zinc	ug/L			NA	x	x
Total Dissolved Solids	mg/L			NA	558	546
Total Suspended Solids	mg/L			NA	23	24
Cation/Anion Balance	%					-3.76
Anion Summation	meq/L					10.5
Cation Summation	meq/L					9.8
Specific Conductance, Lab	umhos/cm					1010
pH, Lab	SU					7.5
Mercury, Low-Level	ng/L	27.6	6.9			1.21

X = Not Analyzed -- = Not Detected

Yellow-shaded entries represent IL exceedances for water quality performance standards.
Blue-shaded entries represent HRL exceedances for water quality performance standards.

WENCK now part of Stantec

Table 10
Clay County Sanitary Landfill
Hawley, Minnesota

Inorganics & Metals Results

W-102A
Lower Aquifer

		HRL	IL	May-16	May-17	May-18	May-19	Oct-19	May-20	Oct-20
Alkalinity	mg/L			Dry	Dry	Dry	240	x	236	Dry
Arsenic	ug/L	10	2.5				<0.5	x	<0.5	
Barium	ug/L	2000	500				41	x	57.2	
Boron	ug/L	500	125				14.6	x	17.8	
Cadmium	ug/L	0.5	0.125				0.14	x	<0.08	
Calcium	mg/L						75.3	x	66.6	
Chloride	mg/L						13.5	x	1.7	
Chromium	ug/L	100	25				1.7	x	1.7	
Copper	ug/L	1300	325				2.1	x	<1.0	
Iron	ug/L						418	x	<50	
Lead	ug/L	15	3.75				0.48	x	<0.1	
Magnesium	ug/L						25600	x	22400	
Manganese	ug/L	100	25				33.6	x	<0.5	
Mercury	ug/L	2.0	0.5				<0.2	x	<0.2	
Nickel	ug/L	100	25				1.3	x	<0.5	
Nitrogen, Ammonia	mg/L						<0.1	x	<0.1	
Nitrogen, Nitrate + Nitrite	mg/L	10	2.5				7.6	x	1.4	
Potassium	ug/L						1170	x	1060	
Selenium	ug/L	30	7.5				0.96	x	<0.5	
Sodium	ug/L						20000	x	4100	
Sulfate	mg/L						32.2	x	8.4	
Zinc	ug/L	2000	500				21.6	x	<5.0	
Total Dissolved Solids	mg/L						372	x	265	
Total Suspended Solids	mg/L						206	x	11	
Cation/Anion Balance	%						7.3	x	4.33	
Anion Summation	meq/L						5.8	x	4.9	
Cation Summation	meq/L						6.8	x	5.4	
Specific Conductance, Lab	umhos/cm						596	649	497	
pH, Lab	SU						7.4	7.4	7.9	

X = Not Analyzed -- = Not Detected

Yellow-shaded entries represent IL exceedances for water quality performance standards.
Blue-shaded entries represent HRL exceedances for water quality performance standards.

WENCK now part of Stantec

Table 10
Clay County Sanitary Landfill
Hawley, Minnesota

Inorganics & Metals Results

W-102B
Lower Aquifer

		HRL	IL	May-16	May-17	May-18	May-19	May-20
Alkalinity	mg/L			Well Obstructed	236	238	237	237
Arsenic	ug/L	10	2.5		--	0.5	0.51	0.54
Barium	ug/L	2000	500		127	134	132	142
Boron	ug/L	500	125		20.7	20.1	19.9	19.4
Cadmium	ug/L	0.5	0.125			<0.08	<0.08	<0.08
Calcium	mg/L				76.8	79.1	76.5	79.1
Chloride	mg/L				4.9	5.3	5.0	4.0
Chromium	ug/L	100	25		--	<0.5	<0.5	<0.5
Copper	ug/L	1300	325		--	<1.0	<1.0	<1.0
Iron	ug/L				--	121	118	97.5
Lead	ug/L	15	3.75		--	<0.1	<0.1	<0.1
Magnesium	ug/L				28000	28600	27800	29600
Manganese	ug/L	100	25		178	196	177	174
Mercury	ug/L	2.0	0.5		--	<0.2	<0.2	<0.2
Nickel	ug/L	100	25		1.5	1.7	1.3	1.9
Nitrogen, Ammonia	mg/L				--	<0.1	<0.1	<0.1
Nitrogen, Nitrate + Nitrite	mg/L	10	2.5		--	<0.1	<0.1	0.49
Potassium	ug/L				2340	2470	2270	2640
Selenium	ug/L	30	7.5		--	<0.5	<0.5	<0.5
Sodium	ug/L				3010	3270	3090	3170
Sulfate	mg/L				35.5	73.1	69.4	59.4
Zinc	ug/L	2000	500		--	<5.0	<5.0	<5.0
Total Dissolved Solids	mg/L				357	344	363	353
Total Suspended Solids	mg/L				31	<10	10	15
Cation/Anion Balance	%						-0.1	4.12
Anion Summation	meq/L						6.3	6.1
Cation Summation	meq/L						6.3	6.6
Specific Conductance, Lab	umhos/cm						574	600
pH, Lab	SU						7.2	7.7

X = Not Analyzed -- = Not Detected

Yellow-shaded entries represent IL exceedances for water quality performance standards.
Blue-shaded entries represent HRL exceedances for water quality performance standards.

WENCK now part of Stantec

Table 10
Clay County Sanitary Landfill
Hawley, Minnesota

Inorganics & Metals Results

W-104A
Upper Aquifer

		MCL	HRL	IL	May-16	May-17	May-18	May-19	Oct-19	May-20	Oct-20
Alkalinity	mg/L	NE			314	327	304	282	x	422	x
Arsenic	ug/L	10	10	2.5	2.0	1.4	1.4	1.6	x	1.8	x
Barium	ug/L	2000	2000	500	103	107	109	101	x	153	x
Boron	ug/L	NE	500	125	--	24.6	22.9	22.3	x	26	x
Cadmium	ug/L	5	0.5	0.125	--	--	<0.08	<0.08	x	<0.08	x
Calcium	mg/L	NE			109	83.6	96.2	88.1	x	142	x
Chloride	mg/L	NE			8.7	7.4	6.8	6.1	x	6.7	x
Chromium	ug/L	100	100	25	--	--	<0.5	0.78	x	<0.5	x
Copper	ug/L	1300	1300	325	--	--	<1.0	<1.0	x	1.1	x
Iron	ug/L	NE			--	--	<50	<50	x	<50	x
Lead	ug/L	15	15	3.75	--	--	<0.1	<0.1	x	<0.1	x
Magnesium	ug/L	NE			33000	31100	30600	29700	x	45600	x
Manganese	ug/L	NE	100	25	65.4	130	169	203	x	266	x
Mercury	ug/L	2	2.0	0.5	--	--	<0.2	<0.2	x	<0.2	x
Nickel	ug/L	NE	100	25	--	0.51	0.77	1.8	x	1.5	x
Nitrogen, Ammonia	mg/L	NE			--	--	<0.1	<0.1	x	<0.1	x
Nitrogen, Nitrate + Nitrite	mg/L	11000	10	2.5	1.7	0.97	1.1	0.74	x	0.97	x
Potassium	ug/L	NE			1300	1190	1180	1250	x	1660	x
Selenium	ug/L		30	7.5	--	--	<0.5	<0.5	x	<0.5	x
Sodium	ug/L	NE			3700	3320	3070	3150	x	4770	x
Sulfate	mg/L	NE			54.6	47.4	42.1	41.6	x	38.5	x
Zinc	ug/L	NE	2000	500	--	--	<5.0	5.7	x	<5.0	x
Total Dissolved Solids	mg/L	NE			492	408	400	360	x	503	x
Total Suspended Solids	mg/L	NE			189	127	77	20	x	131	x
Cation/Anion Balance	%							2.53	x	8.13	x
Anion Summation	meq/L							6.7	x	9.4	x
Cation Summation	meq/L							7.0	x	11.1	x
Specific Conductance, Lab	umhos/cm							636	686	868	793
pH, Lab	SU							7.3	7.0	7.3	7.3

X = Not Analyzed -- = Not Detected

Yellow-shaded entries represent IL exceedances for water quality performance standards.
Blue-shaded entries represent HRL exceedances for water quality performance standards.

WENCK now part of Stantec

Table 10
Clay County Sanitary Landfill
Hawley, Minnesota

Inorganics & Metals Results

W-104B
Lower Aquifer

		HRL	IL	May-16	May-17	May-18	May-19	May-20
Alkalinity	mg/L			248	240	243	238	236
Arsenic	ug/L	10	2.5	11.1	10.2	10.9	10	8.6
Barium	ug/L	2000	500	154	141	146	142	139
Boron	ug/L	500	125	--	25.3	26.3	29	26.4
Cadmium	ug/L	0.5	0.125	--	--	<0.08	<0.08	<0.08
Calcium	mg/L			77.3	74.4	79.1	75.9	74.5
Chloride	mg/L			2.7	3.0	3.0	2.9	2.4
Chromium	ug/L	100	25	--	--	<0.5	<0.5	<0.5
Copper	ug/L	1300	325	--	--	<1.0	<1.0	<1.0
Iron	ug/L			901	819	725	746	768
Lead	ug/L	15	3.75	--	--	<0.1	<0.1	<0.1
Magnesium	ug/L			25900	25300	25800	25200	25100
Manganese	ug/L	100	25	236	226	217	239	228
Mercury	ug/L	2.0	0.5	--	--	<0.2	<0.2	<0.2
Nickel	ug/L	100	25	--	--	<0.5	<0.5	<0.5
Nitrogen, Ammonia	mg/L			0.15	0.3	0.16	0.14	0.12
Nitrogen, Nitrate + Nitrite	mg/L	10	2.5	--	--	<0.1	<0.1	<0.1
Potassium	ug/L			2900	2830	2740	2850	2790
Selenium	ug/L	30	7.5	--		<0.5	<0.5	<0.5
Sodium	ug/L			4300	4010	3930	4030	3940
Sulfate	mg/L			51.6	48.4	56.3	55	47.6
Zinc	ug/L	2000	500	--	--	<5.0	<5.0	<5.0
Total Dissolved Solids	mg/L			411	356	374	345	334
Total Suspended Solids	mg/L			278	114	<10	20	22
Cation/Anion Balance	%						1.14	2.23
Anion Summation	meq/L						6.0	5.8
Cation Summation	meq/L						6.1	6.1
Specific Conductance, Lab	umhos/cm						560	576
pH, Lab	SU						7.5	8.0

X = Not Analyzed -- = Not Detected

Yellow-shaded entries represent IL exceedances for water quality performance standards.
Blue-shaded entries represent HRL exceedances for water quality performance standards.

WENCK now part of Stantec

Table 10
Clay County Sanitary Landfill
Hawley, Minnesota

Inorganics & Metals Results

W-106A
Upper Aquifer

		HRL	IL	May-16	May-17	May-18	May-19	Oct-19	May-20	Oct-20	Oct-20 (DUP)
Alkalinity	mg/L			327	310	278	315	x	316	x	x
Arsenic	ug/L	10	2.5	--	1.0	1.5	1.2	x	1.1	x	x
Barium	ug/L	2000	500	134	128	124	116	x	118	x	x
Boron	ug/L	500	125	--	30.5	28.5	34.4	x	29.6	x	x
Cadmium	ug/L	0.5	0.125	--	--	<0.08	<0.08	x	<0.08	x	x
Calcium	mg/L			103	93.5	92.8	86.3	x	88	x	x
Chloride	mg/L			16.3	16.4	17.3	18.8	x	16	x	x
Chromium	ug/L	100	25	--	--	0.55	<0.5	x	<0.5	x	x
Copper	ug/L	1300	325	--	--	<1.0	<1.0	x	<1.0	x	x
Iron	ug/L			--	--	326	<50	x	<50	x	x
Lead	ug/L	15	3.75	--	--	0.15	<0.1	x	<0.1	x	x
Magnesium	ug/L			38800	36400	36400	33500	x	35200	x	x
Manganese	ug/L	100	25	234	65.5	154	58.8	x	41.5	x	x
Mercury	ug/L	2.0	0.5	--	--	<0.2	<0.2	x	<0.2	x	x
Nickel	ug/L	100	25	--	1.5	1.7	1.7	x	1.6	x	x
Nitrogen, Ammonia	mg/L			--	--	<0.1	<0.1	x	<0.1	x	x
Nitrogen, Nitrate + Nitrite	mg/L	10	2.5	--	--	<0.1	<0.1	x	<0.1	x	x
Potassium	ug/L			3000	3370	2860	3320	x	3520	x	x
Selenium	ug/L	30	7.5	--		<0.5	<0.5	x	<0.5	x	x
Sodium	ug/L			8100	24700	12100	46700	x	38000	x	x
Sulfate	mg/L			80.6	84.2	79.4	83.8	x	71.5	x	x
Zinc	ug/L	2000	500	--	--	<5.0	<5.0	x	<5.0	x	x
Total Dissolved Solids	mg/L			511	485	467	484	x	485	x	x
Total Suspended Solids	mg/L			1110	56	33	38	x	144	x	x
Cation/Anion Balance	%						3.5	x	4.53	x	x
Anion Summation	meq/L						8.6	x	8.3	x	x
Cation Summation	meq/L						9.2	x	9.0	x	x
Specific Conductance, Lab	umhos/cm						796	780	763	792	776
pH, Lab	SU						7.3	7.2	8.1	7.6	7.7

X = Not Analyzed -- = Not Detected

Yellow-shaded entries represent IL exceedances for water quality performance standards.
Blue-shaded entries represent HRL exceedances for water quality performance standards.

WENCK now part of Stantec

Table 10
Clay County Sanitary Landfill
Hawley, Minnesota

Inorganics & Metals Results

W-106B
Lower Aquifer

		HRL	IL	May-16	May-17	May-18	May-19	Oct-19	Oct-19 (DUP)	May-20
Alkalinity	mg/L			261	270	257	285	x	x	293
Arsenic	ug/L	10	2.5	2.8	4.6	4.1	7.6	x	x	9.7
Barium	ug/L	2000	500	129	156	155	204	x	x	199
Boron	ug/L	500	125	--	37.8	37.2	38.6	x	x	36.8
Cadmium	ug/L	0.5	0.125	--	--	<0.08	<0.08	x	x	<0.08
Calcium	mg/L			63.2	51.1	60.9	74.8	x	x	88.4
Chloride	mg/L			--	1.3	1.4	7.1	x	x	10.9
Chromium	ug/L	100	25	--	--	<0.5	<0.5	x	x	0.77
Copper	ug/L	1300	325	--	--	<1.0	1.3	x	x	<1.0
Iron	ug/L			194	203	179	388	x	x	911
Lead	ug/L	15	3.75	--	--	<0.1	<0.1	x	x	0.12
Magnesium	ug/L			29000	29100	30600	33200	x	x	37100
Manganese	ug/L	100	25	74.7	80.4	72.4	109	x	x	129
Mercury	ug/L	2.0	0.5	--	--	<0.2	<0.2	x	x	<0.2
Nickel	ug/L	100	25	--	--	<0.5	1.2	x	x	2.5
Nitrogen, Ammonia	mg/L			0.14	0.25	0.28	0.22	x	x	0.21
Nitrogen, Nitrate + Nitrite	mg/L	10	2.5	--	--	<0.1	<0.1	x	x	<0.1
Potassium	ug/L			2600	2660	2700	3240	x	x	3510
Selenium	ug/L	30	7.5	--	--	<0.5	<0.5	x	x	<0.5
Sodium	ug/L			5300	5430	5190	6070	x	x	6720
Sulfate	mg/L			21.5	24.6	29.8	36	x	x	30.8
Zinc	ug/L	2000	500	--	--	<5.0	<5.0	x	x	5.7
Total Dissolved Solids	mg/L			328	302	307	351	x	x	361
Total Suspended Solids	mg/L			640	482	171	524	x	x	235
Cation/Anion Balance	%						1.34	x	x	7.23
Anion Summation	meq/L						6.7	x	x	6.8
Cation Summation	meq/L						6.8	x	x	7.9
Specific Conductance, Lab	umhos/cm						614	632	655	614
pH, Lab	SU						7.5	7.2	7.1	7.9

X = Not Analyzed -- = Not Detected

Yellow-shaded entries represent IL exceedances for water quality performance standards.
Blue-shaded entries represent HRL exceedances for water quality performance standards.

WENCK now part of Stantec

Table 10
Clay County Sanitary Landfill
Hawley, Minnesota

Inorganics & Metals Results

W-201A
Upper Aquifer

		HRL	IL	May-16	May-17	May-18	May-19	Oct-19	May-20	May-20 (DUP)	Oct-20
Alkalinity	mg/L			301	343	338	347	x	312	312	x
Arsenic	ug/L	10	2.5	2.5	2.5	2.7	2.8	x	2.8	3.0	x
Barium	ug/L	2000	500	184	188	201	228	x	195	201	x
Boron	ug/L	500	125	--	27.1	23.7	24.3	x	25	25.4	x
Cadmium	ug/L	0.5	0.125	--	--	<0.08	<0.08	x	<0.08	<0.08	x
Calcium	mg/L			80.9	75.6	93.8	97.5	x	86.1	88.9	x
Chloride	mg/L			6.6	12.5	13.5	20.4	x	14.6	14.3	x
Chromium	ug/L	100	25	--	--	<0.50	<0.5	x	<0.5	<0.5	x
Copper	ug/L	1300	325	--	--	<1.0	<1.0	x	<1.0	<1.0	x
Iron	ug/L			50.5	53.9	69.6	82.9	x	114	101	x
Lead	ug/L	15	3.75	--	--	<0.1	<0.1	x	<0.1	<0.1	x
Magnesium	ug/L			34100	37400	39700	43100	x	38000	39700	x
Manganese	ug/L	100	25	265	272	300	374	x	317	325	x
Mercury	ug/L	2.0	0.5	--	--	<0.2	<0.2	x	<0.2	<0.2	x
Nickel	ug/L	100	25	--	2.2	2.5	3.2	x	2.8	2.6	x
Nitrogen, Ammonia	mg/L			--	0.071	<0.1	<0.1	x	<0.1	<0.1	x
Nitrogen, Nitrate + Nitrite	mg/L	10	2.5	--	--	<0.1	<0.1	x	<0.1	<0.1	x
Potassium	ug/L			2200	2070	2130	2290	x	2260	2310	x
Selenium	ug/L	30	7.5	--	--	<0.5	<0.5	x	<0.5	<0.5	x
Sodium	ug/L			6000	6280	6660	7390	x	7220	7400	x
Sulfate	mg/L			32	34.6	42.4	48.8	x	31.5	30.5	x
Zinc	ug/L	2000	500	--	--	<5.0	<5.0	x	<5.0	<5.0	x
Total Dissolved Solids	mg/L			389	412	445	437	x	393	391	x
Total Suspended Solids	mg/L			124	785	84	212	x	92	174	x
Cation/Anion Balance	%						1.76	x	3.41	5.5	x
Anion Summation	meq/L						8.5	x	7.3	7.3	x
Cation Summation	meq/L						8.8	x	7.8	8.1	x
Specific Conductance, Lab	umhos/cm						804	710	692	688	806
pH, Lab	SU						7.3	6.9	8	7.9	7.6

X = Not Analyzed -- = Not Detected

Yellow-shaded entries represent IL exceedances for water quality performance standards.
Blue-shaded entries represent HRL exceedances for water quality performance standards.

WENCK now part of Stantec

Table 10
Clay County Sanitary Landfill
Hawley, Minnesota

Inorganics & Metals Results

W-201B
Lower Aquifer

		HRL	IL	May-16	May-17	May-18	May-19	May-20
Alkalinity	mg/L			269	263	271	274	256
Arsenic	ug/L	10	2.5	3.6	4.1	4.6	4.0	4.8
Barium	ug/L	2000	500	131	120	122	127	127
Boron	ug/L	500	125	--	31	31.6	30.4	30.9
Cadmium	ug/L	0.5	0.125	--	--	<0.08	<0.08	<0.08
Calcium	mg/L			67.9	55.4	67.4	65.3	67.8
Chloride	mg/L			--	--	<1.2	<1.2	<1.2
Chromium	ug/L	100	25	--	--	<0.5	0.66	<0.5
Copper	ug/L	1300	325	--	--	<1.0	<1.0	<1.0
Iron	ug/L			547	394	397	299	374
Lead	ug/L	15	3.75	--	--	<0.1	<0.1	<0.1
Magnesium	ug/L			26900	25300	26500	26600	27000
Manganese	ug/L	100	25	109	89.8	91.1	80.9	93.3
Mercury	ug/L	2.0	0.5	--	--	<0.2	<0.2	<0.2
Nickel	ug/L	100	25	--	--	<0.5	0.6	<0.5
Nitrogen, Ammonia	mg/L			--	0.15	0.12	<0.1	0.12
Nitrogen, Nitrate + Nitrite	mg/L	10	2.5	--	--	<0.1	<0.1	<0.1
Potassium	ug/L			2700	2510	2580	2720	2820
Selenium	ug/L	30	7.5	--	--	<0.5	<0.5	<0.5
Sodium	ug/L			5400	5930	6150	6780	6970
Sulfate	mg/L			14.2	13.4	14.8	14.9	13
Zinc	ug/L	2000	500	--	--	<5.0	<5.0	<5.0
Total Dissolved Solids	mg/L			333	284	309	302	290
Total Suspended Solids	mg/L			5.7	25	72	336	<10
Cation/Anion Balance	%						0.33	5.4
Anion Summation	meq/L						5.8	5.4
Cation Summation	meq/L						5.8	6.0
Specific Conductance, Lab	umhos/cm						530	525
pH, Lab	SU						7.3	7.9

X = Not Analyzed -- = Not Detected

Yellow-shaded entries represent IL exceedances for water quality performance standards.
Blue-shaded entries represent HRL exceedances for water quality performance standards.

WENCK now part of Stantec

Table 10
Clay County Sanitary Landfill
Hawley, Minnesota

Inorganics & Metals Results

W-202A
Upper Aquifer

		HRL	IL	May-16	May-17	May-18	May-19	Oct-19	Oct-19 (DUP)	May-20	Oct-20
Alkalinity	mg/L			255	358	370	358	x	x	412	x
Arsenic	ug/L	10	2.5	1.0	0.87	0.94	0.79	x	x	0.7	x
Barium	ug/L	2000	500	132	123	148	137	x	x	130	x
Boron	ug/L	500	125	--	21.8	26	24.2	x	x	19.8	x
Cadmium	ug/L	0.5	0.125	--	--	<0.08	<0.08	x	x	<0.08	x
Calcium	mg/L			77.8	75	103	93.3	x	x	102	x
Chloride	mg/L			30.6	39.8	50.3	40.6	x	x	29.1	x
Chromium	ug/L	100	25	--	--	<0.5	<0.5	x	x	0.61	x
Copper	ug/L	1300	325	--	1.7	1.9	1.6	x	x	1.3	x
Iron	ug/L			--	70.2	<50	<50	x	x	<50	x
Lead	ug/L	15	3.75	--	--	<0.1	<0.1	x	x	<0.1	x
Magnesium	ug/L			33500	54000	59500	56700	x	x	63000	x
Manganese	ug/L	100	25	10.7	10	4.8	3.1	x	x	65.1	x
Mercury	ug/L	2.0	0.5	--	--	<0.2	<0.2	x	x	<0.2	x
Nickel	ug/L	100	25	--	4.7	4.8	4.2	x	x	7.8	x
Nitrogen, Ammonia	mg/L			--	--	<0.1	<0.1	x	x	<0.1	x
Nitrogen, Nitrate + Nitrite	mg/L	10	2.5	--	--	<0.1	<0.1	x	x	<0.1	x
Potassium	ug/L			1800	766	1230	985	x	x	715	x
Selenium	ug/L	30	7.5	--	--	<0.5	<0.5	x	x	<0.5	x
Sodium	ug/L			7700	7920	9330	8810	x	x	9670	x
Sulfate	mg/L			42.6	34.1	49.9	34.7	x	x	14.8	x
Zinc	ug/L	2000	500	--	--	<5.0	<5.0	x	x	<5.0	x
Total Dissolved Solids	mg/L			402	454	562	470	x	x	446	x
Total Suspended Solids	mg/L			46.5	136	125	59	x	x	401	x
Cation/Anion Balance	%						3.79	x	x	6.78	x
Anion Summation	meq/L						9.0	x	x	9.4	x
Cation Summation	meq/L						9.7	x	x	10.7	x
Specific Conductance, Lab	umhos/cm						846	936	921	891	869
pH, Lab	SU						7.3	7.0	7.0	7.6	7.6

X = Not Analyzed -- = Not Detected

Yellow-shaded entries represent IL exceedances for water quality performance standards.
Blue-shaded entries represent HRL exceedances for water quality performance standards.

WENCK now part of Stantec

Table 10
Clay County Sanitary Landfill
Hawley, Minnesota

Inorganics & Metals Results

W-202B
Lower Aquifer

		HRL	IL	May-16	May-17	May-18	May-19	May-20
Alkalinity	mg/L			255	267	269	242	280
Arsenic	ug/L	10	2.5	--	--	<0.5	<0.5	<0.5
Barium	ug/L	2000	500	120	131	117	118	119
Boron	ug/L	500	125	--	37.8	35.9	36.5	36.4
Cadmium	ug/L	0.5	0.125	--	--	<0.08	<0.08	<0.08
Calcium	mg/L			65.9	55.1	67.1	63.1	66.8
Chloride	mg/L			--	--	<1.2	<1.2	<1.2
Chromium	ug/L	100	25	--	--	<0.5	<0.5	<0.5
Copper	ug/L	1300	325	--	--	<1.0	<1.0	<1.0
Iron	ug/L			373	509	309	334	333
Lead	ug/L	15	3.75	--	--	<0.1	<0.1	<0.1
Magnesium	ug/L			22400	12100	21800	21300	23300
Manganese	ug/L	100	25	54.9	54.2	50.2	56.2	50.8
Mercury	ug/L	2.0	0.5	--	--	<0.2	<0.2	<0.2
Nickel	ug/L	100	25	--	0.54	<0.5	<0.5	<0.5
Nitrogen, Ammonia	mg/L			--	0.34	0.26	0.23	0.23
Nitrogen, Nitrate + Nitrite	mg/L	10	2.5	--	--	<0.1	<0.1	<0.1
Potassium	ug/L			3000	2800	2800	2850	3020
Selenium	ug/L	30	7.5	--	--	<0.5	<0.5	<0.5
Sodium	ug/L			7000	6370	6590	6850	7680
Sulfate	mg/L			11.6	10.8	11.6	11.2	9.3
Zinc	ug/L	2000	500	--	--	<5.0	<5.0	<5.0
Total Dissolved Solids	mg/L			307	270	297	273	262
Total Suspended Solids	mg/L			2540	648	626	79	557
Cation/Anion Balance	%						2.0	-1.1
Anion Summation	meq/L						5.1	5.8
Cation Summation	meq/L						5.3	5.7
Specific Conductance, Lab	umhos/cm						494	494
pH, Lab	SU						7.7	7.8

X = Not Analyzed -- = Not Detected

Yellow-shaded entries represent IL exceedances for water quality performance standards.
Blue-shaded entries represent HRL exceedances for water quality performance standards.

WENCK now part of Stantec

Table 10
Clay County Sanitary Landfill
Hawley, Minnesota

Inorganics & Metals Results

W-203B
Lower Aquifer

		HRL	IL	May-16	May-17	May-18	May-19	May-20
Alkalinity	mg/L			261	256	Well Obstructed	Well Access Obstructed	255
Arsenic	ug/L	10	2.5	1.1	0.96			1.2
Barium	ug/L	2000	500	117	110			111
Boron	ug/L	500	125	--	33.7			32.8
Cadmium	ug/L	0.5	0.125	--	--			<0.08
Calcium	mg/L			64	51.8			63.2
Chloride	mg/L			--	--			<1.2
Chromium	ug/L	100	25	--	--			1.2
Copper	ug/L	1300	325	--	--			<1.0
Iron	ug/L			367	348			483
Lead	ug/L	15	3.75	--	--			<0.1
Magnesium	ug/L			26100	24400			25800
Manganese	ug/L	100	25	45.9	44.3			43.6
Mercury	ug/L	2.0	0.5	--	--			<0.2
Nickel	ug/L	100	25	--	--			<0.5
Nitrogen, Ammonia	mg/L			0.17	0.26			0.18
Nitrogen, Nitrate + Nitrite	mg/L	10	2.5	--	--			<0.1
Potassium	ug/L			3000	2660			2880
Selenium	ug/L	30	7.5	--	--			<0.5
Sodium	ug/L			5500	4850			5710
Sulfate	mg/L			12.1	11.6			9.5
Zinc	ug/L	2000	500	--	--			<5.0
Total Dissolved Solids	mg/L			281	271			268
Total Suspended Solids	mg/L			37.7	652			574
Cation/Anion Balance	%							2.88
Anion Summation	meq/L							5.3
Cation Summation	meq/L							5.6
Specific Conductance, Lab	umhos/cm							508
pH, Lab	SU							7.8

X = Not Analyzed -- = Not Detected

Yellow-shaded entries represent IL exceedances for water quality performance standards.
Blue-shaded entries represent HRL exceedances for water quality performance standards.

WENCK now part of Stantec

Table 10
Clay County Sanitary Landfill
Hawley, Minnesota

Inorganics & Metals Results

W-301A
Upper Aquifer

		HRL	IL	May-16	May-17	May-18	May-19	Oct-19	May-20	Oct-20
Alkalinity	mg/L			381	363	375	356	x	410	x
Arsenic	ug/L	10	2.5	--	0.51	0.67	0.61	x	0.79	x
Barium	ug/L	2000	500	128	12.1	126	114	x	141	x
Boron	ug/L	500	125	--	22.8	23.5	20.9	x	18.8	x
Cadmium	ug/L	0.5	0.125	--	--	<0.08	<0.08	x	<0.08	x
Calcium	mg/L			113	95.8	115	108	x	131	x
Chloride	mg/L			42.8	39.2	46.6	39.4	x	39.6	x
Chromium	ug/L	100	25	--	--	<0.5	<0.5	x	<0.5	x
Copper	ug/L	1300	325	--	--	1.1	1.1	x	<1.0	x
Iron	ug/L			--	--	<50	<50	x	68.9	x
Lead	ug/L	15	3.75	--	--	<0.1	<0.1	x	<0.1	x
Magnesium	ug/L			45000	45000	47100	44800	x	53100	x
Manganese	ug/L	100	25	--	0.62	0.68	<0.5	x	2.4	x
Mercury	ug/L	2.0	0.5	--	--	<0.2	<0.2	x	<0.2	x
Nickel	ug/L	100	25	--	5.1	5.2	5.0	x	3.3	x
Nitrogen, Ammonia	mg/L			--	0.02	<0.1	<0.1	x	<0.1	x
Nitrogen, Nitrate + Nitrite	mg/L	10	2.5	--	--	<0.1	<0.1	x	<0.1	x
Potassium	ug/L			2900	2410	2420	2340	x	2810	x
Selenium	ug/L	30	7.5	--	--	<0.5	<0.5	x	<0.5	x
Sodium	ug/L			20100	14900	17200	12700	x	15800	x
Sulfate	mg/L			54.3	52.6	73.6	63.6	x	59.6	x
Zinc	ug/L	2000	500	--	--	<5.0	<5.0	x	<5.0	x
Total Dissolved Solids	mg/L			611	506	569	523	x	574	x
Total Suspended Solids	mg/L			24.6	--	<10	<10	x	26	x
Cation/Anion Balance	%						0.76	x	4.92	x
Anion Summation	meq/L						9.5	x	10.6	x
Cation Summation	meq/L						9.7	x	11.6	x
Specific Conductance, Lab	umhos/cm						884	871	997	1020
pH, Lab	SU						7.4	7.0	7.4	7.4

X = Not Analyzed -- = Not Detected

Yellow-shaded entries represent IL exceedances for water quality performance standards.
Blue-shaded entries represent HRL exceedances for water quality performance standards.

WENCK now part of Stantec

Table 10
Clay County Sanitary Landfill
Hawley, Minnesota

Inorganics & Metals Results

W-301B
Lower Aquifer

		HRL	IL	May-16	May-17	May-18	May-19	May-20
Alkalinity	mg/L			241	222	223	226	228
Arsenic	ug/L	10	2.5	1.6	2.1	1.9	2.5	2.3
Barium	ug/L	2000	500	149	146	128	154	142
Boron	ug/L	500	125	--	30.7	29.8	30.9	27.5
Cadmium	ug/L	0.5	0.125	--	--	<0.08	<0.08	<0.08
Calcium	mg/L			70	56.5	55.2	65.5	64.4
Chloride	mg/L			3.4	3.3	3.7	3.4	2.7
Chromium	ug/L	100	25	--	--	<0.5	<0.5	<0.5
Copper	ug/L	1300	325	--	--	<1.0	<1.0	<1.0
Iron	ug/L			1180	886	961	820	843
Lead	ug/L	15	3.75	--	--	<0.1	<0.1	<0.1
Magnesium	ug/L			30800	30000	29000	30500	30400
Manganese	ug/L	100	25	139	125	112	131	116
Mercury	ug/L	2.0	0.5	--	--	<0.2	<0.2	<0.2
Nickel	ug/L	100	25	--	--	<0.5	<0.5	<0.5
Nitrogen, Ammonia	mg/L			0.14	0.14	0.22	0.13	0.12
Nitrogen, Nitrate + Nitrite	mg/L	10	2.5	--	--	<0.1	<0.1	<0.1
Potassium	ug/L			2600	2440	2440	2610	2670
Selenium	ug/L	30	7.5	--	--	<0.5	<0.5	<0.5
Sodium	ug/L			4700	4310	4300	4540	4640
Sulfate	mg/L			46.2	40.4	45.5	48.4	36.1
Zinc	ug/L	2000	500	--	--	<5.0	<5.0	<5.0
Total Dissolved Solids	mg/L			598	290	308	310	290
Total Suspended Solids	mg/L			63.9	33	34	21	55
Cation/Anion Balance	%						3.79	5.45
Anion Summation	meq/L						5.6	5.4
Cation Summation	meq/L						6.1	6.0
Specific Conductance, Lab	umhos/cm						537	540
pH, Lab	SU						7.6	7.7

X = Not Analyzed -- = Not Detected

Yellow-shaded entries represent IL exceedances for water quality performance standards.
Blue-shaded entries represent HRL exceedances for water quality performance standards.

WENCK now part of Stantec

Table 10
Clay County Sanitary Landfill
Hawley, Minnesota

Inorganics & Metals Results

W-302A
Upper Aquifer

		HRL	IL	May-16	May-17	May-18	Apr-19	Apr-19 (DUP)	Oct-19	May-20	Oct-20
Alkalinity	mg/L			266	277	258	191	191	x	222	x
Arsenic	ug/L	10	2.5	--	0.77	0.65	0.89	0.89	x	1.6	x
Barium	ug/L	2000	500	64.1	66.3	61.7	44.8	45.3	x	131	x
Boron	ug/L	500	125	--	14.1	16	11.5	10.9	x	14.7	x
Cadmium	ug/L	0.5	0.125	--	--	<0.08	<0.08	<0.08	x	<0.08	x
Calcium	mg/L			84.4	73.3	81.5	60.6	60.3	x	71.6	x
Chloride	mg/L			11.7	14.4	10.9	5.1	4.9	x	9.6	x
Chromium	ug/L	100	25	--	--	0.93	1.1	0.76	x	<0.5	x
Copper	ug/L	1300	325	--	--	<1.0	1.6	1.2	x	<1.0	x
Iron	ug/L			--	--	<50	<50	<50	x	899	x
Lead	ug/L	15	3.75	--	--	<0.1	<0.1	<0.1	x	<0.1	x
Magnesium	ug/L			23700	22500	22400	16000	15900	x	31100	x
Manganese	ug/L	100	25	--	1.7	3.2	<0.5	<0.5	x	206	x
Mercury	ug/L	2.0	0.5	--	--	<0.2	<0.2	<0.2	x	<0.2	x
Nickel	ug/L	100	25	--	--	<0.5	0.64	<0.5	x	<0.5	x
Nitrogen, Ammonia	mg/L			--	--	<0.1	<0.1	<0.1	x	<0.1	x
Nitrogen, Nitrate + Nitrite	mg/L	10	2.5	3.5	3.3	<0.5	1.4	1.4	x	<0.1	x
Potassium	ug/L			980	933	988	710	709	x	3520	x
Selenium	ug/L	30	7.5	--	0.82	0.67	<0.5	<0.5	x	<0.5	x
Sodium	ug/L			7000	4960	4860	2870	2950	x	3250	x
Sulfate	mg/L			6.4	8.1	8.8	6.6	6.4	x	38.7	x
Zinc	ug/L	2000	500	--	--	<5.0	14.9	<5.0	x	<5.0	x
Total Dissolved Solids	mg/L			332	321	313	219	239	x	308	x
Total Suspended Solids	mg/L			5.6	13	<10	<10	<10	x	10	x
Cation/Anion Balance	%						4.48	4.31	x	7.21	x
Anion Summation	meq/L						4.1	4.1	x	5.5	x
Cation Summation	meq/L						4.5	4.5	x	6.4	x
Specific Conductance, Lab	umhos/cm						424	424	452	546	471
pH, Lab	SU						7.5	7.3	7.4	7.9	7.8

X = Not Analyzed -- = Not Detected

Yellow-shaded entries represent IL exceedances for water quality performance standards.
Blue-shaded entries represent HRL exceedances for water quality performance standards.

WENCK now part of Stantec

Table 10
Clay County Sanitary Landfill
Hawley, Minnesota

Inorganics & Metals Results

W-302B
Lower Aquifer

		HRL	IL	May-16	May-17	May-18	Apr-19	May-20
Alkalinity	mg/L			246	198	230	222	251
Arsenic	ug/L	10	2.5	1.8	1.3	1.5	1.6	1.5
Barium	ug/L	2000	500	137	98.3	128	120	128
Boron	ug/L	500	125	--	17.8	17	16.6	14.1
Cadmium	ug/L	0.5	0.125	--	--	<0.08	<0.08	<0.08
Calcium	mg/L			74.9	64.6	80.2	63.5	68.7
Chloride	mg/L			8.9	8.1	9.7	10	9.8
Chromium	ug/L	100	25	--	--	<0.5	<0.5	<0.5
Copper	ug/L	1300	325	--	--	<1.0	<1.0	<1.0
Iron	ug/L			2160	1400	1100	955	1070
Lead	ug/L	15	3.75	--	--	<0.1	<0.1	<0.1
Magnesium	ug/L			23700	21400	26700	28800	30600
Manganese	ug/L	100	25	360	189	254	197	215
Mercury	ug/L	2.0	0.5	--	--	<0.2	<0.2	<0.2
Nickel	ug/L	100	25	--	--	<0.5	<0.5	<0.5
Nitrogen, Ammonia	mg/L			--	0.096	<0.1	<0.1	<0.1
Nitrogen, Nitrate + Nitrite	mg/L	10	2.5	--	--	<100	<0.1	1.9
Potassium	ug/L			4200	3530	3090	3440	3420
Selenium	ug/L	30	7.5	--	--	<0.5	<0.5	<0.5
Sodium	ug/L			11900	9230	3270	4420	3300
Sulfate	mg/L			55.6	46.8	48.5	45.5	38.8
Zinc	ug/L	2000	500	--	--	<5.0	<5.0	<5.0
Total Dissolved Solids	mg/L			446	299	338	312	328
Total Suspended Solids	mg/L			189	16	29	<10	<10
Cation/Anion Balance	%						1.41	0.82
Anion Summation	meq/L						5.7	6.1
Cation Summation	meq/L						5.8	6.2
Specific Conductance, Lab	umhos/cm						551	579
pH, Lab	SU						7.4	7.9

X = Not Analyzed -- = Not Detected

Yellow-shaded entries represent IL exceedances for water quality performance standards.
Blue-shaded entries represent HRL exceedances for water quality performance standards.

WENCK now part of Stantec

Table 10
Clay County Sanitary Landfill
Hawley, Minnesota

Inorganics & Metals Results

C-1
Upper Aquifer

		HRL	IL	May-15	May-17	Apr-19
Alkalinity	mg/L			Not Sampled	Not Sampled	x
Arsenic	ug/L	212	53			x
Barium	ug/L					x
Boron	ug/L					x
Cadmium	ug/L	4.4	1.1			x
Calcium	mg/L					x
Chloride	mg/L	920	230			x
Chromium	ug/L					x
Copper	ug/L					x
Iron	ug/L					x
Lead	ug/L	12.8	3.2			x
Magnesium	ug/L					x
Manganese	ug/L					x
Mercury	ug/L					x
Nickel	ug/L					x
Nitrogen, Ammonia	mg/L					x
Nitrogen, Nitrate + Nitrite	mg/L					x
Potassium	ug/L					x
Sodium	ug/L					x
Sulfate	mg/L					x
Zinc	ug/L					x
Total Dissolved Solids	mg/L					x
Total Suspended Solids	mg/L					x
Cation/Anion Balance	%					x
Anion Summation	meq/L					x
Cation Summation	meq/L					x
Specific Conductance, Lab	umhos/cm					755
pH, Lab	SU					6.7
Chemical Oxygen Demand	mg/L					x
Mercury, Low-Level	ng/L	27.6	6.9			x

X = Not Analyzed -- = Not Detected

Yellow-shaded entries represent IL exceedances for water quality performance standards.
Blue-shaded entries represent HRL exceedances for water quality performance standards.

WENCK now part of Stantec

Table 10
Clay County Sanitary Landfill
Hawley, Minnesota

Inorganics & Metals Results

C-4
Upper Aquifer

Odd Years Aquatic Standard		HRL	IL	May-15	May-17	Apr-19	Apr-19 (DUP)
Alkalinity	mg/L			334	342	327	312
Arsenic	ug/L	212	53	--	--	0.51	0.53
Barium	ug/L			240	x	x	x
Boron	ug/L			--	27.2	25	23.3
Cadmium	ug/L	4.4	1.1	--	0.12	0.17	0.12
Calcium	mg/L			87.2	84.8	71.6	71.9
Chloride	mg/L	920	230	14.6	13.7	8.6	8.5
Chromium	ug/L			--	x	x	x
Copper	ug/L			--	x	x	x
Iron	ug/L			--	x	x	x
Lead	ug/L	12.8	3.2	--	1.1	1.1	0.64
Magnesium	ug/L			38900	37800	32400	33000
Manganese	ug/L			127	132	102	100
Mercury	ug/L			--	--	x	x
Nickel	ug/L			--	x	x	x
Nitrogen, Ammonia	mg/L			0.11	x	x	x
Nitrogen, Nitrate + Nitrite	mg/L			--	x	x	x
Potassium	ug/L			2700	x	x	x
Selenium	ug/L			x	x	x	x
Sodium	ug/L			5600	x	x	x
Sulfate	mg/L			5.2	x	x	x
Zinc	ug/L			--	x	x	x
Total Dissolved Solids	mg/L			390	357	322	320
Total Suspended Solids	mg/L			37.2	--	<10	17
Cation/Anion Balance	%					-3.94	-1.27
Anion Summation	meq/L					6.8	6.5
Cation Summation	meq/L					6.3	6.3
Specific Conductance, Lab	umhos/cm					577	592
pH, Lab	SU					7.5	7.6
Mercury, Low-Level	ng/L	27.6	6.9			<0.5	0.689

X = Not Analyzed -- = Not Detected

Yellow-shaded entries represent IL exceedances for water quality performance standards.
Blue-shaded entries represent HRL exceedances for water quality performance standards.

WENCK now part of Stantec

Table 10
Clay County Sanitary Landfill
Hawley, Minnesota

Inorganics & Metals Results

C-8
Upper Aquifer

Odd Years Aquatic Standard		HRL	IL	May-17	Apr-19	Oct-19
Alkalinity	mg/L			294	330	x
Arsenic	ug/L	212	53	7.0	4.2	x
Barium	ug/L			x	x	x
Boron	ug/L			29.1	27.4	x
Cadmium	ug/L	4.4	1.1	0.39	<0.08	x
Calcium	mg/L			80.8	85.2	x
Chloride	mg/L	920	230	9.6	22.1	x
Chromium	ug/L			x	x	x
Copper	ug/L			1.2	x	x
Iron	ug/L			x	x	x
Lead	ug/L	12.8	3.2	22.2	0.11	x
Magnesium	ug/L			35400	38400	x
Manganese	ug/L			178	190	x
Mercury	ug/L			--	x	x
Nickel	ug/L			x	x	x
Nitrogen, Ammonia	mg/L			x	x	x
Nitrogen, Nitrate + Nitrite	mg/L			x	x	x
Potassium	ug/L			x	x	x
Selenium	ug/L			x	x	x
Sodium	ug/L			x	x	x
Sulfate	mg/L			x	x	x
Zinc	ug/L			x	x	x
Total Dissolved Solids	mg/L			346	385	x
Total Suspended Solids	mg/L			21	<10	x
Cation/Anion Balance	%				1.47	x
Anion Summation	meq/L				7.2	x
Cation Summation	meq/L				7.4	x
Specific Conductance, Lab	umhos/cm				687	631
pH, Lab	SU				7.7	7.6
Chemical Oxygen Demand	mg/L				x	x
Mercury, Low-Level	ng/L	27.6	6.9		<0.5	x

X = Not Analyzed -- = Not Detected

Yellow-shaded entries represent IL exceedances for water quality performance standards.
Blue-shaded entries represent HRL exceedances for water quality performance standards.

WENCK now part of Stantec

Table 10
Clay County Sanitary Landfill
Hawley, Minnesota

Inorganics & Metals Results

C-9
Upper Aquifer

Odd Years Aquatic Standard		HRL	IL	May-15	May-17	May-19
Alkalinity	mg/L			592	529	504
Arsenic	ug/L	212	53	--	1.9	4.1
Barium	ug/L			271	x	x
Boron	ug/L			172	151	24.9
Cadmium	ug/L	4.4	1.1	--	0.11	<0.08
Calcium	mg/L			187	155	144
Chloride	mg/L	920	230	112	102	72.6
Chromium	ug/L			--	x	x
Copper	ug/L			--	2.2	x
Iron	ug/L			--	x	x
Lead	ug/L	12.8	3.2	--	0.22	0.12
Magnesium	ug/L			69000	59600	37400
Manganese	ug/L			1100	1240	186
Mercury	ug/L			--	0.00088	x
Nickel	ug/L			39.4	x	x
Nitrogen, Ammonia	mg/L			--	x	x
Nitrogen, Nitrate + Nitrite	mg/L			--	x	x
Potassium	ug/L			2800	x	x
Selenium	ug/L			x	x	x
Sodium	ug/L			35300	x	x
Sulfate	mg/L			42.1	x	x
Zinc	ug/L			--	x	x
Total Dissolved Solids	mg/L			884	723	657
Total Suspended Solids	mg/L			5.2	21	<10
Cation/Anion Balance	%					-8.21
Anion Summation	meq/L					12.1
Cation Summation	meq/L					10.3
Specific Conductance, Lab	umhos/cm					1150
pH, Lab	SU					6.8
Chemical Oxygen Demand	mg/L					x
Mercury, Low-Level	ng/L	27.6	6.9			0.911

X = Not Analyzed -- = Not Detected

Yellow-shaded entries represent IL exceedances for water quality performance standards.
Blue-shaded entries represent HRL exceedances for water quality performance standards.

WENCK now part of Stantec

Table 10
Clay County Sanitary Landfill
Hawley, Minnesota

Inorganics & Metals Results

C-10
Upper Aquifer

Odd Years Aquatic Standard		HRL	IL	May-15	May-17	Apr-19
Alkalinity	mg/L			--	--	x
Arsenic	ug/L	212	53	--	--	x
Barium	ug/L			--	--	x
Boron	ug/L			--	--	x
Cadmium	ug/L	4.4	1.1	--	--	x
Calcium	mg/L			--	--	x
Chloride	mg/L	920	230	--	--	x
Chromium	ug/L			--	--	x
Copper	ug/L			--	--	x
Iron	ug/L			--	--	x
Lead	ug/L	12.8	3.2	--	--	x
Magnesium	ug/L			--	--	x
Manganese	ug/L			--	--	x
Mercury	ug/L			--	--	x
Nickel	ug/L			--	--	x
Nitrogen, Ammonia	mg/L			--	--	x
Nitrogen, Nitrate + Nitrite	mg/L			--	--	x
Potassium	ug/L			--	--	x
Selenium	ug/L			--	--	x
Sodium	ug/L			--	--	x
Sulfate	mg/L			--	--	x
Zinc	ug/L			--	--	x
Total Dissolved Solids	mg/L			--	--	x
Total Suspended Solids	mg/L			--	--	x
Cation/Anion Balance	%			--	--	x
Anion Summation	meq/L			--	--	x
Cation Summation	meq/L			--	--	x
Specific Conductance, Lab	umhos/cm			--	--	1260
pH, Lab	SU			--	--	7.2
Chemical Oxygen Demand	mg/L			--	--	x
Mercury, Low-Level	ng/L	27.6	6.9	--	--	x

X = Not Analyzed -- = Not Detected

Yellow-shaded entries represent IL exceedances for water quality performance standards.
Blue-shaded entries represent HRL exceedances for water quality performance standards.

WENCK now part of Stantec

Table 10
Clay County Sanitary Landfill
Hawley, Minnesota

Inorganics & Metals Results

C-11
Upper Aquifer

		HRL	IL	May-16	May-17	May-18	May-19	May-19 (DUP)	May-20
Alkalinity	mg/L			344	336	336	341	346	338
Arsenic	ug/L	10	2.5	--	--	<0.5	<0.5	<0.5	<0.5
Barium	ug/L	2000	500	138	130	127	123	126	112
Boron	ug/L	500	125	--	30.3	32	30.8	31.1	25.1
Cadmium	ug/L	0.5	0.125	--	--	<0.08	<0.08	<0.08	<0.08
Calcium	mg/L			120	111	112	111	106	104
Chloride	mg/L			23.8	13.6	22	15.2	16.5	4.5
Chromium	ug/L	100	25	--	--	0.53	0.75	<0.5	3.2
Copper	ug/L	1300	325	--	1.3	1.6	1.2	1.4	<1.0
Iron	ug/L			--	--	<50	<50	<50	<50
Lead	ug/L	15	3.75	--	--	<0.1	<0.1	0.46	<0.1
Magnesium	ug/L			49400	43200	46000	43500	43800	36100
Manganese	ug/L	100	25	--	--	<0.5	<0.5	<0.5	<0.5
Mercury	ug/L	2.0	0.5	--	--	<0.2	<0.2	<0.2	<0.2
Nickel	ug/L	100	25	--	--	<0.5	<0.5	<0.5	1.3
Nitrogen, Ammonia	mg/L			--	--	<0.1	<0.1	<0.1	<0.1
Nitrogen, Nitrate + Nitrite	mg/L	10	2.5	18	15.8	19.3	18.9	18.9	8.6
Potassium	ug/L			2800	2810	2520	2520	2540	2280
Selenium	ug/L	30	7.5	--	1.1	1.2	1.3	1.4	1.0
Sodium	ug/L			11300	8850	9270	8240	8410	5060
Sulfate	mg/L			41.9	27.6	40.5	32.3	33.9	13.7
Zinc	ug/L	2000	500	--	--	<5.0	<5.0	<5.0	<5.0
Total Dissolved Solids	mg/L			596	489	483	510	536	411
Total Suspended Solids	mg/L			17.4	--	<10	<10	<10	<10
Cation/Anion Balance	%						9.17	7.3	8.11
Anion Summation	meq/L						7.9	8.1	7.2
Cation Summation	meq/L						9.5	9.4	8.4
Specific Conductance, Lab	umhos/cm						863	867	725
pH, Lab	SU						7.3	7.3	7.5

X = Not Analyzed -- = Not Detected

Yellow-shaded entries represent IL exceedances for water quality performance standards.
Blue-shaded entries represent HRL exceedances for water quality performance standards.

WENCK now part of Stantec

Table 10
Clay County Sanitary Landfill
Hawley, Minnesota

Inorganics & Metals Results

TW-1
Upper Aquifer

Odd Years Aquatic Standard		May-15	May-17	Apr-19
Alkalinity	mg/L	--	--	x
Arsenic	ug/L	--	--	x
Barium	ug/L	--	--	x
Boron	ug/L	--	--	x
Cadmium	ug/L	--	--	x
Calcium	mg/L	--	--	x
Chloride	mg/L	--	--	x
Chromium	ug/L	--	--	x
Copper	ug/L	--	--	x
Iron	ug/L	--	--	x
Lead	ug/L	--	--	x
Magnesium	ug/L	--	--	x
Manganese	ug/L	--	--	x
Mercury	ug/L	--	--	x
Nickel	ug/L	--	--	x
Nitrogen, Ammonia	mg/L	--	--	x
Nitrogen, Nitrate + Nitrite	mg/L	--	--	x
Potassium	ug/L	--	--	x
Selenium	ug/L	--	--	x
Sodium	ug/L	--	--	x
Sulfate	mg/L	--	--	x
Zinc	ug/L	--	--	x
Total Dissolved Solids	mg/L	--	--	x
Total Suspended Solids	mg/L	--	--	x
Cation/Anion Balance	%	--	--	x
Anion Summation	meq/L	--	--	x
Cation Summation	meq/L	--	--	x
Specific Conductance, Lab	umhos/cm	--	--	1370
pH, Lab	SU	--	--	6.7
Mercury, Low-Level	ng/L	--	--	x

X = Not Analyzed -- = Not Detected

WENCK now part of Stantec

Table 10
Clay County Sanitary Landfill
Hawley, Minnesota

Inorganics & Metals Results

TW-2
Upper Aquifer

Odd Years Aquatic Standard		May-15	May-17	Apr-19
Alkalinity	mg/L	--	--	x
Arsenic	ug/L	--	--	x
Barium	ug/L	--	--	x
Boron	ug/L	--	--	x
Cadmium	ug/L	--	--	x
Calcium	mg/L	--	--	x
Chloride	mg/L	--	--	x
Chromium	ug/L	--	--	x
Copper	ug/L	--	--	x
Iron	ug/L	--	--	x
Lead	ug/L	--	--	x
Magnesium	ug/L	--	--	x
Manganese	ug/L	--	--	x
Mercury	ug/L	--	--	x
Nickel	ug/L	--	--	x
Nitrogen, Ammonia	mg/L	--	--	x
Nitrogen, Nitrate + Nitrite	mg/L	--	--	x
Potassium	ug/L	--	--	x
Selenium	ug/L	--	--	x
Sodium	ug/L	--	--	x
Sulfate	mg/L	--	--	x
Zinc	ug/L	--	--	x
Total Dissolved Solids	mg/L	--	--	x
Total Suspended Solids	mg/L	--	--	x
Cation/Anion Balance	%	--	--	x
Anion Summation	meq/L	--	--	x
Cation Summation	meq/L	--	--	x
Specific Conductance, Lab	umhos/cm	--	--	921
pH, Lab	SU	--	--	6.8
Mercury, Low-Level	ng/L	--	--	x

X = Not Analyzed -- = Not Detected

WENCK now part of Stantec

Table 10
Clay County Sanitary Landfill
Hawley, Minnesota

Inorganics & Metals Results

TW-3
Upper Aquifer

Odd Years Aquatic Standard		May-15	May-17	Apr-19
Alkalinity	mg/L	--	--	x
Arsenic	ug/L	--	--	x
Barium	ug/L	--	--	x
Boron	ug/L	--	--	x
Cadmium	ug/L	--	--	x
Calcium	mg/L	--	--	x
Chloride	mg/L	--	--	x
Chromium	ug/L	--	--	x
Copper	ug/L	--	--	x
Iron	ug/L	--	--	x
Lead	ug/L	--	--	x
Magnesium	ug/L	--	--	x
Manganese	ug/L	--	--	x
Mercury	ug/L	--	--	x
Nickel	ug/L	--	--	x
Nitrogen, Ammonia	mg/L	--	--	x
Nitrogen, Nitrate + Nitrite	mg/L	--	--	x
Potassium	ug/L	--	--	x
Selenium	ug/L	--	--	x
Sodium	ug/L	--	--	x
Sulfate	mg/L	--	--	x
Zinc	ug/L	--	--	x
Total Dissolved Solids	mg/L	--	--	x
Total Suspended Solids	mg/L	--	--	x
Cation/Anion Balance	%	--	--	x
Anion Summation	meq/L	--	--	x
Cation Summation	meq/L	--	--	x
Specific Conductance, Lab	umhos/cm	--	--	3460
pH, Lab	SU	--	--	6.7
Mercury, Low-Level	ng/L	--	--	x

X = Not Analyzed -- = Not Detected

WENCK now part of Stantec

Table 10
Clay County Sanitary Landfill
Hawley, Minnesota

Inorganics & Metals Results

Lysimeter III-P1
Area III

		HRL	IL	May-16	May-17	May-18	Apr-19	Oct-19	May-20	Oct-20	Oct-20 (DUP)
				Dry							
Alkalinity	mg/L				303	452	424	x	351	x	x
Arsenic	ug/L	10	2.5		30.8	24.9	105	x	57.7	x	x
Barium	ug/L				390	x	x	x	x	x	x
BOD	mg/L					x	x	x	x	x	x
Boron	ug/L	500	125		29.7	40.4	31	x	35.2	x	x
Cadmium	ug/L	0.5	0.125		--	<0.08	<0.08	x	<0.08	x	x
Calcium	mg/L				60.5	112	127	x	111	x	x
Chloride	mg/L				6.9	9.2	9.9	x	8.7	x	x
Chromium	ug/L	100	25		--	<0.5	x	x	x	x	x
Chromium, Hexavalent	mg/L	100	25				0.014	x	<0.01	x	x
COD	mg/L				--	<50	<50	x	<50	x	x
Copper	ug/L	1300	325		--	<1.0	<1.0	x	<1.0	x	x
Iron	ug/L				1880	12800	6080	x	5680	x	x
Lead	ug/L	15	3.75		--	<0.1	<0.1	x	<0.1	x	x
Magnesium	ug/L				--	51200	59200	x	46900	x	x
Manganese	ug/L	100	25		624	1190	1600	x	1050	x	x
Mercury	ug/L	2.0	0.5		--	<0.2	<0.2	x	<0.2	x	x
Nickel	ug/L				1.1	x	x	x	x	x	x
Nitrogen, Ammonia	mg/L				0.046	<0.1	<0.1	x	<0.1	x	x
Nitrogen, Nitrate + Nitrite	mg/L	10	2.5		--	<0.1	<0.1	x	<0.1	x	x
Potassium	ug/L				2.57	4.15	2.76	x	3010	x	x
Selenium	ug/L	30	7.5		--	--	x	x	x	x	x
Sodium	ug/L				4590	7120	7400	x	8820	x	x
Sulfate	mg/L				--	36.7	125	x	75	x	x
Zinc	ug/L	2000	500		--	<5.0	<5.0	x	<5.0	x	x
Total Dissolved Solids	mg/L				308	490	621	x	509	x	x
Total Suspended Solids	mg/L				18	26	15	x	18	x	x
Cation/Anion Balance	%						1.64	x	5.97	x	x
Anion Summation	meq/L						11.4	x	8.8	x	x
Cation Summation	meq/L						11.7	x	10	x	x
Specific Conductance, Lab	umhos/cm						972	978	824	763	766
pH, Lab	SU						7.1	7.4	7.5	7.8	7.9

X = Not Analyzed -- = Not Detected

Yellow-shaded entries represent IL exceedances for water quality performance standards.
Blue-shaded entries represent HRL exceedances for water quality performance standards.

WENCK now part of Stantec

Table 10
Clay County Sanitary Landfill
Hawley, Minnesota

Inorganics & Metals Results

Lysimeter III-P2

Area III

		HRL	IL	May-16	May-17	May-18	Apr-19	Oct-19	May-20	Oct-20
Alkalinity	mg/L			Dry	756	806	773	x	697	x
Arsenic	ug/L	10	2.5		123	114	112	x	107	x
Barium	ug/L				13.8	x	x	x	x	x
BOD	mg/L				x	x	x	x	x	x
Boron	ug/L	500	125		222	231	226	x	214	x
Cadmium	ug/L	0.5	0.125		x	<0.08	<0.08	x	<0.08	x
Calcium	mg/L				27.9	40.9	41	x	48.6	x
Chloride	mg/L				42.5	41.6	35.6	x	25.7	x
Chromium	ug/L	100	25		9.9	8.9	x	x	x	x
Chromium, Hexavalent	mg/L	100			x	x	<0.01	x	<0.01	x
COD	mg/L				96.6	<50	<50	x	<50	x
Copper	ug/L	1300	325		2.7	5.9	10.4	x	11.4	x
Iron	ug/L				76.8	73	<50	x	69.2	x
Lead	ug/L	15	3.75		x	<0.1	<0.1	x	<0.1	x
Magnesium	ug/L				31000	32300	29500	x	29400	x
Manganese	ug/L	100	25		3.1	18.1	5.9	x	54.4	x
Mercury	ug/L	2.0	0.5		x	<0.2	<0.2	x	<0.2	x
Nickel	ug/L				9.1	x	x	x	x	x
Nitrogen, Ammonia	mg/L				x	<0.1	<0.1	x	<0.1	x
Nitrogen, Nitrate + Nitrite	mg/L	10	2.5		0.34	0.37	0.34	x	0.52	x
Potassium	ug/L				246000	273000	282000	x	246000	x
Selenium	ug/L	30	7.5		x	x	x	x	x	x
Sodium	ug/L				133000	134000	152000	x	128000	x
Sulfate	mg/L				x	6.2	8.8	x	8.0	x
Zinc	ug/L	2000	500		x	<5.0	6.3	x	8.1	x
Total Dissolved Solids	mg/L				930	1240	966	x	865	x
Total Suspended Solids	mg/L				51	<10	<10	x	81	x
Cation/Anion Balance	%				x	x	4.83	x	6.08	x
Anion Summation	meq/L				x	x	16.6	x	14.8	x
Cation Summation	meq/L				x	x	18.3	x	16.7	x
Specific Conductance, Lab	umhos/cm				x	x	1560	1640	1460	1600
pH, Lab	SU					x	7.4	7.5	6.9	6.9

X = Not Analyzed -- = Not Detected

Yellow-shaded entries represent IL exceedances for water quality performance standards.
Blue-shaded entries represent HRL exceedances for water quality performance standards.

WENCK now part of Stantec

Table 10
Clay County Sanitary Landfill
Hawley, Minnesota

Inorganics & Metals Results

Lysimeter III-P3

Area III

Inorganic Parameters		HRL	IL	May-16	May-17	May-18	Apr-19	May-20
Alkalinity	mg/L			Dry	Dry	Dry	Dry	Dry
Arsenic	ug/L	10	2.5					
Barium	ug/L							
BOD	mg/L							
Boron	ug/L	500	125					
Cadmium	ug/L	0.5	0.125					
Calcium	mg/L							
Chloride	mg/L							
Chromium	ug/L	100	25					
Chromium, Hexavalent	mg/L	100	25					
COD	mg/L							
Copper	ug/L	1300	325					
Iron	ug/L							
Lead	ug/L	15	3.75					
Magnesium	ug/L							
Manganese	ug/L	100	25					
Mercury	ug/L	2.0	0.5					
Nickel	ug/L							
Nitrogen, Ammonia	mg/L							
Nitrogen, Nitrate + Nitrite	mg/L	10	2.5					
Potassium	ug/L							
Selenium	ug/L	30	7.5					
Sodium	ug/L							
Sulfate	mg/L							
Zinc	ug/L	2000	500					
Total Dissolved Solids	mg/L							
Total Suspended Solids	mg/L							
Cation/Anion Balance	%							
Anion Summation	meq/L							
Cation Summation	meq/L							
Specific Conductance, Lab	umhos/cm							
pH, Lab	SU							

X = Not Analyzed -- = Not Detected

Yellow-shaded entries represent IL exceedances for water quality performance standards.
Blue-shaded entries represent HRL exceedances for water quality performance standards.

WENCK now part of Stantec

Table 10
Clay County Sanitary Landfill
Hawley, Minnesota

Inorganics & Metals Results

Lysimeter IV-P1&2

Area IV

Inorganic Parameters		HRL	IL	May-16	May-17	May-18	Apr-19	May-20
Alkalinity	mg/L			Obstructed	Dry	Dry	Dry	Dry
Arsenic	ug/L	10	2.5					
Barium	ug/L							
BOD	mg/L							
Boron	ug/L	500	125					
Cadmium	ug/L	0.5	0.125					
Calcium	mg/L							
Chloride	mg/L							
Chromium	ug/L	100	25					
Chromium, Hexavalent	mg/L	100	25					
COD	mg/L							
Copper	ug/L	1300	325					
Iron	ug/L							
Lead	ug/L	15	3.75					
Magnesium	ug/L							
Manganese	ug/L	100	25					
Mercury	ug/L	2.0	0.5					
Nickel	ug/L							
Nitrogen, Ammonia	mg/L							
Nitrogen, Nitrate + Nitrite	mg/L	10	2.5					
Potassium	ug/L							
Selenium	ug/L	30	7.5					
Sodium	ug/L							
Sulfate	mg/L							
Zinc	ug/L	2000	500					
Total Dissolved Solids	mg/L							
Total Suspended Solids	mg/L							
Cation/Anion Balance	%							
Anion Summation	meq/L							
Cation Summation	meq/L							
Specific Conductance, Lab	umhos/cm							
pH, Lab	SU							

X = Not Analyzed -- = Not Detected

Yellow-shaded entries represent IL exceedances for water quality performance standards.
Blue-shaded entries represent HRL exceedances for water quality performance standards.

WENCK now part of Stantec

Table 10
Clay County Sanitary Landfill
Hawley, Minnesota

Inorganics & Metals Results

Lysimeter IV-P3

Area IV

Inorganic Parameters		HRL	IL	May-16	May-17	May-18	Apr-19	May-20
Alkalinity	mg/L			Dry	Dry	Obstructed	Dry	Dry
Arsenic	ug/L	10	2.5					
Barium	ug/L							
BOD	mg/L							
Boron	ug/L	500	125					
Cadmium	ug/L	0.5	0.125					
Calcium	mg/L							
Chloride	mg/L							
Chromium	ug/L	100	25					
Chromium, Hexavalent	mg/L	100	25					
COD	mg/L							
Copper	ug/L	1300	325					
Iron	ug/L							
Lead	ug/L	15	3.75					
Magnesium	ug/L							
Manganese	ug/L	100	25					
Mercury	ug/L	2.0	0.5					
Nickel	ug/L							
Nitrogen, Ammonia	mg/L							
Nitrogen, Nitrate + Nitrite	mg/L	10	2.5					
Potassium	ug/L							
Selenium	ug/L	30	7.5					
Sodium	ug/L							
Sulfate	mg/L							
Zinc	ug/L	2000	500					
Total Dissolved Solids	mg/L							
Total Suspended Solids	mg/L							
Cation/Anion Balance	%							
Anion Summation	meq/L							
Cation Summation	meq/L							
Specific Conductance, Lab	umhos/cm							
pH, Lab	SU							

X = Not Analyzed -- = Not Detected

Yellow-shaded entries represent IL exceedances for water quality performance standards.
Blue-shaded entries represent HRL exceedances for water quality performance standards.

WENCK now part of Stantec

Table 10
Clay County Sanitary Landfill
Hawley, Minnesota

Inorganics & Metals Results

Surface Water: S-1
(West of W-16)

		HRL	IL	May-16	May-17	May-18	Apr-19	May-20
Alkalinity	mg/L			Dry	Dry	452	468	476
Arsenic	ug/L	212	53			974	1.3	22.1
Barium	ug/L					--	x	x
Boron	ug/L	500	125			1330	50.9	81.5
Cadmium	ug/L	4.4	1.1			25.8	<0.08	<0.4
Calcium	mg/L					2490	142	121
Chloride	mg/L	920	230			25.7	35	24.1
Chromium	ug/L					--	x	x
Copper	ug/L					831	x	x
Iron	ug/L					--	x	x
Lead	ug/L	12.8	3.2			489	<0.1	3.6
Magnesium	ug/L					653000	51600	57500
Manganese	ug/L	100	25			62300	1390	1010
Mercury	ug/L					1.1	x	x
Nickel - Total	ug/L					--	x	x
Ammonia-Nitrogen as N	mg/L					--	x	x
Nitrogen, NO2 plus NO4	mg/L					--	x	x
Potassium - Total	ug/L					--	x	x
Selenium - Total	ug/L					--	x	x
Sodium - Total	ug/L					--	x	x
Sulfate	mg/L					--	x	23.8
Zinc - Total	ug/L					--	x	x
Total Dissolved Solids	mg/L					640	556	558
Total Suspended Solids	mg/L					11600	140	386
Cation/Anion Balance	%					--	5.11	0.87
Anion Summation	meq/L					--	10.3	10.7
Cation Summation	meq/L					--	11.5	10.9
Specific Conductance, Lab	umhos/cm					--	951	974
pH, Lab	SU					--	7.4	7.4
Chemical Oxygen Demand	mg/L					--	x	x
Mercury, Low-Level	ng/L	27.6	6.9			--	9.33	3.68

X = Not Analyzed -- = Not Detected

Yellow-shaded entries represent IL exceedances for water quality performance standards.
Blue-shaded entries represent HRL exceedances for water quality performance standards.

WENCK now part of Stantec

Table 10
Clay County Sanitary Landfill
Hawley, Minnesota

Inorganics & Metals Results

Surface Water: S-2
(West of W-10)

		HRL	IL	May-16	May-17	May-18	Apr-19	May-20
Alkalinity	mg/L			395	379	403	399	883
Arsenic	ug/L	212	53	9.6	10.7	81.7	68.6	3700
Boron	ug/L	500	125	--	46.6	80.7	34.6	<50
Cadmium	ug/L	4.4	1.1	--	--	<0.08	<0.08	<0.4
Calcium	mg/L			82.8	101	152	136	259
Chloride	mg/L	920	230	65.7	32.2	48.7	42	85.6
Copper	ug/L		9.8	--	--	2.1	x	x
Lead	ug/L	12.8	3.2	--	--	0.72	0.52	0.79
Magnesium	ug/L			76500	46100	61300	57800	75500
Manganese	ug/L	100	25	540	142	902	1190	3320
Mercury	ug/L		0.0069	0.0197	0.00278	0.019	x	x
Sulfate	mg/L			--	--	--	x	<1.2
Total Dissolved Solids	mg/L			670	448	522	486	695
Total Suspended Solids	mg/L			129	34	312	301	2530
Cation/Anion Balance	%			--	--	--	11.79	-1.83
Anion Summation	meq/L			--	--	--	9.2	20.1
Cation Summation	meq/L			--	--	--	11.6	19.4
Specific Conductance, Lab	umhos/cm			--	--	--	878	1170
pH, Lab	SU			--	--	--	7.4	7.2
Chemical Oxygen Demand	mg/L			--	--	--	x	x
Mercury, Low-Level	ng/L	27.6	6.9	--	--	--	16.9	37.4

X = Not Analyzed -- = Not Detected

Yellow-shaded entries represent IL exceedances for water quality performance standards.
Blue-shaded entries represent HRL exceedances for water quality performance standards.

WENCK now part of Stantec

Table 10
Clay County Sanitary Landfill
Hawley, Minnesota

Inorganics & Metals Results

Surface Water: S-3
(SW Corner)

		HRL	IL	May-16	May-17	May-18	May-19	Oct-19	May-20	Oct-20
Alkalinity	mg/L			321	Dry	357	402	x	734	x
Arsenic	ug/L	212	53	5.8		3.8	3.6	x	3.6	x
Barium				--		--	x	x	x	x
Boron		500	125	--		36.5	25.4	x	27.5	x
Cadmium	ug/L	4.4	1.1	--		<0.08	<0.08	x	<0.08	x
Calcium	mg/L			89		914	79.1	x	96.8	x
Chloride	mg/L	920	230	30.1		24.1	7.9	x	<1.2	x
Chromium				--		--	x	x	x	x
Copper	ug/L		9.8	--		1.2	x	x	x	x
Iron				--		--	x	x	x	x
Lead	ug/L	12.8	3.2	--		0.1	0.2	x	<0.1	x
Magnesium	ug/L			51200		63200	100000	x	145000	x
Manganese	ug/L	100	25	27.2		19.8	141	x	46.3	x
Mercury	ug/L		0.0069	0.00432		0.004	x	x	x	x
Nickel				--		--	x	x	x	x
Ammonia-Nitrogen as N				--		--	x	x	x	x
Nitrogen, NO2 plus NO4				--		--	x	x	x	x
Potassium				--		--	x	x	x	x
Selenium				--		--	x	x	x	x
Sodium				--		--	x	x	x	x
Sulfate				--		--	x	x	189	x
Zinc				--		--	x	x	x	x
Total Dissolved Solids	mg/L			527		510	602	x	985	x
Total Suspended Solids	mg/L			14.6		11	27	x	33	x
Cation/Anion Balance	%			--		--	19.24	x	-5.2	x
Anion Summation	meq/L			--		--	8.3	x	18.6	x
Cation Summation	meq/L			--		--	12.2	x	16.8	x
Specific Conductance, Lab	umhos/cm			--		--	876	1380	1510	887
pH, Lab	SU			--		--	7.4	7.4	7.8	7.4
Chemical Oxygen Demand	mg/L			--		--	x	x	x	x
Mercury, Low-Level	ng/L	27.6	6.9	--		--	7.18	x	13.9	x

X = Not Analyzed -- = Not Detected

Yellow-shaded entries represent IL exceedances for water quality performance standards.
Blue-shaded entries represent HRL exceedances for water quality performance standards.

WENCK now part of Stantec

Table 10
Clay County Sanitary Landfill
Hawley, Minnesota

Inorganics & Metals Results

R. Ekre
Residence

		HRL	IL	May-16	May-17	May-18	May-19	May-20
Alkalinity	mg/L			No Access	No Access	No Access	No Access	No Access
Arsenic	ug/L	10	2.5					
Barium	ug/L	2000	500					
Boron	ug/L	500	125					
Cadmium	ug/L	0.5	0.125					
Calcium	mg/L							
Chloride	mg/L							
Chromium	ug/L	100	25					
Copper	ug/L	1300	325					
Iron	ug/L							
Lead	ug/L	15	3.75					
Magnesium	ug/L							
Manganese	ug/L	100	25					
Mercury	ug/L	2.0	0.5					
Nickel	ug/L	100	25					
Nitrogen, Ammonia	mg/L							
Nitrogen, Nitrate + Nitrite	mg/L	10	2.5					
Potassium	ug/L							
Selenium	ug/L	30	7.5					
Sodium	ug/L							
Sulfate	mg/L							
Zinc	ug/L	2000	500					
Total Dissolved Solids	mg/L							
Total Suspended Solids	mg/L							
Cation/Anion Balance	%							
Anion Summation	meq/L							
Cation Summation	meq/L							
Specific Conductance, Lab	umhos/cm							
pH, Lab	SU							

X = Not Analyzed -- = Not Detected

Yellow-shaded entries represent IL exceedances for water quality performance standards.
Blue-shaded entries represent HRL exceedances for water quality performance standards.

WENCK now part of Stantec

Table 10
Clay County Sanitary Landfill
Hawley, Minnesota

Inorganics & Metals Results

J. Ekre
Residence

		HRL	IL	May-18	May-19	May-20
Alkalinity	mg/L			228	No Access	232
Arsenic	ug/L	10	2.5	1.3		1.8
Barium	ug/L	2000	500	0.69		0.79
Boron	ug/L	500	125	25.4		23.7
Cadmium	ug/L	0.5	0.125	<0.08		<0.08
Calcium	mg/L			0.34		0.298
Chloride	mg/L			2.1		1.5
Chromium	ug/L	100	25	<0.5		<0.5
Copper	ug/L	1300	325	8.0		1.6
Iron	ug/L			<50		<50
Lead	ug/L	15	3.75	<0.1		<0.1
Magnesium	ug/L			147		118
Manganese	ug/L	100	25	0.84		0.99
Mercury	ug/L	2.0	0.5	<0.2		<0.2
Nickel	ug/L	100	25	<0.5		<0.5
Nitrogen, Ammonia	mg/L			<0.1		<0.1
Nitrogen, Nitrate + Nitrite	mg/L	10	2.5	<0.1		<0.1
Potassium	ug/L			256		180
Selenium	ug/L	30	7.5	<0.5		<0.5
Sodium	ug/L			126000		130000
Sulfate	mg/L			54.7		47.2
Zinc	ug/L	2000	500	<5.0		<5.0
Total Dissolved Solids	mg/L			350		365
Total Suspended Solids	mg/L			<10		<10
Cation/Anion Balance	%			-1.83		0.35
Anion Summation	meq/L			5.5		5.7
Cation Summation	meq/L			5.5		5.7
Specific Conductance, Lab	umhos/cm			582		581
pH, Lab	SU			7.8		8.0

X = Not Analyzed -- = Not Detected

Yellow-shaded entries represent IL exceedances for water quality performance standards.
Blue-shaded entries represent HRL exceedances for water quality performance standards.

WENCK now part of Stantec

Table 10
Clay County Sanitary Landfill
Hawley, Minnesota

Inorganics & Metals Results

Deutscher
Residence

		HRL	IL	May-16	May-17	May-18	May-19	May-20
Alkalinity	mg/L			257	257	267	261	273
Arsenic	ug/L	10	2.5	2.7	2.5	0.88	1.4	1.2
Barium	ug/L	2000	500	82.4	88.7	75.6	72.2	109
Boron	ug/L	500	125	<100	21.7	20.7	20.7	29.3
Cadmium	ug/L	0.5	0.125	<0.4	<0.08	<0.08	<0.08	<0.08
Calcium	mg/L			102	86.2	92.3	73.7	132
Chloride	mg/L			34.6	20.6	25.9	17.6	29.4
Chromium	ug/L	100	25	<10	<0.5	<0.5	<0.5	0.78
Copper	ug/L	1300	325	<10	<1.0	5.1	2.1	5.1
Iron	ug/L			1530	<50	<50	<50	<50
Lead	ug/L	15	3.75	<1.0	<0.1	<0.1	<0.1	<0.1
Magnesium	ug/L			58600	45300	53300	40900	77000
Manganese	ug/L	100	25	291	256	267	231	430
Mercury	ug/L	2.0	0.5	<0.2	<0.2	<0.2	<0.2	<0.2
Nickel	ug/L	100	25	<10	<0.5	2.4	<0.5	1.1
Nitrogen, Ammonia	mg/L			<0.1	0.13	<0.1	<0.1	<0.1
Nitrogen, Nitrate + Nitrite	ug/L	10	2.5	<0.1	<0.02	<0.1	<0.1	<0.1
Potassium	ug/L			3400	2910	3100	2670	3890
Selenium	ug/L	30	7.5	<2.0	<0.5	<0.5	<0.5	<0.5
Sodium	ug/L			7200	5120	6660	4900	10400
Sulfate	mg/L			194	111	159	107	163
Zinc	ug/L	2000	500	94.3	32.3	348	87.5	259
Total Dissolved Solids	mg/L			660	474	570	455	676
Total Suspended Solids	mg/L			3.0	<10	<10	<10	10
Cation/Anion Balance	%			0.94	x	-0.14	-3.8	16.49
Anion Summation	meq/L			x	x	9.4	7.9	9.7
Cation Summation	meq/L			x	x	9.4	7.4	13.5
Specific Conductance, Lab	umhos/cm			x	718	806	714	936
pH, Lab	SU			x	7.1	7.4	7.5	7.5

X = Not Analyzed -- = Not Detected

Yellow-shaded entries represent IL exceedances for water quality performance standards.
Blue-shaded entries represent HRL exceedances for water quality performance standards.

WENCK now part of Stantec

Table 10
Clay County Sanitary Landfill
Hawley, Minnesota

Inorganics & Metals Results

Weaver
Residence

		HRL	IL	May-16	May-17	May-18	May-19	May-20
Alkalinity	mg/L			266	No Access	No Access	No Access	No Access
Arsenic	ug/L	10	2.5	1.0				
Barium	ug/L	2000	500	136				
Boron	ug/L	500	125	<100				
Cadmium	ug/L	0.5	0.125	<0.4				
Calcium	mg/L			73.4				
Chloride	mg/L			4.6				
Chromium	ug/L	100	25	<10				
Copper	ug/L	1300	325	<10				
Iron	ug/L			1120				
Lead	ug/L	15	3.75	<1.0				
Magnesium	ug/L			35600				
Manganese	ug/L	100	25	172				
Mercury	ug/L	2.0	0.5	<0.2				
Nickel	ug/L	100	25	<10				
Nitrogen, Ammonia	mg/L			<0.1				
Nitrogen, Nitrate + Nitrite	ug/L	10	2.5	<0.1				
Potassium	ug/L			2700				
Selenium	ug/L	30	7.5	<2.0				
Sodium	ug/L			3800				
Sulfate	mg/L			68.1				
Zinc	ug/L	2000	500	<20				
Total Dissolved Solids	mg/L			417				
Total Suspended Solids	mg/L			2.2				
Cation/Anion Balance	%			<0.1				
Anion Summation	meq/L			x				
Cation Summation	meq/L			x				
Specific Conductance, Lab	umhos/cm			x				
pH, Lab	SU			x				

X = Not Analyzed -- = Not Detected

Yellow-shaded entries represent IL exceedances for water quality performance standards.
Blue-shaded entries represent HRL exceedances for water quality performance standards.

WENCK now part of Stantec

Table 10
Clay County Sanitary Landfill
Hawley, Minnesota

Inorganics & Metals Results

Benesch
Residence

		HRL	IL	May-18	May-19	May-20	May-20 (DUP)
Alkalinity	mg/L			255	No Access	262	263
Arsenic	ug/L	10	2.5	1.7		1.2	1.3
Barium	ug/L	2000	500	342		328	340
Boron	ug/L	500	125	123		116	123
Cadmium	ug/L	0.5	0.125	<0.08		<0.08	<0.08
Calcium	mg/L			56.3		51.5	54.4
Chloride	mg/L			<1.2		<1.2	<1.2
Chromium	ug/L	100	25	<0.5		<0.5	<0.5
Copper	ug/L	1300	325	<1.0		<1.0	<1.0
Iron	ug/L			<50		<50	<50
Lead	ug/L	15	3.75	<0.1		<0.1	<0.1
Magnesium	ug/L			21400		20900	21400
Manganese	ug/L	100	25	41.1		39.5	40.2
Mercury	ug/L	2.0	0.5	<0.2		<0.2	<0.2
Nickel	ug/L	100	25	<0.5		<0.5	<0.5
Nitrogen, Ammonia	mg/L			1.0		0.76	0.76
Nitrogen, Nitrate + Nitrite	ug/L	10	2.5	<0.1		<0.1	<0.1
Potassium	ug/L			4030		3760	3890
Selenium	ug/L	30	7.5	<0.5		<0.5	<0.5
Sodium	ug/L			12800		12800	13100
Sulfate	mg/L			<1.2		<1.2	<1.2
Zinc	ug/L	2000	500	7.4		32.8	17
Total Dissolved Solids	mg/L			280		285	284
Total Suspended Solids	mg/L			<10		<10	<10
Cation/Anion Balance	%			2.97		-2.51	-0.65
Anion Summation	meq/L			5.1		5.2	5.3
Cation Summation	meq/L			5.4		5	5.2
Specific Conductance, Lab	umhos/cm			504		501	494
pH, Lab	SU			7.7		8.2	7.9

X = Not Analyzed -- = Not Detected

Yellow-shaded entries represent IL exceedances for water quality performance standards.
Blue-shaded entries represent HRL exceedances for water quality performance standards.

WENCK now part of Stantec

Figures

1. Site Location Map
2. 2020 Aerial Photograph
3. Old Landfill Area Boundaries

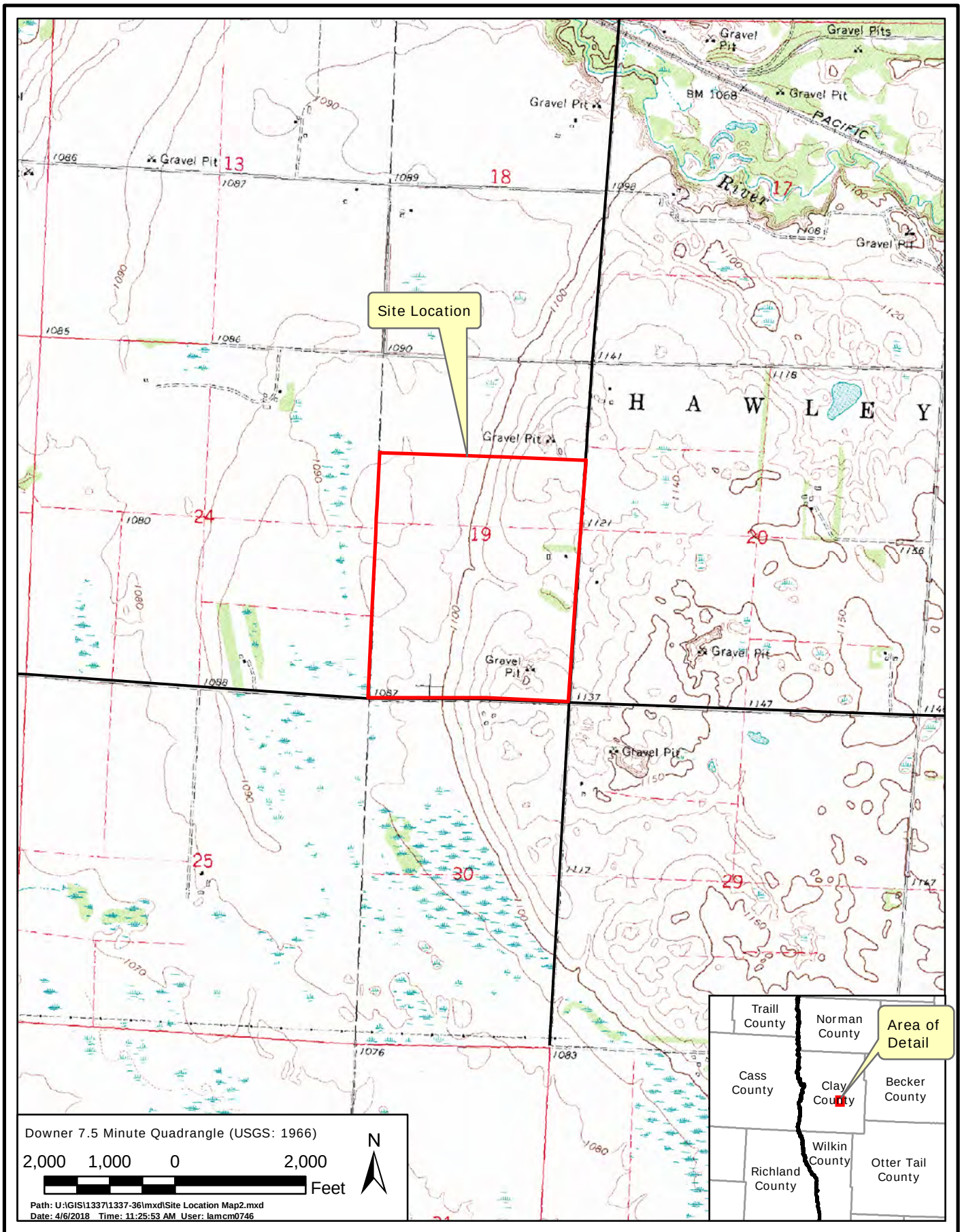
4A 2020 Spring Groundwater Flow – Water Table

4B 2020 Fall Groundwater Flow – Water Table

5A 2020 Spring Groundwater Flow – Lower Aquifer

5B 2020 Fall Groundwater Flow – Lower Aquifer

6. Hydrographs - W-9, W-112, W-106A, W-202A, W-302A & C-12
7. Hydrographs - W-106B, W-202B, W-302B, C-11 & C-13
8. Vinyl Chloride Concentration Trend Graph
9. Arsenic Concentration Trend Graph
10. Manganese Concentration Trend Graph
11. Nitrates Concentration Trend Graph



CLAY COUNTY LANDFILL

Site Location Map

WENCK now part of Stantec

JAN 2021

Figure 1

T:\1337 Clay Co\Annual Reports\2020\CAD\Figures\Figure 1A.dwg

Plot Date & Time: 28 January 2021 8:11 PM

N

400 0 200 400

GRAPHIC SCALE IN FEET

LEGEND

- PROPERTY BOUNDARY
- PHASE BOUNDARY LINE
- C–13 EMS WELLS/PIEZOMETERS
- DEUTSHER RESIDENTIAL WELL
- S–1 SURFACE WATER POINT
- LYS IV–3 LANDFILL LYSIMETER
- GP–2 GAS PROBE
- RW–8 REMEDIATION WELL

WEAVER

W–112
W–109
NORTH ACREAGE
APPLIANCE STORAGE (APPROX. 15' X 22')
TIRE STORAGE (APPROX. 13' X 14')
DEMOLITION DUMPSTER (20 CY CONTAINER)
LANDFILL GAS BLOWER AND FLARE SKID
W–302A
GP–4AR
W–302B
LANDFILL OFFICE, ELECTRONIC STORAGE AND HIGHWAY DEPT. SHOP
W–301A
W–301B
W–104A
W–104B
W–106A
W–106B
W102B
W102A
METAL RECYCLING BIN (40 CY CONTAINER)
LANDFILL TRUCK SCALE
EXISTING LEACHATE LOADOUT
LANDFILL SHOP
W–15
T2–C
T2–B
T2–A
GP–1
MAINTENANCE GARAGE & ELECTRONIC STORAGE
C–1
GP–2
C–2
W–16
W–11
S–1
W–5
W–3
GP–3
J–2
EAST SEDIMENTATION POND
C–4
PP–2
PP–3
PP–1
C–3
LYS IV–3
LYS IV–1&2
RW–1
RW–2
RW–3
RW–4
RW–5
RW–6
RW–7
RW–8
RW–9
RW–10
TW–2
PUBLIC DROP OFF BINS (14 CY CONTAINERS)
TW–1
FUTURE AREA IV PHASE 5
AREA IV PHASE 3 (ACTIVE)
GP–5A
R. EKRE
TW–3
W201B
W–201A
S–2
W–10
WETLANDS
FUTURE AREA IV PHASE 6
NORTH HALF AREA IV PHASE 4 (ACTIVE)
GP–6A
C–8
SOUTH HALF AREA IV PHASE 4 (ACTIVE)
AREA IV PHASES I & 2 (ACTIVE)
C.S.A.H. NO. 23 /190TH ST S
C–12
C–13
GP–7A
W–2
W–2B
W–9
W–17
T1–C
T1–B
T1–A
C–9
AREA II (CLOSED)
AREA III PHASE 3 (CLOSED)
GP–8A
W202B
W–202A
ENCLOSED FLARE
AREA III PHASE 2 (CLOSED)
AREA III PHASE 1 (CLOSED)
W–13
C–10
LYS III–1
LYS III–2
LYS III–3
GP–9
GP–11
GP–10
W–12
W–203B
W–6
W–1
C–11
GP–12
S–3
SOUTHWEST SEDIMENTATION POND
DEUTSCHER
C.S.A.H. NO. 12

REV	REVISION DESCRIPTION	DWN	APP	REV DATE
A	ISSUED TO CLIENT	ANN	MPM	1/29/21

WENCK now part of Stantec

DWN BY	CHK'D	APP'D
ANN	AJF	MPM

DWG DATE JANUARY 2021

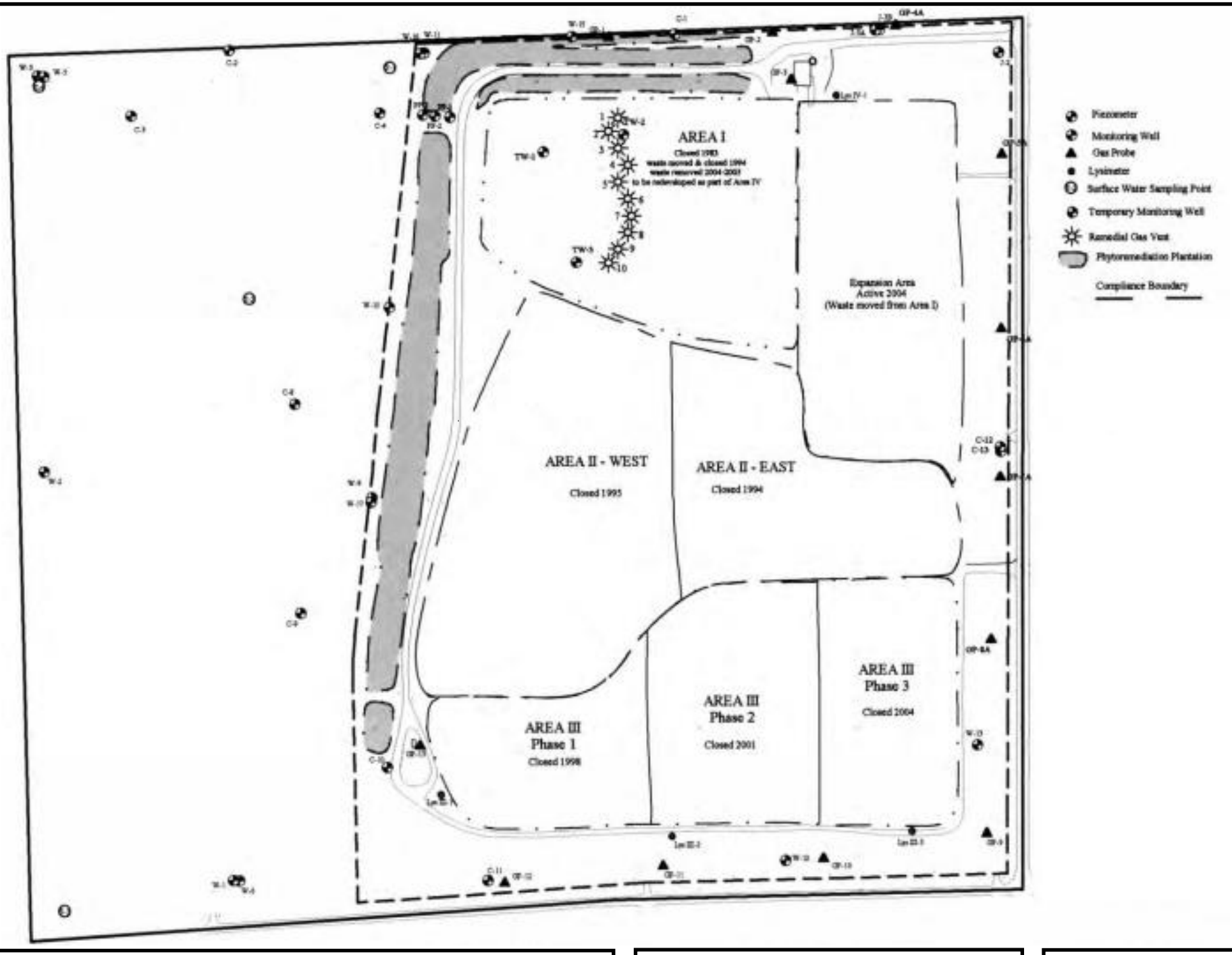
SCALE AS SHOWN

PROJECT CLAY COUNTY SANITARY LANDFILL 2020 ANNUAL LANDFILL REPORT

CLIENT CLAY COUNTY HAWLEY, MINNESOTA

SHEET TITLE 2020 AERIAL PHOTOGRAPH

PROJECT NO.	SHEET NO.	REV NO.
1337–0072	FIGURE 2	A



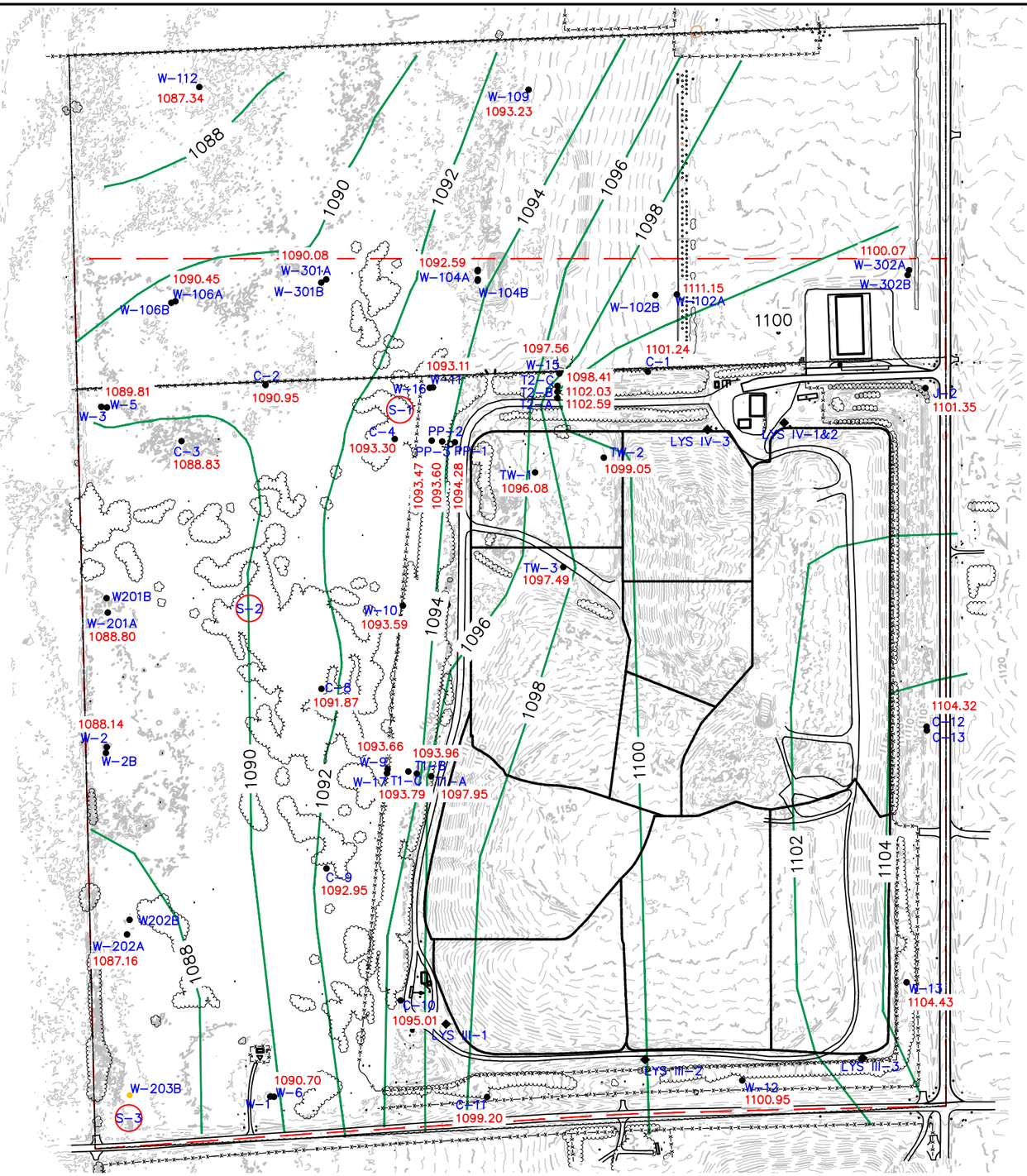
CLAY COUNTY LANDFILL

Old Landfill Area Boundaries

WENCK now part of Stantec

JAN 2021

FIGURE 3



N

200 0 100 200
GRAPHIC SCALE IN FEET

LEGEND

- 1100 — EXISTING CONTOURS
- TREE LINE
- TREE
- EXISTING ROAD
- EXISTING BUILDING
- PROPERTY BOUNDARY
- FENCE
- PHASE BOUNDARY LINE
- COMPLIANCE BOUNDARY LINE
- 1100 — INFERRED WATER ELEVATION CONTOURS
- C-1 EXISTING MONITORING WELL
- S-1 SURFACE WATER POINT
- LYS IV-3 LANDFILL LYSIMETER

NOTE:
EXISTING CONDITIONS BASED ON OCTOBER 25, 2019 AERIAL SURVEY BY KBM, INC.

REV	REVISION DESCRIPTION	DWN	APP	REV DATE

WENCK now part of Stantec
3303 FIECHTNER DR, SUITE 100
FARGO, NORTH DAKOTA 58103
(701) 297-9600
(701) 297-9601

DWN BY	CHK'D	APP'D
MPM	AJF	MPM

DWG DATE: JUNE 2020
SCALE: AS NOTED

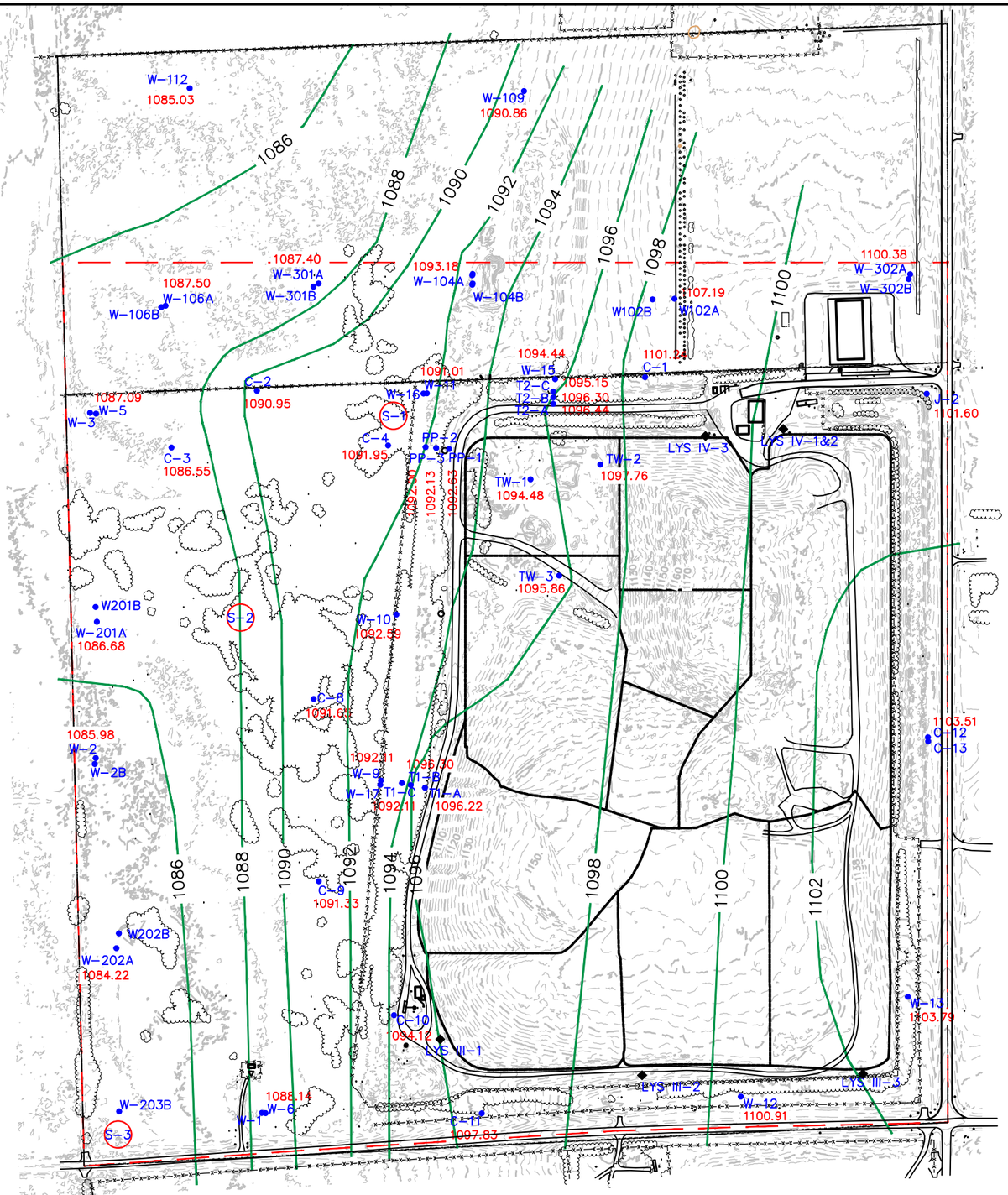
PROJECT: CLAY COUNTY SANITARY LANDFILL
2020 SPRING REPORT

CLIENT: CLAY COUNTY
HAWLEY, MINNESOTA

SHEET TITLE: 2020 SPRING GROUNDWATER FLOW – WATER TABLE

PROJECT NO.	SHEET NO.	REV NO.
1337-0072	FIGURE 4A	

Plot Date & Time: 27 January 2021 10:21 PM
T:\1337 Clay Co\72\02 2020\Spring 2020\A2-Figures\Flow Map – Figure 4A.dwg



NOTE:
EXISTING CONDITIONS BASED ON OCTOBER 16, 2020, AERIAL SURVEY BY WENCK ASSOCIATES, INC.

REV	REVISION DESCRIPTION	DWN	APP	REV DATE

WENCK now part of Stantec
3303 FIECHTNER DR, SUITE 100
FARGO, NORTH DAKOTA 58103
(701) 297-9600
(701) 297-9601

DWN BY	CHK'D	APP'D
ANN	AJF	MPM

DWG DATE: JANUARY 2021
SCALE: AS NOTED

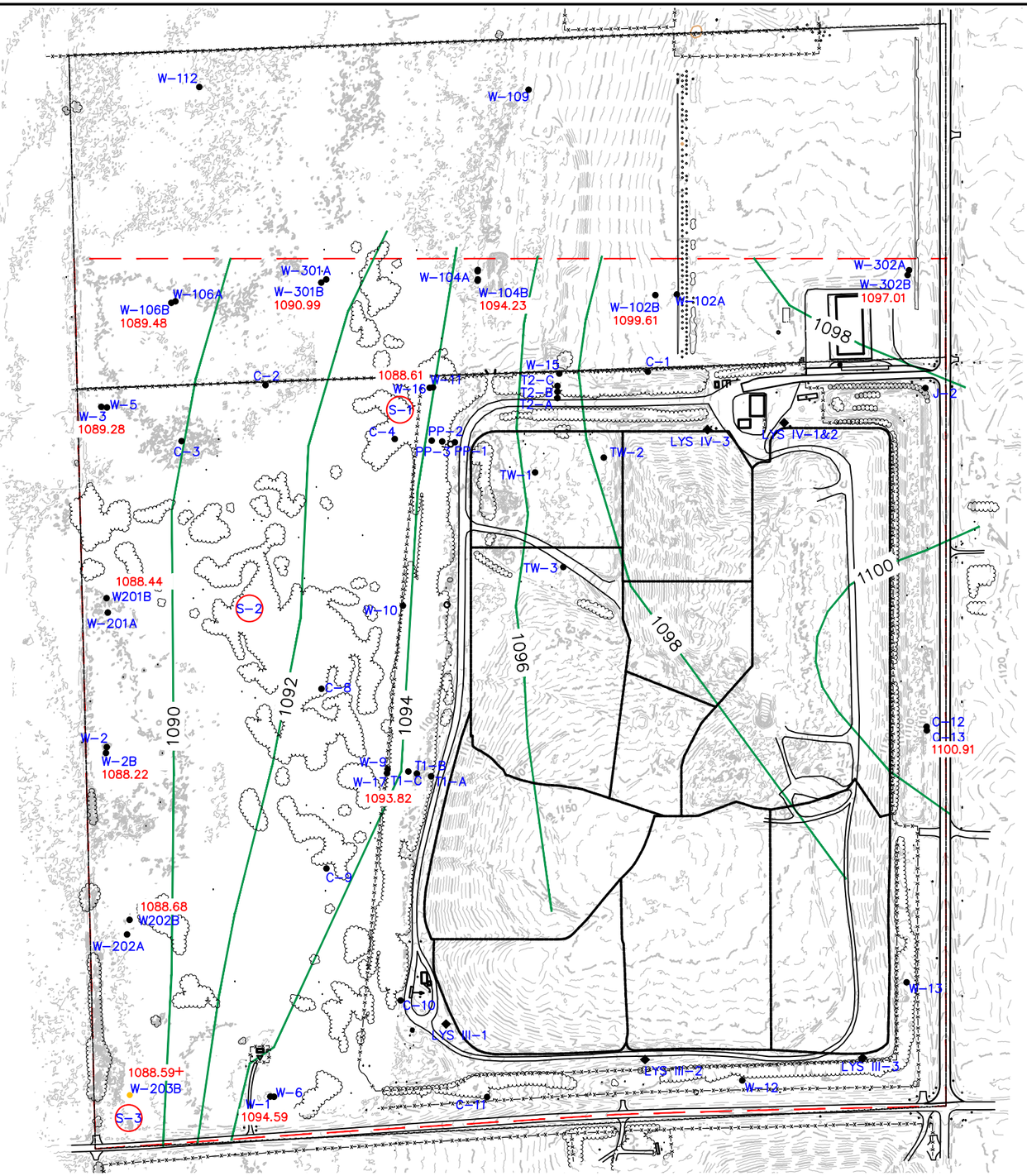
PROJECT: CLAY COUNTY SANITARY LANDFILL
2020 FALL REPORT

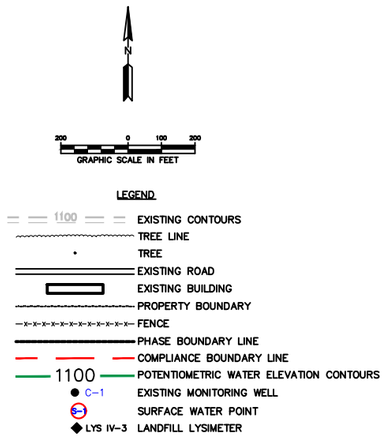
CLIENT: CLAY COUNTY
HAWLEY, MINNESOTA

SHEET TITLE: 2020 FALL GROUNDWATER FLOW – WATER TABLE

PROJECT NO. 1337-0072
SHEET NO. FIGURE 4B
REV NO.

Plot Date & Time: 27 January 2021 10:38 PM
T:\1337 Clay Co\72\02\2020\Fall 2020\Figures\CAD\CIV\Flow Map Fall 2020 – Figure 4B.dwg





LEGEND

- 1100 — EXISTING CONTOURS
- TREE LINE
- TREE
- EXISTING ROAD
- EXISTING BUILDING
- PROPERTY BOUNDARY
- FENCE
- PHASE BOUNDARY LINE
- COMPLIANCE BOUNDARY LINE
- 1100 — POTENTIOMETRIC WATER ELEVATION CONTOURS
- C-1 — EXISTING MONITORING WELL
- S-1 — SURFACE WATER POINT
- LYS IV-3 — LANDFILL LYSIMETER

NOTE:
EXISTING CONDITIONS BASED ON OCTOBER 25, 2019 AERIAL SURVEY BY KBM, INC.

REV	REVISION DESCRIPTION	DWN	APP	REV DATE

WENCK now part of Stantec
3303 FIECHTNER DR, SUITE 100
FARGO, NORTH DAKOTA 58103
(701) 297-9600
(701) 297-9601

DWN BY	CHK'D	APP'D
MPM	AJF	MPM

DWG DATE: JUNE 2020
SCALE: AS NOTED

PROJECT: CLAY COUNTY SANITARY LANDFILL
2020 SPRING REPORT

CLIENT: CLAY COUNTY
HAWLEY, MINNESOTA

SHEET TITLE: 2020 SPRING GROUNDWATER FLOW – LOWER AQUIFER

PROJECT NO.	SHEET NO.	REV NO.
1337-0072	FIGURE 5A	

Plot Date & Time: 27 January 2021 10:50 PM

T:\1337 Clay Co\72\02\2020\Spring 2020\A2-Figures\Flow Map – Figure 5A.dwg

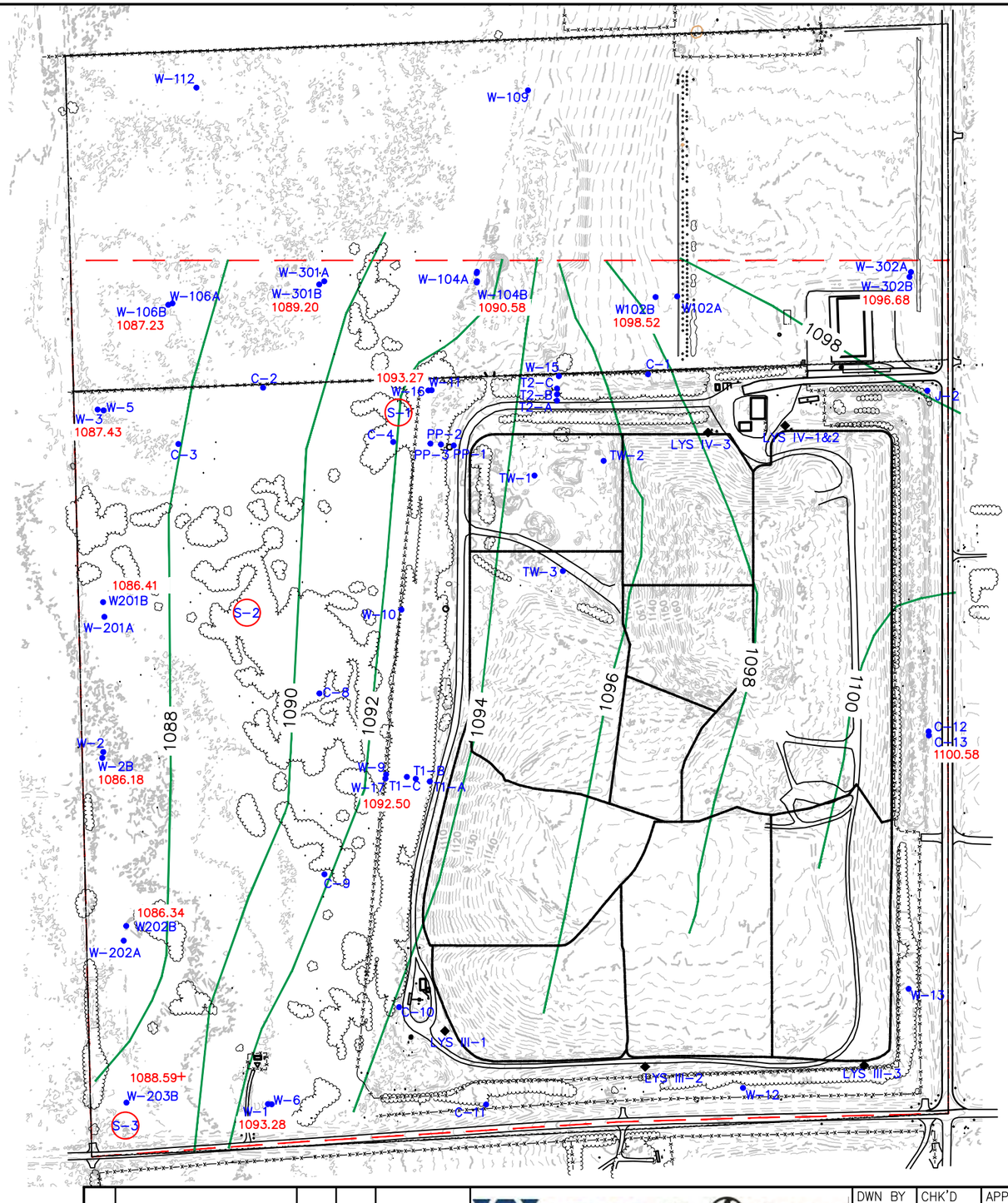
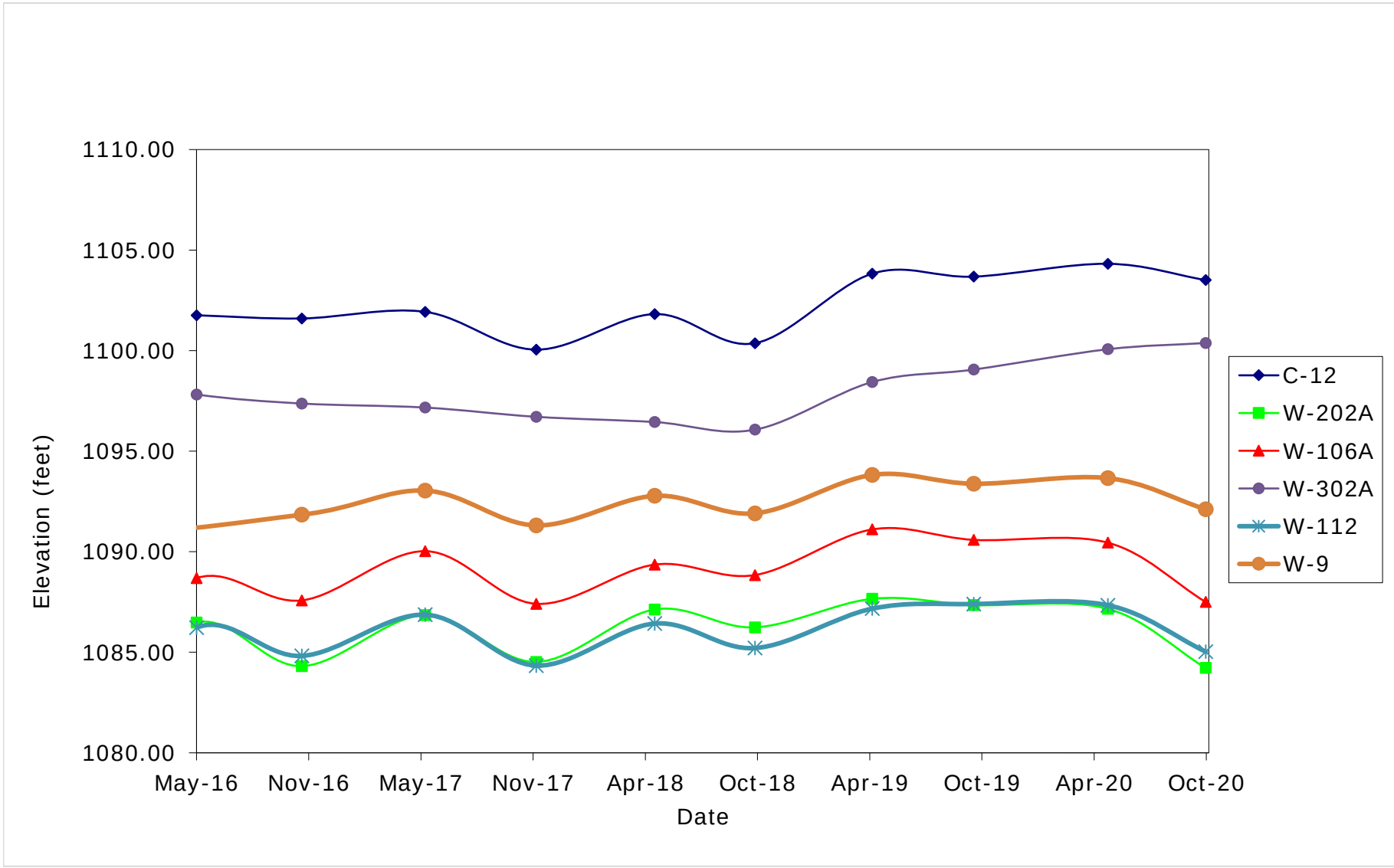

W-112
W-109
W-301A
W-301B
1089.20
W-104A
W-104B
1090.58
W-302A
W-302B
1096.68
W-106A
W-106B
1087.23
W102B
1098.52
W102A
1098
C-2
1093.27
W-16
W-15
T2-C
T2-B
T2-A
C-1
J-2
W-5
W-3
1087.43
S-1
C-4
PP-2
PP-3
PP-1
LYS IV-3
LYS IV-1&2
C-3
TW-2
TW-1
TW-3
1086.41
W201B
W-201A
S-2
W-10
1088
1090
1092
1094
1096
1098
1100
C-8
W-2
W-2B
1086.18
W-9
T1-B
T1-C
T1-A
W-17
1092.50
C-9
C-12
C-13
1100.58
1086.34
W202B
W-202A
W-13
C-10
LYS III-1
LYS III-2
LYS III-3
1088.59
W-203B
W-6
W-7
1093.28
C-11
W-12
S-3
1098
1100
1102
1104
1106
1108
1110
1112
1114
1116
1118
1120
1122
1124
1126
1128
1130
1132
1134
1136
1138
1140
1142
1144
1146
1148
1150
1152
1154
1156
1158
1160
1162
1164
1166
1168
1170
1172
1174
1176

Figure 6

Clay County Sanitary Landfill
Hawley, Minnesota

Hydrographs - W-9, W-112, W-106A, W-202A, W-302A & C-12

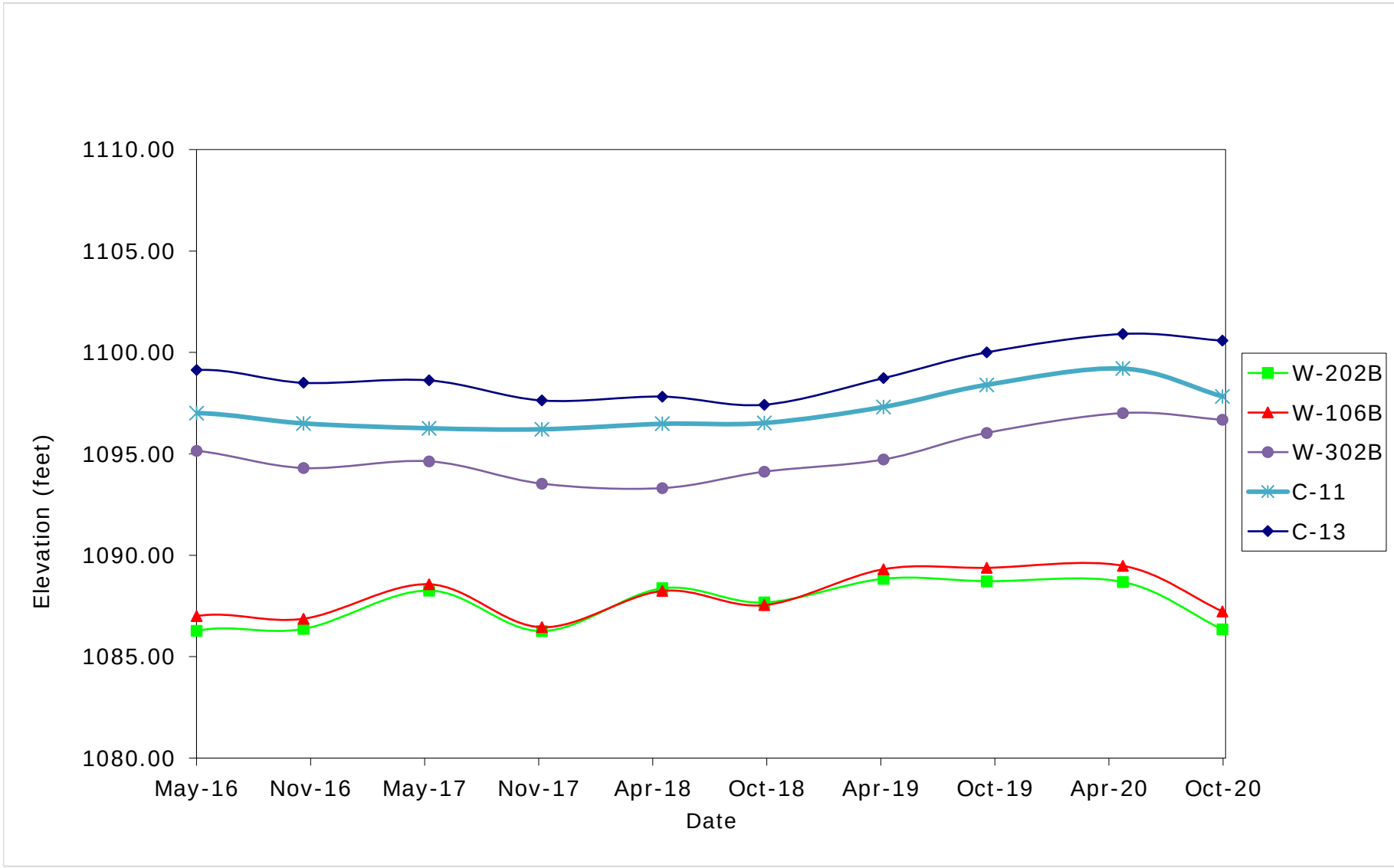


WENCK now part of Stantec

Figure 7

Clay County Sanitary Landfill
Hawley, Minnesota

Hydrographs - W-106B, W-202B, W-302B, C-11 & C-13

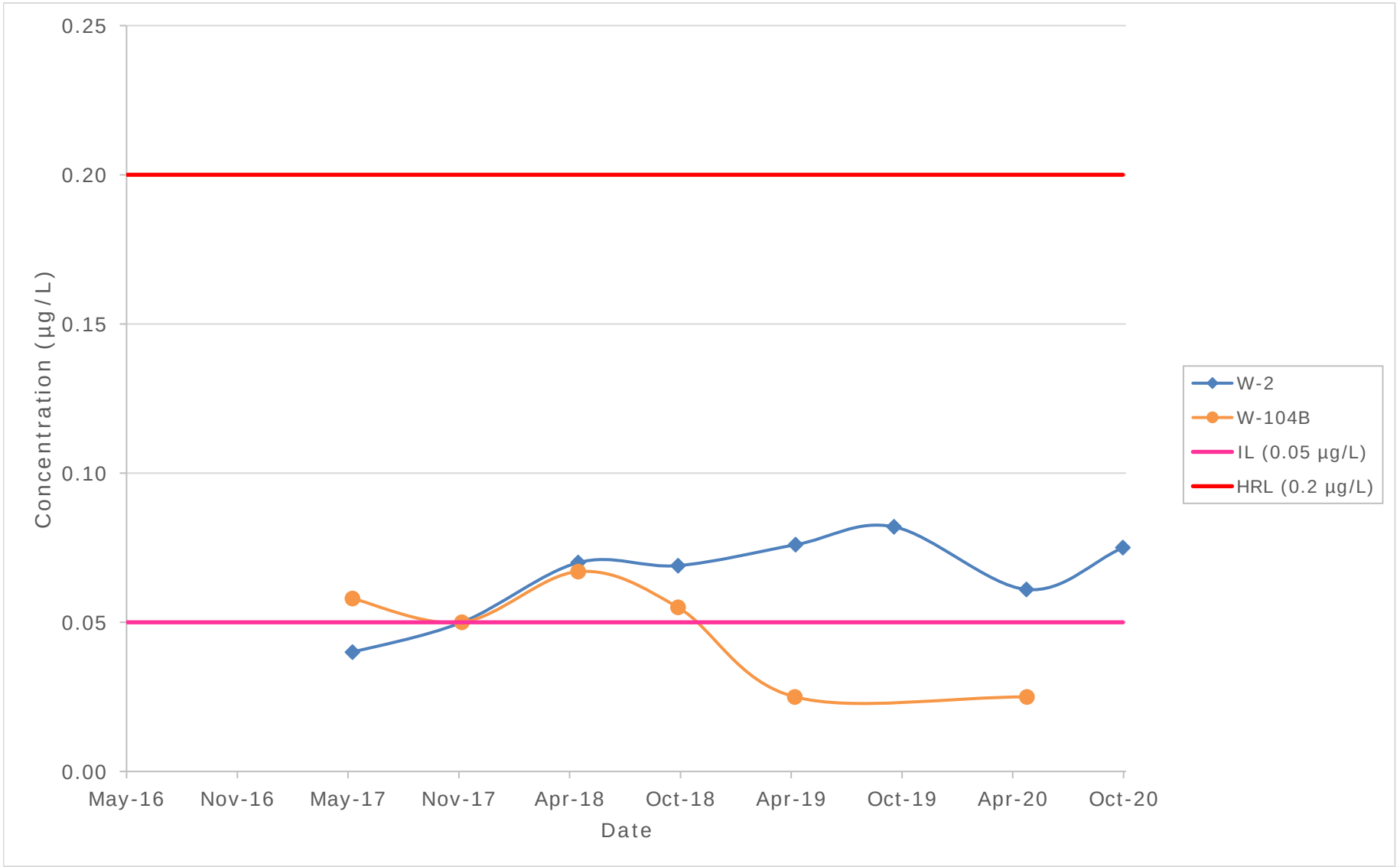


WENCK now part of Stantec

Figure 8

Clay County Sanitary Landfill
Hawley, Minnesota

Vinyl Chloride Concentration Trend Graph

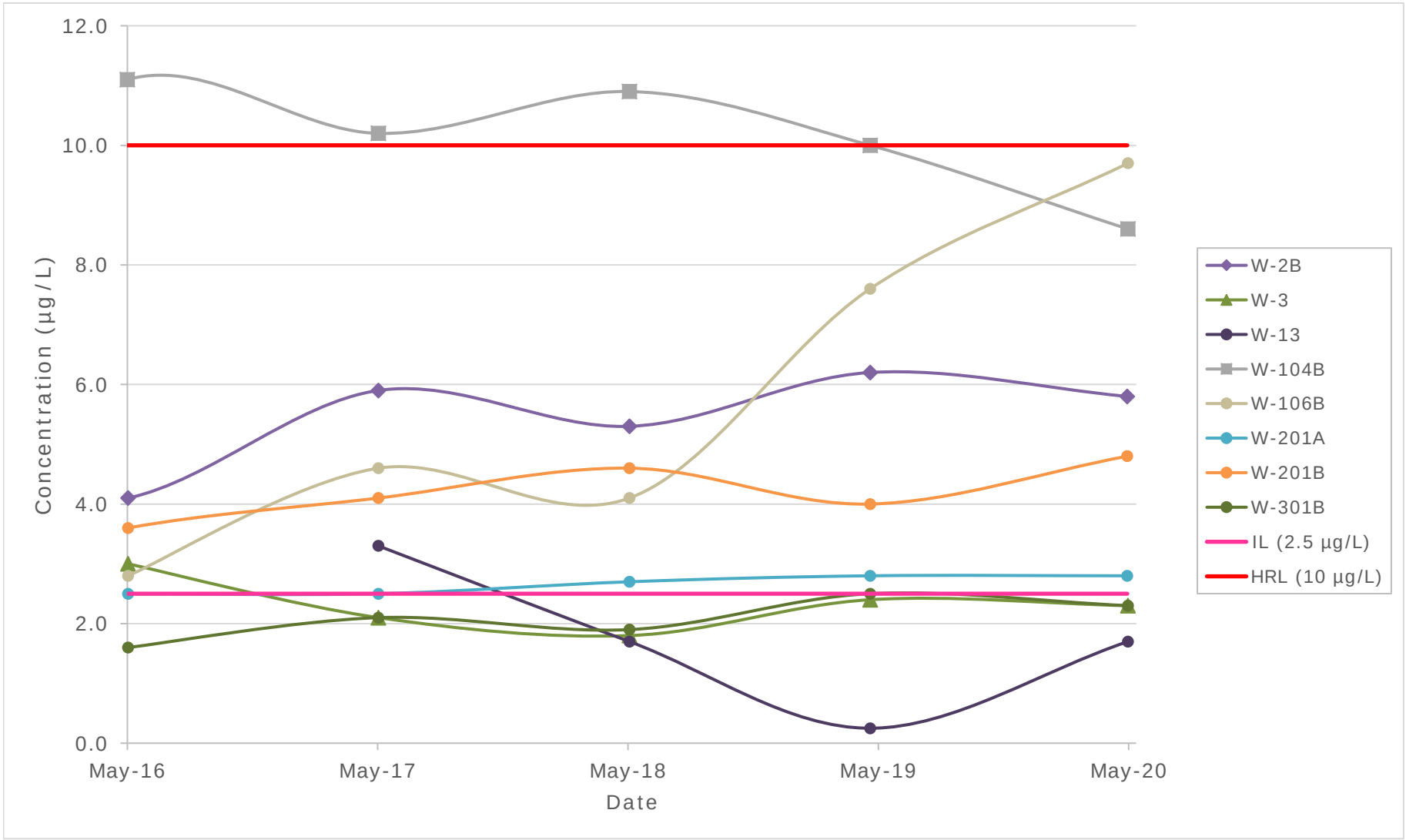


WENCK now part of Stantec

Figure 9

Clay County Sanitary Landfill
Hawley, Minnesota

Arsenic Concentration Trend Graph

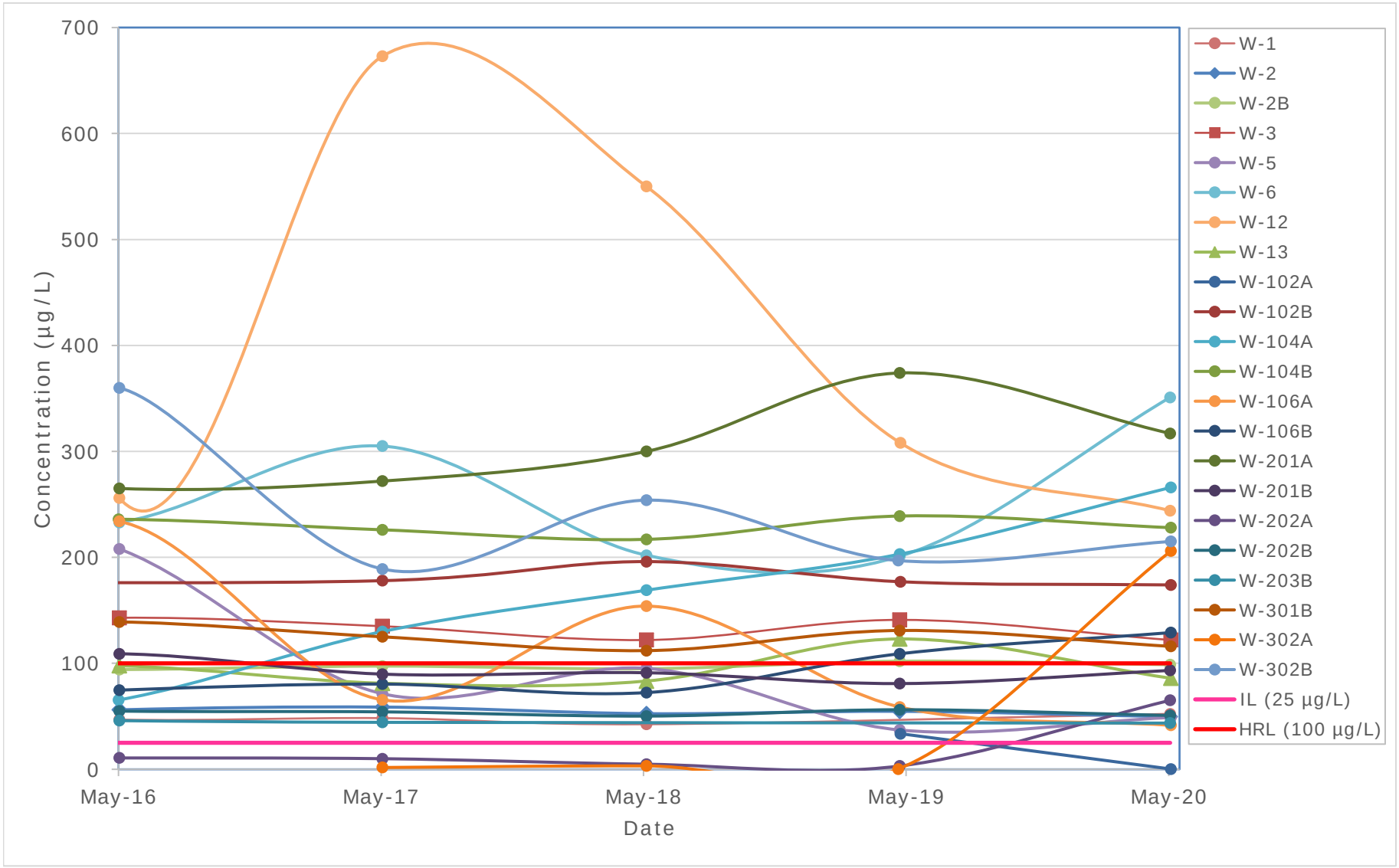


WENCK now part of Stantec

Figure 10

Clay County Sanitary Landfill
Hawley, Minnesota

Manganese Concentration Trend Graph

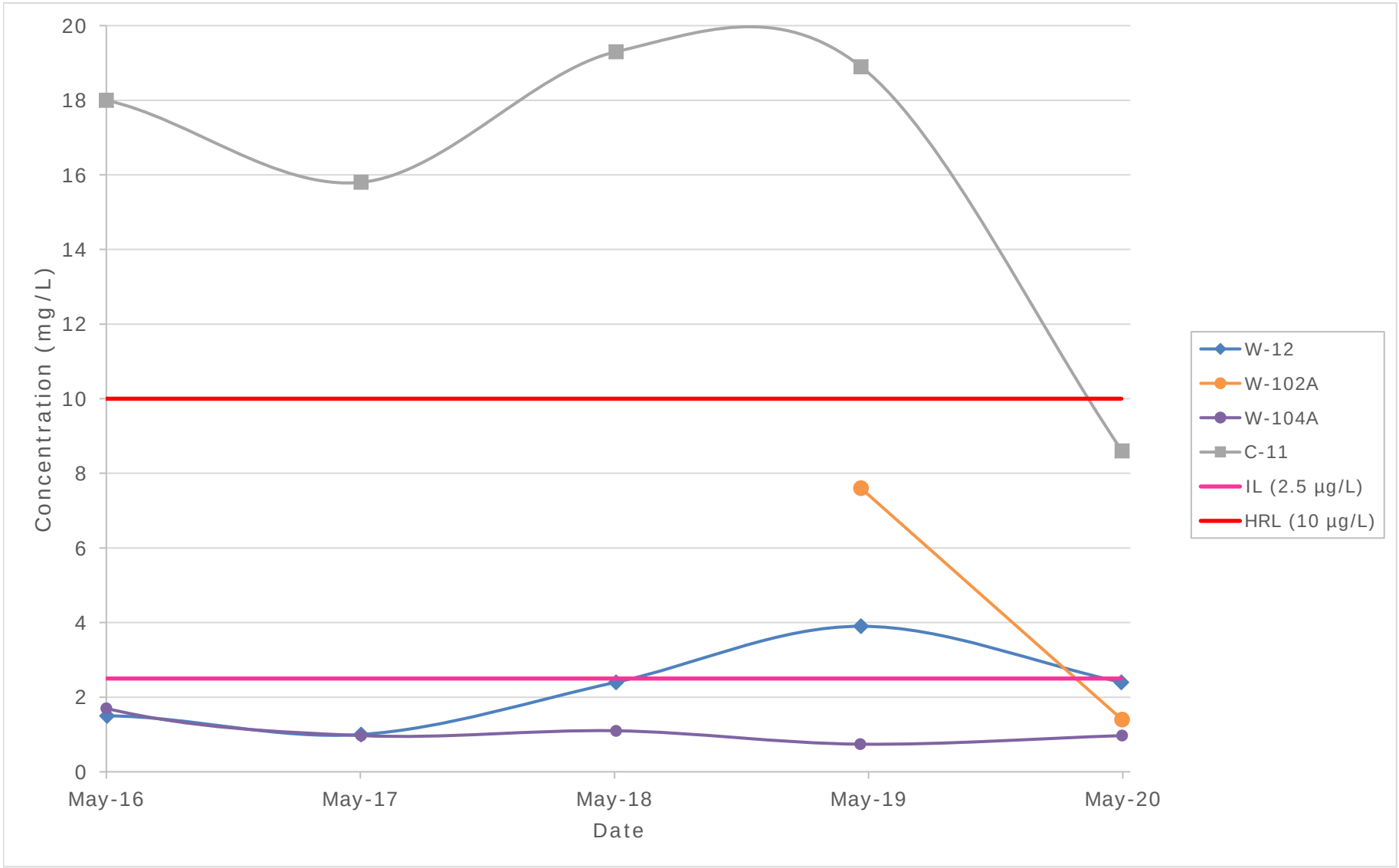


WENCK now part of Stantec

Figure 11

Clay County Sanitary Landfill
Hawley, Minnesota

Nitrates Concentration Trend Graph



WENCK now part of Stantec

Appendix A

Environmental Monitoring System Summary

TABLE 1

Clay County Landfill
Permit SW - 34
Environmental Monitoring System

EMS WELLS: (2x/yr) (Compliance Boundary)

Monitoring Wells*	Parameter Lists for Analysis	
	Spring	Fall
1) W-106A	1, 2, 4	1, 4
2) W-301A	1, 2, 4	1, 4
3) W-104A	1, 2, 4	1, 4
4) W-102A	1, 2, 4	1, 4
5) W-302A	1, 2, 4	1, 4
6) W-6	1, 2, 4	1, 4
7) W-202A	1, 2, 4	1, 4
8) W-2	1, 2, 4	1, 4
9) W-201A	1, 2, 4	1, 4
10) W-5	1, 2, 4	1, 4

* All monitoring wells will be sampled semiannually in the spring for the extended list (low-level VOCs, dissolved metals, geochemicals, field parameters, and static water levels), and in the fall for the routine list (low-level VOCs, field parameters, and static water levels).

EMS WELLS: (1x/yr) (Compliance Boundary)

Monitoring Wells*	Parameter Lists for Analysis	
	Spring	Fall
11) W-106B	1, 2, 4	--
12) W-301B	1, 2, 4	--
13) W-104B	1, 2, 4	--
14) W-102B	1, 2, 4	--
15) W-302B	1, 2, 4	--
16) W-13	1, 2, 4	--
17) W-12	1, 2, 4	--
18) C-11	1, 2, 4	--
19) W-1	1, 2, 4	--
20) W-203B	1, 2, 4	--
21) W-202B	1, 2, 4	--
22) W-2B	1, 2, 4	--
23) W-201B	1, 2, 4	--
24) W-3	1, 2, 4	--

* All monitoring wells will be sampled semiannually in the spring only for the extended list (low-level VOCs, dissolved metals, geochemicals, field parameters, and static water levels).

TABLE 1

Clay County Landfill
Permit SW - 34
Environmental Monitoring System

EMS WELLS: (1x/2yr) (Detection Monitoring Purposes)

Monitoring Wells*	Parameter Lists for Analysis	
	Spring	Fall
25) W-17 (1)	1, 2, 4	--
26) W-9 (1)	1, 2, 4	--
27) W-10 (1)	1, 2, 4	--
29) W-16 (1)	1, 2, 4	--
30) W-11 (1)	1, 2, 4	--
31) C-4 (1)	1, 2, 4	--
32) C-8 (1)	1, 2, 4	--
33) C-9 (1)	1, 2, 4	--

* All detection monitoring wells will be sampled biannually in the spring of odd years for the extended list (low-level VOCs, total metals, geochemicals, LL Hg, field parameters, and static water levels).
(1) Class 2D aquatic standards should apply to these eight wells (except for low-level mercury (LL Hg)).

Monitoring Wells*	Parameter Lists for Analysis	
	Spring	Fall
34) W-15	1, 4	--
35) C-1	1, 4	--
36) C-10	1, 4	--
37) TW-1	1, 4	--
38) TW-2	1, 4	--
39) TW-3	1, 4	--

* All detection monitoring wells will be sampled biannually in the spring of odd years for the routine list (low-level VOCs, field parameters (including pH and conductivity), and static water levels). No limits are proposed for these six wells.

EMS WELLS: (2x/yr) (Water Level Only)

Monitoring Wells*	Parameter Lists for Analysis	
	Spring	Fall
40) W-112	--	--
41) W-109	--	--
42) J-2	--	--
43) C-12	--	--
44) C-13	--	--
45) C-3	--	--
46) C-2	--	--

* Static water level will be measured semiannually in the spring and fall.

TABLE 1

Clay County Landfill
Permit SW - 34
Environmental Monitoring System

RESIDENTIAL WELLS: (1x/yr)

Monitoring Wells*	Parameter Lists for Analysis	
	Spring	Fall
1) R. Ekre	1, 2, 4	--
2) Deutscher	1, 2, 4	--
3) Weaver	1, 2, 4	--

* All residential wells will be sampled annually in the spring for the extended list (low-level VOCs, dissolved metals, geochemicals, and field parameters).
* If well owner does not allow Clay County access for sampling, it shall be documented in the subsequent Quarterly Monitoring Report.

SURFACE WATER MONITORING POINTS: (2x/yr)

Monitoring Points*	Parameter Lists for Analysis	
	Spring	Fall
1) S-1 (1)	1, 3, 4	1, 4
2) S-2 (1)	1, 3, 4	--
3) S-3 (1)	1, 3, 4	1, 4

* All surface water points are sampled semiannually in the spring for the extended list (low-level VOCs, total metals, geochemicals, LL Hg, and field parameters), while only SW-1 and SW-2 are sampled in the fall for the routine list (low-level VOCs and field parameters (including pH and conductivity)).
(1) Class 2D aquatic standards should apply.

LYSIMETERS: (2x/yr)

Lysimeters*	Parameter Lists for Analysis	
	Spring	Fall
1) III - 1	1, 4, 5	1, 4
2) III - 2	1, 4, 5	1, 4
3) III - 3	1, 4, 5	1, 4
4) IV – 1 & 2	1, 4, 5	1, 4
5) IV - 3	1, 4, 5	1, 4

* All lysimeters will be sampled semiannually in the spring for the extended list (low-level VOCs, total metals, geochemicals, and field parameters).

LEACHATE: (4x/yr)
Both leachate tanks #1 and #2 will be sampled quarterly for VOCs, total metals, COD, and BOD as listed in parameter Lists A through C.

METHANE MONITORING SYSTEM: (4x/yr)
All gas probes, GP-1 through GP-12, will be monitored quarterly for each sampling event for combustible gas (methane), carbon dioxide, and oxygen. Note that GP-4 was abandoned in 2014 due to landfill scale installation and replaced with GP-4R.

TABLE 2

Clay County Landfill
Permit SW-34
Environmental Monitoring System

Parameter Lists For Analyses

List 1 (VOCs) (Groundwater, Lysimeters and Surface Water)

1,1,1,2-Tetrachloroethane	Chlorobenzene (monochlorobenzene)
1,1,1-Trichloroethane	Chlorodibromomethane (Dibromochloromethane)
1,1,2,2-Tetrachloroethane	Chloroethane
1,1,2-Trichloroethane	Chloroform
1,1,2-Trichlorotrifluoroethane	Chloromethane (Methyl chloride)
1,1-Dichloroethane	cis-1,3,-Dichloropropene
1,1-Dichloroethylene (Vinylidene chloride)	Cumene (Isopropylbenzene)
1,1-Dichloropropene	Dibromochloropropane (DBCP)
1,2-(trans-) Dichloroethylene	Dibromomethane (Methylene bromide)
1,2,3-Trichlorobenzene	Dichlorodifluoromethane
1,2,3-Trichloropropane	Dichlorofluoromethane
1,2,4-Trichlorobenzene	Dichloromethane (Methylene chloride)
1,2,4-Trimethylbenzene	Ethyl benzene
1,2-Dibromoethane (Ethylene dibromide); EDB	Ethyl ether
1,2-Dichlorobenzene (ortho-)	Hexachlorobutadiene
1,2-Dichloroethane	Methyl ethyl ketone (MEK)
1,2-Dichloroethlyene (cis-)	Methyl isobutyl ketone (4-Methyl-2-pentanone)
1,2-Dichloropropane	Methyl tertiary-Butyl Ether (MTBE)
1,3,5-Trimethylbenzene	Naphthalene
1,3-Dichlorobenzene (meta-)	n-Butyl Benzene
1,3-Dichloropropane	n-Propyl benzene
1,4-Dichlorobenzene (para-)	p-Isopropyltoluene
2,2-Dichloropropane	sec-Butyl Benzene
2-Chlorotoluene (ortho-)	Styrene
4-Chlorotoluene (para-)	tert-Butyl Benzene
Acetone	Tetrachloroethylene (Perchloroethylene)
Allyl chloride (3 chloropropene)	Tetrahydrofuran
Benzene	Toluene
Bromobenzene	Trichloroethylene (TCE)
Bromochloromethane (Chlorobromomethane)	Trichlorofluoromethane
Bromodichloromethane (Dichlorobromomethane)	Vinyl chloride (chloroethene)
Bromoform	m-Xylene & p-Xylene
Bromomethane (Methyl bromide)	o-Xylene
Carbon tetrachloride	

List 2 (Geochemicals, Metals[(1)]) (Groundwater)

Alkalinity, Total as CaCO3	Magnesium
Ammonia Nitrogen	Manganese
Arsenic	Mercury
Barium	Nickel
Boron	Nitrate+Nitrite
Cadmium	Potassium
Calcium	Selenium
Cation-Anion Balance	Sodium
Chloride	Sulfate
Chromium	Zinc
Copper	Total Dissolved Solids
Iron	Total Suspended Solids
Lead	

[(1)] All metals are measured as dissolved. All groundwater samples for metals will be filtered in the field.

TABLE 2

Clay County Landfill
Permit SW-34
Environmental Monitoring System

Parameter Lists For Analayses

List 3 (Geochemicals, Metals[2]) (Detection Wells & Surface Water)

Alkalinity, Total as CaCO3	Copper
Arsenic	Lead
Boron	Magnesium
Cadmium	Manganese
Calcium	Mercury[3]
Cation-Anion Balance	Total Dissolved Solids
Chloride	Total Suspended Solids

[2] All metals are measured as total. All surface water samples for metals will not be filtered in the field or lab.

[3] Low-level mercury analyses, EPA Method 1631E.

List 4 (Field Parameters) (Groundwater, Lysimeters and Surface Water)

Appearance	Specific Conductance
Dissolved Oxygen	Static Water Level (Elevation, MSL)[4]
Eh (Oxidation potential)	Temperature
Odor	Turbidity
pH	

[4] Groundwater Samples only, and not for residential wells or surface water.

List 5 (Geochemicals, Metals[2]) (Lysimeters)

Alkalinity, Total as CaCO3	Iron
Ammonia Nitrogen	Lead
Arsenic	Magnesium
Arsenic	Manganese
BOD	Mercury
Boron	Nitrate+Nitrite
Cadmium	Potassium
Calcium	Sodium
Cation-Anion Balance	Sulfate
COD	Zinc
Chloride	Total Dissolved Solids
Chromium	Total Suspended Solids
Copper	

[1] All metals are measured as total.

TABLE 2

Clay County Landfill
Permit SW-34
Environmental Monitoring System

Parameter Lists For Analyses

List A (VOCs) (Leachate)

1,1,1,2-Tetrachloroethane	Chlorobenzene (monochlorobenzene)
1,1,1-Trichloroethane	Chlorodibromomethane (Dibromochloromethane)
1,1,2,2-Tetrachloroethane	Chloroethane
1,1,2-Trichloroethane	Chloroform
1,1,2-Trichlorotrifluoroethane	Chloromethane (Methyl chloride)
1,1-Dichloroethane	cis-1,3,-Dichloropropene
1,1-Dichloroethylene (Vinylidene chloride)	Cumene (Isopropylbenzene)
1,1-Dichloropropene	Dibromochloropropane (DBCP)
1,2-(trans-) Dichloroethylene	Dibromomethane (Methylene bromide)
1,2,3-Trichlorobenzene	Dichlorodifluoromethane
1,2,3-Trichloropropane	Dichlorofluoromethane
1,2,4-Trichlorobenzene	Dichloromethane (Methylene chloride)
1,2,4-Trimethylbenzene	Ethyl benzene
1,2-Dibromoethane (Ethylene dibromide); EDB	Ethyl ether
1,2-Dichlorobenzene (ortho-)	Hexachlorobutadiene
1,2-Dichloroethane	Methyl ethyl ketone (MEK)
1,2-Dichloroethlyene (cis-)	Methyl isobutyl ketone (4-Methyl-2-pentanone)
1,2-Dichloropropane	Methyl tertiary-Butyl Ether (MTBE)
1,3,5-Trimethylbenzene	Naphthalene
1,3-Dichlorobenzene (meta-)	n-Butyl Benzene
1,3-Dichloropropane	n-Propyl benzene
1,4-Dichlorobenzene (para-)	p-Isopropyltoluene
2,2-Dichloropropane	sec-Butyl Benzene
2-Chlorotoluene (ortho-)	Styrene
4-Chlorotoluene (para-)	tert-Butyl Benzene
Acetone	Tetrachloroethylene (Perchloroethylene)
Allyl chloride (3 chloropropene)	Tetrahydrofuran
Benzene	Toluene
Bromobenzene	Trichloroethylene (TCE)
Bromochloromethane (Chlorobromomethane)	Trichlorofluoromethane
Bromodichloromethane (Dichlorobromomethane)	Vinyl chloride (chloroethene)
Bromoform	m-Xylene & p-Xylene
Bromomethane (Methyl bromide)	o-Xylene
Carbon tetrachloride	

TABLE 2

Clay County Landfill
Permit SW-34
Environmental Monitoring System

Parameter Lists For Analyses

List B (Geochemicals, Metals [2]) (Leachate)

Alkalinity, Total as CaCO3	Iron
Aluminum	Lead
Ammonia Nitrogen	Magnesium
Arsenic	Manganese
Barium	Mercury
BOD	Nitrate+Nitrite
Boron	Potassium
Cadmium	Selenium
Calcium	Silver
Cation-Anion Balance	Sodium
Cobalt	Sulfate
COD	Zinc
Chloride	Total Dissolved Solids
Chromium, Total	Total Suspended Solids
Copper	

[2] All metals are measured as total.

List C (Field Parameters) (Leachate)

Appearance	pH
Dissolved Oxygen	Specific Conductance
Eh (Oxidation potential)	Temperature
Odor	Turbidity
Static Water Level (Elevation, MSL)	

T:\1337 Clay Co\72\01\2020\Figures\Figure 1.dwg

Plot Date & Time: 27 January 2021 10:58 PM

N

400 0 200 400

GRAPHIC SCALE IN FEET

LEGEND

EXISTING ROAD
EXISTING BUILDING
PROPERTY BOUNDARY
FENCE
PHASE BOUNDARY LINE
COMPLIANCE BOUNDARY
C-1 EXISTING MONITORING WELL/PIEZOMETER
RW-1 EXISTING REMEDIATION WELL/VENT
S-1 SURFACE WATER SAMPLING POINT
GP-1 GAS PROBES
PHYTOREMEDIATION PLANTATION
Lys III-1 LYSIMETER
LEACHATE TANKS

W-112
W-109
NORTH ACREAGE
GP-4AR
W-301A
W-301B
W-104A
W-104B
W-302A
W-302B
W-106A
W-106B
W102B
W102A
LEACHATE TANK #1
LANDFILL ENTRANCE
C-2
W-15
C-1
GP-2
T2-C
T2-B
T2-A
W-16
W-17
J-2
W-5
W-3
S-1
GP-3
C-4
PP-2
PP-3
PP-1
LYS IV-1&2
LYS IV-3
C-3
RW-1
RW-2
TW-2
RW-3
RW-4
RW-5
RW-6
RW-7
RW-8
RW-9
RW-10
TW-1
TW-3
FUTURE AREA IV PHASE 6
AREA IV PHASE 3 (ACTIVE)
GP-5A
EAST SEDIMENTATION POND
CLOSURE AREA
W201B
W-201A
S-2
W-10
WETLANDS
FUTURE AREA IV PHASE 5
AREA IV PHASE 4 NORTH (ACTIVE)
GP-6A
C.S.A.H. NO. 23 (BITUMINOUS SURFACE)
C-8
AREA IV PHASE 4 SOUTH (ACTIVE)
AREA IV PHASES I & 2 (ACTIVE)
C-12
C-13
GP-7A
W-2
W-2B
W-9
T1-B
W-11
T1-C
T1-A
AREA III PHASE 3 (CLOSED)
C-9
AREA II (CLOSED)
GP-8A
W202B
W-202A
AREA III PHASE 2 (CLOSED)
W-13
LEACHATE TANK #2
AREA III PHASE 1 (CLOSED)
C-10
LYS III-1
LYS III-2
LYS III-3
GP-9
GP-10
GP-11
W-12
W-203B
W-1
W-6
C-11
GP-12
S-3
CLAY COUNTY MONUMENT AT SE CORNER SECT 19-139-45 HAWLEY TOWNSHIP, MN.
SOUTHWEST SEDIMENTATION POND
C.S.A.H. NO. 12 (GRAVEL SURFACE)

REV	REVISION DESCRIPTION	DWN	APP	REV DATE

WENCK now part of Stantec
3303 FIECHTNER DR, SUITE 100
FARGO, NORTH DAKOTA 58103
(701) 297-9600
(701) 297-9601

DWN BY	CHK'D	APP'D
ANN	AJF	MPM

DWG DATE: JAN. 2021
SCALE: AS NOTED

PROJECT: 2020 ANNUAL WATER QUALITY REPORT
CLIENT: CLAY COUNTY HAWLEY, MINNESOTA

SHEET TITLE: REVISED EMS AND COMPLIANCE BOUNDARY

PROJECT NO.	SHEET NO.	REV NO.
1337-0071	FIGURE 1	A

Appendix B

2020 Field Data and Laboratory Reports

WENCK
Responsive partner. Exceptional outcomes.

Well Purging Sheet

Date: 5/11/20

Project Name: Clay County Landfill
Address: 3301 190th St S, Hawley, MN 56549
Weather Conditions: 47°, sunny, NNW 14mph
Field Technician(s): ~~CMH~~ HRB

Well ID : MW-202A

Casing Diameter (inches)	2.0	Average Purging Rate (g/m)	1.09
Top of Casing Elev. (feet)		Volume Purged (gals.)	12.0
Depth to Water from **TOC** (feet)	3.29	Purged Dry (Y/N)	N
Groundwater Elev. (feet)		Sampling Device	Submersible Pump
Depth to Bottom of Well from **TOC** (feet)	13.98	Time Sample Collected	14:48
Volume of Water in Casing (gals.)	1.74	Color	colorless
3 Well Volumes (gals.)	5.23	Odor	None
Purging Device	Submersible Pump	Well Capped & Locked (Y/N)	Y/Y
Purging Start Time	14:37	Lock Key #	2106
Purging Stop Time	14:48	Damage to Well? (Y/N)	N

Volume Purged (gallons)	1.7	3.4	5.2	8.6	12.0		
Stabilization Readings							
Time	14:38	14:39	14:41	14:46	14:47		
Temperature (°C)	4.69	4.70	4.70	4.70	4.70		
Conductance (uS/cm)	780	792	792	786	~~780~~ 784		
Dissolved Oxygen (mg/L)	2.67	1.65	1.13	0.38	0.23		
pH	7.35	7.18	7.10	6.90	6.79		
ORP (mV)	24.5	29.9	33.1	40.5	46.1		
Turbidity (NTU)			22.1	9.4			

Comments:

WENCK

Responsive partner. Exceptional outcomes.

Well Purging Sheet

Project Name: Clay County Landfill
Address: 3301 190th St S, Hawley, MN 56549
Weather Conditions: 47°, sunny, NNW 14mph
Field Technician(s): CML

Date: 6/11/20

Well ID : W-202B			
Casing Diameter (inches)	2.0	Average Purging Rate (g/m)	1.25
Top of Casing Elev. (feet)		Volume Purged (gals.)	26.3
Depth to Water from **TOC** (feet)	1.56	Purged Dry (Y/N)	N
Groundwater Elev. (feet)		Sampling Device	Submersible Pump
Depth to Bottom of Well from **TOC** (feet)	41.92	Time Sample Collected	14:50
Volume of Water in Casing (gals.)	6.58	Color	H gray
3 Well Volumes (gals.)	19.74	Odor	N
Purging Device	Submersible Pump	Well Capped & Locked (Y/N)	Y
Purging Start Time	14:27	Lock Key #	2406
Purging Stop Time	14:48	Damage to Well? (Y/N)	N

Volume Purged (gallons)	6.6	13.2	19.7	26.3			
Stabilization Readings							
Time	14:31	14:36	14:46	14:48			
Temperature (°C)	6.54	7.36	7.64	7.64			
Conductance (uS/cm)	474	472	470	479			
Dissolved Oxygen (mg/L)	999.99	999.99	999.99	999.99			
pH	7.92	7.78	7.78	7.79			
ORP (mV)	-149.9	-62.7	-17.1	-28.1			
Turbidity (NTU)	350	>1000	130	60.0			

Comments:

WENCK
Responsive partner. Exceptional outcomes.

Well Purging Sheet

Date: 5/11/20

Project Name: Clay County Landfill
Address: 3301 190th St S, Hawley, MN 56549
Weather Conditions: 47°, Sunny, NNW 14 mph
Field Technician(s): CML

Well ID : MW-201A

Casing Diameter (inches)	2.0	Average Purging Rate (g/m)	1.44
Top of Casing Elev. (feet)		Volume Purged (gals.)	11.5
Depth to Water from **TOC** (feet)	3.80	Purged Dry (Y/N)	N
Groundwater Elev. (feet)		Sampling Device	Submersible Pump
Depth to Bottom of Well from **TOC** (feet)	15.20	Time Sample Collected	15:35
Volume of Water in Casing (gals.)	1.86	Color	lt gray
3 Well Volumes (gals.)	5.56	Odor	N
Purging Device	Submersible Pump	Well Capped & Locked (Y/N)	Y
Purging Start Time	15:24	Lock Key #	2106
Purging Stop Time	15:32	Damage to Well? (Y/N)	N

4.0 6.0

Volume Purged (gallons)	1.9	[illegible]	[illegible]	8.0	11.5		
Stabilization Readings							
Time	15:26	15:27	15:28	15:30	15:32		
Temperature (°C)	5.28	5.27	5.27	5.27	5.27		
Conductance (uS/cm)	714	699	694	693	694		
Dissolved Oxygen (mg/L)	99999	—	—	—	—		
pH	7.91	7.82	7.74	7.69	7.64		
ORP (mV)	15.4	16.5	16.0	-32.8	-2.2		
Turbidity (NTU)	140	[illegible]	40.0	25.0	12.0		

55.0

Comments:

Dup 1 collected @ 15:43

WENCK

Responsive partner. Exceptional outcomes.

Well Purging Sheet

Date: 5/11/20

Project Name: Clay County Landfill
Address: 3301 190th St S, Hawley, MN 56549
Weather Conditions: 47°, sunny, NNW 14mph
Field Technician(s): ~~SMH~~ HRB

Well ID : W-201B			
Casing Diameter (inches)	2.0	Average Purging Rate (g/m)	1.68
Top of Casing Elev. (feet)		Volume Purged (gals.)	18.5
Depth to Water from **TOC** (feet)	4.15	Purged Dry (Y/N)	N
Groundwater Elev. (feet)		Sampling Device	Submersible Pump
Depth to Bottom of Well from **TOC** (feet)	42.00	Time Sample Collected	15:45
Volume of Water in Casing (gals.)	6.17	Color	Colorless
3 Well Volumes (gals.)	18.51	Odor	None
Purging Device	Submersible Pump	Well Capped & Locked (Y/N)	Y
Purging Start Time	15:34	Lock Key #	4066
Purging Stop Time	15.45	Damage to Well? (Y/N)	N

Volume Purged (gallons)	6.17	12.32	18.51				
Stabilization Readings							
Time	15:36	15:39	15.42				
Temperature (°C)	7.54	7.80	7.86				
Conductance (uS/cm)	452	450	450				
Dissolved Oxygen (mg/L)	2.05	0.65	0.33				
pH	7.09	7.08	7.04				
ORP (mV)	-69.8	-91.9	-101.0				
Turbidity (NTU)	10.0	5.50	4.10				

Comments:

WENCK
Responsive partner. Exceptional outcomes.

Well Purging Sheet

Date: 5/11/20

Project Name: Clay County Landfill
Address: 3301 190th St S, Hawley, MN 56549
Weather Conditions: 47°, Sunny, NNW 14mph
Field Technician(s): CML

Well ID : W-2

Casing Diameter (inches)	2.0	Average Purging Rate (g/m)	0.31
Top of Casing Elev. (feet)		Volume Purged (gals.)	4.0
Depth to Water from **TOC** (feet)	3.37	Purged Dry (Y/N)	Y
Groundwater Elev. (feet)		Sampling Device	Submersible Pump
Depth to Bottom of Well from **TOC** (feet)	24.04	Time Sample Collected	16:50
Volume of Water in Casing (gals.)	3.37	Color	lt BRN
3 Well Volumes (gals.)	10.11	Odor	N
Purging Device	Submersible Pump	Well Capped & Locked (Y/N)	Y
Purging Start Time	16:34	Lock Key #	2106
Purging Stop Time	16:47	Damage to Well? (Y/N)	N

Volume Purged (gallons)	3.4	4.0	10.1				
Stabilization Readings							
Time	16:38	16:46					
Temperature (°C)	5.55	7.62					
Conductance (uS/cm)	475	580					
Dissolved Oxygen (mg/L)	—	—					
pH	8.25	7.93					
ORP (mV)	-208.1	-207.6					
Turbidity (NTU)	28.0	20.0					

Comments:

- Well ran dry @ 3 gallons @ 16:37, continued to purge to 4 gallons

WENCK
Responsive partner. Exceptional outcomes.

Well Purging Sheet

Project Name: Clay County Landfill
Address: 3301 190th St S, Hawley, MN 56549
Date: 5/11/20
Weather Conditions: 47°, sunny, NNW 14mph
Field Technician(s): ~~GWB~~ HRB

Well ID : W-2B

Casing Diameter (inches)	2.0	Average Purging Rate (g/m)	1.11
Top of Casing Elev. (feet)		Volume Purged (gals.)	30.0
Depth to Water from **TOC** (feet)	2.82	Purged Dry (Y/N)	Y
Groundwater Elev. (feet)		Sampling Device	Submersible Pump
Depth to Bottom of Well from **TOC** (feet)	49.80	Time Sample Collected	16:58
Volume of Water in Casing (gals.)	7.49	Color	Colorless
3 Well Volumes (gals.)	22.48	Odor	None
Purging Device	Submersible Pump	Well Capped & Locked (Y/N)	Y/Y
Purging Start Time	16:36	Lock Key #	2106
Purging Stop Time	16:57	Damage to Well? (Y/N)	N

Volume Purged (gallons)	7.5	15.0	22.5	30			
Stabilization Readings							
Time	16:35	16:47	16:50	16:57			
Temperature (°C)	7.36	7.96	8.10	8.11			
Conductance (uS/cm)	459	462	459	454			
Dissolved Oxygen (mg/L)	3.44	0.67	1.53	3.26			
pH	7.41	7.31	7.30	7.32			
ORP (mV)	-68.0	-100.7	-108.1	-89.2			
Turbidity (NTU)	15.0	9.40	380	21.0			

Comments:

WENCK
Responsive partner. Exceptional outcomes.

Well Purging Sheet

Project Name: 13 Mile Landfill - 2018 Spring Event
Address: Williston, ND
Weather Conditions: 47°, sunny, NNW 14mph
Field Technician(s): CML

Date: 5/11/20

Well ID : W-2030

Casing Diameter (inches)	2.0	Average Purging Rate (g/m)	0.43
Top of Casing Elev. (feet)	.	Volume Purged (gals.)	17.9
Depth to Water from **TOC** (feet)	0.00	Purged Dry (Y/N)	N
Groundwater Elev. (feet)		Sampling Device	Submersible Pump
Depth to Bottom of Well from **TOC** (feet)	36.52	Time Sample Collected	18:19
Volume of Water in Casing (gals.)	5.95	Color	lt yellow/clear
3 Well Volumes (gals.)	17.86	Odor	N
Purging Device	Submersible Pump	Well Capped & Locked (Y/N)	NA
Purging Start Time	17:36	Lock Key #	NA
Purging Stop Time	19:18	Damage to Well? (Y/N)	NA

Volume Purged (gallons)	6.0	12.0	17.9				
Stabilization Readings							
Time	17:53	18:09	19:18				
Temperature (°C)	7.01	7.46	7.46				
Conductance (uS/cm)	497	499	498				
Dissolved Oxygen (mg/L)	-	-	-				
pH	7.77	7.83	7.76				
ORP (mV)	-711.3	-537.2	-418.9				
Turbidity (NTU)	20.0	9.50	7.00				

Comments:

- well is nearly flush w/ ground surface
- new tubing

WENCK

Responsive partner. Exceptional outcomes.

Well Purging Sheet

Date: 5/11/20

Project Name: Clay County Landfill
Address: 3301 190th St S, Hawley, MN 56549
Weather Conditions: 47°, Sunny, NNW 14 mph
Field Technician(s): CML

Well ID : W-1			
Casing Diameter (inches)	2.0	Average Purging Rate (g/m)	0.86
Top of Casing Elev. (feet)		Volume Purged (gals.)	9.5
Depth to Water from **TOC** (feet)	0.2	Purged Dry (Y/N)	Y
Groundwater Elev. (feet)		Sampling Device	Submersible Pump
Depth to Bottom of Well from **TOC** (feet)	63.00	Time Sample Collected	19:22
Volume of Water in Casing (gals.)	10.24	Color	Clear
3 Well Volumes (gals.)	30.71	Odor	N
Purging Device	Submersible Pump	Well Capped & Locked (Y/N)	Y
Purging Start Time	19:00	Lock Key #	2106
Purging Stop Time	19:11	Damage to Well? (Y/N)	N
	9.5		

Volume Purged (gallons)	~~0.24~~						
Stabilization Readings							
Time	19:11						
Temperature (°C)	7.37						
Conductance (uS/cm)	388						
Dissolved Oxygen (mg/L)	9.25						
pH	8.12						
ORP (mV)	143.9						
Turbidity (NTU)	28.0						

Comments:

C-9: 5.93 water level
well ran dry 19:11 @ 9.5 gal

Field Blank @ 20:02

WENCK
Responsive partner. Exceptional outcomes.

Well Purging Sheet

Project Name: Clay County Landfill
Address: 3301 190th St S, Hawley, MN 56549
Date: 5/11/20
Weather Conditions: 47°, sunny, NNW 14mph
Field Technician(s): CML

Well ID : MW-10

Casing Diameter (inches)	2.0	Average Purging Rate (g/m)	0.16
Top of Casing Elev. (feet)		Volume Purged (gals.)	6.1
Depth to Water from **TOC** (feet)	3.71	Purged Dry (Y/N)	N
Groundwater Elev. (feet)		Sampling Device	pers. Submersible Pump
Depth to Bottom of Well from **TOC** (feet)	16.20	Time Sample Collected	19:30
Volume of Water in Casing (gals.)	2.03	Color	lt. org.
3 Well Volumes (gals.)	6.10	Odor	N
Purging Device	pers. Submersible Pump	Well Capped & Locked (Y/N)	Y
Purging Start Time	18:49	Lock Key #	2106
Purging Stop Time	19:28	Damage to Well? (Y/N)	N

Volume Purged (gallons)	2.0	4.0	6.1				
Stabilization Readings							
Time	19:03	19:17	19:28				
Temperature (°C)	5.36	5.30	5.32				
Conductance (uS/cm)	696	760	784				
Dissolved Oxygen (mg/L)	—	—	—				
pH	7.55	7.47	7.43				
ORP (mV)	-231.2	-155.8	-112.0				
Turbidity (NTU)	55.0	9.80	65.0				

Comments:

- water started off orange in color
- collected sample before well ran dry

WENCK
Responsive partner. Exceptional outcomes.

Well Purging Sheet

Project Name: Clay County Landfill
Address: 3301 190th St S, Hawley, MN 56549
Date: 5/11/20
Weather Conditions: 47°, sunny, NNW 14mph
Field Technician(s): CML

Well ID : S-3

Casing Diameter (inches)	2.0	Average Purging Rate (g/m)	
Top of Casing Elev. (feet)		Volume Purged (gals.)	
Depth to Water from **TOC** (feet)		Purged Dry (Y/N)	
Groundwater Elev. (feet)		Sampling Device	Submersible Pump
Depth to Bottom of Well from **TOC** (feet)		Time Sample Collected	18:00
Volume of Water in Casing (gals.)		Color	yellow
3 Well Volumes (gals.)		Odor	N
Purging Device	Submersible Pump	Well Capped & Locked (Y/N)	
Purging Start Time		Lock Key #	
Purging Stop Time		Damage to Well? (Y/N)	

Grab

Volume Purged (gallons)							
Stabilization Readings							
Time	18:00						
Temperature (°C)	9.27						
Conductance (uS/cm)	1388						
Dissolved Oxygen (mg/L)	4.95						
pH	7.68						
ORP (mV)	-54.2						
Turbidity (NTU)	16.0						

Comments:

WENCK
Responsive partner. Exceptional outcomes.

Well Purging Sheet

Project Name: Clay County Landfill
Address: 3301 190th St S, Hawley, MN 56549
Date: 5/12/20
Weather Conditions: 44°, sunny, calm
Field Technician(s): CML

Well ID : W-13

Casing Diameter (inches)	2.0	Average Purging Rate (g/m)	0.96
Top of Casing Elev. (feet)		Volume Purged (gals.)	19.1
Depth to Water from **TOC** (feet)	28.71	Purged Dry (Y/N)	Y
Groundwater Elev. (feet)		Sampling Device	Submersible Pump
Depth to Bottom of Well from **TOC** (feet)	52.23	Time Sample Collected	9:10
Volume of Water in Casing (gals.)	3.83	Color	lt gray
3 Well Volumes (gals.)	11.50	Odor	Slight sewer
Purging Device	Submersible Pump	Well Capped & Locked (Y/N)	Y
Purging Start Time	8:49	Lock Key #	2106
Purging Stop Time	9:09	Damage to Well? (Y/N)	N

Volume Purged (gallons)	3.8	7.6	11.5	15.3	19.1		
Stabilization Readings							
Time	8:52	8:56	9:00	9:05	9:09		
Temperature (°C)	8.88	8.95	8.97	8.99	9.09		
Conductance (uS/cm)	565	588	587	594	591		
Dissolved Oxygen (mg/L)	1.67	1.01	0.91	0.71	3.83		
pH	7.52	7.29	7.27	7.23	7.29		
ORP (mV)	-127.0	-93.0	-87.4	-71.5	-71.2		
Turbidity (NTU)	240	65.0	55.0	71.0	80.0		

Comments:

- well started running dry after 11 WV, continued to purge due to fast recharge
* - needs new tubing next time

Dup-2 collected @ 9:17

WENCK
Responsive partner. Exceptional outcomes.

Well Purging Sheet

Project Name: Clay County Landfill
Address: 3301 190th St S, Hawley, MN 56549
Weather Conditions: 44°, sunny, calm
Field Technician(s): CML

Date: 5/12/20

Well ID : C-11

Casing Diameter (inches)	2.0	Average Purging Rate (g/m)	0.17
Top of Casing Elev. (feet)		Volume Purged (gals.)	4.2
Depth to Water from **TOC** (feet)	13.45	Purged Dry (Y/N)	N
Groundwater Elev. (feet)		Sampling Device	Submersible Pump
Depth to Bottom of Well from **TOC** (feet)	21.91	Time Sample Collected	10:08
Volume of Water in Casing (gals.)	1.38	Color	1+BRN
3 Well Volumes (gals.)	4.14	Odor	N
Purging Device	Submersible Pump	Well Capped & Locked (Y/N)	Y
Purging Start Time	9:41	Lock Key #	2106
Purging Stop Time	10:06	Damage to Well? (Y/N)	N

Volume Purged (gallons)	1.4	2.8	4.2				
Stabilization Readings							
Time	9:49	9:57	10:06				
Temperature (°C)	6.39	6.46	6.44				
Conductance (uS/cm)	647	646	645				
Dissolved Oxygen (mg/L)	7.82	7.80	7.80				
pH	7.09	6.98	6.94				
ORP (mV)	88.7	97.3	103.5				
Turbidity (NTU)	2.10	1.30	1.30				

Comments:

WENCK
Responsive partner. Exceptional outcomes.

Well Purging Sheet

Project Name: Clay County Landfill
Address: 3301 190th St S, Hawley, MN 56549
Weather Conditions: 45°, sunny, NNE 2mph
Field Technician(s): CML
Date: 5/12/20

Well ID : W-12			
Casing Diameter (inches)	2.0	Average Purging Rate (g/m)	0.75
Top of Casing Elev. (feet)		Volume Purged (gals.)	4.5
Depth to Water from **TOC** (feet)	38.17	Purged Dry (Y/N)	N
Groundwater Elev. (feet)		Sampling Device	Submersible Pump
Depth to Bottom of Well from **TOC** (feet)	47.28	Time Sample Collected	10:34
Volume of Water in Casing (gals.)	1.48	Color	Clear
3 Well Volumes (gals.)	4.45	Odor	N
Purging Device	Submersible Pump	Well Capped & Locked (Y/N)	Y
Purging Start Time	10:27	Lock Key #	2106
Purging Stop Time	10:33	Damage to Well? (Y/N)	N

Volume Purged (gallons)	1.5	3.0	4.5				
Stabilization Readings							
Time	10:29	10:31	10:33				
Temperature (°C)	8.99	9.03	9.05				
Conductance (uS/cm)	914	905	905				
Dissolved Oxygen (mg/L)	2.29	0.91	0.51				
pH	6.96	6.85	6.81				
ORP (mV)	-46.2	-19.0	-8.5				
Turbidity (NTU)	9.50	9.50	2.80				

Comments:

WENCK
Responsive partner. Exceptional outcomes.

Well Purging Sheet

Project Name: Clay County Landfill
Address: 3301 190th St S, Hawley, MN 56549
Weather Conditions: 45°, sunny, WNW 2 mph
Field Technician(s): CML

Date: 5/12/20

Well ID : W-5

Casing Diameter (inches)	2.0	Average Purging Rate (g/m)	0.21
Top of Casing Elev. (feet)		Volume Purged (gals.)	6.0
Depth to Water from **TOC** (feet)	3.35	Purged Dry (Y/N)	N
Groundwater Elev. (feet)		Sampling Device	Submersible Pump pers.
Depth to Bottom of Well from **TOC** (feet)	12.48	Time Sample Collected	13:19
Volume of Water in Casing (gals.)	1.49	Color	Org
3 Well Volumes (gals.)	4.46	Odor	N
Purging Device	Submersible Pump pers.	Well Capped & Locked (Y/N)	Y
Purging Start Time	12:49	Lock Key #	2106
Purging Stop Time	13:18	Damage to Well? (Y/N)	N

Volume Purged (gallons)	1.5	3.0	4.5	6.0			
Stabilization Readings							
Time	12:57	13:05	13:10	13:18			
Temperature (°C)	5.45	5.45	5.38	5.40			
Conductance (uS/cm)	719	705	701	715			
Dissolved Oxygen (mg/L)	0.74	0.93	1.02	1.06			
pH	7.36	7.35	7.34	7.32			
ORP (mV)	-127.5	-115.4	-106.4	-98.8			
Turbidity (NTU)	22.0	55.0	9.6	3.10			

Comments:

- new tubing next time

WENCK
Responsive partner. Exceptional outcomes.

Well Purging Sheet

Project Name: Clay County Landfill
Address: 3301 190th St S, Hawley, MN 56549
Weather Conditions: 48°, sunny, WNW 2mph
Field Technician(s): ~~GML~~ HRB

Date: 5/12/20

Well ID : MW-3

Casing Diameter (inches)	2.0	Average Purging Rate (g/m)	1.92
Top of Casing Elev. (feet)		Volume Purged (gals.)	48
Depth to Water from **TOC** (feet)	3.59	Purged Dry (Y/N)	N
Groundwater Elev. (feet)		Sampling Device	Submersible Pump
Depth to Bottom of Well from **TOC** (feet)	76.94	Time Sample Collected	13:30
Volume of Water in Casing (gals.)	11.96	Color	clear
3 Well Volumes (gals.)	35.87	Odor	N
Purging Device	Submersible Pump	Well Capped & Locked (Y/N)	Y
Purging Start Time	12:56	Lock Key #	2106
Purging Stop Time	13:30	Damage to Well? (Y/N)	N

Volume Purged (gallons)	12.0	24.0	35.9	48.0			
Stabilization Readings							
Time	13:03	13:11	13:20	13:30			
Temperature (°C)	7.79	7.82	7.79	7.79			
Conductance (uS/cm)	531	547	550	549			
Dissolved Oxygen (mg/L)	925.85	–	–	–			
pH	8.20	7.89	7.85	7.82			
ORP (mV)	-205.6	-46.9	209.1	-8.8			
Turbidity (NTU)	55.0	19.0	5.3	3.8			

Comments:

WENCK
Responsive partner. Exceptional outcomes.

Well Purging Sheet

Project Name: Clay County Landfill
Address: 3301 190th St S, Hawley, MN 56549
Weather Conditions: 48°, sunny, WNW 2mph
Field Technician(s): CML

Date: 5/12/20

Well ID : MW-16A

Casing Diameter (inches)	2.0	Average Purging Rate (g/m)	0.17
Top of Casing Elev. (feet)		Volume Purged (gals.)	6.7
Depth to Water from **TOC** (feet)	4.19	Purged Dry (Y/N)	N
Groundwater Elev. (feet)		Sampling Device	Submersible Pump
Depth to Bottom of Well from **TOC** (feet)	17.97	Time Sample Collected	14:35
Volume of Water in Casing (gals.)	2.25	Color	lt gray
3 Well Volumes (gals.)	6.74	Odor	N
Purging Device	Submersible Pump	Well Capped & Locked (Y/N)	Y
Purging Start Time	13:53	Lock Key #	2106
Purging Stop Time	14:33	Damage to Well? (Y/N)	N

Volume Purged (gallons)	2.3	4.6	6.7				
Stabilization Readings							
Time	14:07	14:19	14:33				
Temperature (°C)	5.94	5.97	5.89				
Conductance (uS/cm)	391	371	527				
Dissolved Oxygen (mg/L)	1.40	1.18	1.61				
pH	7.23	7.20	7.20				
ORP (mV)	26.8	47.4	43.4				
Turbidity (NTU)	140	65.0	50.0				

Comments:

WENCK

Responsive partner. Exceptional outcomes.

Well Purging Sheet

Project Name: Clay County Landfill
Address: 3301 190th St S, Hawley, MN 56549
Weather Conditions: 48°, Sunny, WNW 2mph
Field Technician(s): ~~GWL~~ HRB

Date: 5/12/20

Well ID : MW-104B

Casing Diameter (inches)	2.0	Average Purging Rate (g/m)	1.07
Top of Casing Elev. (feet)		Volume Purged (gals.)	30
Depth to Water from **TOC** (feet)	4.93	Purged Dry (Y/N)	Y
Groundwater Elev. (feet)		Sampling Device	Submersible Pump
Depth to Bottom of Well from **TOC** (feet)	56.09	Time Sample Collected	14:31
Volume of Water in Casing (gals.)	8.34	Color	Colorless
3 Well Volumes (gals.)	25.02	Odor	None
Purging Device	Submersible Pump	Well Capped & Locked (Y/N)	Y
Purging Start Time	13:58	Lock Key #	2106
Purging Stop Time	14:26	Damage to Well? (Y/N)	N

Volume Purged (gallons)	8.3	16.6	25.0				
Stabilization Readings							
Time	14:04	14:11	14:20				
Temperature (°C)	7.43	7.96	8.02				
Conductance (uS/cm)	584	698	679				
Dissolved Oxygen (mg/L)	—	—	—				
pH	8.14	7.88	7.85				
ORP (mV)	-46.4	-98.9	-103.2				
Turbidity (NTU)	120	95.	12				

Comments:
ran dry at 14:26 @ 30 gal

WENCK
Responsive partner. Exceptional outcomes.

Well Purging Sheet

Project Name: Clay County Landfill
Address: 3301 190th St S, Hawley, MN 56549
Weather Conditions: 52°, sunny, 5 5 mph
Field Technician(s): CML

Date: 5/12/20

Well ID : MW-301A

Casing Diameter (inches)	2.0	Average Purging Rate (g/m)	0.18
Top of Casing Elev. (feet)		Volume Purged (gals.)	6.1
Depth to Water from **TOC** (feet)	4.15	Purged Dry (Y/N)	N
Groundwater Elev. (feet)		Sampling Device	Submersible Pump
Depth to Bottom of Well from **TOC** (feet)	16.68	Time Sample Collected	15:35
Volume of Water in Casing (gals.)	2.04	Color	clear
3 Well Volumes (gals.)	6.12	Odor	N
Purging Device	Submersible Pump	Well Capped & Locked (Y/N)	Y
Purging Start Time	15:00	Lock Key #	2106
Purging Stop Time	15:34	Damage to Well? (Y/N)	N

Volume Purged (gallons)	2.0	4.0	6.1				
Stabilization Readings							
Time	15:13	15:24	15:34				
Temperature (°C)	5.80	5.58	5.63				
Conductance (uS/cm)	690	893	895				
Dissolved Oxygen (mg/L)	0.46	0.41	0.38				
pH	6.96	6.96	6.96				
ORP (mV)	63.1	74.8	78.5				
Turbidity (NTU)	11.0	10.0	7.30				

Comments:

WENCK
Responsive partner. Exceptional outcomes.

Well Purging Sheet

Project Name: Clay County Landfill
Address: 3301 190th St S, Hawley, MN 56549
Weather Conditions: 52°, Sunny, S 5 mph
Field Technician(s): ~~GMA~~ HRB

Date: 5/12/20

Well ID : V1-301B

Casing Diameter (inches)	2.0	Average Purging Rate (g/m)	1.6
Top of Casing Elev. (feet)		Volume Purged (gals.)	32
Depth to Water from **TOC** (feet)	3.15	Purged Dry (Y/N)	N
Groundwater Elev. (feet)		Sampling Device	Submersible Pump
Depth to Bottom of Well from **TOC** (feet)	52.22	Time Sample Collected	15:24
Volume of Water in Casing (gals.)	7.99	Color	Black
3 Well Volumes (gals.)	24	Odor	N
Purging Device	Submersible Pump	Well Capped & Locked (Y/N)	Y/Y
Purging Start Time	15:04	Lock Key #	2106
Purging Stop Time	15:24	Damage to Well? (Y/N)	N

Volume Purged (gallons)	8:00	16	24	32			
Stabilization Readings							
Time	15:09	15:14	15:18	15:23			
Temperature (°C)	7.55	7.59	7.58	7.58			
Conductance (uS/cm)	522	536	540	543			
Dissolved Oxygen (mg/L)	—	—	—	—			
pH	8.36	8.06	7.95	7.89			
ORP (mV)	-129.7	-173.2	-172.8	-181.0			
Turbidity (NTU)	40	13	11	9.60			

Comments:
very silty / Black at start

WENCK

Responsive partner. Exceptional outcomes.

Well Purging Sheet

Project Name: Clay County Landfill
Address: 3301 190th St S, Hawley, MN 56549
Date: 5/12/20
Weather Conditions: 54°, sunny, SSE 5mph
Field Technician(s): CML

Well ID : W-102A

Casing Diameter (inches)	2.0	Average Purging Rate (g/m)	0.15
Top of Casing Elev. (feet)		Volume Purged (gals.)	2.0
Depth to Water from **TOC** (feet)	16.20	Purged Dry (Y/N)	N
Groundwater Elev. (feet)		Sampling Device	Submersible Pump
Depth to Bottom of Well from **TOC** (feet)	20.29	Time Sample Collected	17:06
Volume of Water in Casing (gals.)	0.67	Color	Clear
3 Well Volumes (gals.) 2.0	Submersible Pump	Odor	N
Purging Device		Well Capped & Locked (Y/N)	Y
Purging Start Time	16:52	Lock Key #	2100
Purging Stop Time	17:05	Damage to Well? (Y/N)	N

Volume Purged (gallons)	0.7	1.4	2.0				
Stabilization Readings							
Time	16:56	17:01	17:05				
Temperature (°C)	7.31	7.29	7.40				
Conductance (uS/cm)	405	429	425				
Dissolved Oxygen (mg/L)	10.49	10.19	10.00				
pH	7.44	7.40	7.40				
ORP (mV)	135.2	137.6	136.4				
Turbidity (NTU)	4.80	3.60	4.60				

Comments:

WENCK
Responsive partner. Exceptional outcomes.

Well Purging Sheet

Project Name: Clay County Landfill
Address: 3301 190th St S, Hawley, MN 56549
Date: 5/12/20
Weather Conditions: 54°, sunny, SSE 5mph
Field Technician(s): ~~BMA~~ HRB

Well ID : MW-102B			
Casing Diameter (inches)	2.0	Average Purging Rate (g/m)	1.1
Top of Casing Elev. (feet)		Volume Purged (gals.)	11
Depth to Water from **TOC** (feet)	27.87	Purged Dry (Y/N)	N
Groundwater Elev. (feet)		Sampling Device	Submersible Pump
Depth to Bottom of Well from **TOC** (feet)	44.71	Time Sample Collected	15:12
Volume of Water in Casing (gals.)	2.74	Color	colorless
3 Well Volumes (gals.)	8.23	Odor	None
Purging Device	Submersible Pump	Well Capped & Locked (Y/N)	Y/Y
Purging Start Time	17:01	Lock Key #	2106
Purging Stop Time	17:17	Damage to Well? (Y/N)	N

Volume Purged (gallons)	2.75	5.5	8.23	11			
Stabilization Readings							
Time	17:03	17:06	17:08	17:11			
Temperature (°C)	8.77	8.82	8.84	9.01			
Conductance (uS/cm)	596	596	595	594			
Dissolved Oxygen (mg/L)	—	—	—	—			
pH	7.92	7.75	7.69	7.61			
ORP (mV)	321.9	389.4	375.0	332.1			
Turbidity (NTU)	45.0	12.0	7.2	4.40			

Comments:

WENCK
Responsive partner. Exceptional outcomes.

Well Purging Sheet

Project Name: Clay County Landfill
Address: 3301 190th St S, Hawley, MN 56549
Date: 9/12/20
Weather Conditions: 54°, sunny, SSE 5mph
Field Technician(s): ~~CML~~ HRB

Well ID : W-104A

Casing Diameter (inches)	2.0	Average Purging Rate (g/m)	1.33
Top of Casing Elev. (feet)		Volume Purged (gals.)	8.00
Depth to Water from **TOC** (feet)	5.51	Purged Dry (Y/N)	N
Groundwater Elev. (feet)		Sampling Device	Submersible Pump
Depth to Bottom of Well from **TOC** (feet)	17.64	Time Sample Collected 16:17	[redacted]
Volume of Water in Casing (gals.)	1.98	Color	Colorless
3 Well Volumes (gals.)	5.93	Odor	None
Purging Device	Submersible Pump	Well Capped & Locked (Y/N)	Y/Y
Purging Start Time	16:10	Lock Key #	2106
Purging Stop Time	16:16	Damage to Well? (Y/N)	N

Volume Purged (gallons)	1.98	3.96	5.93	8.0			
Stabilization Readings							
Time	16:12	16:13	16:14	16:15			
Temperature (°C)	6.06	6.05	6.04	6.03			
Conductance (uS/cm)	752	763	773	774			
Dissolved Oxygen (mg/L)	2.41	2.07	1.45	1.26			
pH	7.09	7.04	6.96	6.93			
ORP (mV)	65.7	67.4	68.1	67.8			
Turbidity (NTU)	34.0	6.2	4.7	4.2			

Comments:

WENCK
Responsive partner. Exceptional outcomes.

Well Purging Sheet

Project Name: Clay County Landfill
Address: 3301 190th St S, Hawley, MN 56549
Weather Conditions: 54°, sunny, SSE 5mph
Field Technician(s): CML

Date: 5/12/21

Well ID : W-164B

Casing Diameter (inches)	2.0	Average Purging Rate (g/m)	1.06
Top of Casing Elev. (feet)		Volume Purged (gals.)	26.5
Depth to Water from **TOC** (feet)	3.85	Purged Dry (Y/N)	N
Groundwater Elev. (feet)		Sampling Device	Submersible Pump
Depth to Bottom of Well from **TOC** (feet)	44.17	Time Sample Collected	16:32
Volume of Water in Casing (gals.)	6.57	Color	Clear
3 Well Volumes (gals.)	19.71	Odor	N
Purging Device	Submersible Pump	Well Capped & Locked (Y/N)	Y
Purging Start Time	16:06	Lock Key #	2106
Purging Stop Time	16:31	Damage to Well? (Y/N)	N

Volume Purged (gallons)	6.6	13.2	19.7	26.5			
Stabilization Readings							
Time	16:12	16:19	16:25	16:31			
Temperature (°C)	8.43	8.44	8.44	8.42			
Conductance (uS/cm)	542	551	552	552			
Dissolved Oxygen (mg/L)	—	—	—	—			
pH	7.79	7.69	7.69	7.70			
ORP (mV)	16.1	12.5	-100.8	-48.0			
Turbidity (NTU)	80.0	16.0	11.0	4.00			

Comments:

WENCK
Responsive partner. Exceptional outcomes.

Well Purging Sheet

Project Name: Clay County Landfill
Address: 3301 190th St S, Hawley, MN 56549
Date: 5/12/20
Weather Conditions: 54°, sunny, SE 4mph
Field Technician(s): ~~GM~~ MRB

Well ID : W-302A

Casing Diameter (inches)	2.0	Average Purging Rate (g/m)	0.51
Top of Casing Elev. (feet)		Volume Purged (gals.)	5.1
Depth to Water from **TOC** (feet)	20.53	Purged Dry (Y/N)	N
Groundwater Elev. (feet)		Sampling Device	Submersible Pump
Depth to Bottom of Well from **TOC** (feet)	30.95	Time Sample Collected	18:13
Volume of Water in Casing (gals.)	1.61	Color	colorless
3 Well Volumes (gals.)	5.09	Odor	None
Purging Device	Submersible Pump	Well Capped & Locked (Y/N)	Y/Y
Purging Start Time	18:03	Lock Key #	2106
Purging Stop Time	18:13	Damage to Well? (Y/N)	N

Volume Purged (gallons)	1.7	3.4	5.09				
Stabilization Readings							
Time 18:05	~~18:08~~	18:09	18:11				
Temperature (°C)	7.45	7.42	7.44				
Conductance (uS/cm)	436	442	446				
Dissolved Oxygen (mg/L)	9.01	8.40	8.12				
pH	7.38	7.30	7.26				
ORP (mV)	128.8	131.8	133.9				
Turbidity (NTU)	26.0	3.90	2.30				

Comments:

WENCK
Responsive partner. Exceptional outcomes.

Well Purging Sheet

Project Name: Clay County Landfill
Address: 3301 190th St S, Hawley, MN 56549
Date: 5/12/20
Weather Conditions: 54°, sunny, SE 4 mph
Field Technician(s): CML

Well ID : W-302B

Casing Diameter (inches)	2.0	Average Purging Rate (g/m)	0.78
Top of Casing Elev. (feet)		Volume Purged (gals.)	18.8
Depth to Water from **TOC** (feet)	23.84	Purged Dry (Y/N)	N
Groundwater Elev. (feet)		Sampling Device	Submersible Pump
Depth to Bottom of Well from **TOC** (feet)	62.42	Time Sample Collected	18:11
Volume of Water in Casing (gals.)	6.29	Color	clear
3 Well Volumes (gals.)	18.8	Odor	N
Purging Device	Submersible Pump	Well Capped & Locked (Y/N)	Y
Purging Start Time	17:47	Lock Key #	2106
Purging Stop Time	18:11	Damage to Well? (Y/N)	N

Volume Purged (gallons)	6.3	12.6	18.8				
Stabilization Readings							
Time	17:53	18:02	18:10				
Temperature (°C)	8.07	8.21	8.23				
Conductance (uS/cm)	299	495	539				
Dissolved Oxygen (mg/L)	—	—	—				
pH	8.90	8.17	7.94				
ORP (mV)	-134.5	-230.8	126.5				
Turbidity (NTU)	45.0	6.30	2.60				

Comments:

WENCK
Responsive partner. Exceptional outcomes.

Well Purging Sheet

Project Name: Clay County Landfill
Address: 3301 190th St S, Hawley, MN 56549
Date: 5/12/20
Weather Conditions: 44°, sunny, calm
Field Technician(s): CML

Well ID : MW-2			
Casing Diameter (inches)	2.0	Average Purging Rate (g/m)	
Top of Casing Elev. (feet)		Volume Purged (gals.)	
Depth to Water from **TOC** (feet)		Purged Dry (Y/N)	
Groundwater Elev. (feet)		Sampling Device	Grab / Submersible Pump
Depth to Bottom of Well from **TOC** (feet)		Time Sample Collected	11:52
Volume of Water in Casing (gals.)		Color	ORG
3 Well Volumes (gals.)		Odor	N
Purging Device	Submersible Pump	Well Capped & Locked (Y/N)	
Purging Start Time		Lock Key #	
Purging Stop Time		Damage to Well? (Y/N)	

Volume Purged (gallons)							
Stabilization Readings							
Time	11:52						
Temperature (°C)	13.81						
Conductance (uS/cm)	989						
Dissolved Oxygen (mg/L)	4.26						
pH	6.93						
ORP (mV)	-68.7						
Turbidity (NTU)	>1000						

Comments:

- Sheen visible, but cattails nearby

WENCK
Responsive partner. Exceptional outcomes.

Well Purging Sheet

Project Name: Clay County Landfill
Address: 3301 190th St S, Hawley, MN 56549
Weather Conditions: 44°, sunny, calm
Field Technician(s): CML

Date: 5/12/20

Well ID : S-1			
Casing Diameter (inches)	2.0	Average Purging Rate (g/m)	
Top of Casing Elev. (feet)		Volume Purged (gals.)	
Depth to Water from **TOC** (feet)		Purged Dry (Y/N)	
Groundwater Elev. (feet)		Sampling Device	Submersible Pump
Depth to Bottom of Well from **TOC** (feet)		Time Sample Collected	11:17
Volume of Water in Casing (gals.)		Color	BRN
3 Well Volumes (gals.)		Odor	N
Purging Device	Submersible Pump	Well Capped & Locked (Y/N)	
Purging Start Time		Lock Key #	
Purging Stop Time		Damage to Well? (Y/N)	

Volume Purged (gallons)							
Stabilization Readings							
Time	11:17						
Temperature (°C)	8.04						
Conductance (uS/cm)	848						
Dissolved Oxygen (mg/L)	3.57						
pH	7.09						
ORP (mV)	-12.0						
Turbidity (NTU)	15.0						

Comments:

WENCK
Responsive partner. Exceptional outcomes.

Well Purging Sheet

Project Name: Clay County Landfill
Address: 3301 190th St S, Hawley, MN 56549
Weather Conditions: 54°, sunny, SE 4mph
Field Technician(s): CML
Date: 5/12/20

Well ID : LYS 111-2

Casing Diameter (inches)	2.0	Average Purging Rate (g/m)	
Top of Casing Elev. (feet)		Volume Purged (gals.)	
Depth to Water from **TOC** (feet)		Purged Dry (Y/N)	
Groundwater Elev. (feet)		Sampling Device	Submersible Pump
Depth to Bottom of Well from **TOC** (feet)		Time Sample Collected	19:10
Volume of Water in Casing (gals.)		Color	clear
3 Well Volumes (gals.)		Odor	Y
Purging Device	Submersible Pump	Well Capped & Locked (Y/N)	
Purging Start Time		Lock Key #	
Purging Stop Time		Damage to Well? (Y/N)	

Volume Purged (gallons)							
Stabilization Readings							
Time	19:10						
Temperature (°C)	7.84						
Conductance (uS/cm)	1349						
Dissolved Oxygen (mg/L)	4.76						
pH	6.85						
ORP (mV)	155.4						
Turbidity (NTU)	2.20						

Comments:

WENCK
Responsive partner. Exceptional outcomes.

Well Purging Sheet

Project Name: Clay County Landfill
Address: 3301 190th St S, Hawley, MN 56549
Date: 5/12/20
Weather Conditions: 54°, sunny, SE 4mph
Field Technician(s): CML

Well ID : LYS III-1			
Casing Diameter (inches)	2.0	Average Purging Rate (g/m)	
Top of Casing Elev. (feet)		Volume Purged (gals.)	
Depth to Water from **TOC** (feet)		Purged Dry (Y/N)	
Groundwater Elev. (feet)		Sampling Device	pers. Submersible Pump
Depth to Bottom of Well from **TOC** (feet)		Time Sample Collected	20:00
Volume of Water in Casing (gals.)		Color	clear
3 Well Volumes (gals.)		Odor	N
Purging Device	Submersible Pump	Well Capped & Locked (Y/N)	
Purging Start Time		Lock Key #	
Purging Stop Time		Damage to Well? (Y/N)	

Volume Purged (gallons)							
Stabilization Readings							
Time	20:00						
Temperature (°C)	8.06						
Conductance (uS/cm)	740						
Dissolved Oxygen (mg/L)	4.74						
pH	7.07						
ORP (mV)	-80.1						
Turbidity (NTU)	13.0						

Comments:

WENCK
Responsive partner. Exceptional outcomes.

Well Purging Sheet

Project Name: Clay County Landfill
Address: 3301 190th St S, Hawley, MN 56549
Date: 5/14/20
Weather Conditions: 63°, partly cloudy, SW 13mph
Field Technician(s): CML

Well ID : Benesch			
Casing Diameter (inches)	2.0	Average Purging Rate (g/m)	
Top of Casing Elev. (feet)		Volume Purged (gals.)	
Depth to Water from **TOC** (feet)		Purged Dry (Y/N)	
Groundwater Elev. (feet)		Sampling Device	Submersible Pump (Grab)
Depth to Bottom of Well from **TOC** (feet)		Time Sample Collected	12:20
Volume of Water in Casing (gals.)		Color	Clear
3 Well Volumes (gals.)		Odor	~~R~~ Slight Egg
Purging Device	Submersible Pump	Well Capped & Locked (Y/N)	
Purging Start Time		Lock Key #	
Purging Stop Time		Damage to Well? (Y/N)	

Volume Purged (gallons)							
Stabilization Readings							
Time	12:20						
Temperature (°C)	11.43						
Conductance (uS/cm)	498						
Dissolved Oxygen (mg/L)	—						
pH	7.55						
ORP (mV)	-102.2						
Turbidity (NTU)	6.10						

Comments:

Dup 3 collected

WENCK

Responsive partner. Exceptional outcomes.

Well Purging Sheet

Project Name: Clay County Landfill
Address: 3301 190th St S, Hawley, MN 56549
Date: 5/14/20
Weather Conditions: 63°, partly cloudy, SW 13mph
Field Technician(s): CML

Well ID : J. Ekre

Casing Diameter (inches)	2.0	Average Purging Rate (g/m)	
Top of Casing Elev. (feet)		Volume Purged (gals.)	
Depth to Water from **TOC** (feet)		Purged Dry (Y/N)	
Groundwater Elev. (feet)		Sampling Device	Submersible Pump (Grab)
Depth to Bottom of Well from **TOC** (feet)		Time Sample Collected	13:02
Volume of Water in Casing (gals.)		Color	Clear
3 Well Volumes (gals.)		Odor	N
Purging Device	Submersible Pump	Well Capped & Locked (Y/N)	
Purging Start Time		Lock Key #	
Purging Stop Time		Damage to Well? (Y/N)	

Volume Purged (gallons)							
Stabilization Readings							
Time	13:02						
Temperature (°C)	15.51						
Conductance (uS/cm)	565						
Dissolved Oxygen (mg/L)	[illegible]	660.41					
pH	[illegible]	7.81					
ORP (mV)	[illegible]	-228.5					
Turbidity (NTU)	1.20						

Comments:

Faucet inside house

WENCK
Responsive partner. Exceptional outcomes.

Well Purging Sheet

Project Name: Clay County Landfill
Address: 3301 190th St S, Hawley, MN 56549
Weather Conditions: 63°, partly cloudy, SW 13 mph
Field Technician(s): CML
Date: 9/14/20

Well ID : Deutscher

Casing Diameter (inches)	2.0	Average Purging Rate (g/m)	
Top of Casing Elev. (feet)		Volume Purged (gals.)	
Depth to Water from **TOC** (feet)		Purged Dry (Y/N)	
Groundwater Elev. (feet)		Sampling Device	Grab / ~~Submersible Pump~~
Depth to Bottom of Well from **TOC** (feet)		Time Sample Collected	11:33
Volume of Water in Casing (gals.)		Color	LT BRN
3 Well Volumes (gals.)		Odor	N
Purging Device	Submersible Pump	Well Capped & Locked (Y/N)	
Purging Start Time		Lock Key #	
Purging Stop Time		Damage to Well? (Y/N)	

Volume Purged (gallons)							
Stabilization Readings							
Time	11:33						
Temperature (°C)	12.39						
Conductance (uS/cm)	991						
Dissolved Oxygen (mg/L)	765.34						
pH	7.54						
ORP (mV)	-70.9						
Turbidity (NTU)	50.0						

Comments:

MS/MSD collected

Clay County Landfill

Water Levels Only- Spring event (even years)

W-17 - 3.75
W-9 - 3.71
W-10 - 2.42
W-16 - 7.78
W-11 - 3.94
C-4 - 5.57
C-8 - 5.11
C-9 - 5.93
W-15 - 15.14
~~C-11~~
C-10 - 8.98
TW-1 - 8.65
TW-2 - 8.49
TW-3 - 6.10
W-112 - 3.81
W-109 - 5.87
J-2 - 18.30
C-12 - 8.75
C-13 - 12.36
C-3 - 4.85
C-2 - 3.02
C-1 - 22.79
T2-A - 9.39
T2-B - 8.79
T2-C - 14.69
PP-1 - 4.10
PP-2 - 4.06
PP-3 - 2.75
T1-A - 6.80
T1-B - 8.94
T1-C - 8.02

Lys III-3 = Dry
Lys IV-1&2 = Dry
Lys IV-3 = Could not obtain sample

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

May 29, 2020

Andrew Feia
Wenck Associates, Inc.
3303 Fiechtner Drive
Suite 100
Fargo, ND 58103

RE: Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10518091

Dear Andrew Feia:

Enclosed are the analytical results for sample(s) received by the laboratory on May 15, 2020. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Duluth

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Annika Asp
annika.asp@pacelabs.com
(612)607-1700
Project Manager

Enclosures

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

CERTIFICATIONS

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10518091

Pace Analytical Services Duluth Minnesota

4730 Oneota St., Duluth, MN 55807
Minnesota Dept of Ag Certification #: Via MN Dept of Health 027-137-152
Montana DHHS Certification #: CERT0102
Minnesota Dept of Health Certification #: 1733125
Wisconsin Dept of Agriculture Certification #: 480341
Wisconsin DNR Certification # : 999446800
North Dakota Certification #: R-105
Nevada DCNR Certification #: MN000372019-1

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

SAMPLE SUMMARY

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10518091

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10518091001	**S-1**	Water	05/12/20 11:17	05/15/20 09:05
10518091002	**S-2**	Water	05/12/20 11:52	05/15/20 09:05
10518091003	**S-3**	Water	05/11/20 18:00	05/15/20 09:05
10518091004	**Field Blank (S-1)**	Water	05/11/20 18:00	05/15/20 09:05
10518091005	**Field Blank (S-2)**	Water	05/12/20 11:17	05/15/20 09:05
10518091006	**Field Blank (S-3)**	Water	05/12/20 11:25	05/15/20 09:05

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

SAMPLE ANALYTE COUNT

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10518091

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10518091001	**S-1**	EPA 1631E	CPK	1	PASI-DUL
10518091002	**S-2**	EPA 1631E	CPK	1	PASI-DUL
10518091003	**S-3**	EPA 1631E	CPK	1	PASI-DUL
10518091004	**Field Blank (S-1)**	EPA 1631E	CPK	1	PASI-DUL
10518091005	**Field Blank (S-2)**	EPA 1631E	CPK	1	PASI-DUL
10518091006	**Field Blank (S-3)**	EPA 1631E	CPK	1	PASI-DUL

PASI-DUL = Pace Analytical Services - Duluth

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10518091

Sample: S-1 **Lab ID: 10518091001** Collected: 05/12/20 11:17 Received: 05/15/20 09:05 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
1631E Mercury, Low Level	Analytical Method: EPA 1631E Preparation Method: EPA 1631E Pace Analytical Services - Duluth							
Mercury	**3.68**	ng/L	2.0	4	05/22/20 15:00	05/27/20 13:21	7439-97-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10518091

Sample: S-2 **Lab ID: 10518091002** Collected: 05/12/20 11:52 Received: 05/15/20 09:05 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
1631E Mercury, Low Level	Analytical Method: EPA 1631E Preparation Method: EPA 1631E Pace Analytical Services - Duluth							
Mercury	**37.4**	ng/L	5.0	10	05/22/20 15:00	05/27/20 13:33	7439-97-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10518091

Sample: S-3 **Lab ID: 10518091003** Collected: 05/11/20 18:00 Received: 05/15/20 09:05 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
1631E Mercury, Low Level	Analytical Method: EPA 1631E Preparation Method: EPA 1631E Pace Analytical Services - Duluth							
Mercury	**13.9**	ng/L	2.0	4	05/22/20 15:00	05/27/20 13:27	7439-97-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10518091

Sample: Field Blank (S-1) **Lab ID: 10518091004** Collected: 05/11/20 18:00 Received: 05/15/20 09:05 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
1631E Mercury, Low Level	Analytical Method: EPA 1631E Preparation Method: EPA 1631E Pace Analytical Services - Duluth							
Mercury	**<0.50**	ng/L	0.50	1	05/22/20 15:00	05/27/20 11:27	7439-97-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10518091

Sample: Field Blank (S-2) **Lab ID: 10518091005** Collected: 05/12/20 11:17 Received: 05/15/20 09:05 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
1631E Mercury, Low Level	Analytical Method: EPA 1631E Preparation Method: EPA 1631E Pace Analytical Services - Duluth							
Mercury	**<0.50**	ng/L	0.50	1	05/22/20 15:00	05/27/20 11:33	7439-97-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10518091

Sample: Field Blank (S-3) **Lab ID: 10518091006** Collected: 05/12/20 11:25 Received: 05/15/20 09:05 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
1631E Mercury, Low Level	Analytical Method: EPA 1631E Preparation Method: EPA 1631E Pace Analytical Services - Duluth							
Mercury	**<0.50**	ng/L	0.50	1	05/22/20 15:00	05/27/20 11:51	7439-97-6	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10518091

QC Batch: 189972 Analysis Method: EPA 1631E
QC Batch Method: EPA 1631E Analysis Description: 1631E Mercury
Laboratory: Pace Analytical Services - Duluth
Associated Lab Samples: 10518091001, 10518091002, 10518091003, 10518091004, 10518091005, 10518091006

METHOD BLANK: 747446 Matrix: Water
Associated Lab Samples: 10518091001, 10518091002, 10518091003, 10518091004, 10518091005, 10518091006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	ng/L	<0.50	0.50	05/27/20 10:39	

METHOD BLANK: 747447 Matrix: Water
Associated Lab Samples: 10518091001, 10518091002, 10518091003, 10518091004, 10518091005, 10518091006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	ng/L	<0.50	0.50	05/27/20 10:45	

METHOD BLANK: 747451 Matrix: Water
Associated Lab Samples: 10518091001, 10518091002, 10518091003, 10518091004, 10518091005, 10518091006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	ng/L	<0.50	0.50	05/27/20 12:21	

METHOD BLANK: 747454 Matrix: Water
Associated Lab Samples: 10518091001, 10518091002, 10518091003, 10518091004, 10518091005, 10518091006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	ng/L	<0.50	0.50	05/27/20 13:51	

LABORATORY CONTROL SAMPLE: 747448

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ng/L	5	5.20	104	77-123	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 747449 747450

Parameter	Units	12143961002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ng/L	0.729	2.5	2.5	3.30	3.33	103	104	71-125	1	24	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10518091

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 747452 747453

Parameter	Units	10517938002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ng/L	0.556	2.5	2.5	3.19	3.22	105	106	71-125	1	24	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALIFIERS

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10518091

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10518091

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10518091001	**S-1**	EPA 1631E	189972	EPA 1631E	189975
10518091002	**S-2**	EPA 1631E	189972	EPA 1631E	189975
10518091003	**S-3**	EPA 1631E	189972	EPA 1631E	189975
10518091004	**Field Blank (S-1)**	EPA 1631E	189972	EPA 1631E	189975
10518091005	**Field Blank (S-2)**	EPA 1631E	189972	EPA 1631E	189975
10518091006	**Field Blank (S-3)**	EPA 1631E	189972	EPA 1631E	189975

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Minnesota Pollution Control Agency

MPCA Chain-of-Custody Form revision 2017.0328

* indicates a required field

Work Order Number: | **COC Type:** Standard | **Page:** 1 of 1

Turnaround Time: Standard | **COC ID:** 33549 line8

FOR LAB USE ONLY

PROJECT/CLIENT INFO

Facility Code:* SW-34 | Program Code (MDH Lab Only):

Project Name:* Clay County Sanitary Landfill - Spring 2020 Surface Water | Project Task Code:* PRJ07913

Project Manager: Andrew Feia

Potential Hazard? No | If yes, add information to **Sampler Comments** field

LABORATORY

Lab Name: Pace Analytical Services, LLC

Address: 315 Chestnut Street

Virgina, MN 55792

EPA Lab ID:*

Lab Work Order Sticker

SAMPLE DETAILS

SAMPLE TYPES
Sample=Routine Sample
QC-FB=Field Blank Sample
QC-FR=Field Replicate Sample
QC-TB=Trip Blank Sample
QC-EB=Equipment Blank
Treated-Mid=Treatment system sample
Treated-Post=Treatment system sample

SAMPLING METHODS
G=Grab sample
CT=Composite, time-paced w/AS
CF=Composite w/AS
D-T=Discrete,time-paced w/AS
D-F=Discrete,flow-paced w/AS
SW-GAS=Gas Sampling
Unknown=Unknown

LAB MATRICES
DW=Drinking Water
NW=Nonpotable Water
SD=Soil/Solid
AR=Air
BL=Biological Material
OT=Other
TS=Tissue

FIELD MATRICES
Wtr-Ground=Groundwater
Wtr-Surf=Surface Water
Wtr-Drink=Drinking Water
QC-BLANK=Artificial Blank Water
Leachate=Leachate Sample
Air-Indoor=Indoor Air
Gas-Soil=Soil Gas

ANALYSIS REQUESTED

MN Location Identifier*	Field Name	Sample Type*	Start Date* (mm/dd/yyyy)	Start Time* 24 hr (hh:mm)	Depth Start	Depth End	Depth Units (m or ft.)	Sampling Method*	End Date (mm/dd/yyyy)	End Time 24 hr (hh:mm)	Lab Matrix*	Field Matrix*	AIS	Sampler Comments (filter volume, special handling, etc.)	# of Cont	PRESERV.	HCL	HN03	H2S04	None	None		Lab Sample No.	#
																FF	N	N	N	N	N			
									Complete ONLY if Method is CT, CF, D-T, or D-F							ANALYSIS*	List 1-VOCs (Attached)	List 3-Total Metals (Attached)	List 3-Inorganics (Attached)	List 4-pH, Specific Conductance	LL Mercury 1631 E			
SP00049	S-1	Sample	5/12/2020	11:17				G			NW	WTR-Surf			1						x			1
SP00050	S-2	Sample	5/12/2020	11:52				G			NW	WTR-Surf			1						x			2
SP00051	S-3	Sample	5/11/2020	18:00				G			NW	WTR-Surf			1						x			3
QC-BLANK	Field Blank (S-1)	QC-FB	5/11/2020	18:00				G			NW	QC-BLANK			1						x			4
QC-BLANK	Field Blank (S-2)	QC-FB	5/12/2020	11:17				G			NW	QC-BLANK			1						x			5
QC-BLANK	Field Blank (S-3)	QC-FB	5/12/2020	11:25				G			NW	QC-BLANK			1						x			6
																								7
																								8
																								9
																								10

Sampler's Name:* Christina Lammers | **Phone#:** 701-893-2327

Sampler's Signature:* Christina Lammers

Sampler's Organization: Wenck Associates, Inc.

Billing Organization: Clay County - Kirk Rosenberger | **Acct#:** 10-115155

Address: 807 11th Street North, Moorhead, MN 56560

Courier Name: Speedee | **Tracking#:**

Receiving Comments:

Relinquished By/Affiliation	Date/Time	Accepted By/Affiliation	Date/Time
(Sampler) Christina Lammers /Wenck	5/13 14:30	B Matthews	5/15/20 0905
			2.9

Pace Analytical	Document Name: Sample Condition Upon Receipt Form	Document Revised: 25Feb2020 Page 1 of 1
	Document No.: F-VM-C-001-rev.14	Issuing Authority: Pace Virginia Minnesota Quality Office

Sample Condition Upon Receipt

Client Name: Pace Mpls

Project #: 10518091

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ Other: SD

Tracking Number:

Custody Seal on Cooler/Box Present? ☐ Yes ☑ No **Seals Intact?** ☐ Yes ☐ No

Optional: Proj. Due Date: Proj. Name:

Packing Material: ☐ Bubble Wrap ☑ Bubble Bags ☐ None ☐ Other: **Temp Blank?** ☑ Yes ☐ No

Thermometer Used: ☑ 140792808 **Type of Ice:** ☑ Wet ☐ Blue ☐ None ☐ Samples on ice, cooling process has begun

Cooler Temp Read °C: 2.6 **Cooler Temp Corrected °C:** 2.9 **Biological Tissue Frozen?** ☐ Yes ☐ No ☑ NA

Temp should be above freezing to 6 °C Correction Factor: +0.3 **Date and Initials of Person Examining Contents:** BM 5/15/20

				Comments:
Chain of Custody Present?	☑ Yes	☐ No	☐ N/A	1.
Chain of Custody Filled Out?	☑ Yes	☐ No	☐ N/A	2.
Chain of Custody Relinquished?	☑ Yes	☐ No	☐ N/A	3.
Sampler Name and Signature on COC?	☑ Yes	☐ No	☐ N/A	4.
Samples Arrived within Hold Time?	☑ Yes	☐ No	☐ N/A	5. If Fecal: ☐ <8 hours ☐ >8, <24 hours ☐ >24 hours
Short Hold Time Analysis (<72 hr)?	☐ Yes	☑ No	☐ N/A	6.
Rush Turn Around Time Requested?	☐ Yes	☑ No	☐ N/A	7.
Sufficient Volume?	☑ Yes	☐ No	☐ N/A	8.
Correct Containers Used?	☑ Yes	☐ No	☐ N/A	9.
-Pace Containers Used?	☑ Yes	☐ No	☐ N/A	
Containers Intact?	☑ Yes	☐ No	☐ N/A	10.
Filtered Volume Received for Dissolved Tests?	☐ Yes	☐ No	☑ N/A	11. Note if sediment is visible in the dissolved containers.
Sample Labels Match COC?	☑ Yes	☐ No	☐ N/A	12.
-Includes Date/Time/ID/Analysis Matrix: WT				
All containers needing acid/base preservation properly preserved?	☐ Yes	☐ No	☑ N/A	13. Note samples needing adjustment:
Headspace in Methyl Mercury Container	☐ Yes	☐ No	☑ N/A	14.
Headspace in VOA Vials (>6mm)?	☐ Yes	☐ No	☑ N/A	15.
Trip Blank Present?	☐ Yes	☐ No	☑ N/A	16.
Trip Blank Custody Seals Present?	☐ Yes	☐ No	☑ N/A	
Pace Trip Blank Lot # (if purchased):				

CLIENT NOTIFICATION/RESOLUTION **Field Data Required?** ☐ Yes ☐ No

Person Contacted: Date/Time:

Comments/Resolution:

SEE EXCEPTION FORM Y N

FECAL WAIVER ON FILE Y N TEMPERATURE WAIVER ON FILE Y N

Project Manager Review: Shaunna Davis **Date:** 5/15/20

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

Chain of Custody

WO#: 12144069

PM: LM2 Due Date: 06/01/20

CLIENT: PACE MPLS

☒ Samples were sent directly to the Subcontracting Laboratory.

State Of Origin: MN

Cert. Needed: ☒ Yes ☐ No

Workorder: 10518091 Workorder Name: PRJ07913 Clay County Sanitary

Owner Received Date: 5/15/2020 Results Requested By: 6/1/2020

Report To	Subcontract To
Annika Asp Pace Analytical Minnesota 1700 Elm Street Suite 200 Minneapolis, MN 55414 Phone (612)607-1700	Pace Analytical Duluth 4730 Oneota St. Duluth, MN 55807 Phone (218)727-6380

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers: Other	1631 LL Hg	LAB USE ONLY
1	S-1	PS	5/12/2020 11:17	10518091001	Water	1	X	
2	S-2	PS	5/12/2020 11:52	10518091002	Water	1	X	
3	S-3	PS	5/11/2020 18:00	10518091003	Water	1	X	
4	Field Blank (S-1)	PS	5/11/2020 18:00	10518091004	Water	1	X	
5	Field Blank (S-2)	PS	5/12/2020 11:17	10518091005	Water	1	X	
6	Field Blank (S-3)	PS	5/12/2020 11:25	10518091006	Water	1	X	

Transfers	Released By	Date/Time	Received By	Date/Time
1			B. Mathews	5/15/20 0905
2	[illegible] 5/15/20	1415	John Odett PACE	5/15/2020 15:45
3				

Comments

Cooler Temperature on Receipt 2.9 °C | Custody Seal Y or N | Received on Ice Y or N | Samples Intact Y or N

***In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document. This chain of custody is considered complete as is since this information is available in the owner laboratory.

Pace Analytical	Document Name: Sample Condition Upon Receipt Form	Document Revised: 17June2019 Page 1 of 1
	Document No.: F-DUL-C-001-rev.07	Issuing Authority: Pace Duluth Minnesota Quality Office

Sample Condition Upon Receipt

Client Name: PACE - MPLS

Project # WO#: 12144069

PM: LM2 Due Date: 06/01/20

CLIENT: PACE MPLS

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ SpeeDee ☑ Pace ☐ Other:

Tracking Number:

Custody Seal on Cooler/Box Present? ☑ Yes ☐ No **Seals Intact?** ☑ Yes ☐ No

Packing Material: ☑ Bubble Wrap ☐ Bubble Bags ☐ None ☐ Other:

Type of Ice: ☑ Wet ☐ Blue ☐ None ☐ Samples on ice, cooling process has begun

Is there evidence of ice formation in samples? ☐ Yes ☑ No **Biological Tissue Frozen?** ☐ Yes ☐ No ☑ NA

Temp Blank? ☑ Yes ☐ No **Thermometer Used:** ☑ 01339252/1710 ☐ 122639816 **Correction Factor °C:** -0.3

Temp should be above freezing to 6 °C **Cooler Temp Read °C:** 1.9 **Cooler Temp Corrected °C:** 1.6

Date and Initials of Person Examining Contents: 05/19/2020

				Comments:
Chain of Custody Present?	☑ Yes	☐ No	☐ N/A	1.
Chain of Custody Filled Out?	☑ Yes	☐ No	☐ N/A	2.
Chain of Custody Relinquished?	☑ Yes	☐ No	☐ N/A	3.
Sampler Name and Signature on COC?	☐ Yes	☐ No	☑ N/A	4.
Samples Arrived within Hold Time?	☑ Yes	☐ No	☐ N/A	5. If Fecal: ☐ <8 hours ☐ >8, <24 hours ☐ >24 hours
Short Hold Time Analysis (<72 hr)?	☐ Yes	☑ No	☐ N/A	6.
Rush Turn Around Time Requested?	☐ Yes	☑ No	☐ N/A	7.
Sufficient Volume?	☑ Yes	☐ No	☐ N/A	8.
Correct Containers Used?	☑ Yes	☐ No	☐ N/A	9.
-Pace Containers Used?	☑ Yes	☐ No	☐ N/A	
Containers Intact?	☑ Yes	☐ No	☐ N/A	10.
Filtered Volume Received for Dissolved Tests?	☐ Yes	☐ No	☑ N/A	11. Note if sediment is visible in the dissolved containers:
Sample Labels Match COC? -Includes Date/Time/ID/Analysis Matrix: WT	☑ Yes	☐ No	☐ N/A	12.
All containers needing acid/base preservation properly preserved?	☐ Yes	☐ No	☑ N/A	13. Note samples needing adjustment:
Headspace in Methyl Mercury Container	☐ Yes	☐ No	☑ N/A	14.
Headspace in VOA Vials (>6mm)?	☐ Yes	☐ No	☑ N/A	15.
Trip Blank Present?	☐ Yes	☐ No	☑ N/A	16.
Trip Blank Custody Seals Present?	☐ Yes	☐ No	☑ N/A	
Pace Trip Blank Lot # (if purchased):				

CLIENT NOTIFICATION/RESOLUTION: **Field Data Required?** ☐ Yes ☐ No

Person Contacted: Date/Time:

Comments/Resolution:

FECAL WAIVER ON FILE: Y N TEMPERATURE WAIVER ON FILE: Y N

Project Manager Review: Leah Morehouse **Date:** 05/18/2020

Minnesota Pollution Control Agency

MPCA Chain-of-Custody Form revision 2017.0328

* indicates a required field

Work Order Number: | COC Type: Standard | Page: 1 of 1

Turnaround Time: Standard | COC ID: 33549 line8

WO# : 12144069

PM: LM2 **Due Date: 06/01/20**

CLIENT: PACE MPLS

PROJECT/CLIENT INFO

Facility Code:*	SW-34	Program Code (MDH Lab Only):	
Project Name:*	Clay County Sanitary Landfill - Spring 2020 Surface Water	Project Task Code:*	PRJ07913
Project Manager:	Andrew Feia		
Potential Hazard?	No	If yes, add information to **Sampler Comments** field	

Lab Name: Pace Ana

Address: 315 Chest

Virgina, M

EPA Lab ID:*

SAMPLE DETAILS

SAMPLE TYPES
Sample=Routine Sample
QC-FB=Field Blank Sample
QC-FR=Field Replicate Sample
QC-TB=Trip Blank Sample
QC-EB=Equipment Blank
Treated-Mid=Treatment system sample
Treated-Post=Treatment system sample

SAMPLING METHODS
G=Grab sample
CT=Composite, time-paced w/AS
CF=Composite w/AS
D-T=Discrete,time-paced w/AS
D-F=Discrete,flow-paced w/AS
SW-GAS=Gas Sampling
Unknown=Unknown

LAB MATRICES
DW=Drinking Water
NW=Nonpotable Water
SD=Soil/Solid
AR=Air
BL=Biological Material
OT=Other
TS=Tissue

FIELD MATRICES
Wtr-Ground=Groundwater
Wtr-Surf=Surface Water
Wtr-Drink=Drinking Water
QC-BLANK=Artificial Blank Water
Leachate=Leachate Sample
Air-Indoor=Indoor Air
Gas-Soil=Soil Gas

MN Location Identifier*	Field Name	Sample Type*	Start Date* (mm/dd/yyyy)	Start Time* 24 hr (hh:mm)	Depth Start	Depth End	Depth Units (m or ft.)	Sampling Method*	Complete ONLY if Method is CT, CF, D-T, or D-F: End Date (mm/dd/yyyy)	Complete ONLY if Method is CT, CF, D-T, or D-F: End Time 24 hr (hh:mm)	Lab Matrix*	Field Matrix*	AIS	Sampler Comments (filter volume, special handling, etc.)	# of Cont	ANALYSIS*	List 1-VOCs (Attached)	List 3-Total Metals (Attached)	List 3-Inorganics (Attached)	List 4-pH, Specific Conductance	LL Mercury 1631 E		Lab Sample No.	#
																PRESERV.	HCL	HN03	H2SO4	None	None			
																FF	N	N	N	N	N			
SP00049	S-1	Sample	5/12/2020	11:17				G			NW	WTR-Surf			1						x			1
SP00050	S-2	Sample	5/12/2020	11:52				G			NW	WTR-Surf			1						x			2
SP00051	S-3	Sample	5/11/2020	18:00				G			NW	WTR-Surf			1						x			3
QC-BLANK	Field Blank (S-1)	QC-FB	5/11/2020	18:00				G			NW	QC-BLANK			1						x			4
QC-BLANK	Field Blank (S-2)	QC-FB	5/12/2020	11:17				G			NW	QC-BLANK			1						x			5
QC-BLANK	Field Blank (S-3)	QC-FB	5/12/2020	11:25				G			NW	QC-BLANK			1						x			6
																								7
																								8
																								9
																								10

Sticker

Sampler's Name:* Christina Lammers **Phone#:** 701-893-2327

Sampler's Signature:* Christina Lammers

Sampler's Organization: Wenck Associates, Inc.

Billing Organization: Clay County - Kirk Rosenberger **Acct#:** 10-115155

Address: 807 11th Street North, Moorhead, MN 56560

Courier Name: Speedee **Tracking#:**

Receiving Comments:

Relinquished By/Affiliation	Date/Time	Accepted By/Affiliation	Date/Time
(Sampler) /Wenck	5/13 14:30	B Mathews	5/15/20 0905
	5/15/20 1415	/PACE	5/15/20 15:45 2.9 1.6°C

Pace Analytical	Document Name: Sample Condition Upon Receipt Form	Document Revised: 25Feb2020 Page 1 of 1
	Document No.: F-VM-C-001-rev.14	Issuing Authority: Pace Virginia Minnesota Quality Office

Sample Condition Upon Receipt

Client Name: Pace Mpls

Project #: **WO#: 12144069**

PM: LM2 **Due Date: 06/01/20**

CLIENT: PACE MPLS

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☑ Other: SD

Tracking Number:

Custody Seal on Cooler/Box Present? ☐ Yes ☑ No Seals Intact? ☐ Yes ☐ No

Optional: Proj. Due Date: Proj. Name:

Packing Material: ☑ Bubble Wrap ☑ Bubble Bags ☐ None ☐ Other:

Temp Blank? ☑ Yes ☐ No

Thermometer Used: ☑ 140792808 Type of Ice: ☑ Wet ☐ Blue ☐ None ☐ Samples on ice, cooling process has begun

Cooler Temp Read °C: 2.6 Cooler Temp Corrected °C: 2.9

Biological Tissue Frozen? ☐ Yes ☐ No ☑ NA

Temp should be above freezing to 6 °C Correction Factor: +0.3

Date and Initials of Person Examining Contents: BM 5/15/20

Comments:

Chain of Custody Present?	☑ Yes	☐ No	☐ N/A	1.
Chain of Custody Filled Out?	☑ Yes	☐ No	☐ N/A	2.
Chain of Custody Relinquished?	☑ Yes	☐ No	☐ N/A	3.
Sampler Name and Signature on COC?	☑ Yes	☐ No	☐ N/A	4.
Samples Arrived within Hold Time?	☑ Yes	☐ No	☐ N/A	5. If Fecal: ☐ <8 hours ☐ >8, <24 hours ☐ >24 hours
Short Hold Time Analysis (<72 hr)?	☐ Yes	☑ No	☐ N/A	6.
Rush Turn Around Time Requested?	☐ Yes	☑ No	☐ N/A	7.
Sufficient Volume?	☑ Yes	☐ No	☐ N/A	8.
Correct Containers Used?	☑ Yes	☐ No	☐ N/A	9.
-Pace Containers Used?	☑ Yes	☐ No	☐ N/A	
Containers Intact?	☑ Yes	☐ No	☐ N/A	10.
Filtered Volume Received for Dissolved Tests?	☐ Yes	☐ No	☑ N/A	11. Note if sediment is visible in the dissolved containers.
Sample Labels Match COC?	☑ Yes	☐ No	☐ N/A	12.
-Includes Date/Time/ID/Analysis Matrix: W				
All containers needing acid/base preservation properly preserved?	☐ Yes	☐ No	☑ N/A	13. Note samples needing adjustment:
Headspace in Methyl Mercury Container	☐ Yes	☐ No	☑ N/A	14.
Headspace in VOA Vials (>6mm)?	☐ Yes	☐ No	☑ N/A	15.
Trip Blank Present?	☐ Yes	☐ No	☑ N/A	16.
Trip Blank Custody Seals Present?	☐ Yes	☐ No	☑ N/A	
Pace Trip Blank Lot # (if purchased):				

CLIENT NOTIFICATION/RESOLUTION Field Data Required? ☐ Yes ☐ No

Person Contacted: Date/Time:

Comments/Resolution:

SEE EXCEPTION FORM Y N

FECAL WAIVER ON FILE Y N TEMPERATURE WAIVER ON FILE Y N

Project Manager Review: Date:

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers)

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

June 01, 2020

Andrew Feia
Wenck Associates, Inc.
3303 Fiechtner Drive
Suite 100
Fargo, ND 58103

RE: Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10517973

Dear Andrew Feia:

Enclosed are the analytical results for sample(s) received by the laboratory on May 14, 2020. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Minneapolis

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Annika Asp
annika.asp@pacelabs.com
(612)607-1700
Project Manager

Enclosures

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

CERTIFICATIONS

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10517973

Pace Analytical Services Minneapolis

A2LA Certification #: 2926.01
Alabama Certification #: 40770
Alaska Contaminated Sites Certification #: 17-009
Alaska DW Certification #: MN00064
Arizona Certification #: AZ0014
Arkansas DW Certification #: MN00064
Arkansas WW Certification #: 88-0680
California Certification #: 2929
CNMI Saipan Certification #: MP0003
Colorado Certification #: MN00064
Connecticut Certification #: PH-0256
EPA Region 8+Wyoming DW Certification #: via MN 027-053-137
Florida Certification #: E87605
Georgia Certification #: 959
Guam EPA Certification #: MN00064
Hawaii Certification #: MN00064
Idaho Certification #: MN00064
Illinois Certification #: 200011
Indiana Certification #: C-MN-01
Iowa Certification #: 368
Kansas Certification #: E-10167
Kentucky DW Certification #: 90062
Kentucky WW Certification #: 90062
Louisiana DEQ Certification #: 03086
Louisiana DW Certification #: MN00064
Maine Certification #: MN00064
Maryland Certification #: 322
Massachusetts Certification #: M-MN064
Massachusetts DWP Certification #: via MN 027-053-137
Michigan Certification #: 9909
Minnesota Certification #: 027-053-137
Minnesota Dept of Ag Certifcation #: via MN 027-053-137
Minnesota Petrofund Certification #: 1240
Mississippi Certification #: MN00064
Missouri Certification #: 10100
Montana Certification #: CERT0092
Nebraska Certification #: NE-OS-18-06
Nevada Certification #: MN00064
New Hampshire Certification #: 2081
New Jersey Certification #: MN002
New York Certification #: 11647
North Carolina DW Certification #: 27700
North Carolina WW Certification #: 530
North Dakota Certification #: R-036
Ohio DW Certification #: 41244
Ohio VAP Certification #: CL101
Oklahoma Certification #: 9507
Oregon Primary Certification #: MN300001
Oregon Secondary Certification #: MN200001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification #: MN00064
South Carolina Certification #:74003001
Tennessee Certification #: TN02818
Texas Certification #: T104704192
Utah Certification #: MN00064
Vermont Certification #: VT-027053137
Virginia Certification #: 460163
Washington Certification #: C486
West Virginia DEP Certification #: 382
West Virginia DW Certification #: 9952 C
Wisconsin Certification #: 999407970
Wyoming UST Certification #: via A2LA 2926.01

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

SAMPLE SUMMARY

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10517973

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10517973001	**MH-LYS-III-P1**	Water	05/12/20 20:00	05/14/20 11:35
10517973002	**MH-LYS-III-P2**	Water	05/12/20 19:10	05/14/20 11:35

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

SAMPLE ANALYTE COUNT

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10517973

Lab ID	Sample ID	Method	Analysts	Analytes Reported
10517973001	**MH-LYS-III-P1**	EPA 200.8	PW1	12
		SM 1030E	WBS	3
		EPA 245.1	LMW	1
		EPA 8260B	AEZ	72
		SM 2320B	SH4	1
		SM 2540C	EPT	1
		SM 2540D	EPT	1
		SM 4500-H+B	SH4	1
		SM 2510	SH4	1
		EPA 300.0	KEO	2
		SM 3500-Cr B Modified	AR3	1
		EPA 350.1	JFP	1
		EPA 353.2	JFP	1
		SM 5220D	KEO	1
10517973002	**MH-LYS-III-P2**	EPA 200.8	PW1	12
		SM 1030E	WBS	3
		EPA 245.1	LMW	1
		EPA 8260B	AEZ	72
		SM 2320B	SH4	1
		SM 2540C	EPT	1
		SM 2540D	EPT	1
		SM 4500-H+B	SH4	1
		SM 2510	SH4	1
		EPA 300.0	KEO	2
		SM 3500-Cr B Modified	AR3	1
		EPA 350.1	JFP	1
		EPA 353.2	JFP	1
		SM 5220D	KEO	1

PASI-M = Pace Analytical Services - Minneapolis

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10517973

Sample: MH-LYS-III-P1 **Lab ID: 10517973001** Collected: 05/12/20 20:00 Received: 05/14/20 11:35 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.8 MET ICPMS, Dissolved	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Minneapolis							
Arsenic, Dissolved	**57.7**	ug/L	0.50	1	05/22/20 06:36	05/28/20 18:28	7440-38-2	
Boron, Dissolved	**35.2**	ug/L	10.0	1	05/22/20 06:36	05/28/20 18:28	7440-42-8	
Cadmium, Dissolved	**<0.080**	ug/L	0.080	1	05/22/20 06:36	05/28/20 18:28	7440-43-9	
Calcium, Dissolved	**111000**	ug/L	800	20	05/22/20 06:36	05/28/20 18:31	7440-70-2	
Copper, Dissolved	**<1.0**	ug/L	1.0	1	05/22/20 06:36	05/28/20 18:28	7440-50-8	
Iron, Dissolved	**5680**	ug/L	50.0	1	05/22/20 06:36	05/28/20 18:28	7439-89-6	
Lead, Dissolved	**<0.10**	ug/L	0.10	1	05/22/20 06:36	05/28/20 18:28	7439-92-1	
Magnesium, Dissolved	**46900**	ug/L	200	20	05/22/20 06:36	05/29/20 14:10	7439-95-4	
Manganese, Dissolved	**1050**	ug/L	10.0	20	05/22/20 06:36	05/28/20 18:31	7439-96-5	
Potassium, Dissolved	**3010**	ug/L	100	1	05/22/20 06:36	05/28/20 18:28	7440-09-7	
Sodium, Dissolved	**8820**	ug/L	50.0	1	05/22/20 06:36	05/28/20 18:28	7440-23-5	
Zinc, Dissolved	**<5.0**	ug/L	5.0	1	05/22/20 06:36	05/28/20 18:28	7440-66-6	
Cation/Anion Balance	Analytical Method: SM 1030E Pace Analytical Services - Minneapolis							
Cation/Anion Balance	**5.97**	%		1		06/01/20 15:33		1M
Total Cations	**10**	meq/L		1		06/01/20 15:33		N2
Total Anions	**8.8**	meq/L		1		06/01/20 15:33		N2
245.1 Mercury, Dissolved	Analytical Method: EPA 245.1 Preparation Method: EPA 245.1 Pace Analytical Services - Minneapolis							
Mercury, Dissolved	**<0.20**	ug/L	0.20	1	05/22/20 10:09	05/27/20 10:01	7439-97-6	
8260B MSV LLW by SIMSCAN	Analytical Method: EPA 8260B Pace Analytical Services - Minneapolis							
Acetone	**<20.0**	ug/L	20.0	1		05/22/20 03:30	67-64-1	
Allyl chloride	**<4.0**	ug/L	4.0	1		05/22/20 03:30	107-05-1	
Benzene	**<0.20**	ug/L	0.20	1		05/22/20 03:30	71-43-2	
Bromobenzene	**<0.40**	ug/L	0.40	1		05/22/20 03:30	108-86-1	
Bromochloromethane	**<1.0**	ug/L	1.0	1		05/22/20 03:30	74-97-5	
Bromodichloromethane	**<0.40**	ug/L	0.40	1		05/22/20 03:30	75-27-4	
Bromoform	**<1.0**	ug/L	1.0	1		05/22/20 03:30	75-25-2	
Bromomethane	**<1.0**	ug/L	1.0	1		05/22/20 03:30	74-83-9	
2-Butanone (MEK)	**<5.0**	ug/L	5.0	1		05/22/20 03:30	78-93-3	
n-Butylbenzene	**<0.40**	ug/L	0.40	1		05/22/20 03:30	104-51-8	
sec-Butylbenzene	**<0.40**	ug/L	0.40	1		05/22/20 03:30	135-98-8	
tert-Butylbenzene	**<0.40**	ug/L	0.40	1		05/22/20 03:30	98-06-6	
Carbon tetrachloride	**<0.050**	ug/L	0.050	1		05/25/20 04:58	56-23-5	
Chlorobenzene	**<0.40**	ug/L	0.40	1		05/22/20 03:30	108-90-7	
Chloroethane	**<1.0**	ug/L	1.0	1		05/22/20 03:30	75-00-3	
Chloroform	**<1.0**	ug/L	1.0	1		05/22/20 03:30	67-66-3	
Chloromethane	**<1.0**	ug/L	1.0	1		05/22/20 03:30	74-87-3	
2-Chlorotoluene	**<0.40**	ug/L	0.40	1		05/22/20 03:30	95-49-8	
4-Chlorotoluene	**<0.40**	ug/L	0.40	1		05/22/20 03:30	106-43-4	
1,2-Dibromo-3-chloropropane	**<0.12**	ug/L	0.12	1		05/25/20 04:58	96-12-8	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10517973

Sample: MH-LYS-III-P1 **Lab ID: 10517973001** Collected: 05/12/20 20:00 Received: 05/14/20 11:35 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV LLW by SIMSCAN	Analytical Method: EPA 8260B Pace Analytical Services - Minneapolis							
Dibromochloromethane	**<0.40**	ug/L	0.40	1		05/25/20 04:58	124-48-1	
1,2-Dibromoethane (EDB)	**<0.050**	ug/L	0.050	1		05/25/20 04:58	106-93-4	
Dibromomethane	**<1.0**	ug/L	1.0	1		05/22/20 03:30	74-95-3	
1,2-Dichlorobenzene	**<0.40**	ug/L	0.40	1		05/22/20 03:30	95-50-1	
1,3-Dichlorobenzene	**<0.40**	ug/L	0.40	1		05/22/20 03:30	541-73-1	
1,4-Dichlorobenzene	**<0.40**	ug/L	0.40	1		05/22/20 03:30	106-46-7	
Dichlorodifluoromethane	**<1.0**	ug/L	1.0	1		05/22/20 03:30	75-71-8	
1,1-Dichloroethane	**<0.40**	ug/L	0.40	1		05/22/20 03:30	75-34-3	
1,2-Dichloroethane	**<0.20**	ug/L	0.20	1		05/25/20 04:58	107-06-2	
1,1-Dichloroethene	**<0.40**	ug/L	0.40	1		05/22/20 03:30	75-35-4	
cis-1,2-Dichloroethene	**<0.40**	ug/L	0.40	1		05/22/20 03:30	156-59-2	
trans-1,2-Dichloroethene	**<0.40**	ug/L	0.40	1		05/22/20 03:30	156-60-5	
Dichlorofluoromethane	**<1.0**	ug/L	1.0	1		05/22/20 03:30	75-43-4	
1,2-Dichloropropane	**<0.40**	ug/L	0.40	1		05/22/20 03:30	78-87-5	
1,3-Dichloropropane	**<0.40**	ug/L	0.40	1		05/22/20 03:30	142-28-9	
2,2-Dichloropropane	**<1.0**	ug/L	1.0	1		05/22/20 03:30	594-20-7	
1,1-Dichloropropene	**<0.40**	ug/L	0.40	1		05/22/20 03:30	563-58-6	
cis-1,3-Dichloropropene	**<0.40**	ug/L	0.40	1		05/25/20 04:58	10061-01-5	
trans-1,3-Dichloropropene	**<0.40**	ug/L	0.40	1		05/25/20 04:58	10061-02-6	
Diethyl ether (Ethyl ether)	**<4.0**	ug/L	4.0	1		05/22/20 03:30	60-29-7	
Ethylbenzene	**<0.40**	ug/L	0.40	1		05/22/20 03:30	100-41-4	
Hexachloro-1,3-butadiene	**<0.10**	ug/L	0.10	1		05/25/20 04:58	87-68-3	
Isopropylbenzene (Cumene)	**<0.40**	ug/L	0.40	1		05/22/20 03:30	98-82-8	
p-Isopropyltoluene	**<0.40**	ug/L	0.40	1		05/22/20 03:30	99-87-6	
Methylene Chloride	**<1.0**	ug/L	1.0	1		05/22/20 03:30	75-09-2	
4-Methyl-2-pentanone (MIBK)	**<5.0**	ug/L	5.0	1		05/22/20 03:30	108-10-1	
Methyl-tert-butyl ether	**<0.40**	ug/L	0.40	1		05/22/20 03:30	1634-04-4	
Naphthalene	**<1.0**	ug/L	1.0	1		05/22/20 03:30	91-20-3	
n-Propylbenzene	**<0.40**	ug/L	0.40	1		05/22/20 03:30	103-65-1	
Styrene	**<0.40**	ug/L	0.40	1		05/22/20 03:30	100-42-5	
1,1,1,2-Tetrachloroethane	**<0.40**	ug/L	0.40	1		05/22/20 03:30	630-20-6	
1,1,2,2-Tetrachloroethane	**<0.40**	ug/L	0.40	1		05/22/20 03:30	79-34-5	
Tetrachloroethene	**<0.40**	ug/L	0.40	1		05/22/20 03:30	127-18-4	
Tetrahydrofuran	**<10.0**	ug/L	10.0	1		05/22/20 03:30	109-99-9	
Toluene	**<0.40**	ug/L	0.40	1		05/22/20 03:30	108-88-3	
1,2,3-Trichlorobenzene	**<0.40**	ug/L	0.40	1		05/22/20 03:30	87-61-6	
1,2,4-Trichlorobenzene	**<0.40**	ug/L	0.40	1		05/22/20 03:30	120-82-1	
1,1,1-Trichloroethane	**<0.40**	ug/L	0.40	1		05/22/20 03:30	71-55-6	
1,1,2-Trichloroethane	**<0.40**	ug/L	0.40	1		05/22/20 03:30	79-00-5	
Trichloroethene	**<0.050**	ug/L	0.050	1		05/25/20 04:58	79-01-6	
Trichlorofluoromethane	**<0.40**	ug/L	0.40	1		05/22/20 03:30	75-69-4	
1,2,3-Trichloropropane	**<0.010**	ug/L	0.010	1		05/25/20 04:58	96-18-4	
1,1,2-Trichlorotrifluoroethane	**<1.0**	ug/L	1.0	1		05/22/20 03:30	76-13-1	
1,2,4-Trimethylbenzene	**<1.0**	ug/L	1.0	1		05/22/20 03:30	95-63-6	
1,3,5-Trimethylbenzene	**<0.40**	ug/L	0.40	1		05/22/20 03:30	108-67-8	
Vinyl chloride	**<0.050**	ug/L	0.050	1		05/25/20 04:58	75-01-4	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10517973

Sample: MH-LYS-III-P1 **Lab ID: 10517973001** Collected: 05/12/20 20:00 Received: 05/14/20 11:35 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV LLW by SIMSCAN	Analytical Method: EPA 8260B Pace Analytical Services - Minneapolis							
Xylene (Total)	**<1.2**	ug/L	1.2	1		05/22/20 03:30	1330-20-7	
m&p-Xylene	**<0.80**	ug/L	0.80	1		05/22/20 03:30	179601-23-1	
o-Xylene	**<0.40**	ug/L	0.40	1		05/22/20 03:30	95-47-6	
Surrogates								
1,2-Dichloroethane-d4 (S)	108	%.	75-128	1		05/22/20 03:30	17060-07-0	
1,2-Dichloroethane-d4 (S)	105	%.	75-128	1		05/25/20 04:58	17060-07-0	
Toluene-d8 (S)	101	%.	75-125	1		05/22/20 03:30	2037-26-5	
Toluene-d8 (S)	101	%.	75-125	1		05/25/20 04:58	2037-26-5	
4-Bromofluorobenzene (S)	100	%.	75-125	1		05/22/20 03:30	460-00-4	
2320B Alkalinity	Analytical Method: SM 2320B Pace Analytical Services - Minneapolis							
Alkalinity, Total as CaCO3	**351**	mg/L	5.0	1		05/21/20 18:38		
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Minneapolis							
Total Dissolved Solids	**509**	mg/L	10.0	1		05/19/20 11:43		
2540D Total Suspended Solids	Analytical Method: SM 2540D Pace Analytical Services - Minneapolis							
Total Suspended Solids	**18.0**	mg/L	10.0	1		05/18/20 15:14		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B Pace Analytical Services - Minneapolis							
pH at 25 Degrees C	**7.5**	Std. Units	0.10	1		05/29/20 17:11		H6
SM2510 Specific Conductance	Analytical Method: SM 2510 Pace Analytical Services - Minneapolis							
Specific Conductance	**824**	umhos/cm	1.0	1		05/29/20 17:08		
300.0 IC Anions	Analytical Method: EPA 300.0 Pace Analytical Services - Minneapolis							
Chloride	**8.7**	mg/L	1.2	1		05/28/20 21:32	16887-00-6	
Sulfate	**75.0**	mg/L	1.2	1		05/28/20 21:32	14808-79-8	
Chromium, Hexavalent	Analytical Method: SM 3500-Cr B Modified Pace Analytical Services - Minneapolis							
Chromium, Hexavalent	**<0.010**	mg/L	0.010	1		05/15/20 19:26		FS,H3
350.1 Ammonia	Analytical Method: EPA 350.1 Pace Analytical Services - Minneapolis							
Nitrogen, Ammonia	**<0.10**	mg/L	0.10	1		05/26/20 11:25	7664-41-7	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10517973

Sample: MH-LYS-III-P1 **Lab ID: 10517973001** Collected: 05/12/20 20:00 Received: 05/14/20 11:35 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrate + Nitrite	Analytical Method: EPA 353.2 Pace Analytical Services - Minneapolis							
Nitrogen, NO2 plus NO3	**<0.10**	mg/L	0.10	1		05/22/20 16:56		
5220D COD	Analytical Method: SM 5220D Preparation Method: SM 5220D Pace Analytical Services - Minneapolis							
Chemical Oxygen Demand	**<50.0**	mg/L	50.0	1	05/27/20 08:54	05/27/20 16:11		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10517973

Sample: MH-LYS-III-P2 **Lab ID: 10517973002** Collected: 05/12/20 19:10 Received: 05/14/20 11:35 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.8 MET ICPMS, Dissolved	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Minneapolis							
Arsenic, Dissolved	**107**	ug/L	0.50	1	05/22/20 06:36	05/28/20 18:34	7440-38-2	
Boron, Dissolved	**214**	ug/L	10.0	1	05/22/20 06:36	05/28/20 18:34	7440-42-8	
Cadmium, Dissolved	**<0.080**	ug/L	0.080	1	05/22/20 06:36	05/28/20 18:34	7440-43-9	
Calcium, Dissolved	**48600**	ug/L	800	20	05/22/20 06:36	05/28/20 18:47	7440-70-2	P6
Copper, Dissolved	**11.4**	ug/L	1.0	1	05/22/20 06:36	05/28/20 18:34	7440-50-8	
Iron, Dissolved	**69.2**	ug/L	50.0	1	05/22/20 06:36	05/28/20 18:34	7439-89-6	
Lead, Dissolved	**<0.10**	ug/L	0.10	1	05/22/20 06:36	05/28/20 18:34	7439-92-1	
Magnesium, Dissolved	**29400**	ug/L	200	20	05/22/20 06:36	05/29/20 14:14	7439-95-4	P6
Manganese, Dissolved	**54.4**	ug/L	0.50	1	05/22/20 06:36	05/28/20 18:34	7439-96-5	
Potassium, Dissolved	**246000**	ug/L	2000	20	05/22/20 06:36	05/28/20 18:47	7440-09-7	P6
Sodium, Dissolved	**128000**	ug/L	1000	20	05/22/20 06:36	05/28/20 18:47	7440-23-5	P6
Zinc, Dissolved	**8.1**	ug/L	5.0	1	05/22/20 06:36	05/28/20 18:34	7440-66-6	
Cation/Anion Balance	Analytical Method: SM 1030E Pace Analytical Services - Minneapolis							
Cation/Anion Balance	**6.08**	%		1		06/01/20 15:33		1M
Total Cations	**16.7**	meq/L		1		06/01/20 15:33		N2
Total Anions	**14.8**	meq/L		1		06/01/20 15:33		N2
245.1 Mercury, Dissolved	Analytical Method: EPA 245.1 Preparation Method: EPA 245.1 Pace Analytical Services - Minneapolis							
Mercury, Dissolved	**<0.20**	ug/L	0.20	1	05/22/20 10:09	05/27/20 10:04	7439-97-6	
8260B MSV LLW by SIMSCAN	Analytical Method: EPA 8260B Pace Analytical Services - Minneapolis							
Acetone	**<20.0**	ug/L	20.0	1		05/22/20 03:04	67-64-1	
Allyl chloride	**<4.0**	ug/L	4.0	1		05/22/20 03:04	107-05-1	
Benzene	**<0.20**	ug/L	0.20	1		05/22/20 03:04	71-43-2	
Bromobenzene	**<0.40**	ug/L	0.40	1		05/22/20 03:04	108-86-1	
Bromochloromethane	**<1.0**	ug/L	1.0	1		05/22/20 03:04	74-97-5	
Bromodichloromethane	**<0.40**	ug/L	0.40	1		05/22/20 03:04	75-27-4	
Bromoform	**<1.0**	ug/L	1.0	1		05/22/20 03:04	75-25-2	
Bromomethane	**<1.0**	ug/L	1.0	1		05/22/20 03:04	74-83-9	
2-Butanone (MEK)	**<5.0**	ug/L	5.0	1		05/22/20 03:04	78-93-3	
n-Butylbenzene	**<0.40**	ug/L	0.40	1		05/22/20 03:04	104-51-8	
sec-Butylbenzene	**<0.40**	ug/L	0.40	1		05/22/20 03:04	135-98-8	
tert-Butylbenzene	**<0.40**	ug/L	0.40	1		05/22/20 03:04	98-06-6	
Carbon tetrachloride	**<0.050**	ug/L	0.050	1		05/25/20 04:32	56-23-5	
Chlorobenzene	**<0.40**	ug/L	0.40	1		05/22/20 03:04	108-90-7	
Chloroethane	**<1.0**	ug/L	1.0	1		05/22/20 03:04	75-00-3	
Chloroform	**<1.0**	ug/L	1.0	1		05/22/20 03:04	67-66-3	
Chloromethane	**<1.0**	ug/L	1.0	1		05/22/20 03:04	74-87-3	
2-Chlorotoluene	**<0.40**	ug/L	0.40	1		05/22/20 03:04	95-49-8	
4-Chlorotoluene	**<0.40**	ug/L	0.40	1		05/22/20 03:04	106-43-4	
1,2-Dibromo-3-chloropropane	**<0.12**	ug/L	0.12	1		05/25/20 04:32	96-12-8	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10517973

Sample: MH-LYS-III-P2 **Lab ID: 10517973002** Collected: 05/12/20 19:10 Received: 05/14/20 11:35 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV LLW by SIMSCAN	Analytical Method: EPA 8260B Pace Analytical Services - Minneapolis							
Dibromochloromethane	**<0.40**	ug/L	0.40	1		05/25/20 04:32	124-48-1	
1,2-Dibromoethane (EDB)	**<0.050**	ug/L	0.050	1		05/25/20 04:32	106-93-4	
Dibromomethane	**<1.0**	ug/L	1.0	1		05/22/20 03:04	74-95-3	
1,2-Dichlorobenzene	**<0.40**	ug/L	0.40	1		05/22/20 03:04	95-50-1	
1,3-Dichlorobenzene	**<0.40**	ug/L	0.40	1		05/22/20 03:04	541-73-1	
1,4-Dichlorobenzene	**<0.40**	ug/L	0.40	1		05/22/20 03:04	106-46-7	
Dichlorodifluoromethane	**<1.0**	ug/L	1.0	1		05/22/20 03:04	75-71-8	
1,1-Dichloroethane	**<0.40**	ug/L	0.40	1		05/22/20 03:04	75-34-3	
1,2-Dichloroethane	**<0.20**	ug/L	0.20	1		05/25/20 04:32	107-06-2	
1,1-Dichloroethene	**<0.40**	ug/L	0.40	1		05/22/20 03:04	75-35-4	
cis-1,2-Dichloroethene	**<0.40**	ug/L	0.40	1		05/22/20 03:04	156-59-2	
trans-1,2-Dichloroethene	**<0.40**	ug/L	0.40	1		05/22/20 03:04	156-60-5	
Dichlorofluoromethane	**<1.0**	ug/L	1.0	1		05/22/20 03:04	75-43-4	
1,2-Dichloropropane	**<0.40**	ug/L	0.40	1		05/22/20 03:04	78-87-5	
1,3-Dichloropropane	**<0.40**	ug/L	0.40	1		05/22/20 03:04	142-28-9	
2,2-Dichloropropane	**<1.0**	ug/L	1.0	1		05/22/20 03:04	594-20-7	
1,1-Dichloropropene	**<0.40**	ug/L	0.40	1		05/22/20 03:04	563-58-6	
cis-1,3-Dichloropropene	**<0.40**	ug/L	0.40	1		05/25/20 04:32	10061-01-5	
trans-1,3-Dichloropropene	**<0.40**	ug/L	0.40	1		05/25/20 04:32	10061-02-6	
Diethyl ether (Ethyl ether)	**<4.0**	ug/L	4.0	1		05/22/20 03:04	60-29-7	
Ethylbenzene	**<0.40**	ug/L	0.40	1		05/22/20 03:04	100-41-4	
Hexachloro-1,3-butadiene	**<0.10**	ug/L	0.10	1		05/25/20 04:32	87-68-3	
Isopropylbenzene (Cumene)	**<0.40**	ug/L	0.40	1		05/22/20 03:04	98-82-8	
p-Isopropyltoluene	**<0.40**	ug/L	0.40	1		05/22/20 03:04	99-87-6	
Methylene Chloride	**<1.0**	ug/L	1.0	1		05/22/20 03:04	75-09-2	
4-Methyl-2-pentanone (MIBK)	**<5.0**	ug/L	5.0	1		05/22/20 03:04	108-10-1	
Methyl-tert-butyl ether	**<0.40**	ug/L	0.40	1		05/22/20 03:04	1634-04-4	
Naphthalene	**<1.0**	ug/L	1.0	1		05/22/20 03:04	91-20-3	
n-Propylbenzene	**<0.40**	ug/L	0.40	1		05/22/20 03:04	103-65-1	
Styrene	**<0.40**	ug/L	0.40	1		05/22/20 03:04	100-42-5	
1,1,1,2-Tetrachloroethane	**<0.40**	ug/L	0.40	1		05/22/20 03:04	630-20-6	
1,1,2,2-Tetrachloroethane	**<0.40**	ug/L	0.40	1		05/22/20 03:04	79-34-5	
Tetrachloroethene	**<0.40**	ug/L	0.40	1		05/22/20 03:04	127-18-4	
Tetrahydrofuran	**<10.0**	ug/L	10.0	1		05/22/20 03:04	109-99-9	
Toluene	**<0.40**	ug/L	0.40	1		05/22/20 03:04	108-88-3	
1,2,3-Trichlorobenzene	**<0.40**	ug/L	0.40	1		05/22/20 03:04	87-61-6	
1,2,4-Trichlorobenzene	**<0.40**	ug/L	0.40	1		05/22/20 03:04	120-82-1	
1,1,1-Trichloroethane	**<0.40**	ug/L	0.40	1		05/22/20 03:04	71-55-6	
1,1,2-Trichloroethane	**<0.40**	ug/L	0.40	1		05/22/20 03:04	79-00-5	
Trichloroethene	**<0.050**	ug/L	0.050	1		05/25/20 04:32	79-01-6	
Trichlorofluoromethane	**<0.40**	ug/L	0.40	1		05/22/20 03:04	75-69-4	
1,2,3-Trichloropropane	**<0.010**	ug/L	0.010	1		05/25/20 04:32	96-18-4	
1,1,2-Trichlorotrifluoroethane	**<1.0**	ug/L	1.0	1		05/22/20 03:04	76-13-1	
1,2,4-Trimethylbenzene	**<1.0**	ug/L	1.0	1		05/22/20 03:04	95-63-6	
1,3,5-Trimethylbenzene	**<0.40**	ug/L	0.40	1		05/22/20 03:04	108-67-8	
Vinyl chloride	**<0.050**	ug/L	0.050	1		05/25/20 04:32	75-01-4	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10517973

Sample: MH-LYS-III-P2 **Lab ID: 10517973002** Collected: 05/12/20 19:10 Received: 05/14/20 11:35 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV LLW by SIMSCAN	Analytical Method: EPA 8260B Pace Analytical Services - Minneapolis							
Xylene (Total)	**<1.2**	ug/L	1.2	1		05/22/20 03:04	1330-20-7	
m&p-Xylene	**<0.80**	ug/L	0.80	1		05/22/20 03:04	179601-23-1	
o-Xylene	**<0.40**	ug/L	0.40	1		05/22/20 03:04	95-47-6	
Surrogates								
1,2-Dichloroethane-d4 (S)	105	%.	75-128	1		05/22/20 03:04	17060-07-0	
1,2-Dichloroethane-d4 (S)	105	%.	75-128	1		05/25/20 04:32	17060-07-0	
Toluene-d8 (S)	100	%.	75-125	1		05/22/20 03:04	2037-26-5	
Toluene-d8 (S)	101	%.	75-125	1		05/25/20 04:32	2037-26-5	
4-Bromofluorobenzene (S)	101	%.	75-125	1		05/22/20 03:04	460-00-4	
2320B Alkalinity	Analytical Method: SM 2320B Pace Analytical Services - Minneapolis							
Alkalinity, Total as CaCO3	**697**	mg/L	5.0	1		05/21/20 16:37		M1
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Minneapolis							
Total Dissolved Solids	**865**	mg/L	50.0	1		05/19/20 11:43		D6
2540D Total Suspended Solids	Analytical Method: SM 2540D Pace Analytical Services - Minneapolis							
Total Suspended Solids	**81.0**	mg/L	10.0	1		05/18/20 15:14		D6
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B Pace Analytical Services - Minneapolis							
pH at 25 Degrees C	**6.9**	Std. Units	0.10	1		05/29/20 16:45		H6
SM2510 Specific Conductance	Analytical Method: SM 2510 Pace Analytical Services - Minneapolis							
Specific Conductance	**1460**	umhos/cm	1.0	1		05/29/20 17:09		
300.0 IC Anions	Analytical Method: EPA 300.0 Pace Analytical Services - Minneapolis							
Chloride	**25.7**	mg/L	1.2	1		05/28/20 23:48	16887-00-6	M3
Sulfate	**8.0**	mg/L	1.2	1		05/28/20 23:48	14808-79-8	M3
Chromium, Hexavalent	Analytical Method: SM 3500-Cr B Modified Pace Analytical Services - Minneapolis							
Chromium, Hexavalent	**<0.010**	mg/L	0.010	1		05/15/20 19:23		FS,H3
350.1 Ammonia	Analytical Method: EPA 350.1 Pace Analytical Services - Minneapolis							
Nitrogen, Ammonia	**<0.10**	mg/L	0.10	1		05/26/20 11:27	7664-41-7	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10517973

Sample: MH-LYS-III-P2 **Lab ID: 10517973002** Collected: 05/12/20 19:10 Received: 05/14/20 11:35 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrate + Nitrite	Analytical Method: EPA 353.2 Pace Analytical Services - Minneapolis							
Nitrogen, NO2 plus NO3	**0.52**	mg/L	0.10	1		05/22/20 16:57		M1
5220D COD	Analytical Method: SM 5220D Preparation Method: SM 5220D Pace Analytical Services - Minneapolis							
Chemical Oxygen Demand	**<50.0**	mg/L	50.0	1	05/27/20 08:54	05/27/20 16:11		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10517973

QC Batch: 676620
QC Batch Method: EPA 245.1
Analysis Method: EPA 245.1
Analysis Description: 245.1 Mercury - Dissolved
Laboratory: Pace Analytical Services - Minneapolis
Associated Lab Samples: 10517973001, 10517973002

METHOD BLANK: 3622114 Matrix: Water
Associated Lab Samples: 10517973001, 10517973002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury, Dissolved	ug/L	<0.20	0.20	05/27/20 09:23	

LABORATORY CONTROL SAMPLE: 3622115

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury, Dissolved	ug/L	5	4.9	98	85-115	

MATRIX SPIKE SAMPLE: 3622116

Parameter	Units	10517971003 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Mercury, Dissolved	ug/L	<0.20	5	5.1	102	70-130	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3622117 3622118

Parameter	Units	10517973002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury, Dissolved	ug/L	<0.20	5	5	5.2	4.9	105	98	70-130	7	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10517973

QC Batch: 676612
QC Batch Method: EPA 200.8
Analysis Method: EPA 200.8
Analysis Description: 200.8 MET Dissolved
Laboratory: Pace Analytical Services - Minneapolis
Associated Lab Samples: 10517973001, 10517973002

METHOD BLANK: 3622093 Matrix: Water
Associated Lab Samples: 10517973001, 10517973002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Arsenic, Dissolved	ug/L	<0.50	0.50	05/28/20 16:54	
Boron, Dissolved	ug/L	<10.0	10.0	05/28/20 16:54	
Cadmium, Dissolved	ug/L	<0.080	0.080	05/28/20 16:54	
Calcium, Dissolved	ug/L	<40.0	40.0	05/28/20 16:54	
Copper, Dissolved	ug/L	<1.0	1.0	05/28/20 16:54	
Iron, Dissolved	ug/L	<50.0	50.0	05/28/20 16:54	
Lead, Dissolved	ug/L	<0.10	0.10	05/28/20 16:54	
Magnesium, Dissolved	ug/L	<10.0	10.0	05/28/20 16:54	
Manganese, Dissolved	ug/L	<0.50	0.50	05/28/20 16:54	
Potassium, Dissolved	ug/L	<100	100	05/28/20 16:54	
Sodium, Dissolved	ug/L	<50.0	50.0	05/28/20 16:54	
Zinc, Dissolved	ug/L	<5.0	5.0	05/28/20 16:54	

LABORATORY CONTROL SAMPLE: 3622094

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic, Dissolved	ug/L	100	96.2	96	85-115	
Boron, Dissolved	ug/L	100	97.1	97	85-115	
Cadmium, Dissolved	ug/L	100	97.2	97	85-115	
Calcium, Dissolved	ug/L	2000	2000	100	85-115	
Copper, Dissolved	ug/L	100	100	100	85-115	
Iron, Dissolved	ug/L	2000	2010	101	85-115	
Lead, Dissolved	ug/L	100	95.7	96	85-115	
Magnesium, Dissolved	ug/L	2000	2040	102	85-115	
Manganese, Dissolved	ug/L	100	99.1	99	85-115	
Potassium, Dissolved	ug/L	2000	2030	102	85-115	
Sodium, Dissolved	ug/L	2000	2010	101	85-115	
Zinc, Dissolved	ug/L	100	102	102	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3622095 3622096

Parameter	Units	10517973002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Arsenic, Dissolved	ug/L	107	100	100	212	204	105	98	70-130	4	20	
Boron, Dissolved	ug/L	214	100	100	327	315	114	101	70-130	4	20	
Cadmium, Dissolved	ug/L	<0.080	100	100	95.9	93.7	96	94	70-130	2	20	
Calcium, Dissolved	ug/L	48600	2000	2000	52200	49700	180	54	70-130	5	20	P6

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10517973

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3622095 3622096

Parameter	Units	10517973002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Copper, Dissolved	ug/L	11.4	100	100	109	105	97	94	70-130	3	20	
Iron, Dissolved	ug/L	69.2	2000	2000	2140	2080	104	100	70-130	3	20	
Lead, Dissolved	ug/L	<0.10	100	100	94.0	90.7	94	91	70-130	4	20	
Magnesium, Dissolved	ug/L	29400	2000	2000	32500	31100	157	89	70-130	4	20	P6
Manganese, Dissolved	ug/L	54.4	100	100	157	152	103	98	70-130	3	20	
Potassium, Dissolved	ug/L	246000	2000	2000	256000	243000	498	-128	70-130	5	20	E,P6
Sodium, Dissolved	ug/L	128000	2000	2000	134000	127000	313	-40	70-130	5	20	E,P6
Zinc, Dissolved	ug/L	8.1	100	100	110	107	102	99	70-130	3	20	

MATRIX SPIKE SAMPLE: 3622097

Parameter	Units	10517971001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Arsenic, Dissolved	ug/L	0.70	100	102	101	70-130	
Boron, Dissolved	ug/L	19.8	100	118	99	70-130	
Cadmium, Dissolved	ug/L	<0.080	100	102	102	70-130	
Calcium, Dissolved	ug/L	102000	2000	102000	-5	70-130	P6
Copper, Dissolved	ug/L	1.3	100	102	101	70-130	
Iron, Dissolved	ug/L	<50.0	2000	2160	106	70-130	
Lead, Dissolved	ug/L	<0.10	100	100	100	70-130	
Magnesium, Dissolved	ug/L	63000	2000	65400	121	70-130	
Manganese, Dissolved	ug/L	65.1	100	168	102	70-130	
Potassium, Dissolved	ug/L	715	2000	2810	105	70-130	
Sodium, Dissolved	ug/L	9670	2000	11500	91	70-130	
Zinc, Dissolved	ug/L	<5.0	100	108	105	70-130	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10517973

QC Batch: 676819
QC Batch Method: EPA 8260B
Analysis Method: EPA 8260B
Analysis Description: 8260B MSV LLW by SIMSCAN
Laboratory: Pace Analytical Services - Minneapolis
Associated Lab Samples: 10517973001, 10517973002

METHOD BLANK: 3622840
Matrix: Water
Associated Lab Samples: 10517973001, 10517973002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	<0.40	0.40	05/22/20 02:12	
1,1,1-Trichloroethane	ug/L	<0.40	0.40	05/22/20 02:12	
1,1,2,2-Tetrachloroethane	ug/L	<0.40	0.40	05/22/20 02:12	
1,1,2-Trichloroethane	ug/L	<0.40	0.40	05/22/20 02:12	
1,1,2-Trichlorotrifluoroethane	ug/L	<1.0	1.0	05/22/20 02:12	
1,1-Dichloroethane	ug/L	<0.40	0.40	05/22/20 02:12	
1,1-Dichloroethene	ug/L	<0.40	0.40	05/22/20 02:12	
1,1-Dichloropropene	ug/L	<0.40	0.40	05/22/20 02:12	
1,2,3-Trichlorobenzene	ug/L	<0.40	0.40	05/22/20 02:12	
1,2,3-Trichloropropane	ug/L	<0.010	0.010	05/25/20 03:40	
1,2,4-Trichlorobenzene	ug/L	<0.40	0.40	05/22/20 02:12	
1,2,4-Trimethylbenzene	ug/L	<1.0	1.0	05/22/20 02:12	
1,2-Dibromo-3-chloropropane	ug/L	<0.12	0.12	05/25/20 03:40	
1,2-Dibromoethane (EDB)	ug/L	<0.050	0.050	05/25/20 03:40	
1,2-Dichlorobenzene	ug/L	<0.40	0.40	05/22/20 02:12	
1,2-Dichloroethane	ug/L	<0.20	0.20	05/25/20 03:40	
1,2-Dichloropropane	ug/L	<0.40	0.40	05/22/20 02:12	
1,3,5-Trimethylbenzene	ug/L	<0.40	0.40	05/22/20 02:12	
1,3-Dichlorobenzene	ug/L	<0.40	0.40	05/22/20 02:12	
1,3-Dichloropropane	ug/L	<0.40	0.40	05/22/20 02:12	
1,4-Dichlorobenzene	ug/L	<0.40	0.40	05/22/20 02:12	
2,2-Dichloropropane	ug/L	<1.0	1.0	05/22/20 02:12	
2-Butanone (MEK)	ug/L	<5.0	5.0	05/22/20 02:12	
2-Chlorotoluene	ug/L	<0.40	0.40	05/22/20 02:12	
4-Chlorotoluene	ug/L	<0.40	0.40	05/22/20 02:12	
4-Methyl-2-pentanone (MIBK)	ug/L	<5.0	5.0	05/22/20 02:12	
Acetone	ug/L	<20.0	20.0	05/22/20 02:12	
Allyl chloride	ug/L	<4.0	4.0	05/22/20 02:12	
Benzene	ug/L	<0.20	0.20	05/22/20 02:12	
Bromobenzene	ug/L	<0.40	0.40	05/22/20 02:12	
Bromochloromethane	ug/L	<1.0	1.0	05/22/20 02:12	
Bromodichloromethane	ug/L	<0.40	0.40	05/22/20 02:12	
Bromoform	ug/L	<1.0	1.0	05/22/20 02:12	
Bromomethane	ug/L	<1.0	1.0	05/22/20 02:12	
Carbon tetrachloride	ug/L	<0.050	0.050	05/25/20 03:40	
Chlorobenzene	ug/L	<0.40	0.40	05/22/20 02:12	
Chloroethane	ug/L	<1.0	1.0	05/22/20 02:12	
Chloroform	ug/L	<1.0	1.0	05/22/20 02:12	
Chloromethane	ug/L	<1.0	1.0	05/22/20 02:12	
cis-1,2-Dichloroethene	ug/L	<0.40	0.40	05/22/20 02:12	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10517973

METHOD BLANK: 3622840 Matrix: Water
Associated Lab Samples: 10517973001, 10517973002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
cis-1,3-Dichloropropene	ug/L	<0.40	0.40	05/25/20 03:40	
Dibromochloromethane	ug/L	<0.40	0.40	05/25/20 03:40	
Dibromomethane	ug/L	<1.0	1.0	05/22/20 02:12	
Dichlorodifluoromethane	ug/L	<1.0	1.0	05/22/20 02:12	
Dichlorofluoromethane	ug/L	<1.0	1.0	05/22/20 02:12	
Diethyl ether (Ethyl ether)	ug/L	<4.0	4.0	05/22/20 02:12	
Ethylbenzene	ug/L	<0.40	0.40	05/22/20 02:12	
Hexachloro-1,3-butadiene	ug/L	<0.10	0.10	05/25/20 03:40	
Isopropylbenzene (Cumene)	ug/L	<0.40	0.40	05/22/20 02:12	
m&p-Xylene	ug/L	<0.80	0.80	05/22/20 02:12	
Methyl-tert-butyl ether	ug/L	<0.40	0.40	05/22/20 02:12	
Methylene Chloride	ug/L	<1.0	1.0	05/22/20 02:12	
n-Butylbenzene	ug/L	<0.40	0.40	05/22/20 02:12	
n-Propylbenzene	ug/L	<0.40	0.40	05/22/20 02:12	
Naphthalene	ug/L	<1.0	1.0	05/22/20 02:12	
o-Xylene	ug/L	<0.40	0.40	05/22/20 02:12	
p-Isopropyltoluene	ug/L	<0.40	0.40	05/22/20 02:12	
sec-Butylbenzene	ug/L	<0.40	0.40	05/22/20 02:12	
Styrene	ug/L	<0.40	0.40	05/22/20 02:12	
tert-Butylbenzene	ug/L	<0.40	0.40	05/22/20 02:12	
Tetrachloroethene	ug/L	<0.40	0.40	05/22/20 02:12	
Tetrahydrofuran	ug/L	<10.0	10.0	05/22/20 02:12	
Toluene	ug/L	<0.40	0.40	05/22/20 02:12	
trans-1,2-Dichloroethene	ug/L	<0.40	0.40	05/22/20 02:12	
trans-1,3-Dichloropropene	ug/L	<0.40	0.40	05/25/20 03:40	
Trichloroethene	ug/L	<0.050	0.050	05/25/20 03:40	
Trichlorofluoromethane	ug/L	<0.40	0.40	05/22/20 02:12	
Vinyl chloride	ug/L	<0.050	0.050	05/25/20 03:40	
Xylene (Total)	ug/L	<1.2	1.2	05/22/20 02:12	
1,2-Dichloroethane-d4 (S)	%.	105	75-128	05/25/20 03:40	
1,2-Dichloroethane-d4 (S)	%.	105	75-128	05/22/20 02:12	
4-Bromofluorobenzene (S)	%.	102	75-125	05/22/20 02:12	
Toluene-d8 (S)	%.	103	75-125	05/22/20 02:12	
Toluene-d8 (S)	%.	101	75-125	05/25/20 03:40	

LABORATORY CONTROL SAMPLE: 3622841

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	10	11.0	110	75-125	
1,1,1-Trichloroethane	ug/L	10	10	100	68-131	
1,1,2,2-Tetrachloroethane	ug/L	10	9.1	91	71-125	
1,1,2-Trichloroethane	ug/L	10	10.4	104	75-125	
1,1,2-Trichlorotrifluoroethane	ug/L	10	9.4	94	71-125	
1,1-Dichloroethane	ug/L	10	9.0	90	71-125	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10517973

LABORATORY CONTROL SAMPLE: 3622841

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1-Dichloroethene	ug/L	10	9.3	93	66-126	
1,1-Dichloropropene	ug/L	10	9.0	90	58-134	
1,2,3-Trichlorobenzene	ug/L	10	9.8	98	71-125	
1,2,3-Trichloropropane	ug/L	1	1.0	102	75-125	
1,2,4-Trichlorobenzene	ug/L	10	9.5	95	72-125	
1,2,4-Trimethylbenzene	ug/L	10	10.1	101	75-125	
1,2-Dibromo-3-chloropropane	ug/L	2.5	2.5	100	71-125	
1,2-Dibromoethane (EDB)	ug/L	1	1.0	104	71-125	
1,2-Dichlorobenzene	ug/L	10	9.7	97	75-125	
1,2-Dichloroethane	ug/L	1	1.1	105	75-131	
1,2-Dichloropropane	ug/L	10	9.8	98	73-125	
1,3,5-Trimethylbenzene	ug/L	10	9.9	99	75-125	
1,3-Dichlorobenzene	ug/L	10	10.3	103	75-125	
1,3-Dichloropropane	ug/L	10	9.7	97	75-125	
1,4-Dichlorobenzene	ug/L	10	8.8	88	75-125	
2,2-Dichloropropane	ug/L	10	9.0	90	57-144	
2-Butanone (MEK)	ug/L	50	42.0	84	51-144	
2-Chlorotoluene	ug/L	10	10	100	75-125	
4-Chlorotoluene	ug/L	10	10.6	106	75-125	
4-Methyl-2-pentanone (MIBK)	ug/L	50	48.9	98	72-125	
Acetone	ug/L	50	39.1	78	34-150	
Allyl chloride	ug/L	10	7.9	79	58-132	
Benzene	ug/L	10	9.2	92	70-125	
Bromobenzene	ug/L	10	9.0	90	75-125	
Bromochloromethane	ug/L	10	9.9	99	72-126	
Bromodichloromethane	ug/L	10	10.3	103	73-128	
Bromoform	ug/L	10	10.6	106	70-125	
Bromomethane	ug/L	10	10.7	107	31-150	SS
Carbon tetrachloride	ug/L	1	1.1	107	68-136	
Chlorobenzene	ug/L	10	10	100	75-125	
Chloroethane	ug/L	10	8.7	87	70-128	
Chloroform	ug/L	10	9.9	99	72-125	
Chloromethane	ug/L	10	8.5	85	63-129	
cis-1,2-Dichloroethene	ug/L	10	9.5	95	69-128	
cis-1,3-Dichloropropene	ug/L	1	1.0	100	71-125	
Dibromochloromethane	ug/L	1	1.0	100	71-125	
Dibromomethane	ug/L	10	10	100	74-130	
Dichlorodifluoromethane	ug/L	10	8.5	85	65-134	
Dichlorofluoromethane	ug/L	10	9.3	93	74-125	
Diethyl ether (Ethyl ether)	ug/L	10	8.6	86	64-126	
Ethylbenzene	ug/L	10	9.9	99	75-125	
Hexachloro-1,3-butadiene	ug/L	1	0.96	96	65-133	
Isopropylbenzene (Cumene)	ug/L	10	11.5	115	75-125	
m&p-Xylene	ug/L	20	20.3	102	75-125	
Methyl-tert-butyl ether	ug/L	10	9.0	90	68-125	
Methylene Chloride	ug/L	10	10.5	105	69-125	
n-Butylbenzene	ug/L	10	9.5	95	75-125	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10517973

LABORATORY CONTROL SAMPLE: 3622841

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
n-Propylbenzene	ug/L	10	9.3	93	74-125	
Naphthalene	ug/L	10	9.4	94	66-125	
o-Xylene	ug/L	10	9.9	99	75-125	
p-Isopropyltoluene	ug/L	10	10.1	101	75-125	
sec-Butylbenzene	ug/L	10	10	100	75-125	
Styrene	ug/L	10	10.6	106	75-125	
tert-Butylbenzene	ug/L	10	9.7	97	75-125	
Tetrachloroethene	ug/L	10	9.7	97	75-125	
Tetrahydrofuran	ug/L	100	92.5	93	55-139	
Toluene	ug/L	10	9.1	91	75-125	
trans-1,2-Dichloroethene	ug/L	10	9.1	91	67-127	
trans-1,3-Dichloropropene	ug/L	1	0.98	98	70-125	
Trichloroethene	ug/L	1	1.0	100	69-125	
Trichlorofluoromethane	ug/L	10	9.7	97	70-131	
Vinyl chloride	ug/L	1	0.90	90	68-132	
Xylene (Total)	ug/L	30	30.2	101	75-125	
1,2-Dichloroethane-d4 (S)	%.			96	75-128	
1,2-Dichloroethane-d4 (S)	%.			102	75-128	
4-Bromofluorobenzene (S)	%.			96	75-125	
Toluene-d8 (S)	%.			99	75-125	
Toluene-d8 (S)	%.			100	75-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3622842 3622843

Parameter	Units	10517973002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,1,2-Tetrachloroethane	ug/L	<0.40	10	10	11.1	10.7	111	107	75-125	4	30	
1,1,1-Trichloroethane	ug/L	<0.40	10	10	11.3	10.5	113	105	65-148	7	30	
1,1,2,2-Tetrachloroethane	ug/L	<0.40	10	10	9.4	9.1	94	91	72-125	4	30	
1,1,2-Trichloroethane	ug/L	<0.40	10	10	10.1	9.9	101	99	75-125	2	30	
1,1,2-Trichlorotrifluoroethane	ug/L	<1.0	10	10	10.6	10.4	106	104	75-145	1	30	
1,1-Dichloroethane	ug/L	<0.40	10	10	10.3	9.9	103	99	73-136	4	30	
1,1-Dichloroethene	ug/L	<0.40	10	10	11.2	10.6	112	106	69-138	5	30	
1,1-Dichloropropene	ug/L	<0.40	10	10	10.8	10.6	108	106	60-150	1	30	
1,2,3-Trichlorobenzene	ug/L	<0.40	10	10	9.5	9.5	95	95	67-135	1	30	
1,2,3-Trichloropropane	ug/L	<0.010	1	1	1.1	1.1	105	111	49-150	6	30	
1,2,4-Trichlorobenzene	ug/L	<0.40	10	10	9.5	9.4	95	94	68-133	1	30	
1,2,4-Trimethylbenzene	ug/L	<1.0	10	10	11.1	10.8	111	108	75-135	3	30	
1,2-Dibromo-3-chloropropane	ug/L	<0.12	2.5	2.5	2.6	2.8	104	110	53-150	6	30	
1,2-Dibromoethane (EDB)	ug/L	<0.050	1	1	1.1	1.2	109	116	49-150	6	30	
1,2-Dichlorobenzene	ug/L	<0.40	10	10	10	9.8	100	98	75-125	2	30	
1,2-Dichloroethane	ug/L	<0.20	1	1	1.1	1.2	114	121	42-150	6	30	
1,2-Dichloropropane	ug/L	<0.40	10	10	10.3	9.6	103	96	71-125	6	30	
1,3,5-Trimethylbenzene	ug/L	<0.40	10	10	10.8	10.5	108	105	75-129	3	30	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10517973

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3622842 3622843

Parameter	Units	10517973002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,3-Dichlorobenzene	ug/L	<0.40	10	10	10.5	9.9	105	99	75-125	6	30	
1,3-Dichloropropane	ug/L	<0.40	10	10	9.8	9.6	98	96	75-125	2	30	
1,4-Dichlorobenzene	ug/L	<0.40	10	10	9.7	9.7	97	97	75-125	0	30	
2,2-Dichloropropane	ug/L	<1.0	10	10	9.3	8.8	93	88	67-150	5	30	
2-Butanone (MEK)	ug/L	<5.0	50	50	42.5	40.1	85	80	49-138	6	30	
2-Chlorotoluene	ug/L	<0.40	10	10	10.9	10.4	109	104	75-130	4	30	
4-Chlorotoluene	ug/L	<0.40	10	10	11.1	10.9	111	109	75-133	2	30	
4-Methyl-2-pentanone (MIBK)	ug/L	<5.0	50	50	50.1	46.9	100	94	75-126	7	30	
Acetone	ug/L	<20.0	50	50	42.3	42.8	85	86	51-125	1	30	
Allyl chloride	ug/L	<4.0	10	10	9.7	9.2	97	92	50-150	6	30	
Benzene	ug/L	<0.20	10	10	10.1	9.9	101	99	68-129	2	30	
Bromobenzene	ug/L	<0.40	10	10	9.5	9.2	95	92	75-125	3	30	
Bromochloromethane	ug/L	<1.0	10	10	10.2	9.8	102	98	73-132	3	30	
Bromodichloromethane	ug/L	<0.40	10	10	10.3	10.1	103	101	75-127	2	30	
Bromoform	ug/L	<1.0	10	10	10.2	9.2	102	92	71-125	10	30	
Bromomethane	ug/L	<1.0	10	10	13.2	13.6	132	136	30-150	3	30	SS
Carbon tetrachloride	ug/L	<0.050	1	1	1.2	1.3	124	133	30-150	7	30	
Chlorobenzene	ug/L	<0.40	10	10	10.2	9.9	102	99	75-125	3	30	
Chloroethane	ug/L	<1.0	10	10	9.9	9.6	99	96	68-141	4	30	
Chloroform	ug/L	<1.0	10	10	10.6	10.0	106	100	61-129	6	30	
Chloromethane	ug/L	<1.0	10	10	9.9	9.7	99	97	46-150	2	30	
cis-1,2-Dichloroethene	ug/L	<0.40	10	10	10.4	10.2	104	102	68-142	1	30	
cis-1,3-Dichloropropene	ug/L	<0.40	1	1	1.0	1.1	105	111	48-150	6	30	
Dibromochloromethane	ug/L	<0.40	1	1	1.1	1.1	106	111	50-150	5	30	
Dibromomethane	ug/L	<1.0	10	10	10.4	9.7	104	97	69-137	6	30	
Dichlorodifluoromethane	ug/L	<1.0	10	10	10.5	10.6	105	106	68-150	1	30	
Dichlorofluoromethane	ug/L	<1.0	10	10	10.1	9.9	101	99	73-135	2	30	
Diethyl ether (Ethyl ether)	ug/L	<4.0	10	10	9.7	9.4	97	94	61-128	3	30	
Ethylbenzene	ug/L	<0.40	10	10	10.8	10.4	108	104	75-131	4	30	
Hexachloro-1,3-butadiene	ug/L	<0.10	1	1	1.1	1.2	113	118	40-150	4	30	
Isopropylbenzene (Cumene)	ug/L	<0.40	10	10	12.6	12.1	126	121	75-133	5	30	
m&p-Xylene	ug/L	<0.80	20	20	22.7	21.5	113	107	75-135	5	30	
Methyl-tert-butyl ether	ug/L	<0.40	10	10	9.9	9.6	99	96	67-126	4	30	
Methylene Chloride	ug/L	<1.0	10	10	10.5	10.2	105	102	61-137	3	30	
n-Butylbenzene	ug/L	<0.40	10	10	10.4	10.4	104	104	75-136	0	30	
n-Propylbenzene	ug/L	<0.40	10	10	10.4	10.2	104	102	75-139	2	30	
Naphthalene	ug/L	<1.0	10	10	9.5	9.5	95	95	64-127	0	30	
o-Xylene	ug/L	<0.40	10	10	10.8	10.1	108	101	75-127	6	30	
p-Isopropyltoluene	ug/L	<0.40	10	10	11.1	10.9	111	109	75-135	2	30	
sec-Butylbenzene	ug/L	<0.40	10	10	11.2	11.0	112	110	75-141	2	30	
Styrene	ug/L	<0.40	10	10	11.0	10.5	110	105	75-125	4	30	
tert-Butylbenzene	ug/L	<0.40	10	10	10.8	10.6	108	106	75-141	1	30	
Tetrachloroethene	ug/L	<0.40	10	10	10.3	10.3	103	103	75-135	1	30	
Tetrahydrofuran	ug/L	<10.0	100	100	93.7	90.6	94	91	45-145	3	30	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10517973

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3622842 3622843

Parameter	Units	10517973002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Toluene	ug/L	<0.40	10	10	9.9	9.5	99	95	74-125	4	30	
trans-1,2-Dichloroethene	ug/L	<0.40	10	10	10.3	9.9	103	99	68-137	4	30	
trans-1,3-Dichloropropene	ug/L	<0.40	1	1	1.0	1.1	105	112	50-150	6	30	
Trichloroethene	ug/L	<0.050	1	1	1.1	1.2	112	119	41-150	6	30	
Trichlorofluoromethane	ug/L	<0.40	10	10	11.1	10.4	111	104	72-150	6	30	
Vinyl chloride	ug/L	<0.050	1	1	1.0	0.99	100	99	30-150	2	30	
Xylene (Total)	ug/L	<1.2	30	30	33.4	31.6	111	105	75-131	6	30	
1,2-Dichloroethane-d4 (S)	%.						102	101	75-128			
1,2-Dichloroethane-d4 (S)	%.						102	99	75-128			
1,2-Dichloroethane-d4 (S)	%.						99	101	75-128			
1,2-Dichloroethane-d4 (S)	%.						99	99	75-128			
4-Bromofluorobenzene (S)	%.						97	98	75-125			
Toluene-d8 (S)	%.						98	97	75-125			
Toluene-d8 (S)	%.						98	98	75-125			
Toluene-d8 (S)	%.						98	97	75-125			
Toluene-d8 (S)	%.						98	98	75-125			

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10517973

QC Batch: 676757
QC Batch Method: SM 2320B
Analysis Method: SM 2320B
Analysis Description: 2320B Alkalinity
Laboratory: Pace Analytical Services - Minneapolis
Associated Lab Samples: 10517973001, 10517973002

METHOD BLANK: 3622643 Matrix: Water
Associated Lab Samples: 10517973001, 10517973002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	<5.0	5.0	05/21/20 16:06	

LABORATORY CONTROL SAMPLE & LCSD: 3622644 3622645

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	40	42.3	42.5	106	106	90-110	0	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3622646 3622647

Parameter	Units	10518129001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO3	mg/L	44.1	40	40	84.7	61.4	101	43	80-120	32	20	M1,R1

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3622648 3622649

Parameter	Units	10517973002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO3	mg/L	697	40	40	779	751	207	136	80-120	4	20	M1

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10517973

QC Batch: 676008
QC Batch Method: SM 2540C
Analysis Method: SM 2540C
Analysis Description: 2540C Total Dissolved Solids
Laboratory: Pace Analytical Services - Minneapolis
Associated Lab Samples: 10517973001, 10517973002

METHOD BLANK: 3618951 Matrix: Water
Associated Lab Samples: 10517973001, 10517973002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<10.0	10.0	05/19/20 11:43	

LABORATORY CONTROL SAMPLE: 3618952

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	986	99	80-120	

SAMPLE DUPLICATE: 3618953

Parameter	Units	10517973002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	865	915	6	5	D6

SAMPLE DUPLICATE: 3618954

Parameter	Units	10518119005 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	307	311	1	5	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10517973

QC Batch: 675801
QC Batch Method: SM 2540D
Analysis Method: SM 2540D
Analysis Description: 2540D Total Suspended Solids
Laboratory: Pace Analytical Services - Minneapolis
Associated Lab Samples: 10517973001, 10517973002

METHOD BLANK: 3618146 Matrix: Water
Associated Lab Samples: 10517973001, 10517973002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Suspended Solids	mg/L	<10.0	10.0	05/18/20 15:14	

LABORATORY CONTROL SAMPLE: 3618147

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Suspended Solids	mg/L	100	120	120	80-120	

SAMPLE DUPLICATE: 3618148

Parameter	Units	10517964015 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	<10.0	<10.0		5	

SAMPLE DUPLICATE: 3618149

Parameter	Units	10517973002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	81.0	97.0	18	5	D6

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10517973

QC Batch: 678205
QC Batch Method: SM 4500-H+B
Analysis Method: SM 4500-H+B
Analysis Description: 4500H+B pH
Laboratory: Pace Analytical Services - Minneapolis
Associated Lab Samples: 10517973001, 10517973002

LABORATORY CONTROL SAMPLE: 3629809

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
pH at 25 Degrees C	Std. Units	5	5.0	100	98-102	H6

SAMPLE DUPLICATE: 3629810

Parameter	Units	10517929006 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	7.9	7.9	0	3	H6

SAMPLE DUPLICATE: 3629811

Parameter	Units	10517973002 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	6.9	6.9	0	3	H6

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10517973

QC Batch: 678208
QC Batch Method: SM 2510
Analysis Method: SM 2510
Analysis Description: SM2510 Specific Conductance
Laboratory: Pace Analytical Services - Minneapolis
Associated Lab Samples: 10517973001, 10517973002

METHOD BLANK: 3629825 Matrix: Water
Associated Lab Samples: 10517973001, 10517973002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Specific Conductance	umhos/cm	<1.0	1.0	05/29/20 16:54	

LABORATORY CONTROL SAMPLE: 3629826

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Specific Conductance	umhos/cm	1000	998	100	90-110	

SAMPLE DUPLICATE: 3629827

Parameter	Units	10517929005 Result	Dup Result	RPD	Max RPD	Qualifiers
Specific Conductance	umhos/cm	458	465	2	20	

SAMPLE DUPLICATE: 3629828

Parameter	Units	10517973002 Result	Dup Result	RPD	Max RPD	Qualifiers
Specific Conductance	umhos/cm	1460	1460	0	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10517973

QC Batch: 677791
QC Batch Method: EPA 300.0
Analysis Method: EPA 300.0
Analysis Description: 300.0 IC Anions
Laboratory: Pace Analytical Services - Minneapolis
Associated Lab Samples: 10517973001, 10517973002

METHOD BLANK: 3627619 Matrix: Water
Associated Lab Samples: 10517973001, 10517973002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/L	<1.2	1.2	05/28/20 17:07	
Sulfate	mg/L	<1.2	1.2	05/28/20 17:07	

LABORATORY CONTROL SAMPLE: 3627620

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	12.5	12.0	96	90-110	
Sulfate	mg/L	12.5	12.3	98	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3627621 3627622

Parameter	Units	10517870001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	1.2	12.5	12.5	11.1	11.2	79	80	90-110	0	20	M3
Sulfate	mg/L	3.2	12.5	12.5	13.4	13.6	81	83	90-110	1	20	M3

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3627623 3627624

Parameter	Units	10517973002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	25.7	12.5	12.5	32.0	32.3	51	52	90-110	1	20	M3
Sulfate	mg/L	8.0	12.5	12.5	18.1	18.2	81	82	90-110	1	20	M3

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10517973

QC Batch: 675691
QC Batch Method: SM 3500-Cr B Modified
Analysis Method: SM 3500-Cr B Modified
Analysis Description: Chromium, Hexavalent by 3500
Laboratory: Pace Analytical Services - Minneapolis
Associated Lab Samples: 10517973001, 10517973002

METHOD BLANK: 3617630 Matrix: Water
Associated Lab Samples: 10517973001, 10517973002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chromium, Hexavalent	mg/L	<0.010	0.010	05/15/20 19:21	FS

LABORATORY CONTROL SAMPLE: 3617631

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chromium, Hexavalent	mg/L	0.25	0.25	101	90-110	FS

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3617632 3617633

Parameter	Units	10517973002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chromium, Hexavalent	mg/L	<0.010	0.25	0.25	0.24	0.23	97	92	85-115	5	20	FS,H3

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10517973

QC Batch: 676220
QC Batch Method: EPA 350.1
Analysis Method: EPA 350.1
Analysis Description: 350.1 Ammonia
Laboratory: Pace Analytical Services - Minneapolis
Associated Lab Samples: 10517973001, 10517973002

METHOD BLANK: 3619933 Matrix: Water
Associated Lab Samples: 10517973001, 10517973002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, Ammonia	mg/L	<0.10	0.10	05/26/20 11:15	

LABORATORY CONTROL SAMPLE: 3619934

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	2.5	2.4	97	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3619935 3619937

Parameter	Units	10517973002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, Ammonia	mg/L	<0.10	2.5	2.5	2.5	2.4	99	95	90-110	4	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3619938 3619939

Parameter	Units	10518163001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, Ammonia	mg/L	ND	2.5	2.5	1.7	1.9	66	74	90-110	12	20	M1

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10517973

QC Batch: 677064
QC Batch Method: EPA 353.2
Analysis Method: EPA 353.2
Analysis Description: 353.2 Nitrate + Nitrite, preserved
Laboratory: Pace Analytical Services - Minneapolis
Associated Lab Samples: 10517973001, 10517973002

METHOD BLANK: 3624364 Matrix: Water
Associated Lab Samples: 10517973001, 10517973002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	<0.10	0.10	05/22/20 17:07	

LABORATORY CONTROL SAMPLE: 3624365

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	1	1.1	106	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3624366 3624367

Parameter	Units	10517973002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, NO2 plus NO3	mg/L	0.52	1	1	1.7	1.7	116	116	90-110	1	20	M1

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10517973

QC Batch: 677500
QC Batch Method: SM 5220D
Analysis Method: SM 5220D
Analysis Description: 5220D COD
Laboratory: Pace Analytical Services - Minneapolis
Associated Lab Samples: 10517973001, 10517973002

METHOD BLANK: 3626292 Matrix: Water
Associated Lab Samples: 10517973001, 10517973002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chemical Oxygen Demand	mg/L	<50.0	50.0	05/27/20 16:07	

LABORATORY CONTROL SAMPLE: 3626293

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	300	301	100	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3626294 3626295

Parameter	Units	10518666001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chemical Oxygen Demand	mg/L	1540	2500	2500	3780	3780	90	90	80-120	0	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3626296 3626297

Parameter	Units	10517973002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chemical Oxygen Demand	mg/L	<50.0	250	250	299	293	102	100	80-120	2	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALIFIERS

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10517973

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

1M	Due to required dilutions on anion and/or cation analysis, the cation anion balance calculation resulted in a non-balance state.
D6	The precision between the sample and sample duplicate exceeded laboratory control limits.
E	Analyte concentration exceeded the calibration range. The reported result is estimated.
FS	The sample was filtered in the laboratory prior to analysis.
H3	Sample was received or analysis requested beyond the recognized method holding time.
H6	Analysis initiated outside of the 15 minute EPA required holding time.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
M3	Matrix spike recovery was outside laboratory control limits due to matrix interferences.
N2	The lab does not hold NELAC/TNI accreditation for this parameter but other accreditations/certifications may apply. A complete list of accreditations/certifications is available upon request.
P6	Matrix spike recovery was outside laboratory control limits due to a parent sample concentration notably higher than the spike level.
R1	RPD value was outside control limits.
SS	This analyte did not meet the secondary source verification criteria for the initial calibration. The reported result should be considered an estimated value.

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10517973

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10517973001	**MH-LYS-III-P1**	EPA 200.8	676612	EPA 200.8	677018
10517973002	**MH-LYS-III-P2**	EPA 200.8	676612	EPA 200.8	677018
10517973001	**MH-LYS-III-P1**	SM 1030E	677610		
10517973002	**MH-LYS-III-P2**	SM 1030E	677610		
10517973001	**MH-LYS-III-P1**	EPA 245.1	676620	EPA 245.1	676996
10517973002	**MH-LYS-III-P2**	EPA 245.1	676620	EPA 245.1	676996
10517973001	**MH-LYS-III-P1**	EPA 8260B	676819		
10517973002	**MH-LYS-III-P2**	EPA 8260B	676819		
10517973001	**MH-LYS-III-P1**	SM 2320B	676757		
10517973002	**MH-LYS-III-P2**	SM 2320B	676757		
10517973001	**MH-LYS-III-P1**	SM 2540C	676008		
10517973002	**MH-LYS-III-P2**	SM 2540C	676008		
10517973001	**MH-LYS-III-P1**	SM 2540D	675801		
10517973002	**MH-LYS-III-P2**	SM 2540D	675801		
10517973001	**MH-LYS-III-P1**	SM 4500-H+B	678205		
10517973002	**MH-LYS-III-P2**	SM 4500-H+B	678205		
10517973001	**MH-LYS-III-P1**	SM 2510	678208		
10517973002	**MH-LYS-III-P2**	SM 2510	678208		
10517973001	**MH-LYS-III-P1**	EPA 300.0	677791		
10517973002	**MH-LYS-III-P2**	EPA 300.0	677791		
10517973001	**MH-LYS-III-P1**	SM 3500-Cr B Modified	675691		
10517973002	**MH-LYS-III-P2**	SM 3500-Cr B Modified	675691		
10517973001	**MH-LYS-III-P1**	EPA 350.1	676220		
10517973002	**MH-LYS-III-P2**	EPA 350.1	676220		
10517973001	**MH-LYS-III-P1**	EPA 353.2	677064		
10517973002	**MH-LYS-III-P2**	EPA 353.2	677064		
10517973001	**MH-LYS-III-P1**	SM 5220D	677500	SM 5220D	677689
10517973002	**MH-LYS-III-P2**	SM 5220D	677500	SM 5220D	677689

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

WO#: 10517973

10517973

MPCA Chain-of-Custody Form revision 2017.0328

* indicates a required field

Minnesota Pollution Control Agency

Work Order Number: | **COC Type:** Standard | **Page:**

Turnaround Time: Standard | **COC ID:** 33549 line8

PROJECT/CLIENT INFO

Facility Code:* SW-34 — Program Code (MDH Lab Only):

Project Name:* Clay County Sanitary Landfill - Spring 2020 Lysimeters — Project Task Code:* PRJ07913

Project Manager: Andrew Feia

Potential Hazard? No — If yes, add information to **Sampler Comments** field

LABORATORY

Lab Name: Pace Analytical Services, LLC

Address: 1700 Elm Street SE

Minneapolis, MN 55414

EPA Lab ID:*

SAMPLE DETAILS

SAMPLE TYPES
Sample=Routine Sample
QC-FB=Field Blank Sample
QC-FR=Field Replicate Sample
QC-TB=Trip Blank Sample
QC-EB=Equipment Blank
Treated-Mid=Treatment system sample
Treated-Post=Treatment system sample

SAMPLING METHODS
G=Grab sample
CT=Composite, time-paced w/AS
CF=Composite w/AS
D-T=Discrete,time-paced w/AS
D-F=Discrete,flow-paced w/AS
SW-GAS=Gas Sampling
Unknown=Unknown

LAB MATRICES
DW=Drinking Water
NW=Nonpotable Water
SD=Soil/Solid
AR=Air
BL=Biological Material
OT=Other
TS=Tissue

FIELD MATRICES
Wtr-Ground=Groundwater
Wtr-Surf=Surface Water
Wtr-Drink=Drinking Water
QC-BLANK=Artificial Blank Water
Leachate=Leachate Sample
Air-Indoor=Indoor Air
Gas-Soil=Soil Gas

MN Location Identifier*	Field Name	Sample Type*	Start Date* (mm/dd/yyyy)	Start Time* 24 hr (hh:mm)	Depth Start	Depth End	Depth Units (m or ft.)	Sampling Method*	Complete ONLY if Method is CT, CF, D-T, or D-F: End Date (mm/dd/yyyy)	End Time 24 hr (hh:mm)	Lab Matrix*	Field Matrix*	AIS	Sampler Comments (filter volume, special handling, etc.)	# of Cont	ANALYSIS*	List 1-VOCs (Attached)	List 4-pH, Specific Conductance	List 5-Dissolved Metals (Attached)	List 5-Inorganics (Attached)			Lab Sample No.	#
														PRESERV.	HCL	None	HN03	H2S04						
														FF	N	N	Y	N						
LS00124	MH-LYS-III-P1	Sample	5/12/2020	20:00				G			NW	WTR-Ground			14		x	x	x	x			001	1
LS00125	MH-LYS-III-P2	Sample	5/12/2020	19:10				G			NW	WTR-Ground			14		x	x	x	x			002	2
QC-BLANK	MH-LYS-III-P2 (MS/MSD)	QC-FR	5/12/2020	19:10				G			NW	WTR-Ground			12		x	x	x	x			002	3
																								4
																								5
																								6
																								7
																								8
																								9
																								10

Sampler's Name:* Christina Lammers — **Phone#:** 701-893-2327

Sampler's Signature:* Christina Lammers

Sampler's Organization: Wenck Associates, Inc.

Billing Organization: Clay County - Kirk Rosenberger — **Acct#:** 10-115155

Address: 807 11th Street North, Moorhead, MN 56560

Courier Name: Speedee — **Tracking#:**

Receiving Comments:

Relinquished By/Affiliation	Date/Time	Accepted By/Affiliation	Date/Time
(Sampler) Christina Lammers /Wenck	5/13 14:30	Chip Pa T=2.9	5.14.20 ~~11:39~~ 1135

5-14-20

Pace Analytical®	Document Name: **Sample Condition Upon Receipt (SCUR) - MN**	Document Revised: 27Mar2020 **Page 1 of 1**
	Document No.: **ENV-FRM-MIN4-0150 Rev.00**	Pace Analytical Services - **Minneapolis**

Sample Condition Upon Receipt

Client Name: MPCA - Wenck

Project #: **WO#: 10517973**

PM: AKA **Due Date: 05/29/20**

CLIENT: WENCK-ND

Courier: ☐Fed Ex ☐UPS ☐USPS ☐Client ☐Pace ☒SpeeDee ☐Commercial **See Exceptions** ☐

Tracking Number: _____

Custody Seal on Cooler/Box Present? ☐Yes ☒No **Seals Intact?** ☐Yes ☒No **Biological Tissue Frozen?** ☐Yes ☐No ☒N/A

Packing Material: ☒Bubble Wrap ☐Bubble Bags ☐None ☐Other:_____ **Temp Blank?** ☒Yes ☐No

Thermometer: ☐T1(0461) ☐T2(1336) ☐T3(0459) ☒T4(0254) ☐T5(0489) **Type of Ice:** ☒Wet ☐Blue ☐None ☐Dry ☐Melted

Did Samples Originate in West Virginia? ☐Yes ☒No **Were All Container Temps Taken?** ☐Yes ☐No ☒N/A

Temp should be above freezing to 6°C **Cooler Temp Read w/temp blank:** 2.9 °C

Average Corrected Temp (no temp blank only): ☐See Exceptions _____ °C ☐1 Container

Correction Factor: True **Cooler Temp Corrected w/temp blank:** 2.9 °C

USDA Regulated Soil: (☒ N/A, water sample/Other:_____)

Date/Initials of Person Examining Contents: Clif 5.14.20

Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA. MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? ☐Yes ☐No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐Yes ☐No

If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.

				COMMENTS:
Chain of Custody Present and Filled Out?	☒Yes	☐No		1.
Chain of Custody Relinquished?	☒Yes	☐No		2.
Sampler Name and/or Signature on COC?	☒Yes	☐No	☐N/A	3.
Samples Arrived within Hold Time?	☒Yes	☐No		4.
Short Hold Time Analysis (<72 hr)?	☐Yes	☒No		5. ☐Fecal Coliform ☐HPC ☐Total Coliform/E coli ☐BOD/cBOD ☐Hex Chrome ☐Turbidity ☐Nitrate ☐Nitrite ☐Orthophos ☐Other_____
Rush Turn Around Time Requested?	☐Yes	☒No		6.
Sufficient Volume?	☒Yes	☐No		7.
Correct Containers Used? -Pace Containers Used?	☒Yes ☒Yes	☐No ☐No		8.
Containers Intact?	☒Yes	☐No		9.
Field Filtered Volume Received for Dissolved Tests?	☒Yes	☐No	☐N/A	10. Is sediment visible in the dissolved container? ☐Yes ☐No
Is sufficient information available to reconcile the samples to the COC? Matrix: ☒Water ☐Soil ☐Oil ☐Other_____	☒Yes	☐No		11. **If no, write ID/ Date/Time on Container Below:** **See Exception** ☐
All containers needing acid/base preservation have been checked?	☒Yes	☐No	☐N/A	12. Sample # 1-1/1, 2-2/2 1-3/1, 2-3/3
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO_3, H_2SO_4, <2pH, NaOH >9 Sulfide, NaOH>12 Cyanide)	☒Yes	☐No	☐N/A	☐NaOH ☒HNO_3 ☒H_2SO_4 ☐Zinc Acetate
Exceptions: VOA, Coliform, TOC/DOC Oil and Grease, DRO/8015 (water) and Dioxin/PFAS	☒Yes	☐No	☐N/A	Positive for Res. Chlorine? ☐Yes ☐No **pH Paper Lot#** **See Exception** ☐
				Res. Chlorine | 0-6 Roll | 0-6 Strip | 0-14 Strip
Extra labels present on soil VOA or WIDRO containers?	☐Yes	☐No	☒N/A	13. **See Exception** ☐
Headspace in VOA Vials (greater than 6mm)?	☐Yes	☒No	☐N/A	
Trip Blank Present?	☐Yes	☒No	☐N/A	14.
Trip Blank Custody Seals Present?	☐Yes	☐No	☒N/A	Pace Trip Blank Lot # (if purchased):_____

CLIENT NOTIFICATION/RESOLUTION **Field Data Required?** ☐Yes ☐No

Person Contacted: _____ Date/Time: _____

Comments/Resolution: _____

Project Manager Review: Anna Osp **Date:** 5/14/2020

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers).

RNC

Labeled by: _____

TABLE 2

Clay County Landfill
Permit SW-34
Environmental Monitoring System

Parameter Lists For Analyses

List 1 (VOCs) (Groundwater and Surface Water)

1,1,1,2-Tetrachloroethane	Chlorobenzene (monochlorobenzene)
1,1,1-Trichloroethane	Chlorodibromomethane (Dibromochloromethane)
1,1,2,2-Tetrachloroethane	Chloroethane
1,1,2-Trichloroethane	Chloroform
1,1,2-Trichlorotrifluoroethane	Chloromethane (Methyl chloride)
1,1-Dichloroethane	cis-1,3,-Dichloropropene
1,1-Dichloroethylene (Vinylidene chloride)	Cumene (Isopropylbenzene)
1,1-Dichloropropene	Dibromochloropropane (DBCP)
1,2-(trans-) Dichloroethylene	Dibromomethane (Methylene bromide)
1,2,3-Trichlorobenzene	Dichlorodifluoromethane
1,2,3-Trichloropropane	Dichlorofluoromethane
1,2,4-Trichlorobenzene	Dichloromethane (Methylene chloride)
1,2,4-Trimethylbenzene	Ethyl benzene
1,2-Dibromoethane (Ethylene dibromide); EDB	Ethyl ether
1,2-Dichlorobenzene (ortho-)	Hexachlorobutadiene
1,2-Dichloroethane	Methyl ethyl ketone (MEK)
1,2-Dichloroethlyene (cis-)	Methyl isobutyl ketone (4-Methyl-2-pentanone)
1,2-Dichloropropane	Methyl tertiary-Butyl Ether (MTBE)
1,3,5-Trimethylbenzene	Naphthalene
1,3-Dichlorobenzene (meta-)	n-Butyl Benzene
1,3-Dichloropropane	n-Propyl benzene
1,4-Dichlorobenzene (para-)	p-Isopropyltoluene
2,2-Dichloropropane	sec-Butyl Benzene
2-Chlorotoluene (ortho-)	Styrene
4-Chlorotoluene (para-)	tert-Butyl Benzene
Acetone	Tetrachloroethylene (Perchloroethylene)
Allyl chloride (3 chloropropene)	Tetrahydrofuran
Benzene	Toluene
Bromobenzene	Trichloroethylene (TCE)
Bromochloromethane (Chlorobromomethane)	Trichlorofluoromethane
Bromodichloromethane (Dichlorobromomethane)	Vinyl chloride (chloroethene)
Bromoform	m-Xylene & p-Xylene
Bromomethane (Methyl bromide)	o-Xylene
Carbon tetrachloride	

List 2 (Geochemicals, Metals[1]) (Groundwater)

Alkalinity, Total as CaCO3	Magnesium
Ammonia Nitrogen	Manganese
Arsenic	Mercury
Barium	Nickel
Boron	Nitrate+Nitrite
Cadmium	Potassium
Calcium	Selenium
Cation-Anion Balance	Sodium
Chloride	Sulfate
Chromium	Zinc
Copper	Total Dissolved Solids
Iron	Total Suspended Solids
Lead	

[1] All metals are measured as dissolved. All groundwater samples for metals will be filtered in the field.

TABLE 2

Clay County Landfill
Permit SW-34
Environmental Monitoring System

Parameter Lists For Analyses

List 3 (Geochemicals, Metals[2]) (Surface Water)

Alkalinity, Total as CaCO3	Lead
Arsenic	Magnesium
Boron	Manganese
Cadmium	Mercury[3]
Calcium	Total Dissolved Solids
Cation-Anion Balance	Total Suspended Solids
Chloride	

[2] All metals are measured as total. All surface water samples for metals will not be filtered in the field or lab.

[3] Low-level mercury analyses, EPA Method 1669.

List 4 (Field Parameters) (Groundwater and Surface Water)

Appearance	Specific Conductance
Dissolved Oxygen	Static Water Level (Elevation, MSL)[4]
Eh (Oxidation potential)	Temperature
Odor	Turbidity
pH	

[4] Groundwater Samples only, and not for residential wells.

List 5 (Geochemicals, Metals[1]) (Lysimeter)

Alkalinity, Total as CaCO3	Iron
Ammonia Nitrogen	Lead
Arsenic	Magnesium
Arsenic	Manganese
Boron	Mercury
Cadmium	Nitrate+Nitrite
Calcium	Potassium
Cation-Anion Balance	Sodium
COD	Sulfate
Chloride	Zinc
Chromium VI	Total Dissolved Solids
Copper	Total Suspended Solids

[1] All metals are measured as dissolved. All Lysimeter samples for metals will be filtered in the field.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

June 02, 2020

Andrew Feia
Wenck Associates, Inc.
3303 Fiechtner Drive
Suite 100
Fargo, ND 58103

RE: Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10517964

Dear Andrew Feia:

Enclosed are the analytical results for sample(s) received by the laboratory on May 14, 2020. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Minneapolis

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Annika Asp
annika.asp@pacelabs.com
(612)607-1700
Project Manager

Enclosures

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

CERTIFICATIONS

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10517964

Pace Analytical Services Minneapolis

A2LA Certification #: 2926.01
Alabama Certification #: 40770
Alaska Contaminated Sites Certification #: 17-009
Alaska DW Certification #: MN00064
Arizona Certification #: AZ0014
Arkansas DW Certification #: MN00064
Arkansas WW Certification #: 88-0680
California Certification #: 2929
CNMI Saipan Certification #: MP0003
Colorado Certification #: MN00064
Connecticut Certification #: PH-0256
EPA Region 8+Wyoming DW Certification #: via MN 027-053-137
Florida Certification #: E87605
Georgia Certification #: 959
Guam EPA Certification #: MN00064
Hawaii Certification #: MN00064
Idaho Certification #: MN00064
Illinois Certification #: 200011
Indiana Certification #: C-MN-01
Iowa Certification #: 368
Kansas Certification #: E-10167
Kentucky DW Certification #: 90062
Kentucky WW Certification #: 90062
Louisiana DEQ Certification #: 03086
Louisiana DW Certification #: MN00064
Maine Certification #: MN00064
Maryland Certification #: 322
Massachusetts Certification #: M-MN064
Massachusetts DWP Certification #: via MN 027-053-137
Michigan Certification #: 9909
Minnesota Certification #: 027-053-137
Minnesota Dept of Ag Certifcation #: via MN 027-053-137
Minnesota Petrofund Certification #: 1240
Mississippi Certification #: MN00064
Missouri Certification #: 10100
Montana Certification #: CERT0092
Nebraska Certification #: NE-OS-18-06
Nevada Certification #: MN00064
New Hampshire Certification #: 2081
New Jersey Certification #: MN002
New York Certification #: 11647
North Carolina DW Certification #: 27700
North Carolina WW Certification #: 530
North Dakota Certification #: R-036
Ohio DW Certification #: 41244
Ohio VAP Certification #: CL101
Oklahoma Certification #: 9507
Oregon Primary Certification #: MN300001
Oregon Secondary Certification #: MN200001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification #: MN00064
South Carolina Certification #:74003001
Tennessee Certification #: TN02818
Texas Certification #: T104704192
Utah Certification #: MN00064
Vermont Certification #: VT-027053137
Virginia Certification #: 460163
Washington Certification #: C486
West Virginia DEP Certification #: 382
West Virginia DW Certification #: 9952 C
Wisconsin Certification #: 999407970
Wyoming UST Certification #: via A2LA 2926.01

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

SAMPLE SUMMARY

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10517964

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10517964001	**W-13**	Water	05/12/20 09:10	05/14/20 11:35
10517964002	**C-11**	Water	05/12/20 10:08	05/14/20 11:35
10517964003	**W-12**	Water	05/12/20 10:34	05/14/20 11:35
10517964004	**W-3**	Water	05/12/20 13:30	05/14/20 11:35
10517964005	**W-5**	Water	05/12/20 13:19	05/14/20 11:35
10517964006	**W-106A**	Water	05/12/20 14:35	05/14/20 11:35
10517964007	**W-106B**	Water	05/12/20 14:31	05/14/20 11:35
10517964008	**W-301A**	Water	05/12/20 15:35	05/14/20 11:35
10517964009	**W-301B**	Water	05/12/20 15:24	05/14/20 11:35
10517964010	**W-102A**	Water	05/12/20 17:06	05/14/20 11:35
10517964011	**W-102B**	Water	05/12/20 15:12	05/14/20 11:35
10517964012	**W-104A**	Water	05/12/20 16:17	05/14/20 11:35
10517964013	**W-104B**	Water	05/12/20 16:32	05/14/20 11:35
10517964014	**W-302A**	Water	05/12/20 18:13	05/14/20 11:35
10517964015	**W-302B**	Water	05/12/20 18:11	05/14/20 11:35
10517964016	**Dup-2**	Water	05/12/20 00:00	05/14/20 11:35
10517964017	**Trip Blank 2**	Water	05/12/20 00:00	05/14/20 11:35
10517964018	**Trip Blank 3**	Water	05/12/20 00:00	05/14/20 11:35
10517964019	**Trip Blank 4**	Water	05/12/20 00:00	05/14/20 11:35

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

SAMPLE ANALYTE COUNT

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10517964

Lab ID	Sample ID	Method	Analysts	Analytes Reported
10517964001	**W-13**	EPA 200.8	PW1	16
		SM 1030E	WBS	3
		EPA 245.1	LMW	1
		EPA 8260B	AEZ	72
		SM 2320B	SH4	1
		SM 2540C	EPT	1
		SM 2540D	EPT	1
		SM 4500-H+B	SH4	1
		SM 2510	SH4	1
		EPA 300.0	KEO	2
		EPA 350.1	JFP	1
		EPA 353.2	JFP	1
10517964002	**C-11**	EPA 200.8	PW1	16
		SM 1030E	WBS	3
		EPA 245.1	LMW	1
		EPA 8260B	AEZ	72
		SM 2320B	SH4	1
		SM 2540C	EPT	1
		SM 2540D	EPT	1
		SM 4500-H+B	SH4	1
		SM 2510	SH4	1
		EPA 300.0	KEO	2
		EPA 350.1	JFP	1
		EPA 353.2	JFP	1
10517964003	**W-12**	EPA 200.8	PW1	16
		SM 1030E	WBS	3
		EPA 245.1	LMW	1
		EPA 8260B	AEZ	72
		SM 2320B	SH4	1
		SM 2540C	EPT	1
		SM 2540D	EPT	1
		SM 4500-H+B	SH4	1
		SM 2510	SH4	1
		EPA 300.0	KEO	2
		EPA 350.1	JFP	1
		EPA 353.2	JFP	1
10517964004	**W-3**	EPA 200.8	PW1	16

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

SAMPLE ANALYTE COUNT

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10517964

Lab ID	Sample ID	Method	Analysts	Analytes Reported
		SM 1030E	WBS	3
		EPA 245.1	LMW	1
		EPA 8260B	AEZ	72
		SM 2320B	SH4	1
		SM 2540C	EPT	1
		SM 2540D	EPT	1
		SM 4500-H+B	SH4	1
		SM 2510	SH4	1
		EPA 300.0	KEO	2
		EPA 350.1	JFP	1
		EPA 353.2	JFP	1
10517964005	**W-5**	EPA 200.8	PW1	16
		SM 1030E	WBS	3
		EPA 245.1	LMW	1
		EPA 8260B	AEZ	72
		SM 2320B	SH4	1
		SM 2540C	EPT	1
		SM 2540D	EPT	1
		SM 4500-H+B	SH4	1
		SM 2510	SH4	1
		EPA 300.0	KEO	2
		EPA 350.1	JFP	1
		EPA 353.2	JFP	1
10517964006	**W-106A**	EPA 200.8	PW1	16
		SM 1030E	WBS	3
		EPA 245.1	LMW	1
		EPA 8260B	AEZ	72
		SM 2320B	SH4	1
		SM 2540C	EPT	1
		SM 2540D	EPT	1
		SM 4500-H+B	SH4	1
		SM 2510	SH4	1
		EPA 300.0	KEO	2
		EPA 350.1	JFP	1
		EPA 353.2	JFP	1
10517964007	**W-106B**	EPA 200.8	PW1	16
		SM 1030E	WBS	3

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

SAMPLE ANALYTE COUNT

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10517964

Lab ID	Sample ID	Method	Analysts	Analytes Reported
		EPA 245.1	LMW	1
		EPA 8260B	AEZ	72
		SM 2320B	SH4	1
		SM 2540C	EPT	1
		SM 2540D	EPT	1
		SM 4500-H+B	SH4	1
		SM 2510	SH4	1
		EPA 300.0	KEO	2
		EPA 350.1	JFP	1
		EPA 353.2	JFP	1
10517964008	**W-301A**	EPA 200.8	PW1	16
		SM 1030E	WBS	3
		EPA 245.1	LMW	1
		EPA 8260B	AEZ	72
		SM 2320B	SH4	1
		SM 2540C	EPT	1
		SM 2540D	EPT	1
		SM 4500-H+B	SH4	1
		SM 2510	SH4	1
		EPA 300.0	KEO	2
		EPA 350.1	JFP	1
		EPA 353.2	JFP	1
10517964009	**W-301B**	EPA 200.8	PW1	16
		SM 1030E	WBS	3
		EPA 245.1	LMW	1
		EPA 8260B	AEZ	72
		SM 2320B	SH4	1
		SM 2540C	EPT	1
		SM 2540D	EPT	1
		SM 4500-H+B	SH4	1
		SM 2510	SH4	1
		EPA 300.0	KEO	2
		EPA 350.1	JFP	1
		EPA 353.2	JFP	1
10517964010	**W-102A**	EPA 200.8	PW1	16
		SM 1030E	WBS	3
		EPA 245.1	LMW	1

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

SAMPLE ANALYTE COUNT

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10517964

Lab ID	Sample ID	Method	Analysts	Analytes Reported
		EPA 8260B	AEZ	72
		SM 2320B	SH4	1
		SM 2540C	EPT	1
		SM 2540D	EPT	1
		SM 4500-H+B	SH4	1
		SM 2510	SH4	1
		EPA 300.0	KEO	2
		EPA 350.1	JFP	1
		EPA 353.2	JFP	1
10517964011	**W-102B**	EPA 200.8	PW1	16
		SM 1030E	WBS	3
		EPA 245.1	LMW	1
		EPA 8260B	AEZ	72
		SM 2320B	SH4	1
		SM 2540C	EPT	1
		SM 2540D	EPT	1
		SM 4500-H+B	SH4	1
		SM 2510	SH4	1
		EPA 300.0	KEO	2
		EPA 350.1	JFP	1
		EPA 353.2	JFP	1
10517964012	**W-104A**	EPA 200.8	PW1	16
		SM 1030E	WBS	3
		EPA 245.1	LMW	1
		EPA 8260B	AEZ	72
		SM 2320B	SH4	1
		SM 2540C	EPT	1
		SM 2540D	EPT	1
		SM 4500-H+B	SH4	1
		SM 2510	SH4	1
		EPA 300.0	KEO	2
		EPA 350.1	JFP	1
		EPA 353.2	JFP	1
10517964013	**W-104B**	EPA 200.8	PW1	16
		SM 1030E	WBS	3
		EPA 245.1	LMW	1
		EPA 8260B	AEZ	72

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

SAMPLE ANALYTE COUNT

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10517964

Lab ID	Sample ID	Method	Analysts	Analytes Reported
		SM 2320B	SH4	1
		SM 2540C	EPT	1
		SM 2540D	EPT	1
		SM 4500-H+B	SH4	1
		SM 2510	SH4	1
		EPA 300.0	KEO	2
		EPA 350.1	JFP	1
		EPA 353.2	JFP	1
10517964014	**W-302A**	EPA 200.8	PW1	16
		SM 1030E	WBS	3
		EPA 245.1	LMW	1
		EPA 8260B	AEZ	72
		SM 2320B	SH4	1
		SM 2540C	EPT	1
		SM 2540D	EPT	1
		SM 4500-H+B	SH4	1
		SM 2510	SH4	1
		EPA 300.0	KEO	2
		EPA 350.1	JFP	1
		EPA 353.2	JFP	1
10517964015	**W-302B**	EPA 200.8	PW1	16
		SM 1030E	WBS	3
		EPA 245.1	LMW	1
		EPA 8260B	AEZ	72
		SM 2320B	SH4	1
		SM 2540C	EPT	1
		SM 2540D	EPT	1
		SM 4500-H+B	SH4	1
		SM 2510	SH4	1
		EPA 300.0	KEO	2
		EPA 350.1	JFP	1
		EPA 353.2	JFP	1
10517964016	**Dup-2**	EPA 200.8	PW1	16
		SM 1030E	WBS	3
		EPA 245.1	LMW	1
		EPA 8260B	AEZ	72
		SM 2320B	SH4	1

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

SAMPLE ANALYTE COUNT

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10517964

Lab ID	Sample ID	Method	Analysts	Analytes Reported
		SM 2540C	EPT	1
		SM 2540D	EPT	1
		SM 4500-H+B	SH4	1
		SM 2510	SH4	1
		EPA 300.0	KEO	2
		EPA 350.1	JFP	1
		EPA 353.2	JFP	1
10517964017	**Trip Blank 2**	EPA 8260B	AEZ	72
10517964018	**Trip Blank 3**	EPA 8260B	AEZ	72
10517964019	**Trip Blank 4**	EPA 8260B	AEZ	72

PASI-M = Pace Analytical Services - Minneapolis

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10517964

Sample: W-13 **Lab ID: 10517964001** Collected: 05/12/20 09:10 Received: 05/14/20 11:35 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.8 MET ICPMS, Dissolved	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Minneapolis							
Arsenic, Dissolved	**1.7**	ug/L	0.50	1	05/21/20 15:27	05/28/20 22:09	7440-38-2	
Barium, Dissolved	**178**	ug/L	0.30	1	05/21/20 15:27	05/28/20 22:09	7440-39-3	
Boron, Dissolved	**25.9**	ug/L	10.0	1	05/21/20 15:27	05/28/20 22:09	7440-42-8	
Cadmium, Dissolved	**<0.080**	ug/L	0.080	1	05/21/20 15:27	05/28/20 22:09	7440-43-9	
Calcium, Dissolved	**90600**	ug/L	800	20	05/21/20 15:27	05/28/20 22:12	7440-70-2	P6
Chromium, Dissolved	**<0.50**	ug/L	0.50	1	05/21/20 15:27	05/28/20 22:09	7440-47-3	
Copper, Dissolved	**<1.0**	ug/L	1.0	1	05/21/20 15:27	05/28/20 22:09	7440-50-8	
Iron, Dissolved	**534**	ug/L	50.0	1	05/21/20 15:27	05/28/20 22:09	7439-89-6	
Lead, Dissolved	**<0.10**	ug/L	0.10	1	05/21/20 15:27	05/28/20 22:09	7439-92-1	
Magnesium, Dissolved	**47400**	ug/L	200	20	05/21/20 15:27	05/28/20 22:12	7439-95-4	P6
Manganese, Dissolved	**85.9**	ug/L	0.50	1	05/21/20 15:27	05/28/20 22:09	7439-96-5	
Nickel, Dissolved	**5.4**	ug/L	0.50	1	05/21/20 15:27	05/28/20 22:09	7440-02-0	
Potassium, Dissolved	**2620**	ug/L	100	1	05/21/20 15:27	05/28/20 22:09	7440-09-7	
Selenium, Dissolved	**1.2**	ug/L	0.50	1	05/21/20 15:27	05/28/20 22:09	7782-49-2	
Sodium, Dissolved	**5420**	ug/L	50.0	1	05/21/20 15:27	05/28/20 22:09	7440-23-5	
Zinc, Dissolved	**<5.0**	ug/L	5.0	1	05/21/20 15:27	05/28/20 22:09	7440-66-6	
Cation/Anion Balance	Analytical Method: SM 1030E Pace Analytical Services - Minneapolis							
Cation/Anion Balance	**7.49**	%		1		06/01/20 17:32		1M
Total Cations	**8.7**	meq/L		1		06/01/20 17:32		N2
Total Anions	**7.5**	meq/L		1		06/01/20 17:32		N2
245.1 Mercury, Dissolved	Analytical Method: EPA 245.1 Preparation Method: EPA 245.1 Pace Analytical Services - Minneapolis							
Mercury, Dissolved	**<0.20**	ug/L	0.20	1	05/21/20 18:22	05/27/20 11:16	7439-97-6	
8260B MSV LLW by SIMSCAN	Analytical Method: EPA 8260B Pace Analytical Services - Minneapolis							
Acetone	**<20.0**	ug/L	20.0	1		05/21/20 17:33	67-64-1	
Allyl chloride	**<4.0**	ug/L	4.0	1		05/21/20 17:33	107-05-1	
Benzene	**<0.20**	ug/L	0.20	1		05/21/20 17:33	71-43-2	
Bromobenzene	**<0.40**	ug/L	0.40	1		05/21/20 17:33	108-86-1	
Bromochloromethane	**<1.0**	ug/L	1.0	1		05/21/20 17:33	74-97-5	
Bromodichloromethane	**<0.40**	ug/L	0.40	1		05/21/20 17:33	75-27-4	
Bromoform	**<1.0**	ug/L	1.0	1		05/21/20 17:33	75-25-2	
Bromomethane	**<1.0**	ug/L	1.0	1		05/21/20 17:33	74-83-9	
2-Butanone (MEK)	**<5.0**	ug/L	5.0	1		05/21/20 17:33	78-93-3	
n-Butylbenzene	**<0.40**	ug/L	0.40	1		05/21/20 17:33	104-51-8	
sec-Butylbenzene	**<0.40**	ug/L	0.40	1		05/21/20 17:33	135-98-8	
tert-Butylbenzene	**<0.40**	ug/L	0.40	1		05/21/20 17:33	98-06-6	
Carbon tetrachloride	**<0.050**	ug/L	0.050	1		05/25/20 17:41	56-23-5	
Chlorobenzene	**<0.40**	ug/L	0.40	1		05/21/20 17:33	108-90-7	
Chloroethane	**<1.0**	ug/L	1.0	1		05/21/20 17:33	75-00-3	
Chloroform	**<1.0**	ug/L	1.0	1		05/21/20 17:33	67-66-3	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10517964

Sample: W-13 **Lab ID: 10517964001** Collected: 05/12/20 09:10 Received: 05/14/20 11:35 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV LLW by SIMSCAN	Analytical Method: EPA 8260B Pace Analytical Services - Minneapolis							
Chloromethane	**<1.0**	ug/L	1.0	1		05/21/20 17:33	74-87-3	
2-Chlorotoluene	**<0.40**	ug/L	0.40	1		05/21/20 17:33	95-49-8	
4-Chlorotoluene	**<0.40**	ug/L	0.40	1		05/21/20 17:33	106-43-4	
1,2-Dibromo-3-chloropropane	**<0.12**	ug/L	0.12	1		05/25/20 17:41	96-12-8	
Dibromochloromethane	**<0.40**	ug/L	0.40	1		05/25/20 17:41	124-48-1	
1,2-Dibromoethane (EDB)	**<0.050**	ug/L	0.050	1		05/25/20 17:41	106-93-4	
Dibromomethane	**<1.0**	ug/L	1.0	1		05/21/20 17:33	74-95-3	
1,2-Dichlorobenzene	**<0.40**	ug/L	0.40	1		05/21/20 17:33	95-50-1	
1,3-Dichlorobenzene	**<0.40**	ug/L	0.40	1		05/21/20 17:33	541-73-1	
1,4-Dichlorobenzene	**<0.40**	ug/L	0.40	1		05/21/20 17:33	106-46-7	
Dichlorodifluoromethane	**<1.0**	ug/L	1.0	1		05/21/20 17:33	75-71-8	
1,1-Dichloroethane	**<0.40**	ug/L	0.40	1		05/21/20 17:33	75-34-3	
1,2-Dichloroethane	**<0.20**	ug/L	0.20	1		05/25/20 17:41	107-06-2	
1,1-Dichloroethene	**<0.40**	ug/L	0.40	1		05/21/20 17:33	75-35-4	
cis-1,2-Dichloroethene	**<0.40**	ug/L	0.40	1		05/21/20 17:33	156-59-2	
trans-1,2-Dichloroethene	**<0.40**	ug/L	0.40	1		05/21/20 17:33	156-60-5	
Dichlorofluoromethane	**<1.0**	ug/L	1.0	1		05/21/20 17:33	75-43-4	
1,2-Dichloropropane	**<0.40**	ug/L	0.40	1		05/21/20 17:33	78-87-5	
1,3-Dichloropropane	**<0.40**	ug/L	0.40	1		05/21/20 17:33	142-28-9	
2,2-Dichloropropane	**<1.0**	ug/L	1.0	1		05/21/20 17:33	594-20-7	
1,1-Dichloropropene	**<0.40**	ug/L	0.40	1		05/21/20 17:33	563-58-6	
cis-1,3-Dichloropropene	**<0.40**	ug/L	0.40	1		05/25/20 17:41	10061-01-5	
trans-1,3-Dichloropropene	**<0.40**	ug/L	0.40	1		05/25/20 17:41	10061-02-6	
Diethyl ether (Ethyl ether)	**<4.0**	ug/L	4.0	1		05/21/20 17:33	60-29-7	
Ethylbenzene	**<0.40**	ug/L	0.40	1		05/21/20 17:33	100-41-4	
Hexachloro-1,3-butadiene	**<0.10**	ug/L	0.10	1		05/25/20 17:41	87-68-3	
Isopropylbenzene (Cumene)	**<0.40**	ug/L	0.40	1		05/21/20 17:33	98-82-8	
p-Isopropyltoluene	**<0.40**	ug/L	0.40	1		05/21/20 17:33	99-87-6	
Methylene Chloride	**<1.0**	ug/L	1.0	1		05/21/20 17:33	75-09-2	
4-Methyl-2-pentanone (MIBK)	**<5.0**	ug/L	5.0	1		05/21/20 17:33	108-10-1	
Methyl-tert-butyl ether	**<0.40**	ug/L	0.40	1		05/21/20 17:33	1634-04-4	
Naphthalene	**<1.0**	ug/L	1.0	1		05/21/20 17:33	91-20-3	
n-Propylbenzene	**<0.40**	ug/L	0.40	1		05/21/20 17:33	103-65-1	
Styrene	**<0.40**	ug/L	0.40	1		05/21/20 17:33	100-42-5	
1,1,1,2-Tetrachloroethane	**<0.40**	ug/L	0.40	1		05/21/20 17:33	630-20-6	
1,1,2,2-Tetrachloroethane	**<0.40**	ug/L	0.40	1		05/21/20 17:33	79-34-5	
Tetrachloroethene	**<0.40**	ug/L	0.40	1		05/21/20 17:33	127-18-4	
Tetrahydrofuran	**<10.0**	ug/L	10.0	1		05/21/20 17:33	109-99-9	
Toluene	**<0.40**	ug/L	0.40	1		05/21/20 17:33	108-88-3	
1,2,3-Trichlorobenzene	**<0.40**	ug/L	0.40	1		05/21/20 17:33	87-61-6	
1,2,4-Trichlorobenzene	**<0.40**	ug/L	0.40	1		05/21/20 17:33	120-82-1	
1,1,1-Trichloroethane	**<0.40**	ug/L	0.40	1		05/21/20 17:33	71-55-6	
1,1,2-Trichloroethane	**<0.40**	ug/L	0.40	1		05/21/20 17:33	79-00-5	
Trichloroethene	**<0.050**	ug/L	0.050	1		05/25/20 17:41	79-01-6	
Trichlorofluoromethane	**<0.40**	ug/L	0.40	1		05/21/20 17:33	75-69-4	
1,2,3-Trichloropropane	**<0.010**	ug/L	0.010	1		05/25/20 17:41	96-18-4	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10517964

Sample: W-13 **Lab ID: 10517964001** Collected: 05/12/20 09:10 Received: 05/14/20 11:35 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV LLW by SIMSCAN	Analytical Method: EPA 8260B							
	Pace Analytical Services - Minneapolis							
1,1,2-Trichlorotrifluoroethane	**<1.0**	ug/L	1.0	1		05/21/20 17:33	76-13-1	
1,2,4-Trimethylbenzene	**<1.0**	ug/L	1.0	1		05/21/20 17:33	95-63-6	
1,3,5-Trimethylbenzene	**<0.40**	ug/L	0.40	1		05/21/20 17:33	108-67-8	
Vinyl chloride	**<0.050**	ug/L	0.050	1		05/25/20 17:41	75-01-4	
Xylene (Total)	**<1.2**	ug/L	1.2	1		05/21/20 17:33	1330-20-7	
m&p-Xylene	**<0.80**	ug/L	0.80	1		05/21/20 17:33	179601-23-1	
o-Xylene	**<0.40**	ug/L	0.40	1		05/21/20 17:33	95-47-6	
Surrogates								
1,2-Dichloroethane-d4 (S)	106	%.	75-128	1		05/21/20 17:33	17060-07-0	
1,2-Dichloroethane-d4 (S)	106	%.	75-128	1		05/25/20 17:41	17060-07-0	
Toluene-d8 (S)	102	%.	75-125	1		05/21/20 17:33	2037-26-5	
Toluene-d8 (S)	100	%.	75-125	1		05/25/20 17:41	2037-26-5	
4-Bromofluorobenzene (S)	102	%.	75-125	1		05/21/20 17:33	460-00-4	
2320B Alkalinity	Analytical Method: SM 2320B							
	Pace Analytical Services - Minneapolis							
Alkalinity, Total as CaCO3	**360**	mg/L	5.0	1		05/21/20 13:58		
2540C Total Dissolved Solids	Analytical Method: SM 2540C							
	Pace Analytical Services - Minneapolis							
Total Dissolved Solids	**359**	mg/L	10.0	1		05/15/20 10:47		
2540D Total Suspended Solids	Analytical Method: SM 2540D							
	Pace Analytical Services - Minneapolis							
Total Suspended Solids	**146**	mg/L	10.0	1		05/19/20 14:42		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B							
	Pace Analytical Services - Minneapolis							
pH at 25 Degrees C	**7.6**	Std. Units	0.10	1		05/29/20 17:46		H6
SM2510 Specific Conductance	Analytical Method: SM 2510							
	Pace Analytical Services - Minneapolis							
Specific Conductance	**685**	umhos/cm	1.0	1		05/29/20 18:04		
300.0 IC Anions	Analytical Method: EPA 300.0							
	Pace Analytical Services - Minneapolis							
Chloride	**<1.2**	mg/L	1.2	1		05/29/20 06:52	16887-00-6	M1
Sulfate	**15.3**	mg/L	1.2	1		05/29/20 06:52	14808-79-8	M1
350.1 Ammonia	Analytical Method: EPA 350.1							
	Pace Analytical Services - Minneapolis							
Nitrogen, Ammonia	**<0.10**	mg/L	0.10	1		05/19/20 16:13	7664-41-7	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10517964

Sample: W-13 **Lab ID: 10517964001** Collected: 05/12/20 09:10 Received: 05/14/20 11:35 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrate + Nitrite	Analytical Method: EPA 353.2 Pace Analytical Services - Minneapolis							
Nitrogen, NO2 plus NO3	**<0.10**	mg/L	0.10	1		05/21/20 17:31		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10517964

Sample: C-11 **Lab ID: 10517964002** Collected: 05/12/20 10:08 Received: 05/14/20 11:35 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.8 MET ICPMS, Dissolved	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Minneapolis							
Arsenic, Dissolved	**<0.50**	ug/L	0.50	1	05/21/20 15:27	05/28/20 22:18	7440-38-2	
Barium, Dissolved	**112**	ug/L	0.30	1	05/21/20 15:27	05/28/20 22:18	7440-39-3	
Boron, Dissolved	**25.1**	ug/L	10.0	1	05/21/20 15:27	05/28/20 22:18	7440-42-8	
Cadmium, Dissolved	**<0.080**	ug/L	0.080	1	05/21/20 15:27	05/28/20 22:18	7440-43-9	
Calcium, Dissolved	**104000**	ug/L	800	20	05/21/20 15:27	05/28/20 22:21	7440-70-2	
Chromium, Dissolved	**3.2**	ug/L	0.50	1	05/21/20 15:27	05/28/20 22:18	7440-47-3	
Copper, Dissolved	**<1.0**	ug/L	1.0	1	05/21/20 15:27	05/28/20 22:18	7440-50-8	
Iron, Dissolved	**<50.0**	ug/L	50.0	1	05/21/20 15:27	05/28/20 22:18	7439-89-6	
Lead, Dissolved	**<0.10**	ug/L	0.10	1	05/21/20 15:27	05/28/20 22:18	7439-92-1	
Magnesium, Dissolved	**36100**	ug/L	200	20	05/21/20 15:27	05/28/20 22:21	7439-95-4	
Manganese, Dissolved	**<0.50**	ug/L	0.50	1	05/21/20 15:27	05/28/20 22:18	7439-96-5	
Nickel, Dissolved	**1.3**	ug/L	0.50	1	05/21/20 15:27	05/28/20 22:18	7440-02-0	
Potassium, Dissolved	**2280**	ug/L	100	1	05/21/20 15:27	05/28/20 22:18	7440-09-7	
Selenium, Dissolved	**1.0**	ug/L	0.50	1	05/21/20 15:27	05/28/20 22:18	7782-49-2	
Sodium, Dissolved	**5060**	ug/L	50.0	1	05/21/20 15:27	05/28/20 22:18	7440-23-5	
Zinc, Dissolved	**<5.0**	ug/L	5.0	1	05/21/20 15:27	05/28/20 22:18	7440-66-6	
Cation/Anion Balance	Analytical Method: SM 1030E Pace Analytical Services - Minneapolis							
Cation/Anion Balance	**8.11**	%		1		06/01/20 17:32		1M
Total Cations	**8.4**	meq/L		1		06/01/20 17:32		N2
Total Anions	**7.2**	meq/L		1		06/01/20 17:32		N2
245.1 Mercury, Dissolved	Analytical Method: EPA 245.1 Preparation Method: EPA 245.1 Pace Analytical Services - Minneapolis							
Mercury, Dissolved	**<0.20**	ug/L	0.20	1	05/21/20 18:22	05/27/20 11:18	7439-97-6	
8260B MSV LLW by SIMSCAN	Analytical Method: EPA 8260B Pace Analytical Services - Minneapolis							
Acetone	**<20.0**	ug/L	20.0	1		05/21/20 17:59	67-64-1	
Allyl chloride	**<4.0**	ug/L	4.0	1		05/21/20 17:59	107-05-1	
Benzene	**<0.20**	ug/L	0.20	1		05/21/20 17:59	71-43-2	
Bromobenzene	**<0.40**	ug/L	0.40	1		05/21/20 17:59	108-86-1	
Bromochloromethane	**<1.0**	ug/L	1.0	1		05/21/20 17:59	74-97-5	
Bromodichloromethane	**<0.40**	ug/L	0.40	1		05/21/20 17:59	75-27-4	
Bromoform	**<1.0**	ug/L	1.0	1		05/21/20 17:59	75-25-2	
Bromomethane	**<1.0**	ug/L	1.0	1		05/21/20 17:59	74-83-9	
2-Butanone (MEK)	**<5.0**	ug/L	5.0	1		05/21/20 17:59	78-93-3	
n-Butylbenzene	**<0.40**	ug/L	0.40	1		05/21/20 17:59	104-51-8	
sec-Butylbenzene	**<0.40**	ug/L	0.40	1		05/21/20 17:59	135-98-8	
tert-Butylbenzene	**<0.40**	ug/L	0.40	1		05/21/20 17:59	98-06-6	
Carbon tetrachloride	**<0.050**	ug/L	0.050	1		05/25/20 18:07	56-23-5	
Chlorobenzene	**<0.40**	ug/L	0.40	1		05/21/20 17:59	108-90-7	
Chloroethane	**<1.0**	ug/L	1.0	1		05/21/20 17:59	75-00-3	
Chloroform	**<1.0**	ug/L	1.0	1		05/21/20 17:59	67-66-3	

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10517964

Sample: C-11 **Lab ID: 10517964002** Collected: 05/12/20 10:08 Received: 05/14/20 11:35 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV LLW by SIMSCAN	Analytical Method: EPA 8260B Pace Analytical Services - Minneapolis							
Chloromethane	**<1.0**	ug/L	1.0	1		05/21/20 17:59	74-87-3	
2-Chlorotoluene	**<0.40**	ug/L	0.40	1		05/21/20 17:59	95-49-8	
4-Chlorotoluene	**<0.40**	ug/L	0.40	1		05/21/20 17:59	106-43-4	
1,2-Dibromo-3-chloropropane	**<0.12**	ug/L	0.12	1		05/25/20 18:07	96-12-8	
Dibromochloromethane	**<0.40**	ug/L	0.40	1		05/25/20 18:07	124-48-1	
1,2-Dibromoethane (EDB)	**<0.050**	ug/L	0.050	1		05/25/20 18:07	106-93-4	
Dibromomethane	**<1.0**	ug/L	1.0	1		05/21/20 17:59	74-95-3	
1,2-Dichlorobenzene	**<0.40**	ug/L	0.40	1		05/21/20 17:59	95-50-1	
1,3-Dichlorobenzene	**<0.40**	ug/L	0.40	1		05/21/20 17:59	541-73-1	
1,4-Dichlorobenzene	**<0.40**	ug/L	0.40	1		05/21/20 17:59	106-46-7	
Dichlorodifluoromethane	**<1.0**	ug/L	1.0	1		05/21/20 17:59	75-71-8	
1,1-Dichloroethane	**<0.40**	ug/L	0.40	1		05/21/20 17:59	75-34-3	
1,2-Dichloroethane	**<0.20**	ug/L	0.20	1		05/25/20 18:07	107-06-2	
1,1-Dichloroethene	**<0.40**	ug/L	0.40	1		05/21/20 17:59	75-35-4	
cis-1,2-Dichloroethene	**<0.40**	ug/L	0.40	1		05/21/20 17:59	156-59-2	
trans-1,2-Dichloroethene	**<0.40**	ug/L	0.40	1		05/21/20 17:59	156-60-5	
Dichlorofluoromethane	**<1.0**	ug/L	1.0	1		05/21/20 17:59	75-43-4	
1,2-Dichloropropane	**<0.40**	ug/L	0.40	1		05/21/20 17:59	78-87-5	
1,3-Dichloropropane	**<0.40**	ug/L	0.40	1		05/21/20 17:59	142-28-9	
2,2-Dichloropropane	**<1.0**	ug/L	1.0	1		05/21/20 17:59	594-20-7	
1,1-Dichloropropene	**<0.40**	ug/L	0.40	1		05/21/20 17:59	563-58-6	
cis-1,3-Dichloropropene	**<0.40**	ug/L	0.40	1		05/25/20 18:07	10061-01-5	
trans-1,3-Dichloropropene	**<0.40**	ug/L	0.40	1		05/25/20 18:07	10061-02-6	
Diethyl ether (Ethyl ether)	**<4.0**	ug/L	4.0	1		05/21/20 17:59	60-29-7	
Ethylbenzene	**<0.40**	ug/L	0.40	1		05/21/20 17:59	100-41-4	
Hexachloro-1,3-butadiene	**<0.10**	ug/L	0.10	1		05/25/20 18:07	87-68-3	
Isopropylbenzene (Cumene)	**<0.40**	ug/L	0.40	1		05/21/20 17:59	98-82-8	
p-Isopropyltoluene	**<0.40**	ug/L	0.40	1		05/21/20 17:59	99-87-6	
Methylene Chloride	**<1.0**	ug/L	1.0	1		05/21/20 17:59	75-09-2	
4-Methyl-2-pentanone (MIBK)	**<5.0**	ug/L	5.0	1		05/21/20 17:59	108-10-1	
Methyl-tert-butyl ether	**<0.40**	ug/L	0.40	1		05/21/20 17:59	1634-04-4	
Naphthalene	**<1.0**	ug/L	1.0	1		05/21/20 17:59	91-20-3	
n-Propylbenzene	**<0.40**	ug/L	0.40	1		05/21/20 17:59	103-65-1	
Styrene	**<0.40**	ug/L	0.40	1		05/21/20 17:59	100-42-5	
1,1,1,2-Tetrachloroethane	**<0.40**	ug/L	0.40	1		05/21/20 17:59	630-20-6	
1,1,2,2-Tetrachloroethane	**<0.40**	ug/L	0.40	1		05/21/20 17:59	79-34-5	
Tetrachloroethene	**<0.40**	ug/L	0.40	1		05/21/20 17:59	127-18-4	
Tetrahydrofuran	**<10.0**	ug/L	10.0	1		05/21/20 17:59	109-99-9	
Toluene	**<0.40**	ug/L	0.40	1		05/21/20 17:59	108-88-3	
1,2,3-Trichlorobenzene	**<0.40**	ug/L	0.40	1		05/21/20 17:59	87-61-6	
1,2,4-Trichlorobenzene	**<0.40**	ug/L	0.40	1		05/21/20 17:59	120-82-1	
1,1,1-Trichloroethane	**<0.40**	ug/L	0.40	1		05/21/20 17:59	71-55-6	
1,1,2-Trichloroethane	**<0.40**	ug/L	0.40	1		05/21/20 17:59	79-00-5	
Trichloroethene	**<0.050**	ug/L	0.050	1		05/25/20 18:07	79-01-6	
Trichlorofluoromethane	**<0.40**	ug/L	0.40	1		05/21/20 17:59	75-69-4	
1,2,3-Trichloropropane	**<0.010**	ug/L	0.010	1		05/25/20 18:07	96-18-4	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10517964

Sample: C-11 **Lab ID: 10517964002** Collected: 05/12/20 10:08 Received: 05/14/20 11:35 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV LLW by SIMSCAN	Analytical Method: EPA 8260B Pace Analytical Services - Minneapolis							
1,1,2-Trichlorotrifluoroethane	**<1.0**	ug/L	1.0	1		05/21/20 17:59	76-13-1	
1,2,4-Trimethylbenzene	**<1.0**	ug/L	1.0	1		05/21/20 17:59	95-63-6	
1,3,5-Trimethylbenzene	**<0.40**	ug/L	0.40	1		05/21/20 17:59	108-67-8	
Vinyl chloride	**<0.050**	ug/L	0.050	1		05/25/20 18:07	75-01-4	
Xylene (Total)	**<1.2**	ug/L	1.2	1		05/21/20 17:59	1330-20-7	
m&p-Xylene	**<0.80**	ug/L	0.80	1		05/21/20 17:59	179601-23-1	
o-Xylene	**<0.40**	ug/L	0.40	1		05/21/20 17:59	95-47-6	
Surrogates								
1,2-Dichloroethane-d4 (S)	106	%.	75-128	1		05/25/20 18:07	17060-07-0	
1,2-Dichloroethane-d4 (S)	106	%.	75-128	1		05/21/20 17:59	17060-07-0	
Toluene-d8 (S)	103	%.	75-125	1		05/21/20 17:59	2037-26-5	
Toluene-d8 (S)	100	%.	75-125	1		05/25/20 18:07	2037-26-5	
4-Bromofluorobenzene (S)	102	%.	75-125	1		05/21/20 17:59	460-00-4	
2320B Alkalinity	Analytical Method: SM 2320B Pace Analytical Services - Minneapolis							
Alkalinity, Total as CaCO3	**338**	mg/L	5.0	1		05/21/20 14:08		
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Minneapolis							
Total Dissolved Solids	**411**	mg/L	10.0	1		05/15/20 10:47		
2540D Total Suspended Solids	Analytical Method: SM 2540D Pace Analytical Services - Minneapolis							
Total Suspended Solids	**<10.0**	mg/L	10.0	1		05/18/20 15:14		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B Pace Analytical Services - Minneapolis							
pH at 25 Degrees C	**7.5**	Std. Units	0.10	1		05/29/20 17:54		H6
SM2510 Specific Conductance	Analytical Method: SM 2510 Pace Analytical Services - Minneapolis							
Specific Conductance	**725**	umhos/cm	1.0	1		05/29/20 18:08		
300.0 IC Anions	Analytical Method: EPA 300.0 Pace Analytical Services - Minneapolis							
Chloride	**4.5**	mg/L	1.2	1		05/29/20 08:11	16887-00-6	
Sulfate	**13.7**	mg/L	1.2	1		05/29/20 08:11	14808-79-8	
350.1 Ammonia	Analytical Method: EPA 350.1 Pace Analytical Services - Minneapolis							
Nitrogen, Ammonia	**<0.10**	mg/L	0.10	1		05/19/20 16:14	7664-41-7	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10517964

Sample: C-11 **Lab ID: 10517964002** Collected: 05/12/20 10:08 Received: 05/14/20 11:35 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrate + Nitrite	Analytical Method: EPA 353.2 Pace Analytical Services - Minneapolis							
Nitrogen, NO2 plus NO3	**8.6**	mg/L	1.0	10		05/21/20 17:34		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10517964

Sample: W-12 **Lab ID: 10517964003** Collected: 05/12/20 10:34 Received: 05/14/20 11:35 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.8 MET ICPMS, Dissolved	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Minneapolis							
Arsenic, Dissolved	**<0.50**	ug/L	0.50	1	05/21/20 15:27	05/28/20 22:24	7440-38-2	
Barium, Dissolved	**228**	ug/L	0.30	1	05/21/20 15:27	05/28/20 22:24	7440-39-3	
Boron, Dissolved	**22.2**	ug/L	10.0	1	05/21/20 15:27	05/28/20 22:24	7440-42-8	
Cadmium, Dissolved	**<0.080**	ug/L	0.080	1	05/21/20 15:27	05/28/20 22:24	7440-43-9	
Calcium, Dissolved	**145000**	ug/L	800	20	05/21/20 15:27	05/28/20 22:28	7440-70-2	
Chromium, Dissolved	**<0.50**	ug/L	0.50	1	05/21/20 15:27	05/28/20 22:24	7440-47-3	
Copper, Dissolved	**<1.0**	ug/L	1.0	1	05/21/20 15:27	05/28/20 22:24	7440-50-8	
Iron, Dissolved	**121**	ug/L	50.0	1	05/21/20 15:27	05/28/20 22:24	7439-89-6	
Lead, Dissolved	**<0.10**	ug/L	0.10	1	05/21/20 15:27	05/28/20 22:24	7439-92-1	
Magnesium, Dissolved	**62400**	ug/L	200	20	05/21/20 15:27	05/28/20 22:28	7439-95-4	
Manganese, Dissolved	**244**	ug/L	0.50	1	05/21/20 15:27	05/28/20 22:24	7439-96-5	
Nickel, Dissolved	**2.5**	ug/L	0.50	1	05/21/20 15:27	05/28/20 22:24	7440-02-0	
Potassium, Dissolved	**4740**	ug/L	100	1	05/21/20 15:27	05/28/20 22:24	7440-09-7	
Selenium, Dissolved	**<0.50**	ug/L	0.50	1	05/21/20 15:27	05/28/20 22:24	7782-49-2	
Sodium, Dissolved	**6710**	ug/L	50.0	1	05/21/20 15:27	05/28/20 22:24	7440-23-5	
Zinc, Dissolved	**7.1**	ug/L	5.0	1	05/21/20 15:27	05/28/20 22:24	7440-66-6	
Cation/Anion Balance	Analytical Method: SM 1030E Pace Analytical Services - Minneapolis							
Cation/Anion Balance	**5.62**	%		1		06/01/20 17:32		1M
Total Cations	**12.8**	meq/L		1		06/01/20 17:32		N2
Total Anions	**11.5**	meq/L		1		06/01/20 17:32		N2
245.1 Mercury, Dissolved	Analytical Method: EPA 245.1 Preparation Method: EPA 245.1 Pace Analytical Services - Minneapolis							
Mercury, Dissolved	**<0.20**	ug/L	0.20	1	05/21/20 18:22	05/27/20 11:20	7439-97-6	
8260B MSV LLW by SIMSCAN	Analytical Method: EPA 8260B Pace Analytical Services - Minneapolis							
Acetone	**<20.0**	ug/L	20.0	1		05/21/20 18:25	67-64-1	
Allyl chloride	**<4.0**	ug/L	4.0	1		05/21/20 18:25	107-05-1	
Benzene	**<0.20**	ug/L	0.20	1		05/21/20 18:25	71-43-2	
Bromobenzene	**<0.40**	ug/L	0.40	1		05/21/20 18:25	108-86-1	
Bromochloromethane	**<1.0**	ug/L	1.0	1		05/21/20 18:25	74-97-5	
Bromodichloromethane	**<0.40**	ug/L	0.40	1		05/21/20 18:25	75-27-4	
Bromoform	**<1.0**	ug/L	1.0	1		05/21/20 18:25	75-25-2	
Bromomethane	**<1.0**	ug/L	1.0	1		05/21/20 18:25	74-83-9	
2-Butanone (MEK)	**<5.0**	ug/L	5.0	1		05/21/20 18:25	78-93-3	
n-Butylbenzene	**<0.40**	ug/L	0.40	1		05/21/20 18:25	104-51-8	
sec-Butylbenzene	**<0.40**	ug/L	0.40	1		05/21/20 18:25	135-98-8	
tert-Butylbenzene	**<0.40**	ug/L	0.40	1		05/21/20 18:25	98-06-6	
Carbon tetrachloride	**<0.050**	ug/L	0.050	1		05/25/20 18:33	56-23-5	
Chlorobenzene	**<0.40**	ug/L	0.40	1		05/21/20 18:25	108-90-7	
Chloroethane	**<1.0**	ug/L	1.0	1		05/21/20 18:25	75-00-3	
Chloroform	**<1.0**	ug/L	1.0	1		05/21/20 18:25	67-66-3	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10517964

Sample: W-12 **Lab ID: 10517964003** Collected: 05/12/20 10:34 Received: 05/14/20 11:35 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV LLW by SIMSCAN	Analytical Method: EPA 8260B Pace Analytical Services - Minneapolis							
Chloromethane	**<1.0**	ug/L	1.0	1		05/21/20 18:25	74-87-3	
2-Chlorotoluene	**<0.40**	ug/L	0.40	1		05/21/20 18:25	95-49-8	
4-Chlorotoluene	**<0.40**	ug/L	0.40	1		05/21/20 18:25	106-43-4	
1,2-Dibromo-3-chloropropane	**<0.12**	ug/L	0.12	1		05/25/20 18:33	96-12-8	
Dibromochloromethane	**<0.40**	ug/L	0.40	1		05/25/20 18:33	124-48-1	
1,2-Dibromoethane (EDB)	**<0.050**	ug/L	0.050	1		05/25/20 18:33	106-93-4	
Dibromomethane	**<1.0**	ug/L	1.0	1		05/21/20 18:25	74-95-3	
1,2-Dichlorobenzene	**<0.40**	ug/L	0.40	1		05/21/20 18:25	95-50-1	
1,3-Dichlorobenzene	**<0.40**	ug/L	0.40	1		05/21/20 18:25	541-73-1	
1,4-Dichlorobenzene	**<0.40**	ug/L	0.40	1		05/21/20 18:25	106-46-7	
Dichlorodifluoromethane	**<1.0**	ug/L	1.0	1		05/21/20 18:25	75-71-8	
1,1-Dichloroethane	**<0.40**	ug/L	0.40	1		05/21/20 18:25	75-34-3	
1,2-Dichloroethane	**<0.20**	ug/L	0.20	1		05/25/20 18:33	107-06-2	
1,1-Dichloroethene	**<0.40**	ug/L	0.40	1		05/21/20 18:25	75-35-4	
cis-1,2-Dichloroethene	**<0.40**	ug/L	0.40	1		05/21/20 18:25	156-59-2	
trans-1,2-Dichloroethene	**<0.40**	ug/L	0.40	1		05/21/20 18:25	156-60-5	
Dichlorofluoromethane	**<1.0**	ug/L	1.0	1		05/21/20 18:25	75-43-4	
1,2-Dichloropropane	**<0.40**	ug/L	0.40	1		05/21/20 18:25	78-87-5	
1,3-Dichloropropane	**<0.40**	ug/L	0.40	1		05/21/20 18:25	142-28-9	
2,2-Dichloropropane	**<1.0**	ug/L	1.0	1		05/21/20 18:25	594-20-7	
1,1-Dichloropropene	**<0.40**	ug/L	0.40	1		05/21/20 18:25	563-58-6	
cis-1,3-Dichloropropene	**<0.40**	ug/L	0.40	1		05/25/20 18:33	10061-01-5	
trans-1,3-Dichloropropene	**<0.40**	ug/L	0.40	1		05/25/20 18:33	10061-02-6	
Diethyl ether (Ethyl ether)	**<4.0**	ug/L	4.0	1		05/21/20 18:25	60-29-7	
Ethylbenzene	**<0.40**	ug/L	0.40	1		05/21/20 18:25	100-41-4	
Hexachloro-1,3-butadiene	**<0.10**	ug/L	0.10	1		05/25/20 18:33	87-68-3	
Isopropylbenzene (Cumene)	**<0.40**	ug/L	0.40	1		05/21/20 18:25	98-82-8	
p-Isopropyltoluene	**<0.40**	ug/L	0.40	1		05/21/20 18:25	99-87-6	
Methylene Chloride	**<1.0**	ug/L	1.0	1		05/21/20 18:25	75-09-2	
4-Methyl-2-pentanone (MIBK)	**<5.0**	ug/L	5.0	1		05/21/20 18:25	108-10-1	
Methyl-tert-butyl ether	**<0.40**	ug/L	0.40	1		05/21/20 18:25	1634-04-4	
Naphthalene	**<1.0**	ug/L	1.0	1		05/21/20 18:25	91-20-3	
n-Propylbenzene	**<0.40**	ug/L	0.40	1		05/21/20 18:25	103-65-1	
Styrene	**<0.40**	ug/L	0.40	1		05/21/20 18:25	100-42-5	
1,1,1,2-Tetrachloroethane	**<0.40**	ug/L	0.40	1		05/21/20 18:25	630-20-6	
1,1,2,2-Tetrachloroethane	**<0.40**	ug/L	0.40	1		05/21/20 18:25	79-34-5	
Tetrachloroethene	**<0.40**	ug/L	0.40	1		05/21/20 18:25	127-18-4	
Tetrahydrofuran	**<10.0**	ug/L	10.0	1		05/21/20 18:25	109-99-9	
Toluene	**<0.40**	ug/L	0.40	1		05/21/20 18:25	108-88-3	
1,2,3-Trichlorobenzene	**<0.40**	ug/L	0.40	1		05/21/20 18:25	87-61-6	
1,2,4-Trichlorobenzene	**<0.40**	ug/L	0.40	1		05/21/20 18:25	120-82-1	
1,1,1-Trichloroethane	**<0.40**	ug/L	0.40	1		05/21/20 18:25	71-55-6	
1,1,2-Trichloroethane	**<0.40**	ug/L	0.40	1		05/21/20 18:25	79-00-5	
Trichloroethene	**<0.050**	ug/L	0.050	1		05/25/20 18:33	79-01-6	
Trichlorofluoromethane	**<0.40**	ug/L	0.40	1		05/21/20 18:25	75-69-4	
1,2,3-Trichloropropane	**<0.010**	ug/L	0.010	1		05/25/20 18:33	96-18-4	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10517964

Sample: W-12 **Lab ID: 10517964003** Collected: 05/12/20 10:34 Received: 05/14/20 11:35 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV LLW by SIMSCAN	Analytical Method: EPA 8260B							
	Pace Analytical Services - Minneapolis							
1,1,2-Trichlorotrifluoroethane	**<1.0**	ug/L	1.0	1		05/21/20 18:25	76-13-1	
1,2,4-Trimethylbenzene	**<1.0**	ug/L	1.0	1		05/21/20 18:25	95-63-6	
1,3,5-Trimethylbenzene	**<0.40**	ug/L	0.40	1		05/21/20 18:25	108-67-8	
Vinyl chloride	**<0.050**	ug/L	0.050	1		05/25/20 18:33	75-01-4	
Xylene (Total)	**<1.2**	ug/L	1.2	1		05/21/20 18:25	1330-20-7	
m&p-Xylene	**<0.80**	ug/L	0.80	1		05/21/20 18:25	179601-23-1	
o-Xylene	**<0.40**	ug/L	0.40	1		05/21/20 18:25	95-47-6	
Surrogates								
1,2-Dichloroethane-d4 (S)	106	%.	75-128	1		05/25/20 18:33	17060-07-0	
1,2-Dichloroethane-d4 (S)	104	%.	75-128	1		05/21/20 18:25	17060-07-0	
Toluene-d8 (S)	100	%.	75-125	1		05/25/20 18:33	2037-26-5	
Toluene-d8 (S)	102	%.	75-125	1		05/21/20 18:25	2037-26-5	
4-Bromofluorobenzene (S)	102	%.	75-125	1		05/21/20 18:25	460-00-4	
2320B Alkalinity	Analytical Method: SM 2320B							
	Pace Analytical Services - Minneapolis							
Alkalinity, Total as CaCO3	**542**	mg/L	5.0	1		05/21/20 14:15		
2540C Total Dissolved Solids	Analytical Method: SM 2540C							
	Pace Analytical Services - Minneapolis							
Total Dissolved Solids	**566**	mg/L	20.0	1		05/15/20 10:47		
2540D Total Suspended Solids	Analytical Method: SM 2540D							
	Pace Analytical Services - Minneapolis							
Total Suspended Solids	**<10.0**	mg/L	10.0	1		05/18/20 15:14		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B							
	Pace Analytical Services - Minneapolis							
pH at 25 Degrees C	**7.3**	Std. Units	0.10	1		05/29/20 17:57		H6
SM2510 Specific Conductance	Analytical Method: SM 2510							
	Pace Analytical Services - Minneapolis							
Specific Conductance	**988**	umhos/cm	1.0	1		05/29/20 18:10		
300.0 IC Anions	Analytical Method: EPA 300.0							
	Pace Analytical Services - Minneapolis							
Chloride	**<1.2**	mg/L	1.2	1		05/29/20 08:44	16887-00-6	
Sulfate	**29.5**	mg/L	1.2	1		05/29/20 08:44	14808-79-8	
350.1 Ammonia	Analytical Method: EPA 350.1							
	Pace Analytical Services - Minneapolis							
Nitrogen, Ammonia	**<0.10**	mg/L	0.10	1		05/19/20 16:22	7664-41-7	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10517964

Sample: W-12 **Lab ID: 10517964003** Collected: 05/12/20 10:34 Received: 05/14/20 11:35 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrate + Nitrite	Analytical Method: EPA 353.2 Pace Analytical Services - Minneapolis							
Nitrogen, NO2 plus NO3	**2.4**	mg/L	0.50	5		05/21/20 17:35		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10517964

Sample: W-3 **Lab ID: 10517964004** Collected: 05/12/20 13:30 Received: 05/14/20 11:35 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.8 MET ICPMS, Dissolved	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Minneapolis							
Arsenic, Dissolved	**2.3**	ug/L	0.50	1	05/21/20 15:27	05/28/20 22:37	7440-38-2	
Barium, Dissolved	**156**	ug/L	0.30	1	05/21/20 15:27	05/28/20 22:37	7440-39-3	
Boron, Dissolved	**28.8**	ug/L	10.0	1	05/21/20 15:27	05/28/20 22:37	7440-42-8	
Cadmium, Dissolved	**0.12**	ug/L	0.080	1	05/21/20 15:27	05/28/20 22:37	7440-43-9	
Calcium, Dissolved	**67100**	ug/L	800	20	05/21/20 15:27	05/28/20 22:40	7440-70-2	
Chromium, Dissolved	**<0.50**	ug/L	0.50	1	05/21/20 15:27	05/28/20 22:37	7440-47-3	
Copper, Dissolved	**<1.0**	ug/L	1.0	1	05/21/20 15:27	05/28/20 22:37	7440-50-8	
Iron, Dissolved	**683**	ug/L	50.0	1	05/21/20 15:27	05/28/20 22:37	7439-89-6	
Lead, Dissolved	**1.1**	ug/L	0.10	1	05/21/20 15:27	05/28/20 22:37	7439-92-1	
Magnesium, Dissolved	**30500**	ug/L	200	20	05/21/20 15:27	05/28/20 22:40	7439-95-4	
Manganese, Dissolved	**122**	ug/L	0.50	1	05/21/20 15:27	05/28/20 22:37	7439-96-5	
Nickel, Dissolved	**<0.50**	ug/L	0.50	1	05/21/20 15:27	05/28/20 22:37	7440-02-0	
Potassium, Dissolved	**2550**	ug/L	100	1	05/21/20 15:27	05/28/20 22:37	7440-09-7	
Selenium, Dissolved	**<0.50**	ug/L	0.50	1	05/21/20 15:27	05/28/20 22:37	7782-49-2	
Sodium, Dissolved	**5020**	ug/L	50.0	1	05/21/20 15:27	05/28/20 22:37	7440-23-5	
Zinc, Dissolved	**417**	ug/L	5.0	1	05/21/20 15:27	05/28/20 22:37	7440-66-6	
Cation/Anion Balance	Analytical Method: SM 1030E Pace Analytical Services - Minneapolis							
Cation/Anion Balance	**4.8**	%		1		06/01/20 17:32		
Total Cations	**6.2**	meq/L		1		06/01/20 17:32		N2
Total Anions	**5.6**	meq/L		1		06/01/20 17:32		N2
245.1 Mercury, Dissolved	Analytical Method: EPA 245.1 Preparation Method: EPA 245.1 Pace Analytical Services - Minneapolis							
Mercury, Dissolved	**<0.20**	ug/L	0.20	1	05/21/20 18:22	05/27/20 11:25	7439-97-6	
8260B MSV LLW by SIMSCAN	Analytical Method: EPA 8260B Pace Analytical Services - Minneapolis							
Acetone	**<20.0**	ug/L	20.0	1		05/21/20 18:51	67-64-1	
Allyl chloride	**<4.0**	ug/L	4.0	1		05/21/20 18:51	107-05-1	
Benzene	**<0.20**	ug/L	0.20	1		05/21/20 18:51	71-43-2	
Bromobenzene	**<0.40**	ug/L	0.40	1		05/21/20 18:51	108-86-1	
Bromochloromethane	**<1.0**	ug/L	1.0	1		05/21/20 18:51	74-97-5	
Bromodichloromethane	**<0.40**	ug/L	0.40	1		05/21/20 18:51	75-27-4	
Bromoform	**<1.0**	ug/L	1.0	1		05/21/20 18:51	75-25-2	
Bromomethane	**<1.0**	ug/L	1.0	1		05/21/20 18:51	74-83-9	
2-Butanone (MEK)	**<5.0**	ug/L	5.0	1		05/21/20 18:51	78-93-3	
n-Butylbenzene	**<0.40**	ug/L	0.40	1		05/21/20 18:51	104-51-8	
sec-Butylbenzene	**<0.40**	ug/L	0.40	1		05/21/20 18:51	135-98-8	
tert-Butylbenzene	**<0.40**	ug/L	0.40	1		05/21/20 18:51	98-06-6	
Carbon tetrachloride	**<0.050**	ug/L	0.050	1		05/25/20 18:59	56-23-5	
Chlorobenzene	**<0.40**	ug/L	0.40	1		05/21/20 18:51	108-90-7	
Chloroethane	**<1.0**	ug/L	1.0	1		05/21/20 18:51	75-00-3	
Chloroform	**<1.0**	ug/L	1.0	1		05/21/20 18:51	67-66-3	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10517964

Sample: W-3 **Lab ID: 10517964004** Collected: 05/12/20 13:30 Received: 05/14/20 11:35 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV LLW by SIMSCAN	Analytical Method: EPA 8260B Pace Analytical Services - Minneapolis							
Chloromethane	**<1.0**	ug/L	1.0	1		05/21/20 18:51	74-87-3	
2-Chlorotoluene	**<0.40**	ug/L	0.40	1		05/21/20 18:51	95-49-8	
4-Chlorotoluene	**<0.40**	ug/L	0.40	1		05/21/20 18:51	106-43-4	
1,2-Dibromo-3-chloropropane	**<0.12**	ug/L	0.12	1		05/25/20 18:59	96-12-8	
Dibromochloromethane	**<0.40**	ug/L	0.40	1		05/25/20 18:59	124-48-1	
1,2-Dibromoethane (EDB)	**<0.050**	ug/L	0.050	1		05/25/20 18:59	106-93-4	
Dibromomethane	**<1.0**	ug/L	1.0	1		05/21/20 18:51	74-95-3	
1,2-Dichlorobenzene	**<0.40**	ug/L	0.40	1		05/21/20 18:51	95-50-1	
1,3-Dichlorobenzene	**<0.40**	ug/L	0.40	1		05/21/20 18:51	541-73-1	
1,4-Dichlorobenzene	**<0.40**	ug/L	0.40	1		05/21/20 18:51	106-46-7	
Dichlorodifluoromethane	**<1.0**	ug/L	1.0	1		05/21/20 18:51	75-71-8	
1,1-Dichloroethane	**<0.40**	ug/L	0.40	1		05/21/20 18:51	75-34-3	
1,2-Dichloroethane	**<0.20**	ug/L	0.20	1		05/25/20 18:59	107-06-2	
1,1-Dichloroethene	**<0.40**	ug/L	0.40	1		05/21/20 18:51	75-35-4	
cis-1,2-Dichloroethene	**<0.40**	ug/L	0.40	1		05/21/20 18:51	156-59-2	
trans-1,2-Dichloroethene	**<0.40**	ug/L	0.40	1		05/21/20 18:51	156-60-5	
Dichlorofluoromethane	**<1.0**	ug/L	1.0	1		05/21/20 18:51	75-43-4	
1,2-Dichloropropane	**<0.40**	ug/L	0.40	1		05/21/20 18:51	78-87-5	
1,3-Dichloropropane	**<0.40**	ug/L	0.40	1		05/21/20 18:51	142-28-9	
2,2-Dichloropropane	**<1.0**	ug/L	1.0	1		05/21/20 18:51	594-20-7	
1,1-Dichloropropene	**<0.40**	ug/L	0.40	1		05/21/20 18:51	563-58-6	
cis-1,3-Dichloropropene	**<0.40**	ug/L	0.40	1		05/25/20 18:59	10061-01-5	
trans-1,3-Dichloropropene	**<0.40**	ug/L	0.40	1		05/25/20 18:59	10061-02-6	
Diethyl ether (Ethyl ether)	**<4.0**	ug/L	4.0	1		05/21/20 18:51	60-29-7	
Ethylbenzene	**<0.40**	ug/L	0.40	1		05/21/20 18:51	100-41-4	
Hexachloro-1,3-butadiene	**<0.10**	ug/L	0.10	1		05/25/20 18:59	87-68-3	
Isopropylbenzene (Cumene)	**<0.40**	ug/L	0.40	1		05/21/20 18:51	98-82-8	
p-Isopropyltoluene	**<0.40**	ug/L	0.40	1		05/21/20 18:51	99-87-6	
Methylene Chloride	**<1.0**	ug/L	1.0	1		05/21/20 18:51	75-09-2	
4-Methyl-2-pentanone (MIBK)	**<5.0**	ug/L	5.0	1		05/21/20 18:51	108-10-1	
Methyl-tert-butyl ether	**<0.40**	ug/L	0.40	1		05/21/20 18:51	1634-04-4	
Naphthalene	**<1.0**	ug/L	1.0	1		05/21/20 18:51	91-20-3	
n-Propylbenzene	**<0.40**	ug/L	0.40	1		05/21/20 18:51	103-65-1	
Styrene	**<0.40**	ug/L	0.40	1		05/21/20 18:51	100-42-5	
1,1,1,2-Tetrachloroethane	**<0.40**	ug/L	0.40	1		05/21/20 18:51	630-20-6	
1,1,2,2-Tetrachloroethane	**<0.40**	ug/L	0.40	1		05/21/20 18:51	79-34-5	
Tetrachloroethene	**<0.40**	ug/L	0.40	1		05/21/20 18:51	127-18-4	
Tetrahydrofuran	**<10.0**	ug/L	10.0	1		05/21/20 18:51	109-99-9	
Toluene	**<0.40**	ug/L	0.40	1		05/21/20 18:51	108-88-3	
1,2,3-Trichlorobenzene	**<0.40**	ug/L	0.40	1		05/21/20 18:51	87-61-6	
1,2,4-Trichlorobenzene	**<0.40**	ug/L	0.40	1		05/21/20 18:51	120-82-1	
1,1,1-Trichloroethane	**<0.40**	ug/L	0.40	1		05/21/20 18:51	71-55-6	
1,1,2-Trichloroethane	**<0.40**	ug/L	0.40	1		05/21/20 18:51	79-00-5	
Trichloroethene	**<0.050**	ug/L	0.050	1		05/25/20 18:59	79-01-6	
Trichlorofluoromethane	**<0.40**	ug/L	0.40	1		05/21/20 18:51	75-69-4	
1,2,3-Trichloropropane	**<0.010**	ug/L	0.010	1		05/25/20 18:59	96-18-4	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10517964

Sample: W-3 **Lab ID: 10517964004** Collected: 05/12/20 13:30 Received: 05/14/20 11:35 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV LLW by SIMSCAN	Analytical Method: EPA 8260B Pace Analytical Services - Minneapolis							
1,1,2-Trichlorotrifluoroethane	**<1.0**	ug/L	1.0	1		05/21/20 18:51	76-13-1	
1,2,4-Trimethylbenzene	**<1.0**	ug/L	1.0	1		05/21/20 18:51	95-63-6	
1,3,5-Trimethylbenzene	**<0.40**	ug/L	0.40	1		05/21/20 18:51	108-67-8	
Vinyl chloride	**<0.050**	ug/L	0.050	1		05/25/20 18:59	75-01-4	
Xylene (Total)	**<1.2**	ug/L	1.2	1		05/21/20 18:51	1330-20-7	
m&p-Xylene	**<0.80**	ug/L	0.80	1		05/21/20 18:51	179601-23-1	
o-Xylene	**<0.40**	ug/L	0.40	1		05/21/20 18:51	95-47-6	
Surrogates								
1,2-Dichloroethane-d4 (S)	106	%.	75-128	1		05/25/20 18:59	17060-07-0	
1,2-Dichloroethane-d4 (S)	110	%.	75-128	1		05/21/20 18:51	17060-07-0	
Toluene-d8 (S)	100	%.	75-125	1		05/25/20 18:59	2037-26-5	
Toluene-d8 (S)	103	%.	75-125	1		05/21/20 18:51	2037-26-5	
4-Bromofluorobenzene (S)	101	%.	75-125	1		05/21/20 18:51	460-00-4	
2320B Alkalinity	Analytical Method: SM 2320B Pace Analytical Services - Minneapolis							
Alkalinity, Total as CaCO3	**244**	mg/L	5.0	1		05/21/20 14:27		
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Minneapolis							
Total Dissolved Solids	**299**	mg/L	10.0	1		05/15/20 10:47		
2540D Total Suspended Solids	Analytical Method: SM 2540D Pace Analytical Services - Minneapolis							
Total Suspended Solids	**<10.0**	mg/L	10.0	1		05/18/20 15:14		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B Pace Analytical Services - Minneapolis							
pH at 25 Degrees C	**7.7**	Std. Units	0.10	1		05/29/20 17:59		H6
SM2510 Specific Conductance	Analytical Method: SM 2510 Pace Analytical Services - Minneapolis							
Specific Conductance	**565**	umhos/cm	1.0	1		05/29/20 18:10		
300.0 IC Anions	Analytical Method: EPA 300.0 Pace Analytical Services - Minneapolis							
Chloride	**1.6**	mg/L	1.2	1		05/29/20 08:59	16887-00-6	
Sulfate	**32.2**	mg/L	1.2	1		05/29/20 08:59	14808-79-8	
350.1 Ammonia	Analytical Method: EPA 350.1 Pace Analytical Services - Minneapolis							
Nitrogen, Ammonia	**0.18**	mg/L	0.10	1		05/19/20 16:26	7664-41-7	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10517964

Sample: W-3 **Lab ID: 10517964004** Collected: 05/12/20 13:30 Received: 05/14/20 11:35 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrate + Nitrite	Analytical Method: EPA 353.2 Pace Analytical Services - Minneapolis							
Nitrogen, NO2 plus NO3	**<0.10**	mg/L	0.10	1		05/21/20 17:36		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10517964

Sample: W-5 **Lab ID: 10517964005** Collected: 05/12/20 13:19 Received: 05/14/20 11:35 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.8 MET ICPMS, Dissolved	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Minneapolis							
Arsenic, Dissolved	**0.86**	ug/L	0.50	1	05/21/20 15:27	05/28/20 22:43	7440-38-2	
Barium, Dissolved	**63.7**	ug/L	0.30	1	05/21/20 15:27	05/28/20 22:43	7440-39-3	
Boron, Dissolved	**26.5**	ug/L	10.0	1	05/21/20 15:27	05/28/20 22:43	7440-42-8	
Cadmium, Dissolved	**<0.080**	ug/L	0.080	1	05/21/20 15:27	05/28/20 22:43	7440-43-9	
Calcium, Dissolved	**102000**	ug/L	800	20	05/21/20 15:27	05/28/20 22:46	7440-70-2	
Chromium, Dissolved	**<0.50**	ug/L	0.50	1	05/21/20 15:27	05/28/20 22:43	7440-47-3	
Copper, Dissolved	**<1.0**	ug/L	1.0	1	05/21/20 15:27	05/28/20 22:43	7440-50-8	
Iron, Dissolved	**1950**	ug/L	50.0	1	05/21/20 15:27	05/28/20 22:43	7439-89-6	
Lead, Dissolved	**<0.10**	ug/L	0.10	1	05/21/20 15:27	05/28/20 22:43	7439-92-1	
Magnesium, Dissolved	**56500**	ug/L	200	20	05/21/20 15:27	05/28/20 22:46	7439-95-4	
Manganese, Dissolved	**48.9**	ug/L	0.50	1	05/21/20 15:27	05/28/20 22:43	7439-96-5	
Nickel, Dissolved	**0.81**	ug/L	0.50	1	05/21/20 15:27	05/28/20 22:43	7440-02-0	
Potassium, Dissolved	**2680**	ug/L	100	1	05/21/20 15:27	05/28/20 22:43	7440-09-7	
Selenium, Dissolved	**0.80**	ug/L	0.50	1	05/21/20 15:27	05/28/20 22:43	7782-49-2	
Sodium, Dissolved	**14000**	ug/L	50.0	1	05/21/20 15:27	05/28/20 22:43	7440-23-5	
Zinc, Dissolved	**134**	ug/L	5.0	1	05/21/20 15:27	05/28/20 22:43	7440-66-6	
Cation/Anion Balance	Analytical Method: SM 1030E Pace Analytical Services - Minneapolis							
Cation/Anion Balance	**6.37**	%		1		06/01/20 17:32		1M
Total Cations	**10.4**	meq/L		1		06/01/20 17:32		N2
Total Anions	**9.2**	meq/L		1		06/01/20 17:32		N2
245.1 Mercury, Dissolved	Analytical Method: EPA 245.1 Preparation Method: EPA 245.1 Pace Analytical Services - Minneapolis							
Mercury, Dissolved	**<0.20**	ug/L	0.20	1	05/21/20 18:22	05/27/20 11:28	7439-97-6	
8260B MSV LLW by SIMSCAN	Analytical Method: EPA 8260B Pace Analytical Services - Minneapolis							
Acetone	**<20.0**	ug/L	20.0	1		05/21/20 19:17	67-64-1	
Allyl chloride	**<4.0**	ug/L	4.0	1		05/21/20 19:17	107-05-1	
Benzene	**<0.20**	ug/L	0.20	1		05/21/20 19:17	71-43-2	
Bromobenzene	**<0.40**	ug/L	0.40	1		05/21/20 19:17	108-86-1	
Bromochloromethane	**<1.0**	ug/L	1.0	1		05/21/20 19:17	74-97-5	
Bromodichloromethane	**<0.40**	ug/L	0.40	1		05/21/20 19:17	75-27-4	
Bromoform	**<1.0**	ug/L	1.0	1		05/21/20 19:17	75-25-2	
Bromomethane	**<1.0**	ug/L	1.0	1		05/21/20 19:17	74-83-9	
2-Butanone (MEK)	**<5.0**	ug/L	5.0	1		05/21/20 19:17	78-93-3	
n-Butylbenzene	**<0.40**	ug/L	0.40	1		05/21/20 19:17	104-51-8	
sec-Butylbenzene	**<0.40**	ug/L	0.40	1		05/21/20 19:17	135-98-8	
tert-Butylbenzene	**<0.40**	ug/L	0.40	1		05/21/20 19:17	98-06-6	
Carbon tetrachloride	**<0.050**	ug/L	0.050	1		05/25/20 19:25	56-23-5	
Chlorobenzene	**<0.40**	ug/L	0.40	1		05/21/20 19:17	108-90-7	
Chloroethane	**<1.0**	ug/L	1.0	1		05/21/20 19:17	75-00-3	
Chloroform	**<1.0**	ug/L	1.0	1		05/21/20 19:17	67-66-3	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10517964

Sample: W-5 **Lab ID: 10517964005** Collected: 05/12/20 13:19 Received: 05/14/20 11:35 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV LLW by SIMSCAN	Analytical Method: EPA 8260B Pace Analytical Services - Minneapolis							
Chloromethane	**<1.0**	ug/L	1.0	1		05/21/20 19:17	74-87-3	
2-Chlorotoluene	**<0.40**	ug/L	0.40	1		05/21/20 19:17	95-49-8	
4-Chlorotoluene	**<0.40**	ug/L	0.40	1		05/21/20 19:17	106-43-4	
1,2-Dibromo-3-chloropropane	**<0.12**	ug/L	0.12	1		05/25/20 19:25	96-12-8	
Dibromochloromethane	**<0.40**	ug/L	0.40	1		05/25/20 19:25	124-48-1	
1,2-Dibromoethane (EDB)	**<0.050**	ug/L	0.050	1		05/25/20 19:25	106-93-4	
Dibromomethane	**<1.0**	ug/L	1.0	1		05/21/20 19:17	74-95-3	
1,2-Dichlorobenzene	**<0.40**	ug/L	0.40	1		05/21/20 19:17	95-50-1	
1,3-Dichlorobenzene	**<0.40**	ug/L	0.40	1		05/21/20 19:17	541-73-1	
1,4-Dichlorobenzene	**<0.40**	ug/L	0.40	1		05/21/20 19:17	106-46-7	
Dichlorodifluoromethane	**<1.0**	ug/L	1.0	1		05/21/20 19:17	75-71-8	
1,1-Dichloroethane	**<0.40**	ug/L	0.40	1		05/21/20 19:17	75-34-3	
1,2-Dichloroethane	**<0.20**	ug/L	0.20	1		05/25/20 19:25	107-06-2	
1,1-Dichloroethene	**<0.40**	ug/L	0.40	1		05/21/20 19:17	75-35-4	
cis-1,2-Dichloroethene	**<0.40**	ug/L	0.40	1		05/21/20 19:17	156-59-2	
trans-1,2-Dichloroethene	**<0.40**	ug/L	0.40	1		05/21/20 19:17	156-60-5	
Dichlorofluoromethane	**<1.0**	ug/L	1.0	1		05/21/20 19:17	75-43-4	
1,2-Dichloropropane	**<0.40**	ug/L	0.40	1		05/21/20 19:17	78-87-5	
1,3-Dichloropropane	**<0.40**	ug/L	0.40	1		05/21/20 19:17	142-28-9	
2,2-Dichloropropane	**<1.0**	ug/L	1.0	1		05/21/20 19:17	594-20-7	
1,1-Dichloropropene	**<0.40**	ug/L	0.40	1		05/21/20 19:17	563-58-6	
cis-1,3-Dichloropropene	**<0.40**	ug/L	0.40	1		05/25/20 19:25	10061-01-5	
trans-1,3-Dichloropropene	**<0.40**	ug/L	0.40	1		05/25/20 19:25	10061-02-6	
Diethyl ether (Ethyl ether)	**<4.0**	ug/L	4.0	1		05/21/20 19:17	60-29-7	
Ethylbenzene	**<0.40**	ug/L	0.40	1		05/21/20 19:17	100-41-4	
Hexachloro-1,3-butadiene	**<0.10**	ug/L	0.10	1		05/25/20 19:25	87-68-3	
Isopropylbenzene (Cumene)	**<0.40**	ug/L	0.40	1		05/21/20 19:17	98-82-8	
p-Isopropyltoluene	**<0.40**	ug/L	0.40	1		05/21/20 19:17	99-87-6	
Methylene Chloride	**<1.0**	ug/L	1.0	1		05/21/20 19:17	75-09-2	
4-Methyl-2-pentanone (MIBK)	**<5.0**	ug/L	5.0	1		05/21/20 19:17	108-10-1	
Methyl-tert-butyl ether	**<0.40**	ug/L	0.40	1		05/21/20 19:17	1634-04-4	
Naphthalene	**<1.0**	ug/L	1.0	1		05/21/20 19:17	91-20-3	
n-Propylbenzene	**<0.40**	ug/L	0.40	1		05/21/20 19:17	103-65-1	
Styrene	**<0.40**	ug/L	0.40	1		05/21/20 19:17	100-42-5	
1,1,1,2-Tetrachloroethane	**<0.40**	ug/L	0.40	1		05/21/20 19:17	630-20-6	
1,1,2,2-Tetrachloroethane	**<0.40**	ug/L	0.40	1		05/21/20 19:17	79-34-5	
Tetrachloroethene	**<0.40**	ug/L	0.40	1		05/21/20 19:17	127-18-4	
Tetrahydrofuran	**<10.0**	ug/L	10.0	1		05/21/20 19:17	109-99-9	
Toluene	**<0.40**	ug/L	0.40	1		05/21/20 19:17	108-88-3	
1,2,3-Trichlorobenzene	**<0.40**	ug/L	0.40	1		05/21/20 19:17	87-61-6	
1,2,4-Trichlorobenzene	**<0.40**	ug/L	0.40	1		05/21/20 19:17	120-82-1	
1,1,1-Trichloroethane	**<0.40**	ug/L	0.40	1		05/21/20 19:17	71-55-6	
1,1,2-Trichloroethane	**<0.40**	ug/L	0.40	1		05/21/20 19:17	79-00-5	
Trichloroethene	**<0.050**	ug/L	0.050	1		05/25/20 19:25	79-01-6	
Trichlorofluoromethane	**<0.40**	ug/L	0.40	1		05/21/20 19:17	75-69-4	
1,2,3-Trichloropropane	**<0.010**	ug/L	0.010	1		05/25/20 19:25	96-18-4	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10517964

Sample: W-5 **Lab ID: 10517964005** Collected: 05/12/20 13:19 Received: 05/14/20 11:35 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV LLW by SIMSCAN	Analytical Method: EPA 8260B							
	Pace Analytical Services - Minneapolis							
1,1,2-Trichlorotrifluoroethane	**<1.0**	ug/L	1.0	1		05/21/20 19:17	76-13-1	
1,2,4-Trimethylbenzene	**<1.0**	ug/L	1.0	1		05/21/20 19:17	95-63-6	
1,3,5-Trimethylbenzene	**<0.40**	ug/L	0.40	1		05/21/20 19:17	108-67-8	
Vinyl chloride	**<0.050**	ug/L	0.050	1		05/25/20 19:25	75-01-4	
Xylene (Total)	**<1.2**	ug/L	1.2	1		05/21/20 19:17	1330-20-7	
m&p-Xylene	**<0.80**	ug/L	0.80	1		05/21/20 19:17	179601-23-1	
o-Xylene	**<0.40**	ug/L	0.40	1		05/21/20 19:17	95-47-6	
Surrogates								
1,2-Dichloroethane-d4 (S)	108	%.	75-128	1		05/21/20 19:17	17060-07-0	
1,2-Dichloroethane-d4 (S)	107	%.	75-128	1		05/25/20 19:25	17060-07-0	
Toluene-d8 (S)	102	%.	75-125	1		05/21/20 19:17	2037-26-5	
Toluene-d8 (S)	100	%.	75-125	1		05/25/20 19:25	2037-26-5	
4-Bromofluorobenzene (S)	100	%.	75-125	1		05/21/20 19:17	460-00-4	
2320B Alkalinity	Analytical Method: SM 2320B							
	Pace Analytical Services - Minneapolis							
Alkalinity, Total as CaCO3	**441**	mg/L	5.0	1		05/21/20 14:34		
2540C Total Dissolved Solids	Analytical Method: SM 2540C							
	Pace Analytical Services - Minneapolis							
Total Dissolved Solids	**443**	mg/L	10.0	1		05/15/20 10:47		
2540D Total Suspended Solids	Analytical Method: SM 2540D							
	Pace Analytical Services - Minneapolis							
Total Suspended Solids	**11.0**	mg/L	10.0	1		05/18/20 15:14		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B							
	Pace Analytical Services - Minneapolis							
pH at 25 Degrees C	**7.8**	Std. Units	0.10	1		05/29/20 18:01		H6
SM2510 Specific Conductance	Analytical Method: SM 2510							
	Pace Analytical Services - Minneapolis							
Specific Conductance	**802**	umhos/cm	1.0	1		05/29/20 18:11		
300.0 IC Anions	Analytical Method: EPA 300.0							
	Pace Analytical Services - Minneapolis							
Chloride	**<1.2**	mg/L	1.2	1		05/29/20 11:35	16887-00-6	
Sulfate	**17.0**	mg/L	1.2	1		05/29/20 11:35	14808-79-8	
350.1 Ammonia	Analytical Method: EPA 350.1							
	Pace Analytical Services - Minneapolis							
Nitrogen, Ammonia	**<0.10**	mg/L	0.10	1		05/19/20 16:30	7664-41-7	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10517964

Sample: W-5 **Lab ID: 10517964005** Collected: 05/12/20 13:19 Received: 05/14/20 11:35 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrate + Nitrite	Analytical Method: EPA 353.2 Pace Analytical Services - Minneapolis							
Nitrogen, NO2 plus NO3	**<0.10**	mg/L	0.10	1		05/22/20 11:45		M1,R1

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10517964

Sample: W-106A **Lab ID: 10517964006** Collected: 05/12/20 14:35 Received: 05/14/20 11:35 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.8 MET ICPMS, Dissolved	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Minneapolis							
Arsenic, Dissolved	**1.1**	ug/L	0.50	1	05/21/20 15:27	05/28/20 22:50	7440-38-2	
Barium, Dissolved	**118**	ug/L	0.30	1	05/21/20 15:27	05/28/20 22:50	7440-39-3	
Boron, Dissolved	**29.6**	ug/L	10.0	1	05/21/20 15:27	05/28/20 22:50	7440-42-8	
Cadmium, Dissolved	**<0.080**	ug/L	0.080	1	05/21/20 15:27	05/28/20 22:50	7440-43-9	
Calcium, Dissolved	**88000**	ug/L	800	20	05/21/20 15:27	05/28/20 22:53	7440-70-2	
Chromium, Dissolved	**<0.50**	ug/L	0.50	1	05/21/20 15:27	05/28/20 22:50	7440-47-3	
Copper, Dissolved	**<1.0**	ug/L	1.0	1	05/21/20 15:27	05/28/20 22:50	7440-50-8	
Iron, Dissolved	**<50.0**	ug/L	50.0	1	05/21/20 15:27	05/28/20 22:50	7439-89-6	
Lead, Dissolved	**<0.10**	ug/L	0.10	1	05/21/20 15:27	05/28/20 22:50	7439-92-1	
Magnesium, Dissolved	**35200**	ug/L	200	20	05/21/20 15:27	05/28/20 22:53	7439-95-4	
Manganese, Dissolved	**41.5**	ug/L	0.50	1	05/21/20 15:27	05/28/20 22:50	7439-96-5	
Nickel, Dissolved	**1.6**	ug/L	0.50	1	05/21/20 15:27	05/28/20 22:50	7440-02-0	
Potassium, Dissolved	**3520**	ug/L	100	1	05/21/20 15:27	05/28/20 22:50	7440-09-7	
Selenium, Dissolved	**<0.50**	ug/L	0.50	1	05/21/20 15:27	05/28/20 22:50	7782-49-2	
Sodium, Dissolved	**38000**	ug/L	1000	20	05/21/20 15:27	05/28/20 22:53	7440-23-5	
Zinc, Dissolved	**<5.0**	ug/L	5.0	1	05/21/20 15:27	05/28/20 22:50	7440-66-6	
Cation/Anion Balance	Analytical Method: SM 1030E Pace Analytical Services - Minneapolis							
Cation/Anion Balance	**4.53**	%		1		06/01/20 17:32		
Total Cations	**9.0**	meq/L		1		06/01/20 17:32		N2
Total Anions	**8.3**	meq/L		1		06/01/20 17:32		N2
245.1 Mercury, Dissolved	Analytical Method: EPA 245.1 Preparation Method: EPA 245.1 Pace Analytical Services - Minneapolis							
Mercury, Dissolved	**<0.20**	ug/L	0.20	1	05/21/20 18:22	05/27/20 11:35	7439-97-6	
8260B MSV LLW by SIMSCAN	Analytical Method: EPA 8260B Pace Analytical Services - Minneapolis							
Acetone	**<20.0**	ug/L	20.0	1		05/21/20 19:43	67-64-1	
Allyl chloride	**<4.0**	ug/L	4.0	1		05/21/20 19:43	107-05-1	
Benzene	**<0.20**	ug/L	0.20	1		05/21/20 19:43	71-43-2	
Bromobenzene	**<0.40**	ug/L	0.40	1		05/21/20 19:43	108-86-1	
Bromochloromethane	**<1.0**	ug/L	1.0	1		05/21/20 19:43	74-97-5	
Bromodichloromethane	**<0.40**	ug/L	0.40	1		05/21/20 19:43	75-27-4	
Bromoform	**<1.0**	ug/L	1.0	1		05/21/20 19:43	75-25-2	
Bromomethane	**<1.0**	ug/L	1.0	1		05/21/20 19:43	74-83-9	
2-Butanone (MEK)	**<5.0**	ug/L	5.0	1		05/21/20 19:43	78-93-3	
n-Butylbenzene	**<0.40**	ug/L	0.40	1		05/21/20 19:43	104-51-8	
sec-Butylbenzene	**<0.40**	ug/L	0.40	1		05/21/20 19:43	135-98-8	
tert-Butylbenzene	**<0.40**	ug/L	0.40	1		05/21/20 19:43	98-06-6	
Carbon tetrachloride	**<0.050**	ug/L	0.050	1		05/25/20 19:51	56-23-5	
Chlorobenzene	**<0.40**	ug/L	0.40	1		05/21/20 19:43	108-90-7	
Chloroethane	**<1.0**	ug/L	1.0	1		05/21/20 19:43	75-00-3	
Chloroform	**<1.0**	ug/L	1.0	1		05/21/20 19:43	67-66-3	

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10517964

Sample: W-106A **Lab ID: 10517964006** Collected: 05/12/20 14:35 Received: 05/14/20 11:35 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV LLW by SIMSCAN	Analytical Method: EPA 8260B Pace Analytical Services - Minneapolis							
Chloromethane	**<1.0**	ug/L	1.0	1		05/21/20 19:43	74-87-3	
2-Chlorotoluene	**<0.40**	ug/L	0.40	1		05/21/20 19:43	95-49-8	
4-Chlorotoluene	**<0.40**	ug/L	0.40	1		05/21/20 19:43	106-43-4	
1,2-Dibromo-3-chloropropane	**<0.12**	ug/L	0.12	1		05/25/20 19:51	96-12-8	
Dibromochloromethane	**<0.40**	ug/L	0.40	1		05/25/20 19:51	124-48-1	
1,2-Dibromoethane (EDB)	**<0.050**	ug/L	0.050	1		05/25/20 19:51	106-93-4	
Dibromomethane	**<1.0**	ug/L	1.0	1		05/21/20 19:43	74-95-3	
1,2-Dichlorobenzene	**<0.40**	ug/L	0.40	1		05/21/20 19:43	95-50-1	
1,3-Dichlorobenzene	**<0.40**	ug/L	0.40	1		05/21/20 19:43	541-73-1	
1,4-Dichlorobenzene	**<0.40**	ug/L	0.40	1		05/21/20 19:43	106-46-7	
Dichlorodifluoromethane	**<1.0**	ug/L	1.0	1		05/21/20 19:43	75-71-8	
1,1-Dichloroethane	**<0.40**	ug/L	0.40	1		05/21/20 19:43	75-34-3	
1,2-Dichloroethane	**<0.20**	ug/L	0.20	1		05/25/20 19:51	107-06-2	
1,1-Dichloroethene	**<0.40**	ug/L	0.40	1		05/21/20 19:43	75-35-4	
cis-1,2-Dichloroethene	**<0.40**	ug/L	0.40	1		05/21/20 19:43	156-59-2	
trans-1,2-Dichloroethene	**<0.40**	ug/L	0.40	1		05/21/20 19:43	156-60-5	
Dichlorofluoromethane	**<1.0**	ug/L	1.0	1		05/21/20 19:43	75-43-4	
1,2-Dichloropropane	**<0.40**	ug/L	0.40	1		05/21/20 19:43	78-87-5	
1,3-Dichloropropane	**<0.40**	ug/L	0.40	1		05/21/20 19:43	142-28-9	
2,2-Dichloropropane	**<1.0**	ug/L	1.0	1		05/21/20 19:43	594-20-7	
1,1-Dichloropropene	**<0.40**	ug/L	0.40	1		05/21/20 19:43	563-58-6	
cis-1,3-Dichloropropene	**<0.40**	ug/L	0.40	1		05/25/20 19:51	10061-01-5	
trans-1,3-Dichloropropene	**<0.40**	ug/L	0.40	1		05/25/20 19:51	10061-02-6	
Diethyl ether (Ethyl ether)	**<4.0**	ug/L	4.0	1		05/21/20 19:43	60-29-7	
Ethylbenzene	**<0.40**	ug/L	0.40	1		05/21/20 19:43	100-41-4	
Hexachloro-1,3-butadiene	**<0.10**	ug/L	0.10	1		05/25/20 19:51	87-68-3	
Isopropylbenzene (Cumene)	**<0.40**	ug/L	0.40	1		05/21/20 19:43	98-82-8	
p-Isopropyltoluene	**<0.40**	ug/L	0.40	1		05/21/20 19:43	99-87-6	
Methylene Chloride	**<1.0**	ug/L	1.0	1		05/21/20 19:43	75-09-2	
4-Methyl-2-pentanone (MIBK)	**<5.0**	ug/L	5.0	1		05/21/20 19:43	108-10-1	
Methyl-tert-butyl ether	**<0.40**	ug/L	0.40	1		05/21/20 19:43	1634-04-4	
Naphthalene	**<1.0**	ug/L	1.0	1		05/21/20 19:43	91-20-3	
n-Propylbenzene	**<0.40**	ug/L	0.40	1		05/21/20 19:43	103-65-1	
Styrene	**<0.40**	ug/L	0.40	1		05/21/20 19:43	100-42-5	
1,1,1,2-Tetrachloroethane	**<0.40**	ug/L	0.40	1		05/21/20 19:43	630-20-6	
1,1,2,2-Tetrachloroethane	**<0.40**	ug/L	0.40	1		05/21/20 19:43	79-34-5	
Tetrachloroethene	**<0.40**	ug/L	0.40	1		05/21/20 19:43	127-18-4	
Tetrahydrofuran	**<10.0**	ug/L	10.0	1		05/21/20 19:43	109-99-9	
Toluene	**<0.40**	ug/L	0.40	1		05/21/20 19:43	108-88-3	
1,2,3-Trichlorobenzene	**<0.40**	ug/L	0.40	1		05/21/20 19:43	87-61-6	
1,2,4-Trichlorobenzene	**<0.40**	ug/L	0.40	1		05/21/20 19:43	120-82-1	
1,1,1-Trichloroethane	**<0.40**	ug/L	0.40	1		05/21/20 19:43	71-55-6	
1,1,2-Trichloroethane	**<0.40**	ug/L	0.40	1		05/21/20 19:43	79-00-5	
Trichloroethene	**<0.050**	ug/L	0.050	1		05/25/20 19:51	79-01-6	
Trichlorofluoromethane	**<0.40**	ug/L	0.40	1		05/21/20 19:43	75-69-4	
1,2,3-Trichloropropane	**<0.010**	ug/L	0.010	1		05/25/20 19:51	96-18-4	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10517964

Sample: W-106A **Lab ID: 10517964006** Collected: 05/12/20 14:35 Received: 05/14/20 11:35 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV LLW by SIMSCAN	Analytical Method: EPA 8260B							
	Pace Analytical Services - Minneapolis							
1,1,2-Trichlorotrifluoroethane	**<1.0**	ug/L	1.0	1		05/21/20 19:43	76-13-1	
1,2,4-Trimethylbenzene	**<1.0**	ug/L	1.0	1		05/21/20 19:43	95-63-6	
1,3,5-Trimethylbenzene	**<0.40**	ug/L	0.40	1		05/21/20 19:43	108-67-8	
Vinyl chloride	**<0.050**	ug/L	0.050	1		05/25/20 19:51	75-01-4	
Xylene (Total)	**<1.2**	ug/L	1.2	1		05/21/20 19:43	1330-20-7	
m&p-Xylene	**<0.80**	ug/L	0.80	1		05/21/20 19:43	179601-23-1	
o-Xylene	**<0.40**	ug/L	0.40	1		05/21/20 19:43	95-47-6	
Surrogates								
1,2-Dichloroethane-d4 (S)	107	%.	75-128	1		05/21/20 19:43	17060-07-0	
1,2-Dichloroethane-d4 (S)	107	%.	75-128	1		05/25/20 19:51	17060-07-0	
Toluene-d8 (S)	102	%.	75-125	1		05/21/20 19:43	2037-26-5	
Toluene-d8 (S)	100	%.	75-125	1		05/25/20 19:51	2037-26-5	
4-Bromofluorobenzene (S)	103	%.	75-125	1		05/21/20 19:43	460-00-4	
2320B Alkalinity	Analytical Method: SM 2320B							
	Pace Analytical Services - Minneapolis							
Alkalinity, Total as CaCO3	**316**	mg/L	5.0	1		05/21/20 14:43		
2540C Total Dissolved Solids	Analytical Method: SM 2540C							
	Pace Analytical Services - Minneapolis							
Total Dissolved Solids	**485**	mg/L	10.0	1		05/15/20 10:47		
2540D Total Suspended Solids	Analytical Method: SM 2540D							
	Pace Analytical Services - Minneapolis							
Total Suspended Solids	**144**	mg/L	10.0	1		05/18/20 15:14		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B							
	Pace Analytical Services - Minneapolis							
pH at 25 Degrees C	**8.1**	Std. Units	0.10	1		05/29/20 18:03		H6
SM2510 Specific Conductance	Analytical Method: SM 2510							
	Pace Analytical Services - Minneapolis							
Specific Conductance	**763**	umhos/cm	1.0	1		05/29/20 18:11		
300.0 IC Anions	Analytical Method: EPA 300.0							
	Pace Analytical Services - Minneapolis							
Chloride	**16.0**	mg/L	1.2	1		05/29/20 12:05	16887-00-6	
Sulfate	**71.5**	mg/L	1.2	1		05/29/20 12:05	14808-79-8	
350.1 Ammonia	Analytical Method: EPA 350.1							
	Pace Analytical Services - Minneapolis							
Nitrogen, Ammonia	**<0.10**	mg/L	0.10	1		05/19/20 16:32	7664-41-7	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10517964

Sample: W-106A **Lab ID: 10517964006** Collected: 05/12/20 14:35 Received: 05/14/20 11:35 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrate + Nitrite	Analytical Method: EPA 353.2 Pace Analytical Services - Minneapolis							
Nitrogen, NO2 plus NO3	**<0.10**	mg/L	0.10	1		05/22/20 11:48		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10517964

Sample: W-106B **Lab ID: 10517964007** Collected: 05/12/20 14:31 Received: 05/14/20 11:35 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.8 MET ICPMS, Dissolved	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Minneapolis							
Arsenic, Dissolved	**9.7**	ug/L	0.50	1	05/21/20 15:27	05/28/20 22:56	7440-38-2	
Barium, Dissolved	**199**	ug/L	0.30	1	05/21/20 15:27	05/28/20 22:56	7440-39-3	
Boron, Dissolved	**36.8**	ug/L	10.0	1	05/21/20 15:27	05/28/20 22:56	7440-42-8	
Cadmium, Dissolved	**<0.080**	ug/L	0.080	1	05/21/20 15:27	05/28/20 22:56	7440-43-9	
Calcium, Dissolved	**88400**	ug/L	800	20	05/21/20 15:27	05/28/20 22:59	7440-70-2	
Chromium, Dissolved	**0.77**	ug/L	0.50	1	05/21/20 15:27	05/28/20 22:56	7440-47-3	
Copper, Dissolved	**<1.0**	ug/L	1.0	1	05/21/20 15:27	05/28/20 22:56	7440-50-8	
Iron, Dissolved	**911**	ug/L	50.0	1	05/21/20 15:27	05/28/20 22:56	7439-89-6	
Lead, Dissolved	**0.12**	ug/L	0.10	1	05/21/20 15:27	05/28/20 22:56	7439-92-1	
Magnesium, Dissolved	**37100**	ug/L	200	20	05/21/20 15:27	05/28/20 22:59	7439-95-4	
Manganese, Dissolved	**129**	ug/L	0.50	1	05/21/20 15:27	05/28/20 22:56	7439-96-5	
Nickel, Dissolved	**2.5**	ug/L	0.50	1	05/21/20 15:27	05/28/20 22:56	7440-02-0	
Potassium, Dissolved	**3510**	ug/L	100	1	05/21/20 15:27	05/28/20 22:56	7440-09-7	
Selenium, Dissolved	**<0.50**	ug/L	0.50	1	05/21/20 15:27	05/28/20 22:56	7782-49-2	
Sodium, Dissolved	**6720**	ug/L	50.0	1	05/21/20 15:27	05/28/20 22:56	7440-23-5	
Zinc, Dissolved	**5.7**	ug/L	5.0	1	05/21/20 15:27	05/28/20 22:56	7440-66-6	
Cation/Anion Balance	Analytical Method: SM 1030E Pace Analytical Services - Minneapolis							
Cation/Anion Balance	**7.23**	%		1		06/01/20 17:32		1M
Total Cations	**7.9**	meq/L		1		06/01/20 17:32		N2
Total Anions	**6.8**	meq/L		1		06/01/20 17:32		N2
245.1 Mercury, Dissolved	Analytical Method: EPA 245.1 Preparation Method: EPA 245.1 Pace Analytical Services - Minneapolis							
Mercury, Dissolved	**<0.20**	ug/L	0.20	1	05/21/20 18:22	05/27/20 11:37	7439-97-6	
8260B MSV LLW by SIMSCAN	Analytical Method: EPA 8260B Pace Analytical Services - Minneapolis							
Acetone	**<20.0**	ug/L	20.0	1		05/21/20 20:09	67-64-1	
Allyl chloride	**<4.0**	ug/L	4.0	1		05/21/20 20:09	107-05-1	
Benzene	**<0.20**	ug/L	0.20	1		05/21/20 20:09	71-43-2	
Bromobenzene	**<0.40**	ug/L	0.40	1		05/21/20 20:09	108-86-1	
Bromochloromethane	**<1.0**	ug/L	1.0	1		05/21/20 20:09	74-97-5	
Bromodichloromethane	**<0.40**	ug/L	0.40	1		05/21/20 20:09	75-27-4	
Bromoform	**<1.0**	ug/L	1.0	1		05/21/20 20:09	75-25-2	
Bromomethane	**<1.0**	ug/L	1.0	1		05/21/20 20:09	74-83-9	
2-Butanone (MEK)	**<5.0**	ug/L	5.0	1		05/21/20 20:09	78-93-3	
n-Butylbenzene	**<0.40**	ug/L	0.40	1		05/21/20 20:09	104-51-8	
sec-Butylbenzene	**<0.40**	ug/L	0.40	1		05/21/20 20:09	135-98-8	
tert-Butylbenzene	**<0.40**	ug/L	0.40	1		05/21/20 20:09	98-06-6	
Carbon tetrachloride	**<0.050**	ug/L	0.050	1		05/25/20 20:17	56-23-5	
Chlorobenzene	**<0.40**	ug/L	0.40	1		05/21/20 20:09	108-90-7	
Chloroethane	**<1.0**	ug/L	1.0	1		05/21/20 20:09	75-00-3	
Chloroform	**<1.0**	ug/L	1.0	1		05/21/20 20:09	67-66-3	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10517964

Sample: W-106B **Lab ID: 10517964007** Collected: 05/12/20 14:31 Received: 05/14/20 11:35 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV LLW by SIMSCAN	Analytical Method: EPA 8260B Pace Analytical Services - Minneapolis							
Chloromethane	**<1.0**	ug/L	1.0	1		05/21/20 20:09	74-87-3	
2-Chlorotoluene	**<0.40**	ug/L	0.40	1		05/21/20 20:09	95-49-8	
4-Chlorotoluene	**<0.40**	ug/L	0.40	1		05/21/20 20:09	106-43-4	
1,2-Dibromo-3-chloropropane	**<0.12**	ug/L	0.12	1		05/25/20 20:17	96-12-8	
Dibromochloromethane	**<0.40**	ug/L	0.40	1		05/25/20 20:17	124-48-1	
1,2-Dibromoethane (EDB)	**<0.050**	ug/L	0.050	1		05/25/20 20:17	106-93-4	
Dibromomethane	**<1.0**	ug/L	1.0	1		05/21/20 20:09	74-95-3	
1,2-Dichlorobenzene	**<0.40**	ug/L	0.40	1		05/21/20 20:09	95-50-1	
1,3-Dichlorobenzene	**<0.40**	ug/L	0.40	1		05/21/20 20:09	541-73-1	
1,4-Dichlorobenzene	**<0.40**	ug/L	0.40	1		05/21/20 20:09	106-46-7	
Dichlorodifluoromethane	**<1.0**	ug/L	1.0	1		05/21/20 20:09	75-71-8	
1,1-Dichloroethane	**<0.40**	ug/L	0.40	1		05/21/20 20:09	75-34-3	
1,2-Dichloroethane	**<0.20**	ug/L	0.20	1		05/25/20 20:17	107-06-2	
1,1-Dichloroethene	**<0.40**	ug/L	0.40	1		05/21/20 20:09	75-35-4	
cis-1,2-Dichloroethene	**<0.40**	ug/L	0.40	1		05/21/20 20:09	156-59-2	
trans-1,2-Dichloroethene	**<0.40**	ug/L	0.40	1		05/21/20 20:09	156-60-5	
Dichlorofluoromethane	**<1.0**	ug/L	1.0	1		05/21/20 20:09	75-43-4	
1,2-Dichloropropane	**<0.40**	ug/L	0.40	1		05/21/20 20:09	78-87-5	
1,3-Dichloropropane	**<0.40**	ug/L	0.40	1		05/21/20 20:09	142-28-9	
2,2-Dichloropropane	**<1.0**	ug/L	1.0	1		05/21/20 20:09	594-20-7	
1,1-Dichloropropene	**<0.40**	ug/L	0.40	1		05/21/20 20:09	563-58-6	
cis-1,3-Dichloropropene	**<0.40**	ug/L	0.40	1		05/25/20 20:17	10061-01-5	
trans-1,3-Dichloropropene	**<0.40**	ug/L	0.40	1		05/25/20 20:17	10061-02-6	
Diethyl ether (Ethyl ether)	**<4.0**	ug/L	4.0	1		05/21/20 20:09	60-29-7	
Ethylbenzene	**<0.40**	ug/L	0.40	1		05/21/20 20:09	100-41-4	
Hexachloro-1,3-butadiene	**<0.10**	ug/L	0.10	1		05/25/20 20:17	87-68-3	
Isopropylbenzene (Cumene)	**<0.40**	ug/L	0.40	1		05/21/20 20:09	98-82-8	
p-Isopropyltoluene	**<0.40**	ug/L	0.40	1		05/21/20 20:09	99-87-6	
Methylene Chloride	**<1.0**	ug/L	1.0	1		05/21/20 20:09	75-09-2	
4-Methyl-2-pentanone (MIBK)	**<5.0**	ug/L	5.0	1		05/21/20 20:09	108-10-1	
Methyl-tert-butyl ether	**<0.40**	ug/L	0.40	1		05/21/20 20:09	1634-04-4	
Naphthalene	**<1.0**	ug/L	1.0	1		05/21/20 20:09	91-20-3	
n-Propylbenzene	**<0.40**	ug/L	0.40	1		05/21/20 20:09	103-65-1	
Styrene	**<0.40**	ug/L	0.40	1		05/21/20 20:09	100-42-5	
1,1,1,2-Tetrachloroethane	**<0.40**	ug/L	0.40	1		05/21/20 20:09	630-20-6	
1,1,2,2-Tetrachloroethane	**<0.40**	ug/L	0.40	1		05/21/20 20:09	79-34-5	
Tetrachloroethene	**<0.40**	ug/L	0.40	1		05/21/20 20:09	127-18-4	
Tetrahydrofuran	**<10.0**	ug/L	10.0	1		05/21/20 20:09	109-99-9	
Toluene	**<0.40**	ug/L	0.40	1		05/21/20 20:09	108-88-3	
1,2,3-Trichlorobenzene	**<0.40**	ug/L	0.40	1		05/21/20 20:09	87-61-6	
1,2,4-Trichlorobenzene	**<0.40**	ug/L	0.40	1		05/21/20 20:09	120-82-1	
1,1,1-Trichloroethane	**<0.40**	ug/L	0.40	1		05/21/20 20:09	71-55-6	
1,1,2-Trichloroethane	**<0.40**	ug/L	0.40	1		05/21/20 20:09	79-00-5	
Trichloroethene	**<0.050**	ug/L	0.050	1		05/25/20 20:17	79-01-6	
Trichlorofluoromethane	**<0.40**	ug/L	0.40	1		05/21/20 20:09	75-69-4	
1,2,3-Trichloropropane	**<0.010**	ug/L	0.010	1		05/25/20 20:17	96-18-4	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10517964

Sample: W-106B **Lab ID: 10517964007** Collected: 05/12/20 14:31 Received: 05/14/20 11:35 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV LLW by SIMSCAN	Analytical Method: EPA 8260B							
	Pace Analytical Services - Minneapolis							
1,1,2-Trichlorotrifluoroethane	**<1.0**	ug/L	1.0	1		05/21/20 20:09	76-13-1	
1,2,4-Trimethylbenzene	**<1.0**	ug/L	1.0	1		05/21/20 20:09	95-63-6	
1,3,5-Trimethylbenzene	**<0.40**	ug/L	0.40	1		05/21/20 20:09	108-67-8	
Vinyl chloride	**<0.050**	ug/L	0.050	1		05/25/20 20:17	75-01-4	
Xylene (Total)	**<1.2**	ug/L	1.2	1		05/21/20 20:09	1330-20-7	
m&p-Xylene	**<0.80**	ug/L	0.80	1		05/21/20 20:09	179601-23-1	
o-Xylene	**<0.40**	ug/L	0.40	1		05/21/20 20:09	95-47-6	
Surrogates								
1,2-Dichloroethane-d4 (S)	106	%.	75-128	1		05/25/20 20:17	17060-07-0	
1,2-Dichloroethane-d4 (S)	107	%.	75-128	1		05/21/20 20:09	17060-07-0	
Toluene-d8 (S)	104	%.	75-125	1		05/21/20 20:09	2037-26-5	
Toluene-d8 (S)	100	%.	75-125	1		05/25/20 20:17	2037-26-5	
4-Bromofluorobenzene (S)	101	%.	75-125	1		05/21/20 20:09	460-00-4	
2320B Alkalinity	Analytical Method: SM 2320B							
	Pace Analytical Services - Minneapolis							
Alkalinity, Total as CaCO3	**293**	mg/L	5.0	1		05/21/20 14:51		
2540C Total Dissolved Solids	Analytical Method: SM 2540C							
	Pace Analytical Services - Minneapolis							
Total Dissolved Solids	**361**	mg/L	10.0	1		05/15/20 10:47		
2540D Total Suspended Solids	Analytical Method: SM 2540D							
	Pace Analytical Services - Minneapolis							
Total Suspended Solids	**235**	mg/L	10.0	1		05/18/20 15:14		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B							
	Pace Analytical Services - Minneapolis							
pH at 25 Degrees C	**7.9**	Std. Units	0.10	1		05/29/20 18:07		H6
SM2510 Specific Conductance	Analytical Method: SM 2510							
	Pace Analytical Services - Minneapolis							
Specific Conductance	**614**	umhos/cm	1.0	1		05/29/20 18:12		
300.0 IC Anions	Analytical Method: EPA 300.0							
	Pace Analytical Services - Minneapolis							
Chloride	**10.9**	mg/L	1.2	1		05/29/20 12:20	16887-00-6	
Sulfate	**30.8**	mg/L	1.2	1		05/29/20 12:20	14808-79-8	
350.1 Ammonia	Analytical Method: EPA 350.1							
	Pace Analytical Services - Minneapolis							
Nitrogen, Ammonia	**0.21**	mg/L	0.10	1		05/19/20 16:33	7664-41-7	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10517964

Sample: W-106B **Lab ID: 10517964007** Collected: 05/12/20 14:31 Received: 05/14/20 11:35 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrate + Nitrite	Analytical Method: EPA 353.2 Pace Analytical Services - Minneapolis							
Nitrogen, NO2 plus NO3	**<0.10**	mg/L	0.10	1		05/22/20 11:49		FS

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10517964

Sample: W-301A **Lab ID: 10517964008** Collected: 05/12/20 15:35 Received: 05/14/20 11:35 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.8 MET ICPMS, Dissolved	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8							
	Pace Analytical Services - Minneapolis							
Arsenic, Dissolved	**0.79**	ug/L	0.50	1	05/21/20 15:27	05/28/20 23:02	7440-38-2	
Barium, Dissolved	**141**	ug/L	0.30	1	05/21/20 15:27	05/28/20 23:02	7440-39-3	
Boron, Dissolved	**18.8**	ug/L	10.0	1	05/21/20 15:27	05/28/20 23:02	7440-42-8	
Cadmium, Dissolved	**<0.080**	ug/L	0.080	1	05/21/20 15:27	05/28/20 23:02	7440-43-9	
Calcium, Dissolved	**131000**	ug/L	800	20	05/21/20 15:27	05/28/20 23:05	7440-70-2	
Chromium, Dissolved	**<0.50**	ug/L	0.50	1	05/21/20 15:27	05/28/20 23:02	7440-47-3	
Copper, Dissolved	**<1.0**	ug/L	1.0	1	05/21/20 15:27	05/28/20 23:02	7440-50-8	
Iron, Dissolved	**68.9**	ug/L	50.0	1	05/21/20 15:27	05/28/20 23:02	7439-89-6	
Lead, Dissolved	**<0.10**	ug/L	0.10	1	05/21/20 15:27	05/28/20 23:02	7439-92-1	
Magnesium, Dissolved	**53100**	ug/L	200	20	05/21/20 15:27	05/28/20 23:05	7439-95-4	
Manganese, Dissolved	**2.4**	ug/L	0.50	1	05/21/20 15:27	05/28/20 23:02	7439-96-5	
Nickel, Dissolved	**3.3**	ug/L	0.50	1	05/21/20 15:27	05/28/20 23:02	7440-02-0	
Potassium, Dissolved	**2810**	ug/L	100	1	05/21/20 15:27	05/28/20 23:02	7440-09-7	
Selenium, Dissolved	**<0.50**	ug/L	0.50	1	05/21/20 15:27	05/28/20 23:02	7782-49-2	
Sodium, Dissolved	**15800**	ug/L	50.0	1	05/21/20 15:27	05/28/20 23:02	7440-23-5	
Zinc, Dissolved	**<5.0**	ug/L	5.0	1	05/21/20 15:27	05/28/20 23:02	7440-66-6	
Cation/Anion Balance	Analytical Method: SM 1030E							
	Pace Analytical Services - Minneapolis							
Cation/Anion Balance	**4.92**	%		1		06/01/20 17:32		
Total Cations	**11.6**	meq/L		1		06/01/20 17:32		N2
Total Anions	**10.6**	meq/L		1		06/01/20 17:32		N2
245.1 Mercury, Dissolved	Analytical Method: EPA 245.1 Preparation Method: EPA 245.1							
	Pace Analytical Services - Minneapolis							
Mercury, Dissolved	**<0.20**	ug/L	0.20	1	05/21/20 18:22	05/27/20 11:40	7439-97-6	
8260B MSV LLW by SIMSCAN	Analytical Method: EPA 8260B							
	Pace Analytical Services - Minneapolis							
Acetone	**<20.0**	ug/L	20.0	1		05/21/20 20:35	67-64-1	
Allyl chloride	**<4.0**	ug/L	4.0	1		05/21/20 20:35	107-05-1	
Benzene	**<0.20**	ug/L	0.20	1		05/21/20 20:35	71-43-2	
Bromobenzene	**<0.40**	ug/L	0.40	1		05/21/20 20:35	108-86-1	
Bromochloromethane	**<1.0**	ug/L	1.0	1		05/21/20 20:35	74-97-5	
Bromodichloromethane	**<0.40**	ug/L	0.40	1		05/21/20 20:35	75-27-4	
Bromoform	**<1.0**	ug/L	1.0	1		05/21/20 20:35	75-25-2	
Bromomethane	**<1.0**	ug/L	1.0	1		05/21/20 20:35	74-83-9	
2-Butanone (MEK)	**<5.0**	ug/L	5.0	1		05/21/20 20:35	78-93-3	
n-Butylbenzene	**<0.40**	ug/L	0.40	1		05/21/20 20:35	104-51-8	
sec-Butylbenzene	**<0.40**	ug/L	0.40	1		05/21/20 20:35	135-98-8	
tert-Butylbenzene	**<0.40**	ug/L	0.40	1		05/21/20 20:35	98-06-6	
Carbon tetrachloride	**<0.050**	ug/L	0.050	1		05/25/20 20:43	56-23-5	
Chlorobenzene	**<0.40**	ug/L	0.40	1		05/21/20 20:35	108-90-7	
Chloroethane	**<1.0**	ug/L	1.0	1		05/21/20 20:35	75-00-3	
Chloroform	**<1.0**	ug/L	1.0	1		05/21/20 20:35	67-66-3	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10517964

Sample: W-301A **Lab ID: 10517964008** Collected: 05/12/20 15:35 Received: 05/14/20 11:35 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV LLW by SIMSCAN	Analytical Method: EPA 8260B Pace Analytical Services - Minneapolis							
Chloromethane	**<1.0**	ug/L	1.0	1		05/21/20 20:35	74-87-3	
2-Chlorotoluene	**<0.40**	ug/L	0.40	1		05/21/20 20:35	95-49-8	
4-Chlorotoluene	**<0.40**	ug/L	0.40	1		05/21/20 20:35	106-43-4	
1,2-Dibromo-3-chloropropane	**<0.12**	ug/L	0.12	1		05/25/20 20:43	96-12-8	
Dibromochloromethane	**<0.40**	ug/L	0.40	1		05/25/20 20:43	124-48-1	
1,2-Dibromoethane (EDB)	**<0.050**	ug/L	0.050	1		05/25/20 20:43	106-93-4	
Dibromomethane	**<1.0**	ug/L	1.0	1		05/21/20 20:35	74-95-3	
1,2-Dichlorobenzene	**<0.40**	ug/L	0.40	1		05/21/20 20:35	95-50-1	
1,3-Dichlorobenzene	**<0.40**	ug/L	0.40	1		05/21/20 20:35	541-73-1	
1,4-Dichlorobenzene	**<0.40**	ug/L	0.40	1		05/21/20 20:35	106-46-7	
Dichlorodifluoromethane	**<1.0**	ug/L	1.0	1		05/21/20 20:35	75-71-8	
1,1-Dichloroethane	**<0.40**	ug/L	0.40	1		05/21/20 20:35	75-34-3	
1,2-Dichloroethane	**<0.20**	ug/L	0.20	1		05/25/20 20:43	107-06-2	
1,1-Dichloroethene	**<0.40**	ug/L	0.40	1		05/21/20 20:35	75-35-4	
cis-1,2-Dichloroethene	**<0.40**	ug/L	0.40	1		05/21/20 20:35	156-59-2	
trans-1,2-Dichloroethene	**<0.40**	ug/L	0.40	1		05/21/20 20:35	156-60-5	
Dichlorofluoromethane	**<1.0**	ug/L	1.0	1		05/21/20 20:35	75-43-4	
1,2-Dichloropropane	**<0.40**	ug/L	0.40	1		05/21/20 20:35	78-87-5	
1,3-Dichloropropane	**<0.40**	ug/L	0.40	1		05/21/20 20:35	142-28-9	
2,2-Dichloropropane	**<1.0**	ug/L	1.0	1		05/21/20 20:35	594-20-7	
1,1-Dichloropropene	**<0.40**	ug/L	0.40	1		05/21/20 20:35	563-58-6	
cis-1,3-Dichloropropene	**<0.40**	ug/L	0.40	1		05/25/20 20:43	10061-01-5	
trans-1,3-Dichloropropene	**<0.40**	ug/L	0.40	1		05/25/20 20:43	10061-02-6	
Diethyl ether (Ethyl ether)	**<4.0**	ug/L	4.0	1		05/21/20 20:35	60-29-7	
Ethylbenzene	**<0.40**	ug/L	0.40	1		05/21/20 20:35	100-41-4	
Hexachloro-1,3-butadiene	**<0.10**	ug/L	0.10	1		05/25/20 20:43	87-68-3	
Isopropylbenzene (Cumene)	**<0.40**	ug/L	0.40	1		05/21/20 20:35	98-82-8	
p-Isopropyltoluene	**<0.40**	ug/L	0.40	1		05/21/20 20:35	99-87-6	
Methylene Chloride	**<1.0**	ug/L	1.0	1		05/21/20 20:35	75-09-2	
4-Methyl-2-pentanone (MIBK)	**<5.0**	ug/L	5.0	1		05/21/20 20:35	108-10-1	
Methyl-tert-butyl ether	**<0.40**	ug/L	0.40	1		05/21/20 20:35	1634-04-4	
Naphthalene	**<1.0**	ug/L	1.0	1		05/21/20 20:35	91-20-3	
n-Propylbenzene	**<0.40**	ug/L	0.40	1		05/21/20 20:35	103-65-1	
Styrene	**<0.40**	ug/L	0.40	1		05/21/20 20:35	100-42-5	
1,1,1,2-Tetrachloroethane	**<0.40**	ug/L	0.40	1		05/21/20 20:35	630-20-6	
1,1,2,2-Tetrachloroethane	**<0.40**	ug/L	0.40	1		05/21/20 20:35	79-34-5	
Tetrachloroethene	**<0.40**	ug/L	0.40	1		05/21/20 20:35	127-18-4	
Tetrahydrofuran	**<10.0**	ug/L	10.0	1		05/21/20 20:35	109-99-9	
Toluene	**<0.40**	ug/L	0.40	1		05/21/20 20:35	108-88-3	
1,2,3-Trichlorobenzene	**<0.40**	ug/L	0.40	1		05/21/20 20:35	87-61-6	
1,2,4-Trichlorobenzene	**<0.40**	ug/L	0.40	1		05/21/20 20:35	120-82-1	
1,1,1-Trichloroethane	**<0.40**	ug/L	0.40	1		05/21/20 20:35	71-55-6	
1,1,2-Trichloroethane	**<0.40**	ug/L	0.40	1		05/21/20 20:35	79-00-5	
Trichloroethene	**<0.050**	ug/L	0.050	1		05/25/20 20:43	79-01-6	
Trichlorofluoromethane	**<0.40**	ug/L	0.40	1		05/21/20 20:35	75-69-4	
1,2,3-Trichloropropane	**<0.010**	ug/L	0.010	1		05/25/20 20:43	96-18-4	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10517964

Sample: W-301A **Lab ID: 10517964008** Collected: 05/12/20 15:35 Received: 05/14/20 11:35 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV LLW by SIMSCAN	Analytical Method: EPA 8260B							
	Pace Analytical Services - Minneapolis							
1,1,2-Trichlorotrifluoroethane	**<1.0**	ug/L	1.0	1		05/21/20 20:35	76-13-1	
1,2,4-Trimethylbenzene	**<1.0**	ug/L	1.0	1		05/21/20 20:35	95-63-6	
1,3,5-Trimethylbenzene	**<0.40**	ug/L	0.40	1		05/21/20 20:35	108-67-8	
Vinyl chloride	**<0.050**	ug/L	0.050	1		05/25/20 20:43	75-01-4	
Xylene (Total)	**<1.2**	ug/L	1.2	1		05/21/20 20:35	1330-20-7	
m&p-Xylene	**<0.80**	ug/L	0.80	1		05/21/20 20:35	179601-23-1	
o-Xylene	**<0.40**	ug/L	0.40	1		05/21/20 20:35	95-47-6	
Surrogates								
1,2-Dichloroethane-d4 (S)	109	%.	75-128	1		05/21/20 20:35	17060-07-0	
1,2-Dichloroethane-d4 (S)	107	%.	75-128	1		05/25/20 20:43	17060-07-0	
Toluene-d8 (S)	100	%.	75-125	1		05/25/20 20:43	2037-26-5	
Toluene-d8 (S)	103	%.	75-125	1		05/21/20 20:35	2037-26-5	
4-Bromofluorobenzene (S)	102	%.	75-125	1		05/21/20 20:35	460-00-4	
2320B Alkalinity	Analytical Method: SM 2320B							
	Pace Analytical Services - Minneapolis							
Alkalinity, Total as CaCO3	**410**	mg/L	5.0	1		05/21/20 14:59		
2540C Total Dissolved Solids	Analytical Method: SM 2540C							
	Pace Analytical Services - Minneapolis							
Total Dissolved Solids	**574**	mg/L	20.0	1		05/15/20 10:47		
2540D Total Suspended Solids	Analytical Method: SM 2540D							
	Pace Analytical Services - Minneapolis							
Total Suspended Solids	**26.0**	mg/L	10.0	1		05/18/20 15:14		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B							
	Pace Analytical Services - Minneapolis							
pH at 25 Degrees C	**7.4**	Std. Units	0.10	1		05/29/20 18:09		H6
SM2510 Specific Conductance	Analytical Method: SM 2510							
	Pace Analytical Services - Minneapolis							
Specific Conductance	**997**	umhos/cm	1.0	1		05/29/20 18:14		
300.0 IC Anions	Analytical Method: EPA 300.0							
	Pace Analytical Services - Minneapolis							
Chloride	**39.6**	mg/L	1.2	1		05/29/20 12:35	16887-00-6	
Sulfate	**59.6**	mg/L	1.2	1		05/29/20 12:35	14808-79-8	
350.1 Ammonia	Analytical Method: EPA 350.1							
	Pace Analytical Services - Minneapolis							
Nitrogen, Ammonia	**<0.10**	mg/L	0.10	1		05/19/20 16:35	7664-41-7	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10517964

Sample: W-301A **Lab ID: 10517964008** Collected: 05/12/20 15:35 Received: 05/14/20 11:35 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrate + Nitrite	Analytical Method: EPA 353.2 Pace Analytical Services - Minneapolis							
Nitrogen, NO2 plus NO3	**<0.10**	mg/L	0.10	1		05/22/20 11:51		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10517964

Sample: W-301B **Lab ID: 10517964009** Collected: 05/12/20 15:24 Received: 05/14/20 11:35 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.8 MET ICPMS, Dissolved	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Minneapolis							
Arsenic, Dissolved	**2.3**	ug/L	0.50	1	05/21/20 15:27	05/28/20 23:15	7440-38-2	
Barium, Dissolved	**142**	ug/L	0.30	1	05/21/20 15:27	05/28/20 23:15	7440-39-3	
Boron, Dissolved	**27.5**	ug/L	10.0	1	05/21/20 15:27	05/28/20 23:15	7440-42-8	
Cadmium, Dissolved	**<0.080**	ug/L	0.080	1	05/21/20 15:27	05/28/20 23:15	7440-43-9	
Calcium, Dissolved	**64400**	ug/L	800	20	05/21/20 15:27	05/28/20 23:18	7440-70-2	
Chromium, Dissolved	**<0.50**	ug/L	0.50	1	05/21/20 15:27	05/28/20 23:15	7440-47-3	
Copper, Dissolved	**<1.0**	ug/L	1.0	1	05/21/20 15:27	05/28/20 23:15	7440-50-8	
Iron, Dissolved	**843**	ug/L	50.0	1	05/21/20 15:27	05/28/20 23:15	7439-89-6	
Lead, Dissolved	**<0.10**	ug/L	0.10	1	05/21/20 15:27	05/28/20 23:15	7439-92-1	
Magnesium, Dissolved	**30400**	ug/L	200	20	05/21/20 15:27	05/29/20 14:33	7439-95-4	
Manganese, Dissolved	**116**	ug/L	0.50	1	05/21/20 15:27	05/28/20 23:15	7439-96-5	
Nickel, Dissolved	**<0.50**	ug/L	0.50	1	05/21/20 15:27	05/28/20 23:15	7440-02-0	
Potassium, Dissolved	**2670**	ug/L	100	1	05/21/20 15:27	05/28/20 23:15	7440-09-7	
Selenium, Dissolved	**<0.50**	ug/L	0.50	1	05/21/20 15:27	05/28/20 23:15	7782-49-2	
Sodium, Dissolved	**4640**	ug/L	50.0	1	05/21/20 15:27	05/28/20 23:15	7440-23-5	
Zinc, Dissolved	**<5.0**	ug/L	5.0	1	05/21/20 15:27	05/28/20 23:15	7440-66-6	
Cation/Anion Balance	Analytical Method: SM 1030E Pace Analytical Services - Minneapolis							
Cation/Anion Balance	**5.45**	%		1		06/01/20 17:32		1M
Total Cations	**6.0**	meq/L		1		06/01/20 17:32		N2
Total Anions	**5.4**	meq/L		1		06/01/20 17:32		N2
245.1 Mercury, Dissolved	Analytical Method: EPA 245.1 Preparation Method: EPA 245.1 Pace Analytical Services - Minneapolis							
Mercury, Dissolved	**<0.20**	ug/L	0.20	1	05/21/20 18:22	05/27/20 11:42	7439-97-6	
8260B MSV LLW by SIMSCAN	Analytical Method: EPA 8260B Pace Analytical Services - Minneapolis							
Acetone	**<20.0**	ug/L	20.0	1		05/21/20 21:01	67-64-1	
Allyl chloride	**<4.0**	ug/L	4.0	1		05/21/20 21:01	107-05-1	
Benzene	**<0.20**	ug/L	0.20	1		05/21/20 21:01	71-43-2	
Bromobenzene	**<0.40**	ug/L	0.40	1		05/21/20 21:01	108-86-1	
Bromochloromethane	**<1.0**	ug/L	1.0	1		05/21/20 21:01	74-97-5	
Bromodichloromethane	**<0.40**	ug/L	0.40	1		05/21/20 21:01	75-27-4	
Bromoform	**<1.0**	ug/L	1.0	1		05/21/20 21:01	75-25-2	
Bromomethane	**<1.0**	ug/L	1.0	1		05/21/20 21:01	74-83-9	
2-Butanone (MEK)	**<5.0**	ug/L	5.0	1		05/21/20 21:01	78-93-3	
n-Butylbenzene	**<0.40**	ug/L	0.40	1		05/21/20 21:01	104-51-8	
sec-Butylbenzene	**<0.40**	ug/L	0.40	1		05/21/20 21:01	135-98-8	
tert-Butylbenzene	**<0.40**	ug/L	0.40	1		05/21/20 21:01	98-06-6	
Carbon tetrachloride	**<0.050**	ug/L	0.050	1		05/25/20 21:09	56-23-5	
Chlorobenzene	**<0.40**	ug/L	0.40	1		05/21/20 21:01	108-90-7	
Chloroethane	**<1.0**	ug/L	1.0	1		05/21/20 21:01	75-00-3	
Chloroform	**<1.0**	ug/L	1.0	1		05/21/20 21:01	67-66-3	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10517964

Sample: W-301B **Lab ID: 10517964009** Collected: 05/12/20 15:24 Received: 05/14/20 11:35 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV LLW by SIMSCAN	Analytical Method: EPA 8260B Pace Analytical Services - Minneapolis							
Chloromethane	**<1.0**	ug/L	1.0	1		05/21/20 21:01	74-87-3	
2-Chlorotoluene	**<0.40**	ug/L	0.40	1		05/21/20 21:01	95-49-8	
4-Chlorotoluene	**<0.40**	ug/L	0.40	1		05/21/20 21:01	106-43-4	
1,2-Dibromo-3-chloropropane	**<0.12**	ug/L	0.12	1		05/25/20 21:09	96-12-8	
Dibromochloromethane	**<0.40**	ug/L	0.40	1		05/25/20 21:09	124-48-1	
1,2-Dibromoethane (EDB)	**<0.050**	ug/L	0.050	1		05/25/20 21:09	106-93-4	
Dibromomethane	**<1.0**	ug/L	1.0	1		05/21/20 21:01	74-95-3	
1,2-Dichlorobenzene	**<0.40**	ug/L	0.40	1		05/21/20 21:01	95-50-1	
1,3-Dichlorobenzene	**<0.40**	ug/L	0.40	1		05/21/20 21:01	541-73-1	
1,4-Dichlorobenzene	**<0.40**	ug/L	0.40	1		05/21/20 21:01	106-46-7	
Dichlorodifluoromethane	**<1.0**	ug/L	1.0	1		05/21/20 21:01	75-71-8	
1,1-Dichloroethane	**<0.40**	ug/L	0.40	1		05/21/20 21:01	75-34-3	
1,2-Dichloroethane	**<0.20**	ug/L	0.20	1		05/25/20 21:09	107-06-2	
1,1-Dichloroethene	**<0.40**	ug/L	0.40	1		05/21/20 21:01	75-35-4	
cis-1,2-Dichloroethene	**<0.40**	ug/L	0.40	1		05/21/20 21:01	156-59-2	
trans-1,2-Dichloroethene	**<0.40**	ug/L	0.40	1		05/21/20 21:01	156-60-5	
Dichlorofluoromethane	**<1.0**	ug/L	1.0	1		05/21/20 21:01	75-43-4	
1,2-Dichloropropane	**<0.40**	ug/L	0.40	1		05/21/20 21:01	78-87-5	
1,3-Dichloropropane	**<0.40**	ug/L	0.40	1		05/21/20 21:01	142-28-9	
2,2-Dichloropropane	**<1.0**	ug/L	1.0	1		05/21/20 21:01	594-20-7	
1,1-Dichloropropene	**<0.40**	ug/L	0.40	1		05/21/20 21:01	563-58-6	
cis-1,3-Dichloropropene	**<0.40**	ug/L	0.40	1		05/25/20 21:09	10061-01-5	
trans-1,3-Dichloropropene	**<0.40**	ug/L	0.40	1		05/25/20 21:09	10061-02-6	
Diethyl ether (Ethyl ether)	**<4.0**	ug/L	4.0	1		05/21/20 21:01	60-29-7	
Ethylbenzene	**<0.40**	ug/L	0.40	1		05/21/20 21:01	100-41-4	
Hexachloro-1,3-butadiene	**<0.10**	ug/L	0.10	1		05/25/20 21:09	87-68-3	
Isopropylbenzene (Cumene)	**<0.40**	ug/L	0.40	1		05/21/20 21:01	98-82-8	
p-Isopropyltoluene	**<0.40**	ug/L	0.40	1		05/21/20 21:01	99-87-6	
Methylene Chloride	**<1.0**	ug/L	1.0	1		05/21/20 21:01	75-09-2	
4-Methyl-2-pentanone (MIBK)	**<5.0**	ug/L	5.0	1		05/21/20 21:01	108-10-1	
Methyl-tert-butyl ether	**<0.40**	ug/L	0.40	1		05/21/20 21:01	1634-04-4	
Naphthalene	**<1.0**	ug/L	1.0	1		05/21/20 21:01	91-20-3	
n-Propylbenzene	**<0.40**	ug/L	0.40	1		05/21/20 21:01	103-65-1	
Styrene	**<0.40**	ug/L	0.40	1		05/21/20 21:01	100-42-5	
1,1,1,2-Tetrachloroethane	**<0.40**	ug/L	0.40	1		05/21/20 21:01	630-20-6	
1,1,2,2-Tetrachloroethane	**<0.40**	ug/L	0.40	1		05/21/20 21:01	79-34-5	
Tetrachloroethene	**<0.40**	ug/L	0.40	1		05/21/20 21:01	127-18-4	
Tetrahydrofuran	**<10.0**	ug/L	10.0	1		05/21/20 21:01	109-99-9	
Toluene	**<0.40**	ug/L	0.40	1		05/21/20 21:01	108-88-3	
1,2,3-Trichlorobenzene	**<0.40**	ug/L	0.40	1		05/21/20 21:01	87-61-6	
1,2,4-Trichlorobenzene	**<0.40**	ug/L	0.40	1		05/21/20 21:01	120-82-1	
1,1,1-Trichloroethane	**<0.40**	ug/L	0.40	1		05/21/20 21:01	71-55-6	
1,1,2-Trichloroethane	**<0.40**	ug/L	0.40	1		05/21/20 21:01	79-00-5	
Trichloroethene	**<0.050**	ug/L	0.050	1		05/25/20 21:09	79-01-6	
Trichlorofluoromethane	**<0.40**	ug/L	0.40	1		05/21/20 21:01	75-69-4	
1,2,3-Trichloropropane	**<0.010**	ug/L	0.010	1		05/25/20 21:09	96-18-4	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10517964

Sample: W-301B **Lab ID: 10517964009** Collected: 05/12/20 15:24 Received: 05/14/20 11:35 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV LLW by SIMSCAN	Analytical Method: EPA 8260B Pace Analytical Services - Minneapolis							
1,1,2-Trichlorotrifluoroethane	**<1.0**	ug/L	1.0	1		05/21/20 21:01	76-13-1	
1,2,4-Trimethylbenzene	**<1.0**	ug/L	1.0	1		05/21/20 21:01	95-63-6	
1,3,5-Trimethylbenzene	**<0.40**	ug/L	0.40	1		05/21/20 21:01	108-67-8	
Vinyl chloride	**<0.050**	ug/L	0.050	1		05/25/20 21:09	75-01-4	
Xylene (Total)	**<1.2**	ug/L	1.2	1		05/21/20 21:01	1330-20-7	
m&p-Xylene	**<0.80**	ug/L	0.80	1		05/21/20 21:01	179601-23-1	
o-Xylene	**<0.40**	ug/L	0.40	1		05/21/20 21:01	95-47-6	
Surrogates								
1,2-Dichloroethane-d4 (S)	108	%.	75-128	1		05/21/20 21:01	17060-07-0	
1,2-Dichloroethane-d4 (S)	107	%.	75-128	1		05/25/20 21:09	17060-07-0	
Toluene-d8 (S)	103	%.	75-125	1		05/21/20 21:01	2037-26-5	
Toluene-d8 (S)	99	%.	75-125	1		05/25/20 21:09	2037-26-5	
4-Bromofluorobenzene (S)	100	%.	75-125	1		05/21/20 21:01	460-00-4	
2320B Alkalinity	Analytical Method: SM 2320B Pace Analytical Services - Minneapolis							
Alkalinity, Total as CaCO3	**228**	mg/L	5.0	1		05/21/20 15:16		
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Minneapolis							
Total Dissolved Solids	**290**	mg/L	10.0	1		05/15/20 10:47		
2540D Total Suspended Solids	Analytical Method: SM 2540D Pace Analytical Services - Minneapolis							
Total Suspended Solids	**55.0**	mg/L	10.0	1		05/18/20 15:14		MW
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B Pace Analytical Services - Minneapolis							
pH at 25 Degrees C	**7.7**	Std. Units	0.10	1		05/29/20 18:11		H6
SM2510 Specific Conductance	Analytical Method: SM 2510 Pace Analytical Services - Minneapolis							
Specific Conductance	**540**	umhos/cm	1.0	1		05/29/20 18:15		
300.0 IC Anions	Analytical Method: EPA 300.0 Pace Analytical Services - Minneapolis							
Chloride	**2.7**	mg/L	1.2	1		05/29/20 13:54	16887-00-6	
Sulfate	**36.1**	mg/L	1.2	1		05/29/20 13:54	14808-79-8	
350.1 Ammonia	Analytical Method: EPA 350.1 Pace Analytical Services - Minneapolis							
Nitrogen, Ammonia	**0.12**	mg/L	0.10	1		05/19/20 16:36	7664-41-7	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10517964

Sample: W-301B **Lab ID: 10517964009** Collected: 05/12/20 15:24 Received: 05/14/20 11:35 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrate + Nitrite	Analytical Method: EPA 353.2 Pace Analytical Services - Minneapolis							
Nitrogen, NO2 plus NO3	**<0.10**	mg/L	0.10	1		05/22/20 11:52		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10517964

Sample: W-102A **Lab ID: 10517964010** Collected: 05/12/20 17:06 Received: 05/14/20 11:35 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.8 MET ICPMS, Dissolved	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Minneapolis							
Arsenic, Dissolved	**<0.50**	ug/L	0.50	1	05/21/20 15:27	05/28/20 23:21	7440-38-2	
Barium, Dissolved	**57.2**	ug/L	0.30	1	05/21/20 15:27	05/28/20 23:21	7440-39-3	
Boron, Dissolved	**17.8**	ug/L	10.0	1	05/21/20 15:27	05/28/20 23:21	7440-42-8	
Cadmium, Dissolved	**<0.080**	ug/L	0.080	1	05/21/20 15:27	05/28/20 23:21	7440-43-9	
Calcium, Dissolved	**66600**	ug/L	800	20	05/21/20 15:27	05/28/20 23:24	7440-70-2	
Chromium, Dissolved	**1.7**	ug/L	0.50	1	05/21/20 15:27	05/28/20 23:21	7440-47-3	
Copper, Dissolved	**<1.0**	ug/L	1.0	1	05/21/20 15:27	05/28/20 23:21	7440-50-8	
Iron, Dissolved	**<50.0**	ug/L	50.0	1	05/21/20 15:27	05/28/20 23:21	7439-89-6	
Lead, Dissolved	**<0.10**	ug/L	0.10	1	05/21/20 15:27	05/28/20 23:21	7439-92-1	
Magnesium, Dissolved	**22400**	ug/L	200	20	05/21/20 15:27	05/29/20 14:36	7439-95-4	
Manganese, Dissolved	**<0.50**	ug/L	0.50	1	05/21/20 15:27	05/28/20 23:21	7439-96-5	
Nickel, Dissolved	**<0.50**	ug/L	0.50	1	05/21/20 15:27	05/28/20 23:21	7440-02-0	
Potassium, Dissolved	**1060**	ug/L	100	1	05/21/20 15:27	05/28/20 23:21	7440-09-7	
Selenium, Dissolved	**<0.50**	ug/L	0.50	1	05/21/20 15:27	05/28/20 23:21	7782-49-2	
Sodium, Dissolved	**4100**	ug/L	50.0	1	05/21/20 15:27	05/28/20 23:21	7440-23-5	
Zinc, Dissolved	**<5.0**	ug/L	5.0	1	05/21/20 15:27	05/28/20 23:21	7440-66-6	
Cation/Anion Balance	Analytical Method: SM 1030E Pace Analytical Services - Minneapolis							
Cation/Anion Balance	**4.33**	%		1		06/01/20 17:32		
Total Cations	**5.4**	meq/L		1		06/01/20 17:32		N2
Total Anions	**4.9**	meq/L		1		06/01/20 17:32		N2
245.1 Mercury, Dissolved	Analytical Method: EPA 245.1 Preparation Method: EPA 245.1 Pace Analytical Services - Minneapolis							
Mercury, Dissolved	**<0.20**	ug/L	0.20	1	05/21/20 18:22	05/27/20 11:45	7439-97-6	
8260B MSV LLW by SIMSCAN	Analytical Method: EPA 8260B Pace Analytical Services - Minneapolis							
Acetone	**<20.0**	ug/L	20.0	1		05/21/20 21:27	67-64-1	
Allyl chloride	**<4.0**	ug/L	4.0	1		05/21/20 21:27	107-05-1	
Benzene	**<0.20**	ug/L	0.20	1		05/21/20 21:27	71-43-2	
Bromobenzene	**<0.40**	ug/L	0.40	1		05/21/20 21:27	108-86-1	
Bromochloromethane	**<1.0**	ug/L	1.0	1		05/21/20 21:27	74-97-5	
Bromodichloromethane	**<0.40**	ug/L	0.40	1		05/21/20 21:27	75-27-4	
Bromoform	**<1.0**	ug/L	1.0	1		05/21/20 21:27	75-25-2	
Bromomethane	**<1.0**	ug/L	1.0	1		05/21/20 21:27	74-83-9	
2-Butanone (MEK)	**<5.0**	ug/L	5.0	1		05/21/20 21:27	78-93-3	
n-Butylbenzene	**<0.40**	ug/L	0.40	1		05/21/20 21:27	104-51-8	
sec-Butylbenzene	**<0.40**	ug/L	0.40	1		05/21/20 21:27	135-98-8	
tert-Butylbenzene	**<0.40**	ug/L	0.40	1		05/21/20 21:27	98-06-6	
Carbon tetrachloride	**<0.050**	ug/L	0.050	1		05/25/20 21:35	56-23-5	
Chlorobenzene	**<0.40**	ug/L	0.40	1		05/21/20 21:27	108-90-7	
Chloroethane	**<1.0**	ug/L	1.0	1		05/21/20 21:27	75-00-3	
Chloroform	**<1.0**	ug/L	1.0	1		05/21/20 21:27	67-66-3	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10517964

Sample: W-102A **Lab ID: 10517964010** Collected: 05/12/20 17:06 Received: 05/14/20 11:35 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV LLW by SIMSCAN	Analytical Method: EPA 8260B Pace Analytical Services - Minneapolis							
Chloromethane	**<1.0**	ug/L	1.0	1		05/21/20 21:27	74-87-3	
2-Chlorotoluene	**<0.40**	ug/L	0.40	1		05/21/20 21:27	95-49-8	
4-Chlorotoluene	**<0.40**	ug/L	0.40	1		05/21/20 21:27	106-43-4	
1,2-Dibromo-3-chloropropane	**<0.12**	ug/L	0.12	1		05/25/20 21:35	96-12-8	
Dibromochloromethane	**<0.40**	ug/L	0.40	1		05/25/20 21:35	124-48-1	
1,2-Dibromoethane (EDB)	**<0.050**	ug/L	0.050	1		05/25/20 21:35	106-93-4	
Dibromomethane	**<1.0**	ug/L	1.0	1		05/21/20 21:27	74-95-3	
1,2-Dichlorobenzene	**<0.40**	ug/L	0.40	1		05/21/20 21:27	95-50-1	
1,3-Dichlorobenzene	**<0.40**	ug/L	0.40	1		05/21/20 21:27	541-73-1	
1,4-Dichlorobenzene	**<0.40**	ug/L	0.40	1		05/21/20 21:27	106-46-7	
Dichlorodifluoromethane	**<1.0**	ug/L	1.0	1		05/21/20 21:27	75-71-8	
1,1-Dichloroethane	**<0.40**	ug/L	0.40	1		05/21/20 21:27	75-34-3	
1,2-Dichloroethane	**<0.20**	ug/L	0.20	1		05/25/20 21:35	107-06-2	
1,1-Dichloroethene	**<0.40**	ug/L	0.40	1		05/21/20 21:27	75-35-4	
cis-1,2-Dichloroethene	**<0.40**	ug/L	0.40	1		05/21/20 21:27	156-59-2	
trans-1,2-Dichloroethene	**<0.40**	ug/L	0.40	1		05/21/20 21:27	156-60-5	
Dichlorofluoromethane	**<1.0**	ug/L	1.0	1		05/21/20 21:27	75-43-4	
1,2-Dichloropropane	**<0.40**	ug/L	0.40	1		05/21/20 21:27	78-87-5	
1,3-Dichloropropane	**<0.40**	ug/L	0.40	1		05/21/20 21:27	142-28-9	
2,2-Dichloropropane	**<1.0**	ug/L	1.0	1		05/21/20 21:27	594-20-7	
1,1-Dichloropropene	**<0.40**	ug/L	0.40	1		05/21/20 21:27	563-58-6	
cis-1,3-Dichloropropene	**<0.40**	ug/L	0.40	1		05/25/20 21:35	10061-01-5	
trans-1,3-Dichloropropene	**<0.40**	ug/L	0.40	1		05/25/20 21:35	10061-02-6	
Diethyl ether (Ethyl ether)	**<4.0**	ug/L	4.0	1		05/21/20 21:27	60-29-7	
Ethylbenzene	**<0.40**	ug/L	0.40	1		05/21/20 21:27	100-41-4	
Hexachloro-1,3-butadiene	**<0.10**	ug/L	0.10	1		05/25/20 21:35	87-68-3	
Isopropylbenzene (Cumene)	**<0.40**	ug/L	0.40	1		05/21/20 21:27	98-82-8	
p-Isopropyltoluene	**<0.40**	ug/L	0.40	1		05/21/20 21:27	99-87-6	
Methylene Chloride	**<1.0**	ug/L	1.0	1		05/21/20 21:27	75-09-2	
4-Methyl-2-pentanone (MIBK)	**<5.0**	ug/L	5.0	1		05/21/20 21:27	108-10-1	
Methyl-tert-butyl ether	**<0.40**	ug/L	0.40	1		05/21/20 21:27	1634-04-4	
Naphthalene	**<1.0**	ug/L	1.0	1		05/21/20 21:27	91-20-3	
n-Propylbenzene	**<0.40**	ug/L	0.40	1		05/21/20 21:27	103-65-1	
Styrene	**<0.40**	ug/L	0.40	1		05/21/20 21:27	100-42-5	
1,1,1,2-Tetrachloroethane	**<0.40**	ug/L	0.40	1		05/21/20 21:27	630-20-6	
1,1,2,2-Tetrachloroethane	**<0.40**	ug/L	0.40	1		05/21/20 21:27	79-34-5	
Tetrachloroethene	**<0.40**	ug/L	0.40	1		05/21/20 21:27	127-18-4	
Tetrahydrofuran	**<10.0**	ug/L	10.0	1		05/21/20 21:27	109-99-9	
Toluene	**<0.40**	ug/L	0.40	1		05/21/20 21:27	108-88-3	
1,2,3-Trichlorobenzene	**<0.40**	ug/L	0.40	1		05/21/20 21:27	87-61-6	
1,2,4-Trichlorobenzene	**<0.40**	ug/L	0.40	1		05/21/20 21:27	120-82-1	
1,1,1-Trichloroethane	**<0.40**	ug/L	0.40	1		05/21/20 21:27	71-55-6	
1,1,2-Trichloroethane	**<0.40**	ug/L	0.40	1		05/21/20 21:27	79-00-5	
Trichloroethene	**<0.050**	ug/L	0.050	1		05/25/20 21:35	79-01-6	
Trichlorofluoromethane	**<0.40**	ug/L	0.40	1		05/21/20 21:27	75-69-4	
1,2,3-Trichloropropane	**<0.010**	ug/L	0.010	1		05/25/20 21:35	96-18-4	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10517964

Sample: W-102A **Lab ID: 10517964010** Collected: 05/12/20 17:06 Received: 05/14/20 11:35 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV LLW by SIMSCAN	Analytical Method: EPA 8260B							
	Pace Analytical Services - Minneapolis							
1,1,2-Trichlorotrifluoroethane	**<1.0**	ug/L	1.0	1		05/21/20 21:27	76-13-1	
1,2,4-Trimethylbenzene	**<1.0**	ug/L	1.0	1		05/21/20 21:27	95-63-6	
1,3,5-Trimethylbenzene	**<0.40**	ug/L	0.40	1		05/21/20 21:27	108-67-8	
Vinyl chloride	**<0.050**	ug/L	0.050	1		05/25/20 21:35	75-01-4	
Xylene (Total)	**<1.2**	ug/L	1.2	1		05/21/20 21:27	1330-20-7	
m&p-Xylene	**<0.80**	ug/L	0.80	1		05/21/20 21:27	179601-23-1	
o-Xylene	**<0.40**	ug/L	0.40	1		05/21/20 21:27	95-47-6	
Surrogates								
1,2-Dichloroethane-d4 (S)	107	%.	75-128	1		05/25/20 21:35	17060-07-0	
1,2-Dichloroethane-d4 (S)	107	%.	75-128	1		05/21/20 21:27	17060-07-0	
Toluene-d8 (S)	100	%.	75-125	1		05/25/20 21:35	2037-26-5	
Toluene-d8 (S)	100	%.	75-125	1		05/21/20 21:27	2037-26-5	
4-Bromofluorobenzene (S)	99	%.	75-125	1		05/21/20 21:27	460-00-4	
2320B Alkalinity	Analytical Method: SM 2320B							
	Pace Analytical Services - Minneapolis							
Alkalinity, Total as CaCO3	**236**	mg/L	5.0	1		05/21/20 15:22		
2540C Total Dissolved Solids	Analytical Method: SM 2540C							
	Pace Analytical Services - Minneapolis							
Total Dissolved Solids	**265**	mg/L	10.0	1		05/19/20 11:43		
2540D Total Suspended Solids	Analytical Method: SM 2540D							
	Pace Analytical Services - Minneapolis							
Total Suspended Solids	**11.0**	mg/L	10.0	1		05/18/20 15:14		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B							
	Pace Analytical Services - Minneapolis							
pH at 25 Degrees C	**7.9**	Std. Units	0.10	1		05/29/20 18:13		H6
SM2510 Specific Conductance	Analytical Method: SM 2510							
	Pace Analytical Services - Minneapolis							
Specific Conductance	**497**	umhos/cm	1.0	1		05/29/20 18:15		
300.0 IC Anions	Analytical Method: EPA 300.0							
	Pace Analytical Services - Minneapolis							
Chloride	**1.7**	mg/L	1.2	1		05/29/20 14:27	16887-00-6	
Sulfate	**8.4**	mg/L	1.2	1		05/29/20 14:27	14808-79-8	
350.1 Ammonia	Analytical Method: EPA 350.1							
	Pace Analytical Services - Minneapolis							
Nitrogen, Ammonia	**<0.10**	mg/L	0.10	1		05/19/20 16:38	7664-41-7	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10517964

Sample: W-102A **Lab ID: 10517964010** Collected: 05/12/20 17:06 Received: 05/14/20 11:35 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrate + Nitrite	Analytical Method: EPA 353.2 Pace Analytical Services - Minneapolis							
Nitrogen, NO2 plus NO3	**1.4**	mg/L	0.10	1		05/22/20 11:53		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10517964

Sample: W-102B **Lab ID: 10517964011** Collected: 05/12/20 15:12 Received: 05/14/20 11:35 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.8 MET ICPMS, Dissolved	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8							
	Pace Analytical Services - Minneapolis							
Arsenic, Dissolved	**0.54**	ug/L	0.50	1	05/21/20 15:27	05/28/20 23:28	7440-38-2	
Barium, Dissolved	**142**	ug/L	0.30	1	05/21/20 15:27	05/28/20 23:28	7440-39-3	
Boron, Dissolved	**19.4**	ug/L	10.0	1	05/21/20 15:27	05/28/20 23:28	7440-42-8	
Cadmium, Dissolved	**<0.080**	ug/L	0.080	1	05/21/20 15:27	05/28/20 23:28	7440-43-9	
Calcium, Dissolved	**79100**	ug/L	800	20	05/21/20 15:27	05/28/20 23:31	7440-70-2	
Chromium, Dissolved	**<0.50**	ug/L	0.50	1	05/21/20 15:27	05/28/20 23:28	7440-47-3	
Copper, Dissolved	**<1.0**	ug/L	1.0	1	05/21/20 15:27	05/28/20 23:28	7440-50-8	
Iron, Dissolved	**97.5**	ug/L	50.0	1	05/21/20 15:27	05/28/20 23:28	7439-89-6	
Lead, Dissolved	**<0.10**	ug/L	0.10	1	05/21/20 15:27	05/28/20 23:28	7439-92-1	
Magnesium, Dissolved	**29600**	ug/L	200	20	05/21/20 15:27	05/29/20 14:39	7439-95-4	
Manganese, Dissolved	**174**	ug/L	0.50	1	05/21/20 15:27	05/28/20 23:28	7439-96-5	
Nickel, Dissolved	**1.9**	ug/L	0.50	1	05/21/20 15:27	05/28/20 23:28	7440-02-0	
Potassium, Dissolved	**2640**	ug/L	100	1	05/21/20 15:27	05/28/20 23:28	7440-09-7	
Selenium, Dissolved	**<0.50**	ug/L	0.50	1	05/21/20 15:27	05/28/20 23:28	7782-49-2	
Sodium, Dissolved	**3170**	ug/L	50.0	1	05/21/20 15:27	05/28/20 23:28	7440-23-5	
Zinc, Dissolved	**<5.0**	ug/L	5.0	1	05/21/20 15:27	05/28/20 23:28	7440-66-6	
Cation/Anion Balance	Analytical Method: SM 1030E							
	Pace Analytical Services - Minneapolis							
Cation/Anion Balance	**4.12**	%		1		06/01/20 17:32		
Total Cations	**6.6**	meq/L		1		06/01/20 17:32		N2
Total Anions	**6.1**	meq/L		1		06/01/20 17:32		N2
245.1 Mercury, Dissolved	Analytical Method: EPA 245.1 Preparation Method: EPA 245.1							
	Pace Analytical Services - Minneapolis							
Mercury, Dissolved	**<0.20**	ug/L	0.20	1	05/21/20 18:22	05/27/20 11:47	7439-97-6	
8260B MSV LLW by SIMSCAN	Analytical Method: EPA 8260B							
	Pace Analytical Services - Minneapolis							
Acetone	**<20.0**	ug/L	20.0	1		05/21/20 21:53	67-64-1	
Allyl chloride	**<4.0**	ug/L	4.0	1		05/21/20 21:53	107-05-1	
Benzene	**<0.20**	ug/L	0.20	1		05/21/20 21:53	71-43-2	
Bromobenzene	**<0.40**	ug/L	0.40	1		05/21/20 21:53	108-86-1	
Bromochloromethane	**<1.0**	ug/L	1.0	1		05/21/20 21:53	74-97-5	
Bromodichloromethane	**<0.40**	ug/L	0.40	1		05/21/20 21:53	75-27-4	
Bromoform	**<1.0**	ug/L	1.0	1		05/21/20 21:53	75-25-2	
Bromomethane	**<1.0**	ug/L	1.0	1		05/21/20 21:53	74-83-9	
2-Butanone (MEK)	**<5.0**	ug/L	5.0	1		05/21/20 21:53	78-93-3	
n-Butylbenzene	**<0.40**	ug/L	0.40	1		05/21/20 21:53	104-51-8	
sec-Butylbenzene	**<0.40**	ug/L	0.40	1		05/21/20 21:53	135-98-8	
tert-Butylbenzene	**<0.40**	ug/L	0.40	1		05/21/20 21:53	98-06-6	
Carbon tetrachloride	**<0.050**	ug/L	0.050	1		05/25/20 22:01	56-23-5	
Chlorobenzene	**<0.40**	ug/L	0.40	1		05/21/20 21:53	108-90-7	
Chloroethane	**<1.0**	ug/L	1.0	1		05/21/20 21:53	75-00-3	
Chloroform	**<1.0**	ug/L	1.0	1		05/21/20 21:53	67-66-3	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10517964

Sample: W-102B **Lab ID: 10517964011** Collected: 05/12/20 15:12 Received: 05/14/20 11:35 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV LLW by SIMSCAN	Analytical Method: EPA 8260B Pace Analytical Services - Minneapolis							
Chloromethane	**<1.0**	ug/L	1.0	1		05/21/20 21:53	74-87-3	
2-Chlorotoluene	**<0.40**	ug/L	0.40	1		05/21/20 21:53	95-49-8	
4-Chlorotoluene	**<0.40**	ug/L	0.40	1		05/21/20 21:53	106-43-4	
1,2-Dibromo-3-chloropropane	**<0.12**	ug/L	0.12	1		05/25/20 22:01	96-12-8	
Dibromochloromethane	**<0.40**	ug/L	0.40	1		05/25/20 22:01	124-48-1	
1,2-Dibromoethane (EDB)	**<0.050**	ug/L	0.050	1		05/25/20 22:01	106-93-4	
Dibromomethane	**<1.0**	ug/L	1.0	1		05/21/20 21:53	74-95-3	
1,2-Dichlorobenzene	**<0.40**	ug/L	0.40	1		05/21/20 21:53	95-50-1	
1,3-Dichlorobenzene	**<0.40**	ug/L	0.40	1		05/21/20 21:53	541-73-1	
1,4-Dichlorobenzene	**<0.40**	ug/L	0.40	1		05/21/20 21:53	106-46-7	
Dichlorodifluoromethane	**<1.0**	ug/L	1.0	1		05/21/20 21:53	75-71-8	
1,1-Dichloroethane	**<0.40**	ug/L	0.40	1		05/21/20 21:53	75-34-3	
1,2-Dichloroethane	**<0.20**	ug/L	0.20	1		05/25/20 22:01	107-06-2	
1,1-Dichloroethene	**<0.40**	ug/L	0.40	1		05/21/20 21:53	75-35-4	
cis-1,2-Dichloroethene	**<0.40**	ug/L	0.40	1		05/21/20 21:53	156-59-2	
trans-1,2-Dichloroethene	**<0.40**	ug/L	0.40	1		05/21/20 21:53	156-60-5	
Dichlorofluoromethane	**<1.0**	ug/L	1.0	1		05/21/20 21:53	75-43-4	
1,2-Dichloropropane	**<0.40**	ug/L	0.40	1		05/21/20 21:53	78-87-5	
1,3-Dichloropropane	**<0.40**	ug/L	0.40	1		05/21/20 21:53	142-28-9	
2,2-Dichloropropane	**<1.0**	ug/L	1.0	1		05/21/20 21:53	594-20-7	
1,1-Dichloropropene	**<0.40**	ug/L	0.40	1		05/21/20 21:53	563-58-6	
cis-1,3-Dichloropropene	**<0.40**	ug/L	0.40	1		05/25/20 22:01	10061-01-5	
trans-1,3-Dichloropropene	**<0.40**	ug/L	0.40	1		05/25/20 22:01	10061-02-6	
Diethyl ether (Ethyl ether)	**<4.0**	ug/L	4.0	1		05/21/20 21:53	60-29-7	
Ethylbenzene	**<0.40**	ug/L	0.40	1		05/21/20 21:53	100-41-4	
Hexachloro-1,3-butadiene	**<0.10**	ug/L	0.10	1		05/25/20 22:01	87-68-3	
Isopropylbenzene (Cumene)	**<0.40**	ug/L	0.40	1		05/21/20 21:53	98-82-8	
p-Isopropyltoluene	**<0.40**	ug/L	0.40	1		05/21/20 21:53	99-87-6	
Methylene Chloride	**<1.0**	ug/L	1.0	1		05/21/20 21:53	75-09-2	
4-Methyl-2-pentanone (MIBK)	**<5.0**	ug/L	5.0	1		05/21/20 21:53	108-10-1	
Methyl-tert-butyl ether	**<0.40**	ug/L	0.40	1		05/21/20 21:53	1634-04-4	
Naphthalene	**<1.0**	ug/L	1.0	1		05/21/20 21:53	91-20-3	
n-Propylbenzene	**<0.40**	ug/L	0.40	1		05/21/20 21:53	103-65-1	
Styrene	**<0.40**	ug/L	0.40	1		05/21/20 21:53	100-42-5	
1,1,1,2-Tetrachloroethane	**<0.40**	ug/L	0.40	1		05/21/20 21:53	630-20-6	
1,1,2,2-Tetrachloroethane	**<0.40**	ug/L	0.40	1		05/21/20 21:53	79-34-5	
Tetrachloroethene	**<0.40**	ug/L	0.40	1		05/21/20 21:53	127-18-4	
Tetrahydrofuran	**<10.0**	ug/L	10.0	1		05/21/20 21:53	109-99-9	
Toluene	**<0.40**	ug/L	0.40	1		05/21/20 21:53	108-88-3	
1,2,3-Trichlorobenzene	**<0.40**	ug/L	0.40	1		05/21/20 21:53	87-61-6	
1,2,4-Trichlorobenzene	**<0.40**	ug/L	0.40	1		05/21/20 21:53	120-82-1	
1,1,1-Trichloroethane	**<0.40**	ug/L	0.40	1		05/21/20 21:53	71-55-6	
1,1,2-Trichloroethane	**<0.40**	ug/L	0.40	1		05/21/20 21:53	79-00-5	
Trichloroethene	**<0.050**	ug/L	0.050	1		05/25/20 22:01	79-01-6	
Trichlorofluoromethane	**<0.40**	ug/L	0.40	1		05/21/20 21:53	75-69-4	
1,2,3-Trichloropropane	**<0.010**	ug/L	0.010	1		05/25/20 22:01	96-18-4	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10517964

Sample: W-102B **Lab ID: 10517964011** Collected: 05/12/20 15:12 Received: 05/14/20 11:35 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV LLW by SIMSCAN	Analytical Method: EPA 8260B Pace Analytical Services - Minneapolis							
1,1,2-Trichlorotrifluoroethane	**<1.0**	ug/L	1.0	1		05/21/20 21:53	76-13-1	
1,2,4-Trimethylbenzene	**<1.0**	ug/L	1.0	1		05/21/20 21:53	95-63-6	
1,3,5-Trimethylbenzene	**<0.40**	ug/L	0.40	1		05/21/20 21:53	108-67-8	
Vinyl chloride	**<0.050**	ug/L	0.050	1		05/25/20 22:01	75-01-4	
Xylene (Total)	**<1.2**	ug/L	1.2	1		05/21/20 21:53	1330-20-7	
m&p-Xylene	**<0.80**	ug/L	0.80	1		05/21/20 21:53	179601-23-1	
o-Xylene	**<0.40**	ug/L	0.40	1		05/21/20 21:53	95-47-6	
Surrogates								
1,2-Dichloroethane-d4 (S)	108	%.	75-128	1		05/21/20 21:53	17060-07-0	
1,2-Dichloroethane-d4 (S)	107	%.	75-128	1		05/25/20 22:01	17060-07-0	
Toluene-d8 (S)	100	%.	75-125	1		05/25/20 22:01	2037-26-5	
Toluene-d8 (S)	100	%.	75-125	1		05/21/20 21:53	2037-26-5	
4-Bromofluorobenzene (S)	100	%.	75-125	1		05/21/20 21:53	460-00-4	
2320B Alkalinity	Analytical Method: SM 2320B Pace Analytical Services - Minneapolis							
Alkalinity, Total as CaCO3	**237**	mg/L	5.0	1		05/21/20 15:29		
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Minneapolis							
Total Dissolved Solids	**353**	mg/L	10.0	1		05/19/20 11:43		
2540D Total Suspended Solids	Analytical Method: SM 2540D Pace Analytical Services - Minneapolis							
Total Suspended Solids	**15.0**	mg/L	10.0	1		05/18/20 15:14		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B Pace Analytical Services - Minneapolis							
pH at 25 Degrees C	**7.7**	Std. Units	0.10	1		05/29/20 18:15		H6
SM2510 Specific Conductance	Analytical Method: SM 2510 Pace Analytical Services - Minneapolis							
Specific Conductance	**600**	umhos/cm	1.0	1		05/29/20 18:16		
300.0 IC Anions	Analytical Method: EPA 300.0 Pace Analytical Services - Minneapolis							
Chloride	**4.0**	mg/L	1.2	1		05/29/20 14:42	16887-00-6	
Sulfate	**59.4**	mg/L	1.2	1		05/29/20 14:42	14808-79-8	
350.1 Ammonia	Analytical Method: EPA 350.1 Pace Analytical Services - Minneapolis							
Nitrogen, Ammonia	**<0.10**	mg/L	0.10	1		05/19/20 16:39	7664-41-7	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10517964

Sample: W-102B **Lab ID: 10517964011** Collected: 05/12/20 15:12 Received: 05/14/20 11:35 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrate + Nitrite	Analytical Method: EPA 353.2 Pace Analytical Services - Minneapolis							
Nitrogen, NO2 plus NO3	**0.49**	mg/L	0.10	1		05/22/20 11:54		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10517964

Sample: W-104A **Lab ID: 10517964012** Collected: 05/12/20 16:17 Received: 05/14/20 11:35 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.8 MET ICPMS, Dissolved	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Minneapolis							
Arsenic, Dissolved	**1.8**	ug/L	0.50	1	05/21/20 15:27	05/28/20 23:34	7440-38-2	
Barium, Dissolved	**153**	ug/L	0.30	1	05/21/20 15:27	05/28/20 23:34	7440-39-3	
Boron, Dissolved	**26.0**	ug/L	10.0	1	05/21/20 15:27	05/28/20 23:34	7440-42-8	
Cadmium, Dissolved	**<0.080**	ug/L	0.080	1	05/21/20 15:27	05/28/20 23:34	7440-43-9	
Calcium, Dissolved	**142000**	ug/L	800	20	05/21/20 15:27	05/28/20 23:37	7440-70-2	
Chromium, Dissolved	**<0.50**	ug/L	0.50	1	05/21/20 15:27	05/28/20 23:34	7440-47-3	
Copper, Dissolved	**1.1**	ug/L	1.0	1	05/21/20 15:27	05/28/20 23:34	7440-50-8	
Iron, Dissolved	**<50.0**	ug/L	50.0	1	05/21/20 15:27	05/28/20 23:34	7439-89-6	
Lead, Dissolved	**<0.10**	ug/L	0.10	1	05/21/20 15:27	05/28/20 23:34	7439-92-1	
Magnesium, Dissolved	**45600**	ug/L	200	20	05/21/20 15:27	05/29/20 14:42	7439-95-4	
Manganese, Dissolved	**266**	ug/L	0.50	1	05/21/20 15:27	05/28/20 23:34	7439-96-5	
Nickel, Dissolved	**1.5**	ug/L	0.50	1	05/21/20 15:27	05/28/20 23:34	7440-02-0	
Potassium, Dissolved	**1660**	ug/L	100	1	05/21/20 15:27	05/28/20 23:34	7440-09-7	
Selenium, Dissolved	**<0.50**	ug/L	0.50	1	05/21/20 15:27	05/28/20 23:34	7782-49-2	
Sodium, Dissolved	**4770**	ug/L	50.0	1	05/21/20 15:27	05/28/20 23:34	7440-23-5	
Zinc, Dissolved	**<5.0**	ug/L	5.0	1	05/21/20 15:27	05/28/20 23:34	7440-66-6	
Cation/Anion Balance	Analytical Method: SM 1030E Pace Analytical Services - Minneapolis							
Cation/Anion Balance	**8.13**	%		1		06/01/20 17:32		1M
Total Cations	**11.1**	meq/L		1		06/01/20 17:32		N2
Total Anions	**9.4**	meq/L		1		06/01/20 17:32		N2
245.1 Mercury, Dissolved	Analytical Method: EPA 245.1 Preparation Method: EPA 245.1 Pace Analytical Services - Minneapolis							
Mercury, Dissolved	**<0.20**	ug/L	0.20	1	05/21/20 18:22	05/27/20 11:49	7439-97-6	
8260B MSV LLW by SIMSCAN	Analytical Method: EPA 8260B Pace Analytical Services - Minneapolis							
Acetone	**<20.0**	ug/L	20.0	1		05/21/20 22:19	67-64-1	
Allyl chloride	**<4.0**	ug/L	4.0	1		05/21/20 22:19	107-05-1	
Benzene	**<0.20**	ug/L	0.20	1		05/21/20 22:19	71-43-2	
Bromobenzene	**<0.40**	ug/L	0.40	1		05/21/20 22:19	108-86-1	
Bromochloromethane	**<1.0**	ug/L	1.0	1		05/21/20 22:19	74-97-5	
Bromodichloromethane	**<0.40**	ug/L	0.40	1		05/21/20 22:19	75-27-4	
Bromoform	**<1.0**	ug/L	1.0	1		05/21/20 22:19	75-25-2	
Bromomethane	**<1.0**	ug/L	1.0	1		05/21/20 22:19	74-83-9	
2-Butanone (MEK)	**<5.0**	ug/L	5.0	1		05/21/20 22:19	78-93-3	
n-Butylbenzene	**<0.40**	ug/L	0.40	1		05/21/20 22:19	104-51-8	
sec-Butylbenzene	**<0.40**	ug/L	0.40	1		05/21/20 22:19	135-98-8	
tert-Butylbenzene	**<0.40**	ug/L	0.40	1		05/21/20 22:19	98-06-6	
Carbon tetrachloride	**<0.050**	ug/L	0.050	1		05/25/20 22:27	56-23-5	
Chlorobenzene	**<0.40**	ug/L	0.40	1		05/21/20 22:19	108-90-7	
Chloroethane	**<1.0**	ug/L	1.0	1		05/21/20 22:19	75-00-3	
Chloroform	**<1.0**	ug/L	1.0	1		05/21/20 22:19	67-66-3	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10517964

Sample: W-104A **Lab ID: 10517964012** Collected: 05/12/20 16:17 Received: 05/14/20 11:35 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV LLW by SIMSCAN	Analytical Method: EPA 8260B Pace Analytical Services - Minneapolis							
Chloromethane	**<1.0**	ug/L	1.0	1		05/21/20 22:19	74-87-3	
2-Chlorotoluene	**<0.40**	ug/L	0.40	1		05/21/20 22:19	95-49-8	
4-Chlorotoluene	**<0.40**	ug/L	0.40	1		05/21/20 22:19	106-43-4	
1,2-Dibromo-3-chloropropane	**<0.12**	ug/L	0.12	1		05/25/20 22:27	96-12-8	
Dibromochloromethane	**<0.40**	ug/L	0.40	1		05/25/20 22:27	124-48-1	
1,2-Dibromoethane (EDB)	**<0.050**	ug/L	0.050	1		05/25/20 22:27	106-93-4	
Dibromomethane	**<1.0**	ug/L	1.0	1		05/21/20 22:19	74-95-3	
1,2-Dichlorobenzene	**<0.40**	ug/L	0.40	1		05/21/20 22:19	95-50-1	
1,3-Dichlorobenzene	**<0.40**	ug/L	0.40	1		05/21/20 22:19	541-73-1	
1,4-Dichlorobenzene	**<0.40**	ug/L	0.40	1		05/21/20 22:19	106-46-7	
Dichlorodifluoromethane	**<1.0**	ug/L	1.0	1		05/21/20 22:19	75-71-8	
1,1-Dichloroethane	**<0.40**	ug/L	0.40	1		05/21/20 22:19	75-34-3	
1,2-Dichloroethane	**<0.20**	ug/L	0.20	1		05/25/20 22:27	107-06-2	
1,1-Dichloroethene	**<0.40**	ug/L	0.40	1		05/21/20 22:19	75-35-4	
cis-1,2-Dichloroethene	**<0.40**	ug/L	0.40	1		05/21/20 22:19	156-59-2	
trans-1,2-Dichloroethene	**<0.40**	ug/L	0.40	1		05/21/20 22:19	156-60-5	
Dichlorofluoromethane	**<1.0**	ug/L	1.0	1		05/21/20 22:19	75-43-4	
1,2-Dichloropropane	**<0.40**	ug/L	0.40	1		05/21/20 22:19	78-87-5	
1,3-Dichloropropane	**<0.40**	ug/L	0.40	1		05/21/20 22:19	142-28-9	
2,2-Dichloropropane	**<1.0**	ug/L	1.0	1		05/21/20 22:19	594-20-7	
1,1-Dichloropropene	**<0.40**	ug/L	0.40	1		05/21/20 22:19	563-58-6	
cis-1,3-Dichloropropene	**<0.40**	ug/L	0.40	1		05/25/20 22:27	10061-01-5	
trans-1,3-Dichloropropene	**<0.40**	ug/L	0.40	1		05/25/20 22:27	10061-02-6	
Diethyl ether (Ethyl ether)	**<4.0**	ug/L	4.0	1		05/21/20 22:19	60-29-7	
Ethylbenzene	**<0.40**	ug/L	0.40	1		05/21/20 22:19	100-41-4	
Hexachloro-1,3-butadiene	**<0.10**	ug/L	0.10	1		05/25/20 22:27	87-68-3	
Isopropylbenzene (Cumene)	**<0.40**	ug/L	0.40	1		05/21/20 22:19	98-82-8	
p-Isopropyltoluene	**<0.40**	ug/L	0.40	1		05/21/20 22:19	99-87-6	
Methylene Chloride	**<1.0**	ug/L	1.0	1		05/21/20 22:19	75-09-2	
4-Methyl-2-pentanone (MIBK)	**<5.0**	ug/L	5.0	1		05/21/20 22:19	108-10-1	
Methyl-tert-butyl ether	**<0.40**	ug/L	0.40	1		05/21/20 22:19	1634-04-4	
Naphthalene	**<1.0**	ug/L	1.0	1		05/21/20 22:19	91-20-3	
n-Propylbenzene	**<0.40**	ug/L	0.40	1		05/21/20 22:19	103-65-1	
Styrene	**<0.40**	ug/L	0.40	1		05/21/20 22:19	100-42-5	
1,1,1,2-Tetrachloroethane	**<0.40**	ug/L	0.40	1		05/21/20 22:19	630-20-6	
1,1,2,2-Tetrachloroethane	**<0.40**	ug/L	0.40	1		05/21/20 22:19	79-34-5	
Tetrachloroethene	**<0.40**	ug/L	0.40	1		05/21/20 22:19	127-18-4	
Tetrahydrofuran	**<10.0**	ug/L	10.0	1		05/21/20 22:19	109-99-9	
Toluene	**<0.40**	ug/L	0.40	1		05/21/20 22:19	108-88-3	
1,2,3-Trichlorobenzene	**<0.40**	ug/L	0.40	1		05/21/20 22:19	87-61-6	
1,2,4-Trichlorobenzene	**<0.40**	ug/L	0.40	1		05/21/20 22:19	120-82-1	
1,1,1-Trichloroethane	**<0.40**	ug/L	0.40	1		05/21/20 22:19	71-55-6	
1,1,2-Trichloroethane	**<0.40**	ug/L	0.40	1		05/21/20 22:19	79-00-5	
Trichloroethene	**<0.050**	ug/L	0.050	1		05/25/20 22:27	79-01-6	
Trichlorofluoromethane	**<0.40**	ug/L	0.40	1		05/21/20 22:19	75-69-4	
1,2,3-Trichloropropane	**<0.010**	ug/L	0.010	1		05/25/20 22:27	96-18-4	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10517964

Sample: W-104A **Lab ID: 10517964012** Collected: 05/12/20 16:17 Received: 05/14/20 11:35 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV LLW by SIMSCAN	Analytical Method: EPA 8260B							
	Pace Analytical Services - Minneapolis							
1,1,2-Trichlorotrifluoroethane	**<1.0**	ug/L	1.0	1		05/21/20 22:19	76-13-1	
1,2,4-Trimethylbenzene	**<1.0**	ug/L	1.0	1		05/21/20 22:19	95-63-6	
1,3,5-Trimethylbenzene	**<0.40**	ug/L	0.40	1		05/21/20 22:19	108-67-8	
Vinyl chloride	**<0.050**	ug/L	0.050	1		05/25/20 22:27	75-01-4	
Xylene (Total)	**<1.2**	ug/L	1.2	1		05/21/20 22:19	1330-20-7	
m&p-Xylene	**<0.80**	ug/L	0.80	1		05/21/20 22:19	179601-23-1	
o-Xylene	**<0.40**	ug/L	0.40	1		05/21/20 22:19	95-47-6	
Surrogates								
1,2-Dichloroethane-d4 (S)	106	%.	75-128	1		05/25/20 22:27	17060-07-0	
1,2-Dichloroethane-d4 (S)	110	%.	75-128	1		05/21/20 22:19	17060-07-0	
Toluene-d8 (S)	100	%.	75-125	1		05/25/20 22:27	2037-26-5	
Toluene-d8 (S)	103	%.	75-125	1		05/21/20 22:19	2037-26-5	
4-Bromofluorobenzene (S)	102	%.	75-125	1		05/21/20 22:19	460-00-4	
2320B Alkalinity	Analytical Method: SM 2320B							
	Pace Analytical Services - Minneapolis							
Alkalinity, Total as CaCO3	**422**	mg/L	5.0	1		05/21/20 15:35		
2540C Total Dissolved Solids	Analytical Method: SM 2540C							
	Pace Analytical Services - Minneapolis							
Total Dissolved Solids	**503**	mg/L	10.0	1		05/19/20 11:43		
2540D Total Suspended Solids	Analytical Method: SM 2540D							
	Pace Analytical Services - Minneapolis							
Total Suspended Solids	**131**	mg/L	10.0	1		05/18/20 15:14		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B							
	Pace Analytical Services - Minneapolis							
pH at 25 Degrees C	**7.3**	Std. Units	0.10	1		05/29/20 18:18		H6
SM2510 Specific Conductance	Analytical Method: SM 2510							
	Pace Analytical Services - Minneapolis							
Specific Conductance	**868**	umhos/cm	1.0	1		05/29/20 18:16		
300.0 IC Anions	Analytical Method: EPA 300.0							
	Pace Analytical Services - Minneapolis							
Chloride	**6.7**	mg/L	1.2	1		05/29/20 15:42	16887-00-6	
Sulfate	**38.5**	mg/L	1.2	1		05/29/20 15:42	14808-79-8	
350.1 Ammonia	Analytical Method: EPA 350.1							
	Pace Analytical Services - Minneapolis							
Nitrogen, Ammonia	**<0.10**	mg/L	0.10	1		05/19/20 16:41	7664-41-7	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10517964

Sample: W-104A **Lab ID: 10517964012** Collected: 05/12/20 16:17 Received: 05/14/20 11:35 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrate + Nitrite	Analytical Method: EPA 353.2 Pace Analytical Services - Minneapolis							
Nitrogen, NO2 plus NO3	**0.97**	mg/L	0.10	1		05/22/20 11:58		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10517964

Sample: W-104B **Lab ID: 10517964013** Collected: 05/12/20 16:32 Received: 05/14/20 11:35 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.8 MET ICPMS, Dissolved	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8							
	Pace Analytical Services - Minneapolis							
Arsenic, Dissolved	**8.6**	ug/L	0.50	1	05/21/20 15:27	05/28/20 23:40	7440-38-2	
Barium, Dissolved	**139**	ug/L	0.30	1	05/21/20 15:27	05/28/20 23:40	7440-39-3	
Boron, Dissolved	**26.4**	ug/L	10.0	1	05/21/20 15:27	05/28/20 23:40	7440-42-8	
Cadmium, Dissolved	**<0.080**	ug/L	0.080	1	05/21/20 15:27	05/28/20 23:40	7440-43-9	
Calcium, Dissolved	**74500**	ug/L	800	20	05/21/20 15:27	05/28/20 23:43	7440-70-2	
Chromium, Dissolved	**<0.50**	ug/L	0.50	1	05/21/20 15:27	05/28/20 23:40	7440-47-3	
Copper, Dissolved	**<1.0**	ug/L	1.0	1	05/21/20 15:27	05/28/20 23:40	7440-50-8	
Iron, Dissolved	**768**	ug/L	50.0	1	05/21/20 15:27	05/28/20 23:40	7439-89-6	
Lead, Dissolved	**<0.10**	ug/L	0.10	1	05/21/20 15:27	05/28/20 23:40	7439-92-1	
Magnesium, Dissolved	**25100**	ug/L	200	20	05/21/20 15:27	05/29/20 14:45	7439-95-4	
Manganese, Dissolved	**228**	ug/L	0.50	1	05/21/20 15:27	05/28/20 23:40	7439-96-5	
Nickel, Dissolved	**<0.50**	ug/L	0.50	1	05/21/20 15:27	05/28/20 23:40	7440-02-0	
Potassium, Dissolved	**2790**	ug/L	100	1	05/21/20 15:27	05/28/20 23:40	7440-09-7	
Selenium, Dissolved	**<0.50**	ug/L	0.50	1	05/21/20 15:27	05/28/20 23:40	7782-49-2	
Sodium, Dissolved	**3940**	ug/L	50.0	1	05/21/20 15:27	05/28/20 23:40	7440-23-5	
Zinc, Dissolved	**<5.0**	ug/L	5.0	1	05/21/20 15:27	05/28/20 23:40	7440-66-6	
Cation/Anion Balance	Analytical Method: SM 1030E							
	Pace Analytical Services - Minneapolis							
Cation/Anion Balance	**2.23**	%		1		06/01/20 17:32		
Total Cations	**6.1**	meq/L		1		06/01/20 17:32		N2
Total Anions	**5.8**	meq/L		1		06/01/20 17:32		N2
245.1 Mercury, Dissolved	Analytical Method: EPA 245.1 Preparation Method: EPA 245.1							
	Pace Analytical Services - Minneapolis							
Mercury, Dissolved	**<0.20**	ug/L	0.20	1	05/21/20 18:22	05/27/20 11:52	7439-97-6	
8260B MSV LLW by SIMSCAN	Analytical Method: EPA 8260B							
	Pace Analytical Services - Minneapolis							
Acetone	**<20.0**	ug/L	20.0	1		05/21/20 22:45	67-64-1	
Allyl chloride	**<4.0**	ug/L	4.0	1		05/21/20 22:45	107-05-1	
Benzene	**<0.20**	ug/L	0.20	1		05/21/20 22:45	71-43-2	
Bromobenzene	**<0.40**	ug/L	0.40	1		05/21/20 22:45	108-86-1	
Bromochloromethane	**<1.0**	ug/L	1.0	1		05/21/20 22:45	74-97-5	
Bromodichloromethane	**<0.40**	ug/L	0.40	1		05/21/20 22:45	75-27-4	
Bromoform	**<1.0**	ug/L	1.0	1		05/21/20 22:45	75-25-2	
Bromomethane	**<1.0**	ug/L	1.0	1		05/21/20 22:45	74-83-9	
2-Butanone (MEK)	**<5.0**	ug/L	5.0	1		05/21/20 22:45	78-93-3	
n-Butylbenzene	**<0.40**	ug/L	0.40	1		05/21/20 22:45	104-51-8	
sec-Butylbenzene	**<0.40**	ug/L	0.40	1		05/21/20 22:45	135-98-8	
tert-Butylbenzene	**<0.40**	ug/L	0.40	1		05/21/20 22:45	98-06-6	
Carbon tetrachloride	**<0.050**	ug/L	0.050	1		05/25/20 22:53	56-23-5	
Chlorobenzene	**<0.40**	ug/L	0.40	1		05/21/20 22:45	108-90-7	
Chloroethane	**<1.0**	ug/L	1.0	1		05/21/20 22:45	75-00-3	
Chloroform	**<1.0**	ug/L	1.0	1		05/21/20 22:45	67-66-3	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10517964

Sample: W-104B **Lab ID: 10517964013** Collected: 05/12/20 16:32 Received: 05/14/20 11:35 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV LLW by SIMSCAN	Analytical Method: EPA 8260B Pace Analytical Services - Minneapolis							
Chloromethane	**<1.0**	ug/L	1.0	1		05/21/20 22:45	74-87-3	
2-Chlorotoluene	**<0.40**	ug/L	0.40	1		05/21/20 22:45	95-49-8	
4-Chlorotoluene	**<0.40**	ug/L	0.40	1		05/21/20 22:45	106-43-4	
1,2-Dibromo-3-chloropropane	**<0.12**	ug/L	0.12	1		05/25/20 22:53	96-12-8	
Dibromochloromethane	**<0.40**	ug/L	0.40	1		05/25/20 22:53	124-48-1	
1,2-Dibromoethane (EDB)	**<0.050**	ug/L	0.050	1		05/25/20 22:53	106-93-4	
Dibromomethane	**<1.0**	ug/L	1.0	1		05/21/20 22:45	74-95-3	
1,2-Dichlorobenzene	**<0.40**	ug/L	0.40	1		05/21/20 22:45	95-50-1	
1,3-Dichlorobenzene	**<0.40**	ug/L	0.40	1		05/21/20 22:45	541-73-1	
1,4-Dichlorobenzene	**<0.40**	ug/L	0.40	1		05/21/20 22:45	106-46-7	
Dichlorodifluoromethane	**<1.0**	ug/L	1.0	1		05/21/20 22:45	75-71-8	
1,1-Dichloroethane	**<0.40**	ug/L	0.40	1		05/21/20 22:45	75-34-3	
1,2-Dichloroethane	**<0.20**	ug/L	0.20	1		05/25/20 22:53	107-06-2	
1,1-Dichloroethene	**<0.40**	ug/L	0.40	1		05/21/20 22:45	75-35-4	
cis-1,2-Dichloroethene	**<0.40**	ug/L	0.40	1		05/21/20 22:45	156-59-2	
trans-1,2-Dichloroethene	**<0.40**	ug/L	0.40	1		05/21/20 22:45	156-60-5	
Dichlorofluoromethane	**<1.0**	ug/L	1.0	1		05/21/20 22:45	75-43-4	
1,2-Dichloropropane	**<0.40**	ug/L	0.40	1		05/21/20 22:45	78-87-5	
1,3-Dichloropropane	**<0.40**	ug/L	0.40	1		05/21/20 22:45	142-28-9	
2,2-Dichloropropane	**<1.0**	ug/L	1.0	1		05/21/20 22:45	594-20-7	
1,1-Dichloropropene	**<0.40**	ug/L	0.40	1		05/21/20 22:45	563-58-6	
cis-1,3-Dichloropropene	**<0.40**	ug/L	0.40	1		05/25/20 22:53	10061-01-5	
trans-1,3-Dichloropropene	**<0.40**	ug/L	0.40	1		05/25/20 22:53	10061-02-6	
Diethyl ether (Ethyl ether)	**<4.0**	ug/L	4.0	1		05/21/20 22:45	60-29-7	
Ethylbenzene	**<0.40**	ug/L	0.40	1		05/21/20 22:45	100-41-4	
Hexachloro-1,3-butadiene	**<0.10**	ug/L	0.10	1		05/25/20 22:53	87-68-3	
Isopropylbenzene (Cumene)	**<0.40**	ug/L	0.40	1		05/21/20 22:45	98-82-8	
p-Isopropyltoluene	**<0.40**	ug/L	0.40	1		05/21/20 22:45	99-87-6	
Methylene Chloride	**<1.0**	ug/L	1.0	1		05/21/20 22:45	75-09-2	
4-Methyl-2-pentanone (MIBK)	**<5.0**	ug/L	5.0	1		05/21/20 22:45	108-10-1	
Methyl-tert-butyl ether	**<0.40**	ug/L	0.40	1		05/21/20 22:45	1634-04-4	
Naphthalene	**<1.0**	ug/L	1.0	1		05/21/20 22:45	91-20-3	
n-Propylbenzene	**<0.40**	ug/L	0.40	1		05/21/20 22:45	103-65-1	
Styrene	**<0.40**	ug/L	0.40	1		05/21/20 22:45	100-42-5	
1,1,1,2-Tetrachloroethane	**<0.40**	ug/L	0.40	1		05/21/20 22:45	630-20-6	
1,1,2,2-Tetrachloroethane	**<0.40**	ug/L	0.40	1		05/21/20 22:45	79-34-5	
Tetrachloroethene	**<0.40**	ug/L	0.40	1		05/21/20 22:45	127-18-4	
Tetrahydrofuran	**<10.0**	ug/L	10.0	1		05/21/20 22:45	109-99-9	
Toluene	**<0.40**	ug/L	0.40	1		05/21/20 22:45	108-88-3	
1,2,3-Trichlorobenzene	**<0.40**	ug/L	0.40	1		05/21/20 22:45	87-61-6	
1,2,4-Trichlorobenzene	**<0.40**	ug/L	0.40	1		05/21/20 22:45	120-82-1	
1,1,1-Trichloroethane	**<0.40**	ug/L	0.40	1		05/21/20 22:45	71-55-6	
1,1,2-Trichloroethane	**<0.40**	ug/L	0.40	1		05/21/20 22:45	79-00-5	
Trichloroethene	**<0.050**	ug/L	0.050	1		05/25/20 22:53	79-01-6	
Trichlorofluoromethane	**<0.40**	ug/L	0.40	1		05/21/20 22:45	75-69-4	
1,2,3-Trichloropropane	**<0.010**	ug/L	0.010	1		05/25/20 22:53	96-18-4	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10517964

Sample: W-104B **Lab ID: 10517964013** Collected: 05/12/20 16:32 Received: 05/14/20 11:35 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV LLW by SIMSCAN	Analytical Method: EPA 8260B Pace Analytical Services - Minneapolis							
1,1,2-Trichlorotrifluoroethane	**<1.0**	ug/L	1.0	1		05/21/20 22:45	76-13-1	
1,2,4-Trimethylbenzene	**<1.0**	ug/L	1.0	1		05/21/20 22:45	95-63-6	
1,3,5-Trimethylbenzene	**<0.40**	ug/L	0.40	1		05/21/20 22:45	108-67-8	
Vinyl chloride	**<0.050**	ug/L	0.050	1		05/25/20 22:53	75-01-4	
Xylene (Total)	**<1.2**	ug/L	1.2	1		05/21/20 22:45	1330-20-7	
m&p-Xylene	**<0.80**	ug/L	0.80	1		05/21/20 22:45	179601-23-1	
o-Xylene	**<0.40**	ug/L	0.40	1		05/21/20 22:45	95-47-6	
Surrogates								
1,2-Dichloroethane-d4 (S)	107	%.	75-128	1		05/25/20 22:53	17060-07-0	
1,2-Dichloroethane-d4 (S)	107	%.	75-128	1		05/21/20 22:45	17060-07-0	
Toluene-d8 (S)	99	%.	75-125	1		05/21/20 22:45	2037-26-5	
Toluene-d8 (S)	100	%.	75-125	1		05/25/20 22:53	2037-26-5	
4-Bromofluorobenzene (S)	100	%.	75-125	1		05/21/20 22:45	460-00-4	
2320B Alkalinity	Analytical Method: SM 2320B Pace Analytical Services - Minneapolis							
Alkalinity, Total as CaCO3	**236**	mg/L	5.0	1		05/21/20 15:45		
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Minneapolis							
Total Dissolved Solids	**334**	mg/L	10.0	1		05/19/20 11:43		
2540D Total Suspended Solids	Analytical Method: SM 2540D Pace Analytical Services - Minneapolis							
Total Suspended Solids	**22.0**	mg/L	10.0	1		05/18/20 15:14		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B Pace Analytical Services - Minneapolis							
pH at 25 Degrees C	**8.0**	Std. Units	0.10	1		05/29/20 18:20		H6
SM2510 Specific Conductance	Analytical Method: SM 2510 Pace Analytical Services - Minneapolis							
Specific Conductance	**576**	umhos/cm	1.0	1		05/29/20 18:17		
300.0 IC Anions	Analytical Method: EPA 300.0 Pace Analytical Services - Minneapolis							
Chloride	**2.4**	mg/L	1.2	1		05/29/20 15:58	16887-00-6	
Sulfate	**47.6**	mg/L	1.2	1		05/29/20 15:58	14808-79-8	
350.1 Ammonia	Analytical Method: EPA 350.1 Pace Analytical Services - Minneapolis							
Nitrogen, Ammonia	**0.12**	mg/L	0.10	1		05/19/20 16:42	7664-41-7	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10517964

Sample: W-104B **Lab ID: 10517964013** Collected: 05/12/20 16:32 Received: 05/14/20 11:35 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrate + Nitrite	Analytical Method: EPA 353.2 Pace Analytical Services - Minneapolis							
Nitrogen, NO2 plus NO3	**<0.10**	mg/L	0.10	1		05/22/20 11:59		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10517964

Sample: W-302A **Lab ID: 10517964014** Collected: 05/12/20 18:13 Received: 05/14/20 11:35 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.8 MET ICPMS, Dissolved	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Minneapolis							
Arsenic, Dissolved	**1.6**	ug/L	0.50	1	05/21/20 15:27	05/28/20 23:53	7440-38-2	
Barium, Dissolved	**131**	ug/L	0.30	1	05/21/20 15:27	05/28/20 23:53	7440-39-3	
Boron, Dissolved	**14.7**	ug/L	10.0	1	05/21/20 15:27	05/28/20 23:53	7440-42-8	
Cadmium, Dissolved	**<0.080**	ug/L	0.080	1	05/21/20 15:27	05/28/20 23:53	7440-43-9	
Calcium, Dissolved	**71600**	ug/L	800	20	05/21/20 15:27	05/28/20 23:56	7440-70-2	
Chromium, Dissolved	**<0.50**	ug/L	0.50	1	05/21/20 15:27	05/28/20 23:53	7440-47-3	
Copper, Dissolved	**<1.0**	ug/L	1.0	1	05/21/20 15:27	05/28/20 23:53	7440-50-8	
Iron, Dissolved	**899**	ug/L	50.0	1	05/21/20 15:27	05/28/20 23:53	7439-89-6	
Lead, Dissolved	**<0.10**	ug/L	0.10	1	05/21/20 15:27	05/28/20 23:53	7439-92-1	
Magnesium, Dissolved	**31100**	ug/L	200	20	05/21/20 15:27	05/29/20 14:55	7439-95-4	
Manganese, Dissolved	**206**	ug/L	0.50	1	05/21/20 15:27	05/28/20 23:53	7439-96-5	
Nickel, Dissolved	**<0.50**	ug/L	0.50	1	05/21/20 15:27	05/28/20 23:53	7440-02-0	
Potassium, Dissolved	**3520**	ug/L	2000	20	05/21/20 15:27	05/29/20 14:55	7440-09-7	
Selenium, Dissolved	**<0.50**	ug/L	0.50	1	05/21/20 15:27	05/28/20 23:53	7782-49-2	
Sodium, Dissolved	**3250**	ug/L	50.0	1	05/21/20 15:27	05/28/20 23:53	7440-23-5	
Zinc, Dissolved	**<5.0**	ug/L	5.0	1	05/21/20 15:27	05/28/20 23:53	7440-66-6	
Cation/Anion Balance	Analytical Method: SM 1030E Pace Analytical Services - Minneapolis							
Cation/Anion Balance	**7.21**	%		1		06/01/20 17:32		1M
Total Cations	**6.4**	meq/L		1		06/01/20 17:32		N2
Total Anions	**5.5**	meq/L		1		06/01/20 17:32		N2
245.1 Mercury, Dissolved	Analytical Method: EPA 245.1 Preparation Method: EPA 245.1 Pace Analytical Services - Minneapolis							
Mercury, Dissolved	**<0.20**	ug/L	0.20	1	05/21/20 18:22	05/27/20 11:54	7439-97-6	
8260B MSV LLW by SIMSCAN	Analytical Method: EPA 8260B Pace Analytical Services - Minneapolis							
Acetone	**<20.0**	ug/L	20.0	1		05/21/20 23:11	67-64-1	
Allyl chloride	**<4.0**	ug/L	4.0	1		05/21/20 23:11	107-05-1	
Benzene	**<0.20**	ug/L	0.20	1		05/21/20 23:11	71-43-2	
Bromobenzene	**<0.40**	ug/L	0.40	1		05/21/20 23:11	108-86-1	
Bromochloromethane	**<1.0**	ug/L	1.0	1		05/21/20 23:11	74-97-5	
Bromodichloromethane	**<0.40**	ug/L	0.40	1		05/21/20 23:11	75-27-4	
Bromoform	**<1.0**	ug/L	1.0	1		05/21/20 23:11	75-25-2	
Bromomethane	**<1.0**	ug/L	1.0	1		05/21/20 23:11	74-83-9	
2-Butanone (MEK)	**<5.0**	ug/L	5.0	1		05/21/20 23:11	78-93-3	
n-Butylbenzene	**<0.40**	ug/L	0.40	1		05/21/20 23:11	104-51-8	
sec-Butylbenzene	**<0.40**	ug/L	0.40	1		05/21/20 23:11	135-98-8	
tert-Butylbenzene	**<0.40**	ug/L	0.40	1		05/21/20 23:11	98-06-6	
Carbon tetrachloride	**<0.050**	ug/L	0.050	1		05/25/20 23:19	56-23-5	
Chlorobenzene	**<0.40**	ug/L	0.40	1		05/21/20 23:11	108-90-7	
Chloroethane	**<1.0**	ug/L	1.0	1		05/21/20 23:11	75-00-3	
Chloroform	**<1.0**	ug/L	1.0	1		05/21/20 23:11	67-66-3	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10517964

Sample: W-302A **Lab ID: 10517964014** Collected: 05/12/20 18:13 Received: 05/14/20 11:35 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV LLW by SIMSCAN	Analytical Method: EPA 8260B Pace Analytical Services - Minneapolis							
Chloromethane	**<1.0**	ug/L	1.0	1		05/21/20 23:11	74-87-3	
2-Chlorotoluene	**<0.40**	ug/L	0.40	1		05/21/20 23:11	95-49-8	
4-Chlorotoluene	**<0.40**	ug/L	0.40	1		05/21/20 23:11	106-43-4	
1,2-Dibromo-3-chloropropane	**<0.12**	ug/L	0.12	1		05/25/20 23:19	96-12-8	
Dibromochloromethane	**<0.40**	ug/L	0.40	1		05/25/20 23:19	124-48-1	
1,2-Dibromoethane (EDB)	**<0.050**	ug/L	0.050	1		05/25/20 23:19	106-93-4	
Dibromomethane	**<1.0**	ug/L	1.0	1		05/21/20 23:11	74-95-3	
1,2-Dichlorobenzene	**<0.40**	ug/L	0.40	1		05/21/20 23:11	95-50-1	
1,3-Dichlorobenzene	**<0.40**	ug/L	0.40	1		05/21/20 23:11	541-73-1	
1,4-Dichlorobenzene	**<0.40**	ug/L	0.40	1		05/21/20 23:11	106-46-7	
Dichlorodifluoromethane	**<1.0**	ug/L	1.0	1		05/21/20 23:11	75-71-8	
1,1-Dichloroethane	**<0.40**	ug/L	0.40	1		05/21/20 23:11	75-34-3	
1,2-Dichloroethane	**<0.20**	ug/L	0.20	1		05/25/20 23:19	107-06-2	
1,1-Dichloroethene	**<0.40**	ug/L	0.40	1		05/21/20 23:11	75-35-4	
cis-1,2-Dichloroethene	**<0.40**	ug/L	0.40	1		05/21/20 23:11	156-59-2	
trans-1,2-Dichloroethene	**<0.40**	ug/L	0.40	1		05/21/20 23:11	156-60-5	
Dichlorofluoromethane	**<1.0**	ug/L	1.0	1		05/21/20 23:11	75-43-4	
1,2-Dichloropropane	**<0.40**	ug/L	0.40	1		05/21/20 23:11	78-87-5	
1,3-Dichloropropane	**<0.40**	ug/L	0.40	1		05/21/20 23:11	142-28-9	
2,2-Dichloropropane	**<1.0**	ug/L	1.0	1		05/21/20 23:11	594-20-7	
1,1-Dichloropropene	**<0.40**	ug/L	0.40	1		05/21/20 23:11	563-58-6	
cis-1,3-Dichloropropene	**<0.40**	ug/L	0.40	1		05/25/20 23:19	10061-01-5	
trans-1,3-Dichloropropene	**<0.40**	ug/L	0.40	1		05/25/20 23:19	10061-02-6	
Diethyl ether (Ethyl ether)	**<4.0**	ug/L	4.0	1		05/21/20 23:11	60-29-7	
Ethylbenzene	**<0.40**	ug/L	0.40	1		05/21/20 23:11	100-41-4	
Hexachloro-1,3-butadiene	**<0.10**	ug/L	0.10	1		05/25/20 23:19	87-68-3	
Isopropylbenzene (Cumene)	**<0.40**	ug/L	0.40	1		05/21/20 23:11	98-82-8	
p-Isopropyltoluene	**<0.40**	ug/L	0.40	1		05/21/20 23:11	99-87-6	
Methylene Chloride	**<1.0**	ug/L	1.0	1		05/21/20 23:11	75-09-2	
4-Methyl-2-pentanone (MIBK)	**<5.0**	ug/L	5.0	1		05/21/20 23:11	108-10-1	
Methyl-tert-butyl ether	**<0.40**	ug/L	0.40	1		05/21/20 23:11	1634-04-4	
Naphthalene	**<1.0**	ug/L	1.0	1		05/21/20 23:11	91-20-3	
n-Propylbenzene	**<0.40**	ug/L	0.40	1		05/21/20 23:11	103-65-1	
Styrene	**<0.40**	ug/L	0.40	1		05/21/20 23:11	100-42-5	
1,1,1,2-Tetrachloroethane	**<0.40**	ug/L	0.40	1		05/21/20 23:11	630-20-6	
1,1,2,2-Tetrachloroethane	**<0.40**	ug/L	0.40	1		05/21/20 23:11	79-34-5	
Tetrachloroethene	**<0.40**	ug/L	0.40	1		05/21/20 23:11	127-18-4	
Tetrahydrofuran	**<10.0**	ug/L	10.0	1		05/21/20 23:11	109-99-9	
Toluene	**<0.40**	ug/L	0.40	1		05/21/20 23:11	108-88-3	
1,2,3-Trichlorobenzene	**<0.40**	ug/L	0.40	1		05/21/20 23:11	87-61-6	
1,2,4-Trichlorobenzene	**<0.40**	ug/L	0.40	1		05/21/20 23:11	120-82-1	
1,1,1-Trichloroethane	**<0.40**	ug/L	0.40	1		05/21/20 23:11	71-55-6	
1,1,2-Trichloroethane	**<0.40**	ug/L	0.40	1		05/21/20 23:11	79-00-5	
Trichloroethene	**<0.050**	ug/L	0.050	1		05/25/20 23:19	79-01-6	
Trichlorofluoromethane	**<0.40**	ug/L	0.40	1		05/21/20 23:11	75-69-4	
1,2,3-Trichloropropane	**<0.010**	ug/L	0.010	1		05/25/20 23:19	96-18-4	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10517964

Sample: W-302A **Lab ID: 10517964014** Collected: 05/12/20 18:13 Received: 05/14/20 11:35 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV LLW by SIMSCAN	Analytical Method: EPA 8260B Pace Analytical Services - Minneapolis							
1,1,2-Trichlorotrifluoroethane	**<1.0**	ug/L	1.0	1		05/21/20 23:11	76-13-1	
1,2,4-Trimethylbenzene	**<1.0**	ug/L	1.0	1		05/21/20 23:11	95-63-6	
1,3,5-Trimethylbenzene	**<0.40**	ug/L	0.40	1		05/21/20 23:11	108-67-8	
Vinyl chloride	**<0.050**	ug/L	0.050	1		05/25/20 23:19	75-01-4	
Xylene (Total)	**<1.2**	ug/L	1.2	1		05/21/20 23:11	1330-20-7	
m&p-Xylene	**<0.80**	ug/L	0.80	1		05/21/20 23:11	179601-23-1	
o-Xylene	**<0.40**	ug/L	0.40	1		05/21/20 23:11	95-47-6	
Surrogates								
1,2-Dichloroethane-d4 (S)	110	%.	75-128	1		05/21/20 23:11	17060-07-0	
1,2-Dichloroethane-d4 (S)	106	%.	75-128	1		05/25/20 23:19	17060-07-0	
Toluene-d8 (S)	102	%.	75-125	1		05/21/20 23:11	2037-26-5	
Toluene-d8 (S)	99	%.	75-125	1		05/25/20 23:19	2037-26-5	
4-Bromofluorobenzene (S)	99	%.	75-125	1		05/21/20 23:11	460-00-4	
2320B Alkalinity	Analytical Method: SM 2320B Pace Analytical Services - Minneapolis							
Alkalinity, Total as CaCO3	**222**	mg/L	5.0	1		05/21/20 15:52		
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Minneapolis							
Total Dissolved Solids	**308**	mg/L	10.0	1		05/19/20 11:43		
2540D Total Suspended Solids	Analytical Method: SM 2540D Pace Analytical Services - Minneapolis							
Total Suspended Solids	**10.0**	mg/L	10.0	1		05/18/20 15:14		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B Pace Analytical Services - Minneapolis							
pH at 25 Degrees C	**7.9**	Std. Units	0.10	1		05/29/20 18:22		H6
SM2510 Specific Conductance	Analytical Method: SM 2510 Pace Analytical Services - Minneapolis							
Specific Conductance	**546**	umhos/cm	1.0	1		05/29/20 18:18		
300.0 IC Anions	Analytical Method: EPA 300.0 Pace Analytical Services - Minneapolis							
Chloride	**9.6**	mg/L	1.2	1		05/29/20 16:28	16887-00-6	
Sulfate	**38.7**	mg/L	1.2	1		05/29/20 16:28	14808-79-8	
350.1 Ammonia	Analytical Method: EPA 350.1 Pace Analytical Services - Minneapolis							
Nitrogen, Ammonia	**<0.10**	mg/L	0.10	1		05/19/20 16:44	7664-41-7	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10517964

Sample: W-302A **Lab ID: 10517964014** Collected: 05/12/20 18:13 Received: 05/14/20 11:35 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrate + Nitrite	Analytical Method: EPA 353.2 Pace Analytical Services - Minneapolis							
Nitrogen, NO2 plus NO3	**<0.10**	mg/L	0.10	1		05/22/20 12:00		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10517964

Sample: W-302B **Lab ID: 10517964015** Collected: 05/12/20 18:11 Received: 05/14/20 11:35 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.8 MET ICPMS, Dissolved	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Minneapolis							
Arsenic, Dissolved	**1.5**	ug/L	0.50	1	05/21/20 15:27	05/28/20 23:59	7440-38-2	
Barium, Dissolved	**128**	ug/L	0.30	1	05/21/20 15:27	05/28/20 23:59	7440-39-3	
Boron, Dissolved	**14.1**	ug/L	10.0	1	05/21/20 15:27	05/28/20 23:59	7440-42-8	
Cadmium, Dissolved	**<0.080**	ug/L	0.080	1	05/21/20 15:27	05/28/20 23:59	7440-43-9	
Calcium, Dissolved	**68700**	ug/L	800	20	05/21/20 15:27	05/29/20 00:12	7440-70-2	P6
Chromium, Dissolved	**<0.50**	ug/L	0.50	1	05/21/20 15:27	05/28/20 23:59	7440-47-3	
Copper, Dissolved	**<1.0**	ug/L	1.0	1	05/21/20 15:27	05/28/20 23:59	7440-50-8	
Iron, Dissolved	**1070**	ug/L	50.0	1	05/21/20 15:27	05/28/20 23:59	7439-89-6	
Lead, Dissolved	**<0.10**	ug/L	0.10	1	05/21/20 15:27	05/28/20 23:59	7439-92-1	
Magnesium, Dissolved	**30600**	ug/L	200	20	05/21/20 15:27	05/29/20 14:58	7439-95-4	P6
Manganese, Dissolved	**215**	ug/L	0.50	1	05/21/20 15:27	05/28/20 23:59	7439-96-5	
Nickel, Dissolved	**<0.50**	ug/L	0.50	1	05/21/20 15:27	05/28/20 23:59	7440-02-0	
Potassium, Dissolved	**3420**	ug/L	2000	20	05/21/20 15:27	05/29/20 14:58	7440-09-7	
Selenium, Dissolved	**<0.50**	ug/L	0.50	1	05/21/20 15:27	05/28/20 23:59	7782-49-2	
Sodium, Dissolved	**3300**	ug/L	50.0	1	05/21/20 15:27	05/28/20 23:59	7440-23-5	
Zinc, Dissolved	**<5.0**	ug/L	5.0	1	05/21/20 15:27	05/28/20 23:59	7440-66-6	
Cation/Anion Balance	Analytical Method: SM 1030E Pace Analytical Services - Minneapolis							
Cation/Anion Balance	**.82**	%		1		06/01/20 17:32		
Total Cations	**6.2**	meq/L		1		06/01/20 17:32		N2
Total Anions	**6.1**	meq/L		1		06/01/20 17:32		N2
245.1 Mercury, Dissolved	Analytical Method: EPA 245.1 Preparation Method: EPA 245.1 Pace Analytical Services - Minneapolis							
Mercury, Dissolved	**<0.20**	ug/L	0.20	1	05/21/20 18:22	05/27/20 12:01	7439-97-6	
8260B MSV LLW by SIMSCAN	Analytical Method: EPA 8260B Pace Analytical Services - Minneapolis							
Acetone	**<20.0**	ug/L	20.0	1		05/21/20 16:15	67-64-1	
Allyl chloride	**<4.0**	ug/L	4.0	1		05/21/20 16:15	107-05-1	
Benzene	**<0.20**	ug/L	0.20	1		05/21/20 16:15	71-43-2	
Bromobenzene	**<0.40**	ug/L	0.40	1		05/21/20 16:15	108-86-1	
Bromochloromethane	**<1.0**	ug/L	1.0	1		05/21/20 16:15	74-97-5	
Bromodichloromethane	**<0.40**	ug/L	0.40	1		05/21/20 16:15	75-27-4	
Bromoform	**<1.0**	ug/L	1.0	1		05/21/20 16:15	75-25-2	
Bromomethane	**<1.0**	ug/L	1.0	1		05/21/20 16:15	74-83-9	
2-Butanone (MEK)	**<5.0**	ug/L	5.0	1		05/21/20 16:15	78-93-3	
n-Butylbenzene	**<0.40**	ug/L	0.40	1		05/21/20 16:15	104-51-8	
sec-Butylbenzene	**<0.40**	ug/L	0.40	1		05/21/20 16:15	135-98-8	
tert-Butylbenzene	**<0.40**	ug/L	0.40	1		05/21/20 16:15	98-06-6	
Carbon tetrachloride	**<0.050**	ug/L	0.050	1		05/25/20 16:23	56-23-5	
Chlorobenzene	**<0.40**	ug/L	0.40	1		05/21/20 16:15	108-90-7	
Chloroethane	**<1.0**	ug/L	1.0	1		05/21/20 16:15	75-00-3	
Chloroform	**<1.0**	ug/L	1.0	1		05/21/20 16:15	67-66-3	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10517964

Sample: W-302B **Lab ID: 10517964015** Collected: 05/12/20 18:11 Received: 05/14/20 11:35 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV LLW by SIMSCAN	Analytical Method: EPA 8260B Pace Analytical Services - Minneapolis							
Chloromethane	**<1.0**	ug/L	1.0	1		05/21/20 16:15	74-87-3	
2-Chlorotoluene	**<0.40**	ug/L	0.40	1		05/21/20 16:15	95-49-8	
4-Chlorotoluene	**<0.40**	ug/L	0.40	1		05/21/20 16:15	106-43-4	
1,2-Dibromo-3-chloropropane	**<0.12**	ug/L	0.12	1		05/25/20 16:23	96-12-8	
Dibromochloromethane	**<0.40**	ug/L	0.40	1		05/25/20 16:23	124-48-1	
1,2-Dibromoethane (EDB)	**<0.050**	ug/L	0.050	1		05/25/20 16:23	106-93-4	
Dibromomethane	**<1.0**	ug/L	1.0	1		05/21/20 16:15	74-95-3	
1,2-Dichlorobenzene	**<0.40**	ug/L	0.40	1		05/21/20 16:15	95-50-1	
1,3-Dichlorobenzene	**<0.40**	ug/L	0.40	1		05/21/20 16:15	541-73-1	
1,4-Dichlorobenzene	**<0.40**	ug/L	0.40	1		05/21/20 16:15	106-46-7	
Dichlorodifluoromethane	**<1.0**	ug/L	1.0	1		05/21/20 16:15	75-71-8	
1,1-Dichloroethane	**<0.40**	ug/L	0.40	1		05/21/20 16:15	75-34-3	
1,2-Dichloroethane	**<0.20**	ug/L	0.20	1		05/25/20 16:23	107-06-2	
1,1-Dichloroethene	**<0.40**	ug/L	0.40	1		05/21/20 16:15	75-35-4	
cis-1,2-Dichloroethene	**<0.40**	ug/L	0.40	1		05/21/20 16:15	156-59-2	
trans-1,2-Dichloroethene	**<0.40**	ug/L	0.40	1		05/21/20 16:15	156-60-5	
Dichlorofluoromethane	**<1.0**	ug/L	1.0	1		05/21/20 16:15	75-43-4	
1,2-Dichloropropane	**<0.40**	ug/L	0.40	1		05/21/20 16:15	78-87-5	
1,3-Dichloropropane	**<0.40**	ug/L	0.40	1		05/21/20 16:15	142-28-9	
2,2-Dichloropropane	**<1.0**	ug/L	1.0	1		05/21/20 16:15	594-20-7	
1,1-Dichloropropene	**<0.40**	ug/L	0.40	1		05/21/20 16:15	563-58-6	
cis-1,3-Dichloropropene	**<0.40**	ug/L	0.40	1		05/25/20 16:23	10061-01-5	
trans-1,3-Dichloropropene	**<0.40**	ug/L	0.40	1		05/25/20 16:23	10061-02-6	
Diethyl ether (Ethyl ether)	**<4.0**	ug/L	4.0	1		05/21/20 16:15	60-29-7	
Ethylbenzene	**<0.40**	ug/L	0.40	1		05/21/20 16:15	100-41-4	
Hexachloro-1,3-butadiene	**<0.10**	ug/L	0.10	1		05/25/20 16:23	87-68-3	
Isopropylbenzene (Cumene)	**<0.40**	ug/L	0.40	1		05/21/20 16:15	98-82-8	
p-Isopropyltoluene	**<0.40**	ug/L	0.40	1		05/21/20 16:15	99-87-6	
Methylene Chloride	**<1.0**	ug/L	1.0	1		05/21/20 16:15	75-09-2	
4-Methyl-2-pentanone (MIBK)	**<5.0**	ug/L	5.0	1		05/21/20 16:15	108-10-1	
Methyl-tert-butyl ether	**<0.40**	ug/L	0.40	1		05/21/20 16:15	1634-04-4	
Naphthalene	**<1.0**	ug/L	1.0	1		05/21/20 16:15	91-20-3	
n-Propylbenzene	**<0.40**	ug/L	0.40	1		05/21/20 16:15	103-65-1	
Styrene	**<0.40**	ug/L	0.40	1		05/21/20 16:15	100-42-5	
1,1,1,2-Tetrachloroethane	**<0.40**	ug/L	0.40	1		05/21/20 16:15	630-20-6	
1,1,2,2-Tetrachloroethane	**<0.40**	ug/L	0.40	1		05/21/20 16:15	79-34-5	
Tetrachloroethene	**<0.40**	ug/L	0.40	1		05/21/20 16:15	127-18-4	
Tetrahydrofuran	**<10.0**	ug/L	10.0	1		05/21/20 16:15	109-99-9	
Toluene	**<0.40**	ug/L	0.40	1		05/21/20 16:15	108-88-3	
1,2,3-Trichlorobenzene	**<0.40**	ug/L	0.40	1		05/21/20 16:15	87-61-6	
1,2,4-Trichlorobenzene	**<0.40**	ug/L	0.40	1		05/21/20 16:15	120-82-1	
1,1,1-Trichloroethane	**<0.40**	ug/L	0.40	1		05/21/20 16:15	71-55-6	
1,1,2-Trichloroethane	**<0.40**	ug/L	0.40	1		05/21/20 16:15	79-00-5	
Trichloroethene	**<0.050**	ug/L	0.050	1		05/25/20 16:23	79-01-6	
Trichlorofluoromethane	**<0.40**	ug/L	0.40	1		05/21/20 16:15	75-69-4	
1,2,3-Trichloropropane	**<0.010**	ug/L	0.010	1		05/25/20 16:23	96-18-4	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10517964

Sample: W-302B **Lab ID: 10517964015** Collected: 05/12/20 18:11 Received: 05/14/20 11:35 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV LLW by SIMSCAN	Analytical Method: EPA 8260B Pace Analytical Services - Minneapolis							
1,1,2-Trichlorotrifluoroethane	**<1.0**	ug/L	1.0	1		05/21/20 16:15	76-13-1	
1,2,4-Trimethylbenzene	**<1.0**	ug/L	1.0	1		05/21/20 16:15	95-63-6	
1,3,5-Trimethylbenzene	**<0.40**	ug/L	0.40	1		05/21/20 16:15	108-67-8	
Vinyl chloride	**<0.050**	ug/L	0.050	1		05/25/20 16:23	75-01-4	
Xylene (Total)	**<1.2**	ug/L	1.2	1		05/21/20 16:15	1330-20-7	
m&p-Xylene	**<0.80**	ug/L	0.80	1		05/21/20 16:15	179601-23-1	
o-Xylene	**<0.40**	ug/L	0.40	1		05/21/20 16:15	95-47-6	
Surrogates								
1,2-Dichloroethane-d4 (S)	106	%.	75-128	1		05/21/20 16:15	17060-07-0	
1,2-Dichloroethane-d4 (S)	106	%.	75-128	1		05/25/20 16:23	17060-07-0	
Toluene-d8 (S)	100	%.	75-125	1		05/25/20 16:23	2037-26-5	
Toluene-d8 (S)	104	%.	75-125	1		05/21/20 16:15	2037-26-5	
4-Bromofluorobenzene (S)	102	%.	75-125	1		05/21/20 16:15	460-00-4	
2320B Alkalinity	Analytical Method: SM 2320B Pace Analytical Services - Minneapolis							
Alkalinity, Total as CaCO3	**251**	mg/L	5.0	1		05/21/20 13:13		
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Minneapolis							
Total Dissolved Solids	**328**	mg/L	10.0	1		05/19/20 10:41		
2540D Total Suspended Solids	Analytical Method: SM 2540D Pace Analytical Services - Minneapolis							
Total Suspended Solids	**<10.0**	mg/L	10.0	1		05/18/20 15:14		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B Pace Analytical Services - Minneapolis							
pH at 25 Degrees C	**7.9**	Std. Units	0.10	1		05/29/20 17:50		H6
SM2510 Specific Conductance	Analytical Method: SM 2510 Pace Analytical Services - Minneapolis							
Specific Conductance	**579**	umhos/cm	1.0	1		05/29/20 18:18		
300.0 IC Anions	Analytical Method: EPA 300.0 Pace Analytical Services - Minneapolis							
Chloride	**9.8**	mg/L	1.2	1		05/29/20 16:13	16887-00-6	M1,R1
Sulfate	**38.8**	mg/L	1.2	1		05/29/20 16:13	14808-79-8	M1,R1
350.1 Ammonia	Analytical Method: EPA 350.1 Pace Analytical Services - Minneapolis							
Nitrogen, Ammonia	**<0.10**	mg/L	0.10	1		05/19/20 17:16	7664-41-7	M1

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10517964

Sample: W-302B **Lab ID: 10517964015** Collected: 05/12/20 18:11 Received: 05/14/20 11:35 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrate + Nitrite	Analytical Method: EPA 353.2 Pace Analytical Services - Minneapolis							
Nitrogen, NO2 plus NO3	**1.9**	mg/L	0.10	1		05/22/20 12:02		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10517964

Sample: Dup-2 **Lab ID: 10517964016** Collected: 05/12/20 00:00 Received: 05/14/20 11:35 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.8 MET ICPMS, Dissolved	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Minneapolis							
Arsenic, Dissolved	**1.3**	ug/L	0.50	1	05/21/20 15:27	05/29/20 00:18	7440-38-2	
Barium, Dissolved	**151**	ug/L	0.30	1	05/21/20 15:27	05/29/20 00:18	7440-39-3	
Boron, Dissolved	**23.3**	ug/L	10.0	1	05/21/20 15:27	05/29/20 00:18	7440-42-8	
Cadmium, Dissolved	**<0.080**	ug/L	0.080	1	05/21/20 15:27	05/29/20 00:18	7440-43-9	
Calcium, Dissolved	**81100**	ug/L	800	20	05/21/20 15:27	05/29/20 00:21	7440-70-2	
Chromium, Dissolved	**<0.50**	ug/L	0.50	1	05/21/20 15:27	05/29/20 00:18	7440-47-3	
Copper, Dissolved	**<1.0**	ug/L	1.0	1	05/21/20 15:27	05/29/20 00:18	7440-50-8	
Iron, Dissolved	**523**	ug/L	50.0	1	05/21/20 15:27	05/29/20 00:18	7439-89-6	
Lead, Dissolved	**<0.10**	ug/L	0.10	1	05/21/20 15:27	05/29/20 00:18	7439-92-1	
Magnesium, Dissolved	**41900**	ug/L	200	20	05/21/20 15:27	05/29/20 15:11	7439-95-4	
Manganese, Dissolved	**75.2**	ug/L	0.50	1	05/21/20 15:27	05/29/20 00:18	7439-96-5	
Nickel, Dissolved	**4.0**	ug/L	0.50	1	05/21/20 15:27	05/29/20 00:18	7440-02-0	
Potassium, Dissolved	**2170**	ug/L	2000	20	05/21/20 15:27	05/29/20 15:11	7440-09-7	
Selenium, Dissolved	**0.60**	ug/L	0.50	1	05/21/20 15:27	05/29/20 00:18	7782-49-2	
Sodium, Dissolved	**4800**	ug/L	50.0	1	05/21/20 15:27	05/29/20 00:18	7440-23-5	
Zinc, Dissolved	**<5.0**	ug/L	5.0	1	05/21/20 15:27	05/29/20 00:18	7440-66-6	
Cation/Anion Balance	Analytical Method: SM 1030E Pace Analytical Services - Minneapolis							
Cation/Anion Balance	**-5.88**	%		1		06/01/20 17:32		1M
Total Cations	**7.8**	meq/L		1		06/01/20 17:32		N2
Total Anions	**8.7**	meq/L		1		06/01/20 17:32		N2
245.1 Mercury, Dissolved	Analytical Method: EPA 245.1 Preparation Method: EPA 245.1 Pace Analytical Services - Minneapolis							
Mercury, Dissolved	**<0.20**	ug/L	0.20	1	05/21/20 18:22	05/27/20 12:08	7439-97-6	
8260B MSV LLW by SIMSCAN	Analytical Method: EPA 8260B Pace Analytical Services - Minneapolis							
Acetone	**<20.0**	ug/L	20.0	1		05/21/20 23:37	67-64-1	
Allyl chloride	**<4.0**	ug/L	4.0	1		05/21/20 23:37	107-05-1	
Benzene	**<0.20**	ug/L	0.20	1		05/21/20 23:37	71-43-2	
Bromobenzene	**<0.40**	ug/L	0.40	1		05/21/20 23:37	108-86-1	
Bromochloromethane	**<1.0**	ug/L	1.0	1		05/21/20 23:37	74-97-5	
Bromodichloromethane	**<0.40**	ug/L	0.40	1		05/21/20 23:37	75-27-4	
Bromoform	**<1.0**	ug/L	1.0	1		05/21/20 23:37	75-25-2	
Bromomethane	**<1.0**	ug/L	1.0	1		05/21/20 23:37	74-83-9	
2-Butanone (MEK)	**<5.0**	ug/L	5.0	1		05/21/20 23:37	78-93-3	
n-Butylbenzene	**<0.40**	ug/L	0.40	1		05/21/20 23:37	104-51-8	
sec-Butylbenzene	**<0.40**	ug/L	0.40	1		05/21/20 23:37	135-98-8	
tert-Butylbenzene	**<0.40**	ug/L	0.40	1		05/21/20 23:37	98-06-6	
Carbon tetrachloride	**<0.050**	ug/L	0.050	1		05/25/20 23:44	56-23-5	
Chlorobenzene	**<0.40**	ug/L	0.40	1		05/21/20 23:37	108-90-7	
Chloroethane	**<1.0**	ug/L	1.0	1		05/21/20 23:37	75-00-3	
Chloroform	**<1.0**	ug/L	1.0	1		05/21/20 23:37	67-66-3	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10517964

Sample: Dup-2 **Lab ID: 10517964016** Collected: 05/12/20 00:00 Received: 05/14/20 11:35 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV LLW by SIMSCAN	Analytical Method: EPA 8260B Pace Analytical Services - Minneapolis							
Chloromethane	**<1.0**	ug/L	1.0	1		05/21/20 23:37	74-87-3	
2-Chlorotoluene	**<0.40**	ug/L	0.40	1		05/21/20 23:37	95-49-8	
4-Chlorotoluene	**<0.40**	ug/L	0.40	1		05/21/20 23:37	106-43-4	
1,2-Dibromo-3-chloropropane	**<0.12**	ug/L	0.12	1		05/25/20 23:44	96-12-8	
Dibromochloromethane	**<0.40**	ug/L	0.40	1		05/25/20 23:44	124-48-1	
1,2-Dibromoethane (EDB)	**<0.050**	ug/L	0.050	1		05/25/20 23:44	106-93-4	
Dibromomethane	**<1.0**	ug/L	1.0	1		05/21/20 23:37	74-95-3	
1,2-Dichlorobenzene	**<0.40**	ug/L	0.40	1		05/21/20 23:37	95-50-1	
1,3-Dichlorobenzene	**<0.40**	ug/L	0.40	1		05/21/20 23:37	541-73-1	
1,4-Dichlorobenzene	**<0.40**	ug/L	0.40	1		05/21/20 23:37	106-46-7	
Dichlorodifluoromethane	**<1.0**	ug/L	1.0	1		05/21/20 23:37	75-71-8	
1,1-Dichloroethane	**<0.40**	ug/L	0.40	1		05/21/20 23:37	75-34-3	
1,2-Dichloroethane	**<0.20**	ug/L	0.20	1		05/25/20 23:44	107-06-2	
1,1-Dichloroethene	**<0.40**	ug/L	0.40	1		05/21/20 23:37	75-35-4	
cis-1,2-Dichloroethene	**<0.40**	ug/L	0.40	1		05/21/20 23:37	156-59-2	
trans-1,2-Dichloroethene	**<0.40**	ug/L	0.40	1		05/21/20 23:37	156-60-5	
Dichlorofluoromethane	**<1.0**	ug/L	1.0	1		05/21/20 23:37	75-43-4	
1,2-Dichloropropane	**<0.40**	ug/L	0.40	1		05/21/20 23:37	78-87-5	
1,3-Dichloropropane	**<0.40**	ug/L	0.40	1		05/21/20 23:37	142-28-9	
2,2-Dichloropropane	**<1.0**	ug/L	1.0	1		05/21/20 23:37	594-20-7	
1,1-Dichloropropene	**<0.40**	ug/L	0.40	1		05/21/20 23:37	563-58-6	
cis-1,3-Dichloropropene	**<0.40**	ug/L	0.40	1		05/25/20 23:44	10061-01-5	
trans-1,3-Dichloropropene	**<0.40**	ug/L	0.40	1		05/25/20 23:44	10061-02-6	
Diethyl ether (Ethyl ether)	**<4.0**	ug/L	4.0	1		05/21/20 23:37	60-29-7	
Ethylbenzene	**<0.40**	ug/L	0.40	1		05/21/20 23:37	100-41-4	
Hexachloro-1,3-butadiene	**<0.10**	ug/L	0.10	1		05/25/20 23:44	87-68-3	
Isopropylbenzene (Cumene)	**<0.40**	ug/L	0.40	1		05/21/20 23:37	98-82-8	
p-Isopropyltoluene	**<0.40**	ug/L	0.40	1		05/21/20 23:37	99-87-6	
Methylene Chloride	**<1.0**	ug/L	1.0	1		05/21/20 23:37	75-09-2	
4-Methyl-2-pentanone (MIBK)	**<5.0**	ug/L	5.0	1		05/21/20 23:37	108-10-1	
Methyl-tert-butyl ether	**<0.40**	ug/L	0.40	1		05/21/20 23:37	1634-04-4	
Naphthalene	**<1.0**	ug/L	1.0	1		05/21/20 23:37	91-20-3	
n-Propylbenzene	**<0.40**	ug/L	0.40	1		05/21/20 23:37	103-65-1	
Styrene	**<0.40**	ug/L	0.40	1		05/21/20 23:37	100-42-5	
1,1,1,2-Tetrachloroethane	**<0.40**	ug/L	0.40	1		05/21/20 23:37	630-20-6	
1,1,2,2-Tetrachloroethane	**<0.40**	ug/L	0.40	1		05/21/20 23:37	79-34-5	
Tetrachloroethene	**<0.40**	ug/L	0.40	1		05/21/20 23:37	127-18-4	
Tetrahydrofuran	**<10.0**	ug/L	10.0	1		05/21/20 23:37	109-99-9	
Toluene	**<0.40**	ug/L	0.40	1		05/21/20 23:37	108-88-3	
1,2,3-Trichlorobenzene	**<0.40**	ug/L	0.40	1		05/21/20 23:37	87-61-6	
1,2,4-Trichlorobenzene	**<0.40**	ug/L	0.40	1		05/21/20 23:37	120-82-1	
1,1,1-Trichloroethane	**<0.40**	ug/L	0.40	1		05/21/20 23:37	71-55-6	
1,1,2-Trichloroethane	**<0.40**	ug/L	0.40	1		05/21/20 23:37	79-00-5	
Trichloroethene	**<0.050**	ug/L	0.050	1		05/25/20 23:44	79-01-6	
Trichlorofluoromethane	**<0.40**	ug/L	0.40	1		05/21/20 23:37	75-69-4	
1,2,3-Trichloropropane	**<0.010**	ug/L	0.010	1		05/25/20 23:44	96-18-4	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10517964

Sample: Dup-2 **Lab ID: 10517964016** Collected: 05/12/20 00:00 Received: 05/14/20 11:35 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV LLW by SIMSCAN	Analytical Method: EPA 8260B							
	Pace Analytical Services - Minneapolis							
1,1,2-Trichlorotrifluoroethane	**<1.0**	ug/L	1.0	1		05/21/20 23:37	76-13-1	
1,2,4-Trimethylbenzene	**<1.0**	ug/L	1.0	1		05/21/20 23:37	95-63-6	
1,3,5-Trimethylbenzene	**<0.40**	ug/L	0.40	1		05/21/20 23:37	108-67-8	
Vinyl chloride	**<0.050**	ug/L	0.050	1		05/25/20 23:44	75-01-4	
Xylene (Total)	**<1.2**	ug/L	1.2	1		05/21/20 23:37	1330-20-7	
m&p-Xylene	**<0.80**	ug/L	0.80	1		05/21/20 23:37	179601-23-1	
o-Xylene	**<0.40**	ug/L	0.40	1		05/21/20 23:37	95-47-6	
Surrogates								
1,2-Dichloroethane-d4 (S)	107	%.	75-128	1		05/25/20 23:44	17060-07-0	
1,2-Dichloroethane-d4 (S)	110	%.	75-128	1		05/21/20 23:37	17060-07-0	
Toluene-d8 (S)	99	%.	75-125	1		05/25/20 23:44	2037-26-5	
Toluene-d8 (S)	101	%.	75-125	1		05/21/20 23:37	2037-26-5	
4-Bromofluorobenzene (S)	99	%.	75-125	1		05/21/20 23:37	460-00-4	
2320B Alkalinity	Analytical Method: SM 2320B							
	Pace Analytical Services - Minneapolis							
Alkalinity, Total as CaCO3	**421**	mg/L	5.0	1		05/21/20 15:58		
2540C Total Dissolved Solids	Analytical Method: SM 2540C							
	Pace Analytical Services - Minneapolis							
Total Dissolved Solids	**364**	mg/L	10.0	1		05/19/20 11:43		
2540D Total Suspended Solids	Analytical Method: SM 2540D							
	Pace Analytical Services - Minneapolis							
Total Suspended Solids	**139**	mg/L	10.0	1		05/18/20 15:14		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B							
	Pace Analytical Services - Minneapolis							
pH at 25 Degrees C	**7.6**	Std. Units	0.10	1		05/29/20 18:24		H6
SM2510 Specific Conductance	Analytical Method: SM 2510							
	Pace Analytical Services - Minneapolis							
Specific Conductance	**673**	umhos/cm	1.0	1		05/29/20 18:19		
300.0 IC Anions	Analytical Method: EPA 300.0							
	Pace Analytical Services - Minneapolis							
Chloride	**<1.2**	mg/L	1.2	1		05/29/20 16:43	16887-00-6	
Sulfate	**16.0**	mg/L	1.2	1		05/29/20 16:43	14808-79-8	
350.1 Ammonia	Analytical Method: EPA 350.1							
	Pace Analytical Services - Minneapolis							
Nitrogen, Ammonia	**<0.10**	mg/L	0.10	1		05/19/20 17:21	7664-41-7	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10517964

Sample: Dup-2 **Lab ID: 10517964016** Collected: 05/12/20 00:00 Received: 05/14/20 11:35 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrate + Nitrite	Analytical Method: EPA 353.2 Pace Analytical Services - Minneapolis							
Nitrogen, NO2 plus NO3	**<0.10**	mg/L	0.10	1		05/22/20 12:05		FS

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10517964

Sample: Trip Blank 2 **Lab ID: 10517964017** Collected: 05/12/20 00:00 Received: 05/14/20 11:35 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV LLW by SIMSCAN	Analytical Method: EPA 8260B Pace Analytical Services - Minneapolis							
Acetone	**<20.0**	ug/L	20.0	1		05/21/20 14:57	67-64-1	
Allyl chloride	**<4.0**	ug/L	4.0	1		05/21/20 14:57	107-05-1	
Benzene	**<0.20**	ug/L	0.20	1		05/21/20 14:57	71-43-2	
Bromobenzene	**<0.40**	ug/L	0.40	1		05/21/20 14:57	108-86-1	
Bromochloromethane	**<1.0**	ug/L	1.0	1		05/21/20 14:57	74-97-5	
Bromodichloromethane	**<0.40**	ug/L	0.40	1		05/21/20 14:57	75-27-4	
Bromoform	**<1.0**	ug/L	1.0	1		05/21/20 14:57	75-25-2	
Bromomethane	**<1.0**	ug/L	1.0	1		05/21/20 14:57	74-83-9	
2-Butanone (MEK)	**<5.0**	ug/L	5.0	1		05/21/20 14:57	78-93-3	
n-Butylbenzene	**<0.40**	ug/L	0.40	1		05/21/20 14:57	104-51-8	
sec-Butylbenzene	**<0.40**	ug/L	0.40	1		05/21/20 14:57	135-98-8	
tert-Butylbenzene	**<0.40**	ug/L	0.40	1		05/21/20 14:57	98-06-6	
Carbon tetrachloride	**<0.050**	ug/L	0.050	1		05/26/20 00:10	56-23-5	
Chlorobenzene	**<0.40**	ug/L	0.40	1		05/21/20 14:57	108-90-7	
Chloroethane	**<1.0**	ug/L	1.0	1		05/21/20 14:57	75-00-3	
Chloroform	**<1.0**	ug/L	1.0	1		05/21/20 14:57	67-66-3	
Chloromethane	**<1.0**	ug/L	1.0	1		05/21/20 14:57	74-87-3	
2-Chlorotoluene	**<0.40**	ug/L	0.40	1		05/21/20 14:57	95-49-8	
4-Chlorotoluene	**<0.40**	ug/L	0.40	1		05/21/20 14:57	106-43-4	
1,2-Dibromo-3-chloropropane	**<0.12**	ug/L	0.12	1		05/26/20 00:10	96-12-8	
Dibromochloromethane	**<0.40**	ug/L	0.40	1		05/26/20 00:10	124-48-1	
1,2-Dibromoethane (EDB)	**<0.050**	ug/L	0.050	1		05/26/20 00:10	106-93-4	
Dibromomethane	**<1.0**	ug/L	1.0	1		05/21/20 14:57	74-95-3	
1,2-Dichlorobenzene	**<0.40**	ug/L	0.40	1		05/21/20 14:57	95-50-1	
1,3-Dichlorobenzene	**<0.40**	ug/L	0.40	1		05/21/20 14:57	541-73-1	
1,4-Dichlorobenzene	**<0.40**	ug/L	0.40	1		05/21/20 14:57	106-46-7	
Dichlorodifluoromethane	**<1.0**	ug/L	1.0	1		05/21/20 14:57	75-71-8	
1,1-Dichloroethane	**<0.40**	ug/L	0.40	1		05/21/20 14:57	75-34-3	
1,2-Dichloroethane	**<0.20**	ug/L	0.20	1		05/26/20 00:10	107-06-2	
1,1-Dichloroethene	**<0.40**	ug/L	0.40	1		05/21/20 14:57	75-35-4	
cis-1,2-Dichloroethene	**<0.40**	ug/L	0.40	1		05/21/20 14:57	156-59-2	
trans-1,2-Dichloroethene	**<0.40**	ug/L	0.40	1		05/21/20 14:57	156-60-5	
Dichlorofluoromethane	**<1.0**	ug/L	1.0	1		05/21/20 14:57	75-43-4	
1,2-Dichloropropane	**<0.40**	ug/L	0.40	1		05/21/20 14:57	78-87-5	
1,3-Dichloropropane	**<0.40**	ug/L	0.40	1		05/21/20 14:57	142-28-9	
2,2-Dichloropropane	**<1.0**	ug/L	1.0	1		05/21/20 14:57	594-20-7	
1,1-Dichloropropene	**<0.40**	ug/L	0.40	1		05/21/20 14:57	563-58-6	
cis-1,3-Dichloropropene	**<0.40**	ug/L	0.40	1		05/26/20 00:10	10061-01-5	
trans-1,3-Dichloropropene	**<0.40**	ug/L	0.40	1		05/26/20 00:10	10061-02-6	
Diethyl ether (Ethyl ether)	**<4.0**	ug/L	4.0	1		05/21/20 14:57	60-29-7	
Ethylbenzene	**<0.40**	ug/L	0.40	1		05/21/20 14:57	100-41-4	
Hexachloro-1,3-butadiene	**<0.10**	ug/L	0.10	1		05/26/20 00:10	87-68-3	
Isopropylbenzene (Cumene)	**<0.40**	ug/L	0.40	1		05/21/20 14:57	98-82-8	
p-Isopropyltoluene	**<0.40**	ug/L	0.40	1		05/21/20 14:57	99-87-6	
Methylene Chloride	**<1.0**	ug/L	1.0	1		05/21/20 14:57	75-09-2	
4-Methyl-2-pentanone (MIBK)	**<5.0**	ug/L	5.0	1		05/21/20 14:57	108-10-1	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10517964

Sample: Trip Blank 2 **Lab ID: 10517964017** Collected: 05/12/20 00:00 Received: 05/14/20 11:35 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV LLW by SIMSCAN	Analytical Method: EPA 8260B Pace Analytical Services - Minneapolis							
Methyl-tert-butyl ether	**<0.40**	ug/L	0.40	1		05/21/20 14:57	1634-04-4	
Naphthalene	**<1.0**	ug/L	1.0	1		05/21/20 14:57	91-20-3	
n-Propylbenzene	**<0.40**	ug/L	0.40	1		05/21/20 14:57	103-65-1	
Styrene	**<0.40**	ug/L	0.40	1		05/21/20 14:57	100-42-5	
1,1,1,2-Tetrachloroethane	**<0.40**	ug/L	0.40	1		05/21/20 14:57	630-20-6	
1,1,2,2-Tetrachloroethane	**<0.40**	ug/L	0.40	1		05/21/20 14:57	79-34-5	
Tetrachloroethene	**<0.40**	ug/L	0.40	1		05/21/20 14:57	127-18-4	
Tetrahydrofuran	**<10.0**	ug/L	10.0	1		05/21/20 14:57	109-99-9	
Toluene	**<0.40**	ug/L	0.40	1		05/21/20 14:57	108-88-3	
1,2,3-Trichlorobenzene	**<0.40**	ug/L	0.40	1		05/21/20 14:57	87-61-6	
1,2,4-Trichlorobenzene	**<0.40**	ug/L	0.40	1		05/21/20 14:57	120-82-1	
1,1,1-Trichloroethane	**<0.40**	ug/L	0.40	1		05/21/20 14:57	71-55-6	
1,1,2-Trichloroethane	**<0.40**	ug/L	0.40	1		05/21/20 14:57	79-00-5	
Trichloroethene	**<0.050**	ug/L	0.050	1		05/26/20 00:10	79-01-6	
Trichlorofluoromethane	**<0.40**	ug/L	0.40	1		05/21/20 14:57	75-69-4	
1,2,3-Trichloropropane	**<0.010**	ug/L	0.010	1		05/26/20 00:10	96-18-4	
1,1,2-Trichlorotrifluoroethane	**<1.0**	ug/L	1.0	1		05/21/20 14:57	76-13-1	
1,2,4-Trimethylbenzene	**<1.0**	ug/L	1.0	1		05/21/20 14:57	95-63-6	
1,3,5-Trimethylbenzene	**<0.40**	ug/L	0.40	1		05/21/20 14:57	108-67-8	
Vinyl chloride	**<0.050**	ug/L	0.050	1		05/26/20 00:10	75-01-4	
Xylene (Total)	**<1.2**	ug/L	1.2	1		05/21/20 14:57	1330-20-7	
m&p-Xylene	**<0.80**	ug/L	0.80	1		05/21/20 14:57	179601-23-1	
o-Xylene	**<0.40**	ug/L	0.40	1		05/21/20 14:57	95-47-6	
Surrogates								
1,2-Dichloroethane-d4 (S)	109	%.	75-128	1		05/21/20 14:57	17060-07-0	
1,2-Dichloroethane-d4 (S)	107	%.	75-128	1		05/26/20 00:10	17060-07-0	
Toluene-d8 (S)	103	%.	75-125	1		05/21/20 14:57	2037-26-5	
Toluene-d8 (S)	100	%.	75-125	1		05/26/20 00:10	2037-26-5	
4-Bromofluorobenzene (S)	101	%.	75-125	1		05/21/20 14:57	460-00-4	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10517964

Sample: Trip Blank 3 **Lab ID: 10517964018** Collected: 05/12/20 00:00 Received: 05/14/20 11:35 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV LLW by SIMSCAN	Analytical Method: EPA 8260B Pace Analytical Services - Minneapolis							
Acetone	**<20.0**	ug/L	20.0	1		05/21/20 15:23	67-64-1	
Allyl chloride	**<4.0**	ug/L	4.0	1		05/21/20 15:23	107-05-1	
Benzene	**<0.20**	ug/L	0.20	1		05/21/20 15:23	71-43-2	
Bromobenzene	**<0.40**	ug/L	0.40	1		05/21/20 15:23	108-86-1	
Bromochloromethane	**<1.0**	ug/L	1.0	1		05/21/20 15:23	74-97-5	
Bromodichloromethane	**<0.40**	ug/L	0.40	1		05/21/20 15:23	75-27-4	
Bromoform	**<1.0**	ug/L	1.0	1		05/21/20 15:23	75-25-2	
Bromomethane	**<1.0**	ug/L	1.0	1		05/21/20 15:23	74-83-9	
2-Butanone (MEK)	**<5.0**	ug/L	5.0	1		05/21/20 15:23	78-93-3	
n-Butylbenzene	**<0.40**	ug/L	0.40	1		05/21/20 15:23	104-51-8	
sec-Butylbenzene	**<0.40**	ug/L	0.40	1		05/21/20 15:23	135-98-8	
tert-Butylbenzene	**<0.40**	ug/L	0.40	1		05/21/20 15:23	98-06-6	
Carbon tetrachloride	**<0.050**	ug/L	0.050	1		05/26/20 11:38	56-23-5	
Chlorobenzene	**<0.40**	ug/L	0.40	1		05/21/20 15:23	108-90-7	
Chloroethane	**<1.0**	ug/L	1.0	1		05/21/20 15:23	75-00-3	
Chloroform	**<1.0**	ug/L	1.0	1		05/21/20 15:23	67-66-3	
Chloromethane	**<1.0**	ug/L	1.0	1		05/21/20 15:23	74-87-3	
2-Chlorotoluene	**<0.40**	ug/L	0.40	1		05/21/20 15:23	95-49-8	
4-Chlorotoluene	**<0.40**	ug/L	0.40	1		05/21/20 15:23	106-43-4	
1,2-Dibromo-3-chloropropane	**<0.12**	ug/L	0.12	1		05/26/20 11:38	96-12-8	
Dibromochloromethane	**<0.40**	ug/L	0.40	1		05/26/20 11:38	124-48-1	
1,2-Dibromoethane (EDB)	**<0.050**	ug/L	0.050	1		05/26/20 11:38	106-93-4	
Dibromomethane	**<1.0**	ug/L	1.0	1		05/21/20 15:23	74-95-3	
1,2-Dichlorobenzene	**<0.40**	ug/L	0.40	1		05/21/20 15:23	95-50-1	
1,3-Dichlorobenzene	**<0.40**	ug/L	0.40	1		05/21/20 15:23	541-73-1	
1,4-Dichlorobenzene	**<0.40**	ug/L	0.40	1		05/21/20 15:23	106-46-7	
Dichlorodifluoromethane	**<1.0**	ug/L	1.0	1		05/21/20 15:23	75-71-8	
1,1-Dichloroethane	**<0.40**	ug/L	0.40	1		05/21/20 15:23	75-34-3	
1,2-Dichloroethane	**<0.20**	ug/L	0.20	1		05/26/20 11:38	107-06-2	
1,1-Dichloroethene	**<0.40**	ug/L	0.40	1		05/21/20 15:23	75-35-4	
cis-1,2-Dichloroethene	**<0.40**	ug/L	0.40	1		05/21/20 15:23	156-59-2	
trans-1,2-Dichloroethene	**<0.40**	ug/L	0.40	1		05/21/20 15:23	156-60-5	
Dichlorofluoromethane	**<1.0**	ug/L	1.0	1		05/21/20 15:23	75-43-4	
1,2-Dichloropropane	**<0.40**	ug/L	0.40	1		05/21/20 15:23	78-87-5	
1,3-Dichloropropane	**<0.40**	ug/L	0.40	1		05/21/20 15:23	142-28-9	
2,2-Dichloropropane	**<1.0**	ug/L	1.0	1		05/21/20 15:23	594-20-7	
1,1-Dichloropropene	**<0.40**	ug/L	0.40	1		05/21/20 15:23	563-58-6	
cis-1,3-Dichloropropene	**<0.40**	ug/L	0.40	1		05/26/20 11:38	10061-01-5	
trans-1,3-Dichloropropene	**<0.40**	ug/L	0.40	1		05/26/20 11:38	10061-02-6	
Diethyl ether (Ethyl ether)	**<4.0**	ug/L	4.0	1		05/21/20 15:23	60-29-7	
Ethylbenzene	**<0.40**	ug/L	0.40	1		05/21/20 15:23	100-41-4	
Hexachloro-1,3-butadiene	**<0.10**	ug/L	0.10	1		05/26/20 11:38	87-68-3	
Isopropylbenzene (Cumene)	**<0.40**	ug/L	0.40	1		05/21/20 15:23	98-82-8	
p-Isopropyltoluene	**<0.40**	ug/L	0.40	1		05/21/20 15:23	99-87-6	
Methylene Chloride	**<1.0**	ug/L	1.0	1		05/21/20 15:23	75-09-2	
4-Methyl-2-pentanone (MIBK)	**<5.0**	ug/L	5.0	1		05/21/20 15:23	108-10-1	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10517964

Sample: Trip Blank 3 **Lab ID: 10517964018** Collected: 05/12/20 00:00 Received: 05/14/20 11:35 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV LLW by SIMSCAN	Analytical Method: EPA 8260B Pace Analytical Services - Minneapolis							
Methyl-tert-butyl ether	**<0.40**	ug/L	0.40	1		05/21/20 15:23	1634-04-4	
Naphthalene	**<1.0**	ug/L	1.0	1		05/21/20 15:23	91-20-3	
n-Propylbenzene	**<0.40**	ug/L	0.40	1		05/21/20 15:23	103-65-1	
Styrene	**<0.40**	ug/L	0.40	1		05/21/20 15:23	100-42-5	
1,1,1,2-Tetrachloroethane	**<0.40**	ug/L	0.40	1		05/21/20 15:23	630-20-6	
1,1,2,2-Tetrachloroethane	**<0.40**	ug/L	0.40	1		05/21/20 15:23	79-34-5	
Tetrachloroethene	**<0.40**	ug/L	0.40	1		05/21/20 15:23	127-18-4	
Tetrahydrofuran	**<10.0**	ug/L	10.0	1		05/21/20 15:23	109-99-9	
Toluene	**<0.40**	ug/L	0.40	1		05/21/20 15:23	108-88-3	
1,2,3-Trichlorobenzene	**<0.40**	ug/L	0.40	1		05/21/20 15:23	87-61-6	
1,2,4-Trichlorobenzene	**<0.40**	ug/L	0.40	1		05/21/20 15:23	120-82-1	
1,1,1-Trichloroethane	**<0.40**	ug/L	0.40	1		05/21/20 15:23	71-55-6	
1,1,2-Trichloroethane	**<0.40**	ug/L	0.40	1		05/21/20 15:23	79-00-5	
Trichloroethene	**<0.050**	ug/L	0.050	1		05/26/20 11:38	79-01-6	
Trichlorofluoromethane	**<0.40**	ug/L	0.40	1		05/21/20 15:23	75-69-4	
1,2,3-Trichloropropane	**<0.010**	ug/L	0.010	1		05/26/20 11:38	96-18-4	
1,1,2-Trichlorotrifluoroethane	**<1.0**	ug/L	1.0	1		05/21/20 15:23	76-13-1	
1,2,4-Trimethylbenzene	**<1.0**	ug/L	1.0	1		05/21/20 15:23	95-63-6	
1,3,5-Trimethylbenzene	**<0.40**	ug/L	0.40	1		05/21/20 15:23	108-67-8	
Vinyl chloride	**<0.050**	ug/L	0.050	1		05/26/20 11:38	75-01-4	
Xylene (Total)	**<1.2**	ug/L	1.2	1		05/21/20 15:23	1330-20-7	
m&p-Xylene	**<0.80**	ug/L	0.80	1		05/21/20 15:23	179601-23-1	
o-Xylene	**<0.40**	ug/L	0.40	1		05/21/20 15:23	95-47-6	
Surrogates								
1,2-Dichloroethane-d4 (S)	109	%.	75-128	1		05/21/20 15:23	17060-07-0	
1,2-Dichloroethane-d4 (S)	105	%.	75-128	1		05/26/20 11:38	17060-07-0	
Toluene-d8 (S)	99	%.	75-125	1		05/26/20 11:38	2037-26-5	
Toluene-d8 (S)	103	%.	75-125	1		05/21/20 15:23	2037-26-5	
4-Bromofluorobenzene (S)	103	%.	75-125	1		05/21/20 15:23	460-00-4	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10517964

Sample: Trip Blank 4 **Lab ID: 10517964019** Collected: 05/12/20 00:00 Received: 05/14/20 11:35 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV LLW by SIMSCAN	Analytical Method: EPA 8260B Pace Analytical Services - Minneapolis							
Acetone	**<20.0**	ug/L	20.0	1		05/21/20 15:49	67-64-1	
Allyl chloride	**<4.0**	ug/L	4.0	1		05/21/20 15:49	107-05-1	
Benzene	**<0.20**	ug/L	0.20	1		05/21/20 15:49	71-43-2	
Bromobenzene	**<0.40**	ug/L	0.40	1		05/21/20 15:49	108-86-1	
Bromochloromethane	**<1.0**	ug/L	1.0	1		05/21/20 15:49	74-97-5	
Bromodichloromethane	**<0.40**	ug/L	0.40	1		05/21/20 15:49	75-27-4	
Bromoform	**<1.0**	ug/L	1.0	1		05/21/20 15:49	75-25-2	
Bromomethane	**<1.0**	ug/L	1.0	1		05/21/20 15:49	74-83-9	
2-Butanone (MEK)	**<5.0**	ug/L	5.0	1		05/21/20 15:49	78-93-3	
n-Butylbenzene	**<0.40**	ug/L	0.40	1		05/21/20 15:49	104-51-8	
sec-Butylbenzene	**<0.40**	ug/L	0.40	1		05/21/20 15:49	135-98-8	
tert-Butylbenzene	**<0.40**	ug/L	0.40	1		05/21/20 15:49	98-06-6	
Carbon tetrachloride	**<0.050**	ug/L	0.050	1		05/26/20 12:04	56-23-5	
Chlorobenzene	**<0.40**	ug/L	0.40	1		05/21/20 15:49	108-90-7	
Chloroethane	**<1.0**	ug/L	1.0	1		05/21/20 15:49	75-00-3	
Chloroform	**<1.0**	ug/L	1.0	1		05/21/20 15:49	67-66-3	
Chloromethane	**<1.0**	ug/L	1.0	1		05/21/20 15:49	74-87-3	
2-Chlorotoluene	**<0.40**	ug/L	0.40	1		05/21/20 15:49	95-49-8	
4-Chlorotoluene	**<0.40**	ug/L	0.40	1		05/21/20 15:49	106-43-4	
1,2-Dibromo-3-chloropropane	**<0.12**	ug/L	0.12	1		05/26/20 12:04	96-12-8	
Dibromochloromethane	**<0.40**	ug/L	0.40	1		05/26/20 12:04	124-48-1	
1,2-Dibromoethane (EDB)	**<0.050**	ug/L	0.050	1		05/26/20 12:04	106-93-4	
Dibromomethane	**<1.0**	ug/L	1.0	1		05/21/20 15:49	74-95-3	
1,2-Dichlorobenzene	**<0.40**	ug/L	0.40	1		05/21/20 15:49	95-50-1	
1,3-Dichlorobenzene	**<0.40**	ug/L	0.40	1		05/21/20 15:49	541-73-1	
1,4-Dichlorobenzene	**<0.40**	ug/L	0.40	1		05/21/20 15:49	106-46-7	
Dichlorodifluoromethane	**<1.0**	ug/L	1.0	1		05/21/20 15:49	75-71-8	
1,1-Dichloroethane	**<0.40**	ug/L	0.40	1		05/21/20 15:49	75-34-3	
1,2-Dichloroethane	**<0.20**	ug/L	0.20	1		05/26/20 12:04	107-06-2	
1,1-Dichloroethene	**<0.40**	ug/L	0.40	1		05/21/20 15:49	75-35-4	
cis-1,2-Dichloroethene	**<0.40**	ug/L	0.40	1		05/21/20 15:49	156-59-2	
trans-1,2-Dichloroethene	**<0.40**	ug/L	0.40	1		05/21/20 15:49	156-60-5	
Dichlorofluoromethane	**<1.0**	ug/L	1.0	1		05/21/20 15:49	75-43-4	
1,2-Dichloropropane	**<0.40**	ug/L	0.40	1		05/21/20 15:49	78-87-5	
1,3-Dichloropropane	**<0.40**	ug/L	0.40	1		05/21/20 15:49	142-28-9	
2,2-Dichloropropane	**<1.0**	ug/L	1.0	1		05/21/20 15:49	594-20-7	
1,1-Dichloropropene	**<0.40**	ug/L	0.40	1		05/21/20 15:49	563-58-6	
cis-1,3-Dichloropropene	**<0.40**	ug/L	0.40	1		05/26/20 12:04	10061-01-5	
trans-1,3-Dichloropropene	**<0.40**	ug/L	0.40	1		05/26/20 12:04	10061-02-6	
Diethyl ether (Ethyl ether)	**<4.0**	ug/L	4.0	1		05/21/20 15:49	60-29-7	
Ethylbenzene	**<0.40**	ug/L	0.40	1		05/21/20 15:49	100-41-4	
Hexachloro-1,3-butadiene	**<0.10**	ug/L	0.10	1		05/26/20 12:04	87-68-3	
Isopropylbenzene (Cumene)	**<0.40**	ug/L	0.40	1		05/21/20 15:49	98-82-8	
p-Isopropyltoluene	**<0.40**	ug/L	0.40	1		05/21/20 15:49	99-87-6	
Methylene Chloride	**<1.0**	ug/L	1.0	1		05/21/20 15:49	75-09-2	
4-Methyl-2-pentanone (MIBK)	**<5.0**	ug/L	5.0	1		05/21/20 15:49	108-10-1	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10517964

Sample: Trip Blank 4 **Lab ID: 10517964019** Collected: 05/12/20 00:00 Received: 05/14/20 11:35 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV LLW by SIMSCAN	Analytical Method: EPA 8260B Pace Analytical Services - Minneapolis							
Methyl-tert-butyl ether	**<0.40**	ug/L	0.40	1		05/21/20 15:49	1634-04-4	
Naphthalene	**<1.0**	ug/L	1.0	1		05/21/20 15:49	91-20-3	
n-Propylbenzene	**<0.40**	ug/L	0.40	1		05/21/20 15:49	103-65-1	
Styrene	**<0.40**	ug/L	0.40	1		05/21/20 15:49	100-42-5	
1,1,1,2-Tetrachloroethane	**<0.40**	ug/L	0.40	1		05/21/20 15:49	630-20-6	
1,1,2,2-Tetrachloroethane	**<0.40**	ug/L	0.40	1		05/21/20 15:49	79-34-5	
Tetrachloroethene	**<0.40**	ug/L	0.40	1		05/21/20 15:49	127-18-4	
Tetrahydrofuran	**<10.0**	ug/L	10.0	1		05/21/20 15:49	109-99-9	
Toluene	**<0.40**	ug/L	0.40	1		05/21/20 15:49	108-88-3	
1,2,3-Trichlorobenzene	**<0.40**	ug/L	0.40	1		05/21/20 15:49	87-61-6	
1,2,4-Trichlorobenzene	**<0.40**	ug/L	0.40	1		05/21/20 15:49	120-82-1	
1,1,1-Trichloroethane	**<0.40**	ug/L	0.40	1		05/21/20 15:49	71-55-6	
1,1,2-Trichloroethane	**<0.40**	ug/L	0.40	1		05/21/20 15:49	79-00-5	
Trichloroethene	**<0.050**	ug/L	0.050	1		05/26/20 12:04	79-01-6	
Trichlorofluoromethane	**<0.40**	ug/L	0.40	1		05/21/20 15:49	75-69-4	
1,2,3-Trichloropropane	**<0.010**	ug/L	0.010	1		05/26/20 12:04	96-18-4	
1,1,2-Trichlorotrifluoroethane	**<1.0**	ug/L	1.0	1		05/21/20 15:49	76-13-1	
1,2,4-Trimethylbenzene	**<1.0**	ug/L	1.0	1		05/21/20 15:49	95-63-6	
1,3,5-Trimethylbenzene	**<0.40**	ug/L	0.40	1		05/21/20 15:49	108-67-8	
Vinyl chloride	**<0.050**	ug/L	0.050	1		05/26/20 12:04	75-01-4	
Xylene (Total)	**<1.2**	ug/L	1.2	1		05/21/20 15:49	1330-20-7	
m&p-Xylene	**<0.80**	ug/L	0.80	1		05/21/20 15:49	179601-23-1	
o-Xylene	**<0.40**	ug/L	0.40	1		05/21/20 15:49	95-47-6	
Surrogates								
1,2-Dichloroethane-d4 (S)	110	%.	75-128	1		05/21/20 15:49	17060-07-0	
1,2-Dichloroethane-d4 (S)	104	%.	75-128	1		05/26/20 12:04	17060-07-0	
Toluene-d8 (S)	101	%.	75-125	1		05/21/20 15:49	2037-26-5	
Toluene-d8 (S)	99	%.	75-125	1		05/26/20 12:04	2037-26-5	
4-Bromofluorobenzene (S)	101	%.	75-125	1		05/21/20 15:49	460-00-4	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10517964

QC Batch: 676619 | Analysis Method: EPA 245.1
QC Batch Method: EPA 245.1 | Analysis Description: 245.1 Mercury - Dissolved
Laboratory: Pace Analytical Services - Minneapolis
Associated Lab Samples: 10517964001, 10517964002, 10517964003, 10517964004, 10517964005, 10517964006, 10517964007, 10517964008, 10517964009, 10517964010, 10517964011, 10517964012, 10517964013, 10517964014, 10517964015, 10517964016

METHOD BLANK: 3622109 Matrix: Water
Associated Lab Samples: 10517964001, 10517964002, 10517964003, 10517964004, 10517964005, 10517964006, 10517964007, 10517964008, 10517964009, 10517964010, 10517964011, 10517964012, 10517964013, 10517964014, 10517964015, 10517964016

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury, Dissolved	ug/L	<0.20	0.20	05/27/20 11:11	

LABORATORY CONTROL SAMPLE: 3622110

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury, Dissolved	ug/L	5	5.3	106	85-115	

MATRIX SPIKE SAMPLE: 3622111

Parameter	Units	10517964003 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Mercury, Dissolved	ug/L	<0.20	5	5.0	100	70-130	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3622112 3622113

Parameter	Units	10517964015 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury, Dissolved	ug/L	<0.20	5	5	5.2	5.2	104	103	70-130	1	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10517964

QC Batch: 676609
QC Batch Method: EPA 200.8
Analysis Method: EPA 200.8
Analysis Description: 200.8 MET Dissolved
Laboratory: Pace Analytical Services - Minneapolis
Associated Lab Samples: 10517964001, 10517964002, 10517964003, 10517964004, 10517964005, 10517964006, 10517964007, 10517964008, 10517964009, 10517964010, 10517964011, 10517964012, 10517964013, 10517964014, 10517964015, 10517964016

METHOD BLANK: 3622084
Matrix: Water
Associated Lab Samples: 10517964001, 10517964002, 10517964003, 10517964004, 10517964005, 10517964006, 10517964007, 10517964008, 10517964009, 10517964010, 10517964011, 10517964012, 10517964013, 10517964014, 10517964015, 10517964016

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Arsenic, Dissolved	ug/L	<0.50	0.50	05/28/20 22:02	
Barium, Dissolved	ug/L	<0.30	0.30	05/28/20 22:02	
Boron, Dissolved	ug/L	<10.0	10.0	05/28/20 22:02	
Cadmium, Dissolved	ug/L	<0.080	0.080	05/28/20 22:02	
Calcium, Dissolved	ug/L	<40.0	40.0	05/28/20 22:02	
Chromium, Dissolved	ug/L	<0.50	0.50	05/28/20 22:02	
Copper, Dissolved	ug/L	<1.0	1.0	05/28/20 22:02	
Iron, Dissolved	ug/L	<50.0	50.0	05/28/20 22:02	
Lead, Dissolved	ug/L	<0.10	0.10	05/28/20 22:02	
Magnesium, Dissolved	ug/L	<10.0	10.0	05/28/20 22:02	
Manganese, Dissolved	ug/L	<0.50	0.50	05/28/20 22:02	
Nickel, Dissolved	ug/L	<0.50	0.50	05/28/20 22:02	
Potassium, Dissolved	ug/L	<100	100	05/28/20 22:02	
Selenium, Dissolved	ug/L	<0.50	0.50	05/28/20 22:02	
Sodium, Dissolved	ug/L	<50.0	50.0	05/28/20 22:02	
Zinc, Dissolved	ug/L	<5.0	5.0	05/28/20 22:02	

LABORATORY CONTROL SAMPLE: 3622085

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic, Dissolved	ug/L	100	99.3	99	85-115	
Barium, Dissolved	ug/L	100	105	105	85-115	
Boron, Dissolved	ug/L	100	104	104	85-115	
Cadmium, Dissolved	ug/L	100	98.9	99	85-115	
Calcium, Dissolved	ug/L	2000	2090	104	85-115	
Chromium, Dissolved	ug/L	100	106	106	85-115	
Copper, Dissolved	ug/L	100	101	101	85-115	
Iron, Dissolved	ug/L	2000	2040	102	85-115	
Lead, Dissolved	ug/L	100	101	101	85-115	
Magnesium, Dissolved	ug/L	2000	2110	105	85-115	
Manganese, Dissolved	ug/L	100	101	101	85-115	
Nickel, Dissolved	ug/L	100	103	103	85-115	
Potassium, Dissolved	ug/L	2000	2070	104	85-115	
Selenium, Dissolved	ug/L	100	104	104	85-115	
Sodium, Dissolved	ug/L	2000	2040	102	85-115	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10517964

LABORATORY CONTROL SAMPLE: 3622085

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Zinc, Dissolved	ug/L	100	105	105	85-115	

MATRIX SPIKE SAMPLE: 3622086

Parameter	Units	10517964001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Arsenic, Dissolved	ug/L	1.7	100	105	103	70-130	
Barium, Dissolved	ug/L	178	100	272	93	70-130	
Boron, Dissolved	ug/L	25.9	100	126	100	70-130	
Cadmium, Dissolved	ug/L	<0.080	100	101	101	70-130	
Calcium, Dissolved	ug/L	90600	2000	86800	-192	70-130	P6
Chromium, Dissolved	ug/L	<0.50	100	107	107	70-130	
Copper, Dissolved	ug/L	<1.0	100	99.7	100	70-130	
Iron, Dissolved	ug/L	534	2000	2640	106	70-130	
Lead, Dissolved	ug/L	<0.10	100	100	100	70-130	
Magnesium, Dissolved	ug/L	47400	2000	46700	-33	70-130	P6
Manganese, Dissolved	ug/L	85.9	100	185	99	70-130	
Nickel, Dissolved	ug/L	5.4	100	111	105	70-130	
Potassium, Dissolved	ug/L	2620	2000	4550	97	70-130	
Selenium, Dissolved	ug/L	1.2	100	104	103	70-130	
Sodium, Dissolved	ug/L	5420	2000	7180	88	70-130	
Zinc, Dissolved	ug/L	<5.0	100	109	105	70-130	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3622087 3622088

Parameter	Units	10517964015 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Arsenic, Dissolved	ug/L	1.5	100	100	102	103	100	101	70-130	1	20	
Barium, Dissolved	ug/L	128	100	100	234	243	106	115	70-130	4	20	
Boron, Dissolved	ug/L	14.1	100	100	109	117	95	103	70-130	7	20	
Cadmium, Dissolved	ug/L	<0.080	100	100	98.5	98.5	99	99	70-130	0	20	
Calcium, Dissolved	ug/L	68700	2000	2000	72200	78000	173	467	70-130	8	20	P6
Chromium, Dissolved	ug/L	<0.50	100	100	106	107	105	107	70-130	2	20	
Copper, Dissolved	ug/L	<1.0	100	100	96.1	97.3	96	97	70-130	1	20	
Iron, Dissolved	ug/L	1070	2000	2000	3190	3270	106	110	70-130	2	20	
Lead, Dissolved	ug/L	<0.10	100	100	98.5	100	98	100	70-130	2	20	
Magnesium, Dissolved	ug/L	30600	2000	2000	32800	36000	108	270	70-130	9	20	P6
Manganese, Dissolved	ug/L	215	100	100	314	336	99	121	70-130	7	20	
Nickel, Dissolved	ug/L	<0.50	100	100	102	103	102	103	70-130	1	20	
Potassium, Dissolved	ug/L	3420	2000	2000	5260	5610	92	110	70-130	6	20	
Selenium, Dissolved	ug/L	<0.50	100	100	100	103	100	103	70-130	3	20	
Sodium, Dissolved	ug/L	3300	2000	2000	5360	5790	103	124	70-130	8	20	
Zinc, Dissolved	ug/L	<5.0	100	100	104	107	102	105	70-130	3	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10517964

QC Batch: 676817 | Analysis Method: EPA 8260B
QC Batch Method: EPA 8260B | Analysis Description: 8260B MSV LLW by SIMSCAN
Laboratory: Pace Analytical Services - Minneapolis

Associated Lab Samples: 10517964001, 10517964002, 10517964003, 10517964004, 10517964005, 10517964006, 10517964007, 10517964008, 10517964009, 10517964010, 10517964011, 10517964012, 10517964013, 10517964014, 10517964015, 10517964016, 10517964017

METHOD BLANK: 3622834 Matrix: Water

Associated Lab Samples: 10517964001, 10517964002, 10517964003, 10517964004, 10517964005, 10517964006, 10517964007, 10517964008, 10517964009, 10517964010, 10517964011, 10517964012, 10517964013, 10517964014, 10517964015, 10517964016, 10517964017

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	<0.40	0.40	05/21/20 14:31	
1,1,1-Trichloroethane	ug/L	<0.40	0.40	05/21/20 14:31	
1,1,2,2-Tetrachloroethane	ug/L	<0.40	0.40	05/21/20 14:31	
1,1,2-Trichloroethane	ug/L	<0.40	0.40	05/21/20 14:31	
1,1,2-Trichlorotrifluoroethane	ug/L	<1.0	1.0	05/21/20 14:31	
1,1-Dichloroethane	ug/L	<0.40	0.40	05/21/20 14:31	
1,1-Dichloroethene	ug/L	<0.40	0.40	05/21/20 14:31	
1,1-Dichloropropene	ug/L	<0.40	0.40	05/21/20 14:31	
1,2,3-Trichlorobenzene	ug/L	<0.40	0.40	05/21/20 14:31	
1,2,3-Trichloropropane	ug/L	<0.010	0.010	05/25/20 15:05	
1,2,4-Trichlorobenzene	ug/L	<0.40	0.40	05/21/20 14:31	
1,2,4-Trimethylbenzene	ug/L	<1.0	1.0	05/21/20 14:31	
1,2-Dibromo-3-chloropropane	ug/L	<0.12	0.12	05/25/20 15:05	
1,2-Dibromoethane (EDB)	ug/L	<0.050	0.050	05/25/20 15:05	
1,2-Dichlorobenzene	ug/L	<0.40	0.40	05/21/20 14:31	
1,2-Dichloroethane	ug/L	<0.20	0.20	05/25/20 15:05	
1,2-Dichloropropane	ug/L	<0.40	0.40	05/21/20 14:31	
1,3,5-Trimethylbenzene	ug/L	<0.40	0.40	05/21/20 14:31	
1,3-Dichlorobenzene	ug/L	<0.40	0.40	05/21/20 14:31	
1,3-Dichloropropane	ug/L	<0.40	0.40	05/21/20 14:31	
1,4-Dichlorobenzene	ug/L	<0.40	0.40	05/21/20 14:31	
2,2-Dichloropropane	ug/L	<1.0	1.0	05/21/20 14:31	
2-Butanone (MEK)	ug/L	<5.0	5.0	05/21/20 14:31	
2-Chlorotoluene	ug/L	<0.40	0.40	05/21/20 14:31	
4-Chlorotoluene	ug/L	<0.40	0.40	05/21/20 14:31	
4-Methyl-2-pentanone (MIBK)	ug/L	<5.0	5.0	05/21/20 14:31	
Acetone	ug/L	<20.0	20.0	05/21/20 14:31	
Allyl chloride	ug/L	<4.0	4.0	05/21/20 14:31	
Benzene	ug/L	<0.20	0.20	05/21/20 14:31	
Bromobenzene	ug/L	<0.40	0.40	05/21/20 14:31	
Bromochloromethane	ug/L	<1.0	1.0	05/21/20 14:31	
Bromodichloromethane	ug/L	<0.40	0.40	05/21/20 14:31	
Bromoform	ug/L	<1.0	1.0	05/21/20 14:31	
Bromomethane	ug/L	<1.0	1.0	05/21/20 14:31	
Carbon tetrachloride	ug/L	<0.050	0.050	05/25/20 15:05	
Chlorobenzene	ug/L	<0.40	0.40	05/21/20 14:31	
Chloroethane	ug/L	<1.0	1.0	05/21/20 14:31	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10517964

METHOD BLANK: 3622834 Matrix: Water

Associated Lab Samples: 10517964001, 10517964002, 10517964003, 10517964004, 10517964005, 10517964006, 10517964007, 10517964008, 10517964009, 10517964010, 10517964011, 10517964012, 10517964013, 10517964014, 10517964015, 10517964016, 10517964017

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloroform	ug/L	<1.0	1.0	05/21/20 14:31	
Chloromethane	ug/L	<1.0	1.0	05/21/20 14:31	
cis-1,2-Dichloroethene	ug/L	<0.40	0.40	05/21/20 14:31	
cis-1,3-Dichloropropene	ug/L	<0.40	0.40	05/25/20 15:05	
Dibromochloromethane	ug/L	<0.40	0.40	05/25/20 15:05	
Dibromomethane	ug/L	<1.0	1.0	05/21/20 14:31	
Dichlorodifluoromethane	ug/L	<1.0	1.0	05/21/20 14:31	
Dichlorofluoromethane	ug/L	<1.0	1.0	05/21/20 14:31	
Diethyl ether (Ethyl ether)	ug/L	<4.0	4.0	05/21/20 14:31	
Ethylbenzene	ug/L	<0.40	0.40	05/21/20 14:31	
Hexachloro-1,3-butadiene	ug/L	<0.10	0.10	05/25/20 15:05	
Isopropylbenzene (Cumene)	ug/L	<0.40	0.40	05/21/20 14:31	
m&p-Xylene	ug/L	<0.80	0.80	05/21/20 14:31	
Methyl-tert-butyl ether	ug/L	<0.40	0.40	05/21/20 14:31	
Methylene Chloride	ug/L	<1.0	1.0	05/21/20 14:31	
n-Butylbenzene	ug/L	<0.40	0.40	05/21/20 14:31	
n-Propylbenzene	ug/L	<0.40	0.40	05/21/20 14:31	
Naphthalene	ug/L	<1.0	1.0	05/21/20 14:31	
o-Xylene	ug/L	<0.40	0.40	05/21/20 14:31	
p-Isopropyltoluene	ug/L	<0.40	0.40	05/21/20 14:31	
sec-Butylbenzene	ug/L	<0.40	0.40	05/21/20 14:31	
Styrene	ug/L	<0.40	0.40	05/21/20 14:31	
tert-Butylbenzene	ug/L	<0.40	0.40	05/21/20 14:31	
Tetrachloroethene	ug/L	0.40	0.40	05/21/20 14:31	P8
Tetrahydrofuran	ug/L	<10.0	10.0	05/21/20 14:31	
Toluene	ug/L	<0.40	0.40	05/21/20 14:31	
trans-1,2-Dichloroethene	ug/L	<0.40	0.40	05/21/20 14:31	
trans-1,3-Dichloropropene	ug/L	<0.40	0.40	05/25/20 15:05	
Trichloroethene	ug/L	<0.050	0.050	05/25/20 15:05	
Trichlorofluoromethane	ug/L	<0.40	0.40	05/21/20 14:31	
Vinyl chloride	ug/L	<0.050	0.050	05/25/20 15:05	
Xylene (Total)	ug/L	<1.2	1.2	05/21/20 14:31	
1,2-Dichloroethane-d4 (S)	%.	107	75-128	05/21/20 14:31	
1,2-Dichloroethane-d4 (S)	%.	106	75-128	05/25/20 15:05	
4-Bromofluorobenzene (S)	%.	101	75-125	05/21/20 14:31	
Toluene-d8 (S)	%.	101	75-125	05/25/20 15:05	
Toluene-d8 (S)	%.	105	75-125	05/21/20 14:31	

LABORATORY CONTROL SAMPLE: 3622835

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	10	10.3	103	75-125	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10517964

LABORATORY CONTROL SAMPLE: 3622835

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	10	10	100	68-131	
1,1,2,2-Tetrachloroethane	ug/L	10	9.1	91	71-125	
1,1,2-Trichloroethane	ug/L	10	10	100	75-125	
1,1,2-Trichlorotrifluoroethane	ug/L	10	9.8	98	71-125	
1,1-Dichloroethane	ug/L	10	8.7	87	71-125	
1,1-Dichloroethene	ug/L	10	9.5	95	66-126	
1,1-Dichloropropene	ug/L	10	9.2	92	58-134	
1,2,3-Trichlorobenzene	ug/L	10	10.0	100	71-125	
1,2,3-Trichloropropane	ug/L	1	1.1	114	75-125	
1,2,4-Trichlorobenzene	ug/L	10	9.8	98	72-125	
1,2,4-Trimethylbenzene	ug/L	10	10.3	103	75-125	
1,2-Dibromo-3-chloropropane	ug/L	2.5	2.8	111	71-125	
1,2-Dibromoethane (EDB)	ug/L	1	1.2	117	71-125	
1,2-Dichlorobenzene	ug/L	10	9.8	98	75-125	
1,2-Dichloroethane	ug/L	1	1.2	120	75-131	
1,2-Dichloropropane	ug/L	10	9.8	98	73-125	
1,3,5-Trimethylbenzene	ug/L	10	10.3	103	75-125	
1,3-Dichlorobenzene	ug/L	10	10.3	103	75-125	
1,3-Dichloropropane	ug/L	10	9.1	91	75-125	
1,4-Dichlorobenzene	ug/L	10	9.1	91	75-125	
2,2-Dichloropropane	ug/L	10	10.2	102	57-144	
2-Butanone (MEK)	ug/L	50	41.9	84	51-144	
2-Chlorotoluene	ug/L	10	10.1	101	75-125	
4-Chlorotoluene	ug/L	10	10.8	108	75-125	
4-Methyl-2-pentanone (MIBK)	ug/L	50	46.7	93	72-125	
Acetone	ug/L	50	39.0	78	34-150	
Allyl chloride	ug/L	10	8.1	81	58-132	
Benzene	ug/L	10	9.0	90	70-125	
Bromobenzene	ug/L	10	9.2	92	75-125	
Bromochloromethane	ug/L	10	9.5	95	72-126	
Bromodichloromethane	ug/L	10	9.4	94	73-128	
Bromoform	ug/L	10	9.8	98	70-125	
Bromomethane	ug/L	10	12.2	122	31-150	SS
Carbon tetrachloride	ug/L	1	1.3	127	68-136	CH
Chlorobenzene	ug/L	10	10.1	101	75-125	
Chloroethane	ug/L	10	8.6	86	70-128	
Chloroform	ug/L	10	9.9	99	72-125	
Chloromethane	ug/L	10	8.2	82	63-129	
cis-1,2-Dichloroethene	ug/L	10	9.3	93	69-128	
cis-1,3-Dichloropropene	ug/L	1	1.2	119	71-125	
Dibromochloromethane	ug/L	1	1.1	114	71-125	
Dibromomethane	ug/L	10	9.6	96	74-130	
Dichlorodifluoromethane	ug/L	10	8.8	88	65-134	
Dichlorofluoromethane	ug/L	10	9.1	91	74-125	
Diethyl ether (Ethyl ether)	ug/L	10	8.2	82	64-126	
Ethylbenzene	ug/L	10	9.6	96	75-125	
Hexachloro-1,3-butadiene	ug/L	1	1.3	125	65-133	CH

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10517964

LABORATORY CONTROL SAMPLE: 3622835

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Isopropylbenzene (Cumene)	ug/L	10	11.3	113	75-125	
m&p-Xylene	ug/L	20	19.8	99	75-125	
Methyl-tert-butyl ether	ug/L	10	8.9	89	68-125	
Methylene Chloride	ug/L	10	10.1	101	69-125	
n-Butylbenzene	ug/L	10	10.2	102	75-125	
n-Propylbenzene	ug/L	10	9.7	97	74-125	
Naphthalene	ug/L	10	9.2	92	66-125	
o-Xylene	ug/L	10	9.5	95	75-125	
p-Isopropyltoluene	ug/L	10	10.6	106	75-125	
sec-Butylbenzene	ug/L	10	10.5	105	75-125	
Styrene	ug/L	10	10.2	102	75-125	
tert-Butylbenzene	ug/L	10	9.8	98	75-125	
Tetrachloroethene	ug/L	10	9.6	96	75-125	
Tetrahydrofuran	ug/L	100	88.4	88	55-139	
Toluene	ug/L	10	9.0	90	75-125	
trans-1,2-Dichloroethene	ug/L	10	9.3	93	67-127	
trans-1,3-Dichloropropene	ug/L	1	1.2	118	70-125	
Trichloroethene	ug/L	1	1.2	118	69-125	
Trichlorofluoromethane	ug/L	10	10.1	101	70-131	
Vinyl chloride	ug/L	1	1.1	113	68-132	
Xylene (Total)	ug/L	30	29.3	98	75-125	
1,2-Dichloroethane-d4 (S)	%.			98	75-128	
1,2-Dichloroethane-d4 (S)	%.			101	75-128	
4-Bromofluorobenzene (S)	%.			96	75-125	
Toluene-d8 (S)	%.			99	75-125	
Toluene-d8 (S)	%.			98	75-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3622836 3622837

Parameter	Units	10517964015 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,1,2-Tetrachloroethane	ug/L	<0.40	10	10	10.5	10.9	105	109	75-125	4	30	
1,1,1-Trichloroethane	ug/L	<0.40	10	10	10.7	10.7	107	107	65-148	0	30	
1,1,2,2-Tetrachloroethane	ug/L	<0.40	10	10	9.2	9.2	92	92	72-125	0	30	
1,1,2-Trichloroethane	ug/L	<0.40	10	10	10.2	10.1	102	101	75-125	2	30	
1,1,2-Trichlorotrifluoroethane	ug/L	<1.0	10	10	10.5	11.1	105	111	75-145	5	30	
1,1-Dichloroethane	ug/L	<0.40	10	10	9.6	9.9	96	99	73-136	3	30	
1,1-Dichloroethene	ug/L	<0.40	10	10	10.2	10.6	102	106	69-138	4	30	
1,1-Dichloropropene	ug/L	<0.40	10	10	10.7	10.6	107	106	60-150	0	30	
1,2,3-Trichlorobenzene	ug/L	<0.40	10	10	9.8	9.6	98	96	67-135	2	30	
1,2,3-Trichloropropane	ug/L	<0.010	1	1	1.0	0.94	100	94	49-150	7	30	
1,2,4-Trichlorobenzene	ug/L	<0.40	10	10	10	9.9	100	99	68-133	1	30	
1,2,4-Trimethylbenzene	ug/L	<1.0	10	10	10.8	10.6	108	106	75-135	1	30	
1,2-Dibromo-3-chloropropane	ug/L	<0.12	2.5	2.5	2.4	2.3	98	90	53-150	8	30	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10517964

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3622836 3622837

Parameter	Units	10517964015 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,2-Dibromoethane (EDB)	ug/L	<0.050	1	1	1.0	0.98	103	98	49-150	5	30	
1,2-Dichlorobenzene	ug/L	<0.40	10	10	9.9	9.9	99	99	75-125	0	30	
1,2-Dichloroethane	ug/L	<0.20	1	1	1.1	1.1	110	106	42-150	4	30	
1,2-Dichloropropane	ug/L	<0.40	10	10	9.7	10.1	97	101	71-125	4	30	
1,3,5-Trimethylbenzene	ug/L	<0.40	10	10	10.5	10.8	105	108	75-129	2	30	
1,3-Dichlorobenzene	ug/L	<0.40	10	10	10.3	10.4	103	104	75-125	1	30	
1,3-Dichloropropane	ug/L	<0.40	10	10	9.5	9.5	95	95	75-125	1	30	
1,4-Dichlorobenzene	ug/L	<0.40	10	10	9.8	9.6	98	96	75-125	2	30	
2,2-Dichloropropane	ug/L	<1.0	10	10	10.9	11.1	109	111	67-150	2	30	
2-Butanone (MEK)	ug/L	<5.0	50	50	40.8	42.8	82	86	49-138	5	30	
2-Chlorotoluene	ug/L	<0.40	10	10	10.5	10.7	105	107	75-130	3	30	
4-Chlorotoluene	ug/L	<0.40	10	10	11.1	11.0	111	110	75-133	1	30	
4-Methyl-2-pentanone (MIBK)	ug/L	<5.0	50	50	47.5	47.6	95	95	75-126	0	30	
Acetone	ug/L	<20.0	50	50	36.5	41.4	73	83	51-125	12	30	
Allyl chloride	ug/L	<4.0	10	10	8.9	9.6	89	96	50-150	8	30	
Benzene	ug/L	<0.20	10	10	9.8	10.0	98	100	68-129	2	30	
Bromobenzene	ug/L	<0.40	10	10	9.4	9.4	94	94	75-125	0	30	
Bromochloromethane	ug/L	<1.0	10	10	10.2	9.8	102	98	73-132	4	30	
Bromodichloromethane	ug/L	<0.40	10	10	9.8	10	98	100	75-127	2	30	
Bromoform	ug/L	<1.0	10	10	9.6	9.0	96	90	71-125	7	30	
Bromomethane	ug/L	<1.0	10	10	14.1	13.8	141	138	30-150	2	30	SS
Carbon tetrachloride	ug/L	<0.050	1	1	1.2	1.1	121	112	30-150	7	30	CH
Chlorobenzene	ug/L	<0.40	10	10	10.1	10	101	100	75-125	1	30	
Chloroethane	ug/L	<1.0	10	10	9.5	10	95	100	68-141	4	30	
Chloroform	ug/L	<1.0	10	10	9.7	10.1	97	101	61-129	4	30	
Chloromethane	ug/L	<1.0	10	10	9.2	9.5	92	95	46-150	4	30	
cis-1,2-Dichloroethene	ug/L	<0.40	10	10	9.7	10.1	97	101	68-142	4	30	
cis-1,3-Dichloropropene	ug/L	<0.40	1	1	1.0	0.96	101	96	48-150	4	30	
Dibromochloromethane	ug/L	<0.40	1	1	0.98	0.92	98	92	50-150	6	30	
Dibromomethane	ug/L	<1.0	10	10	10.2	9.8	102	98	69-137	4	30	
Dichlorodifluoromethane	ug/L	<1.0	10	10	10.6	10.5	106	105	68-150	1	30	
Dichlorofluoromethane	ug/L	<1.0	10	10	10	9.9	100	99	73-135	1	30	
Diethyl ether (Ethyl ether)	ug/L	<4.0	10	10	8.6	9.2	86	92	61-128	7	30	
Ethylbenzene	ug/L	<0.40	10	10	10.5	10.5	105	105	75-131	1	30	
Hexachloro-1,3-butadiene	ug/L	<0.10	1	1	1.1	1.0	107	100	40-150	6	30	CH
Isopropylbenzene (Cumene)	ug/L	<0.40	10	10	12.4	12.4	124	124	75-133	0	30	
m&p-Xylene	ug/L	<0.80	20	20	21.8	21.9	109	110	75-135	0	30	
Methyl-tert-butyl ether	ug/L	<0.40	10	10	9.0	9.4	90	94	67-126	4	30	
Methylene Chloride	ug/L	<1.0	10	10	9.5	10.1	95	101	61-137	6	30	
n-Butylbenzene	ug/L	<0.40	10	10	10.8	11.0	108	110	75-136	2	30	
n-Propylbenzene	ug/L	<0.40	10	10	10.4	10.5	104	105	75-139	1	30	
Naphthalene	ug/L	<1.0	10	10	9.2	9.4	92	94	64-127	3	30	
o-Xylene	ug/L	<0.40	10	10	10.3	10.4	103	104	75-127	2	30	
p-Isopropyltoluene	ug/L	<0.40	10	10	11.4	11.5	114	115	75-135	1	30	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10517964

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3622836 3622837

Parameter	Units	10517964015 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
sec-Butylbenzene	ug/L	<0.40	10	10	11.2	11.4	112	114	75-141	2	30	
Styrene	ug/L	<0.40	10	10	10.6	10.1	106	101	75-125	5	30	
tert-Butylbenzene	ug/L	<0.40	10	10	10.6	10.7	106	107	75-141	1	30	
Tetrachloroethene	ug/L	<0.40	10	10	10.6	10.5	106	105	75-135	1	30	
Tetrahydrofuran	ug/L	<10.0	100	100	86.8	89.2	87	89	45-145	3	30	
Toluene	ug/L	<0.40	10	10	9.5	9.5	95	95	74-125	1	30	
trans-1,2-Dichloroethene	ug/L	<0.40	10	10	9.9	10	99	100	68-137	1	30	
trans-1,3-Dichloropropene	ug/L	<0.40	1	1	1.0	0.96	101	96	50-150	5	30	
Trichloroethene	ug/L	<0.050	1	1	1.0	0.99	105	99	41-150	6	30	
Trichlorofluoromethane	ug/L	<0.40	10	10	11.0	10.6	110	106	72-150	4	30	
Vinyl chloride	ug/L	<0.050	1	1	1.4	1.1	136	110	30-150	21	30	
Xylene (Total)	ug/L	<1.2	30	30	32.1	32.3	107	108	75-131	1	30	
1,2-Dichloroethane-d4 (S)	%.						103	99	75-128			
1,2-Dichloroethane-d4 (S)	%.						98	103	75-128			
1,2-Dichloroethane-d4 (S)	%.						98	99	75-128			
1,2-Dichloroethane-d4 (S)	%.						103	103	75-128			
4-Bromofluorobenzene (S)	%.						98	97	75-125			
Toluene-d8 (S)	%.						96	98	75-125			
Toluene-d8 (S)	%.						96	97	75-125			
Toluene-d8 (S)	%.						98	97	75-125			
Toluene-d8 (S)	%.						98	98	75-125			

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10517964

QC Batch: 677147
QC Batch Method: EPA 8260B
Analysis Method: EPA 8260B
Analysis Description: 8260B MSV LLW by SIMSCAN
Laboratory: Pace Analytical Services - Minneapolis
Associated Lab Samples: 10517964018, 10517964019

METHOD BLANK: 3625058
Matrix: Water
Associated Lab Samples: 10517964018, 10517964019

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	<0.40	0.40	05/21/20 14:31	
1,1,1-Trichloroethane	ug/L	<0.40	0.40	05/21/20 14:31	
1,1,2,2-Tetrachloroethane	ug/L	<0.40	0.40	05/21/20 14:31	
1,1,2-Trichloroethane	ug/L	<0.40	0.40	05/21/20 14:31	
1,1,2-Trichlorotrifluoroethane	ug/L	<1.0	1.0	05/21/20 14:31	
1,1-Dichloroethane	ug/L	<0.40	0.40	05/21/20 14:31	
1,1-Dichloroethene	ug/L	<0.40	0.40	05/21/20 14:31	
1,1-Dichloropropene	ug/L	<0.40	0.40	05/21/20 14:31	
1,2,3-Trichlorobenzene	ug/L	<0.40	0.40	05/21/20 14:31	
1,2,3-Trichloropropane	ug/L	<0.010	0.010	05/26/20 11:12	
1,2,4-Trichlorobenzene	ug/L	<0.40	0.40	05/21/20 14:31	
1,2,4-Trimethylbenzene	ug/L	<1.0	1.0	05/21/20 14:31	
1,2-Dibromo-3-chloropropane	ug/L	<0.12	0.12	05/26/20 11:12	
1,2-Dibromoethane (EDB)	ug/L	<0.050	0.050	05/26/20 11:12	
1,2-Dichlorobenzene	ug/L	<0.40	0.40	05/21/20 14:31	
1,2-Dichloroethane	ug/L	<0.20	0.20	05/26/20 11:12	
1,2-Dichloropropane	ug/L	<0.40	0.40	05/21/20 14:31	
1,3,5-Trimethylbenzene	ug/L	<0.40	0.40	05/21/20 14:31	
1,3-Dichlorobenzene	ug/L	<0.40	0.40	05/21/20 14:31	
1,3-Dichloropropane	ug/L	<0.40	0.40	05/21/20 14:31	
1,4-Dichlorobenzene	ug/L	<0.40	0.40	05/21/20 14:31	
2,2-Dichloropropane	ug/L	<1.0	1.0	05/21/20 14:31	
2-Butanone (MEK)	ug/L	<5.0	5.0	05/21/20 14:31	
2-Chlorotoluene	ug/L	<0.40	0.40	05/21/20 14:31	
4-Chlorotoluene	ug/L	<0.40	0.40	05/21/20 14:31	
4-Methyl-2-pentanone (MIBK)	ug/L	<5.0	5.0	05/21/20 14:31	
Acetone	ug/L	<20.0	20.0	05/21/20 14:31	
Allyl chloride	ug/L	<4.0	4.0	05/21/20 14:31	
Benzene	ug/L	<0.20	0.20	05/21/20 14:31	
Bromobenzene	ug/L	<0.40	0.40	05/21/20 14:31	
Bromochloromethane	ug/L	<1.0	1.0	05/21/20 14:31	
Bromodichloromethane	ug/L	<0.40	0.40	05/21/20 14:31	
Bromoform	ug/L	<1.0	1.0	05/21/20 14:31	
Bromomethane	ug/L	<1.0	1.0	05/21/20 14:31	
Carbon tetrachloride	ug/L	<0.050	0.050	05/26/20 11:12	
Chlorobenzene	ug/L	<0.40	0.40	05/21/20 14:31	
Chloroethane	ug/L	<1.0	1.0	05/21/20 14:31	
Chloroform	ug/L	<1.0	1.0	05/21/20 14:31	
Chloromethane	ug/L	<1.0	1.0	05/21/20 14:31	
cis-1,2-Dichloroethene	ug/L	<0.40	0.40	05/21/20 14:31	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10517964

METHOD BLANK: 3625058 Matrix: Water
Associated Lab Samples: 10517964018, 10517964019

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
cis-1,3-Dichloropropene	ug/L	<0.40	0.40	05/26/20 11:12	
Dibromochloromethane	ug/L	<0.40	0.40	05/26/20 11:12	
Dibromomethane	ug/L	<1.0	1.0	05/21/20 14:31	
Dichlorodifluoromethane	ug/L	<1.0	1.0	05/21/20 14:31	
Dichlorofluoromethane	ug/L	<1.0	1.0	05/21/20 14:31	
Diethyl ether (Ethyl ether)	ug/L	<4.0	4.0	05/21/20 14:31	
Ethylbenzene	ug/L	<0.40	0.40	05/21/20 14:31	
Hexachloro-1,3-butadiene	ug/L	<0.10	0.10	05/26/20 11:12	
Isopropylbenzene (Cumene)	ug/L	<0.40	0.40	05/21/20 14:31	
m&p-Xylene	ug/L	<0.80	0.80	05/21/20 14:31	
Methyl-tert-butyl ether	ug/L	<0.40	0.40	05/21/20 14:31	
Methylene Chloride	ug/L	<1.0	1.0	05/21/20 14:31	
n-Butylbenzene	ug/L	<0.40	0.40	05/21/20 14:31	
n-Propylbenzene	ug/L	<0.40	0.40	05/21/20 14:31	
Naphthalene	ug/L	<1.0	1.0	05/21/20 14:31	
o-Xylene	ug/L	<0.40	0.40	05/21/20 14:31	
p-Isopropyltoluene	ug/L	<0.40	0.40	05/21/20 14:31	
sec-Butylbenzene	ug/L	<0.40	0.40	05/21/20 14:31	
Styrene	ug/L	<0.40	0.40	05/21/20 14:31	
tert-Butylbenzene	ug/L	<0.40	0.40	05/21/20 14:31	
Tetrachloroethene	ug/L	0.40	0.40	05/21/20 14:31	P8
Tetrahydrofuran	ug/L	<10.0	10.0	05/21/20 14:31	
Toluene	ug/L	<0.40	0.40	05/21/20 14:31	
trans-1,2-Dichloroethene	ug/L	<0.40	0.40	05/21/20 14:31	
trans-1,3-Dichloropropene	ug/L	<0.40	0.40	05/26/20 11:12	
Trichloroethene	ug/L	<0.050	0.050	05/26/20 11:12	
Trichlorofluoromethane	ug/L	<0.40	0.40	05/21/20 14:31	
Vinyl chloride	ug/L	<0.050	0.050	05/26/20 11:12	
Xylene (Total)	ug/L	<1.2	1.2	05/21/20 14:31	
1,2-Dichloroethane-d4 (S)	%.	107	75-128	05/21/20 14:31	
1,2-Dichloroethane-d4 (S)	%.	104	75-128	05/26/20 11:12	
4-Bromofluorobenzene (S)	%.	101	75-125	05/21/20 14:31	
Toluene-d8 (S)	%.	100	75-125	05/26/20 11:12	
Toluene-d8 (S)	%.	105	75-125	05/21/20 14:31	

LABORATORY CONTROL SAMPLE: 3625059

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	10	10.3	103	75-125	
1,1,1-Trichloroethane	ug/L	10	10	100	68-131	
1,1,2,2-Tetrachloroethane	ug/L	10	9.1	91	71-125	
1,1,2-Trichloroethane	ug/L	10	10	100	75-125	
1,1,2-Trichlorotrifluoroethane	ug/L	10	9.8	98	71-125	
1,1-Dichloroethane	ug/L	10	8.7	87	71-125	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10517964

LABORATORY CONTROL SAMPLE: 3625059

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1-Dichloroethene	ug/L	10	9.5	95	66-126	
1,1-Dichloropropene	ug/L	10	9.2	92	58-134	
1,2,3-Trichlorobenzene	ug/L	10	10.0	100	71-125	
1,2,3-Trichloropropane	ug/L	1	1.1	110	75-125	
1,2,4-Trichlorobenzene	ug/L	10	9.8	98	72-125	
1,2,4-Trimethylbenzene	ug/L	10	10.3	103	75-125	
1,2-Dibromo-3-chloropropane	ug/L	2.5	2.7	107	71-125	
1,2-Dibromoethane (EDB)	ug/L	1	1.1	110	71-125	
1,2-Dichlorobenzene	ug/L	10	9.8	98	75-125	
1,2-Dichloroethane	ug/L	1	1.1	115	75-131	
1,2-Dichloropropane	ug/L	10	9.8	98	73-125	
1,3,5-Trimethylbenzene	ug/L	10	10.3	103	75-125	
1,3-Dichlorobenzene	ug/L	10	10.3	103	75-125	
1,3-Dichloropropane	ug/L	10	9.1	91	75-125	
1,4-Dichlorobenzene	ug/L	10	9.1	91	75-125	
2,2-Dichloropropane	ug/L	10	10.2	102	57-144	
2-Butanone (MEK)	ug/L	50	41.9	84	51-144	
2-Chlorotoluene	ug/L	10	10.1	101	75-125	
4-Chlorotoluene	ug/L	10	10.8	108	75-125	
4-Methyl-2-pentanone (MIBK)	ug/L	50	46.7	93	72-125	
Acetone	ug/L	50	39.0	78	34-150	
Allyl chloride	ug/L	10	8.1	81	58-132	
Benzene	ug/L	10	9.0	90	70-125	
Bromobenzene	ug/L	10	9.2	92	75-125	
Bromochloromethane	ug/L	10	9.5	95	72-126	
Bromodichloromethane	ug/L	10	9.4	94	73-128	
Bromoform	ug/L	10	9.8	98	70-125	
Bromomethane	ug/L	10	12.2	122	31-150	SS
Carbon tetrachloride	ug/L	1	1.2	122	68-136	CH
Chlorobenzene	ug/L	10	10.1	101	75-125	
Chloroethane	ug/L	10	8.6	86	70-128	
Chloroform	ug/L	10	9.9	99	72-125	
Chloromethane	ug/L	10	8.2	82	63-129	
cis-1,2-Dichloroethene	ug/L	10	9.3	93	69-128	
cis-1,3-Dichloropropene	ug/L	1	1.1	111	71-125	
Dibromochloromethane	ug/L	1	1.1	108	71-125	
Dibromomethane	ug/L	10	9.6	96	74-130	
Dichlorodifluoromethane	ug/L	10	8.8	88	65-134	
Dichlorofluoromethane	ug/L	10	9.1	91	74-125	
Diethyl ether (Ethyl ether)	ug/L	10	8.2	82	64-126	
Ethylbenzene	ug/L	10	9.6	96	75-125	
Hexachloro-1,3-butadiene	ug/L	1	1.1	113	65-133	
Isopropylbenzene (Cumene)	ug/L	10	11.3	113	75-125	
m&p-Xylene	ug/L	20	19.8	99	75-125	
Methyl-tert-butyl ether	ug/L	10	8.9	89	68-125	
Methylene Chloride	ug/L	10	10.1	101	69-125	
n-Butylbenzene	ug/L	10	10.2	102	75-125	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10517964

LABORATORY CONTROL SAMPLE: 3625059

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
n-Propylbenzene	ug/L	10	9.7	97	74-125	
Naphthalene	ug/L	10	9.2	92	66-125	
o-Xylene	ug/L	10	9.5	95	75-125	
p-Isopropyltoluene	ug/L	10	10.6	106	75-125	
sec-Butylbenzene	ug/L	10	10.5	105	75-125	
Styrene	ug/L	10	10.2	102	75-125	
tert-Butylbenzene	ug/L	10	9.8	98	75-125	
Tetrachloroethene	ug/L	10	9.6	96	75-125	
Tetrahydrofuran	ug/L	100	88.4	88	55-139	
Toluene	ug/L	10	9.0	90	75-125	
trans-1,2-Dichloroethene	ug/L	10	9.3	93	67-127	
trans-1,3-Dichloropropene	ug/L	1	1.1	109	70-125	
Trichloroethene	ug/L	1	1.1	110	69-125	
Trichlorofluoromethane	ug/L	10	10.1	101	70-131	
Vinyl chloride	ug/L	1	0.95	95	68-132	
Xylene (Total)	ug/L	30	29.3	98	75-125	
1,2-Dichloroethane-d4 (S)	%.			100	75-128	
1,2-Dichloroethane-d4 (S)	%.			98	75-128	
4-Bromofluorobenzene (S)	%.			96	75-125	
Toluene-d8 (S)	%.			98	75-125	
Toluene-d8 (S)	%.			97	75-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3626727 3626728

Parameter	Units	10519223001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,1,2-Tetrachloroethane	ug/L	<0.40	10	10	10.5	10.9	105	109	75-125	4	30	
1,1,1-Trichloroethane	ug/L	<0.40	10	10	10.7	10.7	107	107	65-148	0	30	
1,1,2,2-Tetrachloroethane	ug/L	<0.40	10	10	9.2	9.2	92	92	72-125	0	30	
1,1,2-Trichloroethane	ug/L	<0.40	10	10	10.2	10.1	102	101	75-125	2	30	
1,1,2-Trichlorotrifluoroethane	ug/L	<1.0	10	10	10.5	11.1	105	111	75-145	5	30	
1,1-Dichloroethane	ug/L	<0.40	10	10	9.6	9.9	96	99	73-136	3	30	
1,1-Dichloroethene	ug/L	<0.40	10	10	10.2	10.6	102	106	69-138	4	30	
1,1-Dichloropropene	ug/L	<0.40	10	10	10.7	10.6	107	106	60-150	0	30	
1,2,3-Trichlorobenzene	ug/L	<0.40	10	10	9.8	9.6	98	96	67-135	2	30	
1,2,3-Trichloropropane	ug/L	<0.010	1	1	1.2	1.1	117	109	49-150	7	30	
1,2,4-Trichlorobenzene	ug/L	<0.40	10	10	10	9.9	100	99	68-133	1	30	
1,2,4-Trimethylbenzene	ug/L	<1.0	10	10	10.8	10.6	108	106	75-135	1	30	
1,2-Dibromo-3-chloropropane	ug/L	<0.12	2.5	2.5	2.8	2.6	113	105	53-150	7	30	
1,2-Dibromoethane (EDB)	ug/L	<0.050	1	1	1.2	1.1	119	111	49-150	7	30	
1,2-Dichlorobenzene	ug/L	<0.40	10	10	9.9	9.9	99	99	75-125	0	30	
1,2-Dichloroethane	ug/L	<0.20	1	1	1.3	1.2	126	118	42-150	7	30	
1,2-Dichloropropane	ug/L	<0.40	10	10	9.7	10.1	97	101	71-125	4	30	
1,3,5-Trimethylbenzene	ug/L	<0.40	10	10	10.5	10.8	105	108	75-129	2	30	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10517964

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3626727 3626728

Parameter	Units	10519223001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,3-Dichlorobenzene	ug/L	<0.40	10	10	10.3	10.4	103	104	75-125	1	30	
1,3-Dichloropropane	ug/L	<0.40	10	10	9.5	9.5	95	95	75-125	1	30	
1,4-Dichlorobenzene	ug/L	<0.40	10	10	9.8	9.6	98	96	75-125	2	30	
2,2-Dichloropropane	ug/L	<1.0	10	10	10.9	11.1	109	111	67-150	2	30	
2-Butanone (MEK)	ug/L	<5.0	50	50	40.8	42.8	82	86	49-138	5	30	
2-Chlorotoluene	ug/L	<0.40	10	10	10.5	10.7	105	107	75-130	3	30	
4-Chlorotoluene	ug/L	<0.40	10	10	11.1	11.0	111	110	75-133	1	30	
4-Methyl-2-pentanone (MIBK)	ug/L	<5.0	50	50	47.5	47.6	95	95	75-126	0	30	
Acetone	ug/L	<20.0	50	50	36.5	41.4	73	83	51-125	12	30	
Allyl chloride	ug/L	<4.0	10	10	8.9	9.6	89	96	50-150	8	30	
Benzene	ug/L	<0.20	10	10	9.8	10.0	98	100	68-129	2	30	
Bromobenzene	ug/L	<0.40	10	10	9.4	9.4	94	94	75-125	0	30	
Bromochloromethane	ug/L	<1.0	10	10	10.2	9.8	102	98	73-132	4	30	
Bromodichloromethane	ug/L	<0.40	10	10	9.8	10	98	100	75-127	2	30	
Bromoform	ug/L	<1.0	10	10	9.6	9.0	96	90	71-125	7	30	
Bromomethane	ug/L	<1.0	10	10	14.1	13.8	141	138	30-150	2	30	SS
Carbon tetrachloride	ug/L	<0.050	1	1	1.5	1.3	145	135	30-150	8	30	CH
Chlorobenzene	ug/L	<0.40	10	10	10.1	10	101	100	75-125	1	30	
Chloroethane	ug/L	<1.0	10	10	9.5	10	95	100	68-141	4	30	
Chloroform	ug/L	<1.0	10	10	9.7	10.1	97	101	61-129	4	30	
Chloromethane	ug/L	<1.0	10	10	9.2	9.5	92	95	46-150	4	30	
cis-1,2-Dichloroethene	ug/L	<0.40	10	10	9.7	10.1	97	101	68-142	4	30	
cis-1,3-Dichloropropene	ug/L	<0.40	1	1	1.2	1.1	115	106	48-150	8	30	
Dibromochloromethane	ug/L	<0.40	1	1	1.2	1.1	115	107	50-150	8	30	
Dibromomethane	ug/L	<1.0	10	10	10.2	9.8	102	98	69-137	4	30	
Dichlorodifluoromethane	ug/L	<1.0	10	10	10.6	10.5	106	105	68-150	1	30	
Dichlorofluoromethane	ug/L	<1.0	10	10	10	9.9	100	99	73-135	1	30	
Diethyl ether (Ethyl ether)	ug/L	<4.0	10	10	8.6	9.2	86	92	61-128	7	30	
Ethylbenzene	ug/L	<0.40	10	10	10.5	10.5	105	105	75-131	1	30	
Hexachloro-1,3-butadiene	ug/L	<0.10	1	1	1.2	1.2	124	116	40-150	6	30	
Isopropylbenzene (Cumene)	ug/L	<0.40	10	10	12.4	12.4	124	124	75-133	0	30	
m&p-Xylene	ug/L	<0.80	20	20	21.8	21.9	109	110	75-135	0	30	
Methyl-tert-butyl ether	ug/L	<0.40	10	10	9.0	9.4	90	94	67-126	4	30	
Methylene Chloride	ug/L	<1.0	10	10	9.5	10.1	95	101	61-137	6	30	
n-Butylbenzene	ug/L	<0.40	10	10	10.8	11.0	108	110	75-136	2	30	
n-Propylbenzene	ug/L	<0.40	10	10	10.4	10.5	104	105	75-139	1	30	
Naphthalene	ug/L	<1.0	10	10	9.2	9.4	92	94	64-127	3	30	
o-Xylene	ug/L	<0.40	10	10	10.3	10.4	103	104	75-127	2	30	
p-Isopropyltoluene	ug/L	<0.40	10	10	11.4	11.5	114	115	75-135	1	30	
sec-Butylbenzene	ug/L	<0.40	10	10	11.2	11.4	112	114	75-141	2	30	
Styrene	ug/L	<0.40	10	10	10.6	10.1	106	101	75-125	5	30	
tert-Butylbenzene	ug/L	<0.40	10	10	10.6	10.7	106	107	75-141	1	30	
Tetrachloroethene	ug/L	<0.40	10	10	10.6	10.5	106	105	75-135	1	30	
Tetrahydrofuran	ug/L	<10.0	100	100	86.8	89.2	87	89	45-145	3	30	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10517964

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3626727 3626728

Parameter	Units	10519223001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Toluene	ug/L	<0.40	10	10	9.5	9.5	95	95	74-125	1	30	
trans-1,2-Dichloroethene	ug/L	<0.40	10	10	9.9	10	99	100	68-137	1	30	
trans-1,3-Dichloropropene	ug/L	<0.40	1	1	1.2	1.1	115	106	50-150	9	30	
Trichloroethene	ug/L	<0.050	1	1	1.2	1.1	124	115	41-150	8	30	
Trichlorofluoromethane	ug/L	<0.40	10	10	11.0	10.6	110	106	72-150	4	30	
Vinyl chloride	ug/L	<0.050	1	1	1.2	1.1	118	115	30-150	3	30	
Xylene (Total)	ug/L	<1.2	30	30	32.1	32.3	107	108	75-131	1	30	
1,2-Dichloroethane-d4 (S)	%.						102	99	75-128			
1,2-Dichloroethane-d4 (S)	%.						102	102	75-128			
1,2-Dichloroethane-d4 (S)	%.						98	102	75-128			
1,2-Dichloroethane-d4 (S)	%.						98	99	75-128			
4-Bromofluorobenzene (S)	%.						98	97	75-125			
Toluene-d8 (S)	%.						95	95	75-125			
Toluene-d8 (S)	%.						96	97	75-125			
Toluene-d8 (S)	%.						96	95	75-125			
Toluene-d8 (S)	%.						95	97	75-125			

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10517964

QC Batch: 676548 — Analysis Method: SM 2320B
QC Batch Method: SM 2320B — Analysis Description: 2320B Alkalinity
Laboratory: Pace Analytical Services - Minneapolis
Associated Lab Samples: 10517964001, 10517964002, 10517964003, 10517964004, 10517964005, 10517964006, 10517964007, 10517964008, 10517964009, 10517964010, 10517964011, 10517964012, 10517964013, 10517964014, 10517964015, 10517964016

METHOD BLANK: 3621761 — Matrix: Water
Associated Lab Samples: 10517964001, 10517964002, 10517964003, 10517964004, 10517964005, 10517964006, 10517964007, 10517964008, 10517964009, 10517964010, 10517964011, 10517964012, 10517964013, 10517964014, 10517964015, 10517964016

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	<5.0	5.0	05/21/20 12:42	

LABORATORY CONTROL SAMPLE & LCSD: 3621762 3621763

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	40	42.4	42.4	106	106	90-110	0	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3621764 3621765

Parameter	Units	10518518001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO3	mg/L	27.5	40	40	63.6	64.0	90	91	80-120	1	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3621766 3621767

Parameter	Units	10517964015 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO3	mg/L	251	40	40	285	287	86	90	80-120	1	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10517964

QC Batch: 675525 | Analysis Method: SM 2540C
QC Batch Method: SM 2540C | Analysis Description: 2540C Total Dissolved Solids
Laboratory: Pace Analytical Services - Minneapolis
Associated Lab Samples: 10517964001, 10517964002, 10517964003, 10517964004, 10517964005, 10517964006, 10517964007, 10517964008, 10517964009

METHOD BLANK: 3616450 Matrix: Water
Associated Lab Samples: 10517964001, 10517964002, 10517964003, 10517964004, 10517964005, 10517964006, 10517964007, 10517964008, 10517964009

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<10.0	10.0	05/15/20 10:47	

LABORATORY CONTROL SAMPLE: 3616451

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	1030	103	80-120	

SAMPLE DUPLICATE: 3616452

Parameter	Units	10517971001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	446	462	4	5	

SAMPLE DUPLICATE: 3616453

Parameter	Units	10517971002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	262	161	48	5	D6

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10517964

QC Batch: 676005
QC Batch Method: SM 2540C
Analysis Method: SM 2540C
Analysis Description: 2540C Total Dissolved Solids
Laboratory: Pace Analytical Services - Minneapolis
Associated Lab Samples: 10517964015

METHOD BLANK: 3618942 Matrix: Water
Associated Lab Samples: 10517964015

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<10.0	10.0	05/19/20 10:41	

LABORATORY CONTROL SAMPLE: 3618943

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	996	100	80-120	

SAMPLE DUPLICATE: 3618945

Parameter	Units	10517918005 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	195	286	38	5	D6

SAMPLE DUPLICATE: 3618950

Parameter	Units	10517964015 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	328	318	3	5	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10517964

QC Batch: 676008 | Analysis Method: SM 2540C
QC Batch Method: SM 2540C | Analysis Description: 2540C Total Dissolved Solids
Laboratory: Pace Analytical Services - Minneapolis
Associated Lab Samples: 10517964010, 10517964011, 10517964012, 10517964013, 10517964014, 10517964016

METHOD BLANK: 3618951 Matrix: Water
Associated Lab Samples: 10517964010, 10517964011, 10517964012, 10517964013, 10517964014, 10517964016

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<10.0	10.0	05/19/20 11:43	

LABORATORY CONTROL SAMPLE: 3618952

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	986	99	80-120	

SAMPLE DUPLICATE: 3618953

Parameter	Units	10517973002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	865	915	6	5	D6

SAMPLE DUPLICATE: 3618954

Parameter	Units	10518119005 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	307	311	1	5	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10517964

QC Batch: 675801 | Analysis Method: SM 2540D
QC Batch Method: SM 2540D | Analysis Description: 2540D Total Suspended Solids
Laboratory: Pace Analytical Services - Minneapolis
Associated Lab Samples: 10517964002, 10517964003, 10517964004, 10517964005, 10517964006, 10517964007, 10517964008, 10517964009, 10517964010, 10517964011, 10517964012, 10517964013, 10517964014, 10517964015, 10517964016

METHOD BLANK: 3618146 Matrix: Water
Associated Lab Samples: 10517964002, 10517964003, 10517964004, 10517964005, 10517964006, 10517964007, 10517964008, 10517964009, 10517964010, 10517964011, 10517964012, 10517964013, 10517964014, 10517964015, 10517964016

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Suspended Solids	mg/L	<10.0	10.0	05/18/20 15:14	

LABORATORY CONTROL SAMPLE: 3618147

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Suspended Solids	mg/L	100	120	120	80-120	

SAMPLE DUPLICATE: 3618148

Parameter	Units	10517964015 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	<10.0	<10.0		5	

SAMPLE DUPLICATE: 3618149

Parameter	Units	10517973002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	81.0	97.0	18	5	D6

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10517964

QC Batch: 676016
QC Batch Method: SM 2540D
Analysis Method: SM 2540D
Analysis Description: 2540D Total Suspended Solids
Laboratory: Pace Analytical Services - Minneapolis
Associated Lab Samples: 10517964001

METHOD BLANK: 3618979 Matrix: Water
Associated Lab Samples: 10517964001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Suspended Solids	mg/L	<10.0	10.0	05/19/20 14:42	

LABORATORY CONTROL SAMPLE: 3618980

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Suspended Solids	mg/L	100	90.0	90	80-120	

SAMPLE DUPLICATE: 3618981

Parameter	Units	10517772001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	87.0	115	28	5	D6

SAMPLE DUPLICATE: 3620950

Parameter	Units	10517750001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	450	500	11	5	D6

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10517964

QC Batch: 678204
QC Batch Method: SM 4500-H+B
Analysis Method: SM 4500-H+B
Analysis Description: 4500H+B pH
Laboratory: Pace Analytical Services - Minneapolis

Associated Lab Samples: 10517964001, 10517964002, 10517964003, 10517964004, 10517964005, 10517964006, 10517964007, 10517964008, 10517964009, 10517964010, 10517964011, 10517964012, 10517964013, 10517964014, 10517964015, 10517964016

LABORATORY CONTROL SAMPLE: 3629802

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
pH at 25 Degrees C	Std. Units	5	5.0	100	98-102	H6

SAMPLE DUPLICATE: 3629803

Parameter	Units	10517964001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	7.6	7.7	1	3	H6

SAMPLE DUPLICATE: 3629804

Parameter	Units	10517964015 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	7.9	7.8	0	3	H6

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10517964

QC Batch: 678207
QC Batch Method: SM 2510
Analysis Method: SM 2510
Analysis Description: SM2510 Specific Conductance
Laboratory: Pace Analytical Services - Minneapolis
Associated Lab Samples: 10517964001, 10517964002, 10517964003, 10517964004, 10517964005, 10517964006, 10517964007, 10517964008, 10517964009, 10517964010, 10517964011, 10517964012, 10517964013, 10517964014, 10517964015, 10517964016

METHOD BLANK: 3629821
Matrix: Water
Associated Lab Samples: 10517964001, 10517964002, 10517964003, 10517964004, 10517964005, 10517964006, 10517964007, 10517964008, 10517964009, 10517964010, 10517964011, 10517964012, 10517964013, 10517964014, 10517964015, 10517964016

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Specific Conductance	umhos/cm	<1.0	1.0	05/29/20 18:01	

LABORATORY CONTROL SAMPLE: 3629822

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Specific Conductance	umhos/cm	1000	992	99	90-110	

SAMPLE DUPLICATE: 3629823

Parameter	Units	10517964001 Result	Dup Result	RPD	Max RPD	Qualifiers
Specific Conductance	umhos/cm	685	681	1	20	

SAMPLE DUPLICATE: 3629824

Parameter	Units	10517964015 Result	Dup Result	RPD	Max RPD	Qualifiers
Specific Conductance	umhos/cm	579	556	4	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10517964

QC Batch: 677796
QC Batch Method: EPA 300.0
Analysis Method: EPA 300.0
Analysis Description: 300.0 IC Anions
Laboratory: Pace Analytical Services - Minneapolis
Associated Lab Samples: 10517964001, 10517964002, 10517964003, 10517964004, 10517964005, 10517964006, 10517964007, 10517964008, 10517964009, 10517964010, 10517964011, 10517964012, 10517964013, 10517964014, 10517964015, 10517964016

METHOD BLANK: 3627641 Matrix: Water
Associated Lab Samples: 10517964001, 10517964002, 10517964003, 10517964004, 10517964005, 10517964006, 10517964007, 10517964008, 10517964009, 10517964010, 10517964011, 10517964012, 10517964013, 10517964014, 10517964015, 10517964016

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/L	<1.2	1.2	05/29/20 02:54	
Sulfate	mg/L	<1.2	1.2	05/29/20 02:54	

LABORATORY CONTROL SAMPLE: 3627642

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	12.5	11.8	94	90-110	
Sulfate	mg/L	12.5	11.9	95	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3627643 3627644

Parameter	Units	10517964001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	<1.2	12.5	12.5	10.8	10.8	80	80	90-110	0	20	M1
Sulfate	mg/L	15.3	12.5	12.5	24.1	24.3	70	72	90-110	1	20	M1

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3627645 3627646

Parameter	Units	10517964015 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	9.8	12.5	12.5	6.7	10	-25	2	90-110	40	20	M1,R1
Sulfate	mg/L	38.8	12.5	12.5	19.6	26.2	-154	-101	90-110	29	20	M1,R1

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10517964

QC Batch: 676157
QC Batch Method: EPA 350.1
Analysis Method: EPA 350.1
Analysis Description: 350.1 Ammonia
Laboratory: Pace Analytical Services - Minneapolis
Associated Lab Samples: 10517964001, 10517964002

METHOD BLANK: 3619552 Matrix: Water
Associated Lab Samples: 10517964001, 10517964002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, Ammonia	mg/L	<0.10	0.10	05/19/20 15:32	

LABORATORY CONTROL SAMPLE: 3619553

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	2.5	2.5	99	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3619554 3619555

Parameter	Units	10518199005 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, Ammonia	mg/L	ND	2.5	2.5	2.4	2.4	94	97	90-110	3	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3619556 3619557

Parameter	Units	10517964002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, Ammonia	mg/L	<0.10	2.5	2.5	2.4	2.4	95	94	90-110	0	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10517964

QC Batch: 676219 | Analysis Method: EPA 350.1
QC Batch Method: EPA 350.1 | Analysis Description: 350.1 Ammonia
Laboratory: Pace Analytical Services - Minneapolis
Associated Lab Samples: 10517964003, 10517964004, 10517964005, 10517964006, 10517964007, 10517964008, 10517964009, 10517964010, 10517964011, 10517964012, 10517964013, 10517964014, 10517964015, 10517964016

METHOD BLANK: 3619909 Matrix: Water
Associated Lab Samples: 10517964003, 10517964004, 10517964005, 10517964006, 10517964007, 10517964008, 10517964009, 10517964010, 10517964011, 10517964012, 10517964013, 10517964014, 10517964015, 10517964016

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, Ammonia	mg/L	<0.10	0.10	05/19/20 16:19	

LABORATORY CONTROL SAMPLE: 3619910

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	2.5	2.4	98	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3619911 3619912

Parameter	Units	10517964003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, Ammonia	mg/L	<0.10	2.5	2.5	2.4	2.4	96	97	90-110	0	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3619913 3619914

Parameter	Units	10517964015 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, Ammonia	mg/L	<0.10	2.5	2.5	2.2	2.5	88	101	90-110	13	20	M1

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10517964

QC Batch: 676821 | Analysis Method: EPA 353.2
QC Batch Method: EPA 353.2 | Analysis Description: 353.2 Nitrate + Nitrite, preserved
Laboratory: Pace Analytical Services - Minneapolis
Associated Lab Samples: 10517964001, 10517964002, 10517964003, 10517964004

METHOD BLANK: 3622876 Matrix: Water
Associated Lab Samples: 10517964001, 10517964002, 10517964003, 10517964004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	<0.10	0.10	05/21/20 17:37	

LABORATORY CONTROL SAMPLE: 3622877

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	1	0.95	95	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3622878 3622879

Parameter	Units	10517954003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, NO2 plus NO3	mg/L	ND	1	1	1.0	1.0	104	102	90-110	2	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3622880 3622881

Parameter	Units	10517964001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, NO2 plus NO3	mg/L	<0.10	1	1	1.0	1.0	98	98	90-110	0	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10517964

QC Batch: 676822 — Analysis Method: EPA 353.2
QC Batch Method: EPA 353.2 — Analysis Description: 353.2 Nitrate + Nitrite, preserved
Laboratory: Pace Analytical Services - Minneapolis
Associated Lab Samples: 10517964005, 10517964006, 10517964007, 10517964008, 10517964009, 10517964010, 10517964011, 10517964012, 10517964013, 10517964014, 10517964015, 10517964016

METHOD BLANK: 3622882 — Matrix: Water
Associated Lab Samples: 10517964005, 10517964006, 10517964007, 10517964008, 10517964009, 10517964010, 10517964011, 10517964012, 10517964013, 10517964014, 10517964015, 10517964016

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	<0.10	0.10	05/22/20 12:17	FS

LABORATORY CONTROL SAMPLE: 3622883

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	1	1.0	102	90-110	FS

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3622884 3622885

Parameter	Units	10517964005 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, NO2 plus NO3	mg/L	<0.10	1	1	1.1	0.72	103	69	90-110	38	20	M1,R1

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3622886 3622887

Parameter	Units	10517964015 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, NO2 plus NO3	mg/L	1.9	1	1	3.0	3.0	104	106	90-110	1	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALIFIERS

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10517964

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

1M	Due to required dilutions on anion and/or cation analysis, the cation anion balance calculation resulted in a non-balance state.
CH	The continuing calibration for this compound is outside of Pace Analytical acceptance limits. The results may be biased high.
D6	The precision between the sample and sample duplicate exceeded laboratory control limits.
FS	The sample was filtered in the laboratory prior to analysis.
H6	Analysis initiated outside of the 15 minute EPA required holding time.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
MW	Due to matrix interference, achieving a constant weight is not possible.
N2	The lab does not hold NELAC/TNI accreditation for this parameter but other accreditations/certifications may apply. A complete list of accreditations/certifications is available upon request.
P6	Matrix spike recovery was outside laboratory control limits due to a parent sample concentration notably higher than the spike level.
P8	Analyte was detected in the method blank. All associated samples had concentrations of at least ten times greater than the blank or were below the reporting limit.
R1	RPD value was outside control limits.
SS	This analyte did not meet the secondary source verification criteria for the initial calibration. The reported result should be considered an estimated value.

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10517964

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10517964001	**W-13**	EPA 200.8	676609	EPA 200.8	676932
10517964002	**C-11**	EPA 200.8	676609	EPA 200.8	676932
10517964003	**W-12**	EPA 200.8	676609	EPA 200.8	676932
10517964004	**W-3**	EPA 200.8	676609	EPA 200.8	676932
10517964005	**W-5**	EPA 200.8	676609	EPA 200.8	676932
10517964006	**W-106A**	EPA 200.8	676609	EPA 200.8	676932
10517964007	**W-106B**	EPA 200.8	676609	EPA 200.8	676932
10517964008	**W-301A**	EPA 200.8	676609	EPA 200.8	676932
10517964009	**W-301B**	EPA 200.8	676609	EPA 200.8	676932
10517964010	**W-102A**	EPA 200.8	676609	EPA 200.8	676932
10517964011	**W-102B**	EPA 200.8	676609	EPA 200.8	676932
10517964012	**W-104A**	EPA 200.8	676609	EPA 200.8	676932
10517964013	**W-104B**	EPA 200.8	676609	EPA 200.8	676932
10517964014	**W-302A**	EPA 200.8	676609	EPA 200.8	676932
10517964015	**W-302B**	EPA 200.8	676609	EPA 200.8	676932
10517964016	**Dup-2**	EPA 200.8	676609	EPA 200.8	676932
10517964001	**W-13**	SM 1030E	677608		
10517964002	**C-11**	SM 1030E	677608		
10517964003	**W-12**	SM 1030E	677608		
10517964004	**W-3**	SM 1030E	677608		
10517964005	**W-5**	SM 1030E	677608		
10517964006	**W-106A**	SM 1030E	677608		
10517964007	**W-106B**	SM 1030E	677608		
10517964008	**W-301A**	SM 1030E	677608		
10517964009	**W-301B**	SM 1030E	677608		
10517964010	**W-102A**	SM 1030E	677608		
10517964011	**W-102B**	SM 1030E	677608		
10517964012	**W-104A**	SM 1030E	677608		
10517964013	**W-104B**	SM 1030E	677608		
10517964014	**W-302A**	SM 1030E	677608		
10517964015	**W-302B**	SM 1030E	677608		
10517964016	**Dup-2**	SM 1030E	677608		
10517964001	**W-13**	EPA 245.1	676619	EPA 245.1	676878
10517964002	**C-11**	EPA 245.1	676619	EPA 245.1	676878
10517964003	**W-12**	EPA 245.1	676619	EPA 245.1	676878
10517964004	**W-3**	EPA 245.1	676619	EPA 245.1	676878
10517964005	**W-5**	EPA 245.1	676619	EPA 245.1	676878
10517964006	**W-106A**	EPA 245.1	676619	EPA 245.1	676878
10517964007	**W-106B**	EPA 245.1	676619	EPA 245.1	676878
10517964008	**W-301A**	EPA 245.1	676619	EPA 245.1	676878
10517964009	**W-301B**	EPA 245.1	676619	EPA 245.1	676878
10517964010	**W-102A**	EPA 245.1	676619	EPA 245.1	676878
10517964011	**W-102B**	EPA 245.1	676619	EPA 245.1	676878
10517964012	**W-104A**	EPA 245.1	676619	EPA 245.1	676878
10517964013	**W-104B**	EPA 245.1	676619	EPA 245.1	676878
10517964014	**W-302A**	EPA 245.1	676619	EPA 245.1	676878
10517964015	**W-302B**	EPA 245.1	676619	EPA 245.1	676878
10517964016	**Dup-2**	EPA 245.1	676619	EPA 245.1	676878

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10517964

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10517964001	**W-13**	EPA 8260B	676817		
10517964002	**C-11**	EPA 8260B	676817		
10517964003	**W-12**	EPA 8260B	676817		
10517964004	**W-3**	EPA 8260B	676817		
10517964005	**W-5**	EPA 8260B	676817		
10517964006	**W-106A**	EPA 8260B	676817		
10517964007	**W-106B**	EPA 8260B	676817		
10517964008	**W-301A**	EPA 8260B	676817		
10517964009	**W-301B**	EPA 8260B	676817		
10517964010	**W-102A**	EPA 8260B	676817		
10517964011	**W-102B**	EPA 8260B	676817		
10517964012	**W-104A**	EPA 8260B	676817		
10517964013	**W-104B**	EPA 8260B	676817		
10517964014	**W-302A**	EPA 8260B	676817		
10517964015	**W-302B**	EPA 8260B	676817		
10517964016	**Dup-2**	EPA 8260B	676817		
10517964017	**Trip Blank 2**	EPA 8260B	676817		
10517964018	**Trip Blank 3**	EPA 8260B	677147		
10517964019	**Trip Blank 4**	EPA 8260B	677147		
10517964001	**W-13**	SM 2320B	676548		
10517964002	**C-11**	SM 2320B	676548		
10517964003	**W-12**	SM 2320B	676548		
10517964004	**W-3**	SM 2320B	676548		
10517964005	**W-5**	SM 2320B	676548		
10517964006	**W-106A**	SM 2320B	676548		
10517964007	**W-106B**	SM 2320B	676548		
10517964008	**W-301A**	SM 2320B	676548		
10517964009	**W-301B**	SM 2320B	676548		
10517964010	**W-102A**	SM 2320B	676548		
10517964011	**W-102B**	SM 2320B	676548		
10517964012	**W-104A**	SM 2320B	676548		
10517964013	**W-104B**	SM 2320B	676548		
10517964014	**W-302A**	SM 2320B	676548		
10517964015	**W-302B**	SM 2320B	676548		
10517964016	**Dup-2**	SM 2320B	676548		
10517964001	**W-13**	SM 2540C	675525		
10517964002	**C-11**	SM 2540C	675525		
10517964003	**W-12**	SM 2540C	675525		
10517964004	**W-3**	SM 2540C	675525		
10517964005	**W-5**	SM 2540C	675525		
10517964006	**W-106A**	SM 2540C	675525		
10517964007	**W-106B**	SM 2540C	675525		
10517964008	**W-301A**	SM 2540C	675525		
10517964009	**W-301B**	SM 2540C	675525		
10517964010	**W-102A**	SM 2540C	676008		
10517964011	**W-102B**	SM 2540C	676008		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10517964

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10517964012	**W-104A**	SM 2540C	676008		
10517964013	**W-104B**	SM 2540C	676008		
10517964014	**W-302A**	SM 2540C	676008		
10517964015	**W-302B**	SM 2540C	676005		
10517964016	**Dup-2**	SM 2540C	676008		
10517964001	**W-13**	SM 2540D	676016		
10517964002	**C-11**	SM 2540D	675801		
10517964003	**W-12**	SM 2540D	675801		
10517964004	**W-3**	SM 2540D	675801		
10517964005	**W-5**	SM 2540D	675801		
10517964006	**W-106A**	SM 2540D	675801		
10517964007	**W-106B**	SM 2540D	675801		
10517964008	**W-301A**	SM 2540D	675801		
10517964009	**W-301B**	SM 2540D	675801		
10517964010	**W-102A**	SM 2540D	675801		
10517964011	**W-102B**	SM 2540D	675801		
10517964012	**W-104A**	SM 2540D	675801		
10517964013	**W-104B**	SM 2540D	675801		
10517964014	**W-302A**	SM 2540D	675801		
10517964015	**W-302B**	SM 2540D	675801		
10517964016	**Dup-2**	SM 2540D	675801		
10517964001	**W-13**	SM 4500-H+B	678204		
10517964002	**C-11**	SM 4500-H+B	678204		
10517964003	**W-12**	SM 4500-H+B	678204		
10517964004	**W-3**	SM 4500-H+B	678204		
10517964005	**W-5**	SM 4500-H+B	678204		
10517964006	**W-106A**	SM 4500-H+B	678204		
10517964007	**W-106B**	SM 4500-H+B	678204		
10517964008	**W-301A**	SM 4500-H+B	678204		
10517964009	**W-301B**	SM 4500-H+B	678204		
10517964010	**W-102A**	SM 4500-H+B	678204		
10517964011	**W-102B**	SM 4500-H+B	678204		
10517964012	**W-104A**	SM 4500-H+B	678204		
10517964013	**W-104B**	SM 4500-H+B	678204		
10517964014	**W-302A**	SM 4500-H+B	678204		
10517964015	**W-302B**	SM 4500-H+B	678204		
10517964016	**Dup-2**	SM 4500-H+B	678204		
10517964001	**W-13**	SM 2510	678207		
10517964002	**C-11**	SM 2510	678207		
10517964003	**W-12**	SM 2510	678207		
10517964004	**W-3**	SM 2510	678207		
10517964005	**W-5**	SM 2510	678207		
10517964006	**W-106A**	SM 2510	678207		
10517964007	**W-106B**	SM 2510	678207		
10517964008	**W-301A**	SM 2510	678207		
10517964009	**W-301B**	SM 2510	678207		

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10517964

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10517964010	**W-102A**	SM 2510	678207		
10517964011	**W-102B**	SM 2510	678207		
10517964012	**W-104A**	SM 2510	678207		
10517964013	**W-104B**	SM 2510	678207		
10517964014	**W-302A**	SM 2510	678207		
10517964015	**W-302B**	SM 2510	678207		
10517964016	**Dup-2**	SM 2510	678207		
10517964001	**W-13**	EPA 300.0	677796		
10517964002	**C-11**	EPA 300.0	677796		
10517964003	**W-12**	EPA 300.0	677796		
10517964004	**W-3**	EPA 300.0	677796		
10517964005	**W-5**	EPA 300.0	677796		
10517964006	**W-106A**	EPA 300.0	677796		
10517964007	**W-106B**	EPA 300.0	677796		
10517964008	**W-301A**	EPA 300.0	677796		
10517964009	**W-301B**	EPA 300.0	677796		
10517964010	**W-102A**	EPA 300.0	677796		
10517964011	**W-102B**	EPA 300.0	677796		
10517964012	**W-104A**	EPA 300.0	677796		
10517964013	**W-104B**	EPA 300.0	677796		
10517964014	**W-302A**	EPA 300.0	677796		
10517964015	**W-302B**	EPA 300.0	677796		
10517964016	**Dup-2**	EPA 300.0	677796		
10517964001	**W-13**	EPA 350.1	676157		
10517964002	**C-11**	EPA 350.1	676157		
10517964003	**W-12**	EPA 350.1	676219		
10517964004	**W-3**	EPA 350.1	676219		
10517964005	**W-5**	EPA 350.1	676219		
10517964006	**W-106A**	EPA 350.1	676219		
10517964007	**W-106B**	EPA 350.1	676219		
10517964008	**W-301A**	EPA 350.1	676219		
10517964009	**W-301B**	EPA 350.1	676219		
10517964010	**W-102A**	EPA 350.1	676219		
10517964011	**W-102B**	EPA 350.1	676219		
10517964012	**W-104A**	EPA 350.1	676219		
10517964013	**W-104B**	EPA 350.1	676219		
10517964014	**W-302A**	EPA 350.1	676219		
10517964015	**W-302B**	EPA 350.1	676219		
10517964016	**Dup-2**	EPA 350.1	676219		
10517964001	**W-13**	EPA 353.2	676821		
10517964002	**C-11**	EPA 353.2	676821		
10517964003	**W-12**	EPA 353.2	676821		
10517964004	**W-3**	EPA 353.2	676821		
10517964005	**W-5**	EPA 353.2	676822		
10517964006	**W-106A**	EPA 353.2	676822		
10517964007	**W-106B**	EPA 353.2	676822		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10517964

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10517964008	**W-301A**	EPA 353.2	676822		
10517964009	**W-301B**	EPA 353.2	676822		
10517964010	**W-102A**	EPA 353.2	676822		
10517964011	**W-102B**	EPA 353.2	676822		
10517964012	**W-104A**	EPA 353.2	676822		
10517964013	**W-104B**	EPA 353.2	676822		
10517964014	**W-302A**	EPA 353.2	676822		
10517964015	**W-302B**	EPA 353.2	676822		
10517964016	**Dup-2**	EPA 353.2	676822		

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

WO#: 10517964

10517964

Minnesota Pollution Control Agency

MPCA Chain-of-Custody Form revision 2017.0328

* indicates a required field

Work Order Number: | COC Type: Standard | Page:

Turnaround Time: Standard | COC ID: 33549 line8

PROJECT/CLIENT INFO

Facility Code:* SW-34 | Program Code (MDH Lab Only):

Project Name:* Clay County Sanitary Landfill - Spring 2020 Compliance W | Project Task Code:* PRJ07913

Project Manager: Andrew Feia

Potential Hazard? No | If yes, add information to **Sampler Comments** field

LABORATORY

Lab Name: Pace Analytical Services, LLC

Address: 1700 Elm Street SE

Minneapolis, MN 55414

EPA Lab ID:*

SAMPLE DETAILS

SAMPLE TYPES
Sample=Routine Sample
QC-FB=Field Blank Sample
QC-FR=Field Replicate Sample
QC-TB=Trip Blank Sample
QC-EB=Equipment Blank
Treated-Mid=Treatment system sample
Treated-Post=Treatment system sample

SAMPLING METHODS
G=Grab sample
CT=Composite, time-paced w/AS
CF=Composite w/AS
D-T=Discrete,time-paced w/AS
D-F=Discrete,flow-paced w/AS
SW-GAS=Gas Sampling
Unknown=Unknown

LAB MATRICES
DW=Drinking Water
NW=Nonpotable Water
SD=Soil/Solid
AR=Air
BL=Biological Material
OT=Other
TS=Tissue

FIELD MATRICES
Wtr-Ground=Groundwater
Wtr-Surf=Surface Water
Wtr-Drink=Drinking Water
QC-BLANK=Artificial Blank Water
Leachate=Leachate Sample
Air-Indoor=Indoor Air
Gas-Soil=Soil Gas

MN Location Identifier*	Field Name	Sample Type*	Start Date* (mm/dd/yyyy)	Start Time* 24 hr (hh:mm)	Depth Start	Depth End	Depth Units (m or ft.)	Sampling Method*	Complete ONLY if Method is CT, CF, D-T, or D-F: End Date (mm/dd/yyyy)	Complete ONLY if Method is CT, CF, D-T, or D-F: End Time 24 hr (hh:mm)	Lab Matrix*	Field Matrix*	AIS	Sampler Comments (filter volume, special handling, etc.)	# of Cont	ANALYSIS*	PRESERV.	List 1-VOCs (Attached) HCL	List 2-Dissolved Metals (Attached) HN03	List 2-Inorganics (Attached) H2S04	List 4-pH, Specific Conductance None			Lab Sample No.	#
																	FF	N	Y	N	N				
458867	W-13	Sample	5/12/2020	09:10				G			NW	WTR-Ground			12			x	x	x	x			001	1
670505	C-11	Sample	5/12/2020	10:08				G			NW	WTR-Ground			12			x	x	x	x			002	2
458868	W-12	Sample	5/12/2020	10:34				G			NW	WTR-Ground			12			x	x	x	x			003	3
117059	W-3	Sample	5/12/2020	13:30				G			NW	WTR-Ground			12			x	x	x	x			004	4
222010	W-5	Sample	5/12/2020	13:19				G			NW	WTR-Ground			12			x	x	x	x			005	5
763239	W-106A	Sample	5/12/2020	14:35				G			NW	WTR-Ground			12			x	x	x	x			006	6
763240	W-106B	Sample	5/12/2020	14:31				G			NW	WTR-Ground			12			x	x	x	x			007	7
778496	W-301A	Sample	5/12/2020	15:35				G			NW	WTR-Ground			12			x	x	x	x			008	8
778497	W-301B	Sample	5/12/2020	15:24				G			NW	WTR-Ground			12			x	x	x	x			009	9
670532	W-102A	Sample	5/12/2020	17:06				G			NW	WTR-Ground			12			x	x	x	x			010	10

Sampler's Name:* Christina Lammers | **Phone#:** 701-893-2327

Sampler's Signature:* Christina Lammers

Sampler's Organization: Wenck Associates, Inc.

Billing Organization: Clay County - Kirk Rosenberger | **Acct#:** 10-115155

Address: 807 11th Street North, Moorhead, MN 56560

Courier Name: Speedee | **Tracking#:**

Receiving Comments:

Relinquished By/Affiliation	Date/Time	Accepted By/Affiliation	Date/Time
(Sampler) /Wenck	5/13 14:30		5/14/20 1135

T=1.3, 3.4, 6.5, 1.5, 2.7

Minnesota Pollution Control Agency

MPCA Chain-of-Custody Form revision 2017.0328

* indicates a required field

Work Order Number: | **COC Type:** Standard | **Page:** 2 of 2

Turnaround Time: Standard | **COC ID:** 33549 line8

FOR LAB USE ONLY

PROJECT/CLIENT INFO

Facility Code:*	SW-34
Program Code (MDH Lab Only):	
Project Name:*	Clay County Sanitary Landfill - Spring 2020 Compliance W
Project Task Code:*	PRJ07913
Project Manager:	Andrew Feia
Potential Hazard?	No — If yes, add information to **Sampler Comments** field

LABORATORY

Lab Name:	Pace Analytical Services, LLC
Address:	1700 Elm Street SE
	Minneapolis, MN 55414
EPA Lab ID:*	

Lab Work Order Sticker

SAMPLE DETAILS

SAMPLE TYPES
Sample=Routine Sample
QC-FB=Field Blank Sample
QC-FR=Field Replicate Sample
QC-TB=Trip Blank Sample
QC-EB=Equipment Blank
Treated-Mid=Treatment system sample
Treated-Post=Treatment system sample

SAMPLING METHODS
G=Grab sample
CT=Composite, time-paced w/AS
CF=Composite w/AS
D-T=Discrete,time-paced w/AS
D-F=Discrete,flow-paced w/AS
SW-GAS=Gas Sampling
Unknown=Unknown

LAB MATRICES
DW=Drinking Water
NW=Nonpotable Water
SD=Soil/Solid
AR=Air
BL=Biological Material
OT=Other
TS=Tissue

FIELD MATRICES
Wtr-Ground=Groundwater
Wtr-Surf=Surface Water
Wtr-Drink=Drinking Water
QC-BLANK=Artificial Blank Water
Leachate=Leachate Sample
Air-Indoor=Indoor Air
Gas-Soil=Soil Gas

MN Location Identifier*	Field Name	Sample Type*	Start Date* (mm/dd/yyyy)	Start Time* 24 hr (hh:mm)	Depth Start	Depth End	Depth Units (m or ft.)	Sampling Method*	End Date (mm/dd/yyyy)	End Time 24 hr (hh:mm)	Lab Matrix*	Field Matrix*	AIS	Sampler Comments (filter volume, special handling, etc.)	# of Cont	ANALYSIS*	List 1-VOCs (Attached)	List 2-Dissolved Metals (Attached)	List 2-Inorganics (Attached)	List 4-pH, Specific Conductance			Lab Sample No.	#
														PRESERV.			HCL	HN03	H2S04	None				
														FF			N	Y	N	N				
670533	W-102B	Sample	5/12/2020	15:12				G			NW	WTR-Ground			12		x	x	x	x			011	1
763237	W-104A	Sample	5/12/2020	16:17				G			NW	WTR-Ground			12		x	x	x	x			012	2
763238	W-104B	Sample	5/12/2020	16:32				G			NW	WTR-Ground			12		x	x	x	x			013	3
778498	W-302A	Sample	5/12/2020	18:13				G			NW	WTR-Ground			12		x	x	x	x			014	4
778499	W-302B	Sample	5/12/2020	18:11				G			NW	WTR-Ground			12		x	x	x	x			015	5
QC-BLANK	Dup-2	QC-FR	5/12/2020	-				G			NW	WTR-Ground			12		x	x	x	x			016	6
QC-BLANK	Trip Blank 2	QC-TB	5/12/2020	-				G			NW	QC-Blank			4		x						017	7
QC-BLANK	Trip Blank 3	QC-TB	5/12/2020	-				G			NW	QC-Blank			4		x						018	8
QC-BLANK	Trip Blank 4	QC-TB	5/12/2020	-				G			NW	QC-Blank			4		x						019	9
QC-BLANK	W-302B (MS/MSD)	QC-FR	5/12/2020	18:11				G			NW	WTR-Ground			12		x	x	x	x				10

Sampler's Name:* Christina Lammers — **Phone#:** 701-893-2327

Sampler's Signature:* Christina Lammers

Sampler's Organization: Wenck Associates, Inc.

Billing Organization: Clay County - Kirk Rosenberger — **Acct#:** 10-115155

Address: 807 11th Street North, Moorhead, MN 56560

Courier Name: Speedee — **Tracking#:**

Receiving Comments:

Relinquished By/Affiliation	Date/Time	Accepted By/Affiliation	Date/Time
(Sampler) Christina Lammers /Wenck	5/13 14:30	Pace	5/14/20 1135

Pace Analytical®	Document Name: **Sample Condition Upon Receipt (SCUR) - MN**	Document Revised: 27Mar2020 **Page 1 of 1**
	Document No.: **ENV-FRM-MIN4-0150 Rev.00**	Pace Analytical Services - **Minneapolis**

Sample Condition Upon Receipt

Client Name: Wenck

Project #: WO#: 10517964
PM: AKA Due Date: 05/29/20
CLIENT: WENCK-ND

Courier: ☐Fed Ex ☐UPS ☐USPS ☐Client ☐Pace ☑SpeeDee ☐Commercial See Exceptions ☑

Tracking Number:

Custody Seal on Cooler/Box Present? ☑Yes ☐No **Seals Intact?** ☑Yes ☐No **Biological Tissue Frozen?** ☐Yes ☐No ☑N/A

Packing Material: ☑Bubble Wrap ☑Bubble Bags ☐None ☑Other: pb **Temp Blank?** ☑Yes ☐No

Thermometer: ☑T1(0461) ☐T2(1336) ☐T3(0459) ☐T4(0254) ☐T5(0489) **Type of Ice:** ☑Wet ☐Blue ☐None ☐Dry ☐Melted

Did Samples Originate in West Virginia? ☐Yes ☑No **Were All Container Temps Taken?** ☐Yes ☐No ☑N/A

Temp should be above freezing to 6°C **Cooler Temp Read w/temp blank:** _____ °C **Average Corrected Temp (no temp blank only):** ☐See Exceptions _____ °C ☐1 Container

Correction Factor: true **Cooler Temp Corrected w/temp blank:** See exceptions °C

USDA Regulated Soil: (☑N/A, water sample/Other: _____)
Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA. MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? ☐Yes ☐No

Date/Initials of Person Examining Contents: 5-14-20 AA
Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐Yes ☐No

If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.

				COMMENTS:
Chain of Custody Present and Filled Out?	☑Yes	☐No		1.
Chain of Custody Relinquished?	☑Yes	☐No		2.
Sampler Name and/or Signature on COC?	☑Yes	☐No	☐N/A	3.
Samples Arrived within Hold Time?	☑Yes	☑No	AA 5-14-20	4.
Short Hold Time Analysis (<72 hr)?	☐Yes	☑No		5. ☐Fecal Coliform ☐HPC ☐Total Coliform/E coli ☐BOD/cBOD ☐Hex Chrome ☐Turbidity ☐Nitrate ☐Nitrite ☐Orthophos ☐Other
Rush Turn Around Time Requested?	☐Yes	☑No		6.
Sufficient Volume?	☑Yes	☐No		7.
Correct Containers Used? -Pace Containers Used?	☑Yes ☑Yes	☐No ☐No		8.
Containers Intact?	☑Yes	☐No		9.
Field Filtered Volume Received for Dissolved Tests?	☑Yes	☐No	☐N/A	10. Is sediment visible in the dissolved container? ☐Yes ☑No
Is sufficient information available to reconcile the samples to the COC? Matrix: ☑Water ☐Soil ☐Oil ☐Other	☑Yes	☐No		11. **If no, write ID/ Date/Time on Container Below:** **See Exception** ☐
All containers needing acid/base preservation have been checked?	☑Yes	☐No	☐N/A	12. Sample # 1-16
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO_3, H_2SO_4, <2pH, NaOH >9 Sulfide, NaOH>12 Cyanide)	☑Yes	☐No	☐N/A	1-14,16: 1/1 1/1 ☐NaOH ☑HNO_3 ☑H_2SO_4 ☐Zinc Acetate 15: 2/2 2/2
Exceptions: VOA, Coliform, TOC/DOC Oil and Grease, DRO/8015 (water) and Dioxin/PFAS	☑Yes	☐No	☐N/A	Positive for Res. Chlorine? ☐Yes ☐No **pH Paper Lot#** **See Exception** ☐
				Res. Chlorine: 0-6 Roll 203619 / 0-6 Strip / 0-14 Strip
Extra labels present on soil VOA or WIDRO containers?	☐Yes	☐No	☑N/A	13. 1 vial in Trip Blank 3 has <6mm headspace **See Exception** ☐
Headspace in VOA Vials (greater than 6mm)?	☐Yes	☑No	☐N/A	
Trip Blank Present?	☑Yes	☐No	☐N/A	14.
Trip Blank Custody Seals Present?	☑Yes	☐No	☐N/A	Pace Trip Blank Lot # (if purchased): 256134

CLIENT NOTIFICATION/RESOLUTION **Field Data Required?** ☐Yes ☐No

Person Contacted: _____ Date/Time: _____

Comments/Resolution: _____

Project Manager Review: Anna Osp **Date:** 5/14/2020

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers).

Labeled by: RNC (1)

Pace Analytical®	Document Name: **Sample Condition Upon Receipt (SCUR) Exception Form**	Document Revised: 26Mar2020 **Page 1 of 1**
	Document No.: **ENV-FRM-MIN4-0142 Rev.00**	Pace Analytical Services - **Minneapolis**

SCUR Exceptions:

Workorder #:

Out of Temp Sample IDs	Container Type	# of Containers

PM Notified? ☐Yes ☐No

If yes, indicate who was contacted/date/time.
If no, indicate reason why.

Multiple Cooler Project? ☐Yes ☐No
If you answered yes, fill out information to the left.

No Temp Blank		
Read Temp	Corrected Temp	Average Temp

Tracking Number/Temperature	
SP 00795303 13420 45262	1.3
" " " " 52475	3.4
" " " " 22645	0.5
" " " " 25714	1.5
" " " " 25695	2.7

Other Issues		
Issue Type: Sample ID	Container Type	# of Containers

pH Adjustment Log for Preserved Samples

Sample ID	Type of Preserv.	pH Upon Receipt	Date Adjusted	Time Adjusted	Amount Added (mL)	Lot # Added	pH After	In Compliance after addition?	Initials
								☐Yes ☐No	
								☐Yes ☐No	
								☐Yes ☐No	
								☐Yes ☐No	

TABLE 2

Clay County Landfill
Permit SW-34
Environmental Monitoring System

Parameter Lists For Analyses

List 1 (VOCs) (Groundwater and Surface Water)

1,1,1,2-Tetrachloroethane	Chlorobenzene (monochlorobenzene)
1,1,1-Trichloroethane	Chlorodibromomethane (Dibromochloromethane)
1,1,2,2-Tetrachloroethane	Chloroethane
1,1,2-Trichloroethane	Chloroform
1,1,2-Trichlorotrifluoroethane	Chloromethane (Methyl chloride)
1,1-Dichloroethane	cis-1,3,-Dichloropropene
1,1-Dichloroethylene (Vinylidene chloride)	Cumene (Isopropylbenzene)
1,1-Dichloropropene	Dibromochloropropane (DBCP)
1,2-(trans-) Dichloroethylene	Dibromomethane (Methylene bromide)
1,2,3-Trichlorobenzene	Dichlorodifluoromethane
1,2,3-Trichloropropane	Dichlorofluoromethane
1,2,4-Trichlorobenzene	Dichloromethane (Methylene chloride)
1,2,4-Trimethylbenzene	Ethyl benzene
1,2-Dibromoethane (Ethylene dibromide); EDB	Ethyl ether
1,2-Dichlorobenzene (ortho-)	Hexachlorobutadiene
1,2-Dichloroethane	Methyl ethyl ketone (MEK)
1,2-Dichloroethlyene (cis-)	Methyl isobutyl ketone (4-Methyl-2-pentanone)
1,2-Dichloropropane	Methyl tertiary-Butyl Ether (MTBE)
1,3,5-Trimethylbenzene	Naphthalene
1,3-Dichlorobenzene (meta-)	n-Butyl Benzene
1,3-Dichloropropane	n-Propyl benzene
1,4-Dichlorobenzene (para-)	p-Isopropyltoluene
2,2-Dichloropropane	sec-Butyl Benzene
2-Chlorotoluene (ortho-)	Styrene
4-Chlorotoluene (para-)	tert-Butyl Benzene
Acetone	Tetrachloroethylene (Perchloroethylene)
Allyl chloride (3 chloropropene)	Tetrahydrofuran
Benzene	Toluene
Bromobenzene	Trichloroethylene (TCE)
Bromochloromethane (Chlorobromomethane)	Trichlorofluoromethane
Bromodichloromethane (Dichlorobromomethane)	Vinyl chloride (chloroethene)
Bromoform	m-Xylene & p-Xylene
Bromomethane (Methyl bromide)	o-Xylene
Carbon tetrachloride	

List 2 (Geochemicals, Metals[1]) (Groundwater)

Alkalinity, Total as CaCO3	Magnesium
Ammonia Nitrogen	Manganese
Arsenic	Mercury
Barium	Nickel
Boron	Nitrate+Nitrite
Cadmium	Potassium
Calcium	Selenium
Cation-Anion Balance	Sodium
Chloride	Sulfate
Chromium	Zinc
Copper	Total Dissolved Solids
Iron	Total Suspended Solids
Lead	

[1] All metals are measured as dissolved. All groundwater samples for metals will be filtered in the field.

WENCK
Responsive partner. Exceptional outcomes.

TABLE 2

Clay County Landfill
Permit SW-34
Environmental Monitoring System

Parameter Lists For Analyses

List 3 (Geochemicals, Metals[2]) (Surface Water)

Alkalinity, Total as CaCO3	Lead
Arsenic	Magnesium
Boron	Manganese
Cadmium	Mercury[3]
Calcium	Total Dissolved Solids
Cation-Anion Balance	Total Suspended Solids
Chloride	

[2] All metals are measured as total. All surface water samples for metals will not be filtered in the field or lab.

[3] Low-level mercury analyses, EPA Method 1669.

List 4 (Field Parameters) (Groundwater and Surface Water)

Appearance	Specific Conductance
Dissolved Oxygen	Static Water Level (Elevation, MSL)[4]
Eh (Oxidation potential)	Temperature
Odor	Turbidity
pH	

[4] Groundwater Samples only, and not for residential wells.

List 5 (Geochemicals, Metals[1]) (Lysimeter)

Alkalinity, Total as CaCO3	Iron
Ammonia Nitrogen	Lead
Arsenic	Magnesium
Arsenic	Manganese
Boron	Mercury
Cadmium	Nitrate+Nitrite
Calcium	Potassium
Cation-Anion Balance	Sodium
COD	Sulfate
Chloride	Zinc
Chromium VI	Total Dissolved Solids
Copper	Total Suspended Solids

[1] All metals are measured as dissolved. All Lysimeter samples for metals will be filtered in the field.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

June 02, 2020

Andrew Feia
Wenck Associates, Inc.
3303 Fiechtner Drive
Suite 100
Fargo, ND 58103

RE: Project: PRJ07913 Clay County Landfill
Pace Project No.: 10518185

Dear Andrew Feia:

Enclosed are the analytical results for sample(s) received by the laboratory on May 14, 2020. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Minneapolis

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Annika Asp
annika.asp@pacelabs.com
(612)607-1700
Project Manager

Enclosures

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

CERTIFICATIONS

Project: PRJ07913 Clay County Landfill
Pace Project No.: 10518185

Pace Analytical Services Minneapolis

A2LA Certification #: 2926.01
Alabama Certification #: 40770
Alaska Contaminated Sites Certification #: 17-009
Alaska DW Certification #: MN00064
Arizona Certification #: AZ0014
Arkansas DW Certification #: MN00064
Arkansas WW Certification #: 88-0680
California Certification #: 2929
CNMI Saipan Certification #: MP0003
Colorado Certification #: MN00064
Connecticut Certification #: PH-0256
EPA Region 8+Wyoming DW Certification #: via MN 027-053-137
Florida Certification #: E87605
Georgia Certification #: 959
Guam EPA Certification #: MN00064
Hawaii Certification #: MN00064
Idaho Certification #: MN00064
Illinois Certification #: 200011
Indiana Certification #: C-MN-01
Iowa Certification #: 368
Kansas Certification #: E-10167
Kentucky DW Certification #: 90062
Kentucky WW Certification #: 90062
Louisiana DEQ Certification #: 03086
Louisiana DW Certification #: MN00064
Maine Certification #: MN00064
Maryland Certification #: 322
Massachusetts Certification #: M-MN064
Massachusetts DWP Certification #: via MN 027-053-137
Michigan Certification #: 9909
Minnesota Certification #: 027-053-137
Minnesota Dept of Ag Certifcation #: via MN 027-053-137
Minnesota Petrofund Certification #: 1240
Mississippi Certification #: MN00064
Missouri Certification #: 10100
Montana Certification #: CERT0092
Nebraska Certification #: NE-OS-18-06
Nevada Certification #: MN00064
New Hampshire Certification #: 2081
New Jersey Certification #: MN002
New York Certification #: 11647
North Carolina DW Certification #: 27700
North Carolina WW Certification #: 530
North Dakota Certification #: R-036
Ohio DW Certification #: 41244
Ohio VAP Certification #: CL101
Oklahoma Certification #: 9507
Oregon Primary Certification #: MN300001
Oregon Secondary Certification #: MN200001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification #: MN00064
South Carolina Certification #:74003001
Tennessee Certification #: TN02818
Texas Certification #: T104704192
Utah Certification #: MN00064
Vermont Certification #: VT-027053137
Virginia Certification #: 460163
Washington Certification #: C486
West Virginia DEP Certification #: 382
West Virginia DW Certification #: 9952 C
Wisconsin Certification #: 999407970
Wyoming UST Certification #: via A2LA 2926.01

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

SAMPLE SUMMARY

Project: PRJ07913 Clay County Landfill
Pace Project No.: 10518185

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10518185001	**S-1**	Water	05/12/20 11:17	05/14/20 11:35
10518185002	**S-2**	Water	05/12/20 11:52	05/14/20 11:35
10518185003	**S-3**	Water	05/12/20 18:00	05/14/20 11:35

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

SAMPLE ANALYTE COUNT

Project: PRJ07913 Clay County Landfill
Pace Project No.: 10518185

Lab ID	Sample ID	Method	Analysts	Analytes Reported
10518185001	**S-1**	EPA 200.8	PW1	7
		SM 1030E	WBS	3
		EPA 8260B	AEZ	72
		SM 2320B	SH4	1
		SM 2540C	EPT	1
		SM 2540D	EPT	1
		SM 4500-H+B	SH4	1
		SM 2510	SH4	1
		EPA 300.0	KEO	2
10518185002	**S-2**	EPA 200.8	PW1	7
		SM 1030E	WBS	3
		EPA 8260B	AEZ	72
		SM 2320B	SH4	1
		SM 2540C	EPT	1
		SM 2540D	EPT	1
		SM 4500-H+B	SH4	1
		SM 2510	SH4	1
		EPA 300.0	KEO	2
10518185003	**S-3**	EPA 200.8	PW1	7
		SM 1030E	WBS	3
		EPA 8260B	AEZ	72
		SM 2320B	SH4	1
		SM 2540C	EPT	1
		SM 2540D	EPT	1
		SM 4500-H+B	SH4	1
		SM 2510	SH4	1
		EPA 300.0	KEO	2

PASI-M = Pace Analytical Services - Minneapolis

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: PRJ07913 Clay County Landfill
Pace Project No.: 10518185

Sample: S-1 **Lab ID: 10518185001** Collected: 05/12/20 11:17 Received: 05/14/20 11:35 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8							
	Pace Analytical Services - Minneapolis							
Arsenic	**22.1**	ug/L	2.5	5	05/22/20 05:38	05/29/20 22:58	7440-38-2	
Boron	**81.5**	ug/L	50.0	5	05/22/20 05:38	05/29/20 22:58	7440-42-8	
Cadmium	**<0.40**	ug/L	0.40	5	05/22/20 05:38	05/29/20 22:58	7440-43-9	D3
Calcium	**121000**	ug/L	2000	50	05/22/20 05:38	05/29/20 23:04	7440-70-2	P6
Lead	**3.6**	ug/L	0.50	5	05/22/20 05:38	05/29/20 22:58	7439-92-1	
Magnesium	**57500**	ug/L	50.0	5	05/22/20 05:38	05/29/20 22:58	7439-95-4	P6
Manganese	**1010**	ug/L	2.5	5	05/22/20 05:38	05/29/20 22:58	7439-96-5	
Cation/Anion Balance	Analytical Method: SM 1030E							
	Pace Analytical Services - Minneapolis							
Cation/Anion Balance	**.87**	%		1		06/02/20 14:15		
Total Cations	**10.9**	meq/L		1		06/02/20 14:15		N2
Total Anions	**10.7**	meq/L		1		06/02/20 14:15		N2
8260B MSV LLW by SIMSCAN	Analytical Method: EPA 8260B							
	Pace Analytical Services - Minneapolis							
Acetone	**<20.0**	ug/L	20.0	1		05/22/20 10:25	67-64-1	
Allyl chloride	**<4.0**	ug/L	4.0	1		05/22/20 10:25	107-05-1	
Benzene	**<0.20**	ug/L	0.20	1		05/22/20 10:25	71-43-2	
Bromobenzene	**<0.40**	ug/L	0.40	1		05/22/20 10:25	108-86-1	
Bromochloromethane	**<1.0**	ug/L	1.0	1		05/22/20 10:25	74-97-5	
Bromodichloromethane	**<0.40**	ug/L	0.40	1		05/22/20 10:25	75-27-4	
Bromoform	**<1.0**	ug/L	1.0	1		05/22/20 10:25	75-25-2	
Bromomethane	**<1.0**	ug/L	1.0	1		05/22/20 10:25	74-83-9	
2-Butanone (MEK)	**<5.0**	ug/L	5.0	1		05/22/20 10:25	78-93-3	
n-Butylbenzene	**<0.40**	ug/L	0.40	1		05/22/20 10:25	104-51-8	
sec-Butylbenzene	**<0.40**	ug/L	0.40	1		05/22/20 10:25	135-98-8	
tert-Butylbenzene	**<0.40**	ug/L	0.40	1		05/22/20 10:25	98-06-6	
Carbon tetrachloride	**<0.050**	ug/L	0.050	1		05/25/20 11:27	56-23-5	
Chlorobenzene	**<0.40**	ug/L	0.40	1		05/22/20 10:25	108-90-7	
Chloroethane	**<1.0**	ug/L	1.0	1		05/22/20 10:25	75-00-3	
Chloroform	**<1.0**	ug/L	1.0	1		05/22/20 10:25	67-66-3	
Chloromethane	**<1.0**	ug/L	1.0	1		05/22/20 10:25	74-87-3	
2-Chlorotoluene	**<0.40**	ug/L	0.40	1		05/22/20 10:25	95-49-8	
4-Chlorotoluene	**<0.40**	ug/L	0.40	1		05/22/20 10:25	106-43-4	
1,2-Dibromo-3-chloropropane	**<0.12**	ug/L	0.12	1		05/25/20 11:27	96-12-8	
Dibromochloromethane	**<0.40**	ug/L	0.40	1		05/25/20 11:27	124-48-1	
1,2-Dibromoethane (EDB)	**<0.050**	ug/L	0.050	1		05/25/20 11:27	106-93-4	
Dibromomethane	**<1.0**	ug/L	1.0	1		05/22/20 10:25	74-95-3	
1,2-Dichlorobenzene	**<0.40**	ug/L	0.40	1		05/22/20 10:25	95-50-1	
1,3-Dichlorobenzene	**<0.40**	ug/L	0.40	1		05/22/20 10:25	541-73-1	
1,4-Dichlorobenzene	**<0.40**	ug/L	0.40	1		05/22/20 10:25	106-46-7	
Dichlorodifluoromethane	**<1.0**	ug/L	1.0	1		05/22/20 10:25	75-71-8	
1,1-Dichloroethane	**<0.40**	ug/L	0.40	1		05/22/20 10:25	75-34-3	
1,2-Dichloroethane	**<0.20**	ug/L	0.20	1		05/25/20 11:27	107-06-2	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: PRJ07913 Clay County Landfill
Pace Project No.: 10518185

Sample: S-1 **Lab ID: 10518185001** Collected: 05/12/20 11:17 Received: 05/14/20 11:35 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV LLW by SIMSCAN	Analytical Method: EPA 8260B Pace Analytical Services - Minneapolis							
1,1-Dichloroethene	**<0.40**	ug/L	0.40	1		05/22/20 10:25	75-35-4	
cis-1,2-Dichloroethene	**<0.40**	ug/L	0.40	1		05/22/20 10:25	156-59-2	
trans-1,2-Dichloroethene	**<0.40**	ug/L	0.40	1		05/22/20 10:25	156-60-5	
Dichlorofluoromethane	**<1.0**	ug/L	1.0	1		05/22/20 10:25	75-43-4	
1,2-Dichloropropane	**<0.40**	ug/L	0.40	1		05/22/20 10:25	78-87-5	
1,3-Dichloropropane	**<0.40**	ug/L	0.40	1		05/22/20 10:25	142-28-9	
2,2-Dichloropropane	**<1.0**	ug/L	1.0	1		05/22/20 10:25	594-20-7	
1,1-Dichloropropene	**<0.40**	ug/L	0.40	1		05/22/20 10:25	563-58-6	
cis-1,3-Dichloropropene	**<0.40**	ug/L	0.40	1		05/25/20 11:27	10061-01-5	
trans-1,3-Dichloropropene	**<0.40**	ug/L	0.40	1		05/25/20 11:27	10061-02-6	
Diethyl ether (Ethyl ether)	**11.6**	ug/L	4.0	1		05/22/20 10:25	60-29-7	
Ethylbenzene	**<0.40**	ug/L	0.40	1		05/22/20 10:25	100-41-4	
Hexachloro-1,3-butadiene	**<0.10**	ug/L	0.10	1		05/25/20 11:27	87-68-3	
Isopropylbenzene (Cumene)	**<0.40**	ug/L	0.40	1		05/22/20 10:25	98-82-8	
p-Isopropyltoluene	**<0.40**	ug/L	0.40	1		05/22/20 10:25	99-87-6	
Methylene Chloride	**<1.0**	ug/L	1.0	1		05/22/20 10:25	75-09-2	
4-Methyl-2-pentanone (MIBK)	**<5.0**	ug/L	5.0	1		05/22/20 10:25	108-10-1	
Methyl-tert-butyl ether	**<0.40**	ug/L	0.40	1		05/22/20 10:25	1634-04-4	
Naphthalene	**<1.0**	ug/L	1.0	1		05/22/20 10:25	91-20-3	
n-Propylbenzene	**<0.40**	ug/L	0.40	1		05/22/20 10:25	103-65-1	
Styrene	**<0.40**	ug/L	0.40	1		05/22/20 10:25	100-42-5	
1,1,1,2-Tetrachloroethane	**<0.40**	ug/L	0.40	1		05/22/20 10:25	630-20-6	
1,1,2,2-Tetrachloroethane	**<0.40**	ug/L	0.40	1		05/22/20 10:25	79-34-5	
Tetrachloroethene	**<0.40**	ug/L	0.40	1		05/22/20 10:25	127-18-4	
Tetrahydrofuran	**<10.0**	ug/L	10.0	1		05/22/20 10:25	109-99-9	
Toluene	**<0.40**	ug/L	0.40	1		05/22/20 10:25	108-88-3	
1,2,3-Trichlorobenzene	**<0.40**	ug/L	0.40	1		05/22/20 10:25	87-61-6	
1,2,4-Trichlorobenzene	**<0.40**	ug/L	0.40	1		05/22/20 10:25	120-82-1	
1,1,1-Trichloroethane	**<0.40**	ug/L	0.40	1		05/22/20 10:25	71-55-6	
1,1,2-Trichloroethane	**<0.40**	ug/L	0.40	1		05/22/20 10:25	79-00-5	
Trichloroethene	**<0.050**	ug/L	0.050	1		05/25/20 11:27	79-01-6	
Trichlorofluoromethane	**<0.40**	ug/L	0.40	1		05/22/20 10:25	75-69-4	
1,2,3-Trichloropropane	**<0.010**	ug/L	0.010	1		05/25/20 11:27	96-18-4	
1,1,2-Trichlorotrifluoroethane	**<1.0**	ug/L	1.0	1		05/22/20 10:25	76-13-1	
1,2,4-Trimethylbenzene	**<1.0**	ug/L	1.0	1		05/22/20 10:25	95-63-6	
1,3,5-Trimethylbenzene	**<0.40**	ug/L	0.40	1		05/22/20 10:25	108-67-8	
Vinyl chloride	**0.20**	ug/L	0.050	1		05/25/20 11:27	75-01-4	
Xylene (Total)	**<1.2**	ug/L	1.2	1		05/22/20 10:25	1330-20-7	
m&p-Xylene	**<0.80**	ug/L	0.80	1		05/22/20 10:25	179601-23-1	
o-Xylene	**<0.40**	ug/L	0.40	1		05/22/20 10:25	95-47-6	
Surrogates								
1,2-Dichloroethane-d4 (S)	105	%.	75-128	1		05/25/20 11:27	17060-07-0	
1,2-Dichloroethane-d4 (S)	108	%.	75-128	1		05/22/20 10:25	17060-07-0	
Toluene-d8 (S)	97	%.	75-125	1		05/25/20 11:27	2037-26-5	
Toluene-d8 (S)	99	%.	75-125	1		05/22/20 10:25	2037-26-5	
4-Bromofluorobenzene (S)	102	%.	75-125	1		05/22/20 10:25	460-00-4	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: PRJ07913 Clay County Landfill
Pace Project No.: 10518185

Sample: S-1 **Lab ID: 10518185001** Collected: 05/12/20 11:17 Received: 05/14/20 11:35 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
2320B Alkalinity	Analytical Method: SM 2320B Pace Analytical Services - Minneapolis							
Alkalinity, Total as CaCO3	**476**	mg/L	5.0	1		05/21/20 18:56		
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Minneapolis							
Total Dissolved Solids	**558**	mg/L	20.0	1		05/19/20 11:43		
2540D Total Suspended Solids	Analytical Method: SM 2540D Pace Analytical Services - Minneapolis							
Total Suspended Solids	**386**	mg/L	20.0	1		05/18/20 15:14		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B Pace Analytical Services - Minneapolis							
pH at 25 Degrees C	**7.4**	Std. Units	0.10	1		05/29/20 17:13		H6
SM2510 Specific Conductance	Analytical Method: SM 2510 Pace Analytical Services - Minneapolis							
Specific Conductance	**974**	umhos/cm	1.0	1		05/29/20 17:10		
300.0 IC Anions	Analytical Method: EPA 300.0 Pace Analytical Services - Minneapolis							
Chloride	**24.1**	mg/L	1.2	1		05/29/20 05:36	16887-00-6	
Sulfate	**23.8**	mg/L	1.2	1		05/29/20 05:36	14808-79-8	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: PRJ07913 Clay County Landfill
Pace Project No.: 10518185

Sample: S-2 **Lab ID: 10518185002** Collected: 05/12/20 11:52 Received: 05/14/20 11:35 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8							
	Pace Analytical Services - Minneapolis							
Arsenic	**3700**	ug/L	25.0	50	05/22/20 05:38	05/29/20 23:29	7440-38-2	
Boron	**<50.0**	ug/L	50.0	5	05/22/20 05:38	05/29/20 23:26	7440-42-8	D3
Cadmium	**<0.40**	ug/L	0.40	5	05/22/20 05:38	05/29/20 23:26	7440-43-9	D3
Calcium	**259000**	ug/L	2000	50	05/22/20 05:38	05/29/20 23:29	7440-70-2	
Lead	**0.79**	ug/L	0.50	5	05/22/20 05:38	05/29/20 23:26	7439-92-1	
Magnesium	**75500**	ug/L	50.0	5	05/22/20 05:38	05/29/20 23:26	7439-95-4	
Manganese	**3320**	ug/L	25.0	50	05/22/20 05:38	05/29/20 23:29	7439-96-5	
Cation/Anion Balance	Analytical Method: SM 1030E							
	Pace Analytical Services - Minneapolis							
Cation/Anion Balance	**-1.83**	%		1		06/02/20 14:15		
Total Cations	**19.4**	meq/L		1		06/02/20 14:15		N2
Total Anions	**20.1**	meq/L		1		06/02/20 14:15		N2
8260B MSV LLW by SIMSCAN	Analytical Method: EPA 8260B							
	Pace Analytical Services - Minneapolis							
Acetone	**22.5**	ug/L	20.0	1		05/22/20 10:51	67-64-1	
Allyl chloride	**<4.0**	ug/L	4.0	1		05/22/20 10:51	107-05-1	
Benzene	**<0.20**	ug/L	0.20	1		05/22/20 10:51	71-43-2	
Bromobenzene	**<0.40**	ug/L	0.40	1		05/22/20 10:51	108-86-1	
Bromochloromethane	**<1.0**	ug/L	1.0	1		05/22/20 10:51	74-97-5	
Bromodichloromethane	**<0.40**	ug/L	0.40	1		05/22/20 10:51	75-27-4	
Bromoform	**<1.0**	ug/L	1.0	1		05/22/20 10:51	75-25-2	
Bromomethane	**<1.0**	ug/L	1.0	1		05/22/20 10:51	74-83-9	
2-Butanone (MEK)	**<5.0**	ug/L	5.0	1		05/22/20 10:51	78-93-3	
n-Butylbenzene	**<0.40**	ug/L	0.40	1		05/22/20 10:51	104-51-8	
sec-Butylbenzene	**<0.40**	ug/L	0.40	1		05/22/20 10:51	135-98-8	
tert-Butylbenzene	**<0.40**	ug/L	0.40	1		05/22/20 10:51	98-06-6	
Carbon tetrachloride	**<0.050**	ug/L	0.050	1		05/25/20 12:19	56-23-5	
Chlorobenzene	**<0.40**	ug/L	0.40	1		05/22/20 10:51	108-90-7	
Chloroethane	**<1.0**	ug/L	1.0	1		05/22/20 10:51	75-00-3	
Chloroform	**<1.0**	ug/L	1.0	1		05/22/20 10:51	67-66-3	
Chloromethane	**<1.0**	ug/L	1.0	1		05/22/20 10:51	74-87-3	
2-Chlorotoluene	**<0.40**	ug/L	0.40	1		05/22/20 10:51	95-49-8	
4-Chlorotoluene	**<0.40**	ug/L	0.40	1		05/22/20 10:51	106-43-4	
1,2-Dibromo-3-chloropropane	**<0.12**	ug/L	0.12	1		05/25/20 12:19	96-12-8	
Dibromochloromethane	**<0.40**	ug/L	0.40	1		05/25/20 12:19	124-48-1	
1,2-Dibromoethane (EDB)	**<0.050**	ug/L	0.050	1		05/25/20 12:19	106-93-4	
Dibromomethane	**<1.0**	ug/L	1.0	1		05/22/20 10:51	74-95-3	
1,2-Dichlorobenzene	**<0.40**	ug/L	0.40	1		05/22/20 10:51	95-50-1	
1,3-Dichlorobenzene	**<0.40**	ug/L	0.40	1		05/22/20 10:51	541-73-1	
1,4-Dichlorobenzene	**<0.40**	ug/L	0.40	1		05/22/20 10:51	106-46-7	
Dichlorodifluoromethane	**<1.0**	ug/L	1.0	1		05/22/20 10:51	75-71-8	
1,1-Dichloroethane	**<0.40**	ug/L	0.40	1		05/22/20 10:51	75-34-3	
1,2-Dichloroethane	**<0.20**	ug/L	0.20	1		05/25/20 12:19	107-06-2	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: PRJ07913 Clay County Landfill
Pace Project No.: 10518185

Sample: S-2 **Lab ID: 10518185002** Collected: 05/12/20 11:52 Received: 05/14/20 11:35 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV LLW by SIMSCAN	Analytical Method: EPA 8260B Pace Analytical Services - Minneapolis							
1,1-Dichloroethene	**<0.40**	ug/L	0.40	1		05/22/20 10:51	75-35-4	
cis-1,2-Dichloroethene	**<0.40**	ug/L	0.40	1		05/22/20 10:51	156-59-2	
trans-1,2-Dichloroethene	**<0.40**	ug/L	0.40	1		05/22/20 10:51	156-60-5	
Dichlorofluoromethane	**<1.0**	ug/L	1.0	1		05/22/20 10:51	75-43-4	
1,2-Dichloropropane	**<0.40**	ug/L	0.40	1		05/22/20 10:51	78-87-5	
1,3-Dichloropropane	**<0.40**	ug/L	0.40	1		05/22/20 10:51	142-28-9	
2,2-Dichloropropane	**<1.0**	ug/L	1.0	1		05/22/20 10:51	594-20-7	
1,1-Dichloropropene	**<0.40**	ug/L	0.40	1		05/22/20 10:51	563-58-6	
cis-1,3-Dichloropropene	**<0.40**	ug/L	0.40	1		05/25/20 12:19	10061-01-5	
trans-1,3-Dichloropropene	**<0.40**	ug/L	0.40	1		05/25/20 12:19	10061-02-6	
Diethyl ether (Ethyl ether)	**22.0**	ug/L	4.0	1		05/22/20 10:51	60-29-7	
Ethylbenzene	**<0.40**	ug/L	0.40	1		05/22/20 10:51	100-41-4	
Hexachloro-1,3-butadiene	**<0.10**	ug/L	0.10	1		05/25/20 12:19	87-68-3	
Isopropylbenzene (Cumene)	**<0.40**	ug/L	0.40	1		05/22/20 10:51	98-82-8	
p-Isopropyltoluene	**<0.40**	ug/L	0.40	1		05/22/20 10:51	99-87-6	
Methylene Chloride	**<1.0**	ug/L	1.0	1		05/22/20 10:51	75-09-2	
4-Methyl-2-pentanone (MIBK)	**<5.0**	ug/L	5.0	1		05/22/20 10:51	108-10-1	
Methyl-tert-butyl ether	**<0.40**	ug/L	0.40	1		05/22/20 10:51	1634-04-4	
Naphthalene	**<1.0**	ug/L	1.0	1		05/22/20 10:51	91-20-3	
n-Propylbenzene	**<0.40**	ug/L	0.40	1		05/22/20 10:51	103-65-1	
Styrene	**<0.40**	ug/L	0.40	1		05/22/20 10:51	100-42-5	
1,1,1,2-Tetrachloroethane	**<0.40**	ug/L	0.40	1		05/22/20 10:51	630-20-6	
1,1,2,2-Tetrachloroethane	**<0.40**	ug/L	0.40	1		05/22/20 10:51	79-34-5	
Tetrachloroethene	**<0.40**	ug/L	0.40	1		05/22/20 10:51	127-18-4	
Tetrahydrofuran	**74.4**	ug/L	10.0	1		05/22/20 10:51	109-99-9	
Toluene	**<0.40**	ug/L	0.40	1		05/22/20 10:51	108-88-3	
1,2,3-Trichlorobenzene	**<0.40**	ug/L	0.40	1		05/22/20 10:51	87-61-6	
1,2,4-Trichlorobenzene	**<0.40**	ug/L	0.40	1		05/22/20 10:51	120-82-1	
1,1,1-Trichloroethane	**<0.40**	ug/L	0.40	1		05/22/20 10:51	71-55-6	
1,1,2-Trichloroethane	**<0.40**	ug/L	0.40	1		05/22/20 10:51	79-00-5	
Trichloroethene	**<0.050**	ug/L	0.050	1		05/25/20 12:19	79-01-6	
Trichlorofluoromethane	**<0.40**	ug/L	0.40	1		05/22/20 10:51	75-69-4	
1,2,3-Trichloropropane	**<0.010**	ug/L	0.010	1		05/25/20 12:19	96-18-4	
1,1,2-Trichlorotrifluoroethane	**<1.0**	ug/L	1.0	1		05/22/20 10:51	76-13-1	
1,2,4-Trimethylbenzene	**<1.0**	ug/L	1.0	1		05/22/20 10:51	95-63-6	
1,3,5-Trimethylbenzene	**<0.40**	ug/L	0.40	1		05/22/20 10:51	108-67-8	
Vinyl chloride	**<0.050**	ug/L	0.050	1		05/25/20 12:19	75-01-4	
Xylene (Total)	**<1.2**	ug/L	1.2	1		05/22/20 10:51	1330-20-7	
m&p-Xylene	**<0.80**	ug/L	0.80	1		05/22/20 10:51	179601-23-1	
o-Xylene	**<0.40**	ug/L	0.40	1		05/22/20 10:51	95-47-6	
Surrogates								
1,2-Dichloroethane-d4 (S)	105	%.	75-128	1		05/25/20 12:19	17060-07-0	
1,2-Dichloroethane-d4 (S)	111	%.	75-128	1		05/22/20 10:51	17060-07-0	
Toluene-d8 (S)	95	%.	75-125	1		05/25/20 12:19	2037-26-5	
Toluene-d8 (S)	97	%.	75-125	1		05/22/20 10:51	2037-26-5	
4-Bromofluorobenzene (S)	99	%.	75-125	1		05/22/20 10:51	460-00-4	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: PRJ07913 Clay County Landfill
Pace Project No.: 10518185

Sample: S-2 **Lab ID: 10518185002** Collected: 05/12/20 11:52 Received: 05/14/20 11:35 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
2320B Alkalinity	Analytical Method: SM 2320B Pace Analytical Services - Minneapolis							
Alkalinity, Total as CaCO3	**883**	mg/L	5.0	1		05/21/20 19:05		
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Minneapolis							
Total Dissolved Solids	**695**	mg/L	50.0	1		05/19/20 11:43		
2540D Total Suspended Solids	Analytical Method: SM 2540D Pace Analytical Services - Minneapolis							
Total Suspended Solids	**2530**	mg/L	100	1		05/18/20 15:14		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B Pace Analytical Services - Minneapolis							
pH at 25 Degrees C	**7.2**	Std. Units	0.10	1		05/29/20 17:15		H6
SM2510 Specific Conductance	Analytical Method: SM 2510 Pace Analytical Services - Minneapolis							
Specific Conductance	**1170**	umhos/cm	1.0	1		05/29/20 17:12		
300.0 IC Anions	Analytical Method: EPA 300.0 Pace Analytical Services - Minneapolis							
Chloride	**85.6**	mg/L	1.2	1		05/29/20 06:21	16887-00-6	
Sulfate	**<1.2**	mg/L	1.2	1		05/29/20 06:21	14808-79-8	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: PRJ07913 Clay County Landfill
Pace Project No.: 10518185

Sample: S-3 **Lab ID: 10518185003** Collected: 05/12/20 18:00 Received: 05/14/20 11:35 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8							
	Pace Analytical Services - Minneapolis							
Arsenic	**3.6**	ug/L	0.50	1	05/22/20 05:38	05/29/20 23:32	7440-38-2	
Boron	**27.5**	ug/L	10.0	1	05/22/20 05:38	05/29/20 23:32	7440-42-8	
Cadmium	**<0.080**	ug/L	0.080	1	05/22/20 05:38	05/29/20 23:32	7440-43-9	
Calcium	**96800**	ug/L	800	20	05/22/20 05:38	05/29/20 23:35	7440-70-2	
Lead	**<0.10**	ug/L	0.10	1	05/22/20 05:38	05/29/20 23:32	7439-92-1	
Magnesium	**145000**	ug/L	200	20	05/22/20 05:38	05/29/20 23:35	7439-95-4	
Manganese	**46.3**	ug/L	0.50	1	05/22/20 05:38	05/29/20 23:32	7439-96-5	
Cation/Anion Balance	Analytical Method: SM 1030E							
	Pace Analytical Services - Minneapolis							
Cation/Anion Balance	**-5.2**	%		1		06/02/20 14:15		1M
Total Cations	**16.8**	meq/L		1		06/02/20 14:15		N2
Total Anions	**18.6**	meq/L		1		06/02/20 14:15		N2
8260B MSV LLW by SIMSCAN	Analytical Method: EPA 8260B							
	Pace Analytical Services - Minneapolis							
Acetone	**<20.0**	ug/L	20.0	1		05/22/20 09:59	67-64-1	
Allyl chloride	**<4.0**	ug/L	4.0	1		05/22/20 09:59	107-05-1	
Benzene	**<0.20**	ug/L	0.20	1		05/22/20 09:59	71-43-2	
Bromobenzene	**<0.40**	ug/L	0.40	1		05/22/20 09:59	108-86-1	
Bromochloromethane	**<1.0**	ug/L	1.0	1		05/22/20 09:59	74-97-5	
Bromodichloromethane	**<0.40**	ug/L	0.40	1		05/22/20 09:59	75-27-4	
Bromoform	**<1.0**	ug/L	1.0	1		05/22/20 09:59	75-25-2	
Bromomethane	**<1.0**	ug/L	1.0	1		05/22/20 09:59	74-83-9	
2-Butanone (MEK)	**<5.0**	ug/L	5.0	1		05/22/20 09:59	78-93-3	
n-Butylbenzene	**<0.40**	ug/L	0.40	1		05/22/20 09:59	104-51-8	
sec-Butylbenzene	**<0.40**	ug/L	0.40	1		05/22/20 09:59	135-98-8	
tert-Butylbenzene	**<0.40**	ug/L	0.40	1		05/22/20 09:59	98-06-6	
Carbon tetrachloride	**<0.050**	ug/L	0.050	1		05/25/20 11:53	56-23-5	
Chlorobenzene	**<0.40**	ug/L	0.40	1		05/22/20 09:59	108-90-7	
Chloroethane	**<1.0**	ug/L	1.0	1		05/22/20 09:59	75-00-3	
Chloroform	**<1.0**	ug/L	1.0	1		05/22/20 09:59	67-66-3	
Chloromethane	**<1.0**	ug/L	1.0	1		05/22/20 09:59	74-87-3	
2-Chlorotoluene	**<0.40**	ug/L	0.40	1		05/22/20 09:59	95-49-8	
4-Chlorotoluene	**<0.40**	ug/L	0.40	1		05/22/20 09:59	106-43-4	
1,2-Dibromo-3-chloropropane	**<0.12**	ug/L	0.12	1		05/25/20 11:53	96-12-8	
Dibromochloromethane	**<0.40**	ug/L	0.40	1		05/25/20 11:53	124-48-1	
1,2-Dibromoethane (EDB)	**<0.050**	ug/L	0.050	1		05/25/20 11:53	106-93-4	
Dibromomethane	**<1.0**	ug/L	1.0	1		05/22/20 09:59	74-95-3	
1,2-Dichlorobenzene	**<0.40**	ug/L	0.40	1		05/22/20 09:59	95-50-1	
1,3-Dichlorobenzene	**<0.40**	ug/L	0.40	1		05/22/20 09:59	541-73-1	
1,4-Dichlorobenzene	**<0.40**	ug/L	0.40	1		05/22/20 09:59	106-46-7	
Dichlorodifluoromethane	**<1.0**	ug/L	1.0	1		05/22/20 09:59	75-71-8	
1,1-Dichloroethane	**<0.40**	ug/L	0.40	1		05/22/20 09:59	75-34-3	
1,2-Dichloroethane	**<0.20**	ug/L	0.20	1		05/25/20 11:53	107-06-2	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: PRJ07913 Clay County Landfill
Pace Project No.: 10518185

Sample: S-3 **Lab ID: 10518185003** Collected: 05/12/20 18:00 Received: 05/14/20 11:35 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV LLW by SIMSCAN	Analytical Method: EPA 8260B Pace Analytical Services - Minneapolis							
1,1-Dichloroethene	**<0.40**	ug/L	0.40	1		05/22/20 09:59	75-35-4	
cis-1,2-Dichloroethene	**<0.40**	ug/L	0.40	1		05/22/20 09:59	156-59-2	
trans-1,2-Dichloroethene	**<0.40**	ug/L	0.40	1		05/22/20 09:59	156-60-5	
Dichlorofluoromethane	**<1.0**	ug/L	1.0	1		05/22/20 09:59	75-43-4	
1,2-Dichloropropane	**<0.40**	ug/L	0.40	1		05/22/20 09:59	78-87-5	
1,3-Dichloropropane	**<0.40**	ug/L	0.40	1		05/22/20 09:59	142-28-9	
2,2-Dichloropropane	**<1.0**	ug/L	1.0	1		05/22/20 09:59	594-20-7	
1,1-Dichloropropene	**<0.40**	ug/L	0.40	1		05/22/20 09:59	563-58-6	
cis-1,3-Dichloropropene	**<0.40**	ug/L	0.40	1		05/25/20 11:53	10061-01-5	
trans-1,3-Dichloropropene	**<0.40**	ug/L	0.40	1		05/25/20 11:53	10061-02-6	
Diethyl ether (Ethyl ether)	**<4.0**	ug/L	4.0	1		05/22/20 09:59	60-29-7	
Ethylbenzene	**<0.40**	ug/L	0.40	1		05/22/20 09:59	100-41-4	
Hexachloro-1,3-butadiene	**<0.10**	ug/L	0.10	1		05/25/20 11:53	87-68-3	
Isopropylbenzene (Cumene)	**<0.40**	ug/L	0.40	1		05/22/20 09:59	98-82-8	
p-Isopropyltoluene	**<0.40**	ug/L	0.40	1		05/22/20 09:59	99-87-6	
Methylene Chloride	**<1.0**	ug/L	1.0	1		05/22/20 09:59	75-09-2	
4-Methyl-2-pentanone (MIBK)	**<5.0**	ug/L	5.0	1		05/22/20 09:59	108-10-1	
Methyl-tert-butyl ether	**<0.40**	ug/L	0.40	1		05/22/20 09:59	1634-04-4	
Naphthalene	**<1.0**	ug/L	1.0	1		05/22/20 09:59	91-20-3	
n-Propylbenzene	**<0.40**	ug/L	0.40	1		05/22/20 09:59	103-65-1	
Styrene	**<0.40**	ug/L	0.40	1		05/22/20 09:59	100-42-5	
1,1,1,2-Tetrachloroethane	**<0.40**	ug/L	0.40	1		05/22/20 09:59	630-20-6	
1,1,2,2-Tetrachloroethane	**<0.40**	ug/L	0.40	1		05/22/20 09:59	79-34-5	
Tetrachloroethene	**<0.40**	ug/L	0.40	1		05/22/20 09:59	127-18-4	
Tetrahydrofuran	**<10.0**	ug/L	10.0	1		05/22/20 09:59	109-99-9	
Toluene	**<0.40**	ug/L	0.40	1		05/22/20 09:59	108-88-3	
1,2,3-Trichlorobenzene	**<0.40**	ug/L	0.40	1		05/22/20 09:59	87-61-6	
1,2,4-Trichlorobenzene	**<0.40**	ug/L	0.40	1		05/22/20 09:59	120-82-1	
1,1,1-Trichloroethane	**<0.40**	ug/L	0.40	1		05/22/20 09:59	71-55-6	
1,1,2-Trichloroethane	**<0.40**	ug/L	0.40	1		05/22/20 09:59	79-00-5	
Trichloroethene	**<0.050**	ug/L	0.050	1		05/25/20 11:53	79-01-6	
Trichlorofluoromethane	**<0.40**	ug/L	0.40	1		05/22/20 09:59	75-69-4	
1,2,3-Trichloropropane	**<0.010**	ug/L	0.010	1		05/25/20 11:53	96-18-4	
1,1,2-Trichlorotrifluoroethane	**<1.0**	ug/L	1.0	1		05/22/20 09:59	76-13-1	
1,2,4-Trimethylbenzene	**<1.0**	ug/L	1.0	1		05/22/20 09:59	95-63-6	
1,3,5-Trimethylbenzene	**<0.40**	ug/L	0.40	1		05/22/20 09:59	108-67-8	
Vinyl chloride	**<0.050**	ug/L	0.050	1		05/25/20 11:53	75-01-4	
Xylene (Total)	**<1.2**	ug/L	1.2	1		05/22/20 09:59	1330-20-7	
m&p-Xylene	**<0.80**	ug/L	0.80	1		05/22/20 09:59	179601-23-1	
o-Xylene	**<0.40**	ug/L	0.40	1		05/22/20 09:59	95-47-6	
Surrogates								
1,2-Dichloroethane-d4 (S)	104	%.	75-128	1		05/25/20 11:53	17060-07-0	
1,2-Dichloroethane-d4 (S)	107	%.	75-128	1		05/22/20 09:59	17060-07-0	
Toluene-d8 (S)	94	%.	75-125	1		05/25/20 11:53	2037-26-5	
Toluene-d8 (S)	101	%.	75-125	1		05/22/20 09:59	2037-26-5	
4-Bromofluorobenzene (S)	101	%.	75-125	1		05/22/20 09:59	460-00-4	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: PRJ07913 Clay County Landfill
Pace Project No.: 10518185

Sample: S-3 **Lab ID: 10518185003** Collected: 05/12/20 18:00 Received: 05/14/20 11:35 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
2320B Alkalinity	Analytical Method: SM 2320B Pace Analytical Services - Minneapolis							
Alkalinity, Total as CaCO3	**734**	mg/L	5.0	1		05/21/20 19:50		
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Minneapolis							
Total Dissolved Solids	**985**	mg/L	50.0	1		05/19/20 11:43		
2540D Total Suspended Solids	Analytical Method: SM 2540D Pace Analytical Services - Minneapolis							
Total Suspended Solids	**33.0**	mg/L	10.0	1		05/18/20 15:14		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B Pace Analytical Services - Minneapolis							
pH at 25 Degrees C	**7.8**	Std. Units	0.10	1		05/29/20 17:17		H6
SM2510 Specific Conductance	Analytical Method: SM 2510 Pace Analytical Services - Minneapolis							
Specific Conductance	**1510**	umhos/cm	1.0	1		05/29/20 17:13		
300.0 IC Anions	Analytical Method: EPA 300.0 Pace Analytical Services - Minneapolis							
Chloride	**<1.2**	mg/L	1.2	1		05/29/20 07:56	16887-00-6	
Sulfate	**189**	mg/L	6.0	5		05/29/20 11:20	14808-79-8	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: PRJ07913 Clay County Landfill
Pace Project No.: 10518185

QC Batch: 676624 | Analysis Method: EPA 200.8
QC Batch Method: EPA 200.8 | Analysis Description: 200.8 MET
Laboratory: Pace Analytical Services - Minneapolis
Associated Lab Samples: 10518185001, 10518185002, 10518185003

METHOD BLANK: 3622128 Matrix: Water
Associated Lab Samples: 10518185001, 10518185002, 10518185003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Arsenic	ug/L	<0.50	0.50	05/29/20 22:51	
Boron	ug/L	<10.0	10.0	05/29/20 22:51	
Cadmium	ug/L	<0.080	0.080	05/29/20 22:51	
Calcium	ug/L	<40.0	40.0	05/29/20 22:51	
Lead	ug/L	<0.10	0.10	05/29/20 22:51	
Magnesium	ug/L	<10.0	10.0	05/29/20 22:51	
Manganese	ug/L	<0.50	0.50	05/29/20 22:51	

LABORATORY CONTROL SAMPLE: 3622129

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	ug/L	100	95.6	96	85-115	
Boron	ug/L	100	94.0	94	85-115	
Cadmium	ug/L	100	95.7	96	85-115	
Calcium	ug/L	2000	1970	98	85-115	
Lead	ug/L	100	106	106	85-115	
Magnesium	ug/L	2000	2010	100	85-115	
Manganese	ug/L	100	101	101	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3622130 3622131

Parameter	Units	10518185001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Arsenic	ug/L	22.1	100	100	119	123	97	101	70-130	3	20	
Boron	ug/L	81.5	100	100	179	184	98	102	70-130	2	20	
Cadmium	ug/L	<0.40	100	100	95.3	101	95	100	70-130	5	20	
Calcium	ug/L	121000	2000	2000	121000	126000	-22	221	70-130	4	20	E,P6
Lead	ug/L	3.6	100	100	106	110	103	106	70-130	3	20	
Magnesium	ug/L	57500	2000	2000	57400	60800	-3	167	70-130	6	20	P6
Manganese	ug/L	1010	100	100	1100	1140	90	127	70-130	3	20	

MATRIX SPIKE SAMPLE: 3622132

Parameter	Units	10518175007 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Arsenic	ug/L	0.39J	100	99.3	99	70-130	
Boron	ug/L	25.7J	100	120	94	70-130	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: PRJ07913 Clay County Landfill
Pace Project No.: 10518185

MATRIX SPIKE SAMPLE: 3622132

Parameter	Units	10518175007 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Cadmium	ug/L	<0.20	100	97.4	97	70-130	
Calcium	ug/L	228000	2000	238000	534	70-130	E,P6
Lead	ug/L	<0.50	100	102	102	70-130	
Magnesium	ug/L	53000	2000	55100	107	70-130	
Manganese	ug/L	25.5	100	129	104	70-130	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: PRJ07913 Clay County Landfill
Pace Project No.: 10518185

QC Batch: 676819 | Analysis Method: EPA 8260B
QC Batch Method: EPA 8260B | Analysis Description: 8260B MSV LLW by SIMSCAN
Laboratory: Pace Analytical Services - Minneapolis
Associated Lab Samples: 10518185001, 10518185002, 10518185003

METHOD BLANK: 3622840 Matrix: Water
Associated Lab Samples: 10518185001, 10518185002, 10518185003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	<0.40	0.40	05/22/20 02:12	
1,1,1-Trichloroethane	ug/L	<0.40	0.40	05/22/20 02:12	
1,1,2,2-Tetrachloroethane	ug/L	<0.40	0.40	05/22/20 02:12	
1,1,2-Trichloroethane	ug/L	<0.40	0.40	05/22/20 02:12	
1,1,2-Trichlorotrifluoroethane	ug/L	<1.0	1.0	05/22/20 02:12	
1,1-Dichloroethane	ug/L	<0.40	0.40	05/22/20 02:12	
1,1-Dichloroethene	ug/L	<0.40	0.40	05/22/20 02:12	
1,1-Dichloropropene	ug/L	<0.40	0.40	05/22/20 02:12	
1,2,3-Trichlorobenzene	ug/L	<0.40	0.40	05/22/20 02:12	
1,2,3-Trichloropropane	ug/L	<0.010	0.010	05/25/20 03:40	
1,2,4-Trichlorobenzene	ug/L	<0.40	0.40	05/22/20 02:12	
1,2,4-Trimethylbenzene	ug/L	<1.0	1.0	05/22/20 02:12	
1,2-Dibromo-3-chloropropane	ug/L	<0.12	0.12	05/25/20 03:40	
1,2-Dibromoethane (EDB)	ug/L	<0.050	0.050	05/25/20 03:40	
1,2-Dichlorobenzene	ug/L	<0.40	0.40	05/22/20 02:12	
1,2-Dichloroethane	ug/L	<0.20	0.20	05/25/20 03:40	
1,2-Dichloropropane	ug/L	<0.40	0.40	05/22/20 02:12	
1,3,5-Trimethylbenzene	ug/L	<0.40	0.40	05/22/20 02:12	
1,3-Dichlorobenzene	ug/L	<0.40	0.40	05/22/20 02:12	
1,3-Dichloropropane	ug/L	<0.40	0.40	05/22/20 02:12	
1,4-Dichlorobenzene	ug/L	<0.40	0.40	05/22/20 02:12	
2,2-Dichloropropane	ug/L	<1.0	1.0	05/22/20 02:12	
2-Butanone (MEK)	ug/L	<5.0	5.0	05/22/20 02:12	
2-Chlorotoluene	ug/L	<0.40	0.40	05/22/20 02:12	
4-Chlorotoluene	ug/L	<0.40	0.40	05/22/20 02:12	
4-Methyl-2-pentanone (MIBK)	ug/L	<5.0	5.0	05/22/20 02:12	
Acetone	ug/L	<20.0	20.0	05/22/20 02:12	
Allyl chloride	ug/L	<4.0	4.0	05/22/20 02:12	
Benzene	ug/L	<0.20	0.20	05/22/20 02:12	
Bromobenzene	ug/L	<0.40	0.40	05/22/20 02:12	
Bromochloromethane	ug/L	<1.0	1.0	05/22/20 02:12	
Bromodichloromethane	ug/L	<0.40	0.40	05/22/20 02:12	
Bromoform	ug/L	<1.0	1.0	05/22/20 02:12	
Bromomethane	ug/L	<1.0	1.0	05/22/20 02:12	
Carbon tetrachloride	ug/L	<0.050	0.050	05/25/20 03:40	
Chlorobenzene	ug/L	<0.40	0.40	05/22/20 02:12	
Chloroethane	ug/L	<1.0	1.0	05/22/20 02:12	
Chloroform	ug/L	<1.0	1.0	05/22/20 02:12	
Chloromethane	ug/L	<1.0	1.0	05/22/20 02:12	
cis-1,2-Dichloroethene	ug/L	<0.40	0.40	05/22/20 02:12	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: PRJ07913 Clay County Landfill
Pace Project No.: 10518185

METHOD BLANK: 3622840 Matrix: Water
Associated Lab Samples: 10518185001, 10518185002, 10518185003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
cis-1,3-Dichloropropene	ug/L	<0.40	0.40	05/25/20 03:40	
Dibromochloromethane	ug/L	<0.40	0.40	05/25/20 03:40	
Dibromomethane	ug/L	<1.0	1.0	05/22/20 02:12	
Dichlorodifluoromethane	ug/L	<1.0	1.0	05/22/20 02:12	
Dichlorofluoromethane	ug/L	<1.0	1.0	05/22/20 02:12	
Diethyl ether (Ethyl ether)	ug/L	<4.0	4.0	05/22/20 02:12	
Ethylbenzene	ug/L	<0.40	0.40	05/22/20 02:12	
Hexachloro-1,3-butadiene	ug/L	<0.10	0.10	05/25/20 03:40	
Isopropylbenzene (Cumene)	ug/L	<0.40	0.40	05/22/20 02:12	
m&p-Xylene	ug/L	<0.80	0.80	05/22/20 02:12	
Methyl-tert-butyl ether	ug/L	<0.40	0.40	05/22/20 02:12	
Methylene Chloride	ug/L	<1.0	1.0	05/22/20 02:12	
n-Butylbenzene	ug/L	<0.40	0.40	05/22/20 02:12	
n-Propylbenzene	ug/L	<0.40	0.40	05/22/20 02:12	
Naphthalene	ug/L	<1.0	1.0	05/22/20 02:12	
o-Xylene	ug/L	<0.40	0.40	05/22/20 02:12	
p-Isopropyltoluene	ug/L	<0.40	0.40	05/22/20 02:12	
sec-Butylbenzene	ug/L	<0.40	0.40	05/22/20 02:12	
Styrene	ug/L	<0.40	0.40	05/22/20 02:12	
tert-Butylbenzene	ug/L	<0.40	0.40	05/22/20 02:12	
Tetrachloroethene	ug/L	<0.40	0.40	05/22/20 02:12	
Tetrahydrofuran	ug/L	<10.0	10.0	05/22/20 02:12	
Toluene	ug/L	<0.40	0.40	05/22/20 02:12	
trans-1,2-Dichloroethene	ug/L	<0.40	0.40	05/22/20 02:12	
trans-1,3-Dichloropropene	ug/L	<0.40	0.40	05/25/20 03:40	
Trichloroethene	ug/L	<0.050	0.050	05/25/20 03:40	
Trichlorofluoromethane	ug/L	<0.40	0.40	05/22/20 02:12	
Vinyl chloride	ug/L	<0.050	0.050	05/25/20 03:40	
Xylene (Total)	ug/L	<1.2	1.2	05/22/20 02:12	
1,2-Dichloroethane-d4 (S)	%.	105	75-128	05/22/20 02:12	
1,2-Dichloroethane-d4 (S)	%.	105	75-128	05/25/20 03:40	
4-Bromofluorobenzene (S)	%.	102	75-125	05/22/20 02:12	
Toluene-d8 (S)	%.	101	75-125	05/25/20 03:40	
Toluene-d8 (S)	%.	103	75-125	05/22/20 02:12	

LABORATORY CONTROL SAMPLE: 3622841

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	10	11.0	110	75-125	
1,1,1-Trichloroethane	ug/L	10	10	100	68-131	
1,1,2,2-Tetrachloroethane	ug/L	10	9.1	91	71-125	
1,1,2-Trichloroethane	ug/L	10	10.4	104	75-125	
1,1,2-Trichlorotrifluoroethane	ug/L	10	9.4	94	71-125	
1,1-Dichloroethane	ug/L	10	9.0	90	71-125	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: PRJ07913 Clay County Landfill
Pace Project No.: 10518185

LABORATORY CONTROL SAMPLE: 3622841

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1-Dichloroethene	ug/L	10	9.3	93	66-126	
1,1-Dichloropropene	ug/L	10	9.0	90	58-134	
1,2,3-Trichlorobenzene	ug/L	10	9.8	98	71-125	
1,2,3-Trichloropropane	ug/L	1	1.0	102	75-125	
1,2,4-Trichlorobenzene	ug/L	10	9.5	95	72-125	
1,2,4-Trimethylbenzene	ug/L	10	10.1	101	75-125	
1,2-Dibromo-3-chloropropane	ug/L	2.5	2.5	100	71-125	
1,2-Dibromoethane (EDB)	ug/L	1	1.0	104	71-125	
1,2-Dichlorobenzene	ug/L	10	9.7	97	75-125	
1,2-Dichloroethane	ug/L	1	1.1	105	75-131	
1,2-Dichloropropane	ug/L	10	9.8	98	73-125	
1,3,5-Trimethylbenzene	ug/L	10	9.9	99	75-125	
1,3-Dichlorobenzene	ug/L	10	10.3	103	75-125	
1,3-Dichloropropane	ug/L	10	9.7	97	75-125	
1,4-Dichlorobenzene	ug/L	10	8.8	88	75-125	
2,2-Dichloropropane	ug/L	10	9.0	90	57-144	
2-Butanone (MEK)	ug/L	50	42.0	84	51-144	
2-Chlorotoluene	ug/L	10	10	100	75-125	
4-Chlorotoluene	ug/L	10	10.6	106	75-125	
4-Methyl-2-pentanone (MIBK)	ug/L	50	48.9	98	72-125	
Acetone	ug/L	50	39.1	78	34-150	
Allyl chloride	ug/L	10	7.9	79	58-132	
Benzene	ug/L	10	9.2	92	70-125	
Bromobenzene	ug/L	10	9.0	90	75-125	
Bromochloromethane	ug/L	10	9.9	99	72-126	
Bromodichloromethane	ug/L	10	10.3	103	73-128	
Bromoform	ug/L	10	10.6	106	70-125	
Bromomethane	ug/L	10	10.7	107	31-150	SS
Carbon tetrachloride	ug/L	1	1.1	107	68-136	
Chlorobenzene	ug/L	10	10	100	75-125	
Chloroethane	ug/L	10	8.7	87	70-128	
Chloroform	ug/L	10	9.9	99	72-125	
Chloromethane	ug/L	10	8.5	85	63-129	
cis-1,2-Dichloroethene	ug/L	10	9.5	95	69-128	
cis-1,3-Dichloropropene	ug/L	1	1.0	100	71-125	
Dibromochloromethane	ug/L	1	1.0	100	71-125	
Dibromomethane	ug/L	10	10	100	74-130	
Dichlorodifluoromethane	ug/L	10	8.5	85	65-134	
Dichlorofluoromethane	ug/L	10	9.3	93	74-125	
Diethyl ether (Ethyl ether)	ug/L	10	8.6	86	64-126	
Ethylbenzene	ug/L	10	9.9	99	75-125	
Hexachloro-1,3-butadiene	ug/L	1	0.96	96	65-133	
Isopropylbenzene (Cumene)	ug/L	10	11.5	115	75-125	
m&p-Xylene	ug/L	20	20.3	102	75-125	
Methyl-tert-butyl ether	ug/L	10	9.0	90	68-125	
Methylene Chloride	ug/L	10	10.5	105	69-125	
n-Butylbenzene	ug/L	10	9.5	95	75-125	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: PRJ07913 Clay County Landfill
Pace Project No.: 10518185

LABORATORY CONTROL SAMPLE: 3622841

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
n-Propylbenzene	ug/L	10	9.3	93	74-125	
Naphthalene	ug/L	10	9.4	94	66-125	
o-Xylene	ug/L	10	9.9	99	75-125	
p-Isopropyltoluene	ug/L	10	10.1	101	75-125	
sec-Butylbenzene	ug/L	10	10	100	75-125	
Styrene	ug/L	10	10.6	106	75-125	
tert-Butylbenzene	ug/L	10	9.7	97	75-125	
Tetrachloroethene	ug/L	10	9.7	97	75-125	
Tetrahydrofuran	ug/L	100	92.5	93	55-139	
Toluene	ug/L	10	9.1	91	75-125	
trans-1,2-Dichloroethene	ug/L	10	9.1	91	67-127	
trans-1,3-Dichloropropene	ug/L	1	0.98	98	70-125	
Trichloroethene	ug/L	1	1.0	100	69-125	
Trichlorofluoromethane	ug/L	10	9.7	97	70-131	
Vinyl chloride	ug/L	1	0.90	90	68-132	
Xylene (Total)	ug/L	30	30.2	101	75-125	
1,2-Dichloroethane-d4 (S)	%.			102	75-128	
1,2-Dichloroethane-d4 (S)	%.			96	75-128	
4-Bromofluorobenzene (S)	%.			96	75-125	
Toluene-d8 (S)	%.			100	75-125	
Toluene-d8 (S)	%.			99	75-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3622842 3622843

Parameter	Units	10517973002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,1,2-Tetrachloroethane	ug/L	<0.40	10	10	11.1	10.7	111	107	75-125	4	30	
1,1,1-Trichloroethane	ug/L	<0.40	10	10	11.3	10.5	113	105	65-148	7	30	
1,1,2,2-Tetrachloroethane	ug/L	<0.40	10	10	9.4	9.1	94	91	72-125	4	30	
1,1,2-Trichloroethane	ug/L	<0.40	10	10	10.1	9.9	101	99	75-125	2	30	
1,1,2-Trichlorotrifluoroethane	ug/L	<1.0	10	10	10.6	10.4	106	104	75-145	1	30	
1,1-Dichloroethane	ug/L	<0.40	10	10	10.3	9.9	103	99	73-136	4	30	
1,1-Dichloroethene	ug/L	<0.40	10	10	11.2	10.6	112	106	69-138	5	30	
1,1-Dichloropropene	ug/L	<0.40	10	10	10.8	10.6	108	106	60-150	1	30	
1,2,3-Trichlorobenzene	ug/L	<0.40	10	10	9.5	9.5	95	95	67-135	1	30	
1,2,3-Trichloropropane	ug/L	<0.010	1	1	1.1	1.1	105	111	49-150	6	30	
1,2,4-Trichlorobenzene	ug/L	<0.40	10	10	9.5	9.4	95	94	68-133	1	30	
1,2,4-Trimethylbenzene	ug/L	<1.0	10	10	11.1	10.8	111	108	75-135	3	30	
1,2-Dibromo-3-chloropropane	ug/L	<0.12	2.5	2.5	2.6	2.8	104	110	53-150	6	30	
1,2-Dibromoethane (EDB)	ug/L	<0.050	1	1	1.1	1.2	109	116	49-150	6	30	
1,2-Dichlorobenzene	ug/L	<0.40	10	10	10	9.8	100	98	75-125	2	30	
1,2-Dichloroethane	ug/L	<0.20	1	1	1.1	1.2	114	121	42-150	6	30	
1,2-Dichloropropane	ug/L	<0.40	10	10	10.3	9.6	103	96	71-125	6	30	
1,3,5-Trimethylbenzene	ug/L	<0.40	10	10	10.8	10.5	108	105	75-129	3	30	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: PRJ07913 Clay County Landfill
Pace Project No.: 10518185

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3622842 3622843

Parameter	Units	10517973002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,3-Dichlorobenzene	ug/L	<0.40	10	10	10.5	9.9	105	99	75-125	6	30	
1,3-Dichloropropane	ug/L	<0.40	10	10	9.8	9.6	98	96	75-125	2	30	
1,4-Dichlorobenzene	ug/L	<0.40	10	10	9.7	9.7	97	97	75-125	0	30	
2,2-Dichloropropane	ug/L	<1.0	10	10	9.3	8.8	93	88	67-150	5	30	
2-Butanone (MEK)	ug/L	<5.0	50	50	42.5	40.1	85	80	49-138	6	30	
2-Chlorotoluene	ug/L	<0.40	10	10	10.9	10.4	109	104	75-130	4	30	
4-Chlorotoluene	ug/L	<0.40	10	10	11.1	10.9	111	109	75-133	2	30	
4-Methyl-2-pentanone (MIBK)	ug/L	<5.0	50	50	50.1	46.9	100	94	75-126	7	30	
Acetone	ug/L	<20.0	50	50	42.3	42.8	85	86	51-125	1	30	
Allyl chloride	ug/L	<4.0	10	10	9.7	9.2	97	92	50-150	6	30	
Benzene	ug/L	<0.20	10	10	10.1	9.9	101	99	68-129	2	30	
Bromobenzene	ug/L	<0.40	10	10	9.5	9.2	95	92	75-125	3	30	
Bromochloromethane	ug/L	<1.0	10	10	10.2	9.8	102	98	73-132	3	30	
Bromodichloromethane	ug/L	<0.40	10	10	10.3	10.1	103	101	75-127	2	30	
Bromoform	ug/L	<1.0	10	10	10.2	9.2	102	92	71-125	10	30	
Bromomethane	ug/L	<1.0	10	10	13.2	13.6	132	136	30-150	3	30	SS
Carbon tetrachloride	ug/L	<0.050	1	1	1.2	1.3	124	133	30-150	7	30	
Chlorobenzene	ug/L	<0.40	10	10	10.2	9.9	102	99	75-125	3	30	
Chloroethane	ug/L	<1.0	10	10	9.9	9.6	99	96	68-141	4	30	
Chloroform	ug/L	<1.0	10	10	10.6	10.0	106	100	61-129	6	30	
Chloromethane	ug/L	<1.0	10	10	9.9	9.7	99	97	46-150	2	30	
cis-1,2-Dichloroethene	ug/L	<0.40	10	10	10.4	10.2	104	102	68-142	1	30	
cis-1,3-Dichloropropene	ug/L	<0.40	1	1	1.0	1.1	105	111	48-150	6	30	
Dibromochloromethane	ug/L	<0.40	1	1	1.1	1.1	106	111	50-150	5	30	
Dibromomethane	ug/L	<1.0	10	10	10.4	9.7	104	97	69-137	6	30	
Dichlorodifluoromethane	ug/L	<1.0	10	10	10.5	10.6	105	106	68-150	1	30	
Dichlorofluoromethane	ug/L	<1.0	10	10	10.1	9.9	101	99	73-135	2	30	
Diethyl ether (Ethyl ether)	ug/L	<4.0	10	10	9.7	9.4	97	94	61-128	3	30	
Ethylbenzene	ug/L	<0.40	10	10	10.8	10.4	108	104	75-131	4	30	
Hexachloro-1,3-butadiene	ug/L	<0.10	1	1	1.1	1.2	113	118	40-150	4	30	
Isopropylbenzene (Cumene)	ug/L	<0.40	10	10	12.6	12.1	126	121	75-133	5	30	
m&p-Xylene	ug/L	<0.80	20	20	22.7	21.5	113	107	75-135	5	30	
Methyl-tert-butyl ether	ug/L	<0.40	10	10	9.9	9.6	99	96	67-126	4	30	
Methylene Chloride	ug/L	<1.0	10	10	10.5	10.2	105	102	61-137	3	30	
n-Butylbenzene	ug/L	<0.40	10	10	10.4	10.4	104	104	75-136	0	30	
n-Propylbenzene	ug/L	<0.40	10	10	10.4	10.2	104	102	75-139	2	30	
Naphthalene	ug/L	<1.0	10	10	9.5	9.5	95	95	64-127	0	30	
o-Xylene	ug/L	<0.40	10	10	10.8	10.1	108	101	75-127	6	30	
p-Isopropyltoluene	ug/L	<0.40	10	10	11.1	10.9	111	109	75-135	2	30	
sec-Butylbenzene	ug/L	<0.40	10	10	11.2	11.0	112	110	75-141	2	30	
Styrene	ug/L	<0.40	10	10	11.0	10.5	110	105	75-125	4	30	
tert-Butylbenzene	ug/L	<0.40	10	10	10.8	10.6	108	106	75-141	1	30	
Tetrachloroethene	ug/L	<0.40	10	10	10.3	10.3	103	103	75-135	1	30	
Tetrahydrofuran	ug/L	<10.0	100	100	93.7	90.6	94	91	45-145	3	30	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: PRJ07913 Clay County Landfill
Pace Project No.: 10518185

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3622842 3622843

Parameter	Units	10517973002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Toluene	ug/L	<0.40	10	10	9.9	9.5	99	95	74-125	4	30	
trans-1,2-Dichloroethene	ug/L	<0.40	10	10	10.3	9.9	103	99	68-137	4	30	
trans-1,3-Dichloropropene	ug/L	<0.40	1	1	1.0	1.1	105	112	50-150	6	30	
Trichloroethene	ug/L	<0.050	1	1	1.1	1.2	112	119	41-150	6	30	
Trichlorofluoromethane	ug/L	<0.40	10	10	11.1	10.4	111	104	72-150	6	30	
Vinyl chloride	ug/L	<0.050	1	1	1.0	0.99	100	99	30-150	2	30	
Xylene (Total)	ug/L	<1.2	30	30	33.4	31.6	111	105	75-131	6	30	
1,2-Dichloroethane-d4 (S)	%.						102	99	75-128			
1,2-Dichloroethane-d4 (S)	%.						99	101	75-128			
1,2-Dichloroethane-d4 (S)	%.						99	99	75-128			
1,2-Dichloroethane-d4 (S)	%.						102	101	75-128			
4-Bromofluorobenzene (S)	%.						97	98	75-125			
Toluene-d8 (S)	%.						98	98	75-125			
Toluene-d8 (S)	%.						98	97	75-125			
Toluene-d8 (S)	%.						98	97	75-125			
Toluene-d8 (S)	%.						98	98	75-125			

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: PRJ07913 Clay County Landfill
Pace Project No.: 10518185

QC Batch: 676757 | Analysis Method: SM 2320B
QC Batch Method: SM 2320B | Analysis Description: 2320B Alkalinity
Laboratory: Pace Analytical Services - Minneapolis
Associated Lab Samples: 10518185001, 10518185002, 10518185003

METHOD BLANK: 3622643 Matrix: Water
Associated Lab Samples: 10518185001, 10518185002, 10518185003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	<5.0	5.0	05/21/20 16:06	

LABORATORY CONTROL SAMPLE & LCSD: 3622644 3622645

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	40	42.3	42.5	106	106	90-110	0	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3622646 3622647

Parameter	Units	10518129001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO3	mg/L	44.1	40	40	84.7	61.4	101	43	80-120	32	20	M1,R1

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3622648 3622649

Parameter	Units	10517973002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO3	mg/L	697	40	40	779	751	207	136	80-120	4	20	M1

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: PRJ07913 Clay County Landfill
Pace Project No.: 10518185

QC Batch: 676008 | Analysis Method: SM 2540C
QC Batch Method: SM 2540C | Analysis Description: 2540C Total Dissolved Solids
Laboratory: Pace Analytical Services - Minneapolis
Associated Lab Samples: 10518185001, 10518185002, 10518185003

METHOD BLANK: 3618951 Matrix: Water
Associated Lab Samples: 10518185001, 10518185002, 10518185003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<10.0	10.0	05/19/20 11:43	

LABORATORY CONTROL SAMPLE: 3618952

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	986	99	80-120	

SAMPLE DUPLICATE: 3618953

Parameter	Units	10517973002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	865	915	6	5	D6

SAMPLE DUPLICATE: 3618954

Parameter	Units	10518119005 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	307	311	1	5	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: PRJ07913 Clay County Landfill
Pace Project No.: 10518185

QC Batch: 675801 | Analysis Method: SM 2540D
QC Batch Method: SM 2540D | Analysis Description: 2540D Total Suspended Solids
Laboratory: Pace Analytical Services - Minneapolis
Associated Lab Samples: 10518185001, 10518185002, 10518185003

METHOD BLANK: 3618146 Matrix: Water
Associated Lab Samples: 10518185001, 10518185002, 10518185003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Suspended Solids	mg/L	<10.0	10.0	05/18/20 15:14	

LABORATORY CONTROL SAMPLE: 3618147

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Suspended Solids	mg/L	100	120	120	80-120	

SAMPLE DUPLICATE: 3618148

Parameter	Units	10517964015 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	<10.0	<10.0		5	

SAMPLE DUPLICATE: 3618149

Parameter	Units	10517973002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	81.0	97.0	18	5	D6

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: PRJ07913 Clay County Landfill
Pace Project No.: 10518185

QC Batch: 678205
QC Batch Method: SM 4500-H+B
Analysis Method: SM 4500-H+B
Analysis Description: 4500H+B pH
Laboratory: Pace Analytical Services - Minneapolis
Associated Lab Samples: 10518185001, 10518185002, 10518185003

LABORATORY CONTROL SAMPLE: 3629809

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
pH at 25 Degrees C	Std. Units	5	5.0	100	98-102	H6

SAMPLE DUPLICATE: 3629810

Parameter	Units	10517929006 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	7.9	7.9	0	3	H6

SAMPLE DUPLICATE: 3629811

Parameter	Units	10517973002 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	6.9	6.9	0	3	H6

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: PRJ07913 Clay County Landfill
Pace Project No.: 10518185

QC Batch: 678208 | Analysis Method: SM 2510
QC Batch Method: SM 2510 | Analysis Description: SM2510 Specific Conductance
Laboratory: Pace Analytical Services - Minneapolis
Associated Lab Samples: 10518185001, 10518185002, 10518185003

METHOD BLANK: 3629825 Matrix: Water
Associated Lab Samples: 10518185001, 10518185002, 10518185003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Specific Conductance	umhos/cm	<1.0	1.0	05/29/20 16:54	

LABORATORY CONTROL SAMPLE: 3629826

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Specific Conductance	umhos/cm	1000	998	100	90-110	

SAMPLE DUPLICATE: 3629827

Parameter	Units	10517929005 Result	Dup Result	RPD	Max RPD	Qualifiers
Specific Conductance	umhos/cm	458	465	2	20	

SAMPLE DUPLICATE: 3629828

Parameter	Units	10517973002 Result	Dup Result	RPD	Max RPD	Qualifiers
Specific Conductance	umhos/cm	1460	1460	0	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: PRJ07913 Clay County Landfill
Pace Project No.: 10518185

QC Batch: 677791
QC Batch Method: EPA 300.0
Analysis Method: EPA 300.0
Analysis Description: 300.0 IC Anions
Laboratory: Pace Analytical Services - Minneapolis
Associated Lab Samples: 10518185001, 10518185002, 10518185003

METHOD BLANK: 3627619 Matrix: Water
Associated Lab Samples: 10518185001, 10518185002, 10518185003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/L	<1.2	1.2	05/28/20 17:07	
Sulfate	mg/L	<1.2	1.2	05/28/20 17:07	

LABORATORY CONTROL SAMPLE: 3627620

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	12.5	12.0	96	90-110	
Sulfate	mg/L	12.5	12.3	98	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3627621 3627622

Parameter	Units	10517870001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	1.2	12.5	12.5	11.1	11.2	79	80	90-110	0	20	M3
Sulfate	mg/L	3.2	12.5	12.5	13.4	13.6	81	83	90-110	1	20	M3

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3627623 3627624

Parameter	Units	10517973002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	25.7	12.5	12.5	32.0	32.3	51	52	90-110	1	20	M3
Sulfate	mg/L	8.0	12.5	12.5	18.1	18.2	81	82	90-110	1	20	M3

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALIFIERS

Project: PRJ07913 Clay County Landfill
Pace Project No.: 10518185

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

1M	CAB exceeded criteria. Non balance may be due to other cations/anions that were not selected for analysis.
D3	Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.
D6	The precision between the sample and sample duplicate exceeded laboratory control limits.
E	Analyte concentration exceeded the calibration range. The reported result is estimated.
H6	Analysis initiated outside of the 15 minute EPA required holding time.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
M3	Matrix spike recovery was outside laboratory control limits due to matrix interferences.
N2	The lab does not hold NELAC/TNI accreditation for this parameter but other accreditations/certifications may apply. A complete list of accreditations/certifications is available upon request.
P6	Matrix spike recovery was outside laboratory control limits due to a parent sample concentration notably higher than the spike level.
R1	RPD value was outside control limits.
SS	This analyte did not meet the secondary source verification criteria for the initial calibration. The reported result should be considered an estimated value.

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: PRJ07913 Clay County Landfill
Pace Project No.: 10518185

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10518185001	**S-1**	EPA 200.8	676624	EPA 200.8	677031
10518185002	**S-2**	EPA 200.8	676624	EPA 200.8	677031
10518185003	**S-3**	EPA 200.8	676624	EPA 200.8	677031
10518185001	**S-1**	SM 1030E	677610		
10518185002	**S-2**	SM 1030E	677610		
10518185003	**S-3**	SM 1030E	677610		
10518185001	**S-1**	EPA 8260B	676819		
10518185002	**S-2**	EPA 8260B	676819		
10518185003	**S-3**	EPA 8260B	676819		
10518185001	**S-1**	SM 2320B	676757		
10518185002	**S-2**	SM 2320B	676757		
10518185003	**S-3**	SM 2320B	676757		
10518185001	**S-1**	SM 2540C	676008		
10518185002	**S-2**	SM 2540C	676008		
10518185003	**S-3**	SM 2540C	676008		
10518185001	**S-1**	SM 2540D	675801		
10518185002	**S-2**	SM 2540D	675801		
10518185003	**S-3**	SM 2540D	675801		
10518185001	**S-1**	SM 4500-H+B	678205		
10518185002	**S-2**	SM 4500-H+B	678205		
10518185003	**S-3**	SM 4500-H+B	678205		
10518185001	**S-1**	SM 2510	678208		
10518185002	**S-2**	SM 2510	678208		
10518185003	**S-3**	SM 2510	678208		
10518185001	**S-1**	EPA 300.0	677791		
10518185002	**S-2**	EPA 300.0	677791		
10518185003	**S-3**	EPA 300.0	677791		

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

MPCA Chain-of-Custody Form revision 2017.0328

* indicates a required field

Minnesota Pollution Control Agency

Work Order Number: | **COC Type:** Standard | **Page:** 1 of 1

Turnaround Time: Standard | **COC ID:** 33549 line8

FOR LAB USE ONLY

Lab Work Order Sticker

PROJECT/CLIENT INFO

Facility Code:* SW-34 — Program Code (MDH Lab Only):

Project Name:* Clay County Sanitary Landfill - Spring 2020 Surface Wate — Project Task Code:* PRJ07913

Project Manager: Andrew Feia

Potential Hazard? No — If yes, add information to **Sampler Comments** field

LABORATORY

Lab Name: Pace Analytical Services, LLC

Address: 1700 Elm Street SE

Minneapolis, MN 55414

EPA Lab ID:*

SAMPLE DETAILS

SAMPLE TYPES
Sample=Routine Sample
QC-FB=Field Blank Sample
QC-FR=Field Replicate Sample
QC-TB=Trip Blank Sample
QC-EB=Equipment Blank
Treated-Mid=Treatment system sample
Treated-Post=Treatment system sample

SAMPLING METHODS
G=Grab sample
CT=Composite, time-paced w/AS
CF=Composite w/AS
D-T=Discrete,time-paced w/AS
D-F=Discrete,flow-paced w/AS
SW-GAS=Gas Sampling
Unknown=Unknown

LAB MATRICES
DW=Drinking Water
NW=Nonpotable Water
SD=Soil/Solid
AR=Air
BL=Biological Material
OT=Other
TS=Tissue

FIELD MATRICES
Wtr-Ground=Groundwater
Wtr-Surf=Surface Water
Wtr-Drink=Drinking Water
QC-BLANK=Artificial Blank Water
Leachate=Leachate Sample
Air-Indoor=Indoor Air
Gas-Soil=Soil Gas

ANALYSIS REQUESTED

MN Location Identifier*	Field Name	Sample Type*	Start Date* (mm/dd/yyyy)	Start Time* 24 hr (hh:mm)	Depth Start	Depth End	Depth Units (m or ft.)	Sampling Method*	End Date (mm/dd/yyyy)	End Time 24 hr (hh:mm)	Lab Matrix*	Field Matrix*	AIS	Sampler Comments (filter volume, special handling, etc.)	# of Cont	ANALYSIS*	List 1-VOCs (Attached)	List 3-Total Metals (Attached)	List 3-Inorganics (Attached)	List 4-pH, Specific Conductance	LL Mercury 1631 E		Lab Sample No.	#
																PRESERV.	HCL	HN03	H2S04	None	None			
																FF	N	N	N	N	N			
SP00049	S-1	Sample	5/12/2020	11:17				G			NW	WTR-Surf			12		x	x	x	x			001	1
SP00050	S-2	Sample	5/12/2020	11:52				G			NW	WTR-Surf			12		x	x	x	x			002	2
SP00051	S-3	Sample	5/11/2020	18:00				G			NW	WTR-Surf			12		x	x	x	x			003	3
																								4
																								5
																								6
																								7
																								8
																								9
																								10

WO#: 10518185

10518185

Sampler's Name:* Christina Lammers — **Phone#:** 701-893-2327

Sampler's Signature:* Christina Lammers

Sampler's Organization: Wenck Associates, Inc.

Billing Organization: Clay County - Kirk Rosenberger — **Acct#:** 10-115155

Address: 807 11th Street North, Moorhead, MN 56560

Courier Name: Speedee — **Tracking#:**

Receiving Comments:

Relinquished By/Affiliation	Date/Time	Accepted By/Affiliation	Date/Time
(Sampler) /Wenck		Pace	5/14/20 1135

T=4.3, 1.6, 1.4, 1.2

Pace Analytical®	Document Name: Sample Condition Upon Receipt (SCUR) - MN	Document Revised: 27Mar2020 Page 1 of 1
	Document No.: ENV-FRM-MIN4-0150 Rev.00	Pace Analytical Services - Minneapolis

Sample Condition Upon Receipt

Client Name: Wenck

Project #: WO#: 10518185
PM: AKA Due Date: 05/29/20
CLIENT: WENCK-ND

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Pace ☒ SpeeDee ☐ Commercial See Exceptions ☒

Tracking Number:

Custody Seal on Cooler/Box Present? ☒ Yes ☐ No **Seals Intact?** ☒ Yes ☐ No **Biological Tissue Frozen?** ☐ Yes ☐ No ☒ N/A

Packing Material: ☐ Bubble Wrap ☒ Bubble Bags ☐ None ☒ Other: PB **Temp Blank?** ☒ Yes ☐ No

Thermometer: ☐ T1(0461) ☐ T2(1336) ☒ T3(0459) ☐ T4(0254) ☐ T5(0489) **Type of Ice:** ☒ Wet ☐ Blue ☐ None ☐ Dry ☐ Melted

Did Samples Originate in West Virginia? ☐ Yes ☒ No **Were All Container Temps Taken?** ☐ Yes ☐ No ☒ N/A

Temp should be above freezing to 6°C **Cooler Temp Read w/temp blank:** 4.3, 1.4, 1.4, 1.2 °C **Average Corrected Temp (no temp blank only):** ☐ See Exceptions °C ☐ 1 Container

Correction Factor: TWG **Cooler Temp Corrected w/temp blank:** " " °C

USDA Regulated Soil: (☒ N/A, water sample/Other:) **Date/Initials of Person Examining Contents:** 5/15/14/20

Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA. MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? ☐ Yes ☐ No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐ Yes ☐ No

If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.

				COMMENTS:
Chain of Custody Present and Filled Out?	☒ Yes	☐ No		1. COC was received via email after the samples were received.
Chain of Custody Relinquished?	☐ Yes	☒ No		2. - AKA 5/20/2020
Sampler Name and/or Signature on COC?	☒ Yes	☐ No	☐ N/A	3.
Samples Arrived within Hold Time?	☒ Yes	☐ No		4.
Short Hold Time Analysis (<72 hr)?	☐ Yes	☒ No		5. ☐ Fecal Coliform ☐ HPC ☐ Total Coliform/E coli ☐ BOD/cBOD ☐ Hex Chrome ☐ Turbidity ☐ Nitrate ☐ Nitrite ☐ Orthophos ☐ Other
Rush Turn Around Time Requested?	☐ Yes	☒ No		6.
Sufficient Volume?	☒ Yes	☐ No		7.
Correct Containers Used?	☒ Yes	☐ No		8.
-Pace Containers Used?	☒ Yes	☐ No		
Containers Intact?	☒ Yes	☐ No		9.
Field Filtered Volume Received for Dissolved Tests?	☐ Yes	☐ No	☒ N/A	10. Is sediment visible in the dissolved container? ☐ Yes ☐ No
Is sufficient information available to reconcile the samples to the COC? Matrix: ☒ Water ☐ Soil ☐ Oil ☐ Other	☒ Yes	☐ No		11. **If no, write ID/ Date/Time on Container Below:** **See Exception** ☐
All containers needing acid/base preservation have been checked?	☒ Yes	☐ No	☐ N/A	12. Sample # 1-3 ☒ NaOH ☒ HNO_3 ☐ H_2SO_4 ☐ Zinc Acetate
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO_3, H_2SO_4, <2pH, NaOH >9 Sulfide, NaOH>12 Cyanide)	☒ Yes	☐ No	☐ N/A	
Exceptions: VOA, Coliform, TOC/DOC Oil and Grease, DRO/8015 (water) and Dioxin/PFAS	☒ Yes	☐ No	☐ N/A	Positive for Res. Chlorine? ☐ Yes ☐ No **pH Paper Lot#** **See Exception** ☐
				Res. Chlorine: 0-6 Roll 203616 / 0-6 Strip / 0-14 Strip
Extra labels present on soil VOA or WIDRO containers?	☐ Yes	☐ No	☒ N/A	13. **See Exception** ☐
Headspace in VOA Vials (greater than 6mm)?	☐ Yes	☒ No	☐ N/A	
Trip Blank Present?	☐ Yes	☐ No	☐ N/A	14.
Trip Blank Custody Seals Present?	☐ Yes	☐ No	☐ N/A	Pace Trip Blank Lot # (if purchased):

CLIENT NOTIFICATION/RESOLUTION **Field Data Required?** ☐ Yes ☐ No

Person Contacted: Date/Time:

Comments/Resolution: LL hg by 1664 is present on 10518091.

Project Manager Review: Anne Ohp **Date:** 5/20/2020

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers).

Labeled by: CEG (2)

Pace Analytical®	Document Name: **Sample Condition Upon Receipt (SCUR) Exception Form**	Document Revised: 26Mar2020 **Page 1 of 1**
	Document No.: **ENV-FRM-MIN4-0142 Rev.00**	Pace Analytical Services - **Minneapolis**

SCUR Exceptions:

Workorder #:

Out of Temp Sample IDs	Container Type	# of Containers

PM Notified? ☐Yes ☐No

If yes, indicate who was contacted/date/time.
If no, indicate reason why.

Multiple Cooler Project? ☐Yes ☐No
If you answered yes, fill out information to the left.

No Temp Blank

Read Temp	Corrected Temp	Average Temp

Other Issues

Issue Type: / Sample ID	Container Type	# of Containers

Tracking Number/Temperature

SP0095930313420539104	4.3
432391	1.6
404494	1.4
351119/20 ~~256695~~	
453843	1.2

pH Adjustment Log for Preserved Samples

Sample ID	Type of Preserv.	pH Upon Receipt	Date Adjusted	Time Adjusted	Amount Added (mL)	Lot # Added	pH After	In Compliance after addition?	Initials
								☐Yes ☐No	
								☐Yes ☐No	
								☐Yes ☐No	
								☐Yes ☐No	

TABLE 2

Clay County Landfill
Permit SW-34
Environmental Monitoring System

Parameter Lists For Analyses

List 1 (VOCs) (Groundwater and Surface Water)

1,1,1,2-Tetrachloroethane	Chlorobenzene (monochlorobenzene)
1,1,1-Trichloroethane	Chlorodibromomethane (Dibromochloromethane)
1,1,2,2-Tetrachloroethane	Chloroethane
1,1,2-Trichloroethane	Chloroform
1,1,2-Trichlorotrifluoroethane	Chloromethane (Methyl chloride)
1,1-Dichloroethane	cis-1,3,-Dichloropropene
1,1-Dichloroethylene (Vinylidene chloride)	Cumene (Isopropylbenzene)
1,1-Dichloropropene	Dibromochloropropane (DBCP)
1,2-(trans-) Dichloroethylene	Dibromomethane (Methylene bromide)
1,2,3-Trichlorobenzene	Dichlorodifluoromethane
1,2,3-Trichloropropane	Dichlorofluoromethane
1,2,4-Trichlorobenzene	Dichloromethane (Methylene chloride)
1,2,4-Trimethylbenzene	Ethyl benzene
1,2-Dibromoethane (Ethylene dibromide); EDB	Ethyl ether
1,2-Dichlorobenzene (ortho-)	Hexachlorobutadiene
1,2-Dichloroethane	Methyl ethyl ketone (MEK)
1,2-Dichloroethlyene (cis-)	Methyl isobutyl ketone (4-Methyl-2-pentanone)
1,2-Dichloropropane	Methyl tertiary-Butyl Ether (MTBE)
1,3,5-Trimethylbenzene	Naphthalene
1,3-Dichlorobenzene (meta-)	n-Butyl Benzene
1,3-Dichloropropane	n-Propyl benzene
1,4-Dichlorobenzene (para-)	p-Isopropyltoluene
2,2-Dichloropropane	sec-Butyl Benzene
2-Chlorotoluene (ortho-)	Styrene
4-Chlorotoluene (para-)	tert-Butyl Benzene
Acetone	Tetrachloroethylene (Perchloroethylene)
Allyl chloride (3 chloropropene)	Tetrahydrofuran
Benzene	Toluene
Bromobenzene	Trichloroethylene (TCE)
Bromochloromethane (Chlorobromomethane)	Trichlorofluoromethane
Bromodichloromethane (Dichlorobromomethane)	Vinyl chloride (chloroethene)
Bromoform	m-Xylene & p-Xylene
Bromomethane (Methyl bromide)	o-Xylene
Carbon tetrachloride	

List 2 (Geochemicals, Metals[1]) (Groundwater)

Alkalinity, Total as CaCO3	Magnesium
Ammonia Nitrogen	Manganese
Arsenic	Mercury
Barium	Nickel
Boron	Nitrate+Nitrite
Cadmium	Potassium
Calcium	Selenium
Cation-Anion Balance	Sodium
Chloride	Sulfate
Chromium	Zinc
Copper	Total Dissolved Solids
Iron	Total Suspended Solids
Lead	

[1] All metals are measured as dissolved. All groundwater samples for metals will be filtered in the field.

TABLE 2

Clay County Landfill
Permit SW-34
Environmental Monitoring System

Parameter Lists For Analyses

List 3 (Geochemicals, Metals[2]) (Surface Water)

Alkalinity, Total as CaCO3	Lead
Arsenic	Magnesium
Boron	Manganese
Cadmium	Mercury[3]
Calcium	Total Dissolved Solids
Cation-Anion Balance	Total Suspended Solids
Chloride	

[2] All metals are measured as total. All surface water samples for metals will not be filtered in the field or lab.

[3] Low-level mercury analyses, EPA Method 1669.

List 4 (Field Parameters) (Groundwater and Surface Water)

Appearance	Specific Conductance
Dissolved Oxygen	Static Water Level (Elevation, MSL)[4]
Eh (Oxidation potential)	Temperature
Odor	Turbidity
pH	

[4] Groundwater Samples only, and not for residential wells.

List 5 (Geochemicals, Metals[1]) (Lysimeter)

Alkalinity, Total as CaCO3	Iron
Ammonia Nitrogen	Lead
Arsenic	Magnesium
Arsenic	Manganese
Boron	Mercury
Cadmium	Nitrate+Nitrite
Calcium	Potassium
Cation-Anion Balance	Sodium
COD	Sulfate
Chloride	Zinc
Chromium VI	Total Dissolved Solids
Copper	Total Suspended Solids

[1] All metals are measured as dissolved. All Lysimeter samples for metals will be filtered in the field.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

June 05, 2020

Andrew Feia
Wenck Associates, Inc.
3303 Fiechtner Drive
Suite 100
Fargo, ND 58103

RE: Project: PRJ07913 Clay County Landfill
Pace Project No.: 10518134

Dear Andrew Feia:

Enclosed are the analytical results for sample(s) received by the laboratory on May 15, 2020. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Minneapolis

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Annika Asp
annika.asp@pacelabs.com
(612)607-1700
Project Manager

Enclosures

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

CERTIFICATIONS

Project: PRJ07913 Clay County Landfill
Pace Project No.: 10518134

Pace Analytical Services Minneapolis

A2LA Certification #: 2926.01
Alabama Certification #: 40770
Alaska Contaminated Sites Certification #: 17-009
Alaska DW Certification #: MN00064
Arizona Certification #: AZ0014
Arkansas DW Certification #: MN00064
Arkansas WW Certification #: 88-0680
California Certification #: 2929
CNMI Saipan Certification #: MP0003
Colorado Certification #: MN00064
Connecticut Certification #: PH-0256
EPA Region 8+Wyoming DW Certification #: via MN 027-053-137
Florida Certification #: E87605
Georgia Certification #: 959
Guam EPA Certification #: MN00064
Hawaii Certification #: MN00064
Idaho Certification #: MN00064
Illinois Certification #: 200011
Indiana Certification #: C-MN-01
Iowa Certification #: 368
Kansas Certification #: E-10167
Kentucky DW Certification #: 90062
Kentucky WW Certification #: 90062
Louisiana DEQ Certification #: 03086
Louisiana DW Certification #: MN00064
Maine Certification #: MN00064
Maryland Certification #: 322
Massachusetts Certification #: M-MN064
Massachusetts DWP Certification #: via MN 027-053-137
Michigan Certification #: 9909
Minnesota Certification #: 027-053-137
Minnesota Dept of Ag Certifcation #: via MN 027-053-137
Minnesota Petrofund Certification #: 1240
Mississippi Certification #: MN00064
Missouri Certification #: 10100
Montana Certification #: CERT0092
Nebraska Certification #: NE-OS-18-06
Nevada Certification #: MN00064
New Hampshire Certification #: 2081
New Jersey Certification #: MN002
New York Certification #: 11647
North Carolina DW Certification #: 27700
North Carolina WW Certification #: 530
North Dakota Certification #: R-036
Ohio DW Certification #: 41244
Ohio VAP Certification #: CL101
Oklahoma Certification #: 9507
Oregon Primary Certification #: MN300001
Oregon Secondary Certification #: MN200001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification #: MN00064
South Carolina Certification #:74003001
Tennessee Certification #: TN02818
Texas Certification #: T104704192
Utah Certification #: MN00064
Vermont Certification #: VT-027053137
Virginia Certification #: 460163
Washington Certification #: C486
West Virginia DEP Certification #: 382
West Virginia DW Certification #: 9952 C
Wisconsin Certification #: 999407970
Wyoming UST Certification #: via A2LA 2926.01

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

SAMPLE SUMMARY

Project: PRJ07913 Clay County Landfill
Pace Project No.: 10518134

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10518134001	**Deutcher**	Water	05/14/20 11:33	05/15/20 12:15
10518134002	**Benesch**	Water	05/14/20 12:20	05/15/20 12:15
10518134003	**J. Ekre**	Water	05/14/20 13:02	05/15/20 12:15
10518134004	**Dup-3**	Water	05/14/20 00:00	05/15/20 12:15

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

SAMPLE ANALYTE COUNT

Project: PRJ07913 Clay County Landfill
Pace Project No.: 10518134

Lab ID	Sample ID	Method	Analysts	Analytes Reported
10518134001	**Deutcher**	EPA 200.8	RJS	16
		SM 1030E	WBS	3
		EPA 245.1	LMW	1
		EPA 8260B	AEZ	72
		SM 2320B	SH4	1
		SM 2540C	EPT	1
		SM 2540D	EPT	1
		SM 4500-H+B	SH4	1
		SM 2510	SH4	1
		EPA 300.0	KEO	2
		EPA 350.1	JFP	1
		EPA 353.2	JFP	1
10518134002	**Benesch**	EPA 200.8	RJS	16
		SM 1030E	WBS	3
		EPA 245.1	LMW	1
		EPA 8260B	AEZ	72
		SM 2320B	SH4	1
		SM 2540C	EPT	1
		SM 2540D	EPT	1
		SM 4500-H+B	SH4	1
		SM 2510	SH4	1
		EPA 300.0	KEO	2
		EPA 350.1	JFP	1
		EPA 353.2	JFP	1
10518134003	**J. Ekre**	EPA 200.8	RJS	16
		SM 1030E	WBS	3
		EPA 245.1	LMW	1
		EPA 8260B	AEZ	72
		SM 2320B	SH4	1
		SM 2540C	EPT	1
		SM 2540D	EPT	1
		SM 4500-H+B	SH4	1
		SM 2510	SH4	1
		EPA 300.0	KEO	2
		EPA 350.1	JFP	1
		EPA 353.2	JFP	1
10518134004	**Dup-3**	EPA 200.8	RJS	16

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

SAMPLE ANALYTE COUNT

Project: PRJ07913 Clay County Landfill
Pace Project No.: 10518134

Lab ID	Sample ID	Method	Analysts	Analytes Reported
		SM 1030E	WBS	3
		EPA 245.1	LMW	1
		EPA 8260B	AEZ	72
		SM 2320B	SH4	1
		SM 2540C	EPT	1
		SM 2540D	EPT	1
		SM 4500-H+B	SH4	1
		SM 2510	SH4	1
		EPA 300.0	KEO	2
		EPA 350.1	JFP	1
		EPA 353.2	JFP	1

PASI-M = Pace Analytical Services - Minneapolis

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: PRJ07913 Clay County Landfill
Pace Project No.: 10518134

Sample: Deutcher **Lab ID: 10518134001** Collected: 05/14/20 11:33 Received: 05/15/20 12:15 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.8 MET ICPMS, Lab Filtered	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8							
	Pace Analytical Services - Minneapolis							
Arsenic, Dissolved	**1.2**	ug/L	0.50	1	05/28/20 12:54	06/03/20 23:52	7440-38-2	
Barium, Dissolved	**109**	ug/L	0.30	1	05/28/20 12:54	06/03/20 23:52	7440-39-3	M1
Boron, Dissolved	**29.3**	ug/L	10.0	1	05/28/20 12:54	06/03/20 23:52	7440-42-8	
Cadmium, Dissolved	**<0.080**	ug/L	0.080	1	05/28/20 12:54	06/03/20 23:52	7440-43-9	
Calcium, Dissolved	**132000**	ug/L	400	10	05/28/20 12:54	06/05/20 08:00	7440-70-2	P6
Chromium, Dissolved	**0.78**	ug/L	0.50	1	05/28/20 12:54	06/03/20 23:52	7440-47-3	
Copper, Dissolved	**5.1**	ug/L	1.0	1	05/28/20 12:54	06/03/20 23:52	7440-50-8	
Iron, Dissolved	**<50.0**	ug/L	50.0	1	05/28/20 12:54	06/03/20 23:52	7439-89-6	
Lead, Dissolved	**<0.10**	ug/L	0.10	1	05/28/20 12:54	06/03/20 23:52	7439-92-1	
Magnesium, Dissolved	**77000**	ug/L	100	10	05/28/20 12:54	06/05/20 08:00	7439-95-4	P6
Manganese, Dissolved	**430**	ug/L	0.50	1	05/28/20 12:54	06/03/20 23:52	7439-96-5	M1
Nickel, Dissolved	**1.1**	ug/L	0.50	1	05/28/20 12:54	06/03/20 23:52	7440-02-0	
Potassium, Dissolved	**3890**	ug/L	100	1	05/28/20 12:54	06/03/20 23:52	7440-09-7	M1
Selenium, Dissolved	**<0.50**	ug/L	0.50	1	05/28/20 12:54	06/03/20 23:52	7782-49-2	
Sodium, Dissolved	**10400**	ug/L	50.0	1	05/28/20 12:54	06/03/20 23:52	7440-23-5	M1,P6
Zinc, Dissolved	**259**	ug/L	5.0	1	05/28/20 12:54	06/03/20 23:52	7440-66-6	M1
Cation/Anion Balance	Analytical Method: SM 1030E							
	Pace Analytical Services - Minneapolis							
Cation/Anion Balance	**16.49**	%		1		06/05/20 16:15		1M
Total Cations	**13.5**	meq/L		1		06/05/20 16:15		N2
Total Anions	**9.7**	meq/L		1		06/05/20 16:15		N2
245.1 Mercury, Lab Filtered	Analytical Method: EPA 245.1 Preparation Method: EPA 245.1							
	Pace Analytical Services - Minneapolis							
Mercury, Dissolved	**<0.20**	ug/L	0.20	1	05/28/20 17:11	05/29/20 11:44	7439-97-6	
8260B MSV LLW by SIMSCAN	Analytical Method: EPA 8260B							
	Pace Analytical Services - Minneapolis							
Acetone	**<20.0**	ug/L	20.0	1		05/22/20 13:59	67-64-1	
Allyl chloride	**<4.0**	ug/L	4.0	1		05/22/20 13:59	107-05-1	
Benzene	**<0.20**	ug/L	0.20	1		05/22/20 13:59	71-43-2	
Bromobenzene	**<0.40**	ug/L	0.40	1		05/22/20 13:59	108-86-1	
Bromochloromethane	**<1.0**	ug/L	1.0	1		05/22/20 13:59	74-97-5	
Bromodichloromethane	**<0.40**	ug/L	0.40	1		05/22/20 13:59	75-27-4	
Bromoform	**<1.0**	ug/L	1.0	1		05/22/20 13:59	75-25-2	
Bromomethane	**<1.0**	ug/L	1.0	1		05/22/20 13:59	74-83-9	
2-Butanone (MEK)	**<5.0**	ug/L	5.0	1		05/22/20 13:59	78-93-3	
n-Butylbenzene	**<0.40**	ug/L	0.40	1		05/22/20 13:59	104-51-8	
sec-Butylbenzene	**<0.40**	ug/L	0.40	1		05/22/20 13:59	135-98-8	
tert-Butylbenzene	**<0.40**	ug/L	0.40	1		05/22/20 13:59	98-06-6	
Carbon tetrachloride	**<0.050**	ug/L	0.050	1		05/26/20 12:30	56-23-5	
Chlorobenzene	**<0.40**	ug/L	0.40	1		05/22/20 13:59	108-90-7	
Chloroethane	**<1.0**	ug/L	1.0	1		05/22/20 13:59	75-00-3	
Chloroform	**<1.0**	ug/L	1.0	1		05/22/20 13:59	67-66-3	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: PRJ07913 Clay County Landfill
Pace Project No.: 10518134

Sample: Deutcher **Lab ID: 10518134001** Collected: 05/14/20 11:33 Received: 05/15/20 12:15 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV LLW by SIMSCAN	Analytical Method: EPA 8260B Pace Analytical Services - Minneapolis							
Chloromethane	**<1.0**	ug/L	1.0	1		05/22/20 13:59	74-87-3	
2-Chlorotoluene	**<0.40**	ug/L	0.40	1		05/22/20 13:59	95-49-8	
4-Chlorotoluene	**<0.40**	ug/L	0.40	1		05/22/20 13:59	106-43-4	
1,2-Dibromo-3-chloropropane	**<0.12**	ug/L	0.12	1		05/26/20 12:30	96-12-8	
Dibromochloromethane	**<0.40**	ug/L	0.40	1		05/26/20 12:30	124-48-1	
1,2-Dibromoethane (EDB)	**<0.050**	ug/L	0.050	1		05/26/20 12:30	106-93-4	
Dibromomethane	**<1.0**	ug/L	1.0	1		05/22/20 13:59	74-95-3	
1,2-Dichlorobenzene	**<0.40**	ug/L	0.40	1		05/22/20 13:59	95-50-1	
1,3-Dichlorobenzene	**<0.40**	ug/L	0.40	1		05/22/20 13:59	541-73-1	
1,4-Dichlorobenzene	**<0.40**	ug/L	0.40	1		05/22/20 13:59	106-46-7	
Dichlorodifluoromethane	**<1.0**	ug/L	1.0	1		05/22/20 13:59	75-71-8	
1,1-Dichloroethane	**<0.40**	ug/L	0.40	1		05/22/20 13:59	75-34-3	
1,2-Dichloroethane	**<0.20**	ug/L	0.20	1		05/26/20 12:30	107-06-2	
1,1-Dichloroethene	**<0.40**	ug/L	0.40	1		05/22/20 13:59	75-35-4	
cis-1,2-Dichloroethene	**<0.40**	ug/L	0.40	1		05/22/20 13:59	156-59-2	
trans-1,2-Dichloroethene	**<0.40**	ug/L	0.40	1		05/22/20 13:59	156-60-5	
Dichlorofluoromethane	**<1.0**	ug/L	1.0	1		05/22/20 13:59	75-43-4	
1,2-Dichloropropane	**<0.40**	ug/L	0.40	1		05/22/20 13:59	78-87-5	
1,3-Dichloropropane	**<0.40**	ug/L	0.40	1		05/22/20 13:59	142-28-9	
2,2-Dichloropropane	**<1.0**	ug/L	1.0	1		05/22/20 13:59	594-20-7	
1,1-Dichloropropene	**<0.40**	ug/L	0.40	1		05/22/20 13:59	563-58-6	
cis-1,3-Dichloropropene	**<0.40**	ug/L	0.40	1		05/26/20 12:30	10061-01-5	
trans-1,3-Dichloropropene	**<0.40**	ug/L	0.40	1		05/26/20 12:30	10061-02-6	
Diethyl ether (Ethyl ether)	**<4.0**	ug/L	4.0	1		05/22/20 13:59	60-29-7	
Ethylbenzene	**<0.40**	ug/L	0.40	1		05/22/20 13:59	100-41-4	
Hexachloro-1,3-butadiene	**<0.10**	ug/L	0.10	1		05/26/20 12:30	87-68-3	
Isopropylbenzene (Cumene)	**<0.40**	ug/L	0.40	1		05/22/20 13:59	98-82-8	M1
p-Isopropyltoluene	**<0.40**	ug/L	0.40	1		05/22/20 13:59	99-87-6	
Methylene Chloride	**<1.0**	ug/L	1.0	1		05/22/20 13:59	75-09-2	
4-Methyl-2-pentanone (MIBK)	**<5.0**	ug/L	5.0	1		05/22/20 13:59	108-10-1	
Methyl-tert-butyl ether	**<0.40**	ug/L	0.40	1		05/22/20 13:59	1634-04-4	
Naphthalene	**<1.0**	ug/L	1.0	1		05/22/20 13:59	91-20-3	
n-Propylbenzene	**<0.40**	ug/L	0.40	1		05/22/20 13:59	103-65-1	
Styrene	**<0.40**	ug/L	0.40	1		05/22/20 13:59	100-42-5	
1,1,1,2-Tetrachloroethane	**<0.40**	ug/L	0.40	1		05/22/20 13:59	630-20-6	
1,1,2,2-Tetrachloroethane	**<0.40**	ug/L	0.40	1		05/22/20 13:59	79-34-5	
Tetrachloroethene	**<0.40**	ug/L	0.40	1		05/22/20 13:59	127-18-4	
Tetrahydrofuran	**<10.0**	ug/L	10.0	1		05/22/20 13:59	109-99-9	
Toluene	**<0.40**	ug/L	0.40	1		05/22/20 13:59	108-88-3	
1,2,3-Trichlorobenzene	**<0.40**	ug/L	0.40	1		05/22/20 13:59	87-61-6	
1,2,4-Trichlorobenzene	**<0.40**	ug/L	0.40	1		05/22/20 13:59	120-82-1	
1,1,1-Trichloroethane	**<0.40**	ug/L	0.40	1		05/22/20 13:59	71-55-6	
1,1,2-Trichloroethane	**<0.40**	ug/L	0.40	1		05/22/20 13:59	79-00-5	
Trichloroethene	**<0.050**	ug/L	0.050	1		05/26/20 12:30	79-01-6	
Trichlorofluoromethane	**<0.40**	ug/L	0.40	1		05/22/20 13:59	75-69-4	
1,2,3-Trichloropropane	**<0.010**	ug/L	0.010	1		05/26/20 12:30	96-18-4	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: PRJ07913 Clay County Landfill
Pace Project No.: 10518134

Sample: Deutcher **Lab ID: 10518134001** Collected: 05/14/20 11:33 Received: 05/15/20 12:15 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV LLW by SIMSCAN	Analytical Method: EPA 8260B							
	Pace Analytical Services - Minneapolis							
1,1,2-Trichlorotrifluoroethane	**<1.0**	ug/L	1.0	1		05/22/20 13:59	76-13-1	
1,2,4-Trimethylbenzene	**<1.0**	ug/L	1.0	1		05/22/20 13:59	95-63-6	
1,3,5-Trimethylbenzene	**<0.40**	ug/L	0.40	1		05/22/20 13:59	108-67-8	
Vinyl chloride	**<0.050**	ug/L	0.050	1		05/26/20 12:30	75-01-4	
Xylene (Total)	**<1.2**	ug/L	1.2	1		05/22/20 13:59	1330-20-7	
m&p-Xylene	**<0.80**	ug/L	0.80	1		05/22/20 13:59	179601-23-1	
o-Xylene	**<0.40**	ug/L	0.40	1		05/22/20 13:59	95-47-6	
Surrogates								
1,2-Dichloroethane-d4 (S)	108	%.	75-128	1		05/22/20 13:59	17060-07-0	
1,2-Dichloroethane-d4 (S)	105	%.	75-128	1		05/26/20 12:30	17060-07-0	
Toluene-d8 (S)	100	%.	75-125	1		05/22/20 13:59	2037-26-5	
Toluene-d8 (S)	99	%.	75-125	1		05/26/20 12:30	2037-26-5	
4-Bromofluorobenzene (S)	99	%.	75-125	1		05/22/20 13:59	460-00-4	
2320B Alkalinity	Analytical Method: SM 2320B							
	Pace Analytical Services - Minneapolis							
Alkalinity, Total as CaCO3	**273**	mg/L	5.0	1		05/27/20 15:23		
2540C Total Dissolved Solids	Analytical Method: SM 2540C							
	Pace Analytical Services - Minneapolis							
Total Dissolved Solids	**676**	mg/L	10.0	1		05/28/20 13:40		H5
2540D Total Suspended Solids	Analytical Method: SM 2540D							
	Pace Analytical Services - Minneapolis							
Total Suspended Solids	**10.0**	mg/L	10.0	1		05/21/20 11:28		D6
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B							
	Pace Analytical Services - Minneapolis							
pH at 25 Degrees C	**7.5**	Std. Units	0.10	1		05/29/20 19:03		H6
SM2510 Specific Conductance	Analytical Method: SM 2510							
	Pace Analytical Services - Minneapolis							
Specific Conductance	**936**	umhos/cm	1.0	1		06/01/20 19:51		
300.0 IC Anions	Analytical Method: EPA 300.0							
	Pace Analytical Services - Minneapolis							
Chloride	**29.4**	mg/L	1.2	1		05/30/20 00:44	16887-00-6	M1
Sulfate	**163**	mg/L	12.0	10		05/30/20 09:46	14808-79-8	
350.1 Ammonia	Analytical Method: EPA 350.1							
	Pace Analytical Services - Minneapolis							
Nitrogen, Ammonia	**<0.10**	mg/L	0.10	1		05/26/20 14:23	7664-41-7	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: PRJ07913 Clay County Landfill
Pace Project No.: 10518134

Sample: Deutcher **Lab ID: 10518134001** Collected: 05/14/20 11:33 Received: 05/15/20 12:15 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrate + Nitrite	Analytical Method: EPA 353.2 Pace Analytical Services - Minneapolis							
Nitrogen, NO2 plus NO3	**<0.10**	mg/L	0.10	1		05/30/20 11:27		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: PRJ07913 Clay County Landfill
Pace Project No.: 10518134

Sample: Benesch **Lab ID: 10518134002** Collected: 05/14/20 12:20 Received: 05/15/20 12:15 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.8 MET ICPMS, Lab Filtered	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8							
	Pace Analytical Services - Minneapolis							
Arsenic, Dissolved	**1.2**	ug/L	0.50	1	05/28/20 12:54	06/04/20 00:23	7440-38-2	
Barium, Dissolved	**328**	ug/L	0.30	1	05/28/20 12:54	06/04/20 00:23	7440-39-3	
Boron, Dissolved	**116**	ug/L	10.0	1	05/28/20 12:54	06/04/20 00:23	7440-42-8	
Cadmium, Dissolved	**<0.080**	ug/L	0.080	1	05/28/20 12:54	06/04/20 00:23	7440-43-9	
Calcium, Dissolved	**51500**	ug/L	400	10	05/28/20 12:54	06/04/20 00:27	7440-70-2	
Chromium, Dissolved	**<0.50**	ug/L	0.50	1	05/28/20 12:54	06/04/20 00:23	7440-47-3	
Copper, Dissolved	**<1.0**	ug/L	1.0	1	05/28/20 12:54	06/04/20 00:23	7440-50-8	
Iron, Dissolved	**<50.0**	ug/L	50.0	1	05/28/20 12:54	06/04/20 00:23	7439-89-6	
Lead, Dissolved	**<0.10**	ug/L	0.10	1	05/28/20 12:54	06/04/20 00:23	7439-92-1	
Magnesium, Dissolved	**20900**	ug/L	10.0	1	05/28/20 12:54	06/04/20 00:23	7439-95-4	
Manganese, Dissolved	**39.5**	ug/L	0.50	1	05/28/20 12:54	06/04/20 00:23	7439-96-5	
Nickel, Dissolved	**<0.50**	ug/L	0.50	1	05/28/20 12:54	06/04/20 00:23	7440-02-0	
Potassium, Dissolved	**3760**	ug/L	100	1	05/28/20 12:54	06/04/20 00:23	7440-09-7	
Selenium, Dissolved	**<0.50**	ug/L	0.50	1	05/28/20 12:54	06/04/20 00:23	7782-49-2	
Sodium, Dissolved	**12800**	ug/L	50.0	1	05/28/20 12:54	06/04/20 00:23	7440-23-5	
Zinc, Dissolved	**32.8**	ug/L	5.0	1	05/28/20 12:54	06/04/20 00:23	7440-66-6	
Cation/Anion Balance	Analytical Method: SM 1030E							
	Pace Analytical Services - Minneapolis							
Cation/Anion Balance	**-2.51**	%		1		06/05/20 16:15		
Total Cations	**5.0**	meq/L		1		06/05/20 16:15		N2
Total Anions	**5.2**	meq/L		1		06/05/20 16:15		N2
245.1 Mercury, Lab Filtered	Analytical Method: EPA 245.1 Preparation Method: EPA 245.1							
	Pace Analytical Services - Minneapolis							
Mercury, Dissolved	**<0.20**	ug/L	0.20	1	05/28/20 17:11	05/29/20 11:51	7439-97-6	
8260B MSV LLW by SIMSCAN	Analytical Method: EPA 8260B							
	Pace Analytical Services - Minneapolis							
Acetone	**<20.0**	ug/L	20.0	1		05/22/20 19:10	67-64-1	
Allyl chloride	**<4.0**	ug/L	4.0	1		05/22/20 19:10	107-05-1	
Benzene	**<0.20**	ug/L	0.20	1		05/22/20 19:10	71-43-2	
Bromobenzene	**<0.40**	ug/L	0.40	1		05/22/20 19:10	108-86-1	
Bromochloromethane	**<1.0**	ug/L	1.0	1		05/22/20 19:10	74-97-5	
Bromodichloromethane	**<0.40**	ug/L	0.40	1		05/22/20 19:10	75-27-4	
Bromoform	**<1.0**	ug/L	1.0	1		05/22/20 19:10	75-25-2	
Bromomethane	**<1.0**	ug/L	1.0	1		05/22/20 19:10	74-83-9	
2-Butanone (MEK)	**<5.0**	ug/L	5.0	1		05/22/20 19:10	78-93-3	
n-Butylbenzene	**<0.40**	ug/L	0.40	1		05/22/20 19:10	104-51-8	
sec-Butylbenzene	**<0.40**	ug/L	0.40	1		05/22/20 19:10	135-98-8	
tert-Butylbenzene	**<0.40**	ug/L	0.40	1		05/22/20 19:10	98-06-6	
Carbon tetrachloride	**<0.050**	ug/L	0.050	1		05/26/20 16:24	56-23-5	
Chlorobenzene	**<0.40**	ug/L	0.40	1		05/22/20 19:10	108-90-7	
Chloroethane	**<1.0**	ug/L	1.0	1		05/22/20 19:10	75-00-3	
Chloroform	**<1.0**	ug/L	1.0	1		05/22/20 19:10	67-66-3	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: PRJ07913 Clay County Landfill
Pace Project No.: 10518134

Sample: Benesch **Lab ID: 10518134002** Collected: 05/14/20 12:20 Received: 05/15/20 12:15 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV LLW by SIMSCAN	Analytical Method: EPA 8260B Pace Analytical Services - Minneapolis							
Chloromethane	**<1.0**	ug/L	1.0	1		05/22/20 19:10	74-87-3	
2-Chlorotoluene	**<0.40**	ug/L	0.40	1		05/22/20 19:10	95-49-8	
4-Chlorotoluene	**<0.40**	ug/L	0.40	1		05/22/20 19:10	106-43-4	
1,2-Dibromo-3-chloropropane	**<0.12**	ug/L	0.12	1		05/26/20 16:24	96-12-8	
Dibromochloromethane	**<0.40**	ug/L	0.40	1		05/26/20 16:24	124-48-1	
1,2-Dibromoethane (EDB)	**<0.050**	ug/L	0.050	1		05/26/20 16:24	106-93-4	
Dibromomethane	**<1.0**	ug/L	1.0	1		05/22/20 19:10	74-95-3	
1,2-Dichlorobenzene	**<0.40**	ug/L	0.40	1		05/22/20 19:10	95-50-1	
1,3-Dichlorobenzene	**<0.40**	ug/L	0.40	1		05/22/20 19:10	541-73-1	
1,4-Dichlorobenzene	**<0.40**	ug/L	0.40	1		05/22/20 19:10	106-46-7	
Dichlorodifluoromethane	**<1.0**	ug/L	1.0	1		05/22/20 19:10	75-71-8	
1,1-Dichloroethane	**<0.40**	ug/L	0.40	1		05/22/20 19:10	75-34-3	
1,2-Dichloroethane	**<0.20**	ug/L	0.20	1		05/26/20 16:24	107-06-2	
1,1-Dichloroethene	**<0.40**	ug/L	0.40	1		05/22/20 19:10	75-35-4	
cis-1,2-Dichloroethene	**<0.40**	ug/L	0.40	1		05/22/20 19:10	156-59-2	
trans-1,2-Dichloroethene	**<0.40**	ug/L	0.40	1		05/22/20 19:10	156-60-5	
Dichlorofluoromethane	**<1.0**	ug/L	1.0	1		05/22/20 19:10	75-43-4	
1,2-Dichloropropane	**<0.40**	ug/L	0.40	1		05/22/20 19:10	78-87-5	
1,3-Dichloropropane	**<0.40**	ug/L	0.40	1		05/22/20 19:10	142-28-9	
2,2-Dichloropropane	**<1.0**	ug/L	1.0	1		05/22/20 19:10	594-20-7	
1,1-Dichloropropene	**<0.40**	ug/L	0.40	1		05/22/20 19:10	563-58-6	
cis-1,3-Dichloropropene	**<0.40**	ug/L	0.40	1		05/26/20 16:24	10061-01-5	
trans-1,3-Dichloropropene	**<0.40**	ug/L	0.40	1		05/26/20 16:24	10061-02-6	
Diethyl ether (Ethyl ether)	**<4.0**	ug/L	4.0	1		05/22/20 19:10	60-29-7	
Ethylbenzene	**<0.40**	ug/L	0.40	1		05/22/20 19:10	100-41-4	
Hexachloro-1,3-butadiene	**<0.10**	ug/L	0.10	1		05/26/20 16:24	87-68-3	
Isopropylbenzene (Cumene)	**<0.40**	ug/L	0.40	1		05/22/20 19:10	98-82-8	
p-Isopropyltoluene	**<0.40**	ug/L	0.40	1		05/22/20 19:10	99-87-6	
Methylene Chloride	**<1.0**	ug/L	1.0	1		05/22/20 19:10	75-09-2	
4-Methyl-2-pentanone (MIBK)	**<5.0**	ug/L	5.0	1		05/22/20 19:10	108-10-1	
Methyl-tert-butyl ether	**<0.40**	ug/L	0.40	1		05/22/20 19:10	1634-04-4	
Naphthalene	**<1.0**	ug/L	1.0	1		05/22/20 19:10	91-20-3	
n-Propylbenzene	**<0.40**	ug/L	0.40	1		05/22/20 19:10	103-65-1	
Styrene	**<0.40**	ug/L	0.40	1		05/22/20 19:10	100-42-5	
1,1,1,2-Tetrachloroethane	**<0.40**	ug/L	0.40	1		05/22/20 19:10	630-20-6	
1,1,2,2-Tetrachloroethane	**<0.40**	ug/L	0.40	1		05/22/20 19:10	79-34-5	
Tetrachloroethene	**<0.40**	ug/L	0.40	1		05/22/20 19:10	127-18-4	
Tetrahydrofuran	**<10.0**	ug/L	10.0	1		05/22/20 19:10	109-99-9	
Toluene	**<0.40**	ug/L	0.40	1		05/22/20 19:10	108-88-3	
1,2,3-Trichlorobenzene	**<0.40**	ug/L	0.40	1		05/22/20 19:10	87-61-6	
1,2,4-Trichlorobenzene	**<0.40**	ug/L	0.40	1		05/22/20 19:10	120-82-1	
1,1,1-Trichloroethane	**<0.40**	ug/L	0.40	1		05/22/20 19:10	71-55-6	
1,1,2-Trichloroethane	**<0.40**	ug/L	0.40	1		05/22/20 19:10	79-00-5	
Trichloroethene	**<0.050**	ug/L	0.050	1		05/26/20 16:24	79-01-6	
Trichlorofluoromethane	**<0.40**	ug/L	0.40	1		05/22/20 19:10	75-69-4	
1,2,3-Trichloropropane	**<0.010**	ug/L	0.010	1		05/26/20 16:24	96-18-4	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: PRJ07913 Clay County Landfill
Pace Project No.: 10518134

Sample: Benesch **Lab ID: 10518134002** Collected: 05/14/20 12:20 Received: 05/15/20 12:15 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV LLW by SIMSCAN	Analytical Method: EPA 8260B							
	Pace Analytical Services - Minneapolis							
1,1,2-Trichlorotrifluoroethane	**<1.0**	ug/L	1.0	1		05/22/20 19:10	76-13-1	
1,2,4-Trimethylbenzene	**<1.0**	ug/L	1.0	1		05/22/20 19:10	95-63-6	
1,3,5-Trimethylbenzene	**<0.40**	ug/L	0.40	1		05/22/20 19:10	108-67-8	
Vinyl chloride	**<0.050**	ug/L	0.050	1		05/26/20 16:24	75-01-4	
Xylene (Total)	**<1.2**	ug/L	1.2	1		05/22/20 19:10	1330-20-7	
m&p-Xylene	**<0.80**	ug/L	0.80	1		05/22/20 19:10	179601-23-1	
o-Xylene	**<0.40**	ug/L	0.40	1		05/22/20 19:10	95-47-6	
Surrogates								
1,2-Dichloroethane-d4 (S)	104	%.	75-128	1		05/22/20 19:10	17060-07-0	
1,2-Dichloroethane-d4 (S)	105	%.	75-128	1		05/26/20 16:24	17060-07-0	
Toluene-d8 (S)	99	%.	75-125	1		05/26/20 16:24	2037-26-5	
Toluene-d8 (S)	100	%.	75-125	1		05/22/20 19:10	2037-26-5	
4-Bromofluorobenzene (S)	100	%.	75-125	1		05/22/20 19:10	460-00-4	
2320B Alkalinity	Analytical Method: SM 2320B							
	Pace Analytical Services - Minneapolis							
Alkalinity, Total as CaCO3	**262**	mg/L	5.0	1		05/27/20 16:35		
2540C Total Dissolved Solids	Analytical Method: SM 2540C							
	Pace Analytical Services - Minneapolis							
Total Dissolved Solids	**285**	mg/L	10.0	1		05/28/20 13:40		H5
2540D Total Suspended Solids	Analytical Method: SM 2540D							
	Pace Analytical Services - Minneapolis							
Total Suspended Solids	**<10.0**	mg/L	10.0	1		05/21/20 11:28		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B							
	Pace Analytical Services - Minneapolis							
pH at 25 Degrees C	**8.2**	Std. Units	0.10	1		05/29/20 19:20		H6
SM2510 Specific Conductance	Analytical Method: SM 2510							
	Pace Analytical Services - Minneapolis							
Specific Conductance	**501**	umhos/cm	1.0	1		06/01/20 19:53		
300.0 IC Anions	Analytical Method: EPA 300.0							
	Pace Analytical Services - Minneapolis							
Chloride	**<1.2**	mg/L	1.2	1		05/30/20 02:27	16887-00-6	M1
Sulfate	**<1.2**	mg/L	1.2	1		05/30/20 02:27	14808-79-8	M1
350.1 Ammonia	Analytical Method: EPA 350.1							
	Pace Analytical Services - Minneapolis							
Nitrogen, Ammonia	**0.76**	mg/L	0.10	1		05/26/20 14:27	7664-41-7	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: PRJ07913 Clay County Landfill
Pace Project No.: 10518134

Sample: Benesch **Lab ID: 10518134002** Collected: 05/14/20 12:20 Received: 05/15/20 12:15 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrate + Nitrite	Analytical Method: EPA 353.2 Pace Analytical Services - Minneapolis							
Nitrogen, NO2 plus NO3	**<0.10**	mg/L	0.10	1		05/22/20 17:05		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: PRJ07913 Clay County Landfill
Pace Project No.: 10518134

Sample: J. Ekre **Lab ID: 10518134003** Collected: 05/14/20 13:02 Received: 05/15/20 12:15 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.8 MET ICPMS, Lab Filtered	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8							
	Pace Analytical Services - Minneapolis							
Arsenic, Dissolved	**1.8**	ug/L	0.50	1	05/28/20 12:54	06/04/20 00:30	7440-38-2	
Barium, Dissolved	**0.79**	ug/L	0.30	1	05/28/20 12:54	06/04/20 00:30	7440-39-3	
Boron, Dissolved	**23.7**	ug/L	10.0	1	05/28/20 12:54	06/04/20 00:30	7440-42-8	
Cadmium, Dissolved	**<0.080**	ug/L	0.080	1	05/28/20 12:54	06/04/20 00:30	7440-43-9	
Calcium, Dissolved	**298**	ug/L	40.0	1	05/28/20 12:54	06/04/20 00:30	7440-70-2	
Chromium, Dissolved	**<0.50**	ug/L	0.50	1	05/28/20 12:54	06/04/20 00:30	7440-47-3	
Copper, Dissolved	**1.6**	ug/L	1.0	1	05/28/20 12:54	06/04/20 00:30	7440-50-8	
Iron, Dissolved	**<50.0**	ug/L	50.0	1	05/28/20 12:54	06/04/20 00:30	7439-89-6	
Lead, Dissolved	**<0.10**	ug/L	0.10	1	05/28/20 12:54	06/04/20 00:30	7439-92-1	
Magnesium, Dissolved	**118**	ug/L	10.0	1	05/28/20 12:54	06/04/20 00:30	7439-95-4	
Manganese, Dissolved	**0.99**	ug/L	0.50	1	05/28/20 12:54	06/04/20 00:30	7439-96-5	
Nickel, Dissolved	**<0.50**	ug/L	0.50	1	05/28/20 12:54	06/04/20 00:30	7440-02-0	
Potassium, Dissolved	**180**	ug/L	100	1	05/28/20 12:54	06/04/20 00:30	7440-09-7	
Selenium, Dissolved	**<0.50**	ug/L	0.50	1	05/28/20 12:54	06/04/20 00:30	7782-49-2	
Sodium, Dissolved	**130000**	ug/L	500	10	05/28/20 12:54	06/04/20 00:33	7440-23-5	
Zinc, Dissolved	**<5.0**	ug/L	5.0	1	05/28/20 12:54	06/04/20 00:30	7440-66-6	
Cation/Anion Balance	Analytical Method: SM 1030E							
	Pace Analytical Services - Minneapolis							
Cation/Anion Balance	**.35**	%		1		06/05/20 16:15		
Total Cations	**5.7**	meq/L		1		06/05/20 16:15		N2
Total Anions	**5.7**	meq/L		1		06/05/20 16:15		N2
245.1 Mercury, Lab Filtered	Analytical Method: EPA 245.1 Preparation Method: EPA 245.1							
	Pace Analytical Services - Minneapolis							
Mercury, Dissolved	**<0.20**	ug/L	0.20	1	05/28/20 17:11	05/29/20 11:54	7439-97-6	
8260B MSV LLW by SIMSCAN	Analytical Method: EPA 8260B							
	Pace Analytical Services - Minneapolis							
Acetone	**<20.0**	ug/L	20.0	1		05/22/20 19:36	67-64-1	
Allyl chloride	**<4.0**	ug/L	4.0	1		05/22/20 19:36	107-05-1	
Benzene	**<0.20**	ug/L	0.20	1		05/22/20 19:36	71-43-2	
Bromobenzene	**<0.40**	ug/L	0.40	1		05/22/20 19:36	108-86-1	
Bromochloromethane	**<1.0**	ug/L	1.0	1		05/22/20 19:36	74-97-5	
Bromodichloromethane	**<0.40**	ug/L	0.40	1		05/22/20 19:36	75-27-4	
Bromoform	**<1.0**	ug/L	1.0	1		05/22/20 19:36	75-25-2	
Bromomethane	**<1.0**	ug/L	1.0	1		05/22/20 19:36	74-83-9	
2-Butanone (MEK)	**<5.0**	ug/L	5.0	1		05/22/20 19:36	78-93-3	
n-Butylbenzene	**<0.40**	ug/L	0.40	1		05/22/20 19:36	104-51-8	
sec-Butylbenzene	**<0.40**	ug/L	0.40	1		05/22/20 19:36	135-98-8	
tert-Butylbenzene	**<0.40**	ug/L	0.40	1		05/22/20 19:36	98-06-6	
Carbon tetrachloride	**<0.050**	ug/L	0.050	1		05/26/20 16:51	56-23-5	
Chlorobenzene	**<0.40**	ug/L	0.40	1		05/22/20 19:36	108-90-7	
Chloroethane	**<1.0**	ug/L	1.0	1		05/22/20 19:36	75-00-3	
Chloroform	**<1.0**	ug/L	1.0	1		05/22/20 19:36	67-66-3	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: PRJ07913 Clay County Landfill
Pace Project No.: 10518134

Sample: J. Ekre **Lab ID: 10518134003** Collected: 05/14/20 13:02 Received: 05/15/20 12:15 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV LLW by SIMSCAN	Analytical Method: EPA 8260B Pace Analytical Services - Minneapolis							
Chloromethane	**<1.0**	ug/L	1.0	1		05/22/20 19:36	74-87-3	
2-Chlorotoluene	**<0.40**	ug/L	0.40	1		05/22/20 19:36	95-49-8	
4-Chlorotoluene	**<0.40**	ug/L	0.40	1		05/22/20 19:36	106-43-4	
1,2-Dibromo-3-chloropropane	**<0.12**	ug/L	0.12	1		05/26/20 16:51	96-12-8	
Dibromochloromethane	**<0.40**	ug/L	0.40	1		05/26/20 16:51	124-48-1	
1,2-Dibromoethane (EDB)	**<0.050**	ug/L	0.050	1		05/26/20 16:51	106-93-4	
Dibromomethane	**<1.0**	ug/L	1.0	1		05/22/20 19:36	74-95-3	
1,2-Dichlorobenzene	**<0.40**	ug/L	0.40	1		05/22/20 19:36	95-50-1	
1,3-Dichlorobenzene	**<0.40**	ug/L	0.40	1		05/22/20 19:36	541-73-1	
1,4-Dichlorobenzene	**<0.40**	ug/L	0.40	1		05/22/20 19:36	106-46-7	
Dichlorodifluoromethane	**<1.0**	ug/L	1.0	1		05/22/20 19:36	75-71-8	
1,1-Dichloroethane	**<0.40**	ug/L	0.40	1		05/22/20 19:36	75-34-3	
1,2-Dichloroethane	**<0.20**	ug/L	0.20	1		05/26/20 16:51	107-06-2	
1,1-Dichloroethene	**<0.40**	ug/L	0.40	1		05/22/20 19:36	75-35-4	
cis-1,2-Dichloroethene	**<0.40**	ug/L	0.40	1		05/22/20 19:36	156-59-2	
trans-1,2-Dichloroethene	**<0.40**	ug/L	0.40	1		05/22/20 19:36	156-60-5	
Dichlorofluoromethane	**<1.0**	ug/L	1.0	1		05/22/20 19:36	75-43-4	
1,2-Dichloropropane	**<0.40**	ug/L	0.40	1		05/22/20 19:36	78-87-5	
1,3-Dichloropropane	**<0.40**	ug/L	0.40	1		05/22/20 19:36	142-28-9	
2,2-Dichloropropane	**<1.0**	ug/L	1.0	1		05/22/20 19:36	594-20-7	
1,1-Dichloropropene	**<0.40**	ug/L	0.40	1		05/22/20 19:36	563-58-6	
cis-1,3-Dichloropropene	**<0.40**	ug/L	0.40	1		05/26/20 16:51	10061-01-5	
trans-1,3-Dichloropropene	**<0.40**	ug/L	0.40	1		05/26/20 16:51	10061-02-6	
Diethyl ether (Ethyl ether)	**<4.0**	ug/L	4.0	1		05/22/20 19:36	60-29-7	
Ethylbenzene	**<0.40**	ug/L	0.40	1		05/22/20 19:36	100-41-4	
Hexachloro-1,3-butadiene	**<0.10**	ug/L	0.10	1		05/26/20 16:51	87-68-3	
Isopropylbenzene (Cumene)	**<0.40**	ug/L	0.40	1		05/22/20 19:36	98-82-8	
p-Isopropyltoluene	**<0.40**	ug/L	0.40	1		05/22/20 19:36	99-87-6	
Methylene Chloride	**<1.0**	ug/L	1.0	1		05/22/20 19:36	75-09-2	
4-Methyl-2-pentanone (MIBK)	**<5.0**	ug/L	5.0	1		05/22/20 19:36	108-10-1	
Methyl-tert-butyl ether	**<0.40**	ug/L	0.40	1		05/22/20 19:36	1634-04-4	
Naphthalene	**<1.0**	ug/L	1.0	1		05/22/20 19:36	91-20-3	
n-Propylbenzene	**<0.40**	ug/L	0.40	1		05/22/20 19:36	103-65-1	
Styrene	**<0.40**	ug/L	0.40	1		05/22/20 19:36	100-42-5	
1,1,1,2-Tetrachloroethane	**<0.40**	ug/L	0.40	1		05/22/20 19:36	630-20-6	
1,1,2,2-Tetrachloroethane	**<0.40**	ug/L	0.40	1		05/22/20 19:36	79-34-5	
Tetrachloroethene	**<0.40**	ug/L	0.40	1		05/22/20 19:36	127-18-4	
Tetrahydrofuran	**<10.0**	ug/L	10.0	1		05/22/20 19:36	109-99-9	
Toluene	**<0.40**	ug/L	0.40	1		05/22/20 19:36	108-88-3	
1,2,3-Trichlorobenzene	**<0.40**	ug/L	0.40	1		05/22/20 19:36	87-61-6	
1,2,4-Trichlorobenzene	**<0.40**	ug/L	0.40	1		05/22/20 19:36	120-82-1	
1,1,1-Trichloroethane	**<0.40**	ug/L	0.40	1		05/22/20 19:36	71-55-6	
1,1,2-Trichloroethane	**<0.40**	ug/L	0.40	1		05/22/20 19:36	79-00-5	
Trichloroethene	**<0.050**	ug/L	0.050	1		05/26/20 16:51	79-01-6	
Trichlorofluoromethane	**<0.40**	ug/L	0.40	1		05/22/20 19:36	75-69-4	
1,2,3-Trichloropropane	**<0.010**	ug/L	0.010	1		05/26/20 16:51	96-18-4	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: PRJ07913 Clay County Landfill
Pace Project No.: 10518134

Sample: J. Ekre **Lab ID: 10518134003** Collected: 05/14/20 13:02 Received: 05/15/20 12:15 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV LLW by SIMSCAN	Analytical Method: EPA 8260B							
	Pace Analytical Services - Minneapolis							
1,1,2-Trichlorotrifluoroethane	**<1.0**	ug/L	1.0	1		05/22/20 19:36	76-13-1	
1,2,4-Trimethylbenzene	**<1.0**	ug/L	1.0	1		05/22/20 19:36	95-63-6	
1,3,5-Trimethylbenzene	**<0.40**	ug/L	0.40	1		05/22/20 19:36	108-67-8	
Vinyl chloride	**<0.050**	ug/L	0.050	1		05/26/20 16:51	75-01-4	
Xylene (Total)	**<1.2**	ug/L	1.2	1		05/22/20 19:36	1330-20-7	
m&p-Xylene	**<0.80**	ug/L	0.80	1		05/22/20 19:36	179601-23-1	
o-Xylene	**<0.40**	ug/L	0.40	1		05/22/20 19:36	95-47-6	
Surrogates								
1,2-Dichloroethane-d4 (S)	105	%.	75-128	1		05/26/20 16:51	17060-07-0	
1,2-Dichloroethane-d4 (S)	104	%.	75-128	1		05/22/20 19:36	17060-07-0	
Toluene-d8 (S)	99	%.	75-125	1		05/26/20 16:51	2037-26-5	
Toluene-d8 (S)	99	%.	75-125	1		05/22/20 19:36	2037-26-5	
4-Bromofluorobenzene (S)	99	%.	75-125	1		05/22/20 19:36	460-00-4	
2320B Alkalinity	Analytical Method: SM 2320B							
	Pace Analytical Services - Minneapolis							
Alkalinity, Total as CaCO3	**232**	mg/L	5.0	1		05/27/20 16:42		
2540C Total Dissolved Solids	Analytical Method: SM 2540C							
	Pace Analytical Services - Minneapolis							
Total Dissolved Solids	**365**	mg/L	10.0	1		05/28/20 13:40		H5
2540D Total Suspended Solids	Analytical Method: SM 2540D							
	Pace Analytical Services - Minneapolis							
Total Suspended Solids	**<10.0**	mg/L	10.0	1		05/21/20 11:28		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B							
	Pace Analytical Services - Minneapolis							
pH at 25 Degrees C	**8.0**	Std. Units	0.10	1		05/29/20 19:22		H6
SM2510 Specific Conductance	Analytical Method: SM 2510							
	Pace Analytical Services - Minneapolis							
Specific Conductance	**581**	umhos/cm	1.0	1		06/01/20 19:54		
300.0 IC Anions	Analytical Method: EPA 300.0							
	Pace Analytical Services - Minneapolis							
Chloride	**1.5**	mg/L	1.2	1		05/30/20 03:31	16887-00-6	
Sulfate	**47.2**	mg/L	1.2	1		05/30/20 03:31	14808-79-8	
350.1 Ammonia	Analytical Method: EPA 350.1							
	Pace Analytical Services - Minneapolis							
Nitrogen, Ammonia	**<0.10**	mg/L	0.10	1		05/26/20 14:28	7664-41-7	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: PRJ07913 Clay County Landfill
Pace Project No.: 10518134

Sample: J. Ekre **Lab ID: 10518134003** Collected: 05/14/20 13:02 Received: 05/15/20 12:15 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrate + Nitrite	Analytical Method: EPA 353.2 Pace Analytical Services - Minneapolis							
Nitrogen, NO2 plus NO3	**<0.10**	mg/L	0.10	1		05/22/20 17:06		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: PRJ07913 Clay County Landfill
Pace Project No.: 10518134

Sample: Dup-3 **Lab ID: 10518134004** Collected: 05/14/20 00:00 Received: 05/15/20 12:15 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.8 MET ICPMS, Lab Filtered	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8							
	Pace Analytical Services - Minneapolis							
Arsenic, Dissolved	**1.3**	ug/L	0.50	1	05/28/20 12:54	06/04/20 00:36	7440-38-2	
Barium, Dissolved	**340**	ug/L	0.30	1	05/28/20 12:54	06/04/20 00:36	7440-39-3	
Boron, Dissolved	**123**	ug/L	10.0	1	05/28/20 12:54	06/04/20 00:36	7440-42-8	
Cadmium, Dissolved	**<0.080**	ug/L	0.080	1	05/28/20 12:54	06/04/20 00:36	7440-43-9	
Calcium, Dissolved	**54400**	ug/L	400	10	05/28/20 12:54	06/04/20 00:39	7440-70-2	
Chromium, Dissolved	**<0.50**	ug/L	0.50	1	05/28/20 12:54	06/04/20 00:36	7440-47-3	
Copper, Dissolved	**<1.0**	ug/L	1.0	1	05/28/20 12:54	06/04/20 00:36	7440-50-8	
Iron, Dissolved	**<50.0**	ug/L	50.0	1	05/28/20 12:54	06/04/20 00:36	7439-89-6	
Lead, Dissolved	**<0.10**	ug/L	0.10	1	05/28/20 12:54	06/04/20 00:36	7439-92-1	
Magnesium, Dissolved	**21400**	ug/L	10.0	1	05/28/20 12:54	06/04/20 00:36	7439-95-4	
Manganese, Dissolved	**40.2**	ug/L	0.50	1	05/28/20 12:54	06/04/20 00:36	7439-96-5	
Nickel, Dissolved	**<0.50**	ug/L	0.50	1	05/28/20 12:54	06/04/20 00:36	7440-02-0	
Potassium, Dissolved	**3890**	ug/L	100	1	05/28/20 12:54	06/04/20 00:36	7440-09-7	
Selenium, Dissolved	**<0.50**	ug/L	0.50	1	05/28/20 12:54	06/04/20 00:36	7782-49-2	
Sodium, Dissolved	**13100**	ug/L	50.0	1	05/28/20 12:54	06/04/20 00:36	7440-23-5	
Zinc, Dissolved	**17.0**	ug/L	5.0	1	05/28/20 12:54	06/04/20 00:36	7440-66-6	
Cation/Anion Balance	Analytical Method: SM 1030E							
	Pace Analytical Services - Minneapolis							
Cation/Anion Balance	**-.65**	%		1		06/05/20 16:15		
Total Cations	**5.2**	meq/L		1		06/05/20 16:15		N2
Total Anions	**5.3**	meq/L		1		06/05/20 16:15		N2
245.1 Mercury, Lab Filtered	Analytical Method: EPA 245.1 Preparation Method: EPA 245.1							
	Pace Analytical Services - Minneapolis							
Mercury, Dissolved	**<0.20**	ug/L	0.20	1	05/28/20 17:11	05/29/20 11:56	7439-97-6	
8260B MSV LLW by SIMSCAN	Analytical Method: EPA 8260B							
	Pace Analytical Services - Minneapolis							
Acetone	**<20.0**	ug/L	20.0	1		05/22/20 20:02	67-64-1	
Allyl chloride	**<4.0**	ug/L	4.0	1		05/22/20 20:02	107-05-1	
Benzene	**<0.20**	ug/L	0.20	1		05/22/20 20:02	71-43-2	
Bromobenzene	**<0.40**	ug/L	0.40	1		05/22/20 20:02	108-86-1	
Bromochloromethane	**<1.0**	ug/L	1.0	1		05/22/20 20:02	74-97-5	
Bromodichloromethane	**<0.40**	ug/L	0.40	1		05/22/20 20:02	75-27-4	
Bromoform	**<1.0**	ug/L	1.0	1		05/22/20 20:02	75-25-2	
Bromomethane	**<1.0**	ug/L	1.0	1		05/22/20 20:02	74-83-9	
2-Butanone (MEK)	**<5.0**	ug/L	5.0	1		05/22/20 20:02	78-93-3	
n-Butylbenzene	**<0.40**	ug/L	0.40	1		05/22/20 20:02	104-51-8	
sec-Butylbenzene	**<0.40**	ug/L	0.40	1		05/22/20 20:02	135-98-8	
tert-Butylbenzene	**<0.40**	ug/L	0.40	1		05/22/20 20:02	98-06-6	
Carbon tetrachloride	**<0.050**	ug/L	0.050	1		05/26/20 17:17	56-23-5	
Chlorobenzene	**<0.40**	ug/L	0.40	1		05/22/20 20:02	108-90-7	
Chloroethane	**<1.0**	ug/L	1.0	1		05/22/20 20:02	75-00-3	
Chloroform	**<1.0**	ug/L	1.0	1		05/22/20 20:02	67-66-3	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: PRJ07913 Clay County Landfill
Pace Project No.: 10518134

Sample: Dup-3 **Lab ID: 10518134004** Collected: 05/14/20 00:00 Received: 05/15/20 12:15 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV LLW by SIMSCAN	Analytical Method: EPA 8260B Pace Analytical Services - Minneapolis							
Chloromethane	**<1.0**	ug/L	1.0	1		05/22/20 20:02	74-87-3	
2-Chlorotoluene	**<0.40**	ug/L	0.40	1		05/22/20 20:02	95-49-8	
4-Chlorotoluene	**<0.40**	ug/L	0.40	1		05/22/20 20:02	106-43-4	
1,2-Dibromo-3-chloropropane	**<0.12**	ug/L	0.12	1		05/26/20 17:17	96-12-8	
Dibromochloromethane	**<0.40**	ug/L	0.40	1		05/26/20 17:17	124-48-1	
1,2-Dibromoethane (EDB)	**<0.050**	ug/L	0.050	1		05/26/20 17:17	106-93-4	
Dibromomethane	**<1.0**	ug/L	1.0	1		05/22/20 20:02	74-95-3	
1,2-Dichlorobenzene	**<0.40**	ug/L	0.40	1		05/22/20 20:02	95-50-1	
1,3-Dichlorobenzene	**<0.40**	ug/L	0.40	1		05/22/20 20:02	541-73-1	
1,4-Dichlorobenzene	**<0.40**	ug/L	0.40	1		05/22/20 20:02	106-46-7	
Dichlorodifluoromethane	**<1.0**	ug/L	1.0	1		05/22/20 20:02	75-71-8	
1,1-Dichloroethane	**<0.40**	ug/L	0.40	1		05/22/20 20:02	75-34-3	
1,2-Dichloroethane	**<0.20**	ug/L	0.20	1		05/26/20 17:17	107-06-2	
1,1-Dichloroethene	**<0.40**	ug/L	0.40	1		05/22/20 20:02	75-35-4	
cis-1,2-Dichloroethene	**<0.40**	ug/L	0.40	1		05/22/20 20:02	156-59-2	
trans-1,2-Dichloroethene	**<0.40**	ug/L	0.40	1		05/22/20 20:02	156-60-5	
Dichlorofluoromethane	**<1.0**	ug/L	1.0	1		05/22/20 20:02	75-43-4	
1,2-Dichloropropane	**<0.40**	ug/L	0.40	1		05/22/20 20:02	78-87-5	
1,3-Dichloropropane	**<0.40**	ug/L	0.40	1		05/22/20 20:02	142-28-9	
2,2-Dichloropropane	**<1.0**	ug/L	1.0	1		05/22/20 20:02	594-20-7	
1,1-Dichloropropene	**<0.40**	ug/L	0.40	1		05/22/20 20:02	563-58-6	
cis-1,3-Dichloropropene	**<0.40**	ug/L	0.40	1		05/26/20 17:17	10061-01-5	
trans-1,3-Dichloropropene	**<0.40**	ug/L	0.40	1		05/26/20 17:17	10061-02-6	
Diethyl ether (Ethyl ether)	**<4.0**	ug/L	4.0	1		05/22/20 20:02	60-29-7	
Ethylbenzene	**<0.40**	ug/L	0.40	1		05/22/20 20:02	100-41-4	
Hexachloro-1,3-butadiene	**<0.10**	ug/L	0.10	1		05/26/20 17:17	87-68-3	
Isopropylbenzene (Cumene)	**<0.40**	ug/L	0.40	1		05/22/20 20:02	98-82-8	
p-Isopropyltoluene	**<0.40**	ug/L	0.40	1		05/22/20 20:02	99-87-6	
Methylene Chloride	**<1.0**	ug/L	1.0	1		05/22/20 20:02	75-09-2	
4-Methyl-2-pentanone (MIBK)	**<5.0**	ug/L	5.0	1		05/22/20 20:02	108-10-1	
Methyl-tert-butyl ether	**<0.40**	ug/L	0.40	1		05/22/20 20:02	1634-04-4	
Naphthalene	**<1.0**	ug/L	1.0	1		05/22/20 20:02	91-20-3	
n-Propylbenzene	**<0.40**	ug/L	0.40	1		05/22/20 20:02	103-65-1	
Styrene	**<0.40**	ug/L	0.40	1		05/22/20 20:02	100-42-5	
1,1,1,2-Tetrachloroethane	**<0.40**	ug/L	0.40	1		05/22/20 20:02	630-20-6	
1,1,2,2-Tetrachloroethane	**<0.40**	ug/L	0.40	1		05/22/20 20:02	79-34-5	
Tetrachloroethene	**<0.40**	ug/L	0.40	1		05/22/20 20:02	127-18-4	
Tetrahydrofuran	**<10.0**	ug/L	10.0	1		05/22/20 20:02	109-99-9	
Toluene	**<0.40**	ug/L	0.40	1		05/22/20 20:02	108-88-3	
1,2,3-Trichlorobenzene	**<0.40**	ug/L	0.40	1		05/22/20 20:02	87-61-6	
1,2,4-Trichlorobenzene	**<0.40**	ug/L	0.40	1		05/22/20 20:02	120-82-1	
1,1,1-Trichloroethane	**<0.40**	ug/L	0.40	1		05/22/20 20:02	71-55-6	
1,1,2-Trichloroethane	**<0.40**	ug/L	0.40	1		05/22/20 20:02	79-00-5	
Trichloroethene	**<0.050**	ug/L	0.050	1		05/26/20 17:17	79-01-6	
Trichlorofluoromethane	**<0.40**	ug/L	0.40	1		05/22/20 20:02	75-69-4	
1,2,3-Trichloropropane	**<0.010**	ug/L	0.010	1		05/26/20 17:17	96-18-4	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: PRJ07913 Clay County Landfill
Pace Project No.: 10518134

Sample: Dup-3 **Lab ID: 10518134004** Collected: 05/14/20 00:00 Received: 05/15/20 12:15 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV LLW by SIMSCAN	Analytical Method: EPA 8260B							
	Pace Analytical Services - Minneapolis							
1,1,2-Trichlorotrifluoroethane	**<1.0**	ug/L	1.0	1		05/22/20 20:02	76-13-1	
1,2,4-Trimethylbenzene	**<1.0**	ug/L	1.0	1		05/22/20 20:02	95-63-6	
1,3,5-Trimethylbenzene	**<0.40**	ug/L	0.40	1		05/22/20 20:02	108-67-8	
Vinyl chloride	**<0.050**	ug/L	0.050	1		05/26/20 17:17	75-01-4	
Xylene (Total)	**<1.2**	ug/L	1.2	1		05/22/20 20:02	1330-20-7	
m&p-Xylene	**<0.80**	ug/L	0.80	1		05/22/20 20:02	179601-23-1	
o-Xylene	**<0.40**	ug/L	0.40	1		05/22/20 20:02	95-47-6	
Surrogates								
1,2-Dichloroethane-d4 (S)	105	%.	75-128	1		05/26/20 17:17	17060-07-0	
1,2-Dichloroethane-d4 (S)	108	%.	75-128	1		05/22/20 20:02	17060-07-0	
Toluene-d8 (S)	99	%.	75-125	1		05/26/20 17:17	2037-26-5	
Toluene-d8 (S)	100	%.	75-125	1		05/22/20 20:02	2037-26-5	
4-Bromofluorobenzene (S)	99	%.	75-125	1		05/22/20 20:02	460-00-4	
2320B Alkalinity	Analytical Method: SM 2320B							
	Pace Analytical Services - Minneapolis							
Alkalinity, Total as CaCO3	**263**	mg/L	5.0	1		05/27/20 16:48		
2540C Total Dissolved Solids	Analytical Method: SM 2540C							
	Pace Analytical Services - Minneapolis							
Total Dissolved Solids	**284**	mg/L	10.0	1		05/28/20 13:40		H5
2540D Total Suspended Solids	Analytical Method: SM 2540D							
	Pace Analytical Services - Minneapolis							
Total Suspended Solids	**<10.0**	mg/L	10.0	1		05/21/20 11:28		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B							
	Pace Analytical Services - Minneapolis							
pH at 25 Degrees C	**7.9**	Std. Units	0.10	1		05/29/20 19:26		H6
SM2510 Specific Conductance	Analytical Method: SM 2510							
	Pace Analytical Services - Minneapolis							
Specific Conductance	**494**	umhos/cm	1.0	1		06/01/20 19:54		
300.0 IC Anions	Analytical Method: EPA 300.0							
	Pace Analytical Services - Minneapolis							
Chloride	**<1.2**	mg/L	1.2	1		05/30/20 04:02	16887-00-6	
Sulfate	**<1.2**	mg/L	1.2	1		05/30/20 04:02	14808-79-8	
350.1 Ammonia	Analytical Method: EPA 350.1							
	Pace Analytical Services - Minneapolis							
Nitrogen, Ammonia	**0.76**	mg/L	0.10	1		05/26/20 14:30	7664-41-7	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: PRJ07913 Clay County Landfill
Pace Project No.: 10518134

Sample: Dup-3 **Lab ID: 10518134004** Collected: 05/14/20 00:00 Received: 05/15/20 12:15 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrate + Nitrite	Analytical Method: EPA 353.2 Pace Analytical Services - Minneapolis							
Nitrogen, NO2 plus NO3	**<0.10**	mg/L	0.10	1		05/30/20 11:31		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: PRJ07913 Clay County Landfill
Pace Project No.: 10518134

QC Batch: 677743 | Analysis Method: EPA 245.1
QC Batch Method: EPA 245.1 | Analysis Description: 245.1 Mercury - Dissolved
Laboratory: Pace Analytical Services - Minneapolis
Associated Lab Samples: 10518134001, 10518134002, 10518134003, 10518134004

METHOD BLANK: 3627474 Matrix: Water
Associated Lab Samples: 10518134001, 10518134002, 10518134003, 10518134004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury, Dissolved	ug/L	<0.20	0.20	05/29/20 11:40	

LABORATORY CONTROL SAMPLE: 3627475

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury, Dissolved	ug/L	5	5.5	110	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3627476 3627477

Parameter	Units	10518134001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury, Dissolved	ug/L	<0.20	5	5	4.8	4.6	96	91	70-130	6	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: PRJ07913 Clay County Landfill
Pace Project No.: 10518134

QC Batch: 677739
QC Batch Method: EPA 200.8
Analysis Method: EPA 200.8
Analysis Description: 200.8 MET Dissolved
Laboratory: Pace Analytical Services - Minneapolis
Associated Lab Samples: 10518134001, 10518134002, 10518134003, 10518134004

METHOD BLANK: 3627458 Matrix: Water
Associated Lab Samples: 10518134001, 10518134002, 10518134003, 10518134004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Arsenic, Dissolved	ug/L	<0.50	0.50	06/03/20 23:46	
Barium, Dissolved	ug/L	<0.30	0.30	06/03/20 23:46	
Boron, Dissolved	ug/L	<10.0	10.0	06/03/20 23:46	
Cadmium, Dissolved	ug/L	<0.080	0.080	06/03/20 23:46	
Calcium, Dissolved	ug/L	<40.0	40.0	06/03/20 23:46	
Chromium, Dissolved	ug/L	<0.50	0.50	06/03/20 23:46	
Copper, Dissolved	ug/L	<1.0	1.0	06/03/20 23:46	
Iron, Dissolved	ug/L	<50.0	50.0	06/03/20 23:46	
Lead, Dissolved	ug/L	<0.10	0.10	06/03/20 23:46	
Magnesium, Dissolved	ug/L	<10.0	10.0	06/03/20 23:46	
Manganese, Dissolved	ug/L	<0.50	0.50	06/03/20 23:46	
Nickel, Dissolved	ug/L	<0.50	0.50	06/03/20 23:46	
Potassium, Dissolved	ug/L	<100	100	06/03/20 23:46	
Selenium, Dissolved	ug/L	<0.50	0.50	06/03/20 23:46	
Sodium, Dissolved	ug/L	<50.0	50.0	06/03/20 23:46	
Zinc, Dissolved	ug/L	<5.0	5.0	06/03/20 23:46	

LABORATORY CONTROL SAMPLE: 3627459

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic, Dissolved	ug/L	100	95.8	96	85-115	
Barium, Dissolved	ug/L	100	101	101	85-115	
Boron, Dissolved	ug/L	100	100	100	85-115	
Cadmium, Dissolved	ug/L	100	98.7	99	85-115	
Calcium, Dissolved	ug/L	2000	1950	97	85-115	
Chromium, Dissolved	ug/L	100	107	107	85-115	
Copper, Dissolved	ug/L	100	108	108	85-115	
Iron, Dissolved	ug/L	2000	2040	102	85-115	
Lead, Dissolved	ug/L	100	103	103	85-115	
Magnesium, Dissolved	ug/L	2000	2050	102	85-115	
Manganese, Dissolved	ug/L	100	100	100	85-115	
Nickel, Dissolved	ug/L	100	104	104	85-115	
Potassium, Dissolved	ug/L	2000	1950	98	85-115	
Selenium, Dissolved	ug/L	100	96.0	96	85-115	
Sodium, Dissolved	ug/L	2000	2020	101	85-115	
Zinc, Dissolved	ug/L	100	102	102	85-115	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: PRJ07913 Clay County Landfill
Pace Project No.: 10518134

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3627460 3627461

Parameter	Units	10518134001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Arsenic, Dissolved	ug/L	1.2	100	100	97.5	101	96	100	70-130	3	20	
Barium, Dissolved	ug/L	109	100	100	204	211	95	102	70-130	3	20	
Boron, Dissolved	ug/L	29.3	100	100	129	134	100	104	70-130	3	20	
Cadmium, Dissolved	ug/L	<0.080	100	100	95.9	100	96	100	70-130	5	20	
Calcium, Dissolved	ug/L	132000	2000	2000	135000	138000	146	300	70-130	2	20	E,P6
Chromium, Dissolved	ug/L	0.78	100	100	105	110	104	109	70-130	4	20	
Copper, Dissolved	ug/L	5.1	100	100	105	110	100	105	70-130	4	20	
Iron, Dissolved	ug/L	<50.0	2000	2000	2040	2120	101	105	70-130	4	20	
Lead, Dissolved	ug/L	<0.10	100	100	100	104	100	104	70-130	4	20	
Magnesium, Dissolved	ug/L	77000	2000	2000	78600	81000	80	201	70-130	3	20	E,P6
Manganese, Dissolved	ug/L	430	100	100	521	540	90	110	70-130	4	20	
Nickel, Dissolved	ug/L	1.1	100	100	97.2	100	96	99	70-130	3	20	
Potassium, Dissolved	ug/L	3890	2000	2000	6010	6100	106	110	70-130	1	20	
Selenium, Dissolved	ug/L	<0.50	100	100	102	104	102	104	70-130	2	20	
Sodium, Dissolved	ug/L	10400	2000	2000	12300	12600	91	107	70-130	3	20	
Zinc, Dissolved	ug/L	259	100	100	339	347	80	88	70-130	2	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: PRJ07913 Clay County Landfill
Pace Project No.: 10518134

QC Batch: 677028 | Analysis Method: EPA 8260B
QC Batch Method: EPA 8260B | Analysis Description: 8260B MSV LLW by SIMSCAN
Laboratory: Pace Analytical Services - Minneapolis
Associated Lab Samples: 10518134001, 10518134002, 10518134003, 10518134004

METHOD BLANK: 3624021 Matrix: Water
Associated Lab Samples: 10518134001, 10518134002, 10518134003, 10518134004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	<0.40	0.40	05/22/20 12:48	
1,1,1-Trichloroethane	ug/L	<0.40	0.40	05/22/20 12:48	
1,1,2,2-Tetrachloroethane	ug/L	<0.40	0.40	05/22/20 12:48	
1,1,2-Trichloroethane	ug/L	<0.40	0.40	05/22/20 12:48	
1,1,2-Trichlorotrifluoroethane	ug/L	<1.0	1.0	05/22/20 12:48	
1,1-Dichloroethane	ug/L	<0.40	0.40	05/22/20 12:48	
1,1-Dichloroethene	ug/L	<0.40	0.40	05/22/20 12:48	
1,1-Dichloropropene	ug/L	<0.40	0.40	05/22/20 12:48	
1,2,3-Trichlorobenzene	ug/L	<0.40	0.40	05/22/20 12:48	
1,2,3-Trichloropropane	ug/L	<0.010	0.010	05/26/20 11:12	
1,2,4-Trichlorobenzene	ug/L	<0.40	0.40	05/22/20 12:48	
1,2,4-Trimethylbenzene	ug/L	<1.0	1.0	05/22/20 12:48	
1,2-Dibromo-3-chloropropane	ug/L	<0.12	0.12	05/26/20 11:12	
1,2-Dibromoethane (EDB)	ug/L	<0.050	0.050	05/26/20 11:12	
1,2-Dichlorobenzene	ug/L	<0.40	0.40	05/22/20 12:48	
1,2-Dichloroethane	ug/L	<0.20	0.20	05/26/20 11:12	
1,2-Dichloropropane	ug/L	<0.40	0.40	05/22/20 12:48	
1,3,5-Trimethylbenzene	ug/L	<0.40	0.40	05/22/20 12:48	
1,3-Dichlorobenzene	ug/L	<0.40	0.40	05/22/20 12:48	
1,3-Dichloropropane	ug/L	<0.40	0.40	05/22/20 12:48	
1,4-Dichlorobenzene	ug/L	<0.40	0.40	05/22/20 12:48	
2,2-Dichloropropane	ug/L	<1.0	1.0	05/22/20 12:48	
2-Butanone (MEK)	ug/L	<5.0	5.0	05/22/20 12:48	
2-Chlorotoluene	ug/L	<0.40	0.40	05/22/20 12:48	
4-Chlorotoluene	ug/L	<0.40	0.40	05/22/20 12:48	
4-Methyl-2-pentanone (MIBK)	ug/L	<5.0	5.0	05/22/20 12:48	
Acetone	ug/L	<20.0	20.0	05/22/20 12:48	
Allyl chloride	ug/L	<4.0	4.0	05/22/20 12:48	
Benzene	ug/L	<0.20	0.20	05/22/20 12:48	
Bromobenzene	ug/L	<0.40	0.40	05/22/20 12:48	
Bromochloromethane	ug/L	<1.0	1.0	05/22/20 12:48	
Bromodichloromethane	ug/L	<0.40	0.40	05/22/20 12:48	
Bromoform	ug/L	<1.0	1.0	05/22/20 12:48	
Bromomethane	ug/L	<1.0	1.0	05/22/20 12:48	
Carbon tetrachloride	ug/L	<0.050	0.050	05/26/20 11:12	
Chlorobenzene	ug/L	<0.40	0.40	05/22/20 12:48	
Chloroethane	ug/L	<1.0	1.0	05/22/20 12:48	
Chloroform	ug/L	<1.0	1.0	05/22/20 12:48	
Chloromethane	ug/L	<1.0	1.0	05/22/20 12:48	
cis-1,2-Dichloroethene	ug/L	<0.40	0.40	05/22/20 12:48	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: PRJ07913 Clay County Landfill
Pace Project No.: 10518134

METHOD BLANK: 3624021 Matrix: Water
Associated Lab Samples: 10518134001, 10518134002, 10518134003, 10518134004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
cis-1,3-Dichloropropene	ug/L	<0.40	0.40	05/26/20 11:12	
Dibromochloromethane	ug/L	<0.40	0.40	05/26/20 11:12	
Dibromomethane	ug/L	<1.0	1.0	05/22/20 12:48	
Dichlorodifluoromethane	ug/L	<1.0	1.0	05/22/20 12:48	
Dichlorofluoromethane	ug/L	<1.0	1.0	05/22/20 12:48	
Diethyl ether (Ethyl ether)	ug/L	<4.0	4.0	05/22/20 12:48	
Ethylbenzene	ug/L	<0.40	0.40	05/22/20 12:48	
Hexachloro-1,3-butadiene	ug/L	<0.10	0.10	05/26/20 11:12	
Isopropylbenzene (Cumene)	ug/L	<0.40	0.40	05/22/20 12:48	
m&p-Xylene	ug/L	<0.80	0.80	05/22/20 12:48	
Methyl-tert-butyl ether	ug/L	<0.40	0.40	05/22/20 12:48	
Methylene Chloride	ug/L	<1.0	1.0	05/22/20 12:48	
n-Butylbenzene	ug/L	<0.40	0.40	05/22/20 12:48	
n-Propylbenzene	ug/L	<0.40	0.40	05/22/20 12:48	
Naphthalene	ug/L	<1.0	1.0	05/22/20 12:48	
o-Xylene	ug/L	<0.40	0.40	05/22/20 12:48	
p-Isopropyltoluene	ug/L	<0.40	0.40	05/22/20 12:48	
sec-Butylbenzene	ug/L	<0.40	0.40	05/22/20 12:48	
Styrene	ug/L	<0.40	0.40	05/22/20 12:48	
tert-Butylbenzene	ug/L	<0.40	0.40	05/22/20 12:48	
Tetrachloroethene	ug/L	<0.40	0.40	05/22/20 12:48	
Tetrahydrofuran	ug/L	<10.0	10.0	05/22/20 12:48	
Toluene	ug/L	<0.40	0.40	05/22/20 12:48	
trans-1,2-Dichloroethene	ug/L	<0.40	0.40	05/22/20 12:48	
trans-1,3-Dichloropropene	ug/L	<0.40	0.40	05/26/20 11:12	
Trichloroethene	ug/L	<0.050	0.050	05/26/20 11:12	
Trichlorofluoromethane	ug/L	<0.40	0.40	05/22/20 12:48	
Vinyl chloride	ug/L	<0.050	0.050	05/26/20 11:12	
Xylene (Total)	ug/L	<1.2	1.2	05/22/20 12:48	
1,2-Dichloroethane-d4 (S)	%.	104	75-128	05/22/20 12:48	
1,2-Dichloroethane-d4 (S)	%.	104	75-128	05/26/20 11:12	
4-Bromofluorobenzene (S)	%.	99	75-125	05/22/20 12:48	
Toluene-d8 (S)	%.	100	75-125	05/22/20 12:48	
Toluene-d8 (S)	%.	100	75-125	05/26/20 11:12	

LABORATORY CONTROL SAMPLE: 3624022

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	10	10.6	106	75-125	
1,1,1-Trichloroethane	ug/L	10	9.9	99	68-131	
1,1,2,2-Tetrachloroethane	ug/L	10	8.9	89	71-125	
1,1,2-Trichloroethane	ug/L	10	10	100	75-125	
1,1,2-Trichlorotrifluoroethane	ug/L	10	10	100	71-125	
1,1-Dichloroethane	ug/L	10	8.4	84	71-125	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: PRJ07913 Clay County Landfill
Pace Project No.: 10518134

LABORATORY CONTROL SAMPLE: 3624022

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1-Dichloroethene	ug/L	10	9.2	92	66-126	
1,1-Dichloropropene	ug/L	10	8.7	87	58-134	
1,2,3-Trichlorobenzene	ug/L	10	9.8	98	71-125	
1,2,3-Trichloropropane	ug/L	1	1.1	110	75-125	
1,2,4-Trichlorobenzene	ug/L	10	9.5	95	72-125	
1,2,4-Trimethylbenzene	ug/L	10	10.3	103	75-125	
1,2-Dibromo-3-chloropropane	ug/L	2.5	2.7	107	71-125	
1,2-Dibromoethane (EDB)	ug/L	1	1.1	110	71-125	
1,2-Dichlorobenzene	ug/L	10	10.1	101	75-125	
1,2-Dichloroethane	ug/L	1	1.1	115	75-131	
1,2-Dichloropropane	ug/L	10	9.1	91	73-125	
1,3,5-Trimethylbenzene	ug/L	10	10.2	102	75-125	
1,3-Dichlorobenzene	ug/L	10	10.4	104	75-125	
1,3-Dichloropropane	ug/L	10	9.0	90	75-125	
1,4-Dichlorobenzene	ug/L	10	9.2	92	75-125	
2,2-Dichloropropane	ug/L	10	10.3	103	57-144	
2-Butanone (MEK)	ug/L	50	40.9	82	51-144	
2-Chlorotoluene	ug/L	10	10.1	101	75-125	
4-Chlorotoluene	ug/L	10	10.3	103	75-125	
4-Methyl-2-pentanone (MIBK)	ug/L	50	44.6	89	72-125	
Acetone	ug/L	50	37.4	75	34-150	
Allyl chloride	ug/L	10	8.0	80	58-132	
Benzene	ug/L	10	8.7	87	70-125	
Bromobenzene	ug/L	10	8.8	88	75-125	
Bromochloromethane	ug/L	10	10.1	101	72-126	
Bromodichloromethane	ug/L	10	9.6	96	73-128	
Bromoform	ug/L	10	10	100	70-125	
Bromomethane	ug/L	10	8.9	89	31-150	SS
Carbon tetrachloride	ug/L	1	1.2	122	68-136	CH
Chlorobenzene	ug/L	10	9.9	99	75-125	
Chloroethane	ug/L	10	8.5	85	70-128	
Chloroform	ug/L	10	9.7	97	72-125	
Chloromethane	ug/L	10	8.2	82	63-129	
cis-1,2-Dichloroethene	ug/L	10	9.0	90	69-128	
cis-1,3-Dichloropropene	ug/L	1	1.1	111	71-125	
Dibromochloromethane	ug/L	1	1.1	108	71-125	
Dibromomethane	ug/L	10	9.7	97	74-130	
Dichlorodifluoromethane	ug/L	10	8.8	88	65-134	
Dichlorofluoromethane	ug/L	10	9.2	92	74-125	
Diethyl ether (Ethyl ether)	ug/L	10	8.1	81	64-126	
Ethylbenzene	ug/L	10	9.6	96	75-125	
Hexachloro-1,3-butadiene	ug/L	1	1.1	113	65-133	
Isopropylbenzene (Cumene)	ug/L	10	11.3	113	75-125	
m&p-Xylene	ug/L	20	19.7	99	75-125	
Methyl-tert-butyl ether	ug/L	10	8.7	87	68-125	
Methylene Chloride	ug/L	10	9.4	94	69-125	
n-Butylbenzene	ug/L	10	9.9	99	75-125	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: PRJ07913 Clay County Landfill
Pace Project No.: 10518134

LABORATORY CONTROL SAMPLE: 3624022

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
n-Propylbenzene	ug/L	10	9.6	96	74-125	
Naphthalene	ug/L	10	9.4	94	66-125	
o-Xylene	ug/L	10	9.2	92	75-125	
p-Isopropyltoluene	ug/L	10	10.7	107	75-125	
sec-Butylbenzene	ug/L	10	10.5	105	75-125	
Styrene	ug/L	10	10.0	100	75-125	
tert-Butylbenzene	ug/L	10	9.9	99	75-125	
Tetrachloroethene	ug/L	10	9.7	97	75-125	
Tetrahydrofuran	ug/L	100	85.7	86	55-139	
Toluene	ug/L	10	8.7	87	75-125	
trans-1,2-Dichloroethene	ug/L	10	8.8	88	67-127	
trans-1,3-Dichloropropene	ug/L	1	1.1	109	70-125	
Trichloroethene	ug/L	1	1.1	110	69-125	
Trichlorofluoromethane	ug/L	10	10.3	103	70-131	
Vinyl chloride	ug/L	1	0.95	95	68-132	
Xylene (Total)	ug/L	30	28.9	96	75-125	
1,2-Dichloroethane-d4 (S)	%.			100	75-128	
1,2-Dichloroethane-d4 (S)	%.			98	75-128	
4-Bromofluorobenzene (S)	%.			97	75-125	
Toluene-d8 (S)	%.			97	75-125	
Toluene-d8 (S)	%.			98	75-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3624023 3624024

Parameter	Units	10518134001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,1,2-Tetrachloroethane	ug/L	<0.40	10	10	12.0	12.3	120	123	75-125	3	30	
1,1,1-Trichloroethane	ug/L	<0.40	10	10	11.9	11.7	119	117	65-148	2	30	
1,1,2,2-Tetrachloroethane	ug/L	<0.40	10	10	9.7	10	97	100	72-125	3	30	
1,1,2-Trichloroethane	ug/L	<0.40	10	10	11.0	11.0	110	110	75-125	1	30	
1,1,2-Trichlorotrifluoroethane	ug/L	<1.0	10	10	11.9	12.2	119	122	75-145	2	30	
1,1-Dichloroethane	ug/L	<0.40	10	10	10.2	10.4	102	104	73-136	2	30	
1,1-Dichloroethene	ug/L	<0.40	10	10	11.0	11.3	110	113	69-138	3	30	
1,1-Dichloropropene	ug/L	<0.40	10	10	11.5	11.3	115	113	60-150	2	30	
1,2,3-Trichlorobenzene	ug/L	<0.40	10	10	10.4	10.6	104	106	67-135	2	30	
1,2,3-Trichloropropane	ug/L	<0.010	1	1	1.2	1.1	117	109	49-150	7	30	
1,2,4-Trichlorobenzene	ug/L	<0.40	10	10	10.4	10.6	104	106	68-133	2	30	
1,2,4-Trimethylbenzene	ug/L	<1.0	10	10	11.4	11.5	114	115	75-135	1	30	
1,2-Dibromo-3-chloropropane	ug/L	<0.12	2.5	2.5	2.8	2.6	113	105	53-150	7	30	
1,2-Dibromoethane (EDB)	ug/L	<0.050	1	1	1.2	1.1	119	111	49-150	7	30	
1,2-Dichlorobenzene	ug/L	<0.40	10	10	10.9	10.9	109	109	75-125	1	30	
1,2-Dichloroethane	ug/L	<0.20	1	1	1.3	1.2	126	118	42-150	7	30	
1,2-Dichloropropane	ug/L	<0.40	10	10	10.1	10.2	101	102	71-125	0	30	
1,3,5-Trimethylbenzene	ug/L	<0.40	10	10	11.4	11.1	114	111	75-129	3	30	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: PRJ07913 Clay County Landfill
Pace Project No.: 10518134

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3624023 3624024

Parameter	Units	10518134001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,3-Dichlorobenzene	ug/L	<0.40	10	10	11.2	11.3	112	113	75-125	1	30	
1,3-Dichloropropane	ug/L	<0.40	10	10	10.2	10.3	102	103	75-125	1	30	
1,4-Dichlorobenzene	ug/L	<0.40	10	10	10.8	10.9	108	109	75-125	1	30	
2,2-Dichloropropane	ug/L	<1.0	10	10	11.7	11.7	117	117	67-150	0	30	
2-Butanone (MEK)	ug/L	<5.0	50	50	44.4	46.9	89	94	49-138	5	30	
2-Chlorotoluene	ug/L	<0.40	10	10	11.4	11.4	114	114	75-130	0	30	
4-Chlorotoluene	ug/L	<0.40	10	10	11.9	12.0	119	120	75-133	1	30	
4-Methyl-2-pentanone (MIBK)	ug/L	<5.0	50	50	50.1	51.7	100	103	75-126	3	30	
Acetone	ug/L	<20.0	50	50	40.9	42.5	82	85	51-125	4	30	
Allyl chloride	ug/L	<4.0	10	10	9.4	10.1	94	101	50-150	7	30	
Benzene	ug/L	<0.20	10	10	10.4	10.4	104	104	68-129	0	30	
Bromobenzene	ug/L	<0.40	10	10	10.1	10.3	101	103	75-125	3	30	
Bromochloromethane	ug/L	<1.0	10	10	11.2	11.2	112	112	73-132	1	30	
Bromodichloromethane	ug/L	<0.40	10	10	10.9	10.6	109	106	75-127	3	30	
Bromoform	ug/L	<1.0	10	10	10.2	10.4	102	104	71-125	2	30	
Bromomethane	ug/L	<1.0	10	10	10.9	11.2	109	112	30-150	3	30	SS
Carbon tetrachloride	ug/L	<0.050	1	1	1.5	1.3	145	135	30-150	8	30	CH
Chlorobenzene	ug/L	<0.40	10	10	11.0	11.1	110	111	75-125	1	30	
Chloroethane	ug/L	<1.0	10	10	9.8	9.6	98	96	68-141	2	30	
Chloroform	ug/L	<1.0	10	10	11.1	11.1	111	111	61-129	0	30	
Chloromethane	ug/L	<1.0	10	10	9.5	9.7	95	97	46-150	3	30	
cis-1,2-Dichloroethene	ug/L	<0.40	10	10	10.6	10.8	106	108	68-142	2	30	
cis-1,3-Dichloropropene	ug/L	<0.40	1	1	1.2	1.1	115	106	48-150	8	30	
Dibromochloromethane	ug/L	<0.40	1	1	1.2	1.1	115	107	50-150	8	30	
Dibromomethane	ug/L	<1.0	10	10	11.2	10.4	112	104	69-137	7	30	
Dichlorodifluoromethane	ug/L	<1.0	10	10	11.2	10.7	112	107	68-150	4	30	
Dichlorofluoromethane	ug/L	<1.0	10	10	10.1	10.1	101	101	73-135	0	30	
Diethyl ether (Ethyl ether)	ug/L	<4.0	10	10	9.2	10.0	92	100	61-128	8	30	
Ethylbenzene	ug/L	<0.40	10	10	11.3	11.3	113	113	75-131	0	30	
Hexachloro-1,3-butadiene	ug/L	<0.10	1	1	1.2	1.2	124	116	40-150	6	30	
Isopropylbenzene (Cumene)	ug/L	<0.40	10	10	13.6	13.7	136	137	75-133	1	30	M1
m&p-Xylene	ug/L	<0.80	20	20	23.7	23.7	118	119	75-135	0	30	
Methyl-tert-butyl ether	ug/L	<0.40	10	10	9.9	10.5	99	105	67-126	6	30	
Methylene Chloride	ug/L	<1.0	10	10	10.3	10.4	103	104	61-137	1	30	
n-Butylbenzene	ug/L	<0.40	10	10	11.7	11.9	117	119	75-136	2	30	
n-Propylbenzene	ug/L	<0.40	10	10	11.3	11.3	113	113	75-139	0	30	
Naphthalene	ug/L	<1.0	10	10	10.4	10.7	104	107	64-127	3	30	
o-Xylene	ug/L	<0.40	10	10	11.1	11.3	111	113	75-127	1	30	
p-Isopropyltoluene	ug/L	<0.40	10	10	12.3	12.2	123	122	75-135	1	30	
sec-Butylbenzene	ug/L	<0.40	10	10	12.3	12.4	123	124	75-141	1	30	
Styrene	ug/L	<0.40	10	10	10.9	10.8	109	108	75-125	1	30	
tert-Butylbenzene	ug/L	<0.40	10	10	11.7	11.9	117	119	75-141	2	30	
Tetrachloroethene	ug/L	<0.40	10	10	11.4	11.3	114	113	75-135	1	30	
Tetrahydrofuran	ug/L	<10.0	100	100	94.9	100	95	100	45-145	5	30	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: PRJ07913 Clay County Landfill
Pace Project No.: 10518134

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3624023 3624024

Parameter	Units	10518134001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Toluene	ug/L	<0.40	10	10	10.0	10.1	100	101	74-125	1	30	
trans-1,2-Dichloroethene	ug/L	<0.40	10	10	10.8	11.3	108	113	68-137	5	30	
trans-1,3-Dichloropropene	ug/L	<0.40	1	1	1.2	1.1	115	106	50-150	9	30	
Trichloroethene	ug/L	<0.050	1	1	1.2	1.1	124	115	41-150	8	30	
Trichlorofluoromethane	ug/L	<0.40	10	10	11.6	10.9	116	109	72-150	6	30	
Vinyl chloride	ug/L	<0.050	1	1	1.2	1.1	118	115	30-150	3	30	
Xylene (Total)	ug/L	<1.2	30	30	34.8	35.0	116	117	75-131	1	30	
1,2-Dichloroethane-d4 (S)	%.						97	94	75-128			
1,2-Dichloroethane-d4 (S)	%.						102	94	75-128			
1,2-Dichloroethane-d4 (S)	%.						102	102	75-128			
1,2-Dichloroethane-d4 (S)	%.						97	102	75-128			
4-Bromofluorobenzene (S)	%.						95	96	75-125			
Toluene-d8 (S)	%.						95	95	75-125			
Toluene-d8 (S)	%.						93	95	75-125			
Toluene-d8 (S)	%.						93	96	75-125			
Toluene-d8 (S)	%.						95	96	75-125			

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: PRJ07913 Clay County Landfill
Pace Project No.: 10518134

QC Batch: 677074 | Analysis Method: SM 2320B
QC Batch Method: SM 2320B | Analysis Description: 2320B Alkalinity
Laboratory: Pace Analytical Services - Minneapolis
Associated Lab Samples: 10518134001, 10518134002, 10518134003, 10518134004

METHOD BLANK: 3624483 Matrix: Water
Associated Lab Samples: 10518134001, 10518134002, 10518134003, 10518134004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	<5.0	5.0	05/27/20 14:52	

LABORATORY CONTROL SAMPLE & LCSD: 3624484 3624485

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	40	42.6	42.5	106	106	90-110	0	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3624486 3624487

Parameter	Units	10518199005 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO3	mg/L	158	40	40	201	206	107	120	80-120	3	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3624488 3624489

Parameter	Units	10518134001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO3	mg/L	273	40	40	317	319	109	115	80-120	1	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: PRJ07913 Clay County Landfill
Pace Project No.: 10518134

QC Batch: 676583 | Analysis Method: SM 2540C
QC Batch Method: SM 2540C | Analysis Description: 2540C Total Dissolved Solids
Laboratory: Pace Analytical Services - Minneapolis
Associated Lab Samples: 10518134001, 10518134002, 10518134003, 10518134004

METHOD BLANK: 3621992 Matrix: Water
Associated Lab Samples: 10518134001, 10518134002, 10518134003, 10518134004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<10.0	10.0	05/28/20 13:40	H5

LABORATORY CONTROL SAMPLE: 3621993

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	988	99	80-120	H5

SAMPLE DUPLICATE: 3621994

Parameter	Units	10518134001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	676	670	1	5	H5

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: PRJ07913 Clay County Landfill
Pace Project No.: 10518134

QC Batch: 676584 | Analysis Method: SM 2540D
QC Batch Method: SM 2540D | Analysis Description: 2540D Total Suspended Solids
Laboratory: Pace Analytical Services - Minneapolis
Associated Lab Samples: 10518134001, 10518134002, 10518134003, 10518134004

METHOD BLANK: 3621995 Matrix: Water
Associated Lab Samples: 10518134001, 10518134002, 10518134003, 10518134004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Suspended Solids	mg/L	<10.0	10.0	05/21/20 11:28	

LABORATORY CONTROL SAMPLE: 3621996

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Suspended Solids	mg/L	100	88.0	88	80-120	

SAMPLE DUPLICATE: 3621997

Parameter	Units	10518134001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	10.0	11.0	10	5	D6

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: PRJ07913 Clay County Landfill
Pace Project No.: 10518134

QC Batch: 678206
QC Batch Method: SM 4500-H+B
Analysis Method: SM 4500-H+B
Analysis Description: 4500H+B pH
Laboratory: Pace Analytical Services - Minneapolis
Associated Lab Samples: 10518134001, 10518134002, 10518134003, 10518134004

LABORATORY CONTROL SAMPLE: 3629814

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
pH at 25 Degrees C	Std. Units	5	5.0	100	98-102	H6

SAMPLE DUPLICATE: 3629815

Parameter	Units	10518134001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	7.5	7.5	1	3	H6

SAMPLE DUPLICATE: 3629816

Parameter	Units	10518199005 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	8.0	8.0	0	3	H6

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: PRJ07913 Clay County Landfill
Pace Project No.: 10518134

QC Batch: 678502 | Analysis Method: SM 2510
QC Batch Method: SM 2510 | Analysis Description: SM2510 Specific Conductance
Laboratory: Pace Analytical Services - Minneapolis
Associated Lab Samples: 10518134001, 10518134002, 10518134003, 10518134004

METHOD BLANK: 3631181 Matrix: Water
Associated Lab Samples: 10518134001, 10518134002, 10518134003, 10518134004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Specific Conductance	umhos/cm	<1.0	1.0	06/01/20 19:50	

LABORATORY CONTROL SAMPLE: 3631182

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Specific Conductance	umhos/cm	1000	961	96	90-110	

SAMPLE DUPLICATE: 3631183

Parameter	Units	10518134001 Result	Dup Result	RPD	Max RPD	Qualifiers
Specific Conductance	umhos/cm	936	939	0	20	

SAMPLE DUPLICATE: 3631184

Parameter	Units	10518134002 Result	Dup Result	RPD	Max RPD	Qualifiers
Specific Conductance	umhos/cm	501	495	1	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: PRJ07913 Clay County Landfill
Pace Project No.: 10518134

QC Batch: 677800 | Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 | Analysis Description: 300.0 IC Anions
Laboratory: Pace Analytical Services - Minneapolis
Associated Lab Samples: 10518134001, 10518134002, 10518134003, 10518134004

METHOD BLANK: 3627664 Matrix: Water
Associated Lab Samples: 10518134001, 10518134002, 10518134003, 10518134004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/L	<1.2	1.2	05/29/20 23:01	
Sulfate	mg/L	<1.2	1.2	05/29/20 23:01	

LABORATORY CONTROL SAMPLE: 3627665

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	12.5	11.9	95	90-110	
Sulfate	mg/L	12.5	12.0	96	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3627666 3627667

Parameter	Units	10518134001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	29.4	12.5	12.5	35.4	35.8	48	51	90-110	1	20	M1
Sulfate	mg/L	163	125	125	282	283	96	96	90-110	0	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3627668 3627669

Parameter	Units	10518134002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	<1.2	12.5	12.5	10.6	10.7	81	82	90-110	0	20	M1
Sulfate	mg/L	<1.2	12.5	12.5	11.3	11.3	83	84	90-110	1	20	M1

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: PRJ07913 Clay County Landfill
Pace Project No.: 10518134

QC Batch: 677278 | Analysis Method: EPA 350.1
QC Batch Method: EPA 350.1 | Analysis Description: 350.1 Ammonia
Laboratory: Pace Analytical Services - Minneapolis
Associated Lab Samples: 10518134001, 10518134002, 10518134003, 10518134004

METHOD BLANK: 3625420 Matrix: Water
Associated Lab Samples: 10518134001, 10518134002, 10518134003, 10518134004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, Ammonia	mg/L	<0.10	0.10	05/26/20 14:13	

LABORATORY CONTROL SAMPLE: 3625421

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	2.5	2.4	97	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3625422 3625423

Parameter	Units	10518439001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, Ammonia	mg/L	ND	2.5	2.5	2.6	2.5	104	101	90-110	3	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3625424 3625425

Parameter	Units	10518134001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, Ammonia	mg/L	<0.10	2.5	2.5	2.6	2.5	104	98	90-110	6	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: PRJ07913 Clay County Landfill
Pace Project No.: 10518134

QC Batch: 677064
QC Batch Method: EPA 353.2
Analysis Method: EPA 353.2
Analysis Description: 353.2 Nitrate + Nitrite, preserved
Laboratory: Pace Analytical Services - Minneapolis
Associated Lab Samples: 10518134002, 10518134003

METHOD BLANK: 3624364 Matrix: Water
Associated Lab Samples: 10518134002, 10518134003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	<0.10	0.10	05/22/20 17:07	

LABORATORY CONTROL SAMPLE: 3624365

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	1	1.1	106	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3624366 3624367

Parameter	Units	10517973002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, NO2 plus NO3	mg/L	0.52	1	1	1.7	1.7	116	116	90-110	1	20	M1

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: PRJ07913 Clay County Landfill
Pace Project No.: 10518134

QC Batch: 678234
QC Batch Method: EPA 353.2
Analysis Method: EPA 353.2
Analysis Description: 353.2 Nitrate + Nitrite, preserved
Laboratory: Pace Analytical Services - Minneapolis
Associated Lab Samples: 10518134001, 10518134004

METHOD BLANK: 3630111 Matrix: Water
Associated Lab Samples: 10518134001, 10518134004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	<0.10	0.10	05/30/20 12:01	FS

LABORATORY CONTROL SAMPLE: 3630112

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	1	1.1	108	90-110	FS

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3630113 3630114

Parameter	Units	10518134001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, NO2 plus NO3	mg/L	<0.10	1	1	1.0	0.96	104	96	90-110	8	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3630115 3630116

Parameter	Units	40208441001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, NO2 plus NO3	mg/L	18.7	10	10	29.0	31.1	103	124	90-110	7	20	E,M6

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALIFIERS

Project: PRJ07913 Clay County Landfill
Pace Project No.: 10518134

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

1M	Due to required dilutions on anion and/or cation analysis, the cation anion balance calculation resulted in a non-balance state.
CH	The continuing calibration for this compound is outside of Pace Analytical acceptance limits. The results may be biased high.
D6	The precision between the sample and sample duplicate exceeded laboratory control limits.
E	Analyte concentration exceeded the calibration range. The reported result is estimated.
FS	The sample was filtered in the laboratory prior to analysis.
H5	Reanalysis conducted in excess of EPA method holding time. Results confirm original analysis performed in hold time.
H6	Analysis initiated outside of the 15 minute EPA required holding time.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
M6	Matrix spike and Matrix spike duplicate recovery not evaluated against control limits due to sample dilution.
N2	The lab does not hold NELAC/TNI accreditation for this parameter but other accreditations/certifications may apply. A complete list of accreditations/certifications is available upon request.
P6	Matrix spike recovery was outside laboratory control limits due to a parent sample concentration notably higher than the spike level.
SS	This analyte did not meet the secondary source verification criteria for the initial calibration. The reported result should be considered an estimated value.

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: PRJ07913 Clay County Landfill
Pace Project No.: 10518134

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10518134001	**Deutcher**	EPA 200.8	677739	EPA 200.8	678047
10518134002	**Benesch**	EPA 200.8	677739	EPA 200.8	678047
10518134003	**J. Ekre**	EPA 200.8	677739	EPA 200.8	678047
10518134004	**Dup-3**	EPA 200.8	677739	EPA 200.8	678047
10518134001	**Deutcher**	SM 1030E	677610		
10518134002	**Benesch**	SM 1030E	677610		
10518134003	**J. Ekre**	SM 1030E	677610		
10518134004	**Dup-3**	SM 1030E	677610		
10518134001	**Deutcher**	EPA 245.1	677743	EPA 245.1	678126
10518134002	**Benesch**	EPA 245.1	677743	EPA 245.1	678126
10518134003	**J. Ekre**	EPA 245.1	677743	EPA 245.1	678126
10518134004	**Dup-3**	EPA 245.1	677743	EPA 245.1	678126
10518134001	**Deutcher**	EPA 8260B	677028		
10518134002	**Benesch**	EPA 8260B	677028		
10518134003	**J. Ekre**	EPA 8260B	677028		
10518134004	**Dup-3**	EPA 8260B	677028		
10518134001	**Deutcher**	SM 2320B	677074		
10518134002	**Benesch**	SM 2320B	677074		
10518134003	**J. Ekre**	SM 2320B	677074		
10518134004	**Dup-3**	SM 2320B	677074		
10518134001	**Deutcher**	SM 2540C	676583		
10518134002	**Benesch**	SM 2540C	676583		
10518134003	**J. Ekre**	SM 2540C	676583		
10518134004	**Dup-3**	SM 2540C	676583		
10518134001	**Deutcher**	SM 2540D	676584		
10518134002	**Benesch**	SM 2540D	676584		
10518134003	**J. Ekre**	SM 2540D	676584		
10518134004	**Dup-3**	SM 2540D	676584		
10518134001	**Deutcher**	SM 4500-H+B	678206		
10518134002	**Benesch**	SM 4500-H+B	678206		
10518134003	**J. Ekre**	SM 4500-H+B	678206		
10518134004	**Dup-3**	SM 4500-H+B	678206		
10518134001	**Deutcher**	SM 2510	678502		
10518134002	**Benesch**	SM 2510	678502		
10518134003	**J. Ekre**	SM 2510	678502		
10518134004	**Dup-3**	SM 2510	678502		
10518134001	**Deutcher**	EPA 300.0	677800		
10518134002	**Benesch**	EPA 300.0	677800		
10518134003	**J. Ekre**	EPA 300.0	677800		
10518134004	**Dup-3**	EPA 300.0	677800		
10518134001	**Deutcher**	EPA 350.1	677278		
10518134002	**Benesch**	EPA 350.1	677278		
10518134003	**J. Ekre**	EPA 350.1	677278		
10518134004	**Dup-3**	EPA 350.1	677278		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: PRJ07913 Clay County Landfill
Pace Project No.: 10518134

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10518134001	**Deutcher**	EPA 353.2	678234		
10518134002	**Benesch**	EPA 353.2	677064		
10518134003	**J. Ekre**	EPA 353.2	677064		
10518134004	**Dup-3**	EPA 353.2	678234		

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Minnesota Pollution Control Agency

MPCA Chain-of-Custody Form revision 2017.0328

* indicates a required field

Work Order Number: | COC Type: Standard | Page: 1 of 1

Turnaround Time: Standard | COC ID: 33549 line8

FOR LAB USE ONLY

PROJECT/CLIENT INFO

Facility Code:* SW-34 | Program Code (MDH Lab Only):

Project Name:* Clay County Sanitary Landfill - Spring 2020 Compliance W | Project Task Code:* PRJ07913

Project Manager: Andrew Feia

Potential Hazard? No | If yes, add information to **Sampler Comments** field

LABORATORY

Lab Name: Pace Analytical Services, LLC

Address: 1700 Elm Street SE

Minneapolis, MN 55414

EPA Lab ID:*

Lab Work Order Sticker

SAMPLE DETAILS

SAMPLE TYPES
Sample=Routine Sample
QC-FB=Field Blank Sample
QC-FR=Field Replicate Sample
QC-TB=Trip Blank Sample
QC-EB=Equipment Blank
Treated-Mid=Treatment system sample
Treated-Post=Treatment system sample

SAMPLING METHODS
G=Grab sample
CT=Composite, time-paced w/AS
CF=Composite w/AS
D-T=Discrete,time-paced w/AS
D-F=Discrete,flow-paced w/AS
SW-GAS=Gas Sampling
Unknown=Unknown

LAB MATRICES
DW=Drinking Water
NW=Nonpotable Water
SD=Soil/Solid
AR=Air
BL=Biological Material
OT=Other
TS=Tissue

FIELD MATRICES
Wtr-Ground=Groundwater
Wtr-Surf=Surface Water
Wtr-Drink=Drinking Water
QC-BLANK=Artificial Blank Water
Leachate=Leachate Sample
Air-Indoor=Indoor Air
Gas-Soil=Soil Gas

ANALYSIS REQUESTED

MN Location Identifier*	Field Name	Sample Type*	Start Date* (mm/dd/yyyy)	Start Time* 24 hr (hh:mm)	Depth Start	Depth End	Depth Units (m or ft.)	Sampling Method*	Complete ONLY if Method is CT, CF, D-T, or D-F: End Date (mm/dd/yyyy)	Complete ONLY if Method is CT, CF, D-T, or D-F: End Time 24 hr (hh:mm)	Lab Matrix*	Field Matrix*	AIS	Sampler Comments (filter volume, special handling, etc.)	# of Cont	ANALYSIS*	PRESERV: HCL	None	H2S04	None			Lab Sample No.	#
																FF	N	N	N	N				
ZW00200	Deutcher	Sample	5/14/2020	11:33				G			NW	WTR-Ground		lab to filter for metals, not preserved	12		x	x	x	x			001	1
	Benesch	Sample	5/14/2020	12:20				G			NW	WTR-Ground		lab to filter for metals, not preserved	12		x	x	x	x			002	2
	J. Ekre	Sample	5/14/2020	13:02				G			NW	WTR-Ground		lab to filter for metals, not preserved	12		x	x	x	x			003	3
QC-BLANK	Dup-3	QC-FR	5/14/2020	-				G			NW	WTR-Ground		lab to filter for metals, not preserved	12		x	x	x	x			004	4
QC-BLANK	Deutcher (MS/MD)	QC-FR	5/14/2020	11:33				G			NW	WTR-Ground		lab to filter for metals, not preserved	12		x	x	x	x			001	5
																								6
																								7
																								8
																								9
																								10

ANALYSIS*: List 1-VOCs (Attached); List 2-Dissolved Metals (Attached); List 2-Inorganics (Attached); List 4-pH, Specific Conductance

WO#: 10518134

10518134

Sampler's Name:* Christina Lammers | **Phone#:** 701-893-2327

Sampler's Signature:* Christina Lammers

Sampler's Organization: Wenck Associates, Inc.

Billing Organization: Clay County - Kirk Rosenberger | **Acct#:** 10-115155

Address: 807 11th Street North, Moorhead, MN 56560

Courier Name: Speedee | **Tracking#:**

Receiving Comments:

Relinquished By/Affiliation	Date/Time	Accepted By/Affiliation	Date/Time
(Sampler) /Wenck	5/14 14:30		5/15/20 1215

T=5.0

Pace Analytical®	Document Name: **Sample Condition Upon Receipt (SCUR) - MN**	Document Revised: 27Mar2020 **Page 1 of 1**
	Document No.: **ENV-FRM-MIN4-0150 Rev.00**	Pace Analytical Services - **Minneapolis**

Sample Condition Upon Receipt **Client Name:** Wenck **Project #:** **WO#: 10518134**

PM: AKA Due Date: 06/01/20
CLIENT: WENCK-ND

Courier: ☐Fed Ex ☐UPS ☐USPS ☐Client ☐Pace ☒SpeeDee ☐Commercial **See Exceptions** ☒

Tracking Number:

Custody Seal on Cooler/Box Present? ☒Yes ☐No **Seals Intact?** ☒Yes ☐No **Biological Tissue Frozen?** ☐Yes ☐No ☒N/A

Packing Material: ☐Bubble Wrap ☐Bubble Bags ☐None ☐Other: **Temp Blank?** ☐Yes ☒No

Thermometer: ☐T1(0461) ☒T2(1336) ☐T3(0459) ☐T4(0254) ☐T5(0489) **Type of Ice:** ☒Wet ☐Blue ☐None ☐Dry ☐Melted

Did Samples Originate in West Virginia? ☐Yes ☒No **Were All Container Temps Taken?** ☐Yes ☐No ☒N/A

Temp should be above freezing to 6°C **Cooler Temp Read w/temp blank:** °C **Average Corrected Temp (no temp blank only):** ☒See Exceptions ☐1 Container

Correction Factor: -0.1 **Cooler Temp Corrected w/temp blank:** °C 5.0 °C

USDA Regulated Soil: (☒N/A, water sample/Other:) **Date/Initials of Person Examining Contents:** 8/5/18/20

Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA. MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? ☐Yes ☐No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐Yes ☐No

If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.

				COMMENTS:
Chain of Custody Present and Filled Out?	☒Yes	☐No		1.
Chain of Custody Relinquished?	☒Yes	☐No		2.
Sampler Name and/or Signature on COC?	☒Yes	☐No	☐N/A	3.
Samples Arrived within Hold Time?	☒Yes	☐No		4.
Short Hold Time Analysis (<72 hr)?	☒Yes	☐No		5. ☐Fecal Coliform ☐HPC ☐Total Coliform/E coli ☐BOD/cBOD ☐Hex Chrome ☒Turbidity ☐Nitrate ☐Nitrite ☐Orthophos ☒Other
Rush Turn Around Time Requested?	☐Yes	☒No		6.
Sufficient Volume?	☒Yes	☐No		7. Double MS/MSD received for "Deutcher"
Correct Containers Used?	☒Yes	☐No		8.
-Pace Containers Used?	☒Yes	☐No		
Containers Intact?	☒Yes	☐No		9.
Field Filtered Volume Received for Dissolved Tests?	☐Yes	☐No	☒N/A	10. Is sediment visible in the dissolved container? ☐Yes ☐No
Is sufficient information available to reconcile the samples to the COC?	☒Yes	☐No		11. **If no, write ID/ Date/Time on Container Below:** **See Exception** ☐
Matrix: ☒Water ☐Soil ☐Oil ☐Other				
All containers needing acid/base preservation have been checked?	☒Yes	☐No	☐N/A	12. Sample #
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO_3, H_2SO_4, <2pH, NaOH >9 Sulfide, NaOH>12 Cyanide)	☒Yes	☐No	☐N/A	☐NaOH ☐HNO_3 ☐H_2SO_4 ☐Zinc Acetate
Exceptions: VOA, Coliform, TOC/DOC Oil and Grease, DRO/8015 (water) and Dioxin/PFAS	☒Yes	☐No	☒N/A 8/5/18/20	Positive for Res. Chlorine? ☐Yes ☐No **pH Paper Lot#** **See Exception** ☐
				Res. Chlorine | 0-6 Roll | 0-6 Strip | 0-14 Strip
Extra labels present on soil VOA or WIDRO containers?	☐Yes	☐No	☒N/A	13. **See Exception** ☐
Headspace in VOA Vials (greater than 6mm)?	☐Yes	☒No	☐N/A	
Trip Blank Present?	☐Yes	☒No	☐N/A	14.
Trip Blank Custody Seals Present?	☐Yes	☐No	☒N/A	Pace Trip Blank Lot # (if purchased):

CLIENT NOTIFICATION/RESOLUTION **Field Data Required?** ☐Yes ☐No

Person Contacted: Date/Time:

Comments/Resolution:

Project Manager Review: Date: 5/20/2020

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers).

Labeled by: 8/5

Pace Analytical®	Document Name: **Sample Condition Upon Receipt (SCUR) Exception Form**	Document Revised: 26Mar2020 **Page 1 of 1**
	Document No.: **ENV-FRM-MIN4-0142 Rev.00**	Pace Analytical Services - **Minneapolis**

SCUR Exceptions:

Workorder #:

Out of Temp Sample IDs	Container Type	# of Containers

PM Notified? ☐Yes ☐No

If yes, indicate who was contacted/date/time.
If no, indicate reason why.

Multiple Cooler Project? ☐Yes ☐No
If you answered yes, fill out information to the left.

No Temp Blank		
Read Temp	Corrected Temp	Average Temp
5.4	5.3	5.0
3.4	3.8	
6.4	6.8	
4.3	4.2	

Tracking Number/Temperature	
SP 00959303135203246 2	5.0

Other Issues		
Issue Type: **Sample ID**	**Container Type**	**# of Containers**

pH Adjustment Log for Preserved Samples

Sample ID	Type of Preserv.	pH Upon Receipt	Date Adjusted	Time Adjusted	Amount Added (mL)	Lot # Added	pH After	In Compliance after addition?	Initials
								☐Yes ☐No	
								☐Yes ☐No	
								☐Yes ☐No	
								☐Yes ☐No	

Pace Container Order #645080

Addresses

Order By :		Ship To :		Return To:	
Company	Wenck - North Dakota	Company	Wenck - North Dakota	Company	Pace Analytical Minnesota
Contact	Lammers, Christina	Contact	Lammers, Christina	Contact	Asp, Annika
Email	clammers@wenck.com	Email	clammers@wenck.com	Email	annika.asp@pacelabs.com
Address	3303 Fiechtner Drive	Address	3303 Fiechtner Drive	Address	1700 Elm Street
Address 2	Suite 100	Address 2	Suite 100	Address 2	Suite 200
City	Fargo	City	Fargo	City	Minneapolis
State	ND Zip 58103	State	ND Zip 58103	State	MN Zip 55414
Phone	(701) 893-2327	Phone	(701) 893-2327	Phone	(612)607-1700

Info

Project Name Clay County Landfill **Due Date** 05/07/2020 **Profile** 33549 line 8 **Quote** 00058958

Project Manager Asp, Annika **Return Date** **Carrier** Most Economical **Location** ND

Trip Blanks

[X] Include Trip Blanks

Bottle Labels

[ ] Blank
[X] Pre-Printed No Sample IDs
[ ] Pre-Printed With Sample IDs

Bottles

[ ] Boxed Cases
[X] Individually Wrapped
[X] Grouped By Sample ID/Matrix

Return Shipping Labels

[ ] No Shipper
[ ] With Shipper

COC Options

[X] Number of Blanks 5
[ ] Pre-Printed

Misc

[ ] Sampling Instructions
[X] Custody Seal
[X] Temp. Blanks
[X] Coolers
[ ] Syringes
[ ] Extra Bubble Wrap
[X] Short Hold/Rush Stickers
[ ] DI Water Liter(s)
[ ] USDA Regulated Soils

# of Samples	Matrix	Test	Container	Total	# of	Lot #	Notes
39	WT	LL VOC by 8260 SIM SCAN	(6) 40 mL clear glass vials, HCL	252	18	033020-3CYR	
39	WT	Turbidity, Dissolved Oxygen, Specific Conductance, pH. Appearance, Eh, Odor, Temperature	500mL plastic unpres	45	6	040620-2ADT	48 hr short hold
39	WT	Alkalinity, Chloride	250mL plastic unpres	45	6	032320-2EIX	
39	WT	Total Dissolved Solids (TDS); Total Suspended Solids (TSS)	1-1L Plastic Unpreserved	45	6	041320-2AED, 042020-2AED	
36	WT	Sulfate by 300.0	250mL plastic unpres	42	6	032320-2EIX	
36	WT	200.8 Dissolved Metals (Field Filter) + Mercury	250mL plastic HNO3	42	6	033020-2EIZ;041320-	
36	WT	Nitrate + Nitrite (sum of two), Ammonia	250mL plastic H2SO4	42	6	042020-4EJA	

Hazard Shipping Placard In Place : NO

*Sample receiving hours are Mon-Fri 7:30am-7:00pm and Sat 9:00am-1:00pm unless special arrangements are made with your project manager.

*Pace Analytical reserves the right to return hazardous, toxic, or radioactive samples to you.

*Pace Analytical reserves the right to charge for unused bottles, as well as cost associated with sample storage/disposal.

*Payment term are net 30 days.

*Please include the proposal number on the chain of custody to insure proper billing.

LAB USE:

Ship Date :	05/15/2020
Prepared By:	RHL/TDB
Verified By:	HWF

Sample

CLIENT USE (Optional):

Date Rec'd:	
Received By:	
Verified By:	

Pace Container Order #645080

Addresses

Order By :

Company Wenck - North Dakota
Contact Lammers, Christina
Email clammers@wenck.com
Address 3303 Fiechtner Drive
Address 2 Suite 100
City Fargo
State ND Zip 58103
Phone (701) 893-2327

Ship To :

Company Wenck - North Dakota
Contact Lammers, Christina
Email clammers@wenck.com
Address 3303 Fiechtner Drive
Address 2 Suite 100
City Fargo
State ND Zip 58103
Phone (701) 893-2327

Return To:

Company Pace Analytical Minnesota
Contact Asp, Annika
Email annika.asp@pacelabs.com
Address 1700 Elm Street
Address 2 Suite 200
City Minneapolis
State MN Zip 55414
Phone (612)607-1700

Info

Project Name Clay County Landfill **Due Date** 05/07/2020 **Profile** 33549 line 8 **Quote** 00058958

Project Manager Asp, Annika **Return Date** **Carrier** Most Economical **Location** ND

Trip Blanks

[X] Include Trip Blanks

Bottle Labels

[ ] Blank
[X] Pre-Printed No Sample IDs
[ ] Pre-Printed With Sample IDs

Bottles

[ ] Boxed Cases
[X] Individually Wrapped
[X] Grouped By Sample ID/Matrix

Return Shipping Labels

[ ] No Shipper
[ ] With Shipper

Misc

[ ] Sampling Instructions
[X] Custody Seal
[X] Temp. Blanks
[X] Coolers
[ ] Syringes
[ ] Extra Bubble Wrap
[X] Short Hold/Rush Stickers
[ ] DI Water Liter(s)
[ ] USDA Regulated Soils

COC Options

[X] Number of Blanks 5
[ ] Pre-Printed

# of Samples	Matrix	Test	Container	Total	# of	Lot #	Notes
6	WT	Hexavalent Chromium	250 mL unpreserved	6	0	032320-2EIX	
6	WT	COD	250mL plastic H2SO4	6	0	040620-4EJA	
3	WT	Low Level Mercury kit	250mL clear glass (double bagged)	3	0	013020-03DFC; 031720-01dfc	Include LL hg Kit and LL hg field blank
3	WT	Total Metals	250mL Plastic w/HNO3	3	0	041320-2EIZ	
5	WT	Trip BLANK	4-40mL HCL w/custody seal	20	0	255353, 256134	

Hazard Shipping Placard In Place : NO

*Sample receiving hours are Mon-Fri 7:30am-7:00pm and Sat 9:00am-1:00pm unless special arrangements are made with your project manager.
*Pace Analytical reserves the right to return hazardous, toxic, or radioactive samples to you.
*Pace Analytical reserves the right to charge for unused bottles, as well as cost associated with sample storage/disposal.
*Payment term are net 30 days.
*Please include the proposal number on the chain of custody to insure proper billing.

LAB USE:

Ship Date :	05/15/2020
Prepared By:	RHL/TDB
Verified By:	HWF

Sample

CLIENT USE (Optional):

Date Rec'd:	
Received By:	
Verified By:	

TABLE 2

Clay County Landfill
Permit SW-34
Environmental Monitoring System

Parameter Lists For Analyses

List 1 (VOCs) (Groundwater and Surface Water)

1,1,1,2-Tetrachloroethane	Chlorobenzene (monochlorobenzene)
1,1,1-Trichloroethane	Chlorodibromomethane (Dibromochloromethane)
1,1,2,2-Tetrachloroethane	Chloroethane
1,1,2-Trichloroethane	Chloroform
1,1,2-Trichlorotrifluoroethane	Chloromethane (Methyl chloride)
1,1-Dichloroethane	cis-1,3,-Dichloropropene
1,1-Dichloroethylene (Vinylidene chloride)	Cumene (Isopropylbenzene)
1,1-Dichloropropene	Dibromochloropropane (DBCP)
1,2-(trans-) Dichloroethylene	Dibromomethane (Methylene bromide)
1,2,3-Trichlorobenzene	Dichlorodifluoromethane
1,2,3-Trichloropropane	Dichlorofluoromethane
1,2,4-Trichlorobenzene	Dichloromethane (Methylene chloride)
1,2,4-Trimethylbenzene	Ethyl benzene
1,2-Dibromoethane (Ethylene dibromide); EDB	Ethyl ether
1,2-Dichlorobenzene (ortho-)	Hexachlorobutadiene
1,2-Dichloroethane	Methyl ethyl ketone (MEK)
1,2-Dichloroethlyene (cis-)	Methyl isobutyl ketone (4-Methyl-2-pentanone)
1,2-Dichloropropane	Methyl tertiary-Butyl Ether (MTBE)
1,3,5-Trimethylbenzene	Naphthalene
1,3-Dichlorobenzene (meta-)	n-Butyl Benzene
1,3-Dichloropropane	n-Propyl benzene
1,4-Dichlorobenzene (para-)	p-Isopropyltoluene
2,2-Dichloropropane	sec-Butyl Benzene
2-Chlorotoluene (ortho-)	Styrene
4-Chlorotoluene (para-)	tert-Butyl Benzene
Acetone	Tetrachloroethylene (Perchloroethylene)
Allyl chloride (3 chloropropene)	Tetrahydrofuran
Benzene	Toluene
Bromobenzene	Trichloroethylene (TCE)
Bromochloromethane (Chlorobromomethane)	Trichlorofluoromethane
Bromodichloromethane (Dichlorobromomethane)	Vinyl chloride (chloroethene)
Bromoform	m-Xylene & p-Xylene
Bromomethane (Methyl bromide)	o-Xylene
Carbon tetrachloride	

List 2 (Geochemicals, Metals[1]) (Groundwater)

Alkalinity, Total as CaCO3	Magnesium
Ammonia Nitrogen	Manganese
Arsenic	Mercury
Barium	Nickel
Boron	Nitrate+Nitrite
Cadmium	Potassium
Calcium	Selenium
Cation-Anion Balance	Sodium
Chloride	Sulfate
Chromium	Zinc
Copper	Total Dissolved Solids
Iron	Total Suspended Solids
Lead	

[1] All metals are measured as dissolved. All groundwater samples for metals will be filtered in the field.

TABLE 2

Clay County Landfill
Permit SW-34
Environmental Monitoring System

Parameter Lists For Analayses

List 3 (Geochemicals, Metals[2]) (Surface Water)

Alkalinity, Total as CaCO3	Lead
Arsenic	Magnesium
Boron	Manganese
Cadmium	Mercury[3]
Calcium	Total Dissolved Solids
Cation-Anion Balance	Total Suspended Solids
Chloride	

[2] All metals are measured as total. All surface water samples for metals will not be filtered in the field or lab.

[3] Low-level mercury analyses, EPA Method 1669.

List 4 (Field Parameters) (Groundwater and Surface Water)

Appearance	Specific Conductance
Dissolved Oxygen	Static Water Level (Elevation, MSL)[4]
Eh (Oxidation potential)	Temperature
Odor	Turbidity
pH	

[4] Groundwater Samples only, and not for residential wells.

List 5 (Geochemicals, Metals[1]) (Lysimeter)

Alkalinity, Total as CaCO3	Iron
Ammonia Nitrogen	Lead
Arsenic	Magnesium
Arsenic	Manganese
Boron	Mercury
Cadmium	Nitrate+Nitrite
Calcium	Potassium
Cation-Anion Balance	Sodium
COD	Sulfate
Chloride	Zinc
Chromium VI	Total Dissolved Solids
Copper	Total Suspended Solids

[1] All metals are measured as dissolved. All Lysimeter samples for metals will be filtered in the field.

WENCK
Responsive partner. Exceptional outcomes.

Well Purging Sheet

Project Name: Clay County Landfill
Address: 3301 190th St S, Hawley, MN 56549
Date: 10/15/20
Weather Conditions: 46°, cloudy, WNW 22mph
Field Technician(s): CML

Well ID : W-2

Casing Diameter (inches)	2.0	Average Purging Rate (g/m)	0.18
Top of Casing Elev. (feet)		Volume Purged (gals.)	2.5
Depth to Water from **TOC** (feet)	5.53	Purged Dry (Y/N)	Y
Groundwater Elev. (feet)		Sampling Device	Submersible Pump
Depth to Bottom of Well from **TOC** (feet)	24.03	Time Sample Collected	13:27
Volume of Water in Casing (gals.)	3.02	Color	lt GRY
3 Well Volumes (gals.)	9.05	Odor	N
Purging Device	Submersible Pump	Well Capped & Locked (Y/N)	Y/N
Purging Start Time	13:11	Lock Key #	NA
Purging Stop Time	13:25	Damage to Well? (Y/N)	N

Volume Purged (gallons)	2.5	3.0	6.0	9.1			
Stabilization Readings							
Time	13:18						
Temperature (°C)	10.54						
Conductance (uS/cm)	0.694						
Dissolved Oxygen (mg/L)	9.87						
pH	7.62						
ORP (mV)	-726.5						
Turbidity (NTU)	55.0						

Comments:

- well started running dry @ 2 gallons. Continued to purge

WENCK
Responsive partner. Exceptional outcomes.

Well Purging Sheet

Project Name: Clay County Landfill
Address: 3301 190th St S, Hawley, MN 56549
Date: 11/15/20
Weather Conditions: 40°, mostly cloudy, w 11e mph
Field Technician(s): CML

Well ID : N-5

Casing Diameter (inches)	2.0	Average Purging Rate (g/m)	0.20
Top of Casing Elev. (feet)		Volume Purged (gals.)	4.1
Depth to Water from **TOC** (feet)	6.07	Purged Dry (Y/N)	N
Groundwater Elev. (feet)		Sampling Device pers.	~~Submersible Pump~~
Depth to Bottom of Well from **TOC** (feet)	12.41	Time Sample Collected	10:59
Volume of Water in Casing (gals.)	1.03	Color	Slight OR-5
3 Well Volumes (gals.)	3.10	Odor	N
Purging Device pers	~~Submersible~~ Pump	Well Capped & Locked (Y/N)	Y
Purging Start Time	10:36	Lock Key #	2106
Purging Stop Time	10:57	Damage to Well? (Y/N)	N

Volume Purged (gallons)	1.0	2.0	3.1	4.1			
Stabilization Readings							
Time	10:41	10:45	10:49	10:57			
Temperature (°C)	11.37	11.36	11.36	11.20			
Conductance (uS/cm)	1.109	1.090	1.091	1.107			
Dissolved Oxygen (mg/L)	4.69	3.89	3.61	3.50			
pH	7.13	7.11	7.11	7.09			
ORP (mV)	-504.7	-522.3	-530.2	-524.5			
Turbidity (NTU)	60.0	19.0	16.0	5.60			

Comments:

WENCK
Responsive partner. Exceptional outcomes.

Well Purging Sheet

Project Name: Clay County Landfill
Address: 3301 190th St S, Hawley, MN 56549
Date: 10/15/20
Weather Conditions: 46°, cloudy, WNW 22mph
Field Technician(s): CML

Well ID : W-6

Casing Diameter (inches)	2.0	Average Purging Rate (g/m)	0.18
Top of Casing Elev. (feet)		Volume Purged (gals.)	4.9
Depth to Water from **TOC** (feet)	6.27	Purged Dry (Y/N)	N
Groundwater Elev. (feet)		Sampling Device	pers. ~~Submersible~~ Pump
Depth to Bottom of Well from **TOC** (feet)	16.20	Time Sample Collected	14:10
Volume of Water in Casing (gals.)	1.62	Color	ORG
3 Well Volumes (gals.)	4.86	Odor	N
Purging Device	pers. ~~Submersible~~ Pump	Well Capped & Locked (Y/N)	Y
Purging Start Time	13:42	Lock Key #	2106
Purging Stop Time	14:09	Damage to Well? (Y/N)	N

Volume Purged (gallons)	1.6	3.2	4.9				
Stabilization Readings							
Time	13:50	13:59	14:09				
Temperature (°C)	11.28	11.34	11.34				
Conductance (uS/cm)	0.953	1.023	1.113				
Dissolved Oxygen (mg/L)	9.34	2.01	1.01				
pH	7.06	7.03	6.98				
ORP (mV)	-516.6	-481.0	-336.4				
Turbidity (NTU)	15.0	7.50	8.40				

Comments:

WENCK
Responsive partner. Exceptional outcomes.

Well Purging Sheet

Project Name: Clay County Landfill
Address: 3301 190th St S, Hawley, MN 56549
Date: 10/15/20
Weather Conditions: 44°, mostly cloudy, WNW 18mph
Field Technician(s): CML

Well ID : W-104A

Casing Diameter (inches)	2.0	Average Purging Rate (g/m)	1.38
Top of Casing Elev. (feet)		Volume Purged (gals.)	5.5
Depth to Water from **TOC** (feet)	7.53	Purged Dry (Y/N)	N
Groundwater Elev. (feet)		Sampling Device	Submersible Pump
Depth to Bottom of Well from **TOC** (feet)	17.64	Time Sample Collected	15:39
Volume of Water in Casing (gals.)	1.65	Color	Clear
3 Well Volumes (gals.)	4.94	Odor	N
Purging Device	Submersible Pump	Well Capped & Locked (Y/N)	Y
Purging Start Time	15:34	Lock Key #	2106
Purging Stop Time	15:38	Damage to Well? (Y/N)	N

Volume Purged (gallons)	1.7	4.0	5.5				
Stabilization Readings							
Time	15:36	15:37	15:38				
Temperature (°C)	11.37	11.39	11.40				
Conductance (uS/cm)	1.081	1.102	1.115				
Dissolved Oxygen (mg/L)	20.22	13.64	10.32				
pH	6.81	6.77	6.74				
ORP (mV)	-613.5	-611.9	-627.3				
Turbidity (NTU)	5.50	3.20	3.40				

Comments:

WENCK
Responsive partner. Exceptional outcomes.

Well Purging Sheet

Project Name: Clay County Landfill
Address: 3301 190th St S, Hawley, MN 56549
Date: 10/15/20
Weather Conditions: 40°, mostly cloudy, W 16mph
Field Technician(s): CML

Well ID : W-106A

Casing Diameter (inches)	2.0	Average Purging Rate (g/m)	0.24
Top of Casing Elev. (feet)		Volume Purged (gals.)	6.8
Depth to Water from **TOC** (feet)	7.14	Purged Dry (Y/N)	N
Groundwater Elev. (feet)		Sampling Device pers.	~~Submersible~~ Pump
Depth to Bottom of Well from **TOC** (feet)	17.63	Time Sample Collected	10:18
Volume of Water in Casing (gals.)	1.71	Color	BRN
3 Well Volumes (gals.)	5.13	Odor	N
Purging Device pers.	~~Submersible~~ Pump	Well Capped & Locked (Y/N)	Y
Purging Start Time	9:49	Lock Key #	2106
Purging Stop Time	10:17	Damage to Well? (Y/N)	N

Volume Purged (gallons)	1.7	3.4	5.1	6.8			
Stabilization Readings							
Time	9:57	10:04	10:10	10:17			
Temperature (°C)	11.05	10.76	10.78	10.77			
Conductance (uS/cm)	1.109	1.118	1.119	1.115			
Dissolved Oxygen (mg/L)	6.44	4.71	4.04	3.99			
pH	7.05	7.02	7.02	7.02			
ORP (mV)	-925.3	-767.3	-710.2	-721.3			
Turbidity (NTU)	950	1000	800	1000			

Comments:

WENCK
Responsive partner. Exceptional outcomes.

Well Purging Sheet

Project Name: Clay County Landfill
Address: 3301 190th St S, Hawley, MN 56549
Date: 10/15/20
Weather Conditions: 46°, cloudy, WNW 22mph
Field Technician(s): CML

Well ID : W-201A

Casing Diameter (inches)	2.0	Average Purging Rate (g/m)	1.05
Top of Casing Elev. (feet)		Volume Purged (gals.)	8.4
Depth to Water from **TOC** (feet)	5.92	Purged Dry (Y/N)	N
Groundwater Elev. (feet)		Sampling Device	Submersible Pump
Depth to Bottom of Well from **TOC** (feet)	16.23	Time Sample Collected	12:56
Volume of Water in Casing (gals.)	1.68	Color	lt GRY
3 Well Volumes (gals.)	5.04	Odor	N
Purging Device	Submersible Pump	Well Capped & Locked (Y/N)	Y
Purging Start Time	12:47	Lock Key #	2106
Purging Stop Time	12:55	Damage to Well? (Y/N)	N

Volume Purged (gallons)	1.7	3.4	5.1	6.8	8.4		
Stabilization Readings							
Time	12:48	12:50	12:52	12:53	12:55		
Temperature (°C)	11.44	11.49	11.53	11.54	11.55		
Conductance (uS/cm)	1.092	1.116	[illegible]	1.122	1.130		
Dissolved Oxygen (mg/L)	20.28	10.17	5.17	3.48	2.47		
pH	6.96	6.95	6.94	6.95	6.92		
ORP (mV)	-551.0	-515.0	-435.9	-382.8	-396.2		
Turbidity (NTU)	220	39.0	13.0	12.0	8.60		

Comments:

WENCK
Responsive partner. Exceptional outcomes.

Well Purging Sheet

Project Name: Clay County Landfill
Address: 3301 190th St S, Hawley, MN 56549
Date: 10/15/20
Weather Conditions: 46°, cloudy, WNW 22mph
Field Technician(s): CML

Well ID : MW-202A			
Casing Diameter (inches)	2.0	Average Purging Rate (g/m)	1.2
Top of Casing Elev. (feet)		Volume Purged (gals.)	8.4
Depth to Water from **TOC** (feet)	6.23	Purged Dry (Y/N)	N
Groundwater Elev. (feet)		Sampling Device	Submersible Pump
Depth to Bottom of Well from **TOC** (feet)	13.99	Time Sample Collected	12:28
Volume of Water in Casing (gals.)	1.26	Color	LT GRY
3 Well Volumes (gals.)	3.79	Odor	N
Purging Device	Submersible Pump	Well Capped & Locked (Y/N)	Y
Purging Start Time	12:20	Lock Key #	2106
Purging Stop Time	12:27	Damage to Well? (Y/N)	N

Volume Purged (gallons)	1.7	3.4	5.1	6.8	8.4		
Stabilization Readings							
Time	12:22	12:23	12:24	12:26	12:27		
Temperature (°C)	11.42	11.51	11.51	11.55	11.56		
Conductance (uS/cm)	0.904	1.134	1.077	1.144	1.177		
Dissolved Oxygen (mg/L)	7.78	4.64	3.65	2.50	1.98		
pH	7.11	7.00	6.97	6.93	6.90		
ORP (mV)	-316.0	-336.9	-378.1	-367.9	-419.9		
Turbidity (NTU)	45.0	21.0	15.0	12.0	7.20		

Comments:

WENCK
Responsive partner. Exceptional outcomes.

Well Purging Sheet

Project Name: Clay County Landfill
Address: 3301 190th St S, Hawley, MN 56549
Date: 10/15/20
Weather Conditions: 40°, mostly cloudy, W 16 mph
Field Technician(s): CML

Well ID : W-301A

Casing Diameter (inches)	2.0	Average Purging Rate (g/m)	0.23
Top of Casing Elev. (feet)		Volume Purged (gals.)	4.8
Depth to Water from **TOC** (feet)	6.83	Purged Dry (Y/N)	N
Groundwater Elev. (feet)		Sampling Device pers.	~~Submersible~~ Pump
Depth to Bottom of Well from **TOC** (feet)	16.67	Time Sample Collected	9:31
Volume of Water in Casing (gals.)	1.60	Color	Clear
3 Well Volumes (gals.)	4.81	Odor	N
Purging Device pers.	~~Submersible~~ Pump	Well Capped & Locked (Y/N)	Y
Purging Start Time	9:09	Lock Key #	2106
Purging Stop Time	9:30	Damage to Well? (Y/N)	N

Volume Purged (gallons)	1.6	3.2	4.8				
Stabilization Readings							
Time	9:16	9:24	9:30				
Temperature (°C)	10.70	10.70	10.70				
Conductance (uS/cm)	1,448	1,441	1,439				
Dissolved Oxygen (mg/L)	7.60	4.98	4.14				
pH	6.95	6.89	6.88				
ORP (mV)	-309.9	-324.7	-347.0				
Turbidity (NTU)	4.20	2.30	2.60				

Comments:

WENCK
Responsive partner. Exceptional outcomes.

Well Purging Sheet

Project Name: Clay County Landfill
Address: 3301 190th St S, Hawley, MN 56549
Date: 10/15/20
Weather Conditions: 44°, mostly cloudy, WNW 18mph
Field Technician(s): CML

Well ID : W-302A

Casing Diameter (inches)	2.0	Average Purging Rate (g/m)	0.7
Top of Casing Elev. (feet)		Volume Purged (gals.)	7.7
Depth to Water from **TOC** (feet)	20.22	Purged Dry (Y/N)	N
Groundwater Elev. (feet)		Sampling Device	Submersible Pump
Depth to Bottom of Well from **TOC** (feet)	31.99	Time Sample Collected	14:45
Volume of Water in Casing (gals.)	1.92	Color	Clear
3 Well Volumes (gals.)	5.76	Odor	N
Purging Device	Submersible Pump	Well Capped & Locked (Y/N)	Y
Purging Start Time	14:33	Lock Key #	2106
Purging Stop Time	14:44	Damage to Well? (Y/N)	N

Volume Purged (gallons)	1.9	3.8	5.8	7.7			
Stabilization Readings							
Time	14:36	14:38	14:40	14:44			
Temperature (°C)	8.61	8.65	8.65	8.67			
Conductance (uS/cm)	0.607	0.610	0.613	0.613			
Dissolved Oxygen (mg/L)	20.14	15.82	12.87	12.14			
pH	7.12	7.10	7.09	7.09			
ORP (mV)	-397.3	-403.7	-366.9	-527.5			
Turbidity (NTU)	21.0	11.0	5.40	4.00			

Comments:

WENCK
Responsive partner. Exceptional outcomes.

Well Purging Sheet

Project Name: Clay County Landfill
Address: 3301 190th St S, Hawley, MN 56549
Date: 10/15/20
Weather Conditions: 44°, mostly cloudy, WNW 18mph
Field Technician(s): CML

Well ID :			
Casing Diameter (inches)	2.0	Average Purging Rate (g/m)	
Top of Casing Elev. (feet)		Volume Purged (gals.)	
Depth to Water from **TOC** (feet)		Purged Dry (Y/N)	
Groundwater Elev. (feet)		Sampling Device	Submersible Pump
Depth to Bottom of Well from **TOC** (feet)		Time Sample Collected	
Volume of Water in Casing (gals.)		Color	
3 Well Volumes (gals.)		Odor	
Purging Device	Submersible Pump	Well Capped & Locked (Y/N)	
Purging Start Time		Lock Key #	
Purging Stop Time		Damage to Well? (Y/N)	

~~Volume Purged (gallons)~~ Location:	Lys III-1	Lys III-2		SW-3			
Stabilization Readings							
Time	16:18	17:10		11:34			
Temperature (°C)	11.40	8.70		5.77			
Conductance (uS/cm)	1.138	2.077		1.067			
Dissolved Oxygen (mg/L)	44.02	9.86		16.49			
pH	7.35	6.73		7.11			
ORP (mV)	-314.1	-405.9		-338.3			
Turbidity (NTU)	45.0	5.90		5.80			

Comments:
Color: yellow / lt yellow / lt BRN
Odor: N / slight / slightly swampy
Equip: pers. pump / spout pump / Grab

SW-1 = DRY
Lys III-3 = DRY
Lys IV-1 & 2 = DRY
Lys IV-3 = under construction/cannot sample

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

November 11, 2020

Andrew Feia
Wenck Associates, Inc.
3303 Fiechtner Drive
Suite 100
Fargo, ND 58103

RE: Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10536477

Dear Andrew Feia:

Enclosed are the analytical results for sample(s) received by the laboratory on October 21, 2020. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Minneapolis

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Annika Asp
annika.asp@pacelabs.com
(612)607-1700
Project Manager

Enclosures

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

CERTIFICATIONS

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10536477

Pace Analytical Services - Minneapolis MN

1700 Elm Street SE, Minneapolis, MN 55414
1800 Elm Street SE, Minneapolis, MN 55414--Satellite Air Lab
A2LA Certification #: 2926.01*
Alabama Certification #: 40770
Alaska Contaminated Sites Certification #: 17-009*
Alaska DW Certification #: MN00064
Arizona Certification #: AZ0014*
Arkansas DW Certification #: MN00064
Arkansas WW Certification #: 88-0680
California Certification #: 2929
Colorado Certification #: MN00064
Connecticut Certification #: PH-0256
EPA Region 8+Wyoming DW Certification #: via MN 027-053-137
Florida Certification #: E87605*
Georgia Certification #: 959
Hawaii Certification #: MN00064
Idaho Certification #: MN00064
Illinois Certification #: 200011
Indiana Certification #: C-MN-01
Iowa Certification #: 368
Kansas Certification #: E-10167
Kentucky DW Certification #: 90062
Kentucky WW Certification #: 90062
Louisiana DEQ Certification #: AI-03086*
Louisiana DW Certification #: MN00064
Maine Certification #: MN00064*
Maryland Certification #: 322
Massachusetts DWP Certification #: via MN 027-053-137
Michigan Certification #: 9909
Minnesota Certification #: 027-053-137*
Minnesota Dept of Ag Certifcation #: via MN 027-053-137
Minnesota Petrofund Certification #: 1240*
Mississippi Certification #: MN00064
Missouri Certification #: 10100
Montana Certification #: CERT0092
Nebraska Certification #: NE-OS-18-06
Nevada Certification #: MN00064
New Hampshire Certification #: 2081*
New Jersey Certification #: MN002
New York Certification #: 11647*
North Carolina DW Certification #: 27700
North Carolina WW Certification #: 530
North Dakota Certification #: R-036
Ohio DW Certification #: 41244
Ohio VAP Certification #: CL101
Oklahoma Certification #: 9507*
Oregon Primary Certification #: MN300001
Oregon Secondary Certification #: MN200001*
Pennsylvania Certification #: 68-00563*
Puerto Rico Certification #: MN00064
South Carolina Certification #:74003001
Tennessee Certification #: TN02818
Texas Certification #: T104704192*
Utah Certification #: MN00064*
Vermont Certification #: VT-027053137
Virginia Certification #: 460163*
Washington Certification #: C486*
West Virginia DEP Certification #: 382
West Virginia DW Certification #: 9952 C
Wisconsin Certification #: 999407970
Wyoming UST Certification #: via A2LA 2926.01
USDA Permit #: P330-19-00208
*Please Note: Applicable air certifications are denoted with an asterisk (*).

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

SAMPLE SUMMARY

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10536477

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10536477001	**W-301A**	Water	10/15/20 09:31	10/21/20 12:20
10536477002	**W-106A**	Water	10/15/20 10:18	10/21/20 12:20
10536477003	**W-5**	Water	10/15/20 10:59	10/21/20 12:20
10536477004	**S-3**	Water	10/15/20 11:34	10/21/20 12:20
10536477005	**W-202A**	Water	10/15/20 12:28	10/21/20 12:20
10536477006	**W-201A**	Water	10/15/20 12:56	10/21/20 12:20
10536477007	**W-2**	Water	10/15/20 13:27	10/21/20 12:20
10536477008	**W-6**	Water	10/15/20 14:10	10/21/20 12:20
10536477009	**W-302A**	Water	10/15/20 14:45	10/21/20 12:20
10536477010	**W-104A**	Water	10/15/20 15:39	10/21/20 12:20
10536477011	**MH-LYS-III-P1**	Water	10/15/20 16:18	10/21/20 12:20
10536477012	**MH-LYS-III-P2**	Water	10/15/20 17:10	10/21/20 12:20
10536477013	**Duplicate 1**	Water	10/15/20 00:00	10/21/20 12:20
10536477014	**LYS-DUP**	Water	10/15/20 00:00	10/21/20 12:20
10536477015	**Trip Blank**	Water	10/15/20 12:00	10/21/20 12:20
10536477016	**Trip Blank 2**	Water	10/15/20 12:05	10/21/20 12:20

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

SAMPLE ANALYTE COUNT

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10536477

Lab ID	Sample ID	Method	Analysts	Analytes Reported
10536477001	**W-301A**	EPA 8260D	AEZ	72
		SM 4500-H+B	AMN	1
		SM 2510	SH4	1
10536477002	**W-106A**	EPA 8260D	AEZ	72
		SM 4500-H+B	AMN	1
		SM 2510	SH4	1
10536477003	**W-5**	EPA 8260D	AEZ	72
		SM 4500-H+B	AMN	1
		SM 2510	SH4	1
10536477004	**S-3**	EPA 8260D	AEZ	72
		SM 4500-H+B	AMN	1
		SM 2510	SH4	1
10536477005	**W-202A**	EPA 8260D	AEZ	72
		SM 4500-H+B	AMN	1
		SM 2510	SH4	1
10536477006	**W-201A**	EPA 8260D	AEZ	72
		SM 4500-H+B	AMN	1
		SM 2510	SH4	1
10536477007	**W-2**	EPA 8260D	AEZ	72
		SM 4500-H+B	AMN	1
		SM 2510	SH4	1
10536477008	**W-6**	EPA 8260D	AEZ	72
		SM 4500-H+B	AMN	1
		SM 2510	SH4	1
10536477009	**W-302A**	EPA 8260D	AEZ	72
		SM 4500-H+B	AMN	1
		SM 2510	SH4	1
10536477010	**W-104A**	EPA 8260D	AEZ	72
		SM 4500-H+B	AMN	1
		SM 2510	SH4	1
10536477011	**MH-LYS-III-P1**	EPA 8260D	AEZ	72
		SM 4500-H+B	AMN	1
		SM 2510	SH4	1
10536477012	**MH-LYS-III-P2**	EPA 8260D	AEZ	72
		SM 4500-H+B	AMN	1
		SM 2510	SH4	1
10536477013	**Duplicate 1**	EPA 8260D	AEZ	72

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

SAMPLE ANALYTE COUNT

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10536477

Lab ID	Sample ID	Method	Analysts	Analytes Reported
		SM 4500-H+B	AMN	1
		SM 2510	SH4	1
10536477014	**LYS-DUP**	EPA 8260D	AEZ	72
		SM 4500-H+B	AMN	1
		SM 2510	SH4	1
10536477015	**Trip Blank**	EPA 8260D	AEZ	72
10536477016	**Trip Blank 2**	EPA 8260D	AEZ	72

PASI-M = Pace Analytical Services - Minneapolis

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10536477

Sample: W-301A **Lab ID: 10536477001** Collected: 10/15/20 09:31 Received: 10/21/20 12:20 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV LLW by SIMSCAN	Analytical Method: EPA 8260D Pace Analytical Services - Minneapolis							
Acetone	**<20.0**	ug/L	20.0	1		10/28/20 11:32	67-64-1	v2
Allyl chloride	**<4.0**	ug/L	4.0	1		10/28/20 11:32	107-05-1	v2
Benzene	**<0.20**	ug/L	0.20	1		10/28/20 11:32	71-43-2	
Bromobenzene	**<0.40**	ug/L	0.40	1		10/28/20 11:32	108-86-1	
Bromochloromethane	**<1.0**	ug/L	1.0	1		10/28/20 11:32	74-97-5	
Bromodichloromethane	**<0.40**	ug/L	0.40	1		10/28/20 11:32	75-27-4	
Bromoform	**<1.0**	ug/L	1.0	1		10/28/20 11:32	75-25-2	
Bromomethane	**<1.0**	ug/L	1.0	1		10/28/20 11:32	74-83-9	1M,v1
2-Butanone (MEK)	**<5.0**	ug/L	5.0	1		10/28/20 11:32	78-93-3	v2
n-Butylbenzene	**<0.40**	ug/L	0.40	1		10/28/20 11:32	104-51-8	
sec-Butylbenzene	**<0.40**	ug/L	0.40	1		10/28/20 11:32	135-98-8	
tert-Butylbenzene	**<0.40**	ug/L	0.40	1		10/28/20 11:32	98-06-6	
Carbon tetrachloride	**<0.050**	ug/L	0.050	1		10/28/20 22:27	56-23-5	
Chlorobenzene	**<0.40**	ug/L	0.40	1		10/28/20 11:32	108-90-7	
Chloroethane	**<1.0**	ug/L	1.0	1		10/28/20 11:32	75-00-3	
Chloroform	**<1.0**	ug/L	1.0	1		10/28/20 11:32	67-66-3	
Chloromethane	**<1.0**	ug/L	1.0	1		10/28/20 11:32	74-87-3	
2-Chlorotoluene	**<0.40**	ug/L	0.40	1		10/28/20 11:32	95-49-8	
4-Chlorotoluene	**<0.40**	ug/L	0.40	1		10/28/20 11:32	106-43-4	
1,2-Dibromo-3-chloropropane	**<0.12**	ug/L	0.12	1		10/28/20 22:27	96-12-8	
Dibromochloromethane	**<0.40**	ug/L	0.40	1		10/28/20 22:27	124-48-1	
1,2-Dibromoethane (EDB)	**<0.050**	ug/L	0.050	1		10/28/20 22:27	106-93-4	
Dibromomethane	**<1.0**	ug/L	1.0	1		10/28/20 11:32	74-95-3	
1,2-Dichlorobenzene	**<0.40**	ug/L	0.40	1		10/28/20 11:32	95-50-1	
1,3-Dichlorobenzene	**<0.40**	ug/L	0.40	1		10/28/20 11:32	541-73-1	
1,4-Dichlorobenzene	**<0.40**	ug/L	0.40	1		10/28/20 11:32	106-46-7	
Dichlorodifluoromethane	**<1.0**	ug/L	1.0	1		10/28/20 11:32	75-71-8	v2
1,1-Dichloroethane	**<0.40**	ug/L	0.40	1		10/28/20 11:32	75-34-3	
1,2-Dichloroethane	**<0.20**	ug/L	0.20	1		10/28/20 22:27	107-06-2	
1,1-Dichloroethene	**<1.0**	ug/L	1.0	1		10/28/20 11:32	75-35-4	
cis-1,2-Dichloroethene	**<0.40**	ug/L	0.40	1		10/28/20 11:32	156-59-2	
trans-1,2-Dichloroethene	**<0.40**	ug/L	0.40	1		10/28/20 11:32	156-60-5	
Dichlorofluoromethane	**<1.0**	ug/L	1.0	1		10/28/20 11:32	75-43-4	
1,2-Dichloropropane	**<0.40**	ug/L	0.40	1		10/28/20 11:32	78-87-5	
1,3-Dichloropropane	**<0.40**	ug/L	0.40	1		10/28/20 11:32	142-28-9	
2,2-Dichloropropane	**<1.0**	ug/L	1.0	1		10/28/20 11:32	594-20-7	
1,1-Dichloropropene	**<0.40**	ug/L	0.40	1		10/28/20 11:32	563-58-6	
cis-1,3-Dichloropropene	**<0.40**	ug/L	0.40	1		10/28/20 22:27	10061-01-5	
trans-1,3-Dichloropropene	**<0.40**	ug/L	0.40	1		10/28/20 22:27	10061-02-6	
Diethyl ether (Ethyl ether)	**<4.0**	ug/L	4.0	1		10/28/20 11:32	60-29-7	v2
Ethylbenzene	**<0.40**	ug/L	0.40	1		10/28/20 11:32	100-41-4	
Hexachloro-1,3-butadiene	**<0.10**	ug/L	0.10	1		10/28/20 22:27	87-68-3	
Isopropylbenzene (Cumene)	**<0.40**	ug/L	0.40	1		10/28/20 11:32	98-82-8	
p-Isopropyltoluene	**<0.40**	ug/L	0.40	1		10/28/20 11:32	99-87-6	
Methylene Chloride	**<1.0**	ug/L	1.0	1		10/28/20 11:32	75-09-2	
4-Methyl-2-pentanone (MIBK)	**<5.0**	ug/L	5.0	1		10/28/20 11:32	108-10-1	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10536477

Sample: W-301A **Lab ID: 10536477001** Collected: 10/15/20 09:31 Received: 10/21/20 12:20 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV LLW by SIMSCAN	Analytical Method: EPA 8260D							
	Pace Analytical Services - Minneapolis							
Methyl-tert-butyl ether	**<0.40**	ug/L	0.40	1		10/28/20 11:32	1634-04-4	
Naphthalene	**<1.0**	ug/L	1.0	1		10/28/20 11:32	91-20-3	
n-Propylbenzene	**<0.40**	ug/L	0.40	1		10/28/20 11:32	103-65-1	
Styrene	**<0.40**	ug/L	0.40	1		10/28/20 11:32	100-42-5	
1,1,1,2-Tetrachloroethane	**<0.40**	ug/L	0.40	1		10/28/20 11:32	630-20-6	
1,1,2,2-Tetrachloroethane	**<0.40**	ug/L	0.40	1		10/28/20 11:32	79-34-5	
Tetrachloroethene	**<0.40**	ug/L	0.40	1		10/28/20 11:32	127-18-4	
Tetrahydrofuran	**<10.0**	ug/L	10.0	1		10/28/20 11:32	109-99-9	
Toluene	**<0.40**	ug/L	0.40	1		10/28/20 11:32	108-88-3	
1,2,3-Trichlorobenzene	**<0.40**	ug/L	0.40	1		10/28/20 11:32	87-61-6	
1,2,4-Trichlorobenzene	**<0.40**	ug/L	0.40	1		10/28/20 11:32	120-82-1	
1,1,1-Trichloroethane	**<1.0**	ug/L	1.0	1		10/28/20 11:32	71-55-6	
1,1,2-Trichloroethane	**<0.40**	ug/L	0.40	1		10/28/20 11:32	79-00-5	
Trichloroethene	**<0.050**	ug/L	0.050	1		10/28/20 22:27	79-01-6	
Trichlorofluoromethane	**<0.40**	ug/L	0.40	1		10/28/20 11:32	75-69-4	
1,2,3-Trichloropropane	**<0.010**	ug/L	0.010	1		10/28/20 22:27	96-18-4	
1,1,2-Trichlorotrifluoroethane	**<1.0**	ug/L	1.0	1		10/28/20 11:32	76-13-1	
1,2,4-Trimethylbenzene	**<1.0**	ug/L	1.0	1		10/28/20 11:32	95-63-6	
1,3,5-Trimethylbenzene	**<0.40**	ug/L	0.40	1		10/28/20 11:32	108-67-8	
Vinyl chloride	**<0.050**	ug/L	0.050	1		10/28/20 22:27	75-01-4	
Xylene (Total)	**<1.2**	ug/L	1.2	1		10/28/20 11:32	1330-20-7	
m&p-Xylene	**<0.80**	ug/L	0.80	1		10/28/20 11:32	179601-23-1	
o-Xylene	**<0.40**	ug/L	0.40	1		10/28/20 11:32	95-47-6	
Surrogates								
1,2-Dichloroethane-d4 (S)	106	%.	75-128	1		10/28/20 22:27	17060-07-0	
1,2-Dichloroethane-d4 (S)	103	%.	75-128	1		10/28/20 11:32	17060-07-0	
Toluene-d8 (S)	103	%.	75-125	1		10/28/20 22:27	2037-26-5	
Toluene-d8 (S)	98	%.	75-125	1		10/28/20 11:32	2037-26-5	
4-Bromofluorobenzene (S)	90	%.	75-125	1		10/28/20 11:32	460-00-4	
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B							
	Pace Analytical Services - Minneapolis							
pH at 25 Degrees C	**7.4**	Std. Units	0.10	1		11/03/20 12:47		H6
SM2510 Specific Conductance	Analytical Method: SM 2510							
	Pace Analytical Services - Minneapolis							
Specific Conductance	**1020**	umhos/cm	1.0	1		10/26/20 15:05		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10536477

Sample: W-106A **Lab ID: 10536477002** Collected: 10/15/20 10:18 Received: 10/21/20 12:20 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV LLW by SIMSCAN	Analytical Method: EPA 8260D Pace Analytical Services - Minneapolis							
Acetone	**<20.0**	ug/L	20.0	1		10/29/20 18:03	67-64-1	
Allyl chloride	**<4.0**	ug/L	4.0	1		10/29/20 18:03	107-05-1	
Benzene	**<0.20**	ug/L	0.20	1		10/29/20 18:03	71-43-2	
Bromobenzene	**<0.40**	ug/L	0.40	1		10/29/20 18:03	108-86-1	
Bromochloromethane	**<1.0**	ug/L	1.0	1		10/29/20 18:03	74-97-5	
Bromodichloromethane	**<0.40**	ug/L	0.40	1		10/29/20 18:03	75-27-4	
Bromoform	**<1.0**	ug/L	1.0	1		10/29/20 18:03	75-25-2	
Bromomethane	**<1.0**	ug/L	1.0	1		10/29/20 18:03	74-83-9	1M,v2
2-Butanone (MEK)	**<5.0**	ug/L	5.0	1		10/29/20 18:03	78-93-3	v2
n-Butylbenzene	**<0.40**	ug/L	0.40	1		10/29/20 18:03	104-51-8	
sec-Butylbenzene	**<0.40**	ug/L	0.40	1		10/29/20 18:03	135-98-8	
tert-Butylbenzene	**<0.40**	ug/L	0.40	1		10/29/20 18:03	98-06-6	
Carbon tetrachloride	**<0.050**	ug/L	0.050	1		10/29/20 00:38	56-23-5	
Chlorobenzene	**<0.40**	ug/L	0.40	1		10/29/20 18:03	108-90-7	
Chloroethane	**<1.0**	ug/L	1.0	1		10/29/20 18:03	75-00-3	
Chloroform	**<1.0**	ug/L	1.0	1		10/29/20 18:03	67-66-3	
Chloromethane	**<1.0**	ug/L	1.0	1		10/29/20 18:03	74-87-3	v2
2-Chlorotoluene	**<0.40**	ug/L	0.40	1		10/29/20 18:03	95-49-8	
4-Chlorotoluene	**<0.40**	ug/L	0.40	1		10/29/20 18:03	106-43-4	
1,2-Dibromo-3-chloropropane	**<0.12**	ug/L	0.12	1		10/29/20 00:38	96-12-8	
Dibromochloromethane	**<0.40**	ug/L	0.40	1		10/29/20 00:38	124-48-1	
1,2-Dibromoethane (EDB)	**<0.050**	ug/L	0.050	1		10/29/20 00:38	106-93-4	
Dibromomethane	**<1.0**	ug/L	1.0	1		10/29/20 18:03	74-95-3	
1,2-Dichlorobenzene	**<0.40**	ug/L	0.40	1		10/29/20 18:03	95-50-1	
1,3-Dichlorobenzene	**<0.40**	ug/L	0.40	1		10/29/20 18:03	541-73-1	
1,4-Dichlorobenzene	**<0.40**	ug/L	0.40	1		10/29/20 18:03	106-46-7	
Dichlorodifluoromethane	**<1.0**	ug/L	1.0	1		10/29/20 18:03	75-71-8	
1,1-Dichloroethane	**<0.40**	ug/L	0.40	1		10/29/20 18:03	75-34-3	
1,2-Dichloroethane	**<0.20**	ug/L	0.20	1		10/29/20 00:38	107-06-2	
1,1-Dichloroethene	**<1.0**	ug/L	1.0	1		10/29/20 18:03	75-35-4	
cis-1,2-Dichloroethene	**<0.40**	ug/L	0.40	1		10/29/20 18:03	156-59-2	
trans-1,2-Dichloroethene	**<0.40**	ug/L	0.40	1		10/29/20 18:03	156-60-5	
Dichlorofluoromethane	**<1.0**	ug/L	1.0	1		10/29/20 18:03	75-43-4	
1,2-Dichloropropane	**<0.40**	ug/L	0.40	1		10/29/20 18:03	78-87-5	
1,3-Dichloropropane	**<0.40**	ug/L	0.40	1		10/29/20 18:03	142-28-9	
2,2-Dichloropropane	**<1.0**	ug/L	1.0	1		10/29/20 18:03	594-20-7	v1
1,1-Dichloropropene	**<0.40**	ug/L	0.40	1		10/29/20 18:03	563-58-6	
cis-1,3-Dichloropropene	**<0.40**	ug/L	0.40	1		10/29/20 00:38	10061-01-5	
trans-1,3-Dichloropropene	**<0.40**	ug/L	0.40	1		10/29/20 00:38	10061-02-6	
Diethyl ether (Ethyl ether)	**<4.0**	ug/L	4.0	1		10/29/20 18:03	60-29-7	
Ethylbenzene	**<0.40**	ug/L	0.40	1		10/29/20 18:03	100-41-4	
Hexachloro-1,3-butadiene	**<0.10**	ug/L	0.10	1		10/29/20 00:38	87-68-3	
Isopropylbenzene (Cumene)	**<0.40**	ug/L	0.40	1		10/29/20 18:03	98-82-8	
p-Isopropyltoluene	**<0.40**	ug/L	0.40	1		10/29/20 18:03	99-87-6	
Methylene Chloride	**<1.0**	ug/L	1.0	1		10/29/20 18:03	75-09-2	
4-Methyl-2-pentanone (MIBK)	**<5.0**	ug/L	5.0	1		10/29/20 18:03	108-10-1	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10536477

Sample: W-106A **Lab ID: 10536477002** Collected: 10/15/20 10:18 Received: 10/21/20 12:20 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV LLW by SIMSCAN	Analytical Method: EPA 8260D							
	Pace Analytical Services - Minneapolis							
Methyl-tert-butyl ether	**<0.40**	ug/L	0.40	1		10/29/20 18:03	1634-04-4	
Naphthalene	**<1.0**	ug/L	1.0	1		10/29/20 18:03	91-20-3	
n-Propylbenzene	**<0.40**	ug/L	0.40	1		10/29/20 18:03	103-65-1	
Styrene	**<0.40**	ug/L	0.40	1		10/29/20 18:03	100-42-5	
1,1,1,2-Tetrachloroethane	**<0.40**	ug/L	0.40	1		10/29/20 18:03	630-20-6	
1,1,2,2-Tetrachloroethane	**<0.40**	ug/L	0.40	1		10/29/20 18:03	79-34-5	
Tetrachloroethene	**<0.40**	ug/L	0.40	1		10/29/20 18:03	127-18-4	
Tetrahydrofuran	**<10.0**	ug/L	10.0	1		10/29/20 18:03	109-99-9	
Toluene	**<0.40**	ug/L	0.40	1		10/29/20 18:03	108-88-3	
1,2,3-Trichlorobenzene	**<0.40**	ug/L	0.40	1		10/29/20 18:03	87-61-6	
1,2,4-Trichlorobenzene	**<0.40**	ug/L	0.40	1		10/29/20 18:03	120-82-1	
1,1,1-Trichloroethane	**<1.0**	ug/L	1.0	1		10/29/20 18:03	71-55-6	
1,1,2-Trichloroethane	**<0.40**	ug/L	0.40	1		10/29/20 18:03	79-00-5	
Trichloroethene	**<0.050**	ug/L	0.050	1		10/29/20 00:38	79-01-6	
Trichlorofluoromethane	**<0.40**	ug/L	0.40	1		10/29/20 18:03	75-69-4	v1
1,2,3-Trichloropropane	**<0.010**	ug/L	0.010	1		10/29/20 00:38	96-18-4	
1,1,2-Trichlorotrifluoroethane	**<1.0**	ug/L	1.0	1		10/29/20 18:03	76-13-1	
1,2,4-Trimethylbenzene	**<1.0**	ug/L	1.0	1		10/29/20 18:03	95-63-6	
1,3,5-Trimethylbenzene	**<0.40**	ug/L	0.40	1		10/29/20 18:03	108-67-8	
Vinyl chloride	**<0.050**	ug/L	0.050	1		10/29/20 00:38	75-01-4	
Xylene (Total)	**<1.2**	ug/L	1.2	1		10/29/20 18:03	1330-20-7	
m&p-Xylene	**<0.80**	ug/L	0.80	1		10/29/20 18:03	179601-23-1	
o-Xylene	**<0.40**	ug/L	0.40	1		10/29/20 18:03	95-47-6	
Surrogates								
1,2-Dichloroethane-d4 (S)	122	%.	75-128	1		10/29/20 18:03	17060-07-0	
1,2-Dichloroethane-d4 (S)	107	%.	75-128	1		10/29/20 00:38	17060-07-0	
Toluene-d8 (S)	104	%.	75-125	1		10/29/20 00:38	2037-26-5	
Toluene-d8 (S)	103	%.	75-125	1		10/29/20 18:03	2037-26-5	
4-Bromofluorobenzene (S)	90	%.	75-125	1		10/29/20 18:03	460-00-4	
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B							
	Pace Analytical Services - Minneapolis							
pH at 25 Degrees C	**7.6**	Std. Units	0.10	1		11/03/20 12:51		H6
SM2510 Specific Conductance	Analytical Method: SM 2510							
	Pace Analytical Services - Minneapolis							
Specific Conductance	**792**	umhos/cm	1.0	1		10/26/20 15:06		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10536477

Sample: W-5 **Lab ID: 10536477003** Collected: 10/15/20 10:59 Received: 10/21/20 12:20 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV LLW by SIMSCAN	Analytical Method: EPA 8260D Pace Analytical Services - Minneapolis							
Acetone	**<20.0**	ug/L	20.0	1		10/29/20 18:29	67-64-1	
Allyl chloride	**<4.0**	ug/L	4.0	1		10/29/20 18:29	107-05-1	
Benzene	**<0.20**	ug/L	0.20	1		10/29/20 18:29	71-43-2	
Bromobenzene	**<0.40**	ug/L	0.40	1		10/29/20 18:29	108-86-1	
Bromochloromethane	**<1.0**	ug/L	1.0	1		10/29/20 18:29	74-97-5	
Bromodichloromethane	**<0.40**	ug/L	0.40	1		10/29/20 18:29	75-27-4	
Bromoform	**<1.0**	ug/L	1.0	1		10/29/20 18:29	75-25-2	
Bromomethane	**<1.0**	ug/L	1.0	1		10/29/20 18:29	74-83-9	1M,v2
2-Butanone (MEK)	**<5.0**	ug/L	5.0	1		10/29/20 18:29	78-93-3	v2
n-Butylbenzene	**<0.40**	ug/L	0.40	1		10/29/20 18:29	104-51-8	
sec-Butylbenzene	**<0.40**	ug/L	0.40	1		10/29/20 18:29	135-98-8	
tert-Butylbenzene	**<0.40**	ug/L	0.40	1		10/29/20 18:29	98-06-6	
Carbon tetrachloride	**<0.050**	ug/L	0.050	1		10/29/20 01:04	56-23-5	
Chlorobenzene	**<0.40**	ug/L	0.40	1		10/29/20 18:29	108-90-7	
Chloroethane	**<1.0**	ug/L	1.0	1		10/29/20 18:29	75-00-3	
Chloroform	**<1.0**	ug/L	1.0	1		10/29/20 18:29	67-66-3	
Chloromethane	**<1.0**	ug/L	1.0	1		10/29/20 18:29	74-87-3	v2
2-Chlorotoluene	**<0.40**	ug/L	0.40	1		10/29/20 18:29	95-49-8	
4-Chlorotoluene	**<0.40**	ug/L	0.40	1		10/29/20 18:29	106-43-4	
1,2-Dibromo-3-chloropropane	**<0.12**	ug/L	0.12	1		10/29/20 01:04	96-12-8	
Dibromochloromethane	**<0.40**	ug/L	0.40	1		10/29/20 01:04	124-48-1	
1,2-Dibromoethane (EDB)	**<0.050**	ug/L	0.050	1		10/29/20 01:04	106-93-4	
Dibromomethane	**<1.0**	ug/L	1.0	1		10/29/20 18:29	74-95-3	
1,2-Dichlorobenzene	**<0.40**	ug/L	0.40	1		10/29/20 18:29	95-50-1	
1,3-Dichlorobenzene	**<0.40**	ug/L	0.40	1		10/29/20 18:29	541-73-1	
1,4-Dichlorobenzene	**<0.40**	ug/L	0.40	1		10/29/20 18:29	106-46-7	
Dichlorodifluoromethane	**<1.0**	ug/L	1.0	1		10/29/20 18:29	75-71-8	
1,1-Dichloroethane	**<0.40**	ug/L	0.40	1		10/29/20 18:29	75-34-3	
1,2-Dichloroethane	**<0.20**	ug/L	0.20	1		10/29/20 01:04	107-06-2	
1,1-Dichloroethene	**<1.0**	ug/L	1.0	1		10/29/20 18:29	75-35-4	
cis-1,2-Dichloroethene	**<0.40**	ug/L	0.40	1		10/29/20 18:29	156-59-2	
trans-1,2-Dichloroethene	**<0.40**	ug/L	0.40	1		10/29/20 18:29	156-60-5	
Dichlorofluoromethane	**<1.0**	ug/L	1.0	1		10/29/20 18:29	75-43-4	
1,2-Dichloropropane	**<0.40**	ug/L	0.40	1		10/29/20 18:29	78-87-5	
1,3-Dichloropropane	**<0.40**	ug/L	0.40	1		10/29/20 18:29	142-28-9	
2,2-Dichloropropane	**<1.0**	ug/L	1.0	1		10/29/20 18:29	594-20-7	v1
1,1-Dichloropropene	**<0.40**	ug/L	0.40	1		10/29/20 18:29	563-58-6	
cis-1,3-Dichloropropene	**<0.40**	ug/L	0.40	1		10/29/20 01:04	10061-01-5	
trans-1,3-Dichloropropene	**<0.40**	ug/L	0.40	1		10/29/20 01:04	10061-02-6	
Diethyl ether (Ethyl ether)	**<4.0**	ug/L	4.0	1		10/29/20 18:29	60-29-7	
Ethylbenzene	**<0.40**	ug/L	0.40	1		10/29/20 18:29	100-41-4	
Hexachloro-1,3-butadiene	**<0.10**	ug/L	0.10	1		10/29/20 01:04	87-68-3	
Isopropylbenzene (Cumene)	**<0.40**	ug/L	0.40	1		10/29/20 18:29	98-82-8	
p-Isopropyltoluene	**<0.40**	ug/L	0.40	1		10/29/20 18:29	99-87-6	
Methylene Chloride	**<1.0**	ug/L	1.0	1		10/29/20 18:29	75-09-2	
4-Methyl-2-pentanone (MIBK)	**<5.0**	ug/L	5.0	1		10/29/20 18:29	108-10-1	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10536477

Sample: W-5 **Lab ID: 10536477003** Collected: 10/15/20 10:59 Received: 10/21/20 12:20 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV LLW by SIMSCAN	Analytical Method: EPA 8260D							
	Pace Analytical Services - Minneapolis							
Methyl-tert-butyl ether	**<0.40**	ug/L	0.40	1		10/29/20 18:29	1634-04-4	
Naphthalene	**<1.0**	ug/L	1.0	1		10/29/20 18:29	91-20-3	
n-Propylbenzene	**<0.40**	ug/L	0.40	1		10/29/20 18:29	103-65-1	
Styrene	**<0.40**	ug/L	0.40	1		10/29/20 18:29	100-42-5	
1,1,1,2-Tetrachloroethane	**<0.40**	ug/L	0.40	1		10/29/20 18:29	630-20-6	
1,1,2,2-Tetrachloroethane	**<0.40**	ug/L	0.40	1		10/29/20 18:29	79-34-5	
Tetrachloroethene	**<0.40**	ug/L	0.40	1		10/29/20 18:29	127-18-4	
Tetrahydrofuran	**<10.0**	ug/L	10.0	1		10/29/20 18:29	109-99-9	
Toluene	**<0.40**	ug/L	0.40	1		10/29/20 18:29	108-88-3	
1,2,3-Trichlorobenzene	**<0.40**	ug/L	0.40	1		10/29/20 18:29	87-61-6	
1,2,4-Trichlorobenzene	**<0.40**	ug/L	0.40	1		10/29/20 18:29	120-82-1	
1,1,1-Trichloroethane	**<1.0**	ug/L	1.0	1		10/29/20 18:29	71-55-6	
1,1,2-Trichloroethane	**<0.40**	ug/L	0.40	1		10/29/20 18:29	79-00-5	
Trichloroethene	**<0.050**	ug/L	0.050	1		10/29/20 01:04	79-01-6	
Trichlorofluoromethane	**<0.40**	ug/L	0.40	1		10/29/20 18:29	75-69-4	v1
1,2,3-Trichloropropane	**<0.010**	ug/L	0.010	1		10/29/20 01:04	96-18-4	
1,1,2-Trichlorotrifluoroethane	**<1.0**	ug/L	1.0	1		10/29/20 18:29	76-13-1	
1,2,4-Trimethylbenzene	**<1.0**	ug/L	1.0	1		10/29/20 18:29	95-63-6	
1,3,5-Trimethylbenzene	**<0.40**	ug/L	0.40	1		10/29/20 18:29	108-67-8	
Vinyl chloride	**<0.050**	ug/L	0.050	1		10/29/20 01:04	75-01-4	
Xylene (Total)	**<1.2**	ug/L	1.2	1		10/29/20 18:29	1330-20-7	
m&p-Xylene	**<0.80**	ug/L	0.80	1		10/29/20 18:29	179601-23-1	
o-Xylene	**<0.40**	ug/L	0.40	1		10/29/20 18:29	95-47-6	
Surrogates								
1,2-Dichloroethane-d4 (S)	124	%.	75-128	1		10/29/20 18:29	17060-07-0	
1,2-Dichloroethane-d4 (S)	109	%.	75-128	1		10/29/20 01:04	17060-07-0	
Toluene-d8 (S)	105	%.	75-125	1		10/29/20 18:29	2037-26-5	
Toluene-d8 (S)	104	%.	75-125	1		10/29/20 01:04	2037-26-5	
4-Bromofluorobenzene (S)	90	%.	75-125	1		10/29/20 18:29	460-00-4	
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B							
	Pace Analytical Services - Minneapolis							
pH at 25 Degrees C	**7.6**	Std. Units	0.10	1		11/03/20 12:52		H6
SM2510 Specific Conductance	Analytical Method: SM 2510							
	Pace Analytical Services - Minneapolis							
Specific Conductance	**786**	umhos/cm	1.0	1		10/26/20 15:08		

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10536477

Sample: S-3 **Lab ID: 10536477004** Collected: 10/15/20 11:34 Received: 10/21/20 12:20 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV LLW by SIMSCAN	Analytical Method: EPA 8260D Pace Analytical Services - Minneapolis							
Acetone	**<20.0**	ug/L	20.0	1		10/29/20 18:56	67-64-1	
Allyl chloride	**<4.0**	ug/L	4.0	1		10/29/20 18:56	107-05-1	
Benzene	**<0.20**	ug/L	0.20	1		10/29/20 18:56	71-43-2	
Bromobenzene	**<0.40**	ug/L	0.40	1		10/29/20 18:56	108-86-1	
Bromochloromethane	**<1.0**	ug/L	1.0	1		10/29/20 18:56	74-97-5	
Bromodichloromethane	**<0.40**	ug/L	0.40	1		10/29/20 18:56	75-27-4	
Bromoform	**<1.0**	ug/L	1.0	1		10/29/20 18:56	75-25-2	
Bromomethane	**<1.0**	ug/L	1.0	1		10/29/20 18:56	74-83-9	1M,v2
2-Butanone (MEK)	**<5.0**	ug/L	5.0	1		10/29/20 18:56	78-93-3	v2
n-Butylbenzene	**<0.40**	ug/L	0.40	1		10/29/20 18:56	104-51-8	
sec-Butylbenzene	**<0.40**	ug/L	0.40	1		10/29/20 18:56	135-98-8	
tert-Butylbenzene	**<0.40**	ug/L	0.40	1		10/29/20 18:56	98-06-6	
Carbon tetrachloride	**<0.050**	ug/L	0.050	1		10/29/20 01:30	56-23-5	
Chlorobenzene	**<0.40**	ug/L	0.40	1		10/29/20 18:56	108-90-7	
Chloroethane	**<1.0**	ug/L	1.0	1		10/29/20 18:56	75-00-3	
Chloroform	**<1.0**	ug/L	1.0	1		10/29/20 18:56	67-66-3	
Chloromethane	**<1.0**	ug/L	1.0	1		10/29/20 18:56	74-87-3	v2
2-Chlorotoluene	**<0.40**	ug/L	0.40	1		10/29/20 18:56	95-49-8	
4-Chlorotoluene	**<0.40**	ug/L	0.40	1		10/29/20 18:56	106-43-4	
1,2-Dibromo-3-chloropropane	**<0.12**	ug/L	0.12	1		10/29/20 01:30	96-12-8	
Dibromochloromethane	**<0.40**	ug/L	0.40	1		10/29/20 01:30	124-48-1	
1,2-Dibromoethane (EDB)	**<0.050**	ug/L	0.050	1		10/29/20 01:30	106-93-4	
Dibromomethane	**<1.0**	ug/L	1.0	1		10/29/20 18:56	74-95-3	
1,2-Dichlorobenzene	**<0.40**	ug/L	0.40	1		10/29/20 18:56	95-50-1	
1,3-Dichlorobenzene	**<0.40**	ug/L	0.40	1		10/29/20 18:56	541-73-1	
1,4-Dichlorobenzene	**<0.40**	ug/L	0.40	1		10/29/20 18:56	106-46-7	
Dichlorodifluoromethane	**<1.0**	ug/L	1.0	1		10/29/20 18:56	75-71-8	
1,1-Dichloroethane	**<0.40**	ug/L	0.40	1		10/29/20 18:56	75-34-3	
1,2-Dichloroethane	**<0.20**	ug/L	0.20	1		10/29/20 01:30	107-06-2	
1,1-Dichloroethene	**<1.0**	ug/L	1.0	1		10/29/20 18:56	75-35-4	
cis-1,2-Dichloroethene	**<0.40**	ug/L	0.40	1		10/29/20 18:56	156-59-2	
trans-1,2-Dichloroethene	**<0.40**	ug/L	0.40	1		10/29/20 18:56	156-60-5	
Dichlorofluoromethane	**<1.0**	ug/L	1.0	1		10/29/20 18:56	75-43-4	
1,2-Dichloropropane	**<0.40**	ug/L	0.40	1		10/29/20 18:56	78-87-5	
1,3-Dichloropropane	**<0.40**	ug/L	0.40	1		10/29/20 18:56	142-28-9	
2,2-Dichloropropane	**<1.0**	ug/L	1.0	1		10/29/20 18:56	594-20-7	v1
1,1-Dichloropropene	**<0.40**	ug/L	0.40	1		10/29/20 18:56	563-58-6	
cis-1,3-Dichloropropene	**<0.40**	ug/L	0.40	1		10/29/20 01:30	10061-01-5	
trans-1,3-Dichloropropene	**<0.40**	ug/L	0.40	1		10/29/20 01:30	10061-02-6	
Diethyl ether (Ethyl ether)	**<4.0**	ug/L	4.0	1		10/29/20 18:56	60-29-7	
Ethylbenzene	**<0.40**	ug/L	0.40	1		10/29/20 18:56	100-41-4	
Hexachloro-1,3-butadiene	**<0.10**	ug/L	0.10	1		10/29/20 01:30	87-68-3	
Isopropylbenzene (Cumene)	**<0.40**	ug/L	0.40	1		10/29/20 18:56	98-82-8	
p-Isopropyltoluene	**<0.40**	ug/L	0.40	1		10/29/20 18:56	99-87-6	
Methylene Chloride	**<1.0**	ug/L	1.0	1		10/29/20 18:56	75-09-2	
4-Methyl-2-pentanone (MIBK)	**<5.0**	ug/L	5.0	1		10/29/20 18:56	108-10-1	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10536477

Sample: S-3 **Lab ID: 10536477004** Collected: 10/15/20 11:34 Received: 10/21/20 12:20 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV LLW by SIMSCAN	Analytical Method: EPA 8260D Pace Analytical Services - Minneapolis							
Methyl-tert-butyl ether	**<0.40**	ug/L	0.40	1		10/29/20 18:56	1634-04-4	
Naphthalene	**<1.0**	ug/L	1.0	1		10/29/20 18:56	91-20-3	
n-Propylbenzene	**<0.40**	ug/L	0.40	1		10/29/20 18:56	103-65-1	
Styrene	**<0.40**	ug/L	0.40	1		10/29/20 18:56	100-42-5	
1,1,1,2-Tetrachloroethane	**<0.40**	ug/L	0.40	1		10/29/20 18:56	630-20-6	
1,1,2,2-Tetrachloroethane	**<0.40**	ug/L	0.40	1		10/29/20 18:56	79-34-5	
Tetrachloroethene	**<0.40**	ug/L	0.40	1		10/29/20 18:56	127-18-4	
Tetrahydrofuran	**<10.0**	ug/L	10.0	1		10/29/20 18:56	109-99-9	
Toluene	**0.52**	ug/L	0.40	1		10/29/20 18:56	108-88-3	
1,2,3-Trichlorobenzene	**<0.40**	ug/L	0.40	1		10/29/20 18:56	87-61-6	
1,2,4-Trichlorobenzene	**<0.40**	ug/L	0.40	1		10/29/20 18:56	120-82-1	
1,1,1-Trichloroethane	**<1.0**	ug/L	1.0	1		10/29/20 18:56	71-55-6	
1,1,2-Trichloroethane	**<0.40**	ug/L	0.40	1		10/29/20 18:56	79-00-5	
Trichloroethene	**<0.050**	ug/L	0.050	1		10/29/20 01:30	79-01-6	
Trichlorofluoromethane	**<0.40**	ug/L	0.40	1		10/29/20 18:56	75-69-4	v1
1,2,3-Trichloropropane	**<0.010**	ug/L	0.010	1		10/29/20 01:30	96-18-4	
1,1,2-Trichlorotrifluoroethane	**<1.0**	ug/L	1.0	1		10/29/20 18:56	76-13-1	
1,2,4-Trimethylbenzene	**<1.0**	ug/L	1.0	1		10/29/20 18:56	95-63-6	
1,3,5-Trimethylbenzene	**<0.40**	ug/L	0.40	1		10/29/20 18:56	108-67-8	
Vinyl chloride	**<0.050**	ug/L	0.050	1		10/29/20 01:30	75-01-4	
Xylene (Total)	**<1.2**	ug/L	1.2	1		10/29/20 18:56	1330-20-7	
m&p-Xylene	**<0.80**	ug/L	0.80	1		10/29/20 18:56	179601-23-1	
o-Xylene	**<0.40**	ug/L	0.40	1		10/29/20 18:56	95-47-6	
Surrogates								
1,2-Dichloroethane-d4 (S)	109	%.	75-128	1		10/29/20 01:30	17060-07-0	
1,2-Dichloroethane-d4 (S)	120	%.	75-128	1		10/29/20 18:56	17060-07-0	
Toluene-d8 (S)	103	%.	75-125	1		10/29/20 01:30	2037-26-5	
Toluene-d8 (S)	102	%.	75-125	1		10/29/20 18:56	2037-26-5	
4-Bromofluorobenzene (S)	90	%.	75-125	1		10/29/20 18:56	460-00-4	
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B Pace Analytical Services - Minneapolis							
pH at 25 Degrees C	**7.4**	Std. Units	0.10	1		11/03/20 12:54		H6
SM2510 Specific Conductance	Analytical Method: SM 2510 Pace Analytical Services - Minneapolis							
Specific Conductance	**887**	umhos/cm	1.0	1		10/26/20 15:08		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10536477

Sample: W-202A **Lab ID: 10536477005** Collected: 10/15/20 12:28 Received: 10/21/20 12:20 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV LLW by SIMSCAN	Analytical Method: EPA 8260D Pace Analytical Services - Minneapolis							
Acetone	**<20.0**	ug/L	20.0	1		10/29/20 19:22	67-64-1	
Allyl chloride	**<4.0**	ug/L	4.0	1		10/29/20 19:22	107-05-1	
Benzene	**<0.20**	ug/L	0.20	1		10/29/20 19:22	71-43-2	
Bromobenzene	**<0.40**	ug/L	0.40	1		10/29/20 19:22	108-86-1	
Bromochloromethane	**<1.0**	ug/L	1.0	1		10/29/20 19:22	74-97-5	
Bromodichloromethane	**<0.40**	ug/L	0.40	1		10/29/20 19:22	75-27-4	
Bromoform	**<1.0**	ug/L	1.0	1		10/29/20 19:22	75-25-2	
Bromomethane	**<1.0**	ug/L	1.0	1		10/29/20 19:22	74-83-9	1M,v2
2-Butanone (MEK)	**<5.0**	ug/L	5.0	1		10/29/20 19:22	78-93-3	v2
n-Butylbenzene	**<0.40**	ug/L	0.40	1		10/29/20 19:22	104-51-8	
sec-Butylbenzene	**<0.40**	ug/L	0.40	1		10/29/20 19:22	135-98-8	
tert-Butylbenzene	**<0.40**	ug/L	0.40	1		10/29/20 19:22	98-06-6	
Carbon tetrachloride	**<0.050**	ug/L	0.050	1		10/29/20 01:57	56-23-5	
Chlorobenzene	**<0.40**	ug/L	0.40	1		10/29/20 19:22	108-90-7	
Chloroethane	**<1.0**	ug/L	1.0	1		10/29/20 19:22	75-00-3	
Chloroform	**<1.0**	ug/L	1.0	1		10/29/20 19:22	67-66-3	
Chloromethane	**<1.0**	ug/L	1.0	1		10/29/20 19:22	74-87-3	v2
2-Chlorotoluene	**<0.40**	ug/L	0.40	1		10/29/20 19:22	95-49-8	
4-Chlorotoluene	**<0.40**	ug/L	0.40	1		10/29/20 19:22	106-43-4	
1,2-Dibromo-3-chloropropane	**<0.12**	ug/L	0.12	1		10/29/20 01:57	96-12-8	
Dibromochloromethane	**<0.40**	ug/L	0.40	1		10/29/20 01:57	124-48-1	
1,2-Dibromoethane (EDB)	**<0.050**	ug/L	0.050	1		10/29/20 01:57	106-93-4	
Dibromomethane	**<1.0**	ug/L	1.0	1		10/29/20 19:22	74-95-3	
1,2-Dichlorobenzene	**<0.40**	ug/L	0.40	1		10/29/20 19:22	95-50-1	
1,3-Dichlorobenzene	**<0.40**	ug/L	0.40	1		10/29/20 19:22	541-73-1	
1,4-Dichlorobenzene	**<0.40**	ug/L	0.40	1		10/29/20 19:22	106-46-7	
Dichlorodifluoromethane	**<1.0**	ug/L	1.0	1		10/29/20 19:22	75-71-8	
1,1-Dichloroethane	**<0.40**	ug/L	0.40	1		10/29/20 19:22	75-34-3	
1,2-Dichloroethane	**<0.20**	ug/L	0.20	1		10/29/20 01:57	107-06-2	
1,1-Dichloroethene	**<1.0**	ug/L	1.0	1		10/29/20 19:22	75-35-4	
cis-1,2-Dichloroethene	**<0.40**	ug/L	0.40	1		10/29/20 19:22	156-59-2	
trans-1,2-Dichloroethene	**<0.40**	ug/L	0.40	1		10/29/20 19:22	156-60-5	
Dichlorofluoromethane	**<1.0**	ug/L	1.0	1		10/29/20 19:22	75-43-4	
1,2-Dichloropropane	**<0.40**	ug/L	0.40	1		10/29/20 19:22	78-87-5	
1,3-Dichloropropane	**<0.40**	ug/L	0.40	1		10/29/20 19:22	142-28-9	
2,2-Dichloropropane	**<1.0**	ug/L	1.0	1		10/29/20 19:22	594-20-7	v1
1,1-Dichloropropene	**<0.40**	ug/L	0.40	1		10/29/20 19:22	563-58-6	
cis-1,3-Dichloropropene	**<0.40**	ug/L	0.40	1		10/29/20 01:57	10061-01-5	
trans-1,3-Dichloropropene	**<0.40**	ug/L	0.40	1		10/29/20 01:57	10061-02-6	
Diethyl ether (Ethyl ether)	**<4.0**	ug/L	4.0	1		10/29/20 19:22	60-29-7	
Ethylbenzene	**<0.40**	ug/L	0.40	1		10/29/20 19:22	100-41-4	
Hexachloro-1,3-butadiene	**<0.10**	ug/L	0.10	1		10/29/20 01:57	87-68-3	
Isopropylbenzene (Cumene)	**<0.40**	ug/L	0.40	1		10/29/20 19:22	98-82-8	
p-Isopropyltoluene	**<0.40**	ug/L	0.40	1		10/29/20 19:22	99-87-6	
Methylene Chloride	**<1.0**	ug/L	1.0	1		10/29/20 19:22	75-09-2	
4-Methyl-2-pentanone (MIBK)	**<5.0**	ug/L	5.0	1		10/29/20 19:22	108-10-1	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10536477

Sample: W-202A **Lab ID: 10536477005** Collected: 10/15/20 12:28 Received: 10/21/20 12:20 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV LLW by SIMSCAN	Analytical Method: EPA 8260D							
	Pace Analytical Services - Minneapolis							
Methyl-tert-butyl ether	**<0.40**	ug/L	0.40	1		10/29/20 19:22	1634-04-4	
Naphthalene	**<1.0**	ug/L	1.0	1		10/29/20 19:22	91-20-3	
n-Propylbenzene	**<0.40**	ug/L	0.40	1		10/29/20 19:22	103-65-1	
Styrene	**<0.40**	ug/L	0.40	1		10/29/20 19:22	100-42-5	
1,1,1,2-Tetrachloroethane	**<0.40**	ug/L	0.40	1		10/29/20 19:22	630-20-6	
1,1,2,2-Tetrachloroethane	**<0.40**	ug/L	0.40	1		10/29/20 19:22	79-34-5	
Tetrachloroethene	**<0.40**	ug/L	0.40	1		10/29/20 19:22	127-18-4	
Tetrahydrofuran	**<10.0**	ug/L	10.0	1		10/29/20 19:22	109-99-9	
Toluene	**<0.40**	ug/L	0.40	1		10/29/20 19:22	108-88-3	
1,2,3-Trichlorobenzene	**<0.40**	ug/L	0.40	1		10/29/20 19:22	87-61-6	
1,2,4-Trichlorobenzene	**<0.40**	ug/L	0.40	1		10/29/20 19:22	120-82-1	
1,1,1-Trichloroethane	**<1.0**	ug/L	1.0	1		10/29/20 19:22	71-55-6	
1,1,2-Trichloroethane	**<0.40**	ug/L	0.40	1		10/29/20 19:22	79-00-5	
Trichloroethene	**<0.050**	ug/L	0.050	1		10/29/20 01:57	79-01-6	
Trichlorofluoromethane	**<0.40**	ug/L	0.40	1		10/29/20 19:22	75-69-4	v1
1,2,3-Trichloropropane	**<0.010**	ug/L	0.010	1		10/29/20 01:57	96-18-4	
1,1,2-Trichlorotrifluoroethane	**<1.0**	ug/L	1.0	1		10/29/20 19:22	76-13-1	
1,2,4-Trimethylbenzene	**<1.0**	ug/L	1.0	1		10/29/20 19:22	95-63-6	
1,3,5-Trimethylbenzene	**<0.40**	ug/L	0.40	1		10/29/20 19:22	108-67-8	
Vinyl chloride	**<0.050**	ug/L	0.050	1		10/29/20 01:57	75-01-4	
Xylene (Total)	**<1.2**	ug/L	1.2	1		10/29/20 19:22	1330-20-7	
m&p-Xylene	**<0.80**	ug/L	0.80	1		10/29/20 19:22	179601-23-1	
o-Xylene	**<0.40**	ug/L	0.40	1		10/29/20 19:22	95-47-6	
Surrogates								
1,2-Dichloroethane-d4 (S)	109	%.	75-128	1		10/29/20 01:57	17060-07-0	
1,2-Dichloroethane-d4 (S)	124	%.	75-128	1		10/29/20 19:22	17060-07-0	
Toluene-d8 (S)	103	%.	75-125	1		10/29/20 19:22	2037-26-5	
Toluene-d8 (S)	105	%.	75-125	1		10/29/20 01:57	2037-26-5	
4-Bromofluorobenzene (S)	92	%.	75-125	1		10/29/20 19:22	460-00-4	
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B							
	Pace Analytical Services - Minneapolis							
pH at 25 Degrees C	**7.6**	Std. Units	0.10	1		11/03/20 12:55		H6
SM2510 Specific Conductance	Analytical Method: SM 2510							
	Pace Analytical Services - Minneapolis							
Specific Conductance	**869**	umhos/cm	1.0	1		10/26/20 15:09		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10536477

Sample: W-201A **Lab ID: 10536477006** Collected: 10/15/20 12:56 Received: 10/21/20 12:20 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV LLW by SIMSCAN	Analytical Method: EPA 8260D Pace Analytical Services - Minneapolis							
Acetone	**<20.0**	ug/L	20.0	1		10/29/20 19:48	67-64-1	
Allyl chloride	**<4.0**	ug/L	4.0	1		10/29/20 19:48	107-05-1	
Benzene	**<0.20**	ug/L	0.20	1		10/29/20 19:48	71-43-2	
Bromobenzene	**<0.40**	ug/L	0.40	1		10/29/20 19:48	108-86-1	
Bromochloromethane	**<1.0**	ug/L	1.0	1		10/29/20 19:48	74-97-5	
Bromodichloromethane	**<0.40**	ug/L	0.40	1		10/29/20 19:48	75-27-4	
Bromoform	**<1.0**	ug/L	1.0	1		10/29/20 19:48	75-25-2	
Bromomethane	**<1.0**	ug/L	1.0	1		10/29/20 19:48	74-83-9	1M,v2
2-Butanone (MEK)	**<5.0**	ug/L	5.0	1		10/29/20 19:48	78-93-3	v2
n-Butylbenzene	**<0.40**	ug/L	0.40	1		10/29/20 19:48	104-51-8	
sec-Butylbenzene	**<0.40**	ug/L	0.40	1		10/29/20 19:48	135-98-8	
tert-Butylbenzene	**<0.40**	ug/L	0.40	1		10/29/20 19:48	98-06-6	
Carbon tetrachloride	**<0.050**	ug/L	0.050	1		10/29/20 02:23	56-23-5	
Chlorobenzene	**<0.40**	ug/L	0.40	1		10/29/20 19:48	108-90-7	
Chloroethane	**<1.0**	ug/L	1.0	1		10/29/20 19:48	75-00-3	
Chloroform	**<1.0**	ug/L	1.0	1		10/29/20 19:48	67-66-3	
Chloromethane	**<1.0**	ug/L	1.0	1		10/29/20 19:48	74-87-3	v2
2-Chlorotoluene	**<0.40**	ug/L	0.40	1		10/29/20 19:48	95-49-8	
4-Chlorotoluene	**<0.40**	ug/L	0.40	1		10/29/20 19:48	106-43-4	
1,2-Dibromo-3-chloropropane	**<0.12**	ug/L	0.12	1		10/29/20 02:23	96-12-8	
Dibromochloromethane	**<0.40**	ug/L	0.40	1		10/29/20 02:23	124-48-1	
1,2-Dibromoethane (EDB)	**<0.050**	ug/L	0.050	1		10/29/20 02:23	106-93-4	
Dibromomethane	**<1.0**	ug/L	1.0	1		10/29/20 19:48	74-95-3	
1,2-Dichlorobenzene	**<0.40**	ug/L	0.40	1		10/29/20 19:48	95-50-1	
1,3-Dichlorobenzene	**<0.40**	ug/L	0.40	1		10/29/20 19:48	541-73-1	
1,4-Dichlorobenzene	**<0.40**	ug/L	0.40	1		10/29/20 19:48	106-46-7	
Dichlorodifluoromethane	**<1.0**	ug/L	1.0	1		10/29/20 19:48	75-71-8	
1,1-Dichloroethane	**<0.40**	ug/L	0.40	1		10/29/20 19:48	75-34-3	
1,2-Dichloroethane	**<0.20**	ug/L	0.20	1		10/29/20 02:23	107-06-2	
1,1-Dichloroethene	**<1.0**	ug/L	1.0	1		10/29/20 19:48	75-35-4	
cis-1,2-Dichloroethene	**<0.40**	ug/L	0.40	1		10/29/20 19:48	156-59-2	
trans-1,2-Dichloroethene	**<0.40**	ug/L	0.40	1		10/29/20 19:48	156-60-5	
Dichlorofluoromethane	**<1.0**	ug/L	1.0	1		10/29/20 19:48	75-43-4	
1,2-Dichloropropane	**<0.40**	ug/L	0.40	1		10/29/20 19:48	78-87-5	
1,3-Dichloropropane	**<0.40**	ug/L	0.40	1		10/29/20 19:48	142-28-9	
2,2-Dichloropropane	**<1.0**	ug/L	1.0	1		10/29/20 19:48	594-20-7	v1
1,1-Dichloropropene	**<0.40**	ug/L	0.40	1		10/29/20 19:48	563-58-6	
cis-1,3-Dichloropropene	**<0.40**	ug/L	0.40	1		10/29/20 02:23	10061-01-5	
trans-1,3-Dichloropropene	**<0.40**	ug/L	0.40	1		10/29/20 02:23	10061-02-6	
Diethyl ether (Ethyl ether)	**<4.0**	ug/L	4.0	1		10/29/20 19:48	60-29-7	
Ethylbenzene	**<0.40**	ug/L	0.40	1		10/29/20 19:48	100-41-4	
Hexachloro-1,3-butadiene	**<0.10**	ug/L	0.10	1		10/29/20 02:23	87-68-3	
Isopropylbenzene (Cumene)	**<0.40**	ug/L	0.40	1		10/29/20 19:48	98-82-8	
p-Isopropyltoluene	**<0.40**	ug/L	0.40	1		10/29/20 19:48	99-87-6	
Methylene Chloride	**<1.0**	ug/L	1.0	1		10/29/20 19:48	75-09-2	
4-Methyl-2-pentanone (MIBK)	**<5.0**	ug/L	5.0	1		10/29/20 19:48	108-10-1	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10536477

Sample: W-201A **Lab ID: 10536477006** Collected: 10/15/20 12:56 Received: 10/21/20 12:20 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV LLW by SIMSCAN	Analytical Method: EPA 8260D							
	Pace Analytical Services - Minneapolis							
Methyl-tert-butyl ether	**<0.40**	ug/L	0.40	1		10/29/20 19:48	1634-04-4	
Naphthalene	**<1.0**	ug/L	1.0	1		10/29/20 19:48	91-20-3	
n-Propylbenzene	**<0.40**	ug/L	0.40	1		10/29/20 19:48	103-65-1	
Styrene	**<0.40**	ug/L	0.40	1		10/29/20 19:48	100-42-5	
1,1,1,2-Tetrachloroethane	**<0.40**	ug/L	0.40	1		10/29/20 19:48	630-20-6	
1,1,2,2-Tetrachloroethane	**<0.40**	ug/L	0.40	1		10/29/20 19:48	79-34-5	
Tetrachloroethene	**<0.40**	ug/L	0.40	1		10/29/20 19:48	127-18-4	
Tetrahydrofuran	**<10.0**	ug/L	10.0	1		10/29/20 19:48	109-99-9	
Toluene	**<0.40**	ug/L	0.40	1		10/29/20 19:48	108-88-3	
1,2,3-Trichlorobenzene	**<0.40**	ug/L	0.40	1		10/29/20 19:48	87-61-6	
1,2,4-Trichlorobenzene	**<0.40**	ug/L	0.40	1		10/29/20 19:48	120-82-1	
1,1,1-Trichloroethane	**<1.0**	ug/L	1.0	1		10/29/20 19:48	71-55-6	
1,1,2-Trichloroethane	**<0.40**	ug/L	0.40	1		10/29/20 19:48	79-00-5	
Trichloroethene	**<0.050**	ug/L	0.050	1		10/29/20 02:23	79-01-6	
Trichlorofluoromethane	**<0.40**	ug/L	0.40	1		10/29/20 19:48	75-69-4	v1
1,2,3-Trichloropropane	**<0.010**	ug/L	0.010	1		10/29/20 02:23	96-18-4	
1,1,2-Trichlorotrifluoroethane	**<1.0**	ug/L	1.0	1		10/29/20 19:48	76-13-1	
1,2,4-Trimethylbenzene	**<1.0**	ug/L	1.0	1		10/29/20 19:48	95-63-6	
1,3,5-Trimethylbenzene	**<0.40**	ug/L	0.40	1		10/29/20 19:48	108-67-8	
Vinyl chloride	**<0.050**	ug/L	0.050	1		10/29/20 02:23	75-01-4	
Xylene (Total)	**<1.2**	ug/L	1.2	1		10/29/20 19:48	1330-20-7	
m&p-Xylene	**<0.80**	ug/L	0.80	1		10/29/20 19:48	179601-23-1	
o-Xylene	**<0.40**	ug/L	0.40	1		10/29/20 19:48	95-47-6	
Surrogates								
1,2-Dichloroethane-d4 (S)	109	%.	75-128	1		10/29/20 02:23	17060-07-0	
1,2-Dichloroethane-d4 (S)	120	%.	75-128	1		10/29/20 19:48	17060-07-0	
Toluene-d8 (S)	104	%.	75-125	1		10/29/20 19:48	2037-26-5	
Toluene-d8 (S)	105	%.	75-125	1		10/29/20 02:23	2037-26-5	
4-Bromofluorobenzene (S)	92	%.	75-125	1		10/29/20 19:48	460-00-4	
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B							
	Pace Analytical Services - Minneapolis							
pH at 25 Degrees C	**7.6**	Std. Units	0.10	1		11/03/20 12:57		H6
SM2510 Specific Conductance	Analytical Method: SM 2510							
	Pace Analytical Services - Minneapolis							
Specific Conductance	**806**	umhos/cm	1.0	1		10/26/20 15:10		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10536477

Sample: W-2 **Lab ID: 10536477007** Collected: 10/15/20 13:27 Received: 10/21/20 12:20 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV LLW by SIMSCAN	Analytical Method: EPA 8260D Pace Analytical Services - Minneapolis							
Acetone	**<20.0**	ug/L	20.0	1		10/29/20 20:14	67-64-1	
Allyl chloride	**<4.0**	ug/L	4.0	1		10/29/20 20:14	107-05-1	
Benzene	**<0.20**	ug/L	0.20	1		10/29/20 20:14	71-43-2	
Bromobenzene	**<0.40**	ug/L	0.40	1		10/29/20 20:14	108-86-1	
Bromochloromethane	**<1.0**	ug/L	1.0	1		10/29/20 20:14	74-97-5	
Bromodichloromethane	**<0.40**	ug/L	0.40	1		10/29/20 20:14	75-27-4	
Bromoform	**<1.0**	ug/L	1.0	1		10/29/20 20:14	75-25-2	
Bromomethane	**<1.0**	ug/L	1.0	1		10/29/20 20:14	74-83-9	1M,v2
2-Butanone (MEK)	**<5.0**	ug/L	5.0	1		10/29/20 20:14	78-93-3	v2
n-Butylbenzene	**<0.40**	ug/L	0.40	1		10/29/20 20:14	104-51-8	
sec-Butylbenzene	**<0.40**	ug/L	0.40	1		10/29/20 20:14	135-98-8	
tert-Butylbenzene	**<0.40**	ug/L	0.40	1		10/29/20 20:14	98-06-6	
Carbon tetrachloride	**<0.050**	ug/L	0.050	1		10/29/20 02:49	56-23-5	
Chlorobenzene	**<0.40**	ug/L	0.40	1		10/29/20 20:14	108-90-7	
Chloroethane	**<1.0**	ug/L	1.0	1		10/29/20 20:14	75-00-3	
Chloroform	**<1.0**	ug/L	1.0	1		10/29/20 20:14	67-66-3	
Chloromethane	**<1.0**	ug/L	1.0	1		10/29/20 20:14	74-87-3	v2
2-Chlorotoluene	**<0.40**	ug/L	0.40	1		10/29/20 20:14	95-49-8	
4-Chlorotoluene	**<0.40**	ug/L	0.40	1		10/29/20 20:14	106-43-4	
1,2-Dibromo-3-chloropropane	**<0.12**	ug/L	0.12	1		10/29/20 02:49	96-12-8	
Dibromochloromethane	**<0.40**	ug/L	0.40	1		10/29/20 02:49	124-48-1	
1,2-Dibromoethane (EDB)	**<0.050**	ug/L	0.050	1		10/29/20 02:49	106-93-4	
Dibromomethane	**<1.0**	ug/L	1.0	1		10/29/20 20:14	74-95-3	
1,2-Dichlorobenzene	**<0.40**	ug/L	0.40	1		10/29/20 20:14	95-50-1	
1,3-Dichlorobenzene	**<0.40**	ug/L	0.40	1		10/29/20 20:14	541-73-1	
1,4-Dichlorobenzene	**<0.40**	ug/L	0.40	1		10/29/20 20:14	106-46-7	
Dichlorodifluoromethane	**<1.0**	ug/L	1.0	1		10/29/20 20:14	75-71-8	
1,1-Dichloroethane	**<0.40**	ug/L	0.40	1		10/29/20 20:14	75-34-3	
1,2-Dichloroethane	**<0.20**	ug/L	0.20	1		10/29/20 02:49	107-06-2	
1,1-Dichloroethene	**<1.0**	ug/L	1.0	1		10/29/20 20:14	75-35-4	
cis-1,2-Dichloroethene	**<0.40**	ug/L	0.40	1		10/29/20 20:14	156-59-2	
trans-1,2-Dichloroethene	**<0.40**	ug/L	0.40	1		10/29/20 20:14	156-60-5	
Dichlorofluoromethane	**<1.0**	ug/L	1.0	1		10/29/20 20:14	75-43-4	
1,2-Dichloropropane	**<0.40**	ug/L	0.40	1		10/29/20 20:14	78-87-5	
1,3-Dichloropropane	**<0.40**	ug/L	0.40	1		10/29/20 20:14	142-28-9	
2,2-Dichloropropane	**<1.0**	ug/L	1.0	1		10/29/20 20:14	594-20-7	v1
1,1-Dichloropropene	**<0.40**	ug/L	0.40	1		10/29/20 20:14	563-58-6	
cis-1,3-Dichloropropene	**<0.40**	ug/L	0.40	1		10/29/20 02:49	10061-01-5	
trans-1,3-Dichloropropene	**<0.40**	ug/L	0.40	1		10/29/20 02:49	10061-02-6	
Diethyl ether (Ethyl ether)	**<4.0**	ug/L	4.0	1		10/29/20 20:14	60-29-7	
Ethylbenzene	**<0.40**	ug/L	0.40	1		10/29/20 20:14	100-41-4	
Hexachloro-1,3-butadiene	**<0.10**	ug/L	0.10	1		10/29/20 02:49	87-68-3	
Isopropylbenzene (Cumene)	**<0.40**	ug/L	0.40	1		10/29/20 20:14	98-82-8	
p-Isopropyltoluene	**<0.40**	ug/L	0.40	1		10/29/20 20:14	99-87-6	
Methylene Chloride	**<1.0**	ug/L	1.0	1		10/29/20 20:14	75-09-2	
4-Methyl-2-pentanone (MIBK)	**<5.0**	ug/L	5.0	1		10/29/20 20:14	108-10-1	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10536477

Sample: W-2 **Lab ID: 10536477007** Collected: 10/15/20 13:27 Received: 10/21/20 12:20 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV LLW by SIMSCAN	Analytical Method: EPA 8260D							
	Pace Analytical Services - Minneapolis							
Methyl-tert-butyl ether	**<0.40**	ug/L	0.40	1		10/29/20 20:14	1634-04-4	
Naphthalene	**<1.0**	ug/L	1.0	1		10/29/20 20:14	91-20-3	
n-Propylbenzene	**<0.40**	ug/L	0.40	1		10/29/20 20:14	103-65-1	
Styrene	**<0.40**	ug/L	0.40	1		10/29/20 20:14	100-42-5	
1,1,1,2-Tetrachloroethane	**<0.40**	ug/L	0.40	1		10/29/20 20:14	630-20-6	
1,1,2,2-Tetrachloroethane	**<0.40**	ug/L	0.40	1		10/29/20 20:14	79-34-5	
Tetrachloroethene	**<0.40**	ug/L	0.40	1		10/29/20 20:14	127-18-4	
Tetrahydrofuran	**<10.0**	ug/L	10.0	1		10/29/20 20:14	109-99-9	
Toluene	**<0.40**	ug/L	0.40	1		10/29/20 20:14	108-88-3	
1,2,3-Trichlorobenzene	**<0.40**	ug/L	0.40	1		10/29/20 20:14	87-61-6	
1,2,4-Trichlorobenzene	**<0.40**	ug/L	0.40	1		10/29/20 20:14	120-82-1	
1,1,1-Trichloroethane	**<1.0**	ug/L	1.0	1		10/29/20 20:14	71-55-6	
1,1,2-Trichloroethane	**<0.40**	ug/L	0.40	1		10/29/20 20:14	79-00-5	
Trichloroethene	**<0.050**	ug/L	0.050	1		10/29/20 02:49	79-01-6	
Trichlorofluoromethane	**<0.40**	ug/L	0.40	1		10/29/20 20:14	75-69-4	v1
1,2,3-Trichloropropane	**<0.010**	ug/L	0.010	1		10/29/20 02:49	96-18-4	
1,1,2-Trichlorotrifluoroethane	**<1.0**	ug/L	1.0	1		10/29/20 20:14	76-13-1	
1,2,4-Trimethylbenzene	**<1.0**	ug/L	1.0	1		10/29/20 20:14	95-63-6	
1,3,5-Trimethylbenzene	**<0.40**	ug/L	0.40	1		10/29/20 20:14	108-67-8	
Vinyl chloride	**0.075**	ug/L	0.050	1		10/29/20 02:49	75-01-4	
Xylene (Total)	**<1.2**	ug/L	1.2	1		10/29/20 20:14	1330-20-7	
m&p-Xylene	**<0.80**	ug/L	0.80	1		10/29/20 20:14	179601-23-1	
o-Xylene	**<0.40**	ug/L	0.40	1		10/29/20 20:14	95-47-6	
Surrogates								
1,2-Dichloroethane-d4 (S)	121	%.	75-128	1		10/29/20 20:14	17060-07-0	
1,2-Dichloroethane-d4 (S)	110	%.	75-128	1		10/29/20 02:49	17060-07-0	
Toluene-d8 (S)	104	%.	75-125	1		10/29/20 20:14	2037-26-5	
Toluene-d8 (S)	104	%.	75-125	1		10/29/20 02:49	2037-26-5	
4-Bromofluorobenzene (S)	93	%.	75-125	1		10/29/20 20:14	460-00-4	
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B							
	Pace Analytical Services - Minneapolis							
pH at 25 Degrees C	**7.8**	Std. Units	0.10	1		11/03/20 12:58		H6
SM2510 Specific Conductance	Analytical Method: SM 2510							
	Pace Analytical Services - Minneapolis							
Specific Conductance	**564**	umhos/cm	1.0	1		10/27/20 16:31		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10536477

Sample: W-6 **Lab ID: 10536477008** Collected: 10/15/20 14:10 Received: 10/21/20 12:20 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV LLW by SIMSCAN	Analytical Method: EPA 8260D Pace Analytical Services - Minneapolis							
Acetone	**<20.0**	ug/L	20.0	1		10/29/20 20:40	67-64-1	
Allyl chloride	**<4.0**	ug/L	4.0	1		10/29/20 20:40	107-05-1	
Benzene	**<0.20**	ug/L	0.20	1		10/29/20 20:40	71-43-2	
Bromobenzene	**<0.40**	ug/L	0.40	1		10/29/20 20:40	108-86-1	
Bromochloromethane	**<1.0**	ug/L	1.0	1		10/29/20 20:40	74-97-5	
Bromodichloromethane	**<0.40**	ug/L	0.40	1		10/29/20 20:40	75-27-4	
Bromoform	**<1.0**	ug/L	1.0	1		10/29/20 20:40	75-25-2	
Bromomethane	**<1.0**	ug/L	1.0	1		10/29/20 20:40	74-83-9	1M,v2
2-Butanone (MEK)	**<5.0**	ug/L	5.0	1		10/29/20 20:40	78-93-3	v2
n-Butylbenzene	**<0.40**	ug/L	0.40	1		10/29/20 20:40	104-51-8	
sec-Butylbenzene	**<0.40**	ug/L	0.40	1		10/29/20 20:40	135-98-8	
tert-Butylbenzene	**<0.40**	ug/L	0.40	1		10/29/20 20:40	98-06-6	
Carbon tetrachloride	**<0.050**	ug/L	0.050	1		10/29/20 03:15	56-23-5	
Chlorobenzene	**<0.40**	ug/L	0.40	1		10/29/20 20:40	108-90-7	
Chloroethane	**<1.0**	ug/L	1.0	1		10/29/20 20:40	75-00-3	
Chloroform	**<1.0**	ug/L	1.0	1		10/29/20 20:40	67-66-3	
Chloromethane	**<1.0**	ug/L	1.0	1		10/29/20 20:40	74-87-3	v2
2-Chlorotoluene	**<0.40**	ug/L	0.40	1		10/29/20 20:40	95-49-8	
4-Chlorotoluene	**<0.40**	ug/L	0.40	1		10/29/20 20:40	106-43-4	
1,2-Dibromo-3-chloropropane	**<0.12**	ug/L	0.12	1		10/29/20 03:15	96-12-8	
Dibromochloromethane	**<0.40**	ug/L	0.40	1		10/29/20 03:15	124-48-1	
1,2-Dibromoethane (EDB)	**<0.050**	ug/L	0.050	1		10/29/20 03:15	106-93-4	
Dibromomethane	**<1.0**	ug/L	1.0	1		10/29/20 20:40	74-95-3	
1,2-Dichlorobenzene	**<0.40**	ug/L	0.40	1		10/29/20 20:40	95-50-1	
1,3-Dichlorobenzene	**<0.40**	ug/L	0.40	1		10/29/20 20:40	541-73-1	
1,4-Dichlorobenzene	**<0.40**	ug/L	0.40	1		10/29/20 20:40	106-46-7	
Dichlorodifluoromethane	**<1.0**	ug/L	1.0	1		10/29/20 20:40	75-71-8	
1,1-Dichloroethane	**<0.40**	ug/L	0.40	1		10/29/20 20:40	75-34-3	
1,2-Dichloroethane	**<0.20**	ug/L	0.20	1		10/29/20 03:15	107-06-2	
1,1-Dichloroethene	**<1.0**	ug/L	1.0	1		10/29/20 20:40	75-35-4	
cis-1,2-Dichloroethene	**<0.40**	ug/L	0.40	1		10/29/20 20:40	156-59-2	
trans-1,2-Dichloroethene	**<0.40**	ug/L	0.40	1		10/29/20 20:40	156-60-5	
Dichlorofluoromethane	**<1.0**	ug/L	1.0	1		10/29/20 20:40	75-43-4	
1,2-Dichloropropane	**<0.40**	ug/L	0.40	1		10/29/20 20:40	78-87-5	
1,3-Dichloropropane	**<0.40**	ug/L	0.40	1		10/29/20 20:40	142-28-9	
2,2-Dichloropropane	**<1.0**	ug/L	1.0	1		10/29/20 20:40	594-20-7	v1
1,1-Dichloropropene	**<0.40**	ug/L	0.40	1		10/29/20 20:40	563-58-6	
cis-1,3-Dichloropropene	**<0.40**	ug/L	0.40	1		10/29/20 03:15	10061-01-5	
trans-1,3-Dichloropropene	**<0.40**	ug/L	0.40	1		10/29/20 03:15	10061-02-6	
Diethyl ether (Ethyl ether)	**<4.0**	ug/L	4.0	1		10/29/20 20:40	60-29-7	
Ethylbenzene	**<0.40**	ug/L	0.40	1		10/29/20 20:40	100-41-4	
Hexachloro-1,3-butadiene	**<0.10**	ug/L	0.10	1		10/29/20 03:15	87-68-3	
Isopropylbenzene (Cumene)	**<0.40**	ug/L	0.40	1		10/29/20 20:40	98-82-8	
p-Isopropyltoluene	**<0.40**	ug/L	0.40	1		10/29/20 20:40	99-87-6	
Methylene Chloride	**<1.0**	ug/L	1.0	1		10/29/20 20:40	75-09-2	
4-Methyl-2-pentanone (MIBK)	**<5.0**	ug/L	5.0	1		10/29/20 20:40	108-10-1	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10536477

Sample: W-6 **Lab ID: 10536477008** Collected: 10/15/20 14:10 Received: 10/21/20 12:20 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV LLW by SIMSCAN	Analytical Method: EPA 8260D							
	Pace Analytical Services - Minneapolis							
Methyl-tert-butyl ether	**<0.40**	ug/L	0.40	1		10/29/20 20:40	1634-04-4	
Naphthalene	**<1.0**	ug/L	1.0	1		10/29/20 20:40	91-20-3	
n-Propylbenzene	**<0.40**	ug/L	0.40	1		10/29/20 20:40	103-65-1	
Styrene	**<0.40**	ug/L	0.40	1		10/29/20 20:40	100-42-5	
1,1,1,2-Tetrachloroethane	**<0.40**	ug/L	0.40	1		10/29/20 20:40	630-20-6	
1,1,2,2-Tetrachloroethane	**<0.40**	ug/L	0.40	1		10/29/20 20:40	79-34-5	
Tetrachloroethene	**<0.40**	ug/L	0.40	1		10/29/20 20:40	127-18-4	
Tetrahydrofuran	**<10.0**	ug/L	10.0	1		10/29/20 20:40	109-99-9	
Toluene	**<0.40**	ug/L	0.40	1		10/29/20 20:40	108-88-3	
1,2,3-Trichlorobenzene	**<0.40**	ug/L	0.40	1		10/29/20 20:40	87-61-6	
1,2,4-Trichlorobenzene	**<0.40**	ug/L	0.40	1		10/29/20 20:40	120-82-1	
1,1,1-Trichloroethane	**<1.0**	ug/L	1.0	1		10/29/20 20:40	71-55-6	
1,1,2-Trichloroethane	**<0.40**	ug/L	0.40	1		10/29/20 20:40	79-00-5	
Trichloroethene	**<0.050**	ug/L	0.050	1		10/29/20 03:15	79-01-6	
Trichlorofluoromethane	**<0.40**	ug/L	0.40	1		10/29/20 20:40	75-69-4	v1
1,2,3-Trichloropropane	**<0.010**	ug/L	0.010	1		10/29/20 03:15	96-18-4	
1,1,2-Trichlorotrifluoroethane	**<1.0**	ug/L	1.0	1		10/29/20 20:40	76-13-1	
1,2,4-Trimethylbenzene	**<1.0**	ug/L	1.0	1		10/29/20 20:40	95-63-6	
1,3,5-Trimethylbenzene	**<0.40**	ug/L	0.40	1		10/29/20 20:40	108-67-8	
Vinyl chloride	**<0.050**	ug/L	0.050	1		10/29/20 03:15	75-01-4	
Xylene (Total)	**<1.2**	ug/L	1.2	1		10/29/20 20:40	1330-20-7	
m&p-Xylene	**<0.80**	ug/L	0.80	1		10/29/20 20:40	179601-23-1	
o-Xylene	**<0.40**	ug/L	0.40	1		10/29/20 20:40	95-47-6	
Surrogates								
1,2-Dichloroethane-d4 (S)	124	%.	75-128	1		10/29/20 20:40	17060-07-0	
1,2-Dichloroethane-d4 (S)	111	%.	75-128	1		10/29/20 03:15	17060-07-0	
Toluene-d8 (S)	105	%.	75-125	1		10/29/20 03:15	2037-26-5	
Toluene-d8 (S)	105	%.	75-125	1		10/29/20 20:40	2037-26-5	
4-Bromofluorobenzene (S)	95	%.	75-125	1		10/29/20 20:40	460-00-4	
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B							
	Pace Analytical Services - Minneapolis							
pH at 25 Degrees C	**7.5**	Std. Units	0.10	1		11/03/20 13:00		H6
SM2510 Specific Conductance	Analytical Method: SM 2510							
	Pace Analytical Services - Minneapolis							
Specific Conductance	**736**	umhos/cm	1.0	1		10/27/20 16:32		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10536477

Sample: W-302A **Lab ID: 10536477009** Collected: 10/15/20 14:45 Received: 10/21/20 12:20 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV LLW by SIMSCAN	Analytical Method: EPA 8260D Pace Analytical Services - Minneapolis							
Acetone	**<20.0**	ug/L	20.0	1		10/29/20 21:06	67-64-1	
Allyl chloride	**<4.0**	ug/L	4.0	1		10/29/20 21:06	107-05-1	
Benzene	**<0.20**	ug/L	0.20	1		10/29/20 21:06	71-43-2	
Bromobenzene	**<0.40**	ug/L	0.40	1		10/29/20 21:06	108-86-1	
Bromochloromethane	**<1.0**	ug/L	1.0	1		10/29/20 21:06	74-97-5	
Bromodichloromethane	**<0.40**	ug/L	0.40	1		10/29/20 21:06	75-27-4	
Bromoform	**<1.0**	ug/L	1.0	1		10/29/20 21:06	75-25-2	
Bromomethane	**<1.0**	ug/L	1.0	1		10/29/20 21:06	74-83-9	1M,v2
2-Butanone (MEK)	**<5.0**	ug/L	5.0	1		10/29/20 21:06	78-93-3	v2
n-Butylbenzene	**<0.40**	ug/L	0.40	1		10/29/20 21:06	104-51-8	
sec-Butylbenzene	**<0.40**	ug/L	0.40	1		10/29/20 21:06	135-98-8	
tert-Butylbenzene	**<0.40**	ug/L	0.40	1		10/29/20 21:06	98-06-6	
Carbon tetrachloride	**<0.050**	ug/L	0.050	1		10/29/20 03:41	56-23-5	
Chlorobenzene	**<0.40**	ug/L	0.40	1		10/29/20 21:06	108-90-7	
Chloroethane	**<1.0**	ug/L	1.0	1		10/29/20 21:06	75-00-3	
Chloroform	**<1.0**	ug/L	1.0	1		10/29/20 21:06	67-66-3	
Chloromethane	**<1.0**	ug/L	1.0	1		10/29/20 21:06	74-87-3	v2
2-Chlorotoluene	**<0.40**	ug/L	0.40	1		10/29/20 21:06	95-49-8	
4-Chlorotoluene	**<0.40**	ug/L	0.40	1		10/29/20 21:06	106-43-4	
1,2-Dibromo-3-chloropropane	**<0.12**	ug/L	0.12	1		10/29/20 03:41	96-12-8	
Dibromochloromethane	**<0.40**	ug/L	0.40	1		10/29/20 03:41	124-48-1	
1,2-Dibromoethane (EDB)	**<0.050**	ug/L	0.050	1		10/29/20 03:41	106-93-4	
Dibromomethane	**<1.0**	ug/L	1.0	1		10/29/20 21:06	74-95-3	
1,2-Dichlorobenzene	**<0.40**	ug/L	0.40	1		10/29/20 21:06	95-50-1	
1,3-Dichlorobenzene	**<0.40**	ug/L	0.40	1		10/29/20 21:06	541-73-1	
1,4-Dichlorobenzene	**<0.40**	ug/L	0.40	1		10/29/20 21:06	106-46-7	
Dichlorodifluoromethane	**<1.0**	ug/L	1.0	1		10/29/20 21:06	75-71-8	
1,1-Dichloroethane	**<0.40**	ug/L	0.40	1		10/29/20 21:06	75-34-3	
1,2-Dichloroethane	**<0.20**	ug/L	0.20	1		10/29/20 03:41	107-06-2	
1,1-Dichloroethene	**<1.0**	ug/L	1.0	1		10/29/20 21:06	75-35-4	
cis-1,2-Dichloroethene	**<0.40**	ug/L	0.40	1		10/29/20 21:06	156-59-2	
trans-1,2-Dichloroethene	**<0.40**	ug/L	0.40	1		10/29/20 21:06	156-60-5	
Dichlorofluoromethane	**<1.0**	ug/L	1.0	1		10/29/20 21:06	75-43-4	
1,2-Dichloropropane	**<0.40**	ug/L	0.40	1		10/29/20 21:06	78-87-5	
1,3-Dichloropropane	**<0.40**	ug/L	0.40	1		10/29/20 21:06	142-28-9	
2,2-Dichloropropane	**<1.0**	ug/L	1.0	1		10/29/20 21:06	594-20-7	v1
1,1-Dichloropropene	**<0.40**	ug/L	0.40	1		10/29/20 21:06	563-58-6	
cis-1,3-Dichloropropene	**<0.40**	ug/L	0.40	1		10/29/20 03:41	10061-01-5	
trans-1,3-Dichloropropene	**<0.40**	ug/L	0.40	1		10/29/20 03:41	10061-02-6	
Diethyl ether (Ethyl ether)	**<4.0**	ug/L	4.0	1		10/29/20 21:06	60-29-7	
Ethylbenzene	**<0.40**	ug/L	0.40	1		10/29/20 21:06	100-41-4	
Hexachloro-1,3-butadiene	**<0.10**	ug/L	0.10	1		10/29/20 03:41	87-68-3	
Isopropylbenzene (Cumene)	**<0.40**	ug/L	0.40	1		10/29/20 21:06	98-82-8	
p-Isopropyltoluene	**<0.40**	ug/L	0.40	1		10/29/20 21:06	99-87-6	
Methylene Chloride	**<1.0**	ug/L	1.0	1		10/29/20 21:06	75-09-2	
4-Methyl-2-pentanone (MIBK)	**<5.0**	ug/L	5.0	1		10/29/20 21:06	108-10-1	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10536477

Sample: W-302A **Lab ID: 10536477009** Collected: 10/15/20 14:45 Received: 10/21/20 12:20 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV LLW by SIMSCAN	Analytical Method: EPA 8260D							
	Pace Analytical Services - Minneapolis							
Methyl-tert-butyl ether	**<0.40**	ug/L	0.40	1		10/29/20 21:06	1634-04-4	
Naphthalene	**<1.0**	ug/L	1.0	1		10/29/20 21:06	91-20-3	
n-Propylbenzene	**<0.40**	ug/L	0.40	1		10/29/20 21:06	103-65-1	
Styrene	**<0.40**	ug/L	0.40	1		10/29/20 21:06	100-42-5	
1,1,1,2-Tetrachloroethane	**<0.40**	ug/L	0.40	1		10/29/20 21:06	630-20-6	
1,1,2,2-Tetrachloroethane	**<0.40**	ug/L	0.40	1		10/29/20 21:06	79-34-5	
Tetrachloroethene	**<0.40**	ug/L	0.40	1		10/29/20 21:06	127-18-4	
Tetrahydrofuran	**<10.0**	ug/L	10.0	1		10/29/20 21:06	109-99-9	
Toluene	**<0.40**	ug/L	0.40	1		10/29/20 21:06	108-88-3	
1,2,3-Trichlorobenzene	**<0.40**	ug/L	0.40	1		10/29/20 21:06	87-61-6	
1,2,4-Trichlorobenzene	**<0.40**	ug/L	0.40	1		10/29/20 21:06	120-82-1	
1,1,1-Trichloroethane	**<1.0**	ug/L	1.0	1		10/29/20 21:06	71-55-6	
1,1,2-Trichloroethane	**<0.40**	ug/L	0.40	1		10/29/20 21:06	79-00-5	
Trichloroethene	**<0.050**	ug/L	0.050	1		10/29/20 03:41	79-01-6	
Trichlorofluoromethane	**<0.40**	ug/L	0.40	1		10/29/20 21:06	75-69-4	v1
1,2,3-Trichloropropane	**<0.010**	ug/L	0.010	1		10/29/20 03:41	96-18-4	
1,1,2-Trichlorotrifluoroethane	**<1.0**	ug/L	1.0	1		10/29/20 21:06	76-13-1	
1,2,4-Trimethylbenzene	**<1.0**	ug/L	1.0	1		10/29/20 21:06	95-63-6	
1,3,5-Trimethylbenzene	**<0.40**	ug/L	0.40	1		10/29/20 21:06	108-67-8	
Vinyl chloride	**<0.050**	ug/L	0.050	1		10/29/20 03:41	75-01-4	
Xylene (Total)	**<1.2**	ug/L	1.2	1		10/29/20 21:06	1330-20-7	
m&p-Xylene	**<0.80**	ug/L	0.80	1		10/29/20 21:06	179601-23-1	
o-Xylene	**<0.40**	ug/L	0.40	1		10/29/20 21:06	95-47-6	
Surrogates								
1,2-Dichloroethane-d4 (S)	119	%.	75-128	1		10/29/20 21:06	17060-07-0	
1,2-Dichloroethane-d4 (S)	111	%.	75-128	1		10/29/20 03:41	17060-07-0	
Toluene-d8 (S)	105	%.	75-125	1		10/29/20 03:41	2037-26-5	
Toluene-d8 (S)	104	%.	75-125	1		10/29/20 21:06	2037-26-5	
4-Bromofluorobenzene (S)	91	%.	75-125	1		10/29/20 21:06	460-00-4	
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B							
	Pace Analytical Services - Minneapolis							
pH at 25 Degrees C	**7.8**	Std. Units	0.10	1		11/03/20 13:02		H6
SM2510 Specific Conductance	Analytical Method: SM 2510							
	Pace Analytical Services - Minneapolis							
Specific Conductance	**471**	umhos/cm	1.0	1		10/27/20 16:33		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10536477

Sample: W-104A **Lab ID: 10536477010** Collected: 10/15/20 15:39 Received: 10/21/20 12:20 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV LLW by SIMSCAN	Analytical Method: EPA 8260D Pace Analytical Services - Minneapolis							
Acetone	**<20.0**	ug/L	20.0	1		10/29/20 21:33	67-64-1	
Allyl chloride	**<4.0**	ug/L	4.0	1		10/29/20 21:33	107-05-1	
Benzene	**<0.20**	ug/L	0.20	1		10/29/20 21:33	71-43-2	
Bromobenzene	**<0.40**	ug/L	0.40	1		10/29/20 21:33	108-86-1	
Bromochloromethane	**<1.0**	ug/L	1.0	1		10/29/20 21:33	74-97-5	
Bromodichloromethane	**<0.40**	ug/L	0.40	1		10/29/20 21:33	75-27-4	
Bromoform	**<1.0**	ug/L	1.0	1		10/29/20 21:33	75-25-2	
Bromomethane	**<1.0**	ug/L	1.0	1		10/29/20 21:33	74-83-9	1M,v2
2-Butanone (MEK)	**<5.0**	ug/L	5.0	1		10/29/20 21:33	78-93-3	v2
n-Butylbenzene	**<0.40**	ug/L	0.40	1		10/29/20 21:33	104-51-8	
sec-Butylbenzene	**<0.40**	ug/L	0.40	1		10/29/20 21:33	135-98-8	
tert-Butylbenzene	**<0.40**	ug/L	0.40	1		10/29/20 21:33	98-06-6	
Carbon tetrachloride	**<0.050**	ug/L	0.050	1		10/29/20 04:07	56-23-5	
Chlorobenzene	**<0.40**	ug/L	0.40	1		10/29/20 21:33	108-90-7	
Chloroethane	**<1.0**	ug/L	1.0	1		10/29/20 21:33	75-00-3	
Chloroform	**<1.0**	ug/L	1.0	1		10/29/20 21:33	67-66-3	
Chloromethane	**<1.0**	ug/L	1.0	1		10/29/20 21:33	74-87-3	v2
2-Chlorotoluene	**<0.40**	ug/L	0.40	1		10/29/20 21:33	95-49-8	
4-Chlorotoluene	**<0.40**	ug/L	0.40	1		10/29/20 21:33	106-43-4	
1,2-Dibromo-3-chloropropane	**<0.12**	ug/L	0.12	1		10/29/20 04:07	96-12-8	
Dibromochloromethane	**<0.40**	ug/L	0.40	1		10/29/20 04:07	124-48-1	
1,2-Dibromoethane (EDB)	**<0.050**	ug/L	0.050	1		10/29/20 04:07	106-93-4	
Dibromomethane	**<1.0**	ug/L	1.0	1		10/29/20 21:33	74-95-3	
1,2-Dichlorobenzene	**<0.40**	ug/L	0.40	1		10/29/20 21:33	95-50-1	
1,3-Dichlorobenzene	**<0.40**	ug/L	0.40	1		10/29/20 21:33	541-73-1	
1,4-Dichlorobenzene	**<0.40**	ug/L	0.40	1		10/29/20 21:33	106-46-7	
Dichlorodifluoromethane	**<1.0**	ug/L	1.0	1		10/29/20 21:33	75-71-8	
1,1-Dichloroethane	**<0.40**	ug/L	0.40	1		10/29/20 21:33	75-34-3	
1,2-Dichloroethane	**<0.20**	ug/L	0.20	1		10/29/20 04:07	107-06-2	
1,1-Dichloroethene	**<1.0**	ug/L	1.0	1		10/29/20 21:33	75-35-4	
cis-1,2-Dichloroethene	**<0.40**	ug/L	0.40	1		10/29/20 21:33	156-59-2	
trans-1,2-Dichloroethene	**<0.40**	ug/L	0.40	1		10/29/20 21:33	156-60-5	
Dichlorofluoromethane	**<1.0**	ug/L	1.0	1		10/29/20 21:33	75-43-4	
1,2-Dichloropropane	**<0.40**	ug/L	0.40	1		10/29/20 21:33	78-87-5	
1,3-Dichloropropane	**<0.40**	ug/L	0.40	1		10/29/20 21:33	142-28-9	
2,2-Dichloropropane	**<1.0**	ug/L	1.0	1		10/29/20 21:33	594-20-7	v1
1,1-Dichloropropene	**<0.40**	ug/L	0.40	1		10/29/20 21:33	563-58-6	
cis-1,3-Dichloropropene	**<0.40**	ug/L	0.40	1		10/29/20 04:07	10061-01-5	
trans-1,3-Dichloropropene	**<0.40**	ug/L	0.40	1		10/29/20 04:07	10061-02-6	
Diethyl ether (Ethyl ether)	**<4.0**	ug/L	4.0	1		10/29/20 21:33	60-29-7	
Ethylbenzene	**<0.40**	ug/L	0.40	1		10/29/20 21:33	100-41-4	
Hexachloro-1,3-butadiene	**<0.10**	ug/L	0.10	1		10/29/20 04:07	87-68-3	
Isopropylbenzene (Cumene)	**<0.40**	ug/L	0.40	1		10/29/20 21:33	98-82-8	
p-Isopropyltoluene	**<0.40**	ug/L	0.40	1		10/29/20 21:33	99-87-6	
Methylene Chloride	**<1.0**	ug/L	1.0	1		10/29/20 21:33	75-09-2	
4-Methyl-2-pentanone (MIBK)	**<5.0**	ug/L	5.0	1		10/29/20 21:33	108-10-1	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10536477

Sample: W-104A **Lab ID: 10536477010** Collected: 10/15/20 15:39 Received: 10/21/20 12:20 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV LLW by SIMSCAN	Analytical Method: EPA 8260D							
	Pace Analytical Services - Minneapolis							
Methyl-tert-butyl ether	**<0.40**	ug/L	0.40	1		10/29/20 21:33	1634-04-4	
Naphthalene	**<1.0**	ug/L	1.0	1		10/29/20 21:33	91-20-3	
n-Propylbenzene	**<0.40**	ug/L	0.40	1		10/29/20 21:33	103-65-1	
Styrene	**<0.40**	ug/L	0.40	1		10/29/20 21:33	100-42-5	
1,1,1,2-Tetrachloroethane	**<0.40**	ug/L	0.40	1		10/29/20 21:33	630-20-6	
1,1,2,2-Tetrachloroethane	**<0.40**	ug/L	0.40	1		10/29/20 21:33	79-34-5	
Tetrachloroethene	**<0.40**	ug/L	0.40	1		10/29/20 21:33	127-18-4	
Tetrahydrofuran	**<10.0**	ug/L	10.0	1		10/29/20 21:33	109-99-9	
Toluene	**<0.40**	ug/L	0.40	1		10/29/20 21:33	108-88-3	
1,2,3-Trichlorobenzene	**<0.40**	ug/L	0.40	1		10/29/20 21:33	87-61-6	
1,2,4-Trichlorobenzene	**<0.40**	ug/L	0.40	1		10/29/20 21:33	120-82-1	
1,1,1-Trichloroethane	**<1.0**	ug/L	1.0	1		10/29/20 21:33	71-55-6	
1,1,2-Trichloroethane	**<0.40**	ug/L	0.40	1		10/29/20 21:33	79-00-5	
Trichloroethene	**<0.050**	ug/L	0.050	1		10/29/20 04:07	79-01-6	
Trichlorofluoromethane	**<0.40**	ug/L	0.40	1		10/29/20 21:33	75-69-4	v1
1,2,3-Trichloropropane	**<0.010**	ug/L	0.010	1		10/29/20 04:07	96-18-4	
1,1,2-Trichlorotrifluoroethane	**<1.0**	ug/L	1.0	1		10/29/20 21:33	76-13-1	
1,2,4-Trimethylbenzene	**<1.0**	ug/L	1.0	1		10/29/20 21:33	95-63-6	
1,3,5-Trimethylbenzene	**<0.40**	ug/L	0.40	1		10/29/20 21:33	108-67-8	
Vinyl chloride	**<0.050**	ug/L	0.050	1		10/29/20 04:07	75-01-4	
Xylene (Total)	**<1.2**	ug/L	1.2	1		10/29/20 21:33	1330-20-7	
m&p-Xylene	**<0.80**	ug/L	0.80	1		10/29/20 21:33	179601-23-1	
o-Xylene	**<0.40**	ug/L	0.40	1		10/29/20 21:33	95-47-6	
Surrogates								
1,2-Dichloroethane-d4 (S)	111	%.	75-128	1		10/29/20 04:07	17060-07-0	
1,2-Dichloroethane-d4 (S)	123	%.	75-128	1		10/29/20 21:33	17060-07-0	
Toluene-d8 (S)	106	%.	75-125	1		10/29/20 04:07	2037-26-5	
Toluene-d8 (S)	103	%.	75-125	1		10/29/20 21:33	2037-26-5	
4-Bromofluorobenzene (S)	89	%.	75-125	1		10/29/20 21:33	460-00-4	
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B							
	Pace Analytical Services - Minneapolis							
pH at 25 Degrees C	**7.3**	Std. Units	0.10	1		11/03/20 13:03		H6
SM2510 Specific Conductance	Analytical Method: SM 2510							
	Pace Analytical Services - Minneapolis							
Specific Conductance	**793**	umhos/cm	1.0	1		10/27/20 16:33		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10536477

Sample: MH-LYS-III-P1 **Lab ID: 10536477011** Collected: 10/15/20 16:18 Received: 10/21/20 12:20 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV LLW by SIMSCAN	Analytical Method: EPA 8260D Pace Analytical Services - Minneapolis							
Acetone	**<20.0**	ug/L	20.0	1		10/29/20 21:59	67-64-1	
Allyl chloride	**<4.0**	ug/L	4.0	1		10/29/20 21:59	107-05-1	
Benzene	**<0.20**	ug/L	0.20	1		10/29/20 21:59	71-43-2	
Bromobenzene	**<0.40**	ug/L	0.40	1		10/29/20 21:59	108-86-1	
Bromochloromethane	**<1.0**	ug/L	1.0	1		10/29/20 21:59	74-97-5	
Bromodichloromethane	**<0.40**	ug/L	0.40	1		10/29/20 21:59	75-27-4	
Bromoform	**<1.0**	ug/L	1.0	1		10/29/20 21:59	75-25-2	
Bromomethane	**<1.0**	ug/L	1.0	1		10/29/20 21:59	74-83-9	1M,v2
2-Butanone (MEK)	**<5.0**	ug/L	5.0	1		10/29/20 21:59	78-93-3	v2
n-Butylbenzene	**<0.40**	ug/L	0.40	1		10/29/20 21:59	104-51-8	
sec-Butylbenzene	**<0.40**	ug/L	0.40	1		10/29/20 21:59	135-98-8	
tert-Butylbenzene	**<0.40**	ug/L	0.40	1		10/29/20 21:59	98-06-6	
Carbon tetrachloride	**<0.050**	ug/L	0.050	1		10/29/20 04:33	56-23-5	
Chlorobenzene	**<0.40**	ug/L	0.40	1		10/29/20 21:59	108-90-7	
Chloroethane	**<1.0**	ug/L	1.0	1		10/29/20 21:59	75-00-3	
Chloroform	**<1.0**	ug/L	1.0	1		10/29/20 21:59	67-66-3	
Chloromethane	**<1.0**	ug/L	1.0	1		10/29/20 21:59	74-87-3	v2
2-Chlorotoluene	**<0.40**	ug/L	0.40	1		10/29/20 21:59	95-49-8	
4-Chlorotoluene	**<0.40**	ug/L	0.40	1		10/29/20 21:59	106-43-4	
1,2-Dibromo-3-chloropropane	**<0.12**	ug/L	0.12	1		10/29/20 04:33	96-12-8	
Dibromochloromethane	**<0.40**	ug/L	0.40	1		10/29/20 04:33	124-48-1	
1,2-Dibromoethane (EDB)	**<0.050**	ug/L	0.050	1		10/29/20 04:33	106-93-4	
Dibromomethane	**<1.0**	ug/L	1.0	1		10/29/20 21:59	74-95-3	
1,2-Dichlorobenzene	**<0.40**	ug/L	0.40	1		10/29/20 21:59	95-50-1	
1,3-Dichlorobenzene	**<0.40**	ug/L	0.40	1		10/29/20 21:59	541-73-1	
1,4-Dichlorobenzene	**<0.40**	ug/L	0.40	1		10/29/20 21:59	106-46-7	
Dichlorodifluoromethane	**<1.0**	ug/L	1.0	1		10/29/20 21:59	75-71-8	
1,1-Dichloroethane	**<0.40**	ug/L	0.40	1		10/29/20 21:59	75-34-3	
1,2-Dichloroethane	**<0.20**	ug/L	0.20	1		10/29/20 04:33	107-06-2	
1,1-Dichloroethene	**<1.0**	ug/L	1.0	1		10/29/20 21:59	75-35-4	
cis-1,2-Dichloroethene	**<0.40**	ug/L	0.40	1		10/29/20 21:59	156-59-2	
trans-1,2-Dichloroethene	**<0.40**	ug/L	0.40	1		10/29/20 21:59	156-60-5	
Dichlorofluoromethane	**<1.0**	ug/L	1.0	1		10/29/20 21:59	75-43-4	
1,2-Dichloropropane	**<0.40**	ug/L	0.40	1		10/29/20 21:59	78-87-5	
1,3-Dichloropropane	**<0.40**	ug/L	0.40	1		10/29/20 21:59	142-28-9	
2,2-Dichloropropane	**<1.0**	ug/L	1.0	1		10/29/20 21:59	594-20-7	v1
1,1-Dichloropropene	**<0.40**	ug/L	0.40	1		10/29/20 21:59	563-58-6	
cis-1,3-Dichloropropene	**<0.40**	ug/L	0.40	1		10/29/20 04:33	10061-01-5	
trans-1,3-Dichloropropene	**<0.40**	ug/L	0.40	1		10/29/20 04:33	10061-02-6	
Diethyl ether (Ethyl ether)	**<4.0**	ug/L	4.0	1		10/29/20 21:59	60-29-7	
Ethylbenzene	**<0.40**	ug/L	0.40	1		10/29/20 21:59	100-41-4	
Hexachloro-1,3-butadiene	**<0.10**	ug/L	0.10	1		10/29/20 04:33	87-68-3	
Isopropylbenzene (Cumene)	**<0.40**	ug/L	0.40	1		10/29/20 21:59	98-82-8	
p-Isopropyltoluene	**<0.40**	ug/L	0.40	1		10/29/20 21:59	99-87-6	
Methylene Chloride	**<1.0**	ug/L	1.0	1		10/29/20 21:59	75-09-2	
4-Methyl-2-pentanone (MIBK)	**<5.0**	ug/L	5.0	1		10/29/20 21:59	108-10-1	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10536477

Sample: MH-LYS-III-P1 **Lab ID: 10536477011** Collected: 10/15/20 16:18 Received: 10/21/20 12:20 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV LLW by SIMSCAN	Analytical Method: EPA 8260D							
	Pace Analytical Services - Minneapolis							
Methyl-tert-butyl ether	**<0.40**	ug/L	0.40	1		10/29/20 21:59	1634-04-4	
Naphthalene	**<1.0**	ug/L	1.0	1		10/29/20 21:59	91-20-3	
n-Propylbenzene	**<0.40**	ug/L	0.40	1		10/29/20 21:59	103-65-1	
Styrene	**<0.40**	ug/L	0.40	1		10/29/20 21:59	100-42-5	
1,1,1,2-Tetrachloroethane	**<0.40**	ug/L	0.40	1		10/29/20 21:59	630-20-6	
1,1,2,2-Tetrachloroethane	**<0.40**	ug/L	0.40	1		10/29/20 21:59	79-34-5	
Tetrachloroethene	**<0.40**	ug/L	0.40	1		10/29/20 21:59	127-18-4	
Tetrahydrofuran	**<10.0**	ug/L	10.0	1		10/29/20 21:59	109-99-9	
Toluene	**<0.40**	ug/L	0.40	1		10/29/20 21:59	108-88-3	
1,2,3-Trichlorobenzene	**<0.40**	ug/L	0.40	1		10/29/20 21:59	87-61-6	
1,2,4-Trichlorobenzene	**<0.40**	ug/L	0.40	1		10/29/20 21:59	120-82-1	
1,1,1-Trichloroethane	**<1.0**	ug/L	1.0	1		10/29/20 21:59	71-55-6	
1,1,2-Trichloroethane	**<0.40**	ug/L	0.40	1		10/29/20 21:59	79-00-5	
Trichloroethene	**<0.050**	ug/L	0.050	1		10/29/20 04:33	79-01-6	
Trichlorofluoromethane	**<0.40**	ug/L	0.40	1		10/29/20 21:59	75-69-4	v1
1,2,3-Trichloropropane	**<0.010**	ug/L	0.010	1		10/29/20 04:33	96-18-4	
1,1,2-Trichlorotrifluoroethane	**<1.0**	ug/L	1.0	1		10/29/20 21:59	76-13-1	
1,2,4-Trimethylbenzene	**<1.0**	ug/L	1.0	1		10/29/20 21:59	95-63-6	
1,3,5-Trimethylbenzene	**<0.40**	ug/L	0.40	1		10/29/20 21:59	108-67-8	
Vinyl chloride	**<0.050**	ug/L	0.050	1		10/29/20 04:33	75-01-4	
Xylene (Total)	**<1.2**	ug/L	1.2	1		10/29/20 21:59	1330-20-7	
m&p-Xylene	**<0.80**	ug/L	0.80	1		10/29/20 21:59	179601-23-1	
o-Xylene	**<0.40**	ug/L	0.40	1		10/29/20 21:59	95-47-6	
Surrogates								
1,2-Dichloroethane-d4 (S)	112	%.	75-128	1		10/29/20 04:33	17060-07-0	
1,2-Dichloroethane-d4 (S)	122	%.	75-128	1		10/29/20 21:59	17060-07-0	
Toluene-d8 (S)	106	%.	75-125	1		10/29/20 04:33	2037-26-5	
Toluene-d8 (S)	105	%.	75-125	1		10/29/20 21:59	2037-26-5	
4-Bromofluorobenzene (S)	91	%.	75-125	1		10/29/20 21:59	460-00-4	
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B							
	Pace Analytical Services - Minneapolis							
pH at 25 Degrees C	**7.8**	Std. Units	0.10	1		11/03/20 13:05		H6
SM2510 Specific Conductance	Analytical Method: SM 2510							
	Pace Analytical Services - Minneapolis							
Specific Conductance	**763**	umhos/cm	1.0	1		10/27/20 16:34		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10536477

Sample: MH-LYS-III-P2 **Lab ID: 10536477012** Collected: 10/15/20 17:10 Received: 10/21/20 12:20 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV LLW by SIMSCAN	Analytical Method: EPA 8260D Pace Analytical Services - Minneapolis							
Acetone	**<20.0**	ug/L	20.0	1		10/29/20 22:25	67-64-1	
Allyl chloride	**<4.0**	ug/L	4.0	1		10/29/20 22:25	107-05-1	
Benzene	**<0.20**	ug/L	0.20	1		10/29/20 22:25	71-43-2	
Bromobenzene	**<0.40**	ug/L	0.40	1		10/29/20 22:25	108-86-1	
Bromochloromethane	**<1.0**	ug/L	1.0	1		10/29/20 22:25	74-97-5	
Bromodichloromethane	**<0.40**	ug/L	0.40	1		10/29/20 22:25	75-27-4	
Bromoform	**<1.0**	ug/L	1.0	1		10/29/20 22:25	75-25-2	
Bromomethane	**<1.0**	ug/L	1.0	1		10/29/20 22:25	74-83-9	1M,v2
2-Butanone (MEK)	**<5.0**	ug/L	5.0	1		10/29/20 22:25	78-93-3	v2
n-Butylbenzene	**<0.40**	ug/L	0.40	1		10/29/20 22:25	104-51-8	
sec-Butylbenzene	**<0.40**	ug/L	0.40	1		10/29/20 22:25	135-98-8	
tert-Butylbenzene	**<0.40**	ug/L	0.40	1		10/29/20 22:25	98-06-6	
Carbon tetrachloride	**<0.050**	ug/L	0.050	1		10/29/20 08:55	56-23-5	
Chlorobenzene	**<0.40**	ug/L	0.40	1		10/29/20 22:25	108-90-7	
Chloroethane	**<1.0**	ug/L	1.0	1		10/29/20 22:25	75-00-3	
Chloroform	**<1.0**	ug/L	1.0	1		10/29/20 22:25	67-66-3	
Chloromethane	**<1.0**	ug/L	1.0	1		10/29/20 22:25	74-87-3	v2
2-Chlorotoluene	**<0.40**	ug/L	0.40	1		10/29/20 22:25	95-49-8	
4-Chlorotoluene	**<0.40**	ug/L	0.40	1		10/29/20 22:25	106-43-4	
1,2-Dibromo-3-chloropropane	**<0.12**	ug/L	0.12	1		10/29/20 08:55	96-12-8	
Dibromochloromethane	**<0.40**	ug/L	0.40	1		10/29/20 08:55	124-48-1	
1,2-Dibromoethane (EDB)	**<0.050**	ug/L	0.050	1		10/29/20 08:55	106-93-4	
Dibromomethane	**<1.0**	ug/L	1.0	1		10/29/20 22:25	74-95-3	
1,2-Dichlorobenzene	**<0.40**	ug/L	0.40	1		10/29/20 22:25	95-50-1	
1,3-Dichlorobenzene	**<0.40**	ug/L	0.40	1		10/29/20 22:25	541-73-1	
1,4-Dichlorobenzene	**<0.40**	ug/L	0.40	1		10/29/20 22:25	106-46-7	
Dichlorodifluoromethane	**<1.0**	ug/L	1.0	1		10/29/20 22:25	75-71-8	
1,1-Dichloroethane	**<0.40**	ug/L	0.40	1		10/29/20 22:25	75-34-3	
1,2-Dichloroethane	**<0.20**	ug/L	0.20	1		10/29/20 08:55	107-06-2	
1,1-Dichloroethene	**<1.0**	ug/L	1.0	1		10/29/20 22:25	75-35-4	
cis-1,2-Dichloroethene	**<0.40**	ug/L	0.40	1		10/29/20 22:25	156-59-2	
trans-1,2-Dichloroethene	**<0.40**	ug/L	0.40	1		10/29/20 22:25	156-60-5	
Dichlorofluoromethane	**<1.0**	ug/L	1.0	1		10/29/20 22:25	75-43-4	
1,2-Dichloropropane	**<0.40**	ug/L	0.40	1		10/29/20 22:25	78-87-5	
1,3-Dichloropropane	**<0.40**	ug/L	0.40	1		10/29/20 22:25	142-28-9	
2,2-Dichloropropane	**<1.0**	ug/L	1.0	1		10/29/20 22:25	594-20-7	v1
1,1-Dichloropropene	**<0.40**	ug/L	0.40	1		10/29/20 22:25	563-58-6	
cis-1,3-Dichloropropene	**<0.40**	ug/L	0.40	1		10/29/20 08:55	10061-01-5	v2
trans-1,3-Dichloropropene	**<0.40**	ug/L	0.40	1		10/29/20 08:55	10061-02-6	
Diethyl ether (Ethyl ether)	**<4.0**	ug/L	4.0	1		10/29/20 22:25	60-29-7	
Ethylbenzene	**27.8**	ug/L	0.40	1		10/29/20 22:25	100-41-4	
Hexachloro-1,3-butadiene	**<0.10**	ug/L	0.10	1		10/29/20 08:55	87-68-3	
Isopropylbenzene (Cumene)	**<0.40**	ug/L	0.40	1		10/29/20 22:25	98-82-8	
p-Isopropyltoluene	**0.88**	ug/L	0.40	1		10/29/20 22:25	99-87-6	
Methylene Chloride	**<1.0**	ug/L	1.0	1		10/29/20 22:25	75-09-2	
4-Methyl-2-pentanone (MIBK)	**<5.0**	ug/L	5.0	1		10/29/20 22:25	108-10-1	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10536477

Sample: MH-LYS-III-P2 **Lab ID: 10536477012** Collected: 10/15/20 17:10 Received: 10/21/20 12:20 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV LLW by SIMSCAN	Analytical Method: EPA 8260D							
	Pace Analytical Services - Minneapolis							
Methyl-tert-butyl ether	**<0.40**	ug/L	0.40	1		10/29/20 22:25	1634-04-4	
Naphthalene	**<1.0**	ug/L	1.0	1		10/29/20 22:25	91-20-3	
n-Propylbenzene	**<0.40**	ug/L	0.40	1		10/29/20 22:25	103-65-1	
Styrene	**<0.40**	ug/L	0.40	1		10/29/20 22:25	100-42-5	
1,1,1,2-Tetrachloroethane	**<0.40**	ug/L	0.40	1		10/29/20 22:25	630-20-6	
1,1,2,2-Tetrachloroethane	**<0.40**	ug/L	0.40	1		10/29/20 22:25	79-34-5	
Tetrachloroethene	**<0.40**	ug/L	0.40	1		10/29/20 22:25	127-18-4	
Tetrahydrofuran	**<10.0**	ug/L	10.0	1		10/29/20 22:25	109-99-9	
Toluene	**0.95**	ug/L	0.40	1		10/29/20 22:25	108-88-3	
1,2,3-Trichlorobenzene	**<0.40**	ug/L	0.40	1		10/29/20 22:25	87-61-6	
1,2,4-Trichlorobenzene	**<0.40**	ug/L	0.40	1		10/29/20 22:25	120-82-1	
1,1,1-Trichloroethane	**<1.0**	ug/L	1.0	1		10/29/20 22:25	71-55-6	
1,1,2-Trichloroethane	**<0.40**	ug/L	0.40	1		10/29/20 22:25	79-00-5	
Trichloroethene	**<0.050**	ug/L	0.050	1		10/29/20 08:55	79-01-6	
Trichlorofluoromethane	**<0.40**	ug/L	0.40	1		10/29/20 22:25	75-69-4	v1
1,2,3-Trichloropropane	**<0.010**	ug/L	0.010	1		10/29/20 08:55	96-18-4	
1,1,2-Trichlorotrifluoroethane	**<1.0**	ug/L	1.0	1		10/29/20 22:25	76-13-1	
1,2,4-Trimethylbenzene	**<1.0**	ug/L	1.0	1		10/29/20 22:25	95-63-6	
1,3,5-Trimethylbenzene	**<0.40**	ug/L	0.40	1		10/29/20 22:25	108-67-8	
Vinyl chloride	**<0.050**	ug/L	0.050	1		10/29/20 08:55	75-01-4	
Xylene (Total)	**168**	ug/L	6.0	5		11/04/20 11:50	1330-20-7	H5
m&p-Xylene	**81.3**	ug/L	0.80	1		10/29/20 22:25	179601-23-1	
o-Xylene	**86.4**	ug/L	2.0	5		11/04/20 11:50	95-47-6	H5
Surrogates								
1,2-Dichloroethane-d4 (S)	112	%.	75-128	1		10/29/20 08:55	17060-07-0	
1,2-Dichloroethane-d4 (S)	123	%.	75-128	1		10/29/20 22:25	17060-07-0	
Toluene-d8 (S)	107	%.	75-125	1		10/29/20 08:55	2037-26-5	
Toluene-d8 (S)	104	%.	75-125	1		10/29/20 22:25	2037-26-5	
4-Bromofluorobenzene (S)	93	%.	75-125	1		10/29/20 22:25	460-00-4	
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B							
	Pace Analytical Services - Minneapolis							
pH at 25 Degrees C	**6.9**	Std. Units	0.10	1		11/03/20 13:09		H6
SM2510 Specific Conductance	Analytical Method: SM 2510							
	Pace Analytical Services - Minneapolis							
Specific Conductance	**1600**	umhos/cm	1.0	1		10/27/20 16:36		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10536477

Sample: Duplicate 1 **Lab ID: 10536477013** Collected: 10/15/20 00:00 Received: 10/21/20 12:20 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level	Analytical Method: EPA 8260D Pace Analytical Services - Minneapolis							
Acetone	**<20.0**	ug/L	20.0	1		10/29/20 20:10	67-64-1	v1
Allyl chloride	**<4.0**	ug/L	4.0	1		10/29/20 20:10	107-05-1	
Benzene	**<0.50**	ug/L	0.50	1		10/29/20 20:10	71-43-2	
Bromobenzene	**<0.50**	ug/L	0.50	1		10/29/20 20:10	108-86-1	
Bromochloromethane	**<1.0**	ug/L	1.0	1		10/29/20 20:10	74-97-5	
Bromodichloromethane	**<0.50**	ug/L	0.50	1		10/29/20 20:10	75-27-4	
Bromoform	**<4.0**	ug/L	4.0	1		10/29/20 20:10	75-25-2	
Bromomethane	**<4.0**	ug/L	4.0	1		10/29/20 20:10	74-83-9	v1
2-Butanone (MEK)	**<5.0**	ug/L	5.0	1		10/29/20 20:10	78-93-3	
n-Butylbenzene	**<0.50**	ug/L	0.50	1		10/29/20 20:10	104-51-8	
sec-Butylbenzene	**<0.50**	ug/L	0.50	1		10/29/20 20:10	135-98-8	
tert-Butylbenzene	**<0.50**	ug/L	0.50	1		10/29/20 20:10	98-06-6	
Carbon tetrachloride	**<0.50**	ug/L	0.50	1		10/29/20 20:10	56-23-5	
Chlorobenzene	**<0.50**	ug/L	0.50	1		10/29/20 20:10	108-90-7	
Chloroethane	**<1.0**	ug/L	1.0	1		10/29/20 20:10	75-00-3	
Chloroform	**<1.0**	ug/L	1.0	1		10/29/20 20:10	67-66-3	
Chloromethane	**<4.0**	ug/L	4.0	1		10/29/20 20:10	74-87-3	
2-Chlorotoluene	**<0.50**	ug/L	0.50	1		10/29/20 20:10	95-49-8	
4-Chlorotoluene	**<0.50**	ug/L	0.50	1		10/29/20 20:10	106-43-4	
1,2-Dibromo-3-chloropropane	**<4.0**	ug/L	4.0	1		10/29/20 20:10	96-12-8	
Dibromochloromethane	**<0.50**	ug/L	0.50	1		10/29/20 20:10	124-48-1	
1,2-Dibromoethane (EDB)	**<0.50**	ug/L	0.50	1		10/29/20 20:10	106-93-4	
Dibromomethane	**<1.0**	ug/L	1.0	1		10/29/20 20:10	74-95-3	
1,2-Dichlorobenzene	**<0.50**	ug/L	0.50	1		10/29/20 20:10	95-50-1	
1,3-Dichlorobenzene	**<0.50**	ug/L	0.50	1		10/29/20 20:10	541-73-1	
1,4-Dichlorobenzene	**<0.50**	ug/L	0.50	1		10/29/20 20:10	106-46-7	
Dichlorodifluoromethane	**<1.0**	ug/L	1.0	1		10/29/20 20:10	75-71-8	
1,1-Dichloroethane	**<0.50**	ug/L	0.50	1		10/29/20 20:10	75-34-3	
1,2-Dichloroethane	**<0.50**	ug/L	0.50	1		10/29/20 20:10	107-06-2	
1,1-Dichloroethene	**<1.0**	ug/L	1.0	1		10/29/20 20:10	75-35-4	
cis-1,2-Dichloroethene	**<0.50**	ug/L	0.50	1		10/29/20 20:10	156-59-2	
trans-1,2-Dichloroethene	**<0.50**	ug/L	0.50	1		10/29/20 20:10	156-60-5	
Dichlorofluoromethane	**<1.0**	ug/L	1.0	1		10/29/20 20:10	75-43-4	
1,2-Dichloropropane	**<4.0**	ug/L	4.0	1		10/29/20 20:10	78-87-5	
1,3-Dichloropropane	**<0.50**	ug/L	0.50	1		10/29/20 20:10	142-28-9	
2,2-Dichloropropane	**<1.0**	ug/L	1.0	1		10/29/20 20:10	594-20-7	
1,1-Dichloropropene	**<0.50**	ug/L	0.50	1		10/29/20 20:10	563-58-6	
cis-1,3-Dichloropropene	**<0.50**	ug/L	0.50	1		10/29/20 20:10	10061-01-5	
trans-1,3-Dichloropropene	**<0.50**	ug/L	0.50	1		10/29/20 20:10	10061-02-6	
Diethyl ether (Ethyl ether)	**<4.0**	ug/L	4.0	1		10/29/20 20:10	60-29-7	
Ethylbenzene	**<0.50**	ug/L	0.50	1		10/29/20 20:10	100-41-4	
Hexachloro-1,3-butadiene	**<1.0**	ug/L	1.0	1		10/29/20 20:10	87-68-3	
Isopropylbenzene (Cumene)	**<0.50**	ug/L	0.50	1		10/29/20 20:10	98-82-8	
p-Isopropyltoluene	**<0.50**	ug/L	0.50	1		10/29/20 20:10	99-87-6	
Methylene Chloride	**<4.0**	ug/L	4.0	1		10/29/20 20:10	75-09-2	
4-Methyl-2-pentanone (MIBK)	**<5.0**	ug/L	5.0	1		10/29/20 20:10	108-10-1	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10536477

Sample: Duplicate 1 **Lab ID: 10536477013** Collected: 10/15/20 00:00 Received: 10/21/20 12:20 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level	Analytical Method: EPA 8260D Pace Analytical Services - Minneapolis							
Methyl-tert-butyl ether	**<0.50**	ug/L	0.50	1		10/29/20 20:10	1634-04-4	
Naphthalene	**<1.0**	ug/L	1.0	1		10/29/20 20:10	91-20-3	
n-Propylbenzene	**<0.50**	ug/L	0.50	1		10/29/20 20:10	103-65-1	
Styrene	**<0.50**	ug/L	0.50	1		10/29/20 20:10	100-42-5	
1,1,1,2-Tetrachloroethane	**<0.50**	ug/L	0.50	1		10/29/20 20:10	630-20-6	
1,1,2,2-Tetrachloroethane	**<0.50**	ug/L	0.50	1		10/29/20 20:10	79-34-5	
Tetrachloroethene	**<0.50**	ug/L	0.50	1		10/29/20 20:10	127-18-4	
Tetrahydrofuran	**<10.0**	ug/L	10.0	1		10/29/20 20:10	109-99-9	
Toluene	**<0.50**	ug/L	0.50	1		10/29/20 20:10	108-88-3	
1,2,3-Trichlorobenzene	**<0.50**	ug/L	0.50	1		10/29/20 20:10	87-61-6	
1,2,4-Trichlorobenzene	**<0.50**	ug/L	0.50	1		10/29/20 20:10	120-82-1	
1,1,1-Trichloroethane	**<0.50**	ug/L	0.50	1		10/29/20 20:10	71-55-6	
1,1,2-Trichloroethane	**<0.50**	ug/L	0.50	1		10/29/20 20:10	79-00-5	
Trichloroethene	**<0.40**	ug/L	0.40	1		10/29/20 20:10	79-01-6	
Trichlorofluoromethane	**<0.50**	ug/L	0.50	1		10/29/20 20:10	75-69-4	
1,2,3-Trichloropropane	**<4.0**	ug/L	4.0	1		10/29/20 20:10	96-18-4	
1,1,2-Trichlorotrifluoroethane	**<1.0**	ug/L	1.0	1		10/29/20 20:10	76-13-1	
1,2,4-Trimethylbenzene	**<0.50**	ug/L	0.50	1		10/29/20 20:10	95-63-6	
1,3,5-Trimethylbenzene	**<0.50**	ug/L	0.50	1		10/29/20 20:10	108-67-8	
Vinyl chloride	**<0.20**	ug/L	0.20	1		10/29/20 20:10	75-01-4	
Xylene (Total)	**<1.5**	ug/L	1.5	1		10/29/20 20:10	1330-20-7	
m&p-Xylene	**<1.0**	ug/L	1.0	1		10/29/20 20:10	179601-23-1	
o-Xylene	**<0.50**	ug/L	0.50	1		10/29/20 20:10	95-47-6	
Surrogates								
1,2-Dichloroethane-d4 (S)	102	%.	75-128	1		10/29/20 20:10	17060-07-0	
Toluene-d8 (S)	99	%.	75-125	1		10/29/20 20:10	2037-26-5	
4-Bromofluorobenzene (S)	98	%.	75-125	1		10/29/20 20:10	460-00-4	
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B Pace Analytical Services - Minneapolis							
pH at 25 Degrees C	**7.7**	Std. Units	0.10	1		11/03/20 14:03		H6
SM2510 Specific Conductance	Analytical Method: SM 2510 Pace Analytical Services - Minneapolis							
Specific Conductance	**776**	umhos/cm	1.0	1		10/27/20 16:37		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10536477

Sample: LYS-DUP **Lab ID: 10536477014** Collected: 10/15/20 00:00 Received: 10/21/20 12:20 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level	Analytical Method: EPA 8260D Pace Analytical Services - Minneapolis							
Acetone	**<20.0**	ug/L	20.0	1		10/29/20 20:33	67-64-1	v1
Allyl chloride	**<4.0**	ug/L	4.0	1		10/29/20 20:33	107-05-1	
Benzene	**<0.50**	ug/L	0.50	1		10/29/20 20:33	71-43-2	
Bromobenzene	**<0.50**	ug/L	0.50	1		10/29/20 20:33	108-86-1	
Bromochloromethane	**<1.0**	ug/L	1.0	1		10/29/20 20:33	74-97-5	
Bromodichloromethane	**<0.50**	ug/L	0.50	1		10/29/20 20:33	75-27-4	
Bromoform	**<4.0**	ug/L	4.0	1		10/29/20 20:33	75-25-2	
Bromomethane	**<4.0**	ug/L	4.0	1		10/29/20 20:33	74-83-9	v1
2-Butanone (MEK)	**<5.0**	ug/L	5.0	1		10/29/20 20:33	78-93-3	
n-Butylbenzene	**<0.50**	ug/L	0.50	1		10/29/20 20:33	104-51-8	
sec-Butylbenzene	**<0.50**	ug/L	0.50	1		10/29/20 20:33	135-98-8	
tert-Butylbenzene	**<0.50**	ug/L	0.50	1		10/29/20 20:33	98-06-6	
Carbon tetrachloride	**<0.50**	ug/L	0.50	1		10/29/20 20:33	56-23-5	
Chlorobenzene	**<0.50**	ug/L	0.50	1		10/29/20 20:33	108-90-7	
Chloroethane	**<1.0**	ug/L	1.0	1		10/29/20 20:33	75-00-3	
Chloroform	**<1.0**	ug/L	1.0	1		10/29/20 20:33	67-66-3	
Chloromethane	**<4.0**	ug/L	4.0	1		10/29/20 20:33	74-87-3	
2-Chlorotoluene	**<0.50**	ug/L	0.50	1		10/29/20 20:33	95-49-8	
4-Chlorotoluene	**<0.50**	ug/L	0.50	1		10/29/20 20:33	106-43-4	
1,2-Dibromo-3-chloropropane	**<4.0**	ug/L	4.0	1		10/29/20 20:33	96-12-8	
Dibromochloromethane	**<0.50**	ug/L	0.50	1		10/29/20 20:33	124-48-1	
1,2-Dibromoethane (EDB)	**<0.50**	ug/L	0.50	1		10/29/20 20:33	106-93-4	
Dibromomethane	**<1.0**	ug/L	1.0	1		10/29/20 20:33	74-95-3	
1,2-Dichlorobenzene	**<0.50**	ug/L	0.50	1		10/29/20 20:33	95-50-1	
1,3-Dichlorobenzene	**<0.50**	ug/L	0.50	1		10/29/20 20:33	541-73-1	
1,4-Dichlorobenzene	**<0.50**	ug/L	0.50	1		10/29/20 20:33	106-46-7	
Dichlorodifluoromethane	**<1.0**	ug/L	1.0	1		10/29/20 20:33	75-71-8	
1,1-Dichloroethane	**<0.50**	ug/L	0.50	1		10/29/20 20:33	75-34-3	
1,2-Dichloroethane	**<0.50**	ug/L	0.50	1		10/29/20 20:33	107-06-2	
1,1-Dichloroethene	**<1.0**	ug/L	1.0	1		10/29/20 20:33	75-35-4	
cis-1,2-Dichloroethene	**<0.50**	ug/L	0.50	1		10/29/20 20:33	156-59-2	
trans-1,2-Dichloroethene	**<0.50**	ug/L	0.50	1		10/29/20 20:33	156-60-5	
Dichlorofluoromethane	**<1.0**	ug/L	1.0	1		10/29/20 20:33	75-43-4	
1,2-Dichloropropane	**<4.0**	ug/L	4.0	1		10/29/20 20:33	78-87-5	
1,3-Dichloropropane	**<0.50**	ug/L	0.50	1		10/29/20 20:33	142-28-9	
2,2-Dichloropropane	**<1.0**	ug/L	1.0	1		10/29/20 20:33	594-20-7	
1,1-Dichloropropene	**<0.50**	ug/L	0.50	1		10/29/20 20:33	563-58-6	
cis-1,3-Dichloropropene	**<0.50**	ug/L	0.50	1		10/29/20 20:33	10061-01-5	
trans-1,3-Dichloropropene	**<0.50**	ug/L	0.50	1		10/29/20 20:33	10061-02-6	
Diethyl ether (Ethyl ether)	**<4.0**	ug/L	4.0	1		10/29/20 20:33	60-29-7	
Ethylbenzene	**<0.50**	ug/L	0.50	1		10/29/20 20:33	100-41-4	
Hexachloro-1,3-butadiene	**<1.0**	ug/L	1.0	1		10/29/20 20:33	87-68-3	
Isopropylbenzene (Cumene)	**<0.50**	ug/L	0.50	1		10/29/20 20:33	98-82-8	
p-Isopropyltoluene	**<0.50**	ug/L	0.50	1		10/29/20 20:33	99-87-6	
Methylene Chloride	**<4.0**	ug/L	4.0	1		10/29/20 20:33	75-09-2	
4-Methyl-2-pentanone (MIBK)	**<5.0**	ug/L	5.0	1		10/29/20 20:33	108-10-1	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10536477

Sample: LYS-DUP **Lab ID: 10536477014** Collected: 10/15/20 00:00 Received: 10/21/20 12:20 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level	Analytical Method: EPA 8260D Pace Analytical Services - Minneapolis							
Methyl-tert-butyl ether	**<0.50**	ug/L	0.50	1		10/29/20 20:33	1634-04-4	
Naphthalene	**<1.0**	ug/L	1.0	1		10/29/20 20:33	91-20-3	
n-Propylbenzene	**<0.50**	ug/L	0.50	1		10/29/20 20:33	103-65-1	
Styrene	**<0.50**	ug/L	0.50	1		10/29/20 20:33	100-42-5	
1,1,1,2-Tetrachloroethane	**<0.50**	ug/L	0.50	1		10/29/20 20:33	630-20-6	
1,1,2,2-Tetrachloroethane	**<0.50**	ug/L	0.50	1		10/29/20 20:33	79-34-5	
Tetrachloroethene	**<0.50**	ug/L	0.50	1		10/29/20 20:33	127-18-4	
Tetrahydrofuran	**<10.0**	ug/L	10.0	1		10/29/20 20:33	109-99-9	
Toluene	**<0.50**	ug/L	0.50	1		10/29/20 20:33	108-88-3	
1,2,3-Trichlorobenzene	**<0.50**	ug/L	0.50	1		10/29/20 20:33	87-61-6	
1,2,4-Trichlorobenzene	**<0.50**	ug/L	0.50	1		10/29/20 20:33	120-82-1	
1,1,1-Trichloroethane	**<0.50**	ug/L	0.50	1		10/29/20 20:33	71-55-6	
1,1,2-Trichloroethane	**<0.50**	ug/L	0.50	1		10/29/20 20:33	79-00-5	
Trichloroethene	**<0.40**	ug/L	0.40	1		10/29/20 20:33	79-01-6	
Trichlorofluoromethane	**<0.50**	ug/L	0.50	1		10/29/20 20:33	75-69-4	
1,2,3-Trichloropropane	**<4.0**	ug/L	4.0	1		10/29/20 20:33	96-18-4	
1,1,2-Trichlorotrifluoroethane	**<1.0**	ug/L	1.0	1		10/29/20 20:33	76-13-1	
1,2,4-Trimethylbenzene	**<0.50**	ug/L	0.50	1		10/29/20 20:33	95-63-6	
1,3,5-Trimethylbenzene	**<0.50**	ug/L	0.50	1		10/29/20 20:33	108-67-8	
Vinyl chloride	**<0.20**	ug/L	0.20	1		10/29/20 20:33	75-01-4	
Xylene (Total)	**<1.5**	ug/L	1.5	1		10/29/20 20:33	1330-20-7	
m&p-Xylene	**<1.0**	ug/L	1.0	1		10/29/20 20:33	179601-23-1	
o-Xylene	**<0.50**	ug/L	0.50	1		10/29/20 20:33	95-47-6	
Surrogates								
1,2-Dichloroethane-d4 (S)	102	%.	75-128	1		10/29/20 20:33	17060-07-0	
Toluene-d8 (S)	98	%.	75-125	1		10/29/20 20:33	2037-26-5	
4-Bromofluorobenzene (S)	98	%.	75-125	1		10/29/20 20:33	460-00-4	
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B Pace Analytical Services - Minneapolis							
pH at 25 Degrees C	**7.9**	Std. Units	0.10	1		11/03/20 14:07		H6
SM2510 Specific Conductance	Analytical Method: SM 2510 Pace Analytical Services - Minneapolis							
Specific Conductance	**766**	umhos/cm	1.0	1		10/27/20 16:38		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10536477

Sample: Trip Blank **Lab ID: 10536477015** Collected: 10/15/20 12:00 Received: 10/21/20 12:20 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level	Analytical Method: EPA 8260D Pace Analytical Services - Minneapolis							
Acetone	**<20.0**	ug/L	20.0	1		10/29/20 19:22	67-64-1	v1
Allyl chloride	**<4.0**	ug/L	4.0	1		10/29/20 19:22	107-05-1	
Benzene	**<0.50**	ug/L	0.50	1		10/29/20 19:22	71-43-2	
Bromobenzene	**<0.50**	ug/L	0.50	1		10/29/20 19:22	108-86-1	
Bromochloromethane	**<1.0**	ug/L	1.0	1		10/29/20 19:22	74-97-5	
Bromodichloromethane	**<0.50**	ug/L	0.50	1		10/29/20 19:22	75-27-4	
Bromoform	**<4.0**	ug/L	4.0	1		10/29/20 19:22	75-25-2	
Bromomethane	**<4.0**	ug/L	4.0	1		10/29/20 19:22	74-83-9	v1
2-Butanone (MEK)	**<5.0**	ug/L	5.0	1		10/29/20 19:22	78-93-3	
n-Butylbenzene	**<0.50**	ug/L	0.50	1		10/29/20 19:22	104-51-8	
sec-Butylbenzene	**<0.50**	ug/L	0.50	1		10/29/20 19:22	135-98-8	
tert-Butylbenzene	**<0.50**	ug/L	0.50	1		10/29/20 19:22	98-06-6	
Carbon tetrachloride	**<0.50**	ug/L	0.50	1		10/29/20 19:22	56-23-5	
Chlorobenzene	**<0.50**	ug/L	0.50	1		10/29/20 19:22	108-90-7	
Chloroethane	**<1.0**	ug/L	1.0	1		10/29/20 19:22	75-00-3	
Chloroform	**<1.0**	ug/L	1.0	1		10/29/20 19:22	67-66-3	
Chloromethane	**<4.0**	ug/L	4.0	1		10/29/20 19:22	74-87-3	
2-Chlorotoluene	**<0.50**	ug/L	0.50	1		10/29/20 19:22	95-49-8	
4-Chlorotoluene	**<0.50**	ug/L	0.50	1		10/29/20 19:22	106-43-4	
1,2-Dibromo-3-chloropropane	**<4.0**	ug/L	4.0	1		10/29/20 19:22	96-12-8	
Dibromochloromethane	**<0.50**	ug/L	0.50	1		10/29/20 19:22	124-48-1	
1,2-Dibromoethane (EDB)	**<0.50**	ug/L	0.50	1		10/29/20 19:22	106-93-4	
Dibromomethane	**<1.0**	ug/L	1.0	1		10/29/20 19:22	74-95-3	
1,2-Dichlorobenzene	**<0.50**	ug/L	0.50	1		10/29/20 19:22	95-50-1	
1,3-Dichlorobenzene	**<0.50**	ug/L	0.50	1		10/29/20 19:22	541-73-1	
1,4-Dichlorobenzene	**<0.50**	ug/L	0.50	1		10/29/20 19:22	106-46-7	
Dichlorodifluoromethane	**<1.0**	ug/L	1.0	1		10/29/20 19:22	75-71-8	
1,1-Dichloroethane	**<0.50**	ug/L	0.50	1		10/29/20 19:22	75-34-3	
1,2-Dichloroethane	**<0.50**	ug/L	0.50	1		10/29/20 19:22	107-06-2	
1,1-Dichloroethene	**<1.0**	ug/L	1.0	1		10/29/20 19:22	75-35-4	
cis-1,2-Dichloroethene	**<0.50**	ug/L	0.50	1		10/29/20 19:22	156-59-2	
trans-1,2-Dichloroethene	**<0.50**	ug/L	0.50	1		10/29/20 19:22	156-60-5	
Dichlorofluoromethane	**<1.0**	ug/L	1.0	1		10/29/20 19:22	75-43-4	
1,2-Dichloropropane	**<4.0**	ug/L	4.0	1		10/29/20 19:22	78-87-5	
1,3-Dichloropropane	**<0.50**	ug/L	0.50	1		10/29/20 19:22	142-28-9	
2,2-Dichloropropane	**<1.0**	ug/L	1.0	1		10/29/20 19:22	594-20-7	
1,1-Dichloropropene	**<0.50**	ug/L	0.50	1		10/29/20 19:22	563-58-6	
cis-1,3-Dichloropropene	**<0.50**	ug/L	0.50	1		10/29/20 19:22	10061-01-5	
trans-1,3-Dichloropropene	**<0.50**	ug/L	0.50	1		10/29/20 19:22	10061-02-6	
Diethyl ether (Ethyl ether)	**<4.0**	ug/L	4.0	1		10/29/20 19:22	60-29-7	
Ethylbenzene	**<0.50**	ug/L	0.50	1		10/29/20 19:22	100-41-4	
Hexachloro-1,3-butadiene	**<1.0**	ug/L	1.0	1		10/29/20 19:22	87-68-3	
Isopropylbenzene (Cumene)	**<0.50**	ug/L	0.50	1		10/29/20 19:22	98-82-8	
p-Isopropyltoluene	**<0.50**	ug/L	0.50	1		10/29/20 19:22	99-87-6	
Methylene Chloride	**<4.0**	ug/L	4.0	1		10/29/20 19:22	75-09-2	
4-Methyl-2-pentanone (MIBK)	**<5.0**	ug/L	5.0	1		10/29/20 19:22	108-10-1	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10536477

Sample: Trip Blank **Lab ID: 10536477015** Collected: 10/15/20 12:00 Received: 10/21/20 12:20 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level	Analytical Method: EPA 8260D Pace Analytical Services - Minneapolis							
Methyl-tert-butyl ether	**<0.50**	ug/L	0.50	1		10/29/20 19:22	1634-04-4	
Naphthalene	**<1.0**	ug/L	1.0	1		10/29/20 19:22	91-20-3	
n-Propylbenzene	**<0.50**	ug/L	0.50	1		10/29/20 19:22	103-65-1	
Styrene	**<0.50**	ug/L	0.50	1		10/29/20 19:22	100-42-5	
1,1,1,2-Tetrachloroethane	**<0.50**	ug/L	0.50	1		10/29/20 19:22	630-20-6	
1,1,2,2-Tetrachloroethane	**<0.50**	ug/L	0.50	1		10/29/20 19:22	79-34-5	
Tetrachloroethene	**<0.50**	ug/L	0.50	1		10/29/20 19:22	127-18-4	
Tetrahydrofuran	**<10.0**	ug/L	10.0	1		10/29/20 19:22	109-99-9	
Toluene	**<0.50**	ug/L	0.50	1		10/29/20 19:22	108-88-3	
1,2,3-Trichlorobenzene	**<0.50**	ug/L	0.50	1		10/29/20 19:22	87-61-6	
1,2,4-Trichlorobenzene	**<0.50**	ug/L	0.50	1		10/29/20 19:22	120-82-1	
1,1,1-Trichloroethane	**<0.50**	ug/L	0.50	1		10/29/20 19:22	71-55-6	
1,1,2-Trichloroethane	**<0.50**	ug/L	0.50	1		10/29/20 19:22	79-00-5	
Trichloroethene	**<0.40**	ug/L	0.40	1		10/29/20 19:22	79-01-6	
Trichlorofluoromethane	**<0.50**	ug/L	0.50	1		10/29/20 19:22	75-69-4	
1,2,3-Trichloropropane	**<4.0**	ug/L	4.0	1		10/29/20 19:22	96-18-4	
1,1,2-Trichlorotrifluoroethane	**<1.0**	ug/L	1.0	1		10/29/20 19:22	76-13-1	
1,2,4-Trimethylbenzene	**<0.50**	ug/L	0.50	1		10/29/20 19:22	95-63-6	
1,3,5-Trimethylbenzene	**<0.50**	ug/L	0.50	1		10/29/20 19:22	108-67-8	
Vinyl chloride	**<0.20**	ug/L	0.20	1		10/29/20 19:22	75-01-4	
Xylene (Total)	**<1.5**	ug/L	1.5	1		10/29/20 19:22	1330-20-7	
m&p-Xylene	**<1.0**	ug/L	1.0	1		10/29/20 19:22	179601-23-1	
o-Xylene	**<0.50**	ug/L	0.50	1		10/29/20 19:22	95-47-6	
Surrogates								
1,2-Dichloroethane-d4 (S)	100	%.	75-128	1		10/29/20 19:22	17060-07-0	
Toluene-d8 (S)	98	%.	75-125	1		10/29/20 19:22	2037-26-5	
4-Bromofluorobenzene (S)	95	%.	75-125	1		10/29/20 19:22	460-00-4	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10536477

Sample: Trip Blank 2 **Lab ID: 10536477016** Collected: 10/15/20 12:05 Received: 10/21/20 12:20 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level	Analytical Method: EPA 8260D Pace Analytical Services - Minneapolis							
Acetone	**<20.0**	ug/L	20.0	1		10/29/20 19:46	67-64-1	v1
Allyl chloride	**<4.0**	ug/L	4.0	1		10/29/20 19:46	107-05-1	
Benzene	**<0.50**	ug/L	0.50	1		10/29/20 19:46	71-43-2	
Bromobenzene	**<0.50**	ug/L	0.50	1		10/29/20 19:46	108-86-1	
Bromochloromethane	**<1.0**	ug/L	1.0	1		10/29/20 19:46	74-97-5	
Bromodichloromethane	**<0.50**	ug/L	0.50	1		10/29/20 19:46	75-27-4	
Bromoform	**<4.0**	ug/L	4.0	1		10/29/20 19:46	75-25-2	
Bromomethane	**<4.0**	ug/L	4.0	1		10/29/20 19:46	74-83-9	v1
2-Butanone (MEK)	**<5.0**	ug/L	5.0	1		10/29/20 19:46	78-93-3	
n-Butylbenzene	**<0.50**	ug/L	0.50	1		10/29/20 19:46	104-51-8	
sec-Butylbenzene	**<0.50**	ug/L	0.50	1		10/29/20 19:46	135-98-8	
tert-Butylbenzene	**<0.50**	ug/L	0.50	1		10/29/20 19:46	98-06-6	
Carbon tetrachloride	**<0.50**	ug/L	0.50	1		10/29/20 19:46	56-23-5	
Chlorobenzene	**<0.50**	ug/L	0.50	1		10/29/20 19:46	108-90-7	
Chloroethane	**<1.0**	ug/L	1.0	1		10/29/20 19:46	75-00-3	
Chloroform	**<1.0**	ug/L	1.0	1		10/29/20 19:46	67-66-3	
Chloromethane	**<4.0**	ug/L	4.0	1		10/29/20 19:46	74-87-3	
2-Chlorotoluene	**<0.50**	ug/L	0.50	1		10/29/20 19:46	95-49-8	
4-Chlorotoluene	**<0.50**	ug/L	0.50	1		10/29/20 19:46	106-43-4	
1,2-Dibromo-3-chloropropane	**<4.0**	ug/L	4.0	1		10/29/20 19:46	96-12-8	
Dibromochloromethane	**<0.50**	ug/L	0.50	1		10/29/20 19:46	124-48-1	
1,2-Dibromoethane (EDB)	**<0.50**	ug/L	0.50	1		10/29/20 19:46	106-93-4	
Dibromomethane	**<1.0**	ug/L	1.0	1		10/29/20 19:46	74-95-3	
1,2-Dichlorobenzene	**<0.50**	ug/L	0.50	1		10/29/20 19:46	95-50-1	
1,3-Dichlorobenzene	**<0.50**	ug/L	0.50	1		10/29/20 19:46	541-73-1	
1,4-Dichlorobenzene	**<0.50**	ug/L	0.50	1		10/29/20 19:46	106-46-7	
Dichlorodifluoromethane	**<1.0**	ug/L	1.0	1		10/29/20 19:46	75-71-8	
1,1-Dichloroethane	**<0.50**	ug/L	0.50	1		10/29/20 19:46	75-34-3	
1,2-Dichloroethane	**<0.50**	ug/L	0.50	1		10/29/20 19:46	107-06-2	
1,1-Dichloroethene	**<1.0**	ug/L	1.0	1		10/29/20 19:46	75-35-4	
cis-1,2-Dichloroethene	**<0.50**	ug/L	0.50	1		10/29/20 19:46	156-59-2	
trans-1,2-Dichloroethene	**<0.50**	ug/L	0.50	1		10/29/20 19:46	156-60-5	
Dichlorofluoromethane	**<1.0**	ug/L	1.0	1		10/29/20 19:46	75-43-4	
1,2-Dichloropropane	**<4.0**	ug/L	4.0	1		10/29/20 19:46	78-87-5	
1,3-Dichloropropane	**<0.50**	ug/L	0.50	1		10/29/20 19:46	142-28-9	
2,2-Dichloropropane	**<1.0**	ug/L	1.0	1		10/29/20 19:46	594-20-7	
1,1-Dichloropropene	**<0.50**	ug/L	0.50	1		10/29/20 19:46	563-58-6	
cis-1,3-Dichloropropene	**<0.50**	ug/L	0.50	1		10/29/20 19:46	10061-01-5	
trans-1,3-Dichloropropene	**<0.50**	ug/L	0.50	1		10/29/20 19:46	10061-02-6	
Diethyl ether (Ethyl ether)	**<4.0**	ug/L	4.0	1		10/29/20 19:46	60-29-7	
Ethylbenzene	**<0.50**	ug/L	0.50	1		10/29/20 19:46	100-41-4	
Hexachloro-1,3-butadiene	**<1.0**	ug/L	1.0	1		10/29/20 19:46	87-68-3	
Isopropylbenzene (Cumene)	**<0.50**	ug/L	0.50	1		10/29/20 19:46	98-82-8	
p-Isopropyltoluene	**<0.50**	ug/L	0.50	1		10/29/20 19:46	99-87-6	
Methylene Chloride	**<4.0**	ug/L	4.0	1		10/29/20 19:46	75-09-2	
4-Methyl-2-pentanone (MIBK)	**<5.0**	ug/L	5.0	1		10/29/20 19:46	108-10-1	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10536477

Sample: Trip Blank 2 **Lab ID: 10536477016** Collected: 10/15/20 12:05 Received: 10/21/20 12:20 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level	Analytical Method: EPA 8260D Pace Analytical Services - Minneapolis							
Methyl-tert-butyl ether	**<0.50**	ug/L	0.50	1		10/29/20 19:46	1634-04-4	
Naphthalene	**<1.0**	ug/L	1.0	1		10/29/20 19:46	91-20-3	
n-Propylbenzene	**<0.50**	ug/L	0.50	1		10/29/20 19:46	103-65-1	
Styrene	**<0.50**	ug/L	0.50	1		10/29/20 19:46	100-42-5	
1,1,1,2-Tetrachloroethane	**<0.50**	ug/L	0.50	1		10/29/20 19:46	630-20-6	
1,1,2,2-Tetrachloroethane	**<0.50**	ug/L	0.50	1		10/29/20 19:46	79-34-5	
Tetrachloroethene	**<0.50**	ug/L	0.50	1		10/29/20 19:46	127-18-4	
Tetrahydrofuran	**<10.0**	ug/L	10.0	1		10/29/20 19:46	109-99-9	
Toluene	**<0.50**	ug/L	0.50	1		10/29/20 19:46	108-88-3	
1,2,3-Trichlorobenzene	**<0.50**	ug/L	0.50	1		10/29/20 19:46	87-61-6	
1,2,4-Trichlorobenzene	**<0.50**	ug/L	0.50	1		10/29/20 19:46	120-82-1	
1,1,1-Trichloroethane	**<0.50**	ug/L	0.50	1		10/29/20 19:46	71-55-6	
1,1,2-Trichloroethane	**<0.50**	ug/L	0.50	1		10/29/20 19:46	79-00-5	
Trichloroethene	**<0.40**	ug/L	0.40	1		10/29/20 19:46	79-01-6	
Trichlorofluoromethane	**<0.50**	ug/L	0.50	1		10/29/20 19:46	75-69-4	
1,2,3-Trichloropropane	**<4.0**	ug/L	4.0	1		10/29/20 19:46	96-18-4	
1,1,2-Trichlorotrifluoroethane	**<1.0**	ug/L	1.0	1		10/29/20 19:46	76-13-1	
1,2,4-Trimethylbenzene	**<0.50**	ug/L	0.50	1		10/29/20 19:46	95-63-6	
1,3,5-Trimethylbenzene	**<0.50**	ug/L	0.50	1		10/29/20 19:46	108-67-8	
Vinyl chloride	**<0.20**	ug/L	0.20	1		10/29/20 19:46	75-01-4	
Xylene (Total)	**<1.5**	ug/L	1.5	1		10/29/20 19:46	1330-20-7	
m&p-Xylene	**<1.0**	ug/L	1.0	1		10/29/20 19:46	179601-23-1	
o-Xylene	**<0.50**	ug/L	0.50	1		10/29/20 19:46	95-47-6	
Surrogates								
1,2-Dichloroethane-d4 (S)	103	%.	75-128	1		10/29/20 19:46	17060-07-0	
Toluene-d8 (S)	104	%.	75-125	1		10/29/20 19:46	2037-26-5	
4-Bromofluorobenzene (S)	100	%.	75-125	1		10/29/20 19:46	460-00-4	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10536477

QC Batch: 708886 | Analysis Method: EPA 8260D
QC Batch Method: EPA 8260D | Analysis Description: 8260D MSV LL Water
Laboratory: Pace Analytical Services - Minneapolis
Associated Lab Samples: 10536477013, 10536477014, 10536477015, 10536477016

METHOD BLANK: 3787085 Matrix: Water
Associated Lab Samples: 10536477013, 10536477014, 10536477015, 10536477016

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	<0.50	0.50	10/29/20 12:15	
1,1,1-Trichloroethane	ug/L	<0.50	0.50	10/29/20 12:15	
1,1,2,2-Tetrachloroethane	ug/L	<0.50	0.50	10/29/20 12:15	
1,1,2-Trichloroethane	ug/L	<0.50	0.50	10/29/20 12:15	
1,1,2-Trichlorotrifluoroethane	ug/L	<1.0	1.0	10/29/20 12:15	
1,1-Dichloroethane	ug/L	<0.50	0.50	10/29/20 12:15	
1,1-Dichloroethene	ug/L	<1.0	1.0	10/29/20 12:15	MN
1,1-Dichloropropene	ug/L	<0.50	0.50	10/29/20 12:15	
1,2,3-Trichlorobenzene	ug/L	<0.50	0.50	10/29/20 12:15	
1,2,3-Trichloropropane	ug/L	<4.0	4.0	10/29/20 12:15	
1,2,4-Trichlorobenzene	ug/L	<0.50	0.50	10/29/20 12:15	
1,2,4-Trimethylbenzene	ug/L	<0.50	0.50	10/29/20 12:15	
1,2-Dibromo-3-chloropropane	ug/L	<4.0	4.0	10/29/20 12:15	
1,2-Dibromoethane (EDB)	ug/L	<0.50	0.50	10/29/20 12:15	
1,2-Dichlorobenzene	ug/L	<0.50	0.50	10/29/20 12:15	
1,2-Dichloroethane	ug/L	<0.50	0.50	10/29/20 12:15	
1,2-Dichloropropane	ug/L	<4.0	4.0	10/29/20 12:15	
1,3,5-Trimethylbenzene	ug/L	<0.50	0.50	10/29/20 12:15	
1,3-Dichlorobenzene	ug/L	<0.50	0.50	10/29/20 12:15	
1,3-Dichloropropane	ug/L	<0.50	0.50	10/29/20 12:15	
1,4-Dichlorobenzene	ug/L	<0.50	0.50	10/29/20 12:15	
2,2-Dichloropropane	ug/L	<1.0	1.0	10/29/20 12:15	
2-Butanone (MEK)	ug/L	<5.0	5.0	10/29/20 12:15	
2-Chlorotoluene	ug/L	<0.50	0.50	10/29/20 12:15	
4-Chlorotoluene	ug/L	<0.50	0.50	10/29/20 12:15	
4-Methyl-2-pentanone (MIBK)	ug/L	<5.0	5.0	10/29/20 12:15	
Acetone	ug/L	<20.0	20.0	10/29/20 12:15	v1
Allyl chloride	ug/L	<4.0	4.0	10/29/20 12:15	
Benzene	ug/L	<0.50	0.50	10/29/20 12:15	
Bromobenzene	ug/L	<0.50	0.50	10/29/20 12:15	
Bromochloromethane	ug/L	<1.0	1.0	10/29/20 12:15	
Bromodichloromethane	ug/L	<0.50	0.50	10/29/20 12:15	
Bromoform	ug/L	<4.0	4.0	10/29/20 12:15	
Bromomethane	ug/L	<4.0	4.0	10/29/20 12:15	v1
Carbon tetrachloride	ug/L	<0.50	0.50	10/29/20 12:15	
Chlorobenzene	ug/L	<0.50	0.50	10/29/20 12:15	
Chloroethane	ug/L	<1.0	1.0	10/29/20 12:15	
Chloroform	ug/L	<1.0	1.0	10/29/20 12:15	
Chloromethane	ug/L	<4.0	4.0	10/29/20 12:15	
cis-1,2-Dichloroethene	ug/L	<0.50	0.50	10/29/20 12:15	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10536477

METHOD BLANK: 3787085 Matrix: Water
Associated Lab Samples: 10536477013, 10536477014, 10536477015, 10536477016

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
cis-1,3-Dichloropropene	ug/L	<0.50	0.50	10/29/20 12:15	
Dibromochloromethane	ug/L	<0.50	0.50	10/29/20 12:15	
Dibromomethane	ug/L	<1.0	1.0	10/29/20 12:15	
Dichlorodifluoromethane	ug/L	<1.0	1.0	10/29/20 12:15	
Dichlorofluoromethane	ug/L	<1.0	1.0	10/29/20 12:15	
Diethyl ether (Ethyl ether)	ug/L	<4.0	4.0	10/29/20 12:15	
Ethylbenzene	ug/L	<0.50	0.50	10/29/20 12:15	
Hexachloro-1,3-butadiene	ug/L	<1.0	1.0	10/29/20 12:15	
Isopropylbenzene (Cumene)	ug/L	<0.50	0.50	10/29/20 12:15	
m&p-Xylene	ug/L	<1.0	1.0	10/29/20 12:15	
Methyl-tert-butyl ether	ug/L	<0.50	0.50	10/29/20 12:15	
Methylene Chloride	ug/L	<4.0	4.0	10/29/20 12:15	
n-Butylbenzene	ug/L	<0.50	0.50	10/29/20 12:15	
n-Propylbenzene	ug/L	<0.50	0.50	10/29/20 12:15	
Naphthalene	ug/L	<1.0	1.0	10/29/20 12:15	
o-Xylene	ug/L	<0.50	0.50	10/29/20 12:15	
p-Isopropyltoluene	ug/L	<0.50	0.50	10/29/20 12:15	
sec-Butylbenzene	ug/L	<0.50	0.50	10/29/20 12:15	
Styrene	ug/L	<0.50	0.50	10/29/20 12:15	
tert-Butylbenzene	ug/L	<0.50	0.50	10/29/20 12:15	
Tetrachloroethene	ug/L	<0.50	0.50	10/29/20 12:15	
Tetrahydrofuran	ug/L	<10.0	10.0	10/29/20 12:15	
Toluene	ug/L	<0.50	0.50	10/29/20 12:15	
trans-1,2-Dichloroethene	ug/L	<0.50	0.50	10/29/20 12:15	
trans-1,3-Dichloropropene	ug/L	<0.50	0.50	10/29/20 12:15	
Trichloroethene	ug/L	<0.40	0.40	10/29/20 12:15	
Trichlorofluoromethane	ug/L	<0.50	0.50	10/29/20 12:15	
Vinyl chloride	ug/L	<0.20	0.20	10/29/20 12:15	
Xylene (Total)	ug/L	<1.5	1.5	10/29/20 12:15	
1,2-Dichloroethane-d4 (S)	%.	100	75-128	10/29/20 12:15	
4-Bromofluorobenzene (S)	%.	98	75-125	10/29/20 12:15	
Toluene-d8 (S)	%.	99	75-125	10/29/20 12:15	

LABORATORY CONTROL SAMPLE: 3787086

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	20	19.3	97	75-125	
1,1,1-Trichloroethane	ug/L	20	20.0	100	68-131	
1,1,2,2-Tetrachloroethane	ug/L	20	18.5	92	71-125	
1,1,2-Trichloroethane	ug/L	20	20.6	103	75-125	
1,1,2-Trichlorotrifluoroethane	ug/L	20	22.4	112	71-125	
1,1-Dichloroethane	ug/L	20	19.4	97	71-125	
1,1-Dichloroethene	ug/L	20	21.0	105	66-126	
1,1-Dichloropropene	ug/L	20	20.3	101	58-134	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10536477

LABORATORY CONTROL SAMPLE: 3787086

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,2,3-Trichlorobenzene	ug/L	20	18.1	90	71-125	
1,2,3-Trichloropropane	ug/L	20	18.9	95	75-125	
1,2,4-Trichlorobenzene	ug/L	20	18.1	90	72-125	
1,2,4-Trimethylbenzene	ug/L	20	19.1	95	75-125	
1,2-Dibromo-3-chloropropane	ug/L	50	42.6	85	64-125	
1,2-Dibromoethane (EDB)	ug/L	20	19.0	95	75-125	
1,2-Dichlorobenzene	ug/L	20	18.3	92	75-125	
1,2-Dichloroethane	ug/L	20	18.1	91	70-125	
1,2-Dichloropropane	ug/L	20	19.2	96	73-125	
1,3,5-Trimethylbenzene	ug/L	20	19.0	95	75-125	
1,3-Dichlorobenzene	ug/L	20	18.6	93	75-125	
1,3-Dichloropropane	ug/L	20	19.6	98	75-125	
1,4-Dichlorobenzene	ug/L	20	18.7	93	75-125	
2,2-Dichloropropane	ug/L	20	20.1	100	57-144	
2-Butanone (MEK)	ug/L	100	100	100	51-144	
2-Chlorotoluene	ug/L	20	18.8	94	75-125	
4-Chlorotoluene	ug/L	20	19.0	95	75-125	
4-Methyl-2-pentanone (MIBK)	ug/L	100	94.9	95	72-125	
Acetone	ug/L	100	134	134	34-150	v1
Allyl chloride	ug/L	20	22.4	112	58-132	
Benzene	ug/L	20	19.6	98	70-125	
Bromobenzene	ug/L	20	18.8	94	75-125	
Bromochloromethane	ug/L	20	19.4	97	72-126	
Bromodichloromethane	ug/L	20	19.5	97	73-128	
Bromoform	ug/L	20	18.0	90	70-125	
Bromomethane	ug/L	20	29.3	146	31-150	v1
Carbon tetrachloride	ug/L	20	19.8	99	72-131	
Chlorobenzene	ug/L	20	19.6	98	75-125	
Chloroethane	ug/L	20	21.5	108	70-128	
Chloroform	ug/L	20	18.8	94	72-125	
Chloromethane	ug/L	20	21.1	105	63-129	
cis-1,2-Dichloroethene	ug/L	20	18.8	94	69-128	
cis-1,3-Dichloropropene	ug/L	20	20.1	101	74-128	
Dibromochloromethane	ug/L	20	20.1	100	75-125	
Dibromomethane	ug/L	20	19.2	96	74-130	
Dichlorodifluoromethane	ug/L	20	19.0	95	65-134	
Dichlorofluoromethane	ug/L	20	21.8	109	74-125	
Diethyl ether (Ethyl ether)	ug/L	20	20.8	104	64-126	
Ethylbenzene	ug/L	20	20.0	100	75-125	
Hexachloro-1,3-butadiene	ug/L	20	17.9	89	71-130	
Isopropylbenzene (Cumene)	ug/L	20	20.3	102	75-125	
m&p-Xylene	ug/L	40	38.5	96	75-125	
Methyl-tert-butyl ether	ug/L	20	18.2	91	68-125	
Methylene Chloride	ug/L	20	21.0	105	69-125	
n-Butylbenzene	ug/L	20	19.5	98	75-125	
n-Propylbenzene	ug/L	20	19.3	97	74-125	
Naphthalene	ug/L	20	17.2	86	66-125	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10536477

LABORATORY CONTROL SAMPLE: 3787086

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
o-Xylene	ug/L	20	19.5	97	75-125	
p-Isopropyltoluene	ug/L	20	19.7	98	75-125	
sec-Butylbenzene	ug/L	20	19.7	98	75-125	
Styrene	ug/L	20	20.3	102	75-125	
tert-Butylbenzene	ug/L	20	19.2	96	75-125	
Tetrachloroethene	ug/L	20	20.6	103	75-125	
Tetrahydrofuran	ug/L	200	174	87	55-139	
Toluene	ug/L	20	19.2	96	75-125	
trans-1,2-Dichloroethene	ug/L	20	19.2	96	67-127	
trans-1,3-Dichloropropene	ug/L	20	20.1	100	75-125	
Trichloroethene	ug/L	20	19.8	99	75-125	
Trichlorofluoromethane	ug/L	20	22.8	114	70-131	
Vinyl chloride	ug/L	20	22.3	111	71-130	
Xylene (Total)	ug/L	60	58.0	97	75-125	
1,2-Dichloroethane-d4 (S)	%.			97	75-128	
4-Bromofluorobenzene (S)	%.			96	75-125	
Toluene-d8 (S)	%.			99	75-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3787087 3787088

Parameter	Units	10536273002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,1,2-Tetrachloroethane	ug/L	ND	20	20	19.4	19.2	97	96	75-125	1	30	
1,1,1-Trichloroethane	ug/L	ND	20	20	21.4	20.8	107	104	65-148	3	30	
1,1,2,2-Tetrachloroethane	ug/L	ND	20	20	20.0	18.9	100	95	72-125	6	30	
1,1,2-Trichloroethane	ug/L	ND	20	20	20.7	20.0	104	100	75-125	4	30	
1,1,2-Trichlorotrifluoroethane	ug/L	ND	20	20	27.1	26.4	135	132	75-145	2	30	
1,1-Dichloroethane	ug/L	ND	20	20	21.3	20.0	107	100	73-136	6	30	
1,1-Dichloroethene	ug/L	ND	20	20	25.6	24.2	128	121	69-138	5	30	
1,1-Dichloropropene	ug/L	ND	20	20	21.7	20.9	109	105	60-150	4	30	
1,2,3-Trichlorobenzene	ug/L	ND	20	20	20.4	20.2	102	101	67-135	1	30	
1,2,3-Trichloropropane	ug/L	ND	20	20	20.6	19.0	103	95	75-125	8	30	
1,2,4-Trichlorobenzene	ug/L	ND	20	20	20.3	18.5	102	92	68-133	10	30	
1,2,4-Trimethylbenzene	ug/L	ND	20	20	20.8	19.6	104	98	75-135	6	30	
1,2-Dibromo-3-chloropropane	ug/L	ND	50	50	48.9	44.9	98	90	61-127	9	30	
1,2-Dibromoethane (EDB)	ug/L	ND	20	20	20.0	19.1	100	95	75-125	5	30	
1,2-Dichlorobenzene	ug/L	ND	20	20	20.1	19.4	100	97	75-125	3	30	
1,2-Dichloroethane	ug/L	ND	20	20	19.5	18.5	97	93	65-125	5	30	
1,2-Dichloropropane	ug/L	ND	20	20	21.8	20.7	109	104	71-125	5	30	
1,3,5-Trimethylbenzene	ug/L	ND	20	20	20.7	20.1	103	100	75-129	3	30	
1,3-Dichlorobenzene	ug/L	ND	20	20	20.4	20.2	102	101	75-125	1	30	
1,3-Dichloropropane	ug/L	ND	20	20	19.8	19.5	99	97	75-125	2	30	
1,4-Dichlorobenzene	ug/L	ND	20	20	20.4	19.9	102	100	75-125	2	30	
2,2-Dichloropropane	ug/L	ND	20	20	20.4	20.3	102	101	67-150	1	30	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10536477

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3787087 3787088

Parameter	Units	10536273002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
2-Butanone (MEK)	ug/L	ND	100	100	96.1	83.2	96	83	49-138	14	30	
2-Chlorotoluene	ug/L	ND	20	20	20.0	19.9	100	100	75-130	1	30	
4-Chlorotoluene	ug/L	ND	20	20	19.7	19.1	99	96	75-133	3	30	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	100	100	102	91.4	102	91	75-126	11	30	
Acetone	ug/L	ND	100	100	84.3	81.3	84	81	51-125	4	30	v1
Allyl chloride	ug/L	ND	20	20	25.4	24.9	127	125	50-150	2	30	
Benzene	ug/L	ND	20	20	20.5	20.2	103	101	68-129	2	30	
Bromobenzene	ug/L	ND	20	20	20.7	20.6	104	103	75-125	1	30	
Bromochloromethane	ug/L	ND	20	20	20.4	19.8	102	99	73-132	3	30	
Bromodichloromethane	ug/L	ND	20	20	20.6	20.0	103	100	75-127	3	30	
Bromoform	ug/L	ND	20	20	18.8	17.9	94	89	71-125	5	30	
Bromomethane	ug/L	ND	20	20	32.4	32.2	162	161	30-150	1	30	M1,v1
Carbon tetrachloride	ug/L	ND	20	20	21.5	21.4	108	107	74-146	1	30	
Chlorobenzene	ug/L	ND	20	20	20.9	20.2	104	101	75-125	3	30	
Chloroethane	ug/L	ND	20	20	25.2	25.4	126	127	68-141	1	30	
Chloroform	ug/L	ND	20	20	19.5	19.3	98	97	61-129	1	30	
Chloromethane	ug/L	ND	20	20	23.3	22.3	116	111	46-150	4	30	
cis-1,2-Dichloroethene	ug/L	ND	20	20	19.9	19.5	100	98	68-142	2	30	
cis-1,3-Dichloropropene	ug/L	ND	20	20	20.6	19.7	103	99	66-133	5	30	
Dibromochloromethane	ug/L	ND	20	20	20.3	19.8	101	99	75-126	2	30	
Dibromomethane	ug/L	ND	20	20	21.6	20.6	108	103	69-137	5	30	
Dichlorodifluoromethane	ug/L	ND	20	20	21.5	20.5	107	102	68-150	5	30	
Dichlorofluoromethane	ug/L	ND	20	20	25.0	24.3	125	121	73-135	3	30	
Diethyl ether (Ethyl ether)	ug/L	ND	20	20	23.3	21.8	117	109	61-128	7	30	
Ethylbenzene	ug/L	ND	20	20	21.1	20.5	105	103	75-131	3	30	
Hexachloro-1,3-butadiene	ug/L	ND	20	20	19.8	19.4	99	97	66-150	2	30	
Isopropylbenzene (Cumene)	ug/L	ND	20	20	21.0	20.4	105	102	75-133	3	30	
m&p-Xylene	ug/L	ND	40	40	41.1	39.4	103	99	75-135	4	30	
Methyl-tert-butyl ether	ug/L	ND	20	20	22.9	21.9	114	109	67-126	4	30	
Methylene Chloride	ug/L	ND	20	20	24.4	23.4	122	117	61-137	4	30	
n-Butylbenzene	ug/L	ND	20	20	22.1	20.0	111	100	75-136	10	30	
n-Propylbenzene	ug/L	ND	20	20	20.5	20.7	102	103	75-139	1	30	
Naphthalene	ug/L	ND	20	20	18.9	17.1	95	86	64-127	10	30	
o-Xylene	ug/L	ND	20	20	19.9	19.5	99	98	75-127	2	30	
p-Isopropyltoluene	ug/L	ND	20	20	21.7	21.0	109	105	75-135	3	30	
sec-Butylbenzene	ug/L	ND	20	20	21.9	20.0	109	100	75-141	9	30	
Styrene	ug/L	ND	20	20	20.6	19.6	103	98	75-125	5	30	
tert-Butylbenzene	ug/L	ND	20	20	21.3	20.5	107	102	75-141	4	30	
Tetrachloroethene	ug/L	ND	20	20	21.5	21.7	107	108	75-135	1	30	
Tetrahydrofuran	ug/L	ND	200	200	161	151	81	75	45-145	7	30	
Toluene	ug/L	ND	20	20	20.1	20.8	100	104	74-125	4	30	
trans-1,2-Dichloroethene	ug/L	ND	20	20	23.2	22.5	116	112	68-137	3	30	
trans-1,3-Dichloropropene	ug/L	ND	20	20	19.6	19.2	98	96	71-128	2	30	
Trichloroethene	ug/L	ND	20	20	21.6	21.3	108	107	75-131	1	30	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10536477

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3787087 3787088

Parameter	Units	10536273002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Trichlorofluoromethane	ug/L	ND	20	20	27.8	26.6	139	133	72-150	4	30	
Vinyl chloride	ug/L	ND	20	20	26.5	25.1	132	125	60-150	6	30	
Xylene (Total)	ug/L	ND	60	60	61.0	59.0	102	98	75-131	3	30	
1,2-Dichloroethane-d4 (S)	%.						98	99	75-128			
4-Bromofluorobenzene (S)	%.						99	95	75-125			
Toluene-d8 (S)	%.						97	99	75-125			

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10536477

QC Batch: 707085
QC Batch Method: EPA 8260D
Analysis Method: EPA 8260D
Analysis Description: 8260D MSV LLW by SIMSCAN
Laboratory: Pace Analytical Services - Minneapolis

Associated Lab Samples: 10536477001

METHOD BLANK: 3777622 Matrix: Water
Associated Lab Samples: 10536477001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	<0.40	0.40	10/28/20 08:03	
1,1,1-Trichloroethane	ug/L	<1.0	1.0	10/28/20 08:03	MN
1,1,2,2-Tetrachloroethane	ug/L	<0.40	0.40	10/28/20 08:03	
1,1,2-Trichloroethane	ug/L	<0.40	0.40	10/28/20 08:03	
1,1,2-Trichlorotrifluoroethane	ug/L	<1.0	1.0	10/28/20 08:03	
1,1-Dichloroethane	ug/L	<0.40	0.40	10/28/20 08:03	
1,1-Dichloroethene	ug/L	<1.0	1.0	10/28/20 08:03	MN
1,1-Dichloropropene	ug/L	<0.40	0.40	10/28/20 08:03	
1,2,3-Trichlorobenzene	ug/L	<0.40	0.40	10/28/20 08:03	
1,2,3-Trichloropropane	ug/L	<0.010	0.010	10/28/20 18:58	
1,2,4-Trichlorobenzene	ug/L	<0.40	0.40	10/28/20 08:03	
1,2,4-Trimethylbenzene	ug/L	<1.0	1.0	10/28/20 08:03	
1,2-Dibromo-3-chloropropane	ug/L	<0.12	0.12	10/28/20 18:58	
1,2-Dibromoethane (EDB)	ug/L	<0.050	0.050	10/28/20 18:58	
1,2-Dichlorobenzene	ug/L	<0.40	0.40	10/28/20 08:03	
1,2-Dichloroethane	ug/L	<0.20	0.20	10/28/20 18:58	
1,2-Dichloropropane	ug/L	<0.40	0.40	10/28/20 08:03	
1,3,5-Trimethylbenzene	ug/L	<0.40	0.40	10/28/20 08:03	
1,3-Dichlorobenzene	ug/L	<0.40	0.40	10/28/20 08:03	
1,3-Dichloropropane	ug/L	<0.40	0.40	10/28/20 08:03	
1,4-Dichlorobenzene	ug/L	<0.40	0.40	10/28/20 08:03	
2,2-Dichloropropane	ug/L	<1.0	1.0	10/28/20 08:03	
2-Butanone (MEK)	ug/L	<5.0	5.0	10/28/20 08:03	v2
2-Chlorotoluene	ug/L	<0.40	0.40	10/28/20 08:03	
4-Chlorotoluene	ug/L	<0.40	0.40	10/28/20 08:03	
4-Methyl-2-pentanone (MIBK)	ug/L	<5.0	5.0	10/28/20 08:03	
Acetone	ug/L	<20.0	20.0	10/28/20 08:03	v2
Allyl chloride	ug/L	<4.0	4.0	10/28/20 08:03	v2
Benzene	ug/L	<0.20	0.20	10/28/20 08:03	
Bromobenzene	ug/L	<0.40	0.40	10/28/20 08:03	
Bromochloromethane	ug/L	<1.0	1.0	10/28/20 08:03	
Bromodichloromethane	ug/L	<0.40	0.40	10/28/20 08:03	
Bromoform	ug/L	<1.0	1.0	10/28/20 08:03	
Bromomethane	ug/L	<1.0	1.0	10/28/20 08:03	1M,v1
Carbon tetrachloride	ug/L	<0.050	0.050	10/28/20 18:58	
Chlorobenzene	ug/L	<0.40	0.40	10/28/20 08:03	
Chloroethane	ug/L	<1.0	1.0	10/28/20 08:03	
Chloroform	ug/L	<1.0	1.0	10/28/20 08:03	
Chloromethane	ug/L	<1.0	1.0	10/28/20 08:03	
cis-1,2-Dichloroethene	ug/L	<0.40	0.40	10/28/20 08:03	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10536477

METHOD BLANK: 3777622 Matrix: Water
Associated Lab Samples: 10536477001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
cis-1,3-Dichloropropene	ug/L	<0.40	0.40	10/28/20 18:58	
Dibromochloromethane	ug/L	<0.40	0.40	10/28/20 18:58	
Dibromomethane	ug/L	<1.0	1.0	10/28/20 08:03	
Dichlorodifluoromethane	ug/L	<1.0	1.0	10/28/20 08:03	v2
Dichlorofluoromethane	ug/L	<1.0	1.0	10/28/20 08:03	
Diethyl ether (Ethyl ether)	ug/L	<4.0	4.0	10/28/20 08:03	v2
Ethylbenzene	ug/L	<0.40	0.40	10/28/20 08:03	
Hexachloro-1,3-butadiene	ug/L	<0.10	0.10	10/28/20 18:58	
Isopropylbenzene (Cumene)	ug/L	<0.40	0.40	10/28/20 08:03	
m&p-Xylene	ug/L	<0.80	0.80	10/28/20 08:03	
Methyl-tert-butyl ether	ug/L	<0.40	0.40	10/28/20 08:03	
Methylene Chloride	ug/L	<1.0	1.0	10/28/20 08:03	
n-Butylbenzene	ug/L	<0.40	0.40	10/28/20 08:03	
n-Propylbenzene	ug/L	<0.40	0.40	10/28/20 08:03	
Naphthalene	ug/L	<1.0	1.0	10/28/20 08:03	
o-Xylene	ug/L	<0.40	0.40	10/28/20 08:03	
p-Isopropyltoluene	ug/L	<0.40	0.40	10/28/20 08:03	
sec-Butylbenzene	ug/L	<0.40	0.40	10/28/20 08:03	
Styrene	ug/L	<0.40	0.40	10/28/20 08:03	
tert-Butylbenzene	ug/L	<0.40	0.40	10/28/20 08:03	
Tetrachloroethene	ug/L	<0.40	0.40	10/28/20 08:03	
Tetrahydrofuran	ug/L	<10.0	10.0	10/28/20 08:03	
Toluene	ug/L	<0.40	0.40	10/28/20 08:03	
trans-1,2-Dichloroethene	ug/L	<0.40	0.40	10/28/20 08:03	
trans-1,3-Dichloropropene	ug/L	<0.40	0.40	10/28/20 18:58	
Trichloroethene	ug/L	<0.050	0.050	10/28/20 18:58	
Trichlorofluoromethane	ug/L	<0.40	0.40	10/28/20 08:03	
Vinyl chloride	ug/L	<0.050	0.050	10/28/20 18:58	
Xylene (Total)	ug/L	<1.2	1.2	10/28/20 08:03	
1,2-Dichloroethane-d4 (S)	%.	98	75-128	10/28/20 08:03	
1,2-Dichloroethane-d4 (S)	%.	102	75-128	10/28/20 18:58	
4-Bromofluorobenzene (S)	%.	90	75-125	10/28/20 08:03	
Toluene-d8 (S)	%.	101	75-125	10/28/20 18:58	
Toluene-d8 (S)	%.	99	75-125	10/28/20 08:03	

LABORATORY CONTROL SAMPLE: 3777623

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	10	10.5	105	75-125	
1,1,1-Trichloroethane	ug/L	10	9.7	97	68-131	
1,1,2,2-Tetrachloroethane	ug/L	10	9.1	91	71-125	
1,1,2-Trichloroethane	ug/L	10	10.0	100	75-125	
1,1,2-Trichlorotrifluoroethane	ug/L	10	9.3	93	71-125	
1,1-Dichloroethane	ug/L	10	8.7	87	71-125	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10536477

LABORATORY CONTROL SAMPLE: 3777623

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1-Dichloroethene	ug/L	10	9.2	92	66-126	
1,1-Dichloropropene	ug/L	10	8.8	88	58-134	
1,2,3-Trichlorobenzene	ug/L	10	9.3	93	71-125	
1,2,3-Trichloropropane	ug/L	1	0.88	88	75-125	
1,2,4-Trichlorobenzene	ug/L	10	9.2	92	72-125	
1,2,4-Trimethylbenzene	ug/L	10	8.5	85	75-125	
1,2-Dibromo-3-chloropropane	ug/L	2.5	2.2	89	71-125	
1,2-Dibromoethane (EDB)	ug/L	1	0.87	87	71-125	
1,2-Dichlorobenzene	ug/L	10	9.5	95	75-125	
1,2-Dichloroethane	ug/L	1	0.94	94	75-131	
1,2-Dichloropropane	ug/L	10	9.1	91	73-125	
1,3,5-Trimethylbenzene	ug/L	10	8.2	82	75-125	
1,3-Dichlorobenzene	ug/L	10	9.7	97	75-125	
1,3-Dichloropropane	ug/L	10	9.3	93	75-125	
1,4-Dichlorobenzene	ug/L	10	9.4	94	75-125	
2,2-Dichloropropane	ug/L	10	8.5	85	57-144	
2-Butanone (MEK)	ug/L	50	34.3	69	51-144	v3
2-Chlorotoluene	ug/L	10	8.7	87	75-125	
4-Chlorotoluene	ug/L	10	8.1	81	75-125	
4-Methyl-2-pentanone (MIBK)	ug/L	50	40.6	81	72-125	
Acetone	ug/L	50	38.6	77	34-150	v3
Allyl chloride	ug/L	10	7.2	72	58-132	v3
Benzene	ug/L	10	8.9	89	70-125	
Bromobenzene	ug/L	10	9.0	90	75-125	
Bromochloromethane	ug/L	10	10.3	103	72-126	
Bromodichloromethane	ug/L	10	9.3	93	73-128	
Bromoform	ug/L	10	10.3	103	70-125	
Bromomethane	ug/L	10	13.6	136	31-150	1M,v1
Carbon tetrachloride	ug/L	1	0.91	91	68-136	
Chlorobenzene	ug/L	10	9.3	93	75-125	
Chloroethane	ug/L	10	8.4	84	70-128	
Chloroform	ug/L	10	9.4	94	72-125	
Chloromethane	ug/L	10	8.9	89	63-129	
cis-1,2-Dichloroethene	ug/L	10	8.6	86	69-128	
cis-1,3-Dichloropropene	ug/L	1	0.83	83	71-125	
Dibromochloromethane	ug/L	1	0.91	91	71-125	
Dibromomethane	ug/L	10	10.4	104	74-130	
Dichlorodifluoromethane	ug/L	10	7.9	79	65-134	v3
Dichlorofluoromethane	ug/L	10	9.1	91	74-125	
Diethyl ether (Ethyl ether)	ug/L	10	8.0	80	64-126	v3
Ethylbenzene	ug/L	10	8.6	86	75-125	
Hexachloro-1,3-butadiene	ug/L	1	0.80	80	65-133	
Isopropylbenzene (Cumene)	ug/L	10	8.6	86	75-125	
m&p-Xylene	ug/L	20	18.2	91	75-125	
Methyl-tert-butyl ether	ug/L	10	8.9	89	68-125	
Methylene Chloride	ug/L	10	8.9	89	69-125	
n-Butylbenzene	ug/L	10	8.4	84	75-125	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10536477

LABORATORY CONTROL SAMPLE: 3777623

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
n-Propylbenzene	ug/L	10	8.3	83	74-125	
Naphthalene	ug/L	10	8.8	88	66-125	
o-Xylene	ug/L	10	8.7	87	75-125	
p-Isopropyltoluene	ug/L	10	8.6	86	75-125	
sec-Butylbenzene	ug/L	10	8.5	85	75-125	
Styrene	ug/L	10	9.2	92	75-125	
tert-Butylbenzene	ug/L	10	8.1	81	75-125	
Tetrachloroethene	ug/L	10	10.2	102	75-125	
Tetrahydrofuran	ug/L	100	82.6	83	55-139	
Toluene	ug/L	10	9.0	90	75-125	
trans-1,2-Dichloroethene	ug/L	10	8.7	87	67-127	
trans-1,3-Dichloropropene	ug/L	1	0.84	84	70-125	
Trichloroethene	ug/L	1	0.88	88	69-125	
Trichlorofluoromethane	ug/L	10	9.8	98	70-131	
Vinyl chloride	ug/L	1	0.94	94	68-132	
Xylene (Total)	ug/L	30	26.9	90	75-125	
1,2-Dichloroethane-d4 (S)	%.			94	75-128	
1,2-Dichloroethane-d4 (S)	%.			101	75-128	
4-Bromofluorobenzene (S)	%.			87	75-125	
Toluene-d8 (S)	%.			101	75-125	
Toluene-d8 (S)	%.			97	75-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3777624 3777625

Parameter	Units	10536951005 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,1,2-Tetrachloroethane	ug/L	ND	10	10	10.7	10.3	107	103	75-125	4	30	
1,1,1-Trichloroethane	ug/L	ND	10	10	10.4	10.2	104	102	65-148	2	30	
1,1,2,2-Tetrachloroethane	ug/L	ND	10	10	9.5	9.3	95	93	72-125	2	30	
1,1,2-Trichloroethane	ug/L	ND	10	10	10.1	9.7	101	97	75-125	4	30	
1,1,2-Trichlorotrifluoroethane	ug/L	ND	10	10	10.2	9.5	102	95	75-145	7	30	
1,1-Dichloroethane	ug/L	ND	10	10	9.1	9.0	91	90	73-136	1	30	
1,1-Dichloroethene	ug/L	ND	10	10	10.0	9.7	100	97	69-138	4	30	
1,1-Dichloropropene	ug/L	ND	10	10	9.3	9.0	93	90	60-150	3	30	
1,2,3-Trichlorobenzene	ug/L	ND	10	10	9.2	8.9	92	89	67-135	3	30	
1,2,3-Trichloropropane	ug/L	ND	1	1	0.94	0.92	94	92	49-150	2	30	
1,2,4-Trichlorobenzene	ug/L	ND	10	10	8.9	8.9	89	89	68-133	0	30	
1,2,4-Trimethylbenzene	ug/L	ND	10	10	8.8	8.6	88	86	75-135	2	30	
1,2-Dibromo-3-chloropropane	ug/L	ND	2.5	2.5	2.3	2.3	93	92	53-150	0	30	
1,2-Dibromoethane (EDB)	ug/L	ND	1	1	0.92	0.90	92	90	49-150	2	30	
1,2-Dichlorobenzene	ug/L	ND	10	10	9.6	9.6	96	96	75-125	0	30	
1,2-Dichloroethane	ug/L	ND	1	1	1.0	0.99	102	99	42-150	3	30	
1,2-Dichloropropane	ug/L	ND	10	10	9.7	9.5	97	95	71-125	1	30	
1,3,5-Trimethylbenzene	ug/L	ND	10	10	8.6	8.4	86	84	75-129	2	30	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10536477

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3777624 3777625

Parameter	Units	10536951005 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,3-Dichlorobenzene	ug/L	ND	10	10	9.7	9.7	97	97	75-125	1	30	
1,3-Dichloropropane	ug/L	ND	10	10	9.5	9.0	95	90	75-125	6	30	
1,4-Dichlorobenzene	ug/L	ND	10	10	9.6	9.6	96	96	75-125	0	30	
2,2-Dichloropropane	ug/L	ND	10	10	9.1	8.7	91	87	67-150	5	30	
2-Butanone (MEK)	ug/L	ND	50	50	33.0	33.1	66	66	49-138	0	30	v3
2-Chlorotoluene	ug/L	ND	10	10	8.9	8.8	89	88	75-130	1	30	
4-Chlorotoluene	ug/L	ND	10	10	8.2	8.1	82	81	75-133	2	30	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	50	50	41.2	39.4	82	79	75-126	5	30	
Acetone	ug/L	ND	50	50	39.8	37.7	80	75	51-125	5	30	v3
Allyl chloride	ug/L	ND	10	10	7.5	7.2	75	72	50-150	3	30	v3
Benzene	ug/L	ND	10	10	9.3	9.2	93	92	68-129	1	30	
Bromobenzene	ug/L	ND	10	10	9.2	9.0	92	90	75-125	2	30	
Bromochloromethane	ug/L	ND	10	10	10.7	10.5	107	105	73-132	2	30	
Bromodichloromethane	ug/L	ND	10	10	9.7	9.2	97	92	75-127	6	30	
Bromoform	ug/L	ND	10	10	10.5	9.7	105	97	71-125	7	30	
Bromomethane	ug/L	ND	10	10	13.7	14.4	137	144	30-150	5	30	1M,v1
Carbon tetrachloride	ug/L	ND	1	1	1.1	1.1	114	107	30-150	6	30	
Chlorobenzene	ug/L	ND	10	10	9.8	9.4	98	94	75-125	4	30	
Chloroethane	ug/L	ND	10	10	8.1	8.6	81	86	68-141	6	30	
Chloroform	ug/L	ND	10	10	9.4	9.3	94	93	61-129	1	30	
Chloromethane	ug/L	ND	10	10	9.0	9.8	90	98	46-150	9	30	
cis-1,2-Dichloroethene	ug/L	ND	10	10	8.8	8.7	88	87	68-142	2	30	
cis-1,3-Dichloropropene	ug/L	ND	1	1	0.85	0.83	85	83	48-150	3	30	
Dibromochloromethane	ug/L	ND	1	1	0.98	0.95	98	95	50-150	3	30	
Dibromomethane	ug/L	ND	10	10	10.3	10.1	103	101	69-137	3	30	
Dichlorodifluoromethane	ug/L	ND	10	10	8.2	8.5	82	85	68-150	4	30	v3
Dichlorofluoromethane	ug/L	ND	10	10	9.1	9.4	90	92	73-135	3	30	
Diethyl ether (Ethyl ether)	ug/L	ND	10	10	8.1	8.1	79	80	61-128	1	30	v3
Ethylbenzene	ug/L	ND	10	10	9.1	8.8	91	88	75-131	4	30	
Hexachloro-1,3-butadiene	ug/L	ND	1	1	1.0	1.0	102	104	40-150	3	30	
Isopropylbenzene (Cumene)	ug/L	ND	10	10	9.2	8.8	92	88	75-133	4	30	
m&p-Xylene	ug/L	ND	20	20	19.6	18.4	98	92	75-135	6	30	
Methyl-tert-butyl ether	ug/L	ND	10	10	8.7	8.8	87	88	67-126	1	30	
Methylene Chloride	ug/L	ND	10	10	8.8	8.7	86	84	61-137	2	30	
n-Butylbenzene	ug/L	ND	10	10	8.8	8.7	88	87	75-136	1	30	
n-Propylbenzene	ug/L	ND	10	10	8.5	8.4	85	84	75-139	1	30	
Naphthalene	ug/L	ND	10	10	8.7	8.6	87	86	64-127	1	30	
o-Xylene	ug/L	ND	10	10	8.9	8.8	89	88	75-127	1	30	
p-Isopropyltoluene	ug/L	ND	10	10	8.8	8.8	88	88	75-135	0	30	
sec-Butylbenzene	ug/L	ND	10	10	8.9	8.9	89	89	75-141	0	30	
Styrene	ug/L	ND	10	10	9.4	8.8	94	88	75-125	7	30	
tert-Butylbenzene	ug/L	ND	10	10	8.6	8.5	86	85	75-141	1	30	
Tetrachloroethene	ug/L	ND	10	10	10.8	10.2	108	102	75-135	6	30	
Tetrahydrofuran	ug/L	ND	100	100	88.0	89.6	88	90	45-145	2	30	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10536477

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3777624 3777625

Parameter	Units	10536951005 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Toluene	ug/L	ND	10	10	9.9	9.5	97	94	74-125	4	30	
trans-1,2-Dichloroethene	ug/L	ND	10	10	9.0	9.1	90	91	68-137	1	30	
trans-1,3-Dichloropropene	ug/L	ND	1	1	0.89	0.87	89	87	50-150	2	30	
Trichloroethene	ug/L	0.20	1	1	1.2	1.1	96	93	41-150	2	30	
Trichlorofluoromethane	ug/L	ND	10	10	10.0	10.5	100	105	72-150	5	30	
Vinyl chloride	ug/L	ND	1	1	0.89	0.88	89	88	30-150	2	30	
Xylene (Total)	ug/L	ND	30	30	28.4	27.2	95	91	75-131	4	30	
1,2-Dichloroethane-d4 (S)	%.						94	107	75-128			
1,2-Dichloroethane-d4 (S)	%.						94	92	75-128			
1,2-Dichloroethane-d4 (S)	%.						106	107	75-128			
1,2-Dichloroethane-d4 (S)	%.						106	92	75-128			
4-Bromofluorobenzene (S)	%.						87	88	75-125			
Toluene-d8 (S)	%.						103	95	75-125			
Toluene-d8 (S)	%.						103	103	75-125			
Toluene-d8 (S)	%.						97	103	75-125			
Toluene-d8 (S)	%.						97	95	75-125			

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10536477

QC Batch: 707313 | Analysis Method: EPA 8260D
QC Batch Method: EPA 8260D | Analysis Description: 8260D MSV LLW by SIMSCAN
Laboratory: Pace Analytical Services - Minneapolis
Associated Lab Samples: 10536477002, 10536477003, 10536477004, 10536477005, 10536477006, 10536477007, 10536477008, 10536477009, 10536477010, 10536477011

METHOD BLANK: 3778921 Matrix: Water
Associated Lab Samples: 10536477002, 10536477003, 10536477004, 10536477005, 10536477006, 10536477007, 10536477008, 10536477009, 10536477010, 10536477011

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	<0.40	0.40	10/29/20 13:42	
1,1,1-Trichloroethane	ug/L	<1.0	1.0	10/29/20 13:42	MN
1,1,2,2-Tetrachloroethane	ug/L	<0.40	0.40	10/29/20 13:42	
1,1,2-Trichloroethane	ug/L	<0.40	0.40	10/29/20 13:42	
1,1,2-Trichlorotrifluoroethane	ug/L	<1.0	1.0	10/29/20 13:42	
1,1-Dichloroethane	ug/L	<0.40	0.40	10/29/20 13:42	
1,1-Dichloroethene	ug/L	<1.0	1.0	10/29/20 13:42	MN
1,1-Dichloropropene	ug/L	<0.40	0.40	10/29/20 13:42	
1,2,3-Trichlorobenzene	ug/L	<0.40	0.40	10/29/20 13:42	
1,2,3-Trichloropropane	ug/L	<0.010	0.010	10/28/20 18:58	
1,2,4-Trichlorobenzene	ug/L	<0.40	0.40	10/29/20 13:42	
1,2,4-Trimethylbenzene	ug/L	<1.0	1.0	10/29/20 13:42	
1,2-Dibromo-3-chloropropane	ug/L	<0.12	0.12	10/28/20 18:58	
1,2-Dibromoethane (EDB)	ug/L	<0.050	0.050	10/28/20 18:58	
1,2-Dichlorobenzene	ug/L	<0.40	0.40	10/29/20 13:42	
1,2-Dichloroethane	ug/L	<0.20	0.20	10/28/20 18:58	
1,2-Dichloropropane	ug/L	<0.40	0.40	10/29/20 13:42	
1,3,5-Trimethylbenzene	ug/L	<0.40	0.40	10/29/20 13:42	
1,3-Dichlorobenzene	ug/L	<0.40	0.40	10/29/20 13:42	
1,3-Dichloropropane	ug/L	<0.40	0.40	10/29/20 13:42	
1,4-Dichlorobenzene	ug/L	<0.40	0.40	10/29/20 13:42	
2,2-Dichloropropane	ug/L	<1.0	1.0	10/29/20 13:42	v1
2-Butanone (MEK)	ug/L	<5.0	5.0	10/29/20 13:42	v2
2-Chlorotoluene	ug/L	<0.40	0.40	10/29/20 13:42	
4-Chlorotoluene	ug/L	<0.40	0.40	10/29/20 13:42	
4-Methyl-2-pentanone (MIBK)	ug/L	<5.0	5.0	10/29/20 13:42	
Acetone	ug/L	<20.0	20.0	10/29/20 13:42	
Allyl chloride	ug/L	<4.0	4.0	10/29/20 13:42	
Benzene	ug/L	<0.20	0.20	10/29/20 13:42	
Bromobenzene	ug/L	<0.40	0.40	10/29/20 13:42	
Bromochloromethane	ug/L	<1.0	1.0	10/29/20 13:42	
Bromodichloromethane	ug/L	<0.40	0.40	10/29/20 13:42	
Bromoform	ug/L	<1.0	1.0	10/29/20 13:42	
Bromomethane	ug/L	<1.0	1.0	10/29/20 13:42	1M,v2
Carbon tetrachloride	ug/L	<0.050	0.050	10/28/20 18:58	
Chlorobenzene	ug/L	<0.40	0.40	10/29/20 13:42	
Chloroethane	ug/L	<1.0	1.0	10/29/20 13:42	
Chloroform	ug/L	<1.0	1.0	10/29/20 13:42	
Chloromethane	ug/L	<1.0	1.0	10/29/20 13:42	v2

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10536477

METHOD BLANK: 3778921 Matrix: Water

Associated Lab Samples: 10536477002, 10536477003, 10536477004, 10536477005, 10536477006, 10536477007, 10536477008, 10536477009, 10536477010, 10536477011

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
cis-1,2-Dichloroethene	ug/L	<0.40	0.40	10/29/20 13:42	
cis-1,3-Dichloropropene	ug/L	<0.40	0.40	10/28/20 18:58	
Dibromochloromethane	ug/L	<0.40	0.40	10/28/20 18:58	
Dibromomethane	ug/L	<1.0	1.0	10/29/20 13:42	
Dichlorodifluoromethane	ug/L	<1.0	1.0	10/29/20 13:42	
Dichlorofluoromethane	ug/L	<1.0	1.0	10/29/20 13:42	
Diethyl ether (Ethyl ether)	ug/L	<4.0	4.0	10/29/20 13:42	
Ethylbenzene	ug/L	<0.40	0.40	10/29/20 13:42	
Hexachloro-1,3-butadiene	ug/L	<0.10	0.10	10/28/20 18:58	
Isopropylbenzene (Cumene)	ug/L	<0.40	0.40	10/29/20 13:42	
m&p-Xylene	ug/L	<0.80	0.80	10/29/20 13:42	
Methyl-tert-butyl ether	ug/L	<0.40	0.40	10/29/20 13:42	
Methylene Chloride	ug/L	<1.0	1.0	10/29/20 13:42	
n-Butylbenzene	ug/L	<0.40	0.40	10/29/20 13:42	
n-Propylbenzene	ug/L	<0.40	0.40	10/29/20 13:42	
Naphthalene	ug/L	<1.0	1.0	10/29/20 13:42	
o-Xylene	ug/L	<0.40	0.40	10/29/20 13:42	
p-Isopropyltoluene	ug/L	<0.40	0.40	10/29/20 13:42	
sec-Butylbenzene	ug/L	<0.40	0.40	10/29/20 13:42	
Styrene	ug/L	<0.40	0.40	10/29/20 13:42	
tert-Butylbenzene	ug/L	<0.40	0.40	10/29/20 13:42	
Tetrachloroethene	ug/L	<0.40	0.40	10/29/20 13:42	
Tetrahydrofuran	ug/L	<10.0	10.0	10/29/20 13:42	
Toluene	ug/L	<0.40	0.40	10/29/20 13:42	
trans-1,2-Dichloroethene	ug/L	<0.40	0.40	10/29/20 13:42	
trans-1,3-Dichloropropene	ug/L	<0.40	0.40	10/28/20 18:58	
Trichloroethene	ug/L	<0.050	0.050	10/28/20 18:58	
Trichlorofluoromethane	ug/L	<0.40	0.40	10/29/20 13:42	v1
Vinyl chloride	ug/L	<0.050	0.050	10/28/20 18:58	
Xylene (Total)	ug/L	<1.2	1.2	10/29/20 13:42	
1,2-Dichloroethane-d4 (S)	%.	102	75-128	10/28/20 18:58	
1,2-Dichloroethane-d4 (S)	%.	121	75-128	10/29/20 13:42	
4-Bromofluorobenzene (S)	%.	93	75-125	10/29/20 13:42	
Toluene-d8 (S)	%.	101	75-125	10/28/20 18:58	
Toluene-d8 (S)	%.	104	75-125	10/29/20 13:42	

LABORATORY CONTROL SAMPLE: 3778922

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	10	11.5	115	75-125	
1,1,1-Trichloroethane	ug/L	10	10.5	105	68-131	
1,1,2,2-Tetrachloroethane	ug/L	10	10.1	101	71-125	
1,1,2-Trichloroethane	ug/L	10	10.8	108	75-125	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10536477

LABORATORY CONTROL SAMPLE: 3778922

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,2-Trichlorotrifluoroethane	ug/L	10	10.1	101	71-125	
1,1-Dichloroethane	ug/L	10	9.8	98	71-125	
1,1-Dichloroethene	ug/L	10	9.0	90	66-126	
1,1-Dichloropropene	ug/L	10	8.5	85	58-134	
1,2,3-Trichlorobenzene	ug/L	10	9.7	97	71-125	
1,2,3-Trichloropropane	ug/L	1	0.88	88	75-125	
1,2,4-Trichlorobenzene	ug/L	10	9.8	98	72-125	
1,2,4-Trimethylbenzene	ug/L	10	8.9	89	75-125	
1,2-Dibromo-3-chloropropane	ug/L	2.5	2.2	89	71-125	
1,2-Dibromoethane (EDB)	ug/L	1	0.87	87	71-125	
1,2-Dichlorobenzene	ug/L	10	10	100	75-125	
1,2-Dichloroethane	ug/L	1	0.94	94	75-131	
1,2-Dichloropropane	ug/L	10	9.1	91	73-125	
1,3,5-Trimethylbenzene	ug/L	10	8.8	88	75-125	
1,3-Dichlorobenzene	ug/L	10	10.5	105	75-125	
1,3-Dichloropropane	ug/L	10	10.0	100	75-125	
1,4-Dichlorobenzene	ug/L	10	10.5	105	75-125	
2,2-Dichloropropane	ug/L	10	12.3	123	57-144	v1
2-Butanone (MEK)	ug/L	50	31.2	62	51-144	v3
2-Chlorotoluene	ug/L	10	9.4	94	75-125	
4-Chlorotoluene	ug/L	10	8.7	87	75-125	
4-Methyl-2-pentanone (MIBK)	ug/L	50	43.1	86	72-125	
Acetone	ug/L	50	41.3	83	34-150	
Allyl chloride	ug/L	10	8.2	82	58-132	
Benzene	ug/L	10	8.7	87	70-125	
Bromobenzene	ug/L	10	9.7	97	75-125	
Bromochloromethane	ug/L	10	11.2	112	72-126	
Bromodichloromethane	ug/L	10	10.3	103	73-128	
Bromoform	ug/L	10	11.6	116	70-125	
Bromomethane	ug/L	10	6.1	61	31-150	1M,v3
Carbon tetrachloride	ug/L	1	0.91	91	68-136	
Chlorobenzene	ug/L	10	9.9	99	75-125	
Chloroethane	ug/L	10	9.2	92	70-128	
Chloroform	ug/L	10	11.2	112	72-125	
Chloromethane	ug/L	10	6.7	67	63-129	v3
cis-1,2-Dichloroethene	ug/L	10	9.0	90	69-128	
cis-1,3-Dichloropropene	ug/L	1	0.83	83	71-125	
Dibromochloromethane	ug/L	1	0.91	91	71-125	
Dibromomethane	ug/L	10	10.8	108	74-130	
Dichlorodifluoromethane	ug/L	10	9.1	91	65-134	
Dichlorofluoromethane	ug/L	10	10.7	107	74-125	
Diethyl ether (Ethyl ether)	ug/L	10	8.3	83	64-126	
Ethylbenzene	ug/L	10	9.3	93	75-125	
Hexachloro-1,3-butadiene	ug/L	1	0.80	80	65-133	
Isopropylbenzene (Cumene)	ug/L	10	8.9	89	75-125	
m&p-Xylene	ug/L	20	19.1	96	75-125	
Methyl-tert-butyl ether	ug/L	10	10	100	68-125	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10536477

LABORATORY CONTROL SAMPLE: 3778922

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Methylene Chloride	ug/L	10	9.3	93	69-125	
n-Butylbenzene	ug/L	10	9.0	90	75-125	
n-Propylbenzene	ug/L	10	8.6	86	74-125	
Naphthalene	ug/L	10	8.8	88	66-125	
o-Xylene	ug/L	10	8.6	86	75-125	
p-Isopropyltoluene	ug/L	10	9.0	90	75-125	
sec-Butylbenzene	ug/L	10	8.7	87	75-125	
Styrene	ug/L	10	9.7	97	75-125	
tert-Butylbenzene	ug/L	10	8.2	82	75-125	
Tetrachloroethene	ug/L	10	10.6	106	75-125	
Tetrahydrofuran	ug/L	100	85.0	85	55-139	
Toluene	ug/L	10	9.8	98	75-125	
trans-1,2-Dichloroethene	ug/L	10	9.2	92	67-127	
trans-1,3-Dichloropropene	ug/L	1	0.84	84	70-125	
Trichloroethene	ug/L	1	0.88	88	69-125	
Trichlorofluoromethane	ug/L	10	12.3	123	70-131	v1
Vinyl chloride	ug/L	1	0.94	94	68-132	
Xylene (Total)	ug/L	30	27.7	92	75-125	
1,2-Dichloroethane-d4 (S)	%.			101	75-128	
1,2-Dichloroethane-d4 (S)	%.			111	75-128	
4-Bromofluorobenzene (S)	%.			86	75-125	
Toluene-d8 (S)	%.			101	75-125	
Toluene-d8 (S)	%.			103	75-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3778923 3778924

Parameter	Units	10536951006 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,1,2-Tetrachloroethane	ug/L	ND	10	10	10.7	11.2	107	112	75-125	5	30	
1,1,1-Trichloroethane	ug/L	ND	10	10	10.7	10.4	107	104	65-148	3	30	
1,1,2,2-Tetrachloroethane	ug/L	ND	10	10	9.0	9.0	90	90	72-125	0	30	
1,1,2-Trichloroethane	ug/L	ND	10	10	9.6	9.5	96	95	75-125	0	30	
1,1,2-Trichlorotrifluoroethane	ug/L	ND	10	10	10.3	10.1	103	101	75-145	2	30	
1,1-Dichloroethane	ug/L	ND	10	10	9.8	9.6	98	96	73-136	3	30	
1,1-Dichloroethene	ug/L	ND	10	10	9.1	9.3	91	93	69-138	2	30	
1,1-Dichloropropene	ug/L	ND	10	10	8.3	8.6	83	86	60-150	4	30	
1,2,3-Trichlorobenzene	ug/L	ND	10	10	9.2	9.0	92	90	67-135	2	30	
1,2,3-Trichloropropane	ug/L	ND	1	1	0.94	0.92	94	92	49-150	2	30	
1,2,4-Trichlorobenzene	ug/L	ND	10	10	9.0	9.1	90	91	68-133	1	30	
1,2,4-Trimethylbenzene	ug/L	ND	10	10	8.2	8.5	82	85	75-135	4	30	
1,2-Dibromo-3-chloropropane	ug/L	ND	2.5	2.5	2.3	2.3	93	92	53-150	0	30	
1,2-Dibromoethane (EDB)	ug/L	ND	1	1	0.92	0.90	92	90	49-150	2	30	
1,2-Dichlorobenzene	ug/L	ND	10	10	9.4	9.5	94	95	75-125	1	30	
1,2-Dichloroethane	ug/L	ND	1	1	1.0	0.99	102	99	42-150	3	30	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10536477

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3778923 3778924

Parameter	Units	10536951006 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,2-Dichloropropane	ug/L	ND	10	10	8.2	8.5	82	85	71-125	3	30	
1,3,5-Trimethylbenzene	ug/L	ND	10	10	8.1	8.5	81	85	75-129	5	30	
1,3-Dichlorobenzene	ug/L	ND	10	10	9.8	9.9	98	99	75-125	1	30	
1,3-Dichloropropane	ug/L	ND	10	10	9.0	9.2	90	92	75-125	3	30	
1,4-Dichlorobenzene	ug/L	ND	10	10	9.5	9.4	95	94	75-125	1	30	
2,2-Dichloropropane	ug/L	ND	10	10	11.9	11.9	119	119	67-150	0	30	v1
2-Butanone (MEK)	ug/L	ND	50	50	24.2	24.9	48	50	49-138	3	30	M1,v3
2-Chlorotoluene	ug/L	ND	10	10	9.1	9.3	91	93	75-130	2	30	
4-Chlorotoluene	ug/L	ND	10	10	8.0	8.4	80	84	75-133	4	30	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	50	50	36.4	36.4	73	73	75-126	0	30	M1
Acetone	ug/L	ND	50	50	35.1	34.7	70	69	51-125	1	30	
Allyl chloride	ug/L	ND	10	10	7.6	7.7	76	77	50-150	1	30	
Benzene	ug/L	ND	10	10	8.0	8.0	80	80	68-129	1	30	
Bromobenzene	ug/L	ND	10	10	8.9	9.1	89	91	75-125	2	30	
Bromochloromethane	ug/L	ND	10	10	10.7	10.8	107	108	73-132	1	30	
Bromodichloromethane	ug/L	ND	10	10	9.6	9.5	96	95	75-127	1	30	
Bromoform	ug/L	ND	10	10	10.5	10.7	105	107	71-125	2	30	
Bromomethane	ug/L	ND	10	10	4.9	6.1	49	61	30-150	22	30	1M,v3
Carbon tetrachloride	ug/L	ND	1	1	1.1	1.1	114	107	30-150	6	30	
Chlorobenzene	ug/L	ND	10	10	9.1	9.5	91	95	75-125	4	30	
Chloroethane	ug/L	ND	10	10	9.0	8.2	90	82	68-141	9	30	
Chloroform	ug/L	ND	10	10	10.1	10.3	101	103	61-129	2	30	
Chloromethane	ug/L	ND	10	10	6.1	6.0	61	60	46-150	1	30	v3
cis-1,2-Dichloroethene	ug/L	ND	10	10	9.0	8.9	90	89	68-142	1	30	
cis-1,3-Dichloropropene	ug/L	ND	1	1	0.85	0.83	85	83	48-150	3	30	
Dibromochloromethane	ug/L	ND	1	1	0.98	0.95	98	95	50-150	3	30	
Dibromomethane	ug/L	ND	10	10	9.9	9.3	99	93	69-137	6	30	
Dichlorodifluoromethane	ug/L	ND	10	10	8.4	8.7	82	86	68-150	4	30	
Dichlorofluoromethane	ug/L	ND	10	10	10.1	10.1	96	96	73-135	0	30	
Diethyl ether (Ethyl ether)	ug/L	ND	10	10	8.3	8.2	73	72	61-128	1	30	
Ethylbenzene	ug/L	ND	10	10	8.9	9.0	89	90	75-131	1	30	
Hexachloro-1,3-butadiene	ug/L	ND	1	1	1.0	1.0	102	104	40-150	3	30	
Isopropylbenzene (Cumene)	ug/L	ND	10	10	8.5	8.9	85	89	75-133	5	30	
m&p-Xylene	ug/L	ND	20	20	18.0	18.4	90	92	75-135	2	30	
Methyl-tert-butyl ether	ug/L	ND	10	10	9.3	9.4	93	94	67-126	1	30	
Methylene Chloride	ug/L	ND	10	10	8.3	8.5	83	85	61-137	2	30	
n-Butylbenzene	ug/L	ND	10	10	8.7	8.9	87	89	75-136	2	30	
n-Propylbenzene	ug/L	ND	10	10	8.5	8.5	85	85	75-139	0	30	
Naphthalene	ug/L	ND	10	10	8.0	8.1	80	81	64-127	1	30	
o-Xylene	ug/L	ND	10	10	8.1	8.4	81	84	75-127	3	30	
p-Isopropyltoluene	ug/L	ND	10	10	8.7	8.8	87	88	75-135	0	30	
sec-Butylbenzene	ug/L	ND	10	10	8.7	8.9	87	89	75-141	2	30	
Styrene	ug/L	ND	10	10	8.5	8.7	85	87	75-125	3	30	
tert-Butylbenzene	ug/L	ND	10	10	8.4	8.2	84	82	75-141	2	30	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10536477

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3778923 3778924

Parameter	Units	10536951006 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Tetrachloroethene	ug/L	ND	10	10	10.6	10.9	106	109	75-135	3	30	
Tetrahydrofuran	ug/L	ND	100	100	73.8	76.1	74	76	45-145	3	30	
Toluene	ug/L	ND	10	10	9.0	9.2	90	92	74-125	2	30	
trans-1,2-Dichloroethene	ug/L	ND	10	10	8.9	8.7	89	87	68-137	1	30	
trans-1,3-Dichloropropene	ug/L	ND	1	1	0.89	0.87	89	87	50-150	2	30	
Trichloroethene	ug/L	0.20	1	1	1.2	1.1	96	93	41-150	2	30	
Trichlorofluoromethane	ug/L	ND	10	10	11.7	11.6	117	116	72-150	0	30	v1
Vinyl chloride	ug/L	ND	1	1	0.89	0.88	89	88	30-150	2	30	
Xylene (Total)	ug/L	ND	30	30	26.1	26.8	87	89	75-131	3	30	
1,2-Dichloroethane-d4 (S)	%.						106	112	75-128			
1,2-Dichloroethane-d4 (S)	%.						106	107	75-128			
1,2-Dichloroethane-d4 (S)	%.						115	112	75-128			
1,2-Dichloroethane-d4 (S)	%.						115	107	75-128			
4-Bromofluorobenzene (S)	%.						86	88	75-125			
Toluene-d8 (S)	%.						103	103	75-125			
Toluene-d8 (S)	%.						101	103	75-125			
Toluene-d8 (S)	%.						101	103	75-125			
Toluene-d8 (S)	%.						103	103	75-125			

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10536477

QC Batch: 707883
QC Batch Method: EPA 8260D
Analysis Method: EPA 8260D
Analysis Description: 8260D MSV LLW by SIMSCAN
Laboratory: Pace Analytical Services - Minneapolis

Associated Lab Samples: 10536477012

METHOD BLANK: 3782131 Matrix: Water
Associated Lab Samples: 10536477012

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	<0.40	0.40	10/29/20 13:42	
1,1,1-Trichloroethane	ug/L	<1.0	1.0	10/29/20 13:42	MN
1,1,2,2-Tetrachloroethane	ug/L	<0.40	0.40	10/29/20 13:42	
1,1,2-Trichloroethane	ug/L	<0.40	0.40	10/29/20 13:42	
1,1,2-Trichlorotrifluoroethane	ug/L	<1.0	1.0	10/29/20 13:42	
1,1-Dichloroethane	ug/L	<0.40	0.40	10/29/20 13:42	
1,1-Dichloroethene	ug/L	<1.0	1.0	10/29/20 13:42	MN
1,1-Dichloropropene	ug/L	<0.40	0.40	10/29/20 13:42	
1,2,3-Trichlorobenzene	ug/L	<0.40	0.40	10/29/20 13:42	
1,2,3-Trichloropropane	ug/L	<0.010	0.010	10/29/20 07:10	
1,2,4-Trichlorobenzene	ug/L	<0.40	0.40	10/29/20 13:42	
1,2,4-Trimethylbenzene	ug/L	<1.0	1.0	10/29/20 13:42	
1,2-Dibromo-3-chloropropane	ug/L	<0.12	0.12	10/29/20 07:10	
1,2-Dibromoethane (EDB)	ug/L	<0.050	0.050	10/29/20 07:10	
1,2-Dichlorobenzene	ug/L	<0.40	0.40	10/29/20 13:42	
1,2-Dichloroethane	ug/L	<0.20	0.20	10/29/20 07:10	
1,2-Dichloropropane	ug/L	<0.40	0.40	10/29/20 13:42	
1,3,5-Trimethylbenzene	ug/L	<0.40	0.40	10/29/20 13:42	
1,3-Dichlorobenzene	ug/L	<0.40	0.40	10/29/20 13:42	
1,3-Dichloropropane	ug/L	<0.40	0.40	10/29/20 13:42	
1,4-Dichlorobenzene	ug/L	<0.40	0.40	10/29/20 13:42	
2,2-Dichloropropane	ug/L	<1.0	1.0	10/29/20 13:42	v1
2-Butanone (MEK)	ug/L	<5.0	5.0	10/29/20 13:42	v2
2-Chlorotoluene	ug/L	<0.40	0.40	10/29/20 13:42	
4-Chlorotoluene	ug/L	<0.40	0.40	10/29/20 13:42	
4-Methyl-2-pentanone (MIBK)	ug/L	<5.0	5.0	10/29/20 13:42	
Acetone	ug/L	<20.0	20.0	10/29/20 13:42	
Allyl chloride	ug/L	<4.0	4.0	10/29/20 13:42	
Benzene	ug/L	<0.20	0.20	10/29/20 13:42	
Bromobenzene	ug/L	<0.40	0.40	10/29/20 13:42	
Bromochloromethane	ug/L	<1.0	1.0	10/29/20 13:42	
Bromodichloromethane	ug/L	<0.40	0.40	10/29/20 13:42	
Bromoform	ug/L	<1.0	1.0	10/29/20 13:42	
Bromomethane	ug/L	<1.0	1.0	10/29/20 13:42	1M,v2
Carbon tetrachloride	ug/L	<0.050	0.050	10/29/20 07:10	
Chlorobenzene	ug/L	<0.40	0.40	10/29/20 13:42	
Chloroethane	ug/L	<1.0	1.0	10/29/20 13:42	
Chloroform	ug/L	<1.0	1.0	10/29/20 13:42	
Chloromethane	ug/L	<1.0	1.0	10/29/20 13:42	v2
cis-1,2-Dichloroethene	ug/L	<0.40	0.40	10/29/20 13:42	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10536477

METHOD BLANK: 3782131 Matrix: Water
Associated Lab Samples: 10536477012

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
cis-1,3-Dichloropropene	ug/L	<0.40	0.40	10/29/20 07:10	v2
Dibromochloromethane	ug/L	<0.40	0.40	10/29/20 07:10	
Dibromomethane	ug/L	<1.0	1.0	10/29/20 13:42	
Dichlorodifluoromethane	ug/L	<1.0	1.0	10/29/20 13:42	
Dichlorofluoromethane	ug/L	<1.0	1.0	10/29/20 13:42	
Diethyl ether (Ethyl ether)	ug/L	<4.0	4.0	10/29/20 13:42	
Ethylbenzene	ug/L	<0.40	0.40	10/29/20 13:42	
Hexachloro-1,3-butadiene	ug/L	<0.10	0.10	10/29/20 07:10	
Isopropylbenzene (Cumene)	ug/L	<0.40	0.40	10/29/20 13:42	
m&p-Xylene	ug/L	<0.80	0.80	10/29/20 13:42	
Methyl-tert-butyl ether	ug/L	<0.40	0.40	10/29/20 13:42	
Methylene Chloride	ug/L	<1.0	1.0	10/29/20 13:42	
n-Butylbenzene	ug/L	<0.40	0.40	10/29/20 13:42	
n-Propylbenzene	ug/L	<0.40	0.40	10/29/20 13:42	
Naphthalene	ug/L	<1.0	1.0	10/29/20 13:42	
o-Xylene	ug/L	<0.40	0.40	10/29/20 13:42	
p-Isopropyltoluene	ug/L	<0.40	0.40	10/29/20 13:42	
sec-Butylbenzene	ug/L	<0.40	0.40	10/29/20 13:42	
Styrene	ug/L	<0.40	0.40	10/29/20 13:42	
tert-Butylbenzene	ug/L	<0.40	0.40	10/29/20 13:42	
Tetrachloroethene	ug/L	<0.40	0.40	10/29/20 13:42	
Tetrahydrofuran	ug/L	<10.0	10.0	10/29/20 13:42	
Toluene	ug/L	<0.40	0.40	10/29/20 13:42	
trans-1,2-Dichloroethene	ug/L	<0.40	0.40	10/29/20 13:42	
trans-1,3-Dichloropropene	ug/L	<0.40	0.40	10/29/20 07:10	
Trichloroethene	ug/L	<0.050	0.050	10/29/20 07:10	
Trichlorofluoromethane	ug/L	<0.40	0.40	10/29/20 13:42	v1
Vinyl chloride	ug/L	<0.050	0.050	10/29/20 07:10	
Xylene (Total)	ug/L	<1.2	1.2	10/29/20 13:42	
1,2-Dichloroethane-d4 (S)	%.	121	75-128	10/29/20 13:42	
1,2-Dichloroethane-d4 (S)	%.	113	75-128	10/29/20 07:10	
4-Bromofluorobenzene (S)	%.	93	75-125	10/29/20 13:42	
Toluene-d8 (S)	%.	107	75-125	10/29/20 07:10	
Toluene-d8 (S)	%.	104	75-125	10/29/20 13:42	

LABORATORY CONTROL SAMPLE: 3782132

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	10	11.5	115	75-125	
1,1,1-Trichloroethane	ug/L	10	10.5	105	68-131	
1,1,2,2-Tetrachloroethane	ug/L	10	10.1	101	71-125	
1,1,2-Trichloroethane	ug/L	10	10.8	108	75-125	
1,1,2-Trichlorotrifluoroethane	ug/L	10	10.1	101	71-125	
1,1-Dichloroethane	ug/L	10	9.8	98	71-125	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10536477

LABORATORY CONTROL SAMPLE: 3782132

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1-Dichloroethene	ug/L	10	9.0	90	66-126	
1,1-Dichloropropene	ug/L	10	8.5	85	58-134	
1,2,3-Trichlorobenzene	ug/L	10	9.7	97	71-125	
1,2,3-Trichloropropane	ug/L	1	0.88	88	75-125	
1,2,4-Trichlorobenzene	ug/L	10	9.8	98	72-125	
1,2,4-Trimethylbenzene	ug/L	10	8.9	89	75-125	
1,2-Dibromo-3-chloropropane	ug/L	2.5	2.1	86	71-125	
1,2-Dibromoethane (EDB)	ug/L	1	0.85	85	71-125	
1,2-Dichlorobenzene	ug/L	10	10	100	75-125	
1,2-Dichloroethane	ug/L	1	0.94	94	75-131	
1,2-Dichloropropane	ug/L	10	9.1	91	73-125	
1,3,5-Trimethylbenzene	ug/L	10	8.8	88	75-125	
1,3-Dichlorobenzene	ug/L	10	10.5	105	75-125	
1,3-Dichloropropane	ug/L	10	10.0	100	75-125	
1,4-Dichlorobenzene	ug/L	10	10.5	105	75-125	
2,2-Dichloropropane	ug/L	10	12.3	123	57-144	v1
2-Butanone (MEK)	ug/L	50	31.2	62	51-144	v3
2-Chlorotoluene	ug/L	10	9.4	94	75-125	
4-Chlorotoluene	ug/L	10	8.7	87	75-125	
4-Methyl-2-pentanone (MIBK)	ug/L	50	43.1	86	72-125	
Acetone	ug/L	50	41.3	83	34-150	
Allyl chloride	ug/L	10	8.2	82	58-132	
Benzene	ug/L	10	8.7	87	70-125	
Bromobenzene	ug/L	10	9.7	97	75-125	
Bromochloromethane	ug/L	10	11.2	112	72-126	
Bromodichloromethane	ug/L	10	10.3	103	73-128	
Bromoform	ug/L	10	11.6	116	70-125	
Bromomethane	ug/L	10	6.1	61	31-150	1M,v3
Carbon tetrachloride	ug/L	1	0.91	91	68-136	
Chlorobenzene	ug/L	10	9.9	99	75-125	
Chloroethane	ug/L	10	9.2	92	70-128	
Chloroform	ug/L	10	11.2	112	72-125	
Chloromethane	ug/L	10	6.7	67	63-129	v3
cis-1,2-Dichloroethene	ug/L	10	9.0	90	69-128	
cis-1,3-Dichloropropene	ug/L	1	0.76	76	71-125	v3
Dibromochloromethane	ug/L	1	0.91	91	71-125	
Dibromomethane	ug/L	10	10.8	108	74-130	
Dichlorodifluoromethane	ug/L	10	9.1	91	65-134	
Dichlorofluoromethane	ug/L	10	10.7	107	74-125	
Diethyl ether (Ethyl ether)	ug/L	10	8.3	83	64-126	
Ethylbenzene	ug/L	10	9.3	93	75-125	
Hexachloro-1,3-butadiene	ug/L	1	0.84	84	65-133	
Isopropylbenzene (Cumene)	ug/L	10	8.9	89	75-125	
m&p-Xylene	ug/L	20	19.1	96	75-125	
Methyl-tert-butyl ether	ug/L	10	10	100	68-125	
Methylene Chloride	ug/L	10	9.3	93	69-125	
n-Butylbenzene	ug/L	10	9.0	90	75-125	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10536477

LABORATORY CONTROL SAMPLE: 3782132

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
n-Propylbenzene	ug/L	10	8.6	86	74-125	
Naphthalene	ug/L	10	8.8	88	66-125	
o-Xylene	ug/L	10	8.6	86	75-125	
p-Isopropyltoluene	ug/L	10	9.0	90	75-125	
sec-Butylbenzene	ug/L	10	8.7	87	75-125	
Styrene	ug/L	10	9.7	97	75-125	
tert-Butylbenzene	ug/L	10	8.2	82	75-125	
Tetrachloroethene	ug/L	10	10.6	106	75-125	
Tetrahydrofuran	ug/L	100	85.0	85	55-139	
Toluene	ug/L	10	9.8	98	75-125	
trans-1,2-Dichloroethene	ug/L	10	9.2	92	67-127	
trans-1,3-Dichloropropene	ug/L	1	0.81	81	70-125	
Trichloroethene	ug/L	1	0.83	83	69-125	
Trichlorofluoromethane	ug/L	10	12.3	123	70-131	v1
Vinyl chloride	ug/L	1	0.89	89	68-132	
Xylene (Total)	ug/L	30	27.7	92	75-125	
1,2-Dichloroethane-d4 (S)	%.			111	75-128	
1,2-Dichloroethane-d4 (S)	%.			111	75-128	
4-Bromofluorobenzene (S)	%.			86	75-125	
Toluene-d8 (S)	%.			106	75-125	
Toluene-d8 (S)	%.			103	75-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3782133 3782134

Parameter	Units	10537346001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,1,2-Tetrachloroethane	ug/L	ND	10	10	10.7	11.2	107	112	75-125	5	30	
1,1,1-Trichloroethane	ug/L	ND	10	10	10.7	10.4	107	104	65-148	3	30	
1,1,2,2-Tetrachloroethane	ug/L	ND	10	10	9.0	9.0	90	90	72-125	0	30	
1,1,2-Trichloroethane	ug/L	ND	10	10	9.6	9.5	96	95	75-125	0	30	
1,1,2-Trichlorotrifluoroethane	ug/L	ND	10	10	10.3	10.1	103	101	75-145	2	30	
1,1-Dichloroethane	ug/L	ND	10	10	9.8	9.6	98	96	73-136	3	30	
1,1-Dichloroethene	ug/L	ND	10	10	9.1	9.3	91	93	69-138	2	30	
1,1-Dichloropropene	ug/L	ND	10	10	8.3	8.6	83	86	60-150	4	30	
1,2,3-Trichlorobenzene	ug/L	ND	10	10	9.2	9.0	92	90	67-135	2	30	
1,2,3-Trichloropropane	ug/L	ND	1	1	0.93	0.92	93	92	49-150	1	30	
1,2,4-Trichlorobenzene	ug/L	ND	10	10	9.0	9.1	90	91	68-133	1	30	
1,2,4-Trimethylbenzene	ug/L	ND	10	10	8.2	8.5	82	85	75-135	4	30	
1,2-Dibromo-3-chloropropane	ug/L	ND	2.5	2.5	2.3	2.3	94	92	53-150	1	30	
1,2-Dibromoethane (EDB)	ug/L	ND	1	1	0.89	0.89	89	89	49-150	0	30	
1,2-Dichlorobenzene	ug/L	ND	10	10	9.4	9.5	94	95	75-125	1	30	
1,2-Dichloroethane	ug/L	ND	1	1	1.2	1.2	99	98	42-150	1	30	
1,2-Dichloropropane	ug/L	ND	10	10	8.2	8.5	82	85	71-125	3	30	
1,3,5-Trimethylbenzene	ug/L	ND	10	10	8.1	8.5	81	85	75-129	5	30	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10536477

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3782133 3782134

Parameter	Units	10537346001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,3-Dichlorobenzene	ug/L	ND	10	10	9.8	9.9	98	99	75-125	1	30	
1,3-Dichloropropane	ug/L	ND	10	10	9.0	9.2	90	92	75-125	3	30	
1,4-Dichlorobenzene	ug/L	ND	10	10	9.5	9.4	95	94	75-125	1	30	
2,2-Dichloropropane	ug/L	ND	10	10	11.9	11.9	119	119	67-150	0	30	v1
2-Butanone (MEK)	ug/L	ND	50	50	24.2	24.9	48	50	49-138	3	30	M1,v3
2-Chlorotoluene	ug/L	ND	10	10	9.1	9.3	91	93	75-130	2	30	
4-Chlorotoluene	ug/L	ND	10	10	8.0	8.4	80	84	75-133	4	30	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	50	50	36.4	36.4	73	73	75-126	0	30	M1
Acetone	ug/L	ND	50	50	35.1	34.7	70	69	51-125	1	30	
Allyl chloride	ug/L	ND	10	10	7.6	7.7	76	77	50-150	1	30	
Benzene	ug/L	ND	10	10	8.0	8.0	80	80	68-129	1	30	
Bromobenzene	ug/L	ND	10	10	8.9	9.1	89	91	75-125	2	30	
Bromochloromethane	ug/L	ND	10	10	10.7	10.8	107	108	73-132	1	30	
Bromodichloromethane	ug/L	ND	10	10	9.6	9.5	96	95	75-127	1	30	
Bromoform	ug/L	ND	10	10	10.5	10.7	105	107	71-125	2	30	
Bromomethane	ug/L	ND	10	10	4.9	6.1	49	61	30-150	22	30	1M,v3
Carbon tetrachloride	ug/L	ND	1	1	1.1	1.0	107	104	30-150	2	30	
Chlorobenzene	ug/L	ND	10	10	9.1	9.5	91	95	75-125	4	30	
Chloroethane	ug/L	ND	10	10	9.0	8.2	90	82	68-141	9	30	
Chloroform	ug/L	ND	10	10	10.1	10.3	101	103	61-129	2	30	
Chloromethane	ug/L	ND	10	10	6.1	6.0	61	60	46-150	1	30	v3
cis-1,2-Dichloroethene	ug/L	ND	10	10	9.0	8.9	90	89	68-142	1	30	
cis-1,3-Dichloropropene	ug/L	ND	1	1	0.81	0.78	81	78	48-150	3	30	v3
Dibromochloromethane	ug/L	ND	1	1	0.98	0.96	98	96	50-150	2	30	
Dibromomethane	ug/L	ND	10	10	9.9	9.3	99	93	69-137	6	30	
Dichlorodifluoromethane	ug/L	ND	10	10	8.4	8.7	82	86	68-150	4	30	
Dichlorofluoromethane	ug/L	ND	10	10	10.1	10.1	96	96	73-135	0	30	
Diethyl ether (Ethyl ether)	ug/L	ND	10	10	8.3	8.2	73	72	61-128	1	30	
Ethylbenzene	ug/L	ND	10	10	8.9	9.0	89	90	75-131	1	30	
Hexachloro-1,3-butadiene	ug/L	ND	1	1	1.1	1.0	108	100	40-150	8	30	
Isopropylbenzene (Cumene)	ug/L	ND	10	10	8.5	8.9	85	89	75-133	5	30	
m&p-Xylene	ug/L	ND	20	20	18.0	18.4	90	92	75-135	2	30	
Methyl-tert-butyl ether	ug/L	ND	10	10	9.3	9.4	93	94	67-126	1	30	
Methylene Chloride	ug/L	ND	10	10	8.3	8.5	83	85	61-137	2	30	
n-Butylbenzene	ug/L	ND	10	10	8.7	8.9	87	89	75-136	2	30	
n-Propylbenzene	ug/L	ND	10	10	8.5	8.5	85	85	75-139	0	30	
Naphthalene	ug/L	ND	10	10	8.0	8.1	80	81	64-127	1	30	
o-Xylene	ug/L	ND	10	10	8.1	8.4	81	84	75-127	3	30	
p-Isopropyltoluene	ug/L	ND	10	10	8.7	8.8	87	88	75-135	0	30	
sec-Butylbenzene	ug/L	ND	10	10	8.7	8.9	87	89	75-141	2	30	
Styrene	ug/L	ND	10	10	8.5	8.7	85	87	75-125	3	30	
tert-Butylbenzene	ug/L	ND	10	10	8.4	8.2	84	82	75-141	2	30	
Tetrachloroethene	ug/L	ND	10	10	10.6	10.9	106	109	75-135	3	30	
Tetrahydrofuran	ug/L	ND	100	100	73.8	76.1	74	76	45-145	3	30	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10536477

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3782133 3782134

Parameter	Units	10537346001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Toluene	ug/L	ND	10	10	9.0	9.2	90	92	74-125	2	30	
trans-1,2-Dichloroethene	ug/L	ND	10	10	8.9	8.7	89	87	68-137	1	30	
trans-1,3-Dichloropropene	ug/L	ND	1	1	0.91	0.89	91	89	50-150	2	30	
Trichloroethene	ug/L	ND	1	1	0.96	0.95	92	91	41-150	1	30	
Trichlorofluoromethane	ug/L	ND	10	10	11.7	11.6	117	116	72-150	0	30	v1
Vinyl chloride	ug/L	0.15	1	1	0.97	0.97	83	83	30-150	0	30	
Xylene (Total)	ug/L	ND	30	30	26.1	26.8	87	89	75-131	3	30	
1,2-Dichloroethane-d4 (S)	%.						111	112	75-128			
1,2-Dichloroethane-d4 (S)	%.						115	112	75-128			
1,2-Dichloroethane-d4 (S)	%.						111	112	75-128			
1,2-Dichloroethane-d4 (S)	%.						115	112	75-128			
4-Bromofluorobenzene (S)	%.						86	88	75-125			
Toluene-d8 (S)	%.						101	104	75-125			
Toluene-d8 (S)	%.						105	104	75-125			
Toluene-d8 (S)	%.						105	103	75-125			
Toluene-d8 (S)	%.						101	103	75-125			

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10536477

QC Batch: 707946
QC Batch Method: SM 4500-H+B
Analysis Method: SM 4500-H+B
Analysis Description: 4500H+B pH
Laboratory: Pace Analytical Services - Minneapolis
Associated Lab Samples: 10536477001, 10536477002, 10536477003, 10536477004, 10536477005, 10536477006, 10536477007, 10536477008, 10536477009, 10536477010, 10536477011, 10536477012

LABORATORY CONTROL SAMPLE: 3782526

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
pH at 25 Degrees C	Std. Units	5	5.0	101	98-102	H6

SAMPLE DUPLICATE: 3782527

Parameter	Units	10536292002 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	7.8	7.8	0	3	H6

SAMPLE DUPLICATE: 3782528

Parameter	Units	10536377001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	7.8	7.9	0	3	H6

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10536477

QC Batch: 707948
QC Batch Method: SM 4500-H+B
Analysis Method: SM 4500-H+B
Analysis Description: 4500H+B pH
Laboratory: Pace Analytical Services - Minneapolis
Associated Lab Samples: 10536477013, 10536477014

LABORATORY CONTROL SAMPLE: 3782532

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
pH at 25 Degrees C	Std. Units	5	5.0	101	98-102	H6

SAMPLE DUPLICATE: 3782533

Parameter	Units	10536369001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	8.0	8.0	0	3	H6

SAMPLE DUPLICATE: 3782534

Parameter	Units	10536369002 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	8.0	8.0	0	3	H6

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10536477

QC Batch: 706527 | Analysis Method: SM 2510
QC Batch Method: SM 2510 | Analysis Description: SM2510 Specific Conductance
Laboratory: Pace Analytical Services - Minneapolis
Associated Lab Samples: 10536477001, 10536477002, 10536477003, 10536477004, 10536477005, 10536477006

METHOD BLANK: 3774643 Matrix: Water
Associated Lab Samples: 10536477001, 10536477002, 10536477003, 10536477004, 10536477005, 10536477006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Specific Conductance	umhos/cm	<1.0	1.0	10/26/20 14:45	

LABORATORY CONTROL SAMPLE: 3774644

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Specific Conductance	umhos/cm	1000	984	98	90-110	

SAMPLE DUPLICATE: 3774645

Parameter	Units	10536194001 Result	Dup Result	RPD	Max RPD	Qualifiers
Specific Conductance	umhos/cm	2480	2480	0	20	

SAMPLE DUPLICATE: 3774646

Parameter	Units	10536194002 Result	Dup Result	RPD	Max RPD	Qualifiers
Specific Conductance	umhos/cm	2880	2860	1	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10536477

QC Batch: 706915 | Analysis Method: SM 2510
QC Batch Method: SM 2510 | Analysis Description: SM2510 Specific Conductance
Laboratory: Pace Analytical Services - Minneapolis
Associated Lab Samples: 10536477007, 10536477008, 10536477009, 10536477010, 10536477011, 10536477012, 10536477013, 10536477014

METHOD BLANK: 3776783 Matrix: Water
Associated Lab Samples: 10536477007, 10536477008, 10536477009, 10536477010, 10536477011, 10536477012, 10536477013, 10536477014

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Specific Conductance	umhos/cm	<1.0	1.0	10/27/20 16:29	

LABORATORY CONTROL SAMPLE: 3776784

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Specific Conductance	umhos/cm	1000	1000	100	90-110	

SAMPLE DUPLICATE: 3776785

Parameter	Units	10536685001 Result	Dup Result	RPD	Max RPD	Qualifiers
Specific Conductance	umhos/cm	2870	2760	4	20	

SAMPLE DUPLICATE: 3776786

Parameter	Units	10536477007 Result	Dup Result	RPD	Max RPD	Qualifiers
Specific Conductance	umhos/cm	564	567	1	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALIFIERS

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10536477

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

1M	This analyte did not meet the secondary source verification criteria for the initial calibration. Analyte recovery exceeded the 130% upper control limit at 131%. Results may be biased high.
H5	Reanalysis conducted in excess of EPA method holding time. Results confirm original analysis performed in hold time.
H6	Analysis initiated outside of the 15 minute EPA required holding time.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
MN	The reporting limit has been raised in accordance with Minnesota Statutes 4740.2100 Subpart 8. C, D. Reporting Limit Evaluation Rule.
v1	The continuing calibration verification was above the method acceptance limit. Any detection for the analyte in the associated samples may have a high bias.
v2	The continuing calibration verification was below the method acceptance limit. The analyte was not detected in the associated samples and the sensitivity of the instrument was verified with a reporting limit check standard.
v3	The continuing calibration verification was below the method acceptance limit. Any detection for the analyte in the associated samples may have a low bias.

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: PRJ07913 Clay County Sanitary
Pace Project No.: 10536477

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10536477013	**Duplicate 1**	EPA 8260D	708886		
10536477014	**LYS-DUP**	EPA 8260D	708886		
10536477015	**Trip Blank**	EPA 8260D	708886		
10536477016	**Trip Blank 2**	EPA 8260D	708886		
10536477001	**W-301A**	EPA 8260D	707085		
10536477002	**W-106A**	EPA 8260D	707313		
10536477003	**W-5**	EPA 8260D	707313		
10536477004	**S-3**	EPA 8260D	707313		
10536477005	**W-202A**	EPA 8260D	707313		
10536477006	**W-201A**	EPA 8260D	707313		
10536477007	**W-2**	EPA 8260D	707313		
10536477008	**W-6**	EPA 8260D	707313		
10536477009	**W-302A**	EPA 8260D	707313		
10536477010	**W-104A**	EPA 8260D	707313		
10536477011	**MH-LYS-III-P1**	EPA 8260D	707313		
10536477012	**MH-LYS-III-P2**	EPA 8260D	707883		
10536477001	**W-301A**	SM 4500-H+B	707946		
10536477002	**W-106A**	SM 4500-H+B	707946		
10536477003	**W-5**	SM 4500-H+B	707946		
10536477004	**S-3**	SM 4500-H+B	707946		
10536477005	**W-202A**	SM 4500-H+B	707946		
10536477006	**W-201A**	SM 4500-H+B	707946		
10536477007	**W-2**	SM 4500-H+B	707946		
10536477008	**W-6**	SM 4500-H+B	707946		
10536477009	**W-302A**	SM 4500-H+B	707946		
10536477010	**W-104A**	SM 4500-H+B	707946		
10536477011	**MH-LYS-III-P1**	SM 4500-H+B	707946		
10536477012	**MH-LYS-III-P2**	SM 4500-H+B	707946		
10536477013	**Duplicate 1**	SM 4500-H+B	707948		
10536477014	**LYS-DUP**	SM 4500-H+B	707948		
10536477001	**W-301A**	SM 2510	706527		
10536477002	**W-106A**	SM 2510	706527		
10536477003	**W-5**	SM 2510	706527		
10536477004	**S-3**	SM 2510	706527		
10536477005	**W-202A**	SM 2510	706527		
10536477006	**W-201A**	SM 2510	706527		
10536477007	**W-2**	SM 2510	706915		
10536477008	**W-6**	SM 2510	706915		
10536477009	**W-302A**	SM 2510	706915		
10536477010	**W-104A**	SM 2510	706915		
10536477011	**MH-LYS-III-P1**	SM 2510	706915		
10536477012	**MH-LYS-III-P2**	SM 2510	706915		
10536477013	**Duplicate 1**	SM 2510	706915		
10536477014	**LYS-DUP**	SM 2510	706915		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Minnesota Pollution Control Agency

MPCA Chain-of-Custody Form revision 2017.0328

* indicates a required field

Work Order Number: 10536477 | COC Type: Standard | Page:

Turnaround Time: Standard | COC ID: 33549 line8

WO#: 10536477

PROJECT/CLIENT INFO

Facility Code:* SW-34 | Program Code (MDH Lab Only):

Project Name:* Clay County Sanitary Landfill - Fall 2020 | Project Task Code:* PRJ07913

Project Manager: Andrew Feia

Potential Hazard? No | If yes, add information to **Sampler Comments** field

LABORATORY

Lab Name: Pace Analytical Services, LLC

Address: 1700 Elm Street SE, Minneapolis, MN 55414

EPA Lab ID:*

SAMPLE DETAILS

SAMPLE TYPES
Sample=Routine Sample
QC-FB=Field Blank Sample
QC-FR=Field Replicate Sample
QC-TB=Trip Blank Sample
QC-EB=Equipment Blank
Treated-Mid=Treatment system sample
Treated-Post=Treatment system sample

SAMPLING METHODS
G=Grab sample
CT=Composite, time-paced w/AS
CF=Composite w/AS
D-T=Discrete,time-paced w/AS
D-F=Discrete,flow-paced w/AS
SW-GAS=Gas Sampling
Unknown=Unknown

LAB MATRICES
DW=Drinking Water
NW=Nonpotable Water
SD=Soil/Solid
AR=Air
BL=Biological Material
OT=Other
TS=Tissue

FIELD MATRICES
Wtr-Ground=Groundwater
Wtr-Surf=Surface Water
Wtr-Drink=Drinking Water
QC-BLANK=Artificial Blank Water
Leachate=Leachate Sample
Air-Indoor=Indoor Air
Gas-Soil=Soil Gas

MN Location Identifier*	Field Name	Sample Type*	Start Date* (mm/dd/yyyy)	Start Time* 24 hr (hh:mm)	Depth Start	Depth End	Depth Units (m or ft.)	Sampling Method*	Complete ONLY if Method is CT, CF, D-T, or D-F: End Date (mm/dd/yyyy)	Complete ONLY if Method is CT, CF, D-T, or D-F: End Time 24 hr (hh:mm)	Lab Matrix*	Field Matrix*	AIS	Sampler Comments (filter volume, special handling, etc.)	# of Cont	ANALYSIS*	PRESERV.	FF	List 1-VOCs (Attached)	List 4-pH, Specific Conductance				Lab Sample No.	#
																	HCL	None							
																	N	N							
778496	W-301A	Sample	10/15/2020	0931				G			NW	WTR-Ground			7				x	x				001	1
763239	W-106A	Sample	10/15/2020	1018				G			NW	WTR-Ground			7				x	x				002	2
222010	W-5	Sample	10/15/2020	1059				G			NW	WTR-Ground			7				x	x				003	3
SP00051	S-3	Sample	10/15/2020	1134				G			NW	WTR-Surf			7				x	x				004	4
763244	W-202A	Sample	10/15/2020	1228				G			NW	WTR-Ground			7				x	x				005	5
763243	W-201A	Sample	10/15/2020	1256				G			NW	WTR-Ground			7				x	x				006	6
117051	W-2	Sample	10/15/2020	1327				G			NW	WTR-Ground			7				x	x				007	7
222012	W-6	Sample	10/15/2020	1410				G			NW	WTR-Ground			7				x	x				008	8
778498	W-302A	Sample	10/15/2020	1445				G			NW	WTR-Ground			7				x	x				009	9
763237	W-104A	Sample	10/15/2020	1539				G			NW	WTR-Ground			7				x	x				010	10

Sampler's Name:* Christina Lammers | **Phone#:** 701-893-2327

Sampler's Signature:* Christina Lammers

Sampler's Organization: Wenck Associates, Inc.

Billing Organization: Clay County - Kirk Rosenberger | **Acct#:** 10-115155

Address: 807 11th Street North, Moorhead, MN 56560

Courier Name: Speedee | **Tracking#:**

Receiving Comments:

Relinquished By/Affiliation	Date/Time	Accepted By/Affiliation	Date/Time
(Sampler) Christina Lammers /Wenck	10/19/20 1200	PACE	10/21/20 1220

4.3

Minnesota Pollution Control Agency

MPCA Chain-of-Custody Form revision 2017.0328

* indicates a required field

Work Order Number: | **COC Type:** Standard | **Page:** 2 of 2

Turnaround Time: Standard | **COC ID:** 33549 line8

FOR LAB USE ONLY

PROJECT/CLIENT INFO

Facility Code:* SW-34 | Program Code (MDH Lab Only):

Project Name:* Clay County Sanitary Landfill - Fall 2020 | Project Task Code:* PRJ07913

Project Manager: Andrew Feia

Potential Hazard? No | If yes, add information to **Sampler Comments** field

LABORATORY

Lab Name: Pace Analytical Services, LLC

Address: 1700 Elm Street SE

Minneapolis, MN 55414

EPA Lab ID:*

Lab Work Order Sticker

SAMPLE DETAILS

SAMPLE TYPES
Sample=Routine Sample
QC-FB=Field Blank Sample
QC-FR=Field Replicate Sample
QC-TB=Trip Blank Sample
QC-EB=Equipment Blank
Treated-Mid=Treatment system sample
Treated-Post=Treatment system sample

SAMPLING METHODS
G=Grab sample
CT=Composite, time-paced w/AS
CF=Composite w/AS
D-T=Discrete,time-paced w/AS
D-F=Discrete,flow-paced w/AS
SW-GAS=Gas Sampling
Unknown=Unknown

LAB MATRICES
DW=Drinking Water
NW=Nonpotable Water
SD=Soil/Solid
AR=Air
BL=Biological Material
OT=Other
TS=Tissue

FIELD MATRICES
Wtr-Ground=Groundwater
Wtr-Surf=Surface Water
Wtr-Drink=Drinking Water
QC-BLANK=Artificial Blank Water
Leachate=Leachate Sample
Air-Indoor=Indoor Air
Gas-Soil=Soil Gas

ANALYSIS REQUESTED

MN Location Identifier*	Field Name	Sample Type*	Start Date* (mm/dd/yyyy)	Start Time* 24 hr (hh:mm)	Depth Start	Depth End	Depth Units (m or ft.)	Sampling Method*	Complete ONLY if Method is CT, CF, D-T, or D-F: End Date (mm/dd/yyyy)	Complete ONLY if Method is CT, CF, D-T, or D-F: End Time 24 hr (hh:mm)	Lab Matrix*	Field Matrix*	AIS	Sampler Comments (filter volume, special handling, etc.)	# of Cont	PRESERV.	HCL	None					Lab Sample No.	#
																FF	N	N						
																ANALYSIS*	List 1-SimScan VOCs (Attached)	List 4-pH, Specific Conductance						
LS00124	MH-LYS-III-P1	Sample	10/15/2020	1618				G			NW	WTR-Ground			7		x	x					001	1
LS00125	MH-LYS-III-P2	Sample	10/15/2020	1710				G			NW	WTR-Ground			7		x	x					002	2
QC-BLANK	Duplicate 1	QC-FR	10/15/2020	-				G			NW	QC-Blank			7		x	x					003	3
QC-BLANK	LYS-DUP	QC-FR	10/15/2020	-				G			NW	WTR-Ground			7		x	x					004	4
QC-BLANK	Trip Blank	QC-TB	10/15/2020	1200				G			NW	WTR-Ground			4		x						005	5
QC-BLANK	Trip Blank 2	QC-TB	10/15/2020	1205				G			NW	QC-Blank			4		x						006	6
QC-BLANK	Trip Blank 3	QC-TB	10/15/2020	1210				G			NW	QC-Blank			2		x						007	7
																								8
																								9
																								10

Sampler's Name:* Christina Lammers | **Phone#:** 701-893-2327

Sampler's Signature:* Christina Lammers

Sampler's Organization: Wenck Associates, Inc.

Billing Organization: Clay County - Kirk Rosenberger | **Acct#:** 10-115155

Address: 807 11th Street North, Moorhead, MN 56560

Courier Name: Speedee | **Tracking#:**

Receiving Comments:

Relinquished By/Affiliation	Date/Time	Accepted By/Affiliation	Date/Time
(Sampler) Christina Lammers /Wenck	10/19/20 1200	RKE	10/20/20 1220

4.3°

Pace Analytical®	Document Name: **Sample Condition Upon Receipt (SCUR) - MN**	Document Revised: 12Aug2020 **Page 1 of 1**
	Document No.: **ENV-FRM-MIN4-0150 Rev.01**	Pace Analytical Services - **Minneapolis**

Sample Condition Upon Receipt

Client Name: Wenck

Project #: **WO#: 10536477**

PM: AKA Due Date: 11/04/20

CLIENT: WENCK-ND

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Pace ☐ SpeeDee ☑ Commercial

Tracking Number: _____ See Exceptions ☐ ENV-FRM-MIN4-0142

Custody Seal on Cooler/Box Present? ☑ Yes ☐ No **Seals Intact?** ☑ Yes ☐ No **Biological Tissue Frozen?** ☐ Yes ☐ No ☑ N/A

Packing Material: ☑ Bubble Wrap ☑ Bubble Bags ☐ None ☐ Other: _____ **Temp Blank?** ☑ Yes ☐ No

Thermometer: ☑ T1(0461) ☐ T2(1336) ☐ T3(0459) ☐ T4(0254) ☐ T5(0489) **Type of Ice:** ☑ Wet ☐ Blue ☐ None ☐ Dry ☐ Melted

Did Samples Originate in West Virginia? ☐ Yes ☑ No **Were All Container Temps Taken?** ☐ Yes ☐ No ☑ N/A

Temp should be above freezing to 6°C **Cooler Temp Read w/temp blank:** 2.9, 5.1, 4.3 °C

Correction Factor: true **Cooler Temp Corrected w/temp blank:** 2.9 5.1, 4.3 °C

Average Corrected Temp (no temp blank only): _____ °C ☐ See Exceptions ENV-FRM-MIN4-0142 ☐ 1 Container

USDA Regulated Soil: (☑ N/A, water sample/Other: _____)

Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA. MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? ☐ Yes ☐ No

Date/Initials of Person Examining Contents: 10-21-20 AA

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐ Yes ☐ No

If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.

				COMMENTS:
Chain of Custody Present and Filled Out?	☑ Yes	☐ No		1.
Chain of Custody Relinquished?	☑ Yes	☐ No		2.
Sampler Name and/or Signature on COC?	☑ Yes	☐ No	☐ N/A	3.
Samples Arrived within Hold Time?	☑ Yes	☐ No		4.
Short Hold Time Analysis (<72 hr)?	☐ Yes	☑ No		5. ☐ Fecal Coliform ☐ HPC ☐ Total Coliform/E coli ☐ BOD/cBOD ☐ Hex Chrome ☐ Turbidity ☐ Nitrate ☐ Nitrite ☐ Orthophos ☐ Other _____
Rush Turn Around Time Requested?	☐ Yes	☑ No		6.
Sufficient Volume?	☑ Yes	☐ No		7.
Correct Containers Used? -Pace Containers Used?	☑ Yes ☑ Yes	☐ No ☐ No		8.
Containers Intact?	☑ Yes	☐ No		9.
Field Filtered Volume Received for Dissolved Tests?	☐ Yes	☐ No	☑ N/A	10. Is sediment visible in the dissolved container? ☐ Yes ☐ No
Is sufficient information available to reconcile the samples to the COC? Matrix: ☑ Water ☐ Soil ☐ Oil ☐ Other _____	☑ Yes	☐ No		11. **If no, write ID/ Date/Time on Container Below:** **See Exception** ☐ ENV-FRM-MIN4-0142
All containers needing acid/base preservation have been checked?	☐ Yes	☐ No	☑ N/A	12. Sample #
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO_3, H_2SO_4, <2pH, NaOH >9 Sulfide, NaOH>10 Cyanide)	☐ Yes	☐ No	☑ N/A	☐ NaOH ☐ HNO_3 ☐ H_2SO_4 ☐ Zinc Acetate
Exceptions: VOA, Coliform, TOC/DOC Oil and Grease, DRO/8015 (water) and Dioxin/PFAS	☑ Yes	☐ No	☐ N/A	Positive for Res. Chlorine? ☐ Yes ☐ No **pH Paper Lot#** **See Exception** ☐ ENV-FRM-MIN4-0142
				Res. Chlorine | 0-6 Roll | 0-6 Strip | 0-14 Strip
Extra labels present on soil VOA or WIDRO containers?	☐ Yes	☐ No	☑ N/A	13. 26mm x 1 TB v.21 **See Exception** ☐ ENV-FRM-MIN4-0140
Headspace in VOA Vials (greater than 6mm)?	☑ Yes	☐ No	☐ N/A	
Trip Blank Present?	☑ Yes	☐ No	☐ N/A	14.
Trip Blank Custody Seals Present?	☑ Yes	☐ No	☐ N/A	Pace Trip Blank Lot # (if purchased): 272968

CLIENT NOTIFICATION/RESOLUTION **Field Data Required?** ☐ Yes ☐ No

Person Contacted: _____ Date/Time: _____

Comments/Resolution: _____

Project Manager Review: Anna Osp **Date:** 10/23/2020

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers).

Labeled by: TW


WENCK
now part of
Stantec

Appendix E

Landfill Gas Evaluation

Remediation Wells/Gas Vents

Clay County Landfill

Remediation Well Monitoring

Technician: Brett Rice Date: January 9, 2020

SITE	TIME	METHANE (%)	CARBON DIOXIDE (%)	Oxygen (%)	Balance Gas (%)
RW-1	4:39 PM	2.1	0.8	19.9	77.2
RW-2	4:41 PM	0.6	0.1	21	78.3
RW-3	4:43 PM	0.6	0.2	21	78.2
RW-4	4:45 PM	0.7	0.1	21.2	78
RW-5	4:46 PM	0.6	0.2	21	78.2
RW-6	4:48 PM	0.9	0.1	21.3	77.7
RW-7	4:53 PM	1.9	0.3	21.1	76.7
RW-8	4:55 PM	0.9	0.2	21.4	77.5
RW-9	4:57 PM	0.8	0.1	21.8	77.3
RW-10	4:58 PM	0.6	0.1	21.9	77.4

Clay County Landfill

Remediation Well Monitoring

Technician: Brett Rice Date: February 11, 2020

SITE	TIME	METHANE (%)	CARBON DIOXIDE (%)	Oxygen (%)	Balance Gas (%)
RW-1	3:42 PM	1.6	2.7	16.1	79.6
RW-2	3:45 PM	0	0.1	21.5	78.4
RW-3	3:46 PM	0	0.2	21.2	78.6
RW-4	3:48 PM	0.5	0.1	21.3	78.1
RW-5	3:51 PM	0	0.3	21.1	78.6
RW-6	3:53 PM	0.2	0	21.6	78.2
RW-7	3:59 PM	8	1.1	19	71.9
RW-8	4:01 PM	0.1	0.1	21.7	78.1
RW-9	4:03 PM	0.2	0.1	21.7	78
RW-10	4:05 PM	0	0	21.9	78.1

Clay County Landfill

Remediation Well Monitoring

Technician: Brett Rice March 13, 2020

SITE	TIME	METHANE (%)	CARBON DIOXIDE (%)	Oxygen (%)	Balance Gas (%)
RW-1	2:35 PM	0.1	0	21.6	78.3
RW-2	2:37 PM	0.1	0.1	21.5	78.3
RW-3	2:41 PM	0.1	0.2	21.3	78.4
RW-4	2:45 PM	0.1	0	21.5	78.4
RW-5	2:46 PM	0.1	0.2	21	78.7
RW-6	2:49 PM	0.1	0	21.5	78.4
RW-7	2:51 PM	0.1	0	21.6	78.3
RW-8	2:53 PM	0.1	0	21.6	78.3
RW-9	2:55 PM	0.1	0	21.7	78.2
RW-10	2:57 PM	0.1	0	21.7	78.2

Clay County Landfill

Remediation Well Monitoring

Technician: Brett Rice Date: April 8, 2020

SITE	TIME	METHANE (%)	CARBON DIOXIDE (%)	Oxygen (%)	Balance Gas (%)
RW-1	11:15 AM	0	0	20.8	79.2
RW-2	11:17 AM	0	0.1	20.7	79.2
RW-3	11:17 AM	0	0.1	20.7	79.2
RW-4	11:20 AM	0	0.7	19.3	80
RW-5	11:22 AM	0.9	0	20.9	78.2
RW-6	11:24 AM	0	0.1	20.8	79.1
RW-7	11:27 AM	0	0	21	79
RW-8	11:29 AM	0	0	21	79
RW-9	11:29 AM	0	0	21	79
RW-10	11:31 AM	0	0	21	79

Clay County Landfill

Remediation Well Monitoring

Technician: Brett Rice Date: May 20, 2020

SITE	TIME	METHANE (%)	CARBON DIOXIDE (%)	Oxygen (%)	Balance Gas (%)
RW-1	3:20 PM	4.2	1.2	18.7	75.9
RW-2	3:22 PM	0	0.6	20.3	79.1
RW-3	3:23 PM	0	0.4	20.4	79.2
RW-4	3:25 PM	1.7	0.2	20	78.1
RW-5	3:27 PM	0	2.5	17.5	80
RW-6	3:29 PM	0	0	20.8	79.2
RW-7	3:31 PM	11.1	1.2	18.2	69.5
RW-8	3:33 PM	0.8	0.3	20	78.9
RW-9	3:35 PM	1.8	0.3	19.9	78
RW-10	3:37 PM	0	0	20.8	79.2

Clay County Landfill

Remediation Well Monitoring

Technician: Brett Rice Date: June 26, 2020

SITE	TIME	METHANE (%)	CARBON DIOXIDE (%)	Oxygen (%)	Balance Gas (%)
RW-1	3:53 PM	0.4	0.2	20.1	79.3
RW-2	3:55 PM	0.1	0.2	20.2	79.5
RW-3	3:57 PM	0.1	0.3	19.9	79.7
RW-4	3:59 PM	0.3	0.1	20	79.6
RW-5	4:02 PM	0.1	0.6	19.3	80
RW-6	4:05 PM	0.1	0	20	79.9
RW-7	4:08 PM	3	0.7	18.7	77.6
RW-8	2:09 PM	0.3	0.1	19.9	79.7
RW-9	2:11 PM	1	3	17	79
RW-10	2:12 PM	0.2	0	20.1	79.7

Clay County Landfill

Remediation Well Monitoring

Technician: Brett Rice Date: July 29, 2020

SITE	TIME	METHANE (%)	CARBON DIOXIDE (%)	Oxygen (%)	Balance Gas (%)
RW-1	12:07 PM	0.2	0.1	20.3	79.4
RW-2	12:09 PM	0	0.1	20.5	79.4
RW-3	12:11 PM	0	0.3	20.2	79.5
RW-4	12:12 PM	0	0	20.6	79.4
RW-5	12:14 PM	0	0.2	20.1	79.7
RW-6	12:16 PM	0	0	20.5	79.5
RW-7	12:18 PM	6.5	0.7	19	73.8
RW-8	12:20 PM	0.1	0	20.6	79.3
RW-9	12:22 PM	0	0	20.6	79.4
RW-10	12:24 PM	0	0	20.7	79.3

Clay County Landfill

Remediation Well Monitoring

Technician: Brett Rice Date: August 13, 2020

SITE	TIME	METHANE (%)	CARBON DIOXIDE (%)	Oxygen (%)	Balance Gas (%)
RW-1	6:49 PM	1.6	0.3	19.6	78.5
RW-2	6:51 PM	0.1	1.1	19.3	79.5
RW-3	4:45 PM	0	0.1	20.7	79.2
RW-4	4:46 PM	0	0	20.7	79.3
RW-5	4:47 PM	0	0.7	19.8	79.5
RW-6	4:48 PM	0	0	20.8	79.2
RW-7	4:50 PM	3	0.4	20	76.6
RW-8	4:51 PM	0.6	0.1	20.4	78.9
RW-9	4:52 PM	0.1	0.1	20.5	79.3
RW-10	4:54 PM	0	0	20.7	79.3

Clay County Landfill

Remediation Well Monitoring

Technician: Brett Rice Date: September 30, 2020

SITE	TIME	METHANE (%)	CARBON DIOXIDE (%)	Oxygen (%)	Balance Gas (%)
RW-1	6:18 PM	0.1	0.1	20.4	79.4
RW-2	6:19 PM	0	0.1	20.5	79.4
RW-3	6:21 PM	0	0.3	20.3	79.4
RW-4	6:22 PM	0.1	0	20.6	79.3
RW-5	6:23 PM	0	0.6	19.8	79.6
RW-6	6:25 PM	0.1	0	20.7	79.2
RW-7	6:26 PM	0.1	0	20.8	79.1
RW-8	6:27 PM	0.2	0.2	20.4	79.2
RW-9	6:29 PM	0.7	1.1	19.7	78.5
RW-10	6:30 PM	0	0	21	79

Clay County Landfill

Remediation Well Monitoring

Technician: Brett Rice Date: October 30, 2020

SITE	TIME	METHANE (%)	CARBON DIOXIDE (%)	Oxygen (%)	Balance Gas (%)
RW-1	6:06 PM	2.9	3.7	13.7	79.7
RW-2	6:07 PM	0.2	0.2	20.4	79.2
RW-3	6:08 PM	0.2	0.4	20.2	79.2
RW-4	6:09 PM	1.1	0.3	20	78.6
RW-5	6:11 PM	0.2	1.1	18.8	79.9
RW-6	6:12 PM	1.8	0.3	20	77.9
RW-7	6:14 PM	7.5	1	18.5	73
RW-8	6:15 PM	0.5	0.4	20.5	78.6
RW-9	6:16 PM	0.6	0.5	20.5	78.4
RW-10	6:18 PM	0.2	0	21.1	78.7

Clay County Landfill

Remediation Well Monitoring

Technician: Brett Rice Date: November 30, 2020

SITE	TIME	METHANE (%)	CARBON DIOXIDE (%)	Oxygen (%)	Balance Gas (%)
RW-1	5:05 PM	2.4	3.4	13.7	80.5
RW-2	5:06 PM	0.3	0.1	21	78.6
RW-3	5:08 PM	0.3	0.3	20.7	78.7
RW-4	5:09 PM	0.8	0.3	20.6	78.3
RW-5	5:10 PM	0.3	0.6	20.2	78.9
RW-6	5:12 PM	1.7	0.3	20.6	77.4
RW-7	5:13 PM	4.3	0.7	19.9	75.1
RW-8	5:15 PM	0.5	0.2	20.9	78.4
RW-9	5:16 PM	0.7	0.2	21.1	78
RW-10	5:17 PM	0.3	0	21.2	78.5

Clay County Landfill

Remediation Well Monitoring

Technician: Brett Rice Date: December 28, 2020

SITE	TIME	METHANE (%)	CARBON DIOXIDE (%)	Oxygen (%)	Balance Gas (%)
RW-1	1:27 PM	0.4	0	20.4	79.2
RW-2	1:29 PM	0.4	0.1	20.4	79.1
RW-3	1:31 PM	0.4	0.2	20.3	79.1
RW-4	1:33 PM	0.4	0	20.8	78.8
RW-5	1:35 PM	0.4	0.2	20.5	78.9
RW-6	1:37 PM	0.4	0.1	21	78.5
RW-7	1:39 PM	0.5	0	21.2	78.3
RW-8	1:41 PM	0.5	0.2	21.1	78.2
RW-9	1:43 PM	0.5	0.1	21.3	78.1
RW-10	1:45 PM	0.4	0	21.7	77.9

Gas Probes

Clay County Landfill

Landfill Gas Monitoring

Technician: Brett Rice Date: January 9, 2020

SITE	TIME	METHANE (%)	CARBON DIOXIDE (%)	Oxygen (%)	Balance Gas (%)
Gas Probe 1	1:37 PM	0.7	0.5	20.4	78.4
Gas Probe 2	1:48 PM	0.7	1.2	20.3	77.8
Gas Probe 3	2:49 PM	0.7	0	20.9	78.4
Gas Probe 4	2:56 PM	0.7	0.8	20.6	77.9
Gas Probe 5	3:02 PM	0.7	3.2	19.8	76.3
Gas Probe 6	3:08 PM	0.7	2.2	20.4	76.7
Gas Probe 7	3:17 PM	0.7	0.9	20.9	77.5
Gas Probe 8	3:31 PM	0.7	0.7	20.5	78.1
Gas Probe 9	3:43 PM	0.7	4	17.7	77.6
Gas Probe 10	3:54 PM	0.7	0.4	21.4	77.5
Gas Probe 11	4:03 PM	0.7	0.5	21.7	77.1
Gas Probe 12	5:06 PM	0.6	0.1	21.6	77.7

Clay County Landfill

Landfill Gas Monitoring

Technician: Brett Rice Date: April 28, 2020

SITE	TIME	METHANE (%)	CARBON DIOXIDE (%)	Oxygen (%)	Balance Gas (%)
Gas Probe 1	11:32 AM	0.1	0.2	20.8	78.9
Gas Probe 2	11:23 AM	0.1	0.2	20.8	78.9
Gas Probe 3	11:39 AM	0.1	0	21	78.9
Gas Probe 4	11:44 AM	0	0.2	20.6	79.2
Gas Probe 5	11:54 AM	0	0.6	20.4	79
Gas Probe 6	12:00 PM	0	1.6	19.4	79
Gas Probe 7	12:06 PM	0	1.3	19.1	79.6
Gas Probe 8	1:38 PM	0.1	0.5	19.8	79.6
Gas Probe 9	1:48 PM	0.1	0	20.8	79.1
Gas Probe 10	1:52 PM	0.1	0	20.8	79.1
Gas Probe 11	2:09 PM	0	2.2	18.5	79.3
Gas Probe 12	1:58 PM	0.1	0.5	20.4	79

Clay County Landfill

Landfill Gas Monitoring

Technician: Brett Rice Date: July 29, 2020

SITE	TIME	METHANE (%)	CARBON DIOXIDE (%)	Oxygen (%)	Balance Gas (%)
Gas Probe 1	4:14 PM	0.1	0.6	19.7	79.6
Gas Probe 2	4:19 PM	0.1	0.9	19.1	79.9
Gas Probe 3	1:19 PM	1.5	3.6	16.3	78.6
Gas Probe 4	1:42 PM	0.1	1.8	17.8	80.3
Gas Probe 5	1:53 PM	0.1	1	18.6	80.3
Gas Probe 6	1:58 PM	0.1	4	14.5	81.4
Gas Probe 7	2:02 PM	0.1	3.1	13.1	83.7
Gas Probe 8	2:09 PM	0.1	1.4	17.5	81
Gas Probe 9	2:20 PM	0	0.6	19	80.4
Gas Probe 10	2:26 PM	0	1.2	18.9	79.9
Gas Probe 11	2:32 PM	0	0.4	19.9	79.7
Gas Probe 12	2:38 PM	0	0.4	19.8	79.8

Clay County Landfill

Landfill Gas Monitoring

Technician: Brett Rice Date: December 28, 2020

SITE	TIME	METHANE (%)	CARBON DIOXIDE (%)	Oxygen (%)	Balance Gas (%)
Gas Probe 1	2:09 PM	0.4	0.4	20.8	78.4
Gas Probe 2	2:22 PM	0.4	0.4	21.3	77.9
Gas Probe 3	2:27 PM	0.4	0	21.7	77.9
Gas Probe 4	2:33 PM	0.4	0	21.7	77.9
Gas Probe 5	2:39 PM	0.4	0.6	21.4	77.6
Gas Probe 6	2:46 PM	0.4	1.4	20.9	77.3
Gas Probe 7	2:52 PM	0.4	1.5	20.7	77.4
Gas Probe 8	2:59 PM	0.4	0.9	20.9	77.8
Gas Probe 9	3:15 PM	0.4	0.3	20.6	78.7
Gas Probe 10	3:20 PM	0.4	0.9	20.3	78.4
Gas Probe 11	3:24 PM	0.4	0.6	20.2	78.8
Gas Probe 12	3:28 PM	0.4	0.1	20.9	78.6

Landfill Gas Collection System

Device ID	Date/Time	CH4	CO2	O2	Balance	Init. Static Press.	Adj. Static Press.	Init. Diff. Press.	Adj. Diff. Press.	Init. Gas Temp.
GEM™2NAV; Version 3_13L,02/07/		%	%	%	%	inches H2O	inches H2O	inches H2O	inches H2O	DegF
GW000001	1/8/2020 13:06	>>>>	41.3	0.3	N/A	1	1	-0.003	-0.003	0
GW000002	1/8/2020 13:16	45.5	32	0.3	22.2	1	1	-0.007	-0.003	24
GW000003	1/8/2020 13:24	34.4	26.4	0.3	38.9	1	1	-0.013	-0.021	0
GW000004	1/8/2020 13:30	30	29.2	0.3	40.5	0.2	0	1.239	-0.041	31
GW000005	1/8/2020 13:35	47.5	34.8	0.3	17.4	1.2	1.2	-0.006	-0.004	30
GW000006	1/8/2020 13:40	>>>>	41.2	0.5	N/A	1.4	1.4	-1.373	-1.369	34
GW000007	1/8/2020 13:46	>>>>	41.3	0.3	N/A	1.4	1.4	-0.001	-0.001	28
GW000008	1/8/2020 13:51	>>>>	41.5	0.3	N/A	1.2	1.2	0.006	0.006	26
GW000009	1/8/2020 14:02	>>>>	41.1	0.4	N/A	1.4	1.4	0.007	0.012	43
GW000010	1/8/2020 14:06	51.9	39.3	0.2	8.6	1.4	1.4	-0.006	-0.004	24
GW000011	1/8/2020 14:14	>>>>	41.2	0.3	N/A	1.5	1.5	0.031	0.042	30
GW000012	1/8/2020 14:21	60.6	39	0.2	0.2	1	1	-4.339	-4.321	31
GW000013	1/8/2020 14:26	56.8	42.9	0.2	0.1	1.3	1.3	0.003	0.007	38
GW000014	1/8/2020 14:31	58.5	41.1	0.2	0.2	1.3	1.3	-0.001	0	23
GW000015	1/8/2020 16:02	51.6	39.4	0.3	8.7	1.6	1.6	-0.009	-0.012	0
GW000016	1/8/2020 16:07	18.9	31	0.3	49.8	1.7	1.7	-0.01	-0.013	23
GW000018	1/8/2020 16:17	60.7	38.9	0.3	0.1	1.9	1.9	-0.003	-0.004	0
GW000017	1/8/2020 16:22	38.2	31.3	0.5	30	1.9	1.9	-0.031	-0.027	0
GW000021	1/8/2020 16:35	51	35.3	0.3	13.4	1.9	1.9	0.004	0	0
GW000020	1/8/2020 16:39	39.4	31.7	0.2	28.7	2.1	2.1	0.016	0.02	0
GW000022	1/8/2020 16:55	54	34.5	0.4	11.1	2.3	2.3	0.014	0.024	0
GW000019	1/8/2020 17:05	52.5	35.9	0.3	11.3	2.6	2.6	-0.066	-0.134	22
GW000024	1/8/2020 17:11	50.7	34.6	0.3	14.4	2.6	2.6	0.004	0.006	29
GW000023	1/8/2020 17:18	59.7	38.3	1.8	0.2	2.7	2.7	0.001	0.003	0
GW000027	1/9/2020 12:02	30	30.3	0.4	39.3	3.5	3.5	-0.03	-0.023	30
GW000026	1/9/2020 12:08	28.7	31.8	0.3	39.2	3.1	3.1	-0.008	-0.005	32
GW000029	1/9/2020 12:13	23.1	29.9	0.3	46.7	2.8	2.8	-0.002	0.002	40
GW000030	1/9/2020 12:16	24	29.4	0.3	46.3	2.6	2.6	-0.002	-0.001	26
GW000031	1/9/2020 12:20	32.7	30	0.3	37	3.2	3.2	0.006	0.01	23
GW000028	1/9/2020 12:28	47.4	33	0.3	19.3	3.8	3.8	-0.003	-0.001	35
GW000032	1/9/2020 12:32	39.4	26.3	0.2	34.1	3.5	3.5	-3.401	-3.549	34
GW000025	1/9/2020 12:38	58.5	41.1	0.2	0.2	4	4	0.004	0.001	32
TW000001	1/9/2020 12:56	58.6	41	0.3	0.1	2.2	2.2	-2.275	-2.351	35
TW000002	1/9/2020 13:01	58.6	40.9	0.3	0.2	2.2	2.2	-2.263	-2.276	33
TW000003	1/9/2020 13:06	58.6	41	0.3	0.1	2.3	2.3	-2.016	-2.054	34
TW000004	1/9/2020 13:14	>>>>	45.2	0.1	N/A	1.6	1.6	0.004	0.001	38
TW000005	1/9/2020 13:20	>>>>	45.2	0.1	N/A	1.7	1.7	-0.201	-0.186	39

Device ID	Date/Time	Adj. Gas Temp.	Init. Flow	Baro. Press.	Sys. Press.	CO	H2S	H2
GEM™2NAV; Version 3_13L,02/07/		DegF	SCFM	inches Hg	inches H2O	ppm	ppm	ppm
GW000001	1/8/2020 13:06	0	<<>>	28.93	N/A	0	59	0
GW000002	1/8/2020 13:16	N/A	<<>>	28.93	N/A	0	77	0
GW000003	1/8/2020 13:24	0	<<>>	28.92	N/A	0	33	0
GW000004	1/8/2020 13:30	29	76	28.9	N/A	0	13	0
GW000005	1/8/2020 13:35	25	<<>>	28.9	N/A	0	24	0
GW000006	1/8/2020 13:40	29	<<>>	28.89	N/A	0	58	0
GW000007	1/8/2020 13:46	23	<<>>	28.88	N/A	0	17	0
GW000008	1/8/2020 13:51	N/A	<<>>	28.88	N/A	0	60	0
GW000009	1/8/2020 14:02	35	<<>>	28.89	N/A	0	58	0
GW000010	1/8/2020 14:06	N/A	<<>>	28.89	N/A	0	18	0
GW000011	1/8/2020 14:14	26	<<>>	28.88	N/A	0	58	0
GW000012	1/8/2020 14:21	N/A	<<>>	28.87	N/A	0	14	0
GW000013	1/8/2020 14:26	31	4	28.85	N/A	0	32	0
GW000014	1/8/2020 14:31	N/A	<<>>	28.86	N/A	0	41	0
GW000015	1/8/2020 16:02	0	<<>>	28.85	N/A	0	65	0
GW000016	1/8/2020 16:07	N/A	<<>>	28.86	N/A	0	3	0
GW000018	1/8/2020 16:17	0	<<>>	28.8	N/A	0	12	0
GW000017	1/8/2020 16:22	0	<<>>	28.8	N/A	0	0	0
GW000021	1/8/2020 16:35	0	4	28.77	N/A	0	8	0
GW000020	1/8/2020 16:39	0	8	28.78	N/A	0	1	0
GW000022	1/8/2020 16:55	0	8	28.77	N/A	0	7	0
GW000019	1/8/2020 17:05	N/A	<<>>	28.77	N/A	0	18	0
GW000024	1/8/2020 17:11	24	4	28.74	N/A	0	38	0
GW000023	1/8/2020 17:18	0	2	28.74	N/A	0	3	0
GW000027	1/9/2020 12:02	29	<<>>	28.45	N/A	0	39	0
GW000026	1/9/2020 12:08	31	<<>>	28.44	N/A	0	14	0
GW000029	1/9/2020 12:13	37	<<>>	28.44	N/A	0	13	0
GW000030	1/9/2020 12:16	27	<<>>	28.44	N/A	0	10	0
GW000031	1/9/2020 12:20	23	5	28.44	N/A	0	6	0
GW000028	1/9/2020 12:28	34	<<>>	28.42	N/A	0	21	0
GW000032	1/9/2020 12:32	36	<<>>	28.42	N/A	0	4	0
GW000025	1/9/2020 12:38	32	4	28.42	N/A	0	14	0
TW000001	1/9/2020 12:56	35	<<>>	28.4	N/A	0	14	0
TW000002	1/9/2020 13:01	36	<<>>	28.41	N/A	0	13	0
TW000003	1/9/2020 13:06	34	<<>>	28.41	N/A	0	12	0
TW000004	1/9/2020 13:14	38	<<>>	28.41	N/A	0	32766	0
TW000005	1/9/2020 13:20	38	<<>>	28.41	N/A	0	32766	0

Device ID	Date/Time	CH4	CO2	O2	Balance	Init. Static Press.	Adj. Static Press.	Init. Diff. Press.	Adj. Diff. Press.	Init. Gas Temp.
GEM™2NAV; Version 3_13L,02/07/13; LSGAM:6_0		%	%	%	%	inches H2O	inches H2O	inches H2O	inches H2O	DegF
	2/11/2020 9:58	37.6	26.4	0.2	35.8	0	0	-0.051	-0.029	43
	2/11/2020 9:59	37.6	26.4	0.2	35.8	0	0	-0.051	-0.042	43
TW000005	2/11/2020 15:06	59.6	40	0.2	0.2	-1.4	-1.6	-0.075	-0.067	40
TW000004	2/11/2020 15:11	53.4	37.1	0.2	9.3	-7.1	-7.2	0.131	0.069	56
TW000003	2/11/2020 15:14	57.2	35.6	0.2	7	-7	-7.1	0.049	0.092	55
TW000002	2/11/2020 15:18	62.2	37.5	0.2	0.1	-7.1	-7.2	0.057	0.103	54
TW000001	2/11/2020 15:24	61.2	35.3	0.2	3.3	-0.4	-0.5	0.042	0.071	58
GW000001	2/11/2020	37.7	26.4	0.2	35.7					
GW000002	2/11/2020	2.9	2.7	19.1	75.3					
GW000003	2/11/2020	7.1	11.1	12.5	69.3					
GW000004	2/11/2020	8.6	8.3	14.9	68.2					
GW000005	2/11/2020	26	21.9	7.3	44.9					
GW000006	2/11/2020	55.4	35.6	0.2	8.8					
GW000007	2/11/2020	40.3	30.1	0.2	29.4					
GW000008	2/11/2020	27.3	27.1	0.2	45.4					
GW000009	2/11/2020	40.7	31.7	0.2	27.4					
GW000010	2/11/2020	12.5	11.4	14.7	61.4					
GW000011	2/11/2020	54	33	0.3	12.7					
GW000012	2/11/2020	54	35.1	0.2	10.7					
GW000013	2/11/2020	50.3	37.8	0.2	11.7					
GW000014	2/11/2020	56.8	36.4	0.1	6.7					
GW000015	2/11/2020	51.5	37.1	0.1	11.3					
GW000016	2/11/2020	3.8	22.8	0.4	73					
GW000017	2/11/2020	37.2	26.8	2.6	33.4					
GW000018	2/11/2020	56.9	34.5	0	8.6					
GW000021	2/11/2020	42.4	30.9	0.3	26.4					
GW000022	2/11/2020	46.2	32.1	0.1	21.6					
GW000020	2/11/2020	46.2	29.8	2.6	21.4					
GW000019	2/11/2020	29.4	25.3	3.6	41.7					
GW000023	2/11/2020	40.7	30.7	0.3	28.3					
GW000024	2/11/2020	35.6	28.6	0.2	35.6					
GW000026	2/11/2020	26	27.8	0.2	46					
GW000029	2/11/2020	14.3	18.9	4.4	62.4					
GW000030	2/11/2020	16.9	24.8	0.2	58.1					
GW000031	2/11/2020	24.8	26.6	0.1	48.5					
GW000027	2/11/2020	5.1	5.2	17.1	72.6					
GW000028	2/11/2020	46	30.5	0.1	23.4					
GW000032	2/11/2020	33.6	24.7	0.1	41.6					
GW000025	2/11/2020	57	36.4	0	6.6					

Adj. Gas Temp.	Init. Flow	Adj. Flow	Init. Power	Adj. Power	Baro. Press.	Sys. Press.	CO	H2S	H2	HCN	FLD-Tech
DegF	SCFM	SCFM	e3BTU/h	e3BTU/h	inches Hg	inches H2O	ppm	ppm	ppm		
43	0	0	0	0	28.78	0.05	5	11	11	N/A	Brett
27	0	0	0	0	28.78	0.06	5	11	11	N/A	Brett
40	<<>>	<<>>	<<>>	<<>>	28.67	N/A	6	426	N/A	N/A	Brett
56	24	17	787	568	28.67	N/A	5	24	N/A	N/A	Brett
55	14	20	515	711	28.66	N/A	2	23	0	N/A	Brett
54	16	21	612	826	28.65	N/A	2	21	0	N/A	Brett
59	14	18	523	678	28.64	N/A	2	42	0	N/A	Brett

Device ID	Date/Time	CH4	CO2	O2	Balance	Init. Static Press.	Adj. Static Press.	Init. Diff. Press.	Adj. Diff. Press.	Init. Gas Temp.
GEM™2NAV; Version 3_13L,02/07/		%	%	%	%	inches H2O	inches H2O	inches H2O	inches H2O	DegF
GW000001	3/12/2020 12:07	43.9	27.4	0.2	28.5	>>>>	-3.5	-3.5	0.047	0.041
GW000002	3/12/2020 12:13	29.9	19.5	7.1	43.5	>>>>	-2.2	-2.2	-0.074	-0.072
GW000003	3/12/2020 12:24	21.3	15.7	8.3	54.7	>>>>	-2.2	-2.2	0.001	0
GW000004	3/12/2020 12:32	15.6	9.9	14.5	60	>>>>	-2.8	-2.8	-0.003	0
GW000005	3/12/2020 12:38	25.2	19	9.1	46.7	>>>>	-2.8	-2.8	-0.005	0
GW000006	3/12/2020 12:47	58.3	35.4	0.2	6.1	>>>>	-4.2	-4.2	0.039	0.057
GW000007	3/12/2020 12:52	47	31.3	0.2	21.5	>>>>	-5.6	-5.7	0.036	0.034
GW000008	3/12/2020 12:56	51.2	30.2	0.2	18.4	>>>>	-4.8	-4.8	0.038	0.013
GW000009	3/12/2020 13:02	52.1	32.6	0.1	15.2	>>>>	-4.1	-4.1	0.03	0.035
GW000010	3/12/2020 13:06	27.1	21	9.4	42.5	>>>>	-2.1	-2.1	0.002	-0.011
GW000011	3/12/2020 13:11	55.7	32.6	0.1	11.6	>>>>	-3.1	-3	0.009	0.004
GW000012	3/12/2020 13:43	52.9	34.6	0.2	12.3	>>>>	-1.8	-1.8	0.019	0.038
GW000013	3/12/2020 13:48	29.9	21.6	9.2	39.3	>>>>	-1.2	-1.2	-0.003	0.005
GW000014	3/12/2020 13:55	50.1	30.8	3.6	15.5	>>>>	-1.2	-1.2	0.004	0.004
GW000015	3/12/2020 14:06	39.7	29.1	4.5	26.7	>>>>	-0.9	-0.9	-0.022	-0.023
GW000016	3/12/2020 14:13	30.3	24.3	6.1	39.3	>>>>	-1	-1.1	-0.009	-0.014
GW000017	3/12/2020 14:20	37.3	23.7	5.5	33.5	>>>>	-1	-1	-0.002	0.004
GW000018	3/12/2020 14:28	57.6	33.8	0.1	8.5	>>>>	-1.7	-1.7	0.01	-0.011
GW000021	3/12/2020 14:37	37.6	24.2	5.4	32.8	>>>>	-0.9	-0.9	0.001	0.005
GW000022	3/12/2020 14:43	40.4	25.9	3.8	29.9	>>>>	-0.9	-0.9	-0.001	-0.002
GW000020	3/12/2020 14:48	35.6	22.3	7.5	34.6	>>>>	-1.1	-1.1	0.006	0.007
GW000019	3/12/2020 14:53	24.4	16.7	10.7	48.2	>>>>	-1.2	-1.2	0.508	0.542
GW000023	3/12/2020 14:58	46.7	31	0.1	22.2	>>>>	-1.2	-1.2	0.029	0.019
GW000024	3/12/2020 15:05	31.8	21.6	7.2	39.4	>>>>	-1.1	-1.1	0.006	0.004
GW000026	3/12/2020 15:10	22.9	20.7	6.5	49.9	>>>>	-0.9	-0.9	-0.002	-0.002
GW000030	3/12/2020 15:14	1.6	1.6	20.2	76.6	32	-0.7	-0.7	0	0
GW000031	3/12/2020 15:23	23.9	20.6	5.2	50.3	>>>>	-0.8	-0.8	0.004	0.003
GW000027	3/12/2020 15:30	3.9	4	17.9	74.2	78	-1	-1	0.022	0.023
GW000028	3/12/2020 15:37	29.4	19	7.8	43.8	>>>>	-1.3	-1.3	-0.002	-0.002
GW000032	3/12/2020 15:43	35.4	21.8	3.9	38.9	>>>>	-1.1	-1.1	1.142	1.138
GW000025	3/12/2020 15:48	59.6	37.2	0.1	3.1	>>>>	-3.4	-3.4	0.06	0.064
TW000005	3/13/2020 14:07	62.6	37.1	0.2	0.1	>>>>	-1.9	-2	0.076	0.082
TW000004	3/13/2020 14:12	59.2	40.5	0.1	0.2	>>>>	-2.9	-3.1	0.1	0.048
TW000003	3/13/2020 14:15	61.4	38.2	0.1	0.3	>>>>	-8.7	-8.8	0.085	-0.022
TW000002	3/13/2020 14:18	62.3	36.3	0.1	1.3	>>>>	-8.7	-8.7	0.077	0.122
TW000001	3/13/2020 14:21	62.5	37.2	0.1	0.2	>>>>	-8.8	-8.8	0.052	0.062

Device ID	Adj. Gas Temp.	Init. Flow	Adj. Flow	Init. Power	Adj. Power	Baro. Press.	Sys. Press.	HCN	FLD-Tech
GEM™2NAV; Ver	DegF	SCFM	SCFM	e3BTU/h	e3BTU/h	inches Hg	inches H2O		
GW000001	48	48	14	13	389	364	28.54	5	Brett
GW000002	47	47	<<>>	<<>>	<<>>	<<>>	28.54	1	Brett
GW000003	45	45	2	0	27	11	28.54	0	Brett
GW000004	45	45	<<>>	0	<<>>	5	28.54	0	Brett
GW000005	48	48	<<>>	<<>>	<<>>	<<>>	28.54	0	Brett
GW000006	46	46	13	16	478	578	28.53	6	Brett
GW000007	48	49	12	12	363	351	28.52	9	Brett
GW000008	55	55	13	7	409	241	28.53	6	Brett
GW000009	48	48	11	12	373	402	28.54	5	Brett
GW000010	45	45	2	<<>>	46	<<>>	28.54	5	Brett
GW000011	44	43	6	4	220	153	28.53	4	Brett
GW000012	55	55	9	13	298	422	28.54	8	Brett
GW000013	48	48	<<>>	4	<<>>	88	28.54	2	Brett
GW000014	51	51	4	4	135	138	28.54	2	Brett
GW000015	53	53	<<>>	<<>>	<<>>	<<>>	28.53	3	Brett
GW000016	50	50	<<>>	<<>>	<<>>	<<>>	28.54	2	Brett
GW000017	53	54	<<>>	4	<<>>	95	28.54	1	Brett
GW000018	53	54	6	<<>>	233	<<>>	28.55	4	Brett
GW000021	47	48	2	4	61	107	28.54	4	Brett
GW000022	48	48	<<>>	<<>>	<<>>	<<>>	28.55	9	Brett
GW000020	47	47	5	5	110	119	28.54	9	Brett
GW000019	46	45	48	50	719	744	28.54	9	Brett
GW000023	48	49	11	9	323	264	28.53	11	Brett
GW000024	42	42	5	4	104	81	28.54	17	Brett
GW000026	41	42	<<>>	<<>>	<<>>	<<>>	28.54	5	Brett
GW000030	43	43	1	<<>>	1	<<>>	28.56	0	Brett
GW000031	46	46	4	3	59	56	28.54	7	Brett
GW000027	52	51	9	9	23	23	28.55	0	Brett
GW000028	46	45	<<>>	<<>>	<<>>	<<>>	28.54	24	Brett
GW000032	44	44	74	74	1605	1603	28.56	11	Brett
GW000025	47	47	16	17	608	623	28.56	7	Brett
TW000005	56	56	18	19	719	746	29.11	1	Brett
TW000004	33	34	21	14	786	537	29.11	3	Brett
TW000003	56	56	19	<<>>	736	<<>>	29.1	2	Brett
TW000002	55	55	18	23	713	905	29.1	0	Brett
TW000001	50	51	15	16	585	644	29.09	0	Brett

Device ID	Date/Time	CH4	CO2	O2	Balance	Init. Static Press.	Adj. Static Press.	Init. Diff. Press.	Adj. Diff. Press.	Init. Gas Temp.	Adj. Gas Temp.
GEM™2NAV; Version 3_13L,02/07/		%	%	%	%	inches H2O	inches H2O	inches H2O	inches H2O	DegF	DegF
GW000001	4/9/2020 12:04	59.4	35.8	0.3	4.5	-0.8	-0.8	0.01	0.013	37	37
GW000002	4/9/2020 12:11	28.6	17.7	8	45.7	-0.8	-0.8	-0.045	-0.049	41	40
GW000003	4/9/2020 12:17	26.8	17.6	5.6	50	-0.8	-0.8	-0.004	-0.003	37	37
GW000004	4/9/2020 12:26	36.2	22.3	4.1	37.4	-1	-1	0.004	0.002	37	37
GW000005	4/9/2020 12:33	23.7	16.9	10.2	49.2	-1.1	-1.1	0.004	0.006	39	38
GW000006	4/9/2020 12:38	58.7	35.9	0.2	5.2	-1	-1	0.003	0.005	45	43
GW000007	4/9/2020 12:42	58.7	35.8	0.2	5.3	-1	-1	0.003	0.003	44	42
GW000008	4/9/2020 12:46	58.4	35.4	0.2	6	-1	-1	0.004	0.007	40	39
GW000011	4/22/2020 15:34	57.6	31.2	0.3	10.9	1.2	1.2	-0.002	-0.003	73	73
GW000012	4/22/2020 15:38	41.3	29.5	0.3	28.9	1.7	1.7	-0.006	-0.005	60	59
GW000013	4/22/2020 15:42	53.8	34.7	0.3	11.2	0.9	0.9	-0.006	-0.003	72	73
GW000014	4/22/2020 15:46	63.1	32.7	0.3	3.9	0.9	0.9	-0.035	-0.038	75	75
GW000015	4/22/2020 15:50	48.4	34.4	0.3	16.9	0.8	0.8	-0.008	-0.006	76	77
GW000016	4/22/2020 15:54	44	33	0.3	22.7	0.9	0.9	-0.004	-0.006	75	76
GW000017	4/22/2020 15:58	50.4	29.2	0.2	20.2	1.9	1.9	-0.006	-0.011	74	74
GW000018	4/22/2020 16:02	44.7	29.2	0.3	25.8	1.7	1.7	-0.041	-0.039	61	60
GW000019	4/22/2020 16:06	53	31.9	0.2	14.9	1.8	1.8	-1.806	-1.814	74	75
GW000020	4/22/2020 16:09	56.8	31.9	0.2	11.1	1.8	1.8	-0.003	-0.002	74	73
GW000021	4/22/2020 16:13	53.4	30.7	0.2	15.7	1.8	1.8	-0.003	-0.003	71	72
GW000022	4/22/2020 16:17	56.9	15.8	0.6	26.7	1.6	1.7	-0.009	-0.01	73	74
GW000024	4/28/2020 8:47	56.1	33.3	0.2	10.4	1	1	0	-0.003	55	54
GW000025	4/28/2020 9:31	61.6	36.9	0.2	1.3	0.7	0.7	-0.008	-0.004	53	51
GW000023	4/28/2020 9:37	49.5	31.7	0.1	18.7	0.9	0.9	-0.011	-0.002	53	52
GW000026	4/28/2020 9:43	41.6	29.6	0.1	28.7	0.7	0.8	0.003	0.001	61	60
GW000027	4/28/2020 9:48	33.9	28.1	0.2	37.8	0.9	0.9	0	-0.002	62	61
GW000028	4/28/2020 9:54	52.7	31	0.1	16.2	1	1	0.001	-0.001	63	62
GW000029	4/28/2020 9:59	40.1	29.2	0.1	30.6	0.7	0.7	-0.011	-0.011	61	61
GW000030	4/28/2020 10:44	31.1	27.3	0.2	41.4	0.6	0.6	-0.007	-0.01	66	66
GW000031	4/28/2020 10:49	34.6	26.6	0.1	38.7	0.8	0.8	-0.003	-0.003	67	66
GW000032	4/28/2020 10:55	54.7	15.6	0.1	29.6	0.9	0.9	-0.98	-0.981	66	67
TW000001	4/28/2020 11:02	64.6	35.1	0.1	0.2	0.7	0.7	-0.006	-0.007	65	64
TW000002	4/28/2020 11:05	62.1	35.6	0.1	2.2	0.7	0.7	-0.006	-0.011	64	64
TW000003	4/28/2020 11:09	61.3	38.4	0.1	0.2	0.7	0.7	-0.002	0	64	64
TW000004	4/28/2020 11:13	60.1	39.6	0.1	0.2	1.4	1.4	-0.003	0.002	64	66

Device ID	Init. Flow	Adj. Flow	Init. Power	Adj. Power	Baro. Press.	CO	H2S	H2	FLD-Tech
GEM™2NAV; Ver	SCFM	SCFM	e3BTU/h	e3BTU/h	inches Hg	ppm	ppm	ppm	
GW000001	6	7	246	281	28.83	0	24	0	Brett
GW000002	<<>>	<<>>	<<>>	<<>>	28.84	0	31	0	Brett
GW000003	<<>>	<<>>	<<>>	<<>>	28.84	0	9	0	Brett
GW000004	4	2	92	63	28.84	0	11	0	Brett
GW000005	4	5	64	72	28.84	0	4	0	Brett
GW000006	4	4	145	169	28.84	2	20	0	Brett
GW000007	4	3	145	133	28.84	3	20	0	Brett
GW000008	4	5	150	206	28.84	5	16	N/A	Brett
GW000011	<<>>	<<>>	<<>>	<<>>	28.55	10	0	107	Brett
GW000012	<<>>	<<>>	<<>>	<<>>	28.54	10	0	93	Brett
GW000013	<<>>	<<>>	<<>>	<<>>	28.53	8	7	67	Brett
GW000014	<<>>	<<>>	<<>>	<<>>	28.54	7	13	49	Brett
GW000015	<<>>	<<>>	<<>>	<<>>	28.55	9	18	36	Brett
GW000016	<<>>	<<>>	<<>>	<<>>	28.54	8	1	30	Brett
GW000017	<<>>	<<>>	<<>>	<<>>	28.53	7	1	20	Brett
GW000018	<<>>	<<>>	<<>>	<<>>	28.54	7	0	8	Brett
GW000019	<<>>	<<>>	<<>>	<<>>	28.53	18	8	6	Brett
GW000020	<<>>	<<>>	<<>>	<<>>	28.52	15	8	5	Brett
GW000021	<<>>	<<>>	<<>>	<<>>	28.52	9	9	7	Brett
GW000022	<<>>	<<>>	<<>>	<<>>	28.53	11	0	-2	Brett
GW000024	0	<<>>	20	<<>>	28.62	15	16	-3	Brett
GW000025	<<>>	<<>>	<<>>	<<>>	28.62	3	5	0	Brett
GW000023	<<>>	<<>>	<<>>	<<>>	28.62	13	12	-2	Brett
GW000026	3	2	100	69	28.62	14	5	-3	Brett
GW000027	<<>>	<<>>	<<>>	<<>>	28.63	20	16	-4	Brett
GW000028	2	<<>>	86	<<>>	28.62	22	8	-5	Brett
GW000029	<<>>	<<>>	<<>>	<<>>	28.62	53	2	190	Brett
GW000030	<<>>	<<>>	<<>>	<<>>	28.64	7	3	N/A	Brett
GW000031	<<>>	<<>>	<<>>	<<>>	28.64	8	12	N/A	Brett
GW000032	<<>>	<<>>	<<>>	<<>>	28.64	8	0	N/A	Brett
TW000001	<<>>	<<>>	<<>>	<<>>	28.63	1	26	0	Brett
TW000002	<<>>	<<>>	<<>>	<<>>	28.62	1	29	0	Brett
TW000003	<<>>	0	<<>>	25	28.62	3	27	0	Brett
TW000004	<<>>	3	<<>>	113	28.61	3	32766	0	Brett

Device ID	Date/Time	CH4	CO2	O2	Balance	Init. Static Press.	Adj. Static Press.	Init. Diff. Press.	Adj. Diff. Press.	Init. Gas Temp.	Adj. Gas Temp.
GEM™2NAV; Version 3_13L,02/07/		%	%	%	%	inches H2O	inches H2O	inches H2O	inches H2O	DegF	DegF
GW000001	5/27/2020 10:50	53.6	29.9	0.3	16.2	0.1	0.1	0.007	0.008	78	80
GW000002	5/27/2020 10:53	52.5	27.5	0.3	19.7	0.1	0.1	0.009	0.003	81	83
GW000003	5/27/2020 10:59	42.9	23.3	0.2	33.6	0.1	0.1	0.007	0.005	89	88
GW000004	5/27/2020 11:11	45.5	25.8	0.2	28.5	0.1	0.1	0	0	79	81
GW000005	5/27/2020 11:15	61.1	27.4	0.2	11.3	0.1	0.1	-0.001	-0.001	82	82
GW000006	5/27/2020 11:24	60.4	33.1	0.2	6.3	0.2	0.2	0.001	0.001	86	87
GW000007	5/27/2020 11:29	56.7	33.6	0.1	9.6	0.1	0.1	-0.018	-0.019	32	85
GW000008	5/27/2020 11:57	59.8	33.5	0.2	6.5	0.2	0.2	-0.004	-0.001	85	86
GW000009	5/27/2020 12:01	54.8	33.5	0.2	11.5	0.2	0.2	0.001	0.002	87	87
GW000010	5/27/2020 12:04	56	33.8	0.2	10	0	0	-0.023	0	84	84
GW000011	5/27/2020 12:08	56.6	34.2	0.2	9	0.3	0.3	0.003	0.002	80	82
GW000012	5/27/2020 13:40	54.8	34.7	0.2	10.3	0.4	0.4	-0.005	-0.003	85	85
GW000013	5/27/2020 13:43	53.8	34.7	0.2	11.3	0.3	0.3	0.007	0	91	91
GW000014	5/27/2020 13:47	61.9	33.5	0.2	4.4	0.3	0.3	-0.002	0.003	92	92
GW000015	5/27/2020 13:50	47	36	0.2	16.8	0.3	0.3	0	0.001	91	91
GW000016	5/27/2020 13:53	46.4	36.6	0.2	16.8	0.3	0.3	0	0.002	90	90
GW000017	5/27/2020 13:58	57.2	30.6	0.2	12	0.4	0.4	-0.002	-0.006	90	91
GW000018	5/27/2020 14:04	58.5	33.2	0.2	8.1	0.4	0.4	0.001	0.001	83	83
GW000019	5/27/2020 14:09	54.6	32.1	0.4	12.9	0.4	0.4	-0.463	-0.481	88	88
GW000020	5/27/2020 14:14	57.4	31.7	0.2	10.7	0.4	0.4	0.001	0	89	89
GW000021	5/27/2020 14:58	53.9	30.6	0.2	15.3	0.5	0.5	0	0	87	88
GW000022	5/27/2020 15:04	51	27.9	0.1	21	0.4	0.4	0.01	0.01	88	89
GW000023	5/27/2020 15:09	52.6	31.5	0.1	15.8	0.4	0.4	-0.002	0.001	88	89
GW000023	5/27/2020 15:09	52.6	31.5	0.1	15.8	0.4	0.4	-0.002	0.004	88	89
GW000024	5/27/2020 15:14	55.1	32	0.1	12.8	0.5	0.5	-0.003	0	89	90
GW000026	5/27/2020 15:17	45.5	23.7	0.2	30.6	0.4	0.4	-0.012	0.001	90	91
GW000027	5/27/2020 15:21	37	27.6	0.1	35.3	0.4	0.4	-0.045	-0.041	89	90
GW000027	5/27/2020 15:21	37	27.6	0.1	35.3	0.4	0	-0.045	0.009	89	90
GW000029	5/27/2020 15:26	45.8	29.1	0.1	25	0.3	0.3	-0.008	-0.006	87	88
GW000030	5/27/2020 15:29	33	26.5	0.1	40.4	0.3	0.3	0.004	-0.006	85	86
GW000031	5/27/2020 15:33	35.1	25.3	0.4	39.2	0.4	0.4	-0.013	-0.016	86	87
GW000028	5/27/2020 15:38	52.7	29.4	0.3	17.6	0.5	0.5	-0.026	-0.024	87	88
GW000032	5/27/2020 15:42	55	14.5	0.4	30.1	0.5	0.5	-0.555	-0.555	88	89
GW000025	5/29/2020 14:12	62.7	36.9	0.2	0.2	0	0	-0.006	-0.006	69	70
TW000001	5/29/2020 14:18	64.6	35.1	0.1	0.2	0	0	0.008	0.007	68	69
TW000002	5/29/2020 14:21	63.5	36.2	0.1	0.2	0	0	0	0.001	68	69
TW000003	5/29/2020 14:28	61.1	38.6	0.1	0.2	0	0	0	-0.002	68	68
TW000004	5/29/2020 14:32	60.9	38.5	0.1	0.5	0.9	0.9	-0.003	-0.009	68	69
TW000005	5/29/2020 14:37	60.8	38.3	0.1	0.8	1	1	0.007	0.011	66	67

Device ID	Init. Flow	Adj. Flow	Init. Power	Adj. Power	Baro. Press.	CO	H2S	H2	FLD-Tech
GEM™2NAV; Vers	SCFM	SCFM	e3BTU/h	e3BTU/h	inches Hg	ppm	ppm	ppm	
GW000001	5	6	181	198	28.69	1	8	0	Brett
GW000002	6	3	207	122	28.7	0	39	0	Brett
GW000003	5	4	141	126	28.7	1	6	0	Brett
GW000004	1	<<>>	52	<<>>	28.7	0	9	0	Brett
GW000005	<<>>	<<>>	<<>>	<<>>	28.7	3	15	0	Brett
GW000006	2	2	94	78	28.7	0	1	0	Brett
GW000007	<<>>	<<>>	<<>>	<<>>	28.71	0	11	6	Brett
GW000008	<<>>	<<>>	<<>>	<<>>	28.71	5	27	N/A	Brett
GW000009	2	3	84	101	28.72	5	12	N/A	Brett
GW000010	<<>>	1	<<>>	55	28.72	6	6	3	Brett
GW000011	3	3	132	111	28.71	7	7	0	Brett
GW000012	<<>>	<<>>	<<>>	<<>>	28.69	8	9	N/A	Brett
GW000013	5	1	177	60	28.7	4	11	N/A	Brett
GW000014	<<>>	4	<<>>	150	28.7	4	10	0	Brett
GW000015	<<>>	2	<<>>	58	28.72	6	20	N/A	Brett
GW000016	1	2	35	80	28.72	8	8	N/A	Brett
GW000017	<<>>	<<>>	<<>>	<<>>	28.71	6	5	21	Brett
GW000018	2	2	87	80	28.72	7	5	17	Brett
GW000019	<<>>	<<>>	<<>>	<<>>	28.71	16	6	6	Brett
GW000020	2	0	95	23	28.71	14	12	15	Brett
GW000021	<<>>	1	<<>>	37	28.7	8	9	N/A	Brett
GW000022	6	6	201	203	28.71	11	1	-2	Brett
GW000023	<<>>	2	<<>>	83	28.71	18	19	13	Brett
GW000023	<<>>	4	<<>>	133	28.71	18	19	13	Brett
GW000024	<<>>	1	<<>>	59	28.71	0	11	0	Brett
GW000026	<<>>	2	<<>>	61	28.71	17	0	0	Brett
GW000027	<<>>	<<>>	<<>>	<<>>	28.7	19	18	35	Brett
GW000027	<<>>	6	<<>>	135	28.7	19	18	35	Brett
GW000029	<<>>	<<>>	<<>>	<<>>	28.72	12	6	31	Brett
GW000030	3	<<>>	79	<<>>	28.72	12	4	6	Brett
GW000031	<<>>	<<>>	<<>>	<<>>	28.72	11	7	3	Brett
GW000028	<<>>	<<>>	<<>>	<<>>	28.71	20	5	-3	Brett
GW000032	<<>>	<<>>	<<>>	<<>>	28.7	12	0	-2	Brett
GW000025	<<>>	<<>>	<<>>	<<>>	28.98	0	4	0	Brett
TW000001	6	5	243	227	28.98	0	6	0	Brett
TW000002	0	2	23	92	28.98	0	4	0	Brett
TW000003	<<>>	<<>>	<<>>	<<>>	28.99	1	5	0	Brett
TW000004	<<>>	<<>>	<<>>	<<>>	28.99	1	5	0	Brett
TW000005	5	6	209	258	28.99	3	3	0	Brett

Device ID	Date/Time	CH4	CO2	O2	Balance	Init. Static Press.	Adj. Static Press.	Init. Diff. Press.	Adj. Diff. Press.	Init. Gas Temp.	Adj. Gas Temp.
GEM™2NAV; Version 3_13L,02/07/		%	%	%	%	inches H2O	inches H2O	inches H2O	inches H2O	DegF	DegF
GW000001	6/29/2020 13:51	56.1	29.4	0.2	14.3	-0.1	-0.1	0.004	0.004	80	81
GW000002	6/29/2020 13:54	42	21	4.3	32.7	-0.1	-0.1	0.001	0	83	84
GW000003	6/29/2020 13:59	41.8	21.8	3.6	32.8	0	0	0.005	0.003	82	83
GW000004	6/29/2020 14:03	40.8	22.5	3.8	32.9	-0.1	-0.1	0	0	81	82
GW000005	6/29/2020 14:07	53.4	24.8	3.3	18.5	-0.1	-0.1	0.004	0.004	82	83
GW000006	6/29/2020 14:11	59.3	34.2	0.3	6.2	0	0	-0.001	0	80	81
GW000007	6/29/2020 14:15	58.3	32.9	0.4	8.4	0	0	0	0	80	82
GW000008	6/29/2020 14:19	61.2	35.3	0.2	3.3	0	0	0.005	0.006	82	83
GW000009	6/29/2020 14:24	56.5	34.8	0.1	8.6	0	0	0	0.002	83	84
GW000010	6/29/2020 14:27	1.2	1	19.7	78.1	0	0	-0.007	-0.02	83	84
GW000011	6/29/2020 14:32	50.9	34.5	2.1	12.5	0	0	0.003	0.008	84	85
GW000011	6/29/2020 14:33	50.9	34.5	2.1	12.5	0	0	0.003	0.002	84	85
GW000012	6/29/2020 14:37	35.6	21.8	7.5	35.1	-0.1	-0.1	0	-0.001	83	84
GW000013	6/29/2020 14:41	38.6	25.7	5.6	30.1	0	0	0.002	0.005	88	89
GW000014	6/29/2020 14:46	47.3	28.2	4.1	20.4	0	0	0.002	0.002	87	89
GW000015	6/29/2020 14:51	41	33.2	2.4	23.4	0	0	0.004	0.004	91	92
GW000016	6/29/2020 14:56	41.3	33.8	2.4	22.5	0	0	-0.002	-0.001	93	94
GW000017	6/29/2020 15:05	9.8	4.6	18.3	67.3	-0.1	-0.1	0.004	0.009	90	90
GW000018	6/29/2020 15:09	25.8	15.5	10.9	47.8	0	0	0.003	0.005	90	91
GW000019	6/29/2020 15:14	38.9	24	6.2	30.9	-0.1	-0.1	0.063	0.075	90	91
GW000020	6/29/2020 15:19	30.8	18	9.1	42.1	-0.1	-0.1	0.007	0.004	90	90
GW000021	6/29/2020 15:24	41.9	23.5	4.8	29.8	-0.1	-0.1	0.001	-0.002	88	89
GW000022	6/29/2020 15:29	24.9	14.6	10.4	50.1	-0.1	-0.1	0	0.002	91	92
GW000026	6/29/2020 15:36	22.8	12.4	11	53.8	0	0	-0.01	-0.005	90	91
GW000029	6/29/2020 16:04	26	15.7	9.7	48.6	0	0	-0.006	-0.003	89	91
GW000025	6/29/2020 16:12	52.7	33.7	2.3	11.3	0	0	0.003	-0.009	91	92
TW000001	6/29/2020 16:17	60.9	37.7	0.2	1.2	0.8	0.8	-0.006	-0.009	87	88
TW000002	6/29/2020 16:20	65.7	33	0.2	1.1	1	1	0.009	0.004	87	87
TW000003	6/30/2020 13:57	60.9	38.7	0.2	0.2	1.6	1.6	0.004	0.009	84	85
TW000004	6/30/2020 14:00	61.6	38.1	0.2	0.1	1.9	1.9	-0.014	-0.016	83	84
TW000005	6/30/2020 14:04	61.5	38.1	0.2	0.2	1.6	1.6	-0.012	-0.008	83	83

Device ID	Init. Flow	Adj. Flow	Init. Power	Adj. Power	Baro. Press.	CO	H2S	SO2	H2	FLD-Tech
GEM™2NAV; Ver:	SCFM	SCFM	e3BTU/h	e3BTU/h	inches Hg	ppm	ppm		ppm	
GW000001	4	4	144	144	28.53	6	9	N/A	0	Brett
GW000002	2	1	69	33	28.54	4	58	N/A	0	Brett
GW000003	4	3	118	89	28.54	0	6	N/A	0	Brett
GW000004	<<>>	<<>>	<<>>	<<>>	28.55	4	22	N/A	0	Brett
GW000005	4	4	143	135	28.54	121	19	N/A	112	Brett
GW000006	<<>>	1	<<>>	64	28.54	6	26	N/A	N/A	Brett
GW000007	1	0	47	0	28.53	6	19	N/A	6	Brett
GW000008	4	5	175	194	28.54	6	39	N/A	N/A	Brett
GW000009	0	3	22	110	28.55	5	19	N/A	N/A	Brett
GW000010	<<>>	<<>>	<<>>	<<>>	28.55	2	0	N/A	0	Brett
GW000011	3	5	115	178	28.53	5	17	N/A	N/A	Brett
GW000011	3	2	115	90	28.53	5	17	N/A	N/A	Brett
GW000012	1	<<>>	24	<<>>	28.54	5	0	N/A	3	Brett
GW000013	2	4	66	106	28.54	4	20	N/A	N/A	Brett
GW000014	3	3	89	89	28.55	4	10	N/A	N/A	Brett
GW000015	3	4	99	106	28.56	7	5	N/A	0	Brett
GW000016	<<>>	<<>>	<<>>	<<>>	28.56	7	22	N/A	10	Brett
GW000017	4	6	25	36	28.55	2	0	N/A	5	Brett
GW000018	3	4	60	70	28.56	5	0	N/A	12	Brett
GW000019	16	17	385	419	28.55	8	4	N/A	11	Brett
GW000020	5	3	100	74	28.55	7	9	N/A	12	Brett
GW000021	2	<<>>	64	<<>>	28.55	6	12	N/A	10	Brett
GW000022	1	3	21	49	28.56	7	1	N/A	8	Brett
GW000026	<<>>	<<>>	<<>>	<<>>	28.56	4	0	N/A	9	Brett
GW000029	<<>>	<<>>	<<>>	<<>>	28.57	5	0	N/A	3	Brett
GW000025	3	<<>>	110	<<>>	28.55	10	23	N/A	6	Brett
TW000001	<<>>	<<>>	<<>>	<<>>	28.55	6	29	N/A	6	Brett
TW000002	6	4	255	179	28.55	5	38	N/A	8	Brett
TW000003	4	6	162	234	28.56	1	36	N/A	0	Brett
TW000004	<<>>	<<>>	<<>>	<<>>	28.57	1	32766	N/A	0	Brett
TW000005	<<>>	<<>>	<<>>	<<>>	28.56	3	32766	N/A	0	Brett

Device ID	Date/Time	CH4	CO2	O2	Balance	Init. Static Press.	Adj. Static Press.	Init. Diff. Press.	Adj. Diff. Press.	Init. Gas Temp.	Adj. Gas Temp.
GEM™2NAV; Version 3_13L,02/07/		%	%	%	%	inches H2O	inches H2O	inches H2O	inches H2O	DegF	DegF
GW000001	7/23/2020 12:35	57.5	29.4	0.2	12.9	0.8	0.8	-0.015	-0.022	78	80
GW000002	7/23/2020 12:39	58.4	29.2	0.2	12.2	0.8	0.7	-0.006	-0.007	82	83
GW000003	7/23/2020 12:49	58.5	35.3	0.1	6.1	0.8	0.8	0.002	0.003	82	83
GW000004	7/23/2020 12:56	51.4	28.3	0.1	20.2	0.9	0.9	0.002	0.003	82	82
GW000005	7/23/2020 13:00	61.9	31.5	0.1	6.5	0.9	0.9	-0.009	-0.01	83	83
GW000006	7/23/2020 13:04	60.1	34.6	0.1	5.2	0.9	0.9	0	0.001	78	78
GW000007	7/23/2020 13:09	56.9	34.7	0.1	8.3	1	1	0.009	0.012	80	80
GW000008	7/23/2020 13:13	58.6	34.5	0.2	6.7	0.9	0.9	-0.003	0	81	82
GW000009	7/23/2020 13:20	56.3	34.7	0.1	8.9	1.1	1.1	0.01	0.01	82	83
GW000010	7/23/2020 13:28	58.2	35.8	0.2	5.8	1.3	1.4	0.003	-0.012	81	82
GW000011	7/23/2020 13:32	54.3	40	0.1	5.6	1.4	1.3	0.004	0.005	82	82
GW000012	7/28/2020 11:34	54.9	35.2	0.1	9.8	1.1	1.1	0.005	0.005	79	79
GW000013	7/28/2020 11:39	54.8	37	0.1	8.1	0.9	0.9	-0.003	-0.003	84	85
GW000014	7/28/2020 11:43	60.4	37.2	0.1	2.3	0.9	0.9	-0.006	-0.007	84	85
GW000015	7/28/2020 11:48	47.2	39.3	0.2	13.3	0.8	0.8	0.001	0	83	85
GW000016	7/28/2020 11:53	47.4	38.8	0.1	13.7	0.9	0.9	0.002	0.002	85	86
GW000017	7/28/2020 12:00	57.6	32.6	0.1	9.7	1.3	1.3	-0.011	-0.01	89	91
GW000018	7/28/2020 12:05	57.4	34.5	0.1	8	0.9	1.1	0.001	0.001	81	80
GW000019	7/28/2020 12:09	56.5	35.3	0.1	8.1	1.2	1.2	-1.242	-1.238	83	84
GW000020	7/28/2020 12:14	57.7	32.5	0.1	9.7	1.2	1.2	-0.003	-0.008	86	87
GW000021	7/28/2020 12:18	56.7	29.2	0.2	13.9	1.2	1.2	-0.002	0	87	89
GW000022	7/28/2020 12:22	53.8	28.3	0.1	17.8	1.1	1.1	0.001	0.001	86	86
GW000023	7/29/2020 10:52	58.5	34.5	0.2	6.8	0.1	0.1	-0.007	-0.021	82	83
GW000026	7/29/2020 10:58	54.3	22.4	0.2	23.1	0.1	0.1	0.003	0.003	85	86
GW000029	7/29/2020 11:02	50.9	30	0.2	18.9	0.1	0.1	0.007	0.004	87	88
GW000030	7/29/2020 11:12	60.6	36.4	0.1	2.9	0.2	0.2	0.005	0.002	85	87
TW000005	7/29/2020 11:23	62.6	35.3	0.1	2	0.3	0.3	0	-0.006	83	83
TW000004	7/29/2020 11:28	60.7	37.7	0.1	1.5	0.2	0.2	0.009	0.005	87	88
TW000003	7/29/2020 11:33	61.7	36.1	0.1	2.1	0.2	0.2	-0.001	0	85	85
TW000002	7/29/2020 11:38	63.1	35.2	0.1	1.6	0.2	0.2	0.009	0.007	87	88
TW000001	7/29/2020 11:45	63.1	35.4	0.2	1.3	0.2	0.2	0.004	0.005	87	88

Device ID	Init. Flow	Adj. Flow	Init. Power	Adj. Power	Baro. Press.	CO	H2S	H2	FLD-Tech
GEM™2NAV; Ver	SCFM	SCFM	e3BTU/h	e3BTU/h	inches Hg	ppm	ppm	ppm	
GW000001	<<>>	<<>>	<<>>	<<>>	28.88	2	9	7	Brett Rice
GW000002	<<>>	<<>>	<<>>	<<>>	28.88	2	115	0	Brett Rice
GW000003	2	3	103	137	28.88	7	5	3	Brett Rice
GW000004	2	4	91	124	28.88	4	16	8	Brett Rice
GW000005	<<>>	<<>>	<<>>	<<>>	28.87	5	27	9	Brett Rice
GW000006	0	2	24	97	28.88	7	4	6	Brett Rice
GW000007	6	7	222	249	28.87	10	10	45	Brett Rice
GW000008	<<>>	<<>>	<<>>	<<>>	28.87	8	7	28	Brett Rice
GW000009	6	6	225	222	28.88	6	12	6	Brett Rice
GW000010	3	<<>>	129	<<>>	28.86	6	8	1	Brett Rice
GW000011	3	4	131	147	28.85	0	30	0	Brett Rice
GW000012	4	4	151	151	28.74	6	4	12	Brett Rice
GW000013	<<>>	<<>>	<<>>	<<>>	28.75	3	27	0	Brett Rice
GW000014	<<>>	<<>>	<<>>	<<>>	28.75	3	15	0	Brett Rice
GW000015	1	1	56	31	28.77	6	38	N/A	Brett Rice
GW000016	3	3	92	91	28.77	6	63	9	Brett Rice
GW000017	<<>>	<<>>	<<>>	<<>>	28.76	5	7	39	Brett Rice
GW000018	2	2	89	92	28.77	4	5	40	Brett Rice
GW000019	<<>>	<<>>	<<>>	<<>>	28.76	10	11	16	Brett Rice
GW000020	<<>>	<<>>	<<>>	<<>>	28.76	9	15	22	Brett Rice
GW000021	<<>>	<<>>	<<>>	<<>>	28.76	4	13	15	Brett Rice
GW000022	2	2	77	77	28.77	7	6	6	Brett Rice
GW000023	<<>>	<<>>	<<>>	<<>>	28.8	8	9	N/A	Brett Rice
GW000026	3	3	119	118	28.82	20	0	-4	Brett Rice
GW000029	5	4	174	124	28.83	14	3	46	Brett Rice
GW000030	4	3	178	123	28.83	7	4	9	Brett Rice
TW000005	<<>>	<<>>	<<>>	<<>>	28.82	5	23	8	Brett Rice
TW000004	6	4	231	173	28.83	4	539	7	Brett Rice
TW000003	<<>>	1	<<>>	61	28.83	2	45	1	Brett Rice
TW000002	6	5	245	218	28.83	2	25	12	Brett Rice
TW000001	4	4	172	176	28.83	0	22	17	Brett Rice

Device ID	Date/Time	CH4	CO2	O2	Balance	Init. Static Press.	Adj. Static Press.	Init. Diff. Press.	Adj. Diff. Press.	Init. Gas Temp.	Adj. Gas Temp.
GEM™2NAV; Version 3_13L,02/07/		%	%	%	%	inches H2O	inches H2O	inches H2O	inches H2O	DegF	DegF
GW000001	8/13/2020 17:38	59.6	28.8	0.2	11.4	1.1	1.1	-0.015	-0.012	84	82
GW000002	8/13/2020 17:42	57.9	29.4	0.2	12.5	0.9	0.9	0.003	-0.003	85	86
GW000019	8/13/2020 17:48	58	35.7	0.2	6.1	1.7	1.7	-1.737	-1.734	86	86
GW000020	8/13/2020 17:52	60.4	33	0.1	6.5	1.4	1.4	-0.023	-0.018	85	83
GW000023	8/13/2020 17:56	57.2	32.6	0.1	10.1	1.6	1.5	-0.016	-0.017	86	86
TW000001	8/18/2020 14:23	64.1	35.6	0.2	0.1	1	0.9	-0.001	-0.006	84	86
TW000002	8/18/2020 14:28	63.9	35.8	0.1	0.2	1	1	0.003	0.004	88	89
TW000003	8/18/2020 14:45	61.7	38	0.1	0.2	1	1	-0.005	-0.002	87	88
TW000004	8/18/2020 14:48	61.8	37.9	0.1	0.2	1	1	-0.001	-0.003	86	87
TW000005	8/18/2020 14:53	64.5	35.2	0.1	0.2	1.1	1.1	0.008	-0.002	88	89
GW000003	8/20/2020 12:54	57.3	29.5	0.2	13	0.7	0.7	-0.007	-0.008	79	79
GW000004	8/20/2020 12:59	56.3	31.8	0.1	11.8	0.9	0.9	0.003	0.001	80	81
GW000005	8/20/2020 13:03	65.8	33.1	0.1	1	0.9	0.9	0.008	0.006	81	81
GW000006	8/20/2020 13:08	59.7	38.7	0.1	1.5	1.3	1.3	0.005	0.004	82	82
GW000007	8/20/2020 13:12	60.3	37.3	0.1	2.3	1.2	1.2	-0.018	-0.019	83	83
GW000008	8/20/2020 13:17	60.3	37.3	0.1	2.3	0.9	0.9	-0.002	0.002	82	83
GW000009	8/20/2020 13:21	59.1	36.5	0.1	4.3	1.1	1.1	0.006	0.004	86	87
GW000010	8/20/2020 13:25	58.5	38	0.1	3.4	1.2	1.2	0.007	0.005	84	85
GW000011	8/31/2020 15:36	55.5	41	0.2	3.3	0	0	0	0.003	73	73
GW000012	8/31/2020 15:52	56.2	35.5	0.3	8	0.1	0.1	0.002	0.001	74	74
GW000013	8/31/2020 15:55	55.4	38.3	0.2	6.1	0.2	0.2	0.009	0.012	72	73
GW000014	8/31/2020 15:58	60.1	38.3	0.2	1.4	0.1	0.1	0.004	0.002	73	74
GW000015	8/31/2020 16:00	48.2	40.6	0.2	11	0.2	0.2	-0.005	-0.004	73	74
GW000016	8/31/2020 16:03	49.9	41.1	0.2	8.8	0.1	0.1	-0.004	-0.001	73	73
GW000017	8/31/2020 16:07	59.5	33.8	0.2	6.5	0.1	0.1	-0.004	0	72	73
GW000018	8/31/2020 16:09	60.7	35.3	0.2	3.8	0.1	0.1	0.005	0.004	71	71
GW000019	8/31/2020 16:14	56.1	33.7	4.1	6.1	0.5	0.4	-0.412	-0.398	70	71
GW000020	8/31/2020 16:17	59.4	33.6	0.2	6.8	0	0	0	0	72	72
GW000021	8/31/2020 16:20	58.9	31.9	0.2	9	0	0	-0.001	0.001	71	71
GW000022	8/31/2020 16:23	55.5	28.2	0.2	16.1	0	0	-0.004	-0.001	73	74
GW000023	8/31/2020 16:26	56.5	34	0.2	9.3	0	0	-0.003	0	73	73
GW000025	8/31/2020 16:30	59.6	36.7	0.2	3.5	0	0	-0.002	-0.002	72	72
GW000026	8/31/2020 16:37	55.8	25.6	0.2	18.4	0.1	0.1	0.003	0.005	73	73
GW000029	8/31/2020 16:40	53.6	30.8	0.2	15.4	0	0	-0.003	-0.001	73	74

Device ID	Init. Flow	Adj. Flow	Init. Power	Adj. Power	Baro. Press.	CO	H2S	H2	FLD-Tech
GEM™2NAV; Vers	SCFM	SCFM	e3BTU/h	e3BTU/h	inches Hg	ppm	ppm	ppm	
GW000001	<<>>	<<>>	<<>>	<<>>	28.65	4	17	0	Brett
GW000002	3	<<>>	137	<<>>	28.65	4	177	N/A	Brett
GW000019	<<>>	<<>>	<<>>	<<>>	28.63	15	9	-3	Brett
GW000020	<<>>	<<>>	<<>>	<<>>	28.64	14	10	1	Brett
GW000023	<<>>	<<>>	<<>>	<<>>	28.64	23	33	24	Brett
TW000001	<<>>	<<>>	<<>>	<<>>	28.9	1	22	0	Brett
TW000002	3	4	148	163	28.9	2	24	0	Brett
TW000003	<<>>	<<>>	<<>>	<<>>	28.9	3	29	0	Brett
TW000004	<<>>	<<>>	<<>>	<<>>	28.91	4	467	0	Brett
TW000005	6	<<>>	236	<<>>	28.9	4	47	0	Brett
GW000003	<<>>	<<>>	<<>>	<<>>	28.66	3	27	0	Brett
GW000004	3	2	133	81	28.66	5	24	N/A	Brett
GW000005	6	5	240	202	28.66	5	63	N/A	Brett
GW000006	4	4	170	155	28.65	5	12	N/A	Brett
GW000007	<<>>	<<>>	<<>>	<<>>	28.63	8	7	0	Brett
GW000008	<<>>	2	<<>>	106	28.65	8	8	7	Brett
GW000009	4	4	178	157	28.66	6	16	N/A	Brett
GW000010	5	4	189	166	28.66	7	13	N/A	Brett
GW000011	<<>>	3	<<>>	115	28.64	3	28	0	Brett
GW000012	3	2	115	69	28.64	6	17	0	Brett
GW000013	6	7	212	246	28.64	3	43	0	Brett
GW000014	4	3	163	121	28.64	2	22	0	Brett
GW000015	<<>>	<<>>	<<>>	<<>>	28.65	4	42	0	Brett
GW000016	<<>>	<<>>	<<>>	<<>>	28.65	4	55	N/A	Brett
GW000017	<<>>	1	<<>>	42	28.64	4	10	32	Brett
GW000018	4	4	179	154	28.65	4	7	12	Brett
GW000019	<<>>	<<>>	<<>>	<<>>	28.64	3	1	0	Brett
GW000020	<<>>	<<>>	<<>>	<<>>	28.63	11	8	-2	Brett
GW000021	<<>>	2	<<>>	78	28.63	3	25	0	Brett
GW000022	<<>>	<<>>	<<>>	<<>>	28.64	8	12	N/A	Brett
GW000023	<<>>	<<>>	<<>>	<<>>	28.64	13	17	-3	Brett
GW000025	<<>>	<<>>	<<>>	<<>>	28.63	7	5	N/A	Brett
GW000026	3	4	123	165	28.63	16	0	-3	Brett
GW000029	<<>>	<<>>	<<>>	<<>>	28.64	13	3	60	Brett

Device ID	Date/Time	CH4	CO2	O2	Balance	Init. Static Press.	Adj. Static Press.	Init. Diff. Press.	Adj. Diff. Press.	Init. Gas Temp.	Adj. Gas Temp.
GEM™2NAV; Version 3_13L,02/07/		%	%	%	%	inches H2O	inches H2O	inches H2O	inches H2O	DegF	DegF
GW000001	9/30/2020 16:05	23.9	18.1	6.7	51.3	0	0	0.243	0.238	59	59
GW000002	9/30/2020 16:09	24.4	18.3	5.1	52.2	0	0	0.001	0.003	58	57
GW000003	9/30/2020 16:13	28.5	20.3	5.2	46	-0.2	-0.2	0.198	0.22	55	55
GW000004	9/30/2020 16:17	56.3	31.9	1.1	10.7	0	0	0.055	0.058	55	55
GW000005	9/30/2020 16:20	20.3	12.1	14.1	53.5	0	0	-0.004	-0.007	55	55
GW000006	9/30/2020 16:24	27.4	22.2	6.3	44.1	0	0	0.002	0.005	54	54
GW000007	9/30/2020 16:27	28.4	23.8	5.2	42.6	0	0	-0.001	-0.003	55	55
GW000008	9/30/2020 16:30	52.4	34.6	0.4	12.6	0	0	-0.001	0	55	55
GW000009	9/30/2020 16:33	43.4	32.4	0.2	24	-0.2	-0.3	0.265	0.296	55	55
GW000010	9/30/2020 17:06	42.3	30.9	3.1	23.7	-0.1	-0.1	0.002	0	57	56
GW000011	9/30/2020 17:10	29.6	26.4	1.3	42.7	0	0	-0.005	-0.003	57	56
GW000012	9/30/2020 17:13	5.9	3.8	18.5	71.8	-0.6	-0.6	0.012	0.031	57	56
GW000013	9/30/2020 17:17	41.4	30.9	4.7	23	-0.2	-0.2	-0.012	-0.01	56	55
GW000014	9/30/2020 17:20	16.3	13.1	11.6	59	-0.1	-0.1	-0.001	-0.004	57	56
GW000013	9/30/2020 17:24	7.5	5.2	18	69.3	-0.2	-0.2	-0.014	-0.012	58	57
GW000015	9/30/2020 17:28	2.3	1.9	19.7	76.1	-0.2	-0.2	-0.008	-0.008	58	57
GW000016	9/30/2020 17:32	28.7	23.1	8.6	39.6	-0.2	-0.2	-0.003	0.008	58	57
GW000017	9/30/2020 17:35	4.9	2.8	19.1	73.2	-0.6	-0.7	-0.005	0.004	55	55
GW000018	9/30/2020 17:40	5.5	3.1	19	72.4	-0.6	-0.6	0.087	-0.061	57	56
GW000019	9/30/2020 17:45	0.1	0.1	20.6	79.2	0.6	0.5	-1.256	-1.168	56	55
GW000020	9/30/2020 17:49	5.7	3.2	18.9	72.2	-0.3	-0.2	0.065	0.057	56	55
GW000021	9/30/2020 17:52	40.9	24	5.4	29.7	-0.7	-0.7	0	0.002	56	56
GW000022	9/30/2020 17:56	21.7	15	10.3	53	-0.8	-0.8	-0.001	0	56	56
GW000023	9/30/2020 18:00	27.7	18.7	8.6	45	-0.8	-0.8	-0.006	-0.01	56	56
GW000026	9/30/2020 18:06	37.4	21.5	7.1	34	-0.9	-0.8	-0.006	0.001	58	57
GW000029	9/30/2020 18:11	11.6	7.1	16.4	64.9	-0.7	-0.7	-0.003	-0.002	58	56
TW000001	9/30/2020 18:40	63.6	36.1	0.2	0.1	0	0	0.003	0.009	56	55
TW000002	9/30/2020 18:44	63	36.6	0.2	0.2	0	0	0.036	0.036	54	54
TW000003	9/30/2020 18:47	61.3	38.4	0.2	0.1	0	0	0	0.002	53	54
TW000004	9/30/2020 18:51	60.9	38.8	0.2	0.1	0	0	0.004	0.004	53	53
TW000005	9/30/2020 18:54	63.2	36.5	0.2	0.1	0	0	-0.043	-0.043	56	56

Device ID	Init. Flow	Adj. Flow	Init. Power	Adj. Power	Baro. Press.	CO	H2S	H2	FLD-Tech
GEM™2NAV; Ver	SCFM	SCFM	e3BTU/h	e3BTU/h	inches Hg	ppm	ppm	ppm	
GW000001	32	32	476	471	28.71	11	0	-2	Brett
GW000002	2	3	40	54	28.71	33	0	7	Brett
GW000003	29	31	517	546	28.72	8	2	N/A	Brett
GW000004	16	16	552	562	28.7	2	26	0	Brett
GW000005	<<>>	<<>>	<<>>	<<>>	28.7	0	7	0	Brett
GW000006	3	4	55	79	28.7	1	0	0	Brett
GW000007	<<>>	<<>>	<<>>	<<>>	28.7	4	0	0	Brett
GW000008	<<>>	1	<<>>	57	28.7	4	0	0	Brett
GW000009	34	36	916	971	28.71	1	0	0	Brett
GW000010	3	<<>>	85	<<>>	28.71	2	0	0	Brett
GW000011	<<>>	<<>>	<<>>	<<>>	28.72	0	0	0	Brett
GW000012	7	11	25	41	28.71	0	0	0	Brett
GW000013	<<>>	<<>>	<<>>	<<>>	28.71	1	3	0	Brett
GW000014	<<>>	<<>>	<<>>	<<>>	28.73	0	3	0	Brett
GW000013	<<>>	<<>>	<<>>	<<>>	28.72	0	0	0	Brett
GW000015	<<>>	<<>>	<<>>	<<>>	28.73	0	4	0	Brett
GW000016	<<>>	5	<<>>	102	28.74	0	24	0	Brett
GW000017	<<>>	4	<<>>	12	28.73	0	0	0	Brett
GW000018	19	<<>>	64	<<>>	28.74	0	0	0	Brett
GW000019	<<>>	<<>>	<<>>	<<>>	28.73	0	0	0	Brett
GW000020	16	15	58	54	28.73	0	0	0	Brett
GW000021	<<>>	3	<<>>	77	28.72	0	19	0	Brett
GW000022	<<>>	1	<<>>	23	28.74	0	0	0	Brett
GW000023	<<>>	<<>>	<<>>	<<>>	28.74	3	0	0	Brett
GW000026	<<>>	2	<<>>	56	28.74	11	0	-2	Brett
GW000029	<<>>	<<>>	<<>>	<<>>	28.75	0	0	0	Brett
TW000001	4	6	157	249	28.79	0	28	0	Brett
TW000002	13	12	498	497	28.74	0	38	0	Brett
TW000003	1	3	68	114	28.74	0	58	0	Brett
TW000004	4	4	156	169	28.74	0	435	0	Brett
TW000005	<<>>	<<>>	<<>>	<<>>	28.74	0	30	0	Brett

Device ID	Date/Time	CH4	CO2	O2	Balance	Init. Static Press.	Adj. Static Press.	Init. Diff. Press.	Adj. Diff. Press.	Init. Gas Temp.
GEM™2NAV; Version 3_13L,02/07/13;		%	%	%	%	inches H2O	inches H2O	inches H2O	inches H2O	DegF
GW000001	10/21/2020 14:49	0.2	0.1	20.8	78.9	-0.1	-0.1	-0.032	-0.018	43
GW000002	10/21/2020 14:52	0.2	0.1	20.9	78.8	0	0	-0.006	-0.008	40
GW000003	10/21/2020 14:56	1.9	1.3	20.1	76.7	-0.1	-0.2	0.152	0.186	38
GW000004	10/21/2020 15:00	45.5	24.8	5.5	24.2	-0.1	-0.1	0	0.001	38
GW000005	10/21/2020 15:03	0.1	0	21.3	78.6	-0.1	-0.1	-0.004	-0.003	39
GW000006	10/21/2020 15:06	0.2	0.1	21	78.7	0	0	-0.002	-0.003	40
GW000007	10/21/2020 15:09	5.3	3.1	19.3	72.3	-0.5	-0.5	0.482	0.5	41
GW000008	10/21/2020 15:12	39.7	27	3.6	29.7	0	0	0.007	0.005	41
GW000009	10/21/2020 15:16	32.6	24.7	4.7	38	0	0	-0.003	-0.004	44
GW000010	10/21/2020 15:20	12.3	8.2	16	63.5	0	0	0.006	-0.011	42
GW000011	10/21/2020 15:23	43.3	29.6	1.3	25.8	0	0	0.057	0.061	43
GW000012	10/21/2020 15:27	24.3	16.5	10.2	49	-0.4	-0.4	0.002	0.001	44
GW000013	10/21/2020 15:31	38.2	28.7	6.2	26.9	0	-0.1	0.001	-0.002	46
GW000014	10/21/2020 15:35	0.2	0.1	20.9	78.8	0	0	-0.003	-0.002	45
GW000015	10/21/2020 15:38	49.8	38.6	0.7	10.9	-0.1	-0.1	0.005	0.006	44
GW000016	10/21/2020 15:41	47.2	35	1.9	15.9	0	0	0	0.001	46
GW000017	10/21/2020 15:45	23.3	15.7	10.7	50.3	-0.4	-0.4	-0.001	-0.006	44
GW000018	10/21/2020 15:48	27	18.2	8.9	45.9	-0.4	-0.4	-0.003	-0.006	42
GW000019	10/21/2020 15:52	0.2	0.3	21	78.5	0.9	0.7	-1.416	-1.31	42
GW000021	10/21/2020 15:56	41.6	27.2	5.5	25.7	-0.5	-0.5	0.011	0.012	41
GW000022	10/21/2020 15:59	37.8	21.6	6.8	33.8	-0.5	-0.5	0.005	0.007	40
GW000023	10/21/2020 16:03	26.9	18.2	9	45.9	-0.4	-0.4	0.009	0.012	42
GW000020	10/21/2020 16:04	26.7	18.1	10.1	45.1	0	0	-0.002	0.001	38
GW000023	10/21/2020 16:10	37.9	25.3	4	32.8	-0.5	-0.5	0.005	0.008	40
GW000026	10/21/2020 16:15	32.4	19.3	8.6	39.7	-0.6	-0.6	0.003	0.002	40
GW000029	10/21/2020 16:18	30.4	17.9	9.4	42.3	-0.5	-0.5	-0.003	-0.002	44

Device ID	Adj. Gas Temp.	Init. Flow	Adj. Flow	Init. Power	Adj. Power	Baro. Press.	CO	H2S	H2	FLD-Tech
GEM™2NAV; Vers	DegF	SCFM	SCFM	e3BTU/h	e3BTU/h	inches Hg	ppm	ppm	ppm	
GW000001	42	<<>>	<<>>	<<>>	<<>>	28.96	0	0	0	Brett
GW000002	40	<<>>	<<>>	<<>>	<<>>	28.97	0	0	0	Brett
GW000003	38	26	28	31	34	28.97	0	0	0	Brett
GW000004	38	1	2	37	62	28.96	0	24	0	Brett
GW000005	39	<<>>	<<>>	<<>>	<<>>	28.96	0	0	0	Brett
GW000006	40	<<>>	<<>>	<<>>	<<>>	28.94	0	0	0	Brett
GW000007	40	47	47	152	155	28.94	0	0	0	Brett
GW000008	41	5	4	132	111	28.94	0	0	0	Brett
GW000009	43	<<>>	<<>>	<<>>	<<>>	28.95	0	0	0	Brett
GW000010	41	5	<<>>	40	<<>>	28.95	0	0	0	Brett
GW000011	42	16	16	427	442	28.94	8	0	N/A	Brett
GW000012	44	2	2	42	37	28.94	3	0	0	Brett
GW000013	46	2	<<>>	55	<<>>	28.93	0	9	0	Brett
GW000014	45	<<>>	<<>>	<<>>	<<>>	28.94	0	0	0	Brett
GW000015	44	4	5	146	161	28.95	2	61	0	Brett
GW000016	46	0	2	0	79	28.95	1	29	0	Brett
GW000017	44	<<>>	<<>>	<<>>	<<>>	28.94	3	0	0	Brett
GW000018	42	<<>>	<<>>	<<>>	<<>>	28.95	3	0	0	Brett
GW000019	42	<<>>	<<>>	<<>>	<<>>	28.94	0	0	0	Brett
GW000021	42	7	7	178	189	28.95	1	10	0	Brett
GW000022	41	4	5	109	127	28.95	3	2	0	Brett
GW000023	42	6	7	100	121	28.95	3	0	0	Brett
GW000020	38	<<>>	2	<<>>	37	28.94	2	0	0	Brett
GW000023	40	4	6	110	140	28.94	9	0	-2	Brett
GW000026	40	3	3	73	67	28.95	11	0	-2	Brett
GW000029	43	<<>>	<<>>	<<>>	<<>>	28.96	5	1	N/A	Brett

Device ID	Date/Time	CH4	CO2	O2	Balance	Init. Static Press.	Adj. Static Press.	Init. Diff. Press.	Adj. Diff. Press.	Init. Gas Temp.	Adj. Gas Temp.
GEM™2NAV; Version 3_13L,02/07/1		%	%	%	%	inches H2O	inches H2O	inches H2O	inches H2O	DegF	DegF
GW000001	11/30/2020 11:12	58.3	41.3	0.2	0.2	1.3	1.3	-0.012	-0.012	37	36
GW000002	11/30/2020 11:16	59.7	40	0.2	0.1	1.3	1.3	-1.39	-1.393	32	32
GW000003	11/30/2020 11:20	60.6	39.1	0.2	0.1	0.4	0.3	0.943	1.031	33	33
GW000004	11/30/2020 11:24	60	39.7	0.2	0.1	1.4	1.4	-0.001	-0.001	34	34
GW000005	11/30/2020 11:28	59.7	39.9	0.2	0.2	1.3	1.3	-0.007	0	34	34
GW000006	11/30/2020 11:31	59.9	35.7	0.3	4.1	1.4	1.4	0.018	0.018	36	36
GW000007	11/30/2020 11:35	62.6	37.1	0.2	0.1	0.7	1.4	-0.005	-0.004	33	33
GW000008	11/30/2020 11:39	60.7	36	0.2	3.1	1.3	1.3	-1.403	-1.403	32	32
GW000009	11/30/2020 11:42	58.7	37.9	0.7	2.7	1.3	1.3	-0.422	-0.046	35	35
GW000010	11/30/2020 11:45	56.6	35.8	0.2	7.4	1.4	1.4	-0.005	0	34	34
GW000011	11/30/2020 11:49	49.7	32.8	0.1	17.4	1.4	1.4	-1.468	-1.47	34	34
GW000012	11/30/2020 12:00	53.1	36.9	0.2	9.8	1.7	1.7	-1.796	-1.785	40	40
GW000013	11/30/2020 12:03	59.2	40.4	0.2	0.2	1.5	1.5	-0.009	-0.018	36	36
GW000014	11/30/2020 12:07	60	39.6	0.2	0.2	1.5	1.5	-0.01	-0.009	37	37
GW000015	11/30/2020 15:59	52.9	36.3	0.2	10.6	1.9	1.9	-0.018	-0.014	43	44
GW000016	11/30/2020 16:05	53.5	36.5	0.2	9.8	2	2	0.003	0	43	43
GW000017	11/30/2020 16:23	51.1	35.8	0.2	12.9	2.4	2.5	-0.006	0.001	49	49
GW000017	11/30/2020 16:23	51.1	35.8	0.2	12.9	2.4	0	-0.006	-0.014	49	43
GW000018	11/30/2020 16:28	51.1	36	0.1	12.8	2.6	2.6	-0.006	-0.009	57	55
GW000019	11/30/2020 16:33	50.9	36	0.2	12.9	2.7	2.7	-2.732	-2.717	51	50
GW000020	11/30/2020 16:36	50.7	35.9	0.2	13.2	2.6	2.7	0	-0.004	44	44
GW000021	11/30/2020 16:43	52	36	0.2	11.8	2.4	2.4	-0.01	0.001	47	45
GW000022	11/30/2020 16:46	53.1	36.1	0.2	10.6	2.1	2.1	-0.005	-0.003	45	46
GW000023	11/30/2020 16:50	51.6	35.8	0.5	12.1	2.3	2.3	-0.002	-0.003	51	51
GW000026	11/30/2020 16:53	53.2	35.5	0.4	10.9	2.1	2.1	0.014	0.007	45	45
GW000029	11/30/2020 16:56	53.8	36.1	0.4	9.7	2	2	-0.004	0.029	37	37
TW000001	11/30/2020 17:23	53.8	36.7	0.4	9.1	1.5	1.6	-0.527	-0.031	35	34
TW000002	11/30/2020 17:27	54.9	37.5	0.4	7.2	1.3	1.7	-0.014	-0.016	30	30
TW000003	11/30/2020 17:29	59.5	39.9	0.4	0.2	1.8	1.8	-0.03	-0.03	31	31
TW000004	11/30/2020 17:33	60	39.2	0.6	0.2	1.8	1.8	-0.033	-0.037	30	30
TW000005	11/30/2020 17:36	61.7	37.6	0.6	0.1	1.8	1.8	0.002	0.001	39	39
TW000006	11/18/2020	62.4	37.4	0.1	0.1						
TW000007	11/18/2020	0.3	0.3	21	78.4						
TW000008	11/18/2020	58.5	41.3	0	0.2						
TW000009	11/18/2020	51.9	32.9	0.1	15.1						
TW000010	11/18/2020	2.8	2	20.4	74.8						
TW000011	11/18/2020	48.6	31.5	0	19.9						
TW000012	11/18/2020	43.4	27.2	4	25.4						
TW000013	11/18/2020	57.1	42.7	0	0.2						
TW000014	11/18/2020	58	41.9	0	0.1						
TW000015	11/18/2020	58.2	41.7	0	0.1						
TW000016	11/18/2020	47.4	32.4	0	20.2						
TW000017	11/18/2020	60.7	39.2	0	0.1						
TW000018	11/18/2020	63.2	36.7	0	0.1						

Device ID	Init. Flow	Adj. Flow	Init. Power	Adj. Power	Baro. Press.	CO	H2S	SO2	H2	FLD-Tech
GEM™2NAV; Ver:	SCFM	SCFM	e3BTU/h	e3BTU/h	inches Hg	ppm	ppm		ppm	
GW000001	<<>>	<<>>	<<>>	<<>>	28.97	7	32766	N/A	35	Brett Rice
GW000002	<<>>	<<>>	<<>>	<<>>	28.98	8	32766	N/A	36	Brett Rice
GW000003	69	72	2552	2671	28.97	8	32766	N/A	22	Brett Rice
GW000004	<<>>	<<>>	<<>>	<<>>	28.97	5	143	N/A	N/A	Brett Rice
GW000005	<<>>	<<>>	<<>>	<<>>	28.96	5	28	N/A	N/A	Brett Rice
GW000006	9	9	340	342	28.95	4	1	N/A	N/A	Brett Rice
GW000007	<<>>	<<>>	<<>>	<<>>	28.94	8	7	N/A	N/A	Brett Rice
GW000008	<<>>	<<>>	<<>>	<<>>	28.94	6	3	N/A	N/A	Brett Rice
GW000009	<<>>	<<>>	<<>>	<<>>	28.96	8	511	N/A	0	Brett Rice
GW000010	<<>>	<<>>	<<>>	<<>>	28.95	7	1	N/A	N/A	Brett Rice
GW000011	<<>>	<<>>	<<>>	<<>>	28.94	0	4	N/A	0	Brett Rice
GW000012	<<>>	<<>>	<<>>	<<>>	28.94	1	30	N/A	0	Brett Rice
GW000013	<<>>	<<>>	<<>>	<<>>	28.93	7	32766	N/A	1	Brett Rice
GW000014	<<>>	<<>>	<<>>	<<>>	28.92	6	241	N/A	N/A	Brett Rice
GW000015	<<>>	<<>>	<<>>	<<>>	28.84	1	28	N/A	0	Brett Rice
GW000016	3	1	126	44	28.85	1	28	N/A	0	Brett Rice
GW000017	<<>>	2	<<>>	83	28.82	1	13	N/A	0	Brett Rice
GW000017	<<>>	<<>>	<<>>	<<>>	28.82	1	13	N/A	0	Brett Rice
GW000018	<<>>	<<>>	<<>>	<<>>	28.82	1	27	N/A	0	Brett Rice
GW000019	<<>>	<<>>	<<>>	<<>>	28.82	2	21	N/A	0	Brett Rice
GW000020	0	<<>>	0	<<>>	28.8	2	24	N/A	0	Brett Rice
GW000021	<<>>	2	<<>>	69	28.81	1	10	N/A	0	Brett Rice
GW000022	<<>>	<<>>	<<>>	<<>>	28.81	4	21	N/A	0	Brett Rice
GW000023	<<>>	<<>>	<<>>	<<>>	28.81	2	31	N/A	0	Brett Rice
GW000026	8	5	263	189	28.81	16	2	N/A	-3	Brett Rice
GW000029	<<>>	11	<<>>	380	28.82	16	1	N/A	-3	Brett Rice
TW000001	<<>>	<<>>	<<>>	<<>>	28.8	1	32	N/A	0	Brett Rice
TW000002	<<>>	<<>>	<<>>	<<>>	28.8	2	169	N/A	0	Brett Rice
TW000003	<<>>	<<>>	<<>>	<<>>	28.8	0	8	N/A	0	Brett Rice
TW000004	<<>>	<<>>	<<>>	<<>>	28.8	0	183	N/A	0	Brett Rice
TW000005	3	2	124	96	28.8	0	18	N/A	0	Brett Rice
TW000006										
TW000007										
TW000008										
TW000009										
TW000010										
TW000011										
TW000012										
TW000013										
TW000014										
TW000015										
TW000016										
TW000017										
TW000018										

Device ID	Date/Time	CH4	CO2	O2	Balance	Init. Static Press.	Adj. Static Press.	Init. Diff. Press.	Adj. Diff. Press.	Init. Gas Temp.
GEM™2NAV; Version 3_13L,02/07/13		%	%	%	%	inches H2O	inches H2O	inches H2O	inches H2O	DegF
GW000001	12/28/2020 9:53	0.4	0.1	20.9	78.6	-1	-1	1.019	1.008	0
GW000002	12/28/2020 9:59	0.4	0	21.4	78.2	-0.2	-0.4	-0.414	-0.247	0
GW000003	12/28/2020 10:05	0.4	0	21.8	77.8	-0.7	-0.7	0.008	0.002	0
GW000004	12/28/2020 10:10	1	0.4	21.9	76.7	-0.8	-0.8	0.763	0.721	0
GW000005	12/28/2020 10:16	60.7	39	0.2	0.1	-1.1	-1.1	-0.004	-0.003	0
GW000006	12/28/2020 10:21	8	4	19.4	68.6	-0.9	-0.9	0.931	0.935	0
GW000007	12/28/2020 10:26	8.8	4.4	18.9	67.9	-1	-1	0.026	0.03	22
GW000008	12/28/2020 10:32	63.7	36	0.2	0.1	-0.8	-0.8	0.82	0.823	23
GW000009	12/28/2020 10:36	0.4	0.1	21.1	78.4	-0.8	-0.8	0.846	0.85	25
GW000010	12/28/2020 10:41	0.4	0	20.9	78.7	-1.1	-1.1	1.083	1.076	23
GW000011	12/28/2020 10:46	0.4	0	20.9	78.7	-0.8	-0.8	0.839	0.835	23
GW000012	12/28/2020 10:58	54.1	34.7	1	10.2	-2.5	-2.5	0.008	0.01	0
GW000013	12/28/2020 11:03	0.4	0.1	20.8	78.7	-1.1	-1.1	0.001	0.029	25
GW000014	12/28/2020 11:08	0.4	0	20.9	78.7	-1.1	-1.1	0.033	0.039	28
GW000015	12/28/2020 11:16	28.2	19	10.5	42.3	-1.2	-1.2	0.013	0.012	25
GW000016	12/28/2020 11:22	35.2	23	8.5	33.3	-1.3	-1.3	0.008	0.011	26
GW000017	12/28/2020 11:27	0.4	0.1	20.7	78.8	-2.7	-2.7	-0.003	-0.001	0
GW000018	12/28/2020 11:32	0.4	0.1	20.9	78.6	-2.7	-2.7	0.019	0.013	25
GW000019	12/28/2020 11:38	28.8	17.9	10.8	42.5	-2.6	-2.6	2.651	2.656	47
GW000021	12/28/2020 11:45	8.7	5.3	18.5	67.5	-2.6	-2.6	0	-0.002	23
GW000022	12/28/2020 11:53	27.8	16.7	11.2	44.3	-2.5	-2.5	0	0.006	0
GW000020	12/28/2020 11:57	22.1	13.4	13.4	51.1	-2.7	-2.7	0.016	0.017	0
GW000023	12/28/2020 12:04	28.2	16.2	11.3	44.3	-2.6	-2.6	0.026	0.022	0
GW000026	12/28/2020 12:08	7.9	4.4	18.7	69	-2.4	-2.4	0.03	0.022	28
GW000029	12/28/2020 12:14	18.9	10.7	14.4	56	-2.1	-2.1	-0.001	0	24
GP000011	12/28/2020 15:24	0.4	0.6	20.2	78.8	-4.9	0.1	-0.035	-0.032	0
GP000012	12/28/2020 15:28	0.4	0.1	20.9	78.6	0	0.1	-0.042	-0.043	0
TW000001	12/29/2020 10:15	60.8	38.9	0.2	0.1	0.9	0.9	0.001	0.001	22
TW000002	12/29/2020 10:20	61.5	38.2	0.2	0.1	1.2	1.2	-0.008	-0.009	0
TW000003	12/29/2020 10:25	60.5	39.3	0.1	0.1	1.4	1.4	-0.018	-0.012	0
TW000004	12/29/2020 10:32	60.8	38.9	0.2	0.1	1.3	1.4	0.006	0.009	0
TW000005	12/29/2020 10:37	61.7	38	0.2	0.1	1.3	1.3	-0.002	-0.011	22
TW000014	12/29/2020 11:26	57.8	41.8	0.3	0.1	0.6	0.6	-0.562	-0.513	0
TW000011	12/29/2020 11:29	59.9	39.7	0.3	0.1	1.4	1.4	-1.25	-1.045	0
TW000006	12/29/2020 11:33	62.2	37.4	0.3	0.1	0.7	0.7	-0.613	-0.541	0

Device ID	Adj. Gas Temp.	Init. Flow	Adj. Flow	Init. Power	Adj. Power	Baro. Press.	CO	H2S	H2	FLD-Tech
GEM™2NAV; Vers	DegF	SCFM	SCFM	e3BTU/h	e3BTU/h	inches Hg	ppm	ppm	ppm	
GW000001	0	71	71	21	21	29.08	0	0	0	Brett
GW000002	0	<<>>	<<>>	<<>>	<<>>	29.07	0	0	0	Brett
GW000003	0	6	3	1	0	29.06	0	0	0	Brett
GW000004	0	62	60	40	39	29.04	0	3	0	Brett
GW000005	0	<<>>	<<>>	<<>>	<<>>	29.04	0	375	0	Brett
GW000006	0	69	69	336	337	29.04	0	3	0	Brett
GW000007	N/A	10	<<>>	59	<<>>	29.05	0	2	0	Brett
GW000008	N/A	66	<<>>	2562	<<>>	29.06	0	16	0	Brett
GW000009	22	63	63	18	18	29.07	0	0	0	Brett
GW000010	N/A	72	<<>>	20	<<>>	29.07	0	0	0	Brett
GW000011	N/A	63	<<>>	17	<<>>	29.06	0	0	0	Brett
GW000012	0	6	7	212	237	29.06	3	47	0	Brett
GW000013	23	2	11	0	3	29.07	0	0	0	Brett
GW000014	26	12	13	3	3	29.08	0	0	0	Brett
GW000015	25	7	7	134	124	29.1	0	19	0	Brett
GW000016	24	6	7	132	153	29.08	6	251	0	Brett
GW000017	0	<<>>	<<>>	<<>>	<<>>	29.09	0	1	0	Brett
GW000018	23	9	7	2	2	29.11	0	1	0	Brett
GW000019	53	113	112	1983	1971	29.09	0	3	0	Brett
GW000021	N/A	<<>>	<<>>	<<>>	<<>>	29.1	0	0	0	Brett
GW000022	0	<<>>	5	<<>>	94	29.11	0	13	0	Brett
GW000020	0	8	9	117	121	29.11	0	1	0	Brett
GW000023	0	11	10	193	178	29.1	5	3	N/A	Brett
GW000026	24	11	9	55	48	29.11	0	7	0	Brett
GW000029	22	<<>>	<<>>	<<>>	<<>>	29.13	2	4	0	Brett
GP000011	0	<<>>	<<>>	<<>>	<<>>	29.14	0	0	0	Brett
GP000012	0	<<>>	<<>>	<<>>	<<>>	29.14	0	0	0	Brett
TW000001	N/A	2	<<>>	107	<<>>	28.94	2	491	0	Brett
TW000002	0	<<>>	<<>>	<<>>	<<>>	28.93	0	237	0	Brett
TW000003	0	<<>>	<<>>	<<>>	<<>>	28.91	0	75	0	Brett
TW000004	0	5	6	201	249	28.9	0	362	0	Brett
TW000005	23	<<>>	<<>>	<<>>	<<>>	28.91	1	248	0	Brett
TW000014	0	0	0	0	0	28.9	8	32766	N/A	Brett
TW000011	0	0	0	0	0	28.89	4	32766	N/A	Brett
TW000006	0	0	0	0	0	28.87	2	11	0	Brett

Landfill Gas Enclosed Flare

Clay County Gas System
Daily Flare Readings

Date/Time	Sampling Port				From Control Panel			Barometric Pressure	Comments
	CH4 %	CO2 %	O2 %	Balance %	Temp DegF	Vacuum Inches H2O	Flow Scfm	Inches H20	
12-27-18					1300	10	84		
12-30-18						8	8		Flare out
12-31-18									Attempt Restart
1-3-19					1150	8	96		Restart
1-4-19					1210	10	82		
1-5-19					1055	11	74		
1-7-19					1250	9	102		Restart FLARE
1-8-19									Flare out — HIGH WINDS
1-9-19									Attempt Restart
1-10-19									Attempt Restart
1-11-19	31.5	25.7	.9	4.6	1365	9	85	28.95	Cleaned Spark Arrestor
1-14-19			Out		Restart				
1-15-19	52.2	33.6	1.7	12.7	1370	9	95	28.83	
1-16-19	52.1	33.1	.8	13.9	1140	11	86	29.10	
1-17-19	52.1	33.2	.6	14.0	1294	10	89	28.91	
1-18-19	51.8	33.0	.7	14.0	1335	11	84	29.04	
1-22-19	51.2	33.7	.7	13.7	700	10	64	28.85	
1-23-19	55.3	34.0	.7	10	1450	10	69	28.54	
1-24-19	54.3	33.3	1.3	9.8	1485	12	61	28.99	
1-25-19	53.9	33.3	1.4	11.9	1190	12	67	28.84	
1-28-19	5.4	3.4	19.3	71.5	200	9	61	28.84	Flare Out
1-29-19			-30 BELOW		TEMPS				Removed spark Arrester TO THAW
1-30-19			-25 Below		TEMPS				
2-01-19	55.1	33.7	1.9	10.0	700	11	69	28.17	Attempt RESTART
2-7-19			Flare		DOWN				
2-11-19									Attempt RESTART
2-20-19					300	9	77		Attempt Restart
2-22-19					25	10	63		
2-27-19					140	10	80		Below 0° Temps
3-28-19					433	10	52		Attempt RESTART
3-7-19						10	69		-15° TEMP
3-11-19					40	10	69		Attempt Restart
3-12-19	45.8	30.8	.8	20.6	1450	9	84	28.51	Started Flare — outside temp 40°
3-13-19					1515	10	80		
3-14-19	61.8	35.8	.8	1.7	1405	9	88	28.21	
3-15-19	60.9	35.0	1.7	1.1	1370	11	77	28.34	
3-18-19	61.5	35.0	.7	2.7	1557	10	87	29.07	
3-19-19	60.8	34.9	.9	3.2	1420	10	86	28.92	
3-21-19	60.5	34.8	1.0	2.6	1392	10	81	28.83	
3-22-19	60.3	34.9	.8	3.9	1297	11	84	29.02	Outside Temp 44°
3-25-19	FLARE WAS out				chg				
4-4-19		Out							

Clay County Gas System
Daily Flare Readings

Date/Time	Sampling Port				From Control Panel				
	CH4	CO2	O2	Balance	Temp	Vacuum	Flow	Barometric Pressure	Comments
	%	%	%	%	DegF	Inches H2O	Scfm	Inches H20	
4-11-19	59.3	35.3	.8	4.6	1530	9	107	28.73	Restarted
4-12-19	60.7	35.2	.9	3.2	1350	9	91	28.32	
4-13-19	59.3	34.7	.9	5.0	1340	9	89	28.53	
4-16-19	58.8	34.5	.8	5.8	1275	10	84	28.166	
4-17-19					1282	9	87		
4-18-19					1244	10	85		
4-20-19	55.8	33.7	.8	9.6	1352	10	90		
					1162	10	83		
4-23-19	55.8	33.7	.8	9.6	1416	10	88	28.88	
4-24-19	56.2	34.0	1.0	8.8	1440	9	92	28.51	
4-25-19	55.3	33.10	1.0	10.60	1304	10	84	28.63	
4-26-19	54.6	33.4	1.0	11.00	1335	9	87	28.55	
4-29-19	54.4	33.4	.9	11.2	1280	10	85	28.72	
4-30-19	54.3	33.5	.7	11.5	1243	10	83	29.01	
5-1-19	54.4	33.7	.6	11.3	1280	10	88	28.86	
5-2-19	54.4	33.7	.6	11.3	1259	10	89	28.90	
5-3-19	54.3	33.7	.6	10.50	1325	9	89	28.76	
5-6-19					1163	11	82		
5-7-19	53.0	33.0	.7	14.2	1185	11	81	29.10	
5-8-19	53.0	33.4	.4	14.1	1250	10	86	28.80	
5-9-19	52.2	33.2	.6	13.1	1236	10	86	28.84	
5-10-19	51.7	33.0	.6	13.3	1227	10	84	28.91	
5-13-19	50.8	33.1	.7	14.3	1309	10	84	28.63	
5-14-19	50.8	33.2	.7	15.3	1300	10	84	28.66	
5-17-19	55.0	33.0	.7	16.3	1200	10	83	28.76	
5-18-19					1206	10	85		
5-20-19	49.1	32.8	.8	17.2	1183	11	81	28.93	
5-23-19	48.8	33.2	.6	14.2	1075	11	79	28.82	
5-28-19	48.0	33.0	.8	18.3	1280	10	83	28.72	
5-29-19	47.6	32.6	.6	19.1	1353	9	86	28.58	
5-30-19	47.5	32.7	.7	19.0	1330	9	84	28.56	
5-31-19					1310	9	83		
6-3-19					1395	8	88		
6-7-19					1480	7	103		Restart flare
6-11-19	47.7	32.8	.8	18.7	1216	9	85	28.81	
6-13-19	47.7	32.7	.8	17.8	1135	10	83	28.93	
6-14-19	47.6	33.2	.8	18.3	1268	9	88	28.45	
6-17-19	46.3	32.5	.8	20.1	1145	10	82	28.82	
6-18-19	46.2	32.6	.6	19.3	1128	10	84	28.82	
6-19-19	46.2	32.6	.6	20.1	1190	9	85	28.69	
6-20-19	46.3	32.7	.7	20.2	1203	9	86	28.56	
6-25-19					1162	10	83		
6-26-19	44.7	32.5	.7	22.3	1150	10	80	28.78	

Clay County Gas System
Daily Flare Readings

FLOW VAC

Date/Time	Sampling Port				From Control Panel			Barometric Pressure	Comments
	CH4	CO2	O2	Balance	Temp	~~Vacuum~~	~~Flow~~		
	%	%	%	%	DegF	Inches H2O	Scfm	Inches H20	
6-27-19					1102	~~82~~	10		
6-28-19					1145	83	9		
7-1-19					1145	83	9		
7-2-19					1196	86	9		
7-3-19					1156	85	9		
7-5-19	44.0	32.0	.8	23.0	1085	80	10	28.91	
7-8-19	44.5	32.1	.7	~~22.8~~	1250	87	8	28.66	
7-9-19				Flare out					T-storm
7-11-19									Attempt Restart
7-12-19	46.3	32.4	.5	20.4	1170	98	8	28.73	
7-15-19	45.3	32.3	.7	21.7	1238	83	8	28.58	
7-16-19	45.5	32.4	.7	20.1	1160	81	10	28.73	
7-17-19	45.3	32.3	.8	20.1	1188	84	9	28.59	
7-18-19				Flare	Out				
7-22-19				Attempt	Restart		NO Go		
7-26-19				Attempt	Restart				
8-1-19					1200	99	8		Restart
8-2-19					1262	86	9		
8-5-19					1140	98	8		Restart
8-6-19	48.7	32.9	.8	17.2	1290	85	9	28.72	
8-7-19	48.4	33.0	1.	17.6	1250	85	9	28.65	
8-12-19					1260	84	9		
8-13-19					1245	87	9		
8-22-19					1260	84	10		
8-26-19					~~1400~~ 1200	~~12~~	T-		Restart
~~8-27-19~~	~~53.4~~	~~37.4~~	~~.5~~	~~8.3~~	~~1400~~	~~105~~	~~7~~		
8-27-19	53.4	37.4	.5	8.3	1355	88	9	28.56	
8-28-19	53.0	36.8	.8	9.3	1240	82	10	28.71	
9-3-19					1330	102	8		T-STORM Restart
9-5-19	52.1	36.4	.8	10.1	1280	86	9	28.94	
9-6-19	52.2	36.7	.7	10.4	1330	88	9	28.70	
9-10-19	51.8	36.6	.6	11.0	1233	81	10	28.96	
9-11-19					1433	83	9		
9-16-19	49.0	36.2	.6	13.0	1415	86	8	28.66	
9-18-19					1402	82	9		
9-23-19					1335	81	10		
9-24-19	48.0	34.6	1.4	16.00	1313	96	8	28.56	
9-27-19	49.9	36.6	.7	12.7	1120	79	10	28.55	
9-30-19	50.3	36.9	.6	12.0	1212	87	9	28.55	
10-1-19	50.4	36.6	.6	12.3	1217	79	10	28.96	
10-4-19	50.3	36.3	.7	12.7	1328	82	10	29.20	
10-5-19					1490	91	8		
10-7-19	10				1060	79	11		

Clay County Gas System
Daily Flare Readings

	Sampling Port				From Control Panel				
Date/Time	CH4	CO2	O2	Balance	Temp	Vacuum	Flow	Barometric Pressure	Comments
	%	%	%	%	DegF	Inches H2O	Scfm	Inches H20	
10-9-19					1370	9	84		
10-10-19					1280	10	82		
10-11-19	52.0	37.4	.6	10.	1328	9	86	28.40	
10-13-19	51.0	37.0	.8	10.9	1230	11	80	28.76	
10-14-19					1210	11	79		
10-22-19					1260	8	78		started Flare
10-24-19					1277	10	80		
10-31-19					1320	9	82		
11-1-19	53.2	37.3	.7	8.8	1254	10	82	28.77	
11-3-19	53.0	37.0	.8	9.9	1225	10	82	28.91	
11-4-19	53.2	37.8	.8	9.0	1210	11	80	28.78	
11-5-19	53.0	36.9	.7	9.3	1192	10	80	29.05	
11-13-19					1197	11	78		
11-14-19					1200	11	81		
11-16-19					1215	11	81		
11-26-19	52.8	37.2	.8	9.1	1146	11	78	28.67	
11-27-19	52.2	37.0	.8	10.0	1140	11	78	28.81	
12-05-19	51.6	36.8	.8	10.8	1190	11	81	28.64	
12-13-19					1314	9	89		
12-18-19		NO	GO	- Temp					
12-19-19		RESTART			1140	10	81		
12-20-19					1218	10	82		
12-23-19	55.0	37.1	.9	7.0	1091	11	77	28.86	
1-2-20			Flare	out					
1-8-20			11	11					

Appendix F

Leachate Monitoring Data and Recirculation Volumes

Table 1

Clay County 2020 Leachate Recirculation Volume Summary

Date	Injection Trench			Comments
	East (gal)	Middle (gal)	West (gal)	
2020 Year	0	0	0	No leachate was recirculated in 2020

Table 2
2018 - Clay County Landfill
Untreated Leachate Analytical Laboratory Data

	Units	2/10/2020	4/27/2020	8/18/2020	11/23/2020
Aldrin	ug/L	<0.15	<0.15	<0.15	<0.15
Alpha-BHC	ug/L	<0.15	<0.15	<0.15	<0.15
Beta-BHC	ug/L	<0.3	<0.3	<0.3	<0.3
Delta-BHC	ug/L	<0.15	<0.15	<0.15	<0.15
Gamma-BHC [Lindane]	ug/L	<0.15	<0.15	<0.15	<0.15
4,4'-DDD [P,P-DDD]	ug/L	<0.15	<0.15	<0.15	<0.15
4,4'-DDE [P,P-DDE]	ug/L	<0.15	<0.15	<0.15	<0.15
4,4'-DDT [P,P-DDT]	ug/L	<0.3	<0.3	<0.3	<0.3
Dieldrin	ug/L	<0.15	<0.15	<0.15	<0.15
Endosulfan I	ug/L	<0.15	<0.15	<0.15	<0.15
Endosulfan II	ug/L	<0.15	<0.15	<0.15	<0.15
Endosulfan sulfate	ug/L	<0.3	<0.3	<0.3	<0.3
Endrin	ug/L	<0.15	<0.15	<0.15	<0.15
Endrin aldehyde	ug/L	<0.3	<0.3	<0.3	<0.3
Heptachlor	ug/L	<0.15	<0.15	<0.15	<0.15
Heptachlor Epoxide	ug/L	<0.15	<0.15	<0.15	<0.15
Methoxychlor	ug/L	<0.5	<0.5	<0.5	<0.5
Toxaphene	ug/L	<6	<6	<6	<6
Chlordane	ug/L	<3.25	<3.25	<3.25	<3.25
PCB-1016	ug/L	<3.5	<3.5	<3.5	<3.5
PCB-1221	ug/L	<5	<5	<5	<5
PCB-1232	ug/L	<3	<3	<3	<3
PCB-1242	ug/L	<3	<3	<3	<3
PCB-1248	ug/L	<4	<4	<4	<4
PCB-1254	ug/L	<3	<3	<3	<3
PCB-1260	ug/L	<1.5	<1.5	<1.5	<1.5
Acenaphthene	ug/L	<10	<10	<10	<10
Acenaphthylene	ug/L	<10	<10	<10	<10
Anthracene	ug/L	<10	<10	<10	<10
Benzidine	ug/L	<100	<100	<100	<100
Benzo(a)anthracene	ug/L	<20	<20	<20	<20
Benzo(a)pyrene	ug/L	<20	<20	<20	<20
Benzo(b)fluoranthene	ug/L	<20	<20	<20	<20
Benzo(ghi)perylene	ug/L	<20	<20	<20	<20
Benzo(k)fluoranthene	ug/L	<20	<20	<20	<20
Benzyl Butyl Phthalate	ug/L	<10	<10	<10	<10
Bis(2-chloroethoxy)methane	ug/L	<10	<10	<10	<10
Bis(2-chloroethyl)ether	ug/L	<20	<20	<20	<20
Bis(2-ethylhexyl)phthalate	ug/L	<20	<20	34.1	<20
4-Bromophenyl Phenyl Ether	ug/L	<20	<20	<20	<20
4-Chloro-3-methyl phenol	ug/L	<20	<20	<20	<20
2-Chloronaphthalene	ug/L	<20	<20	<20	<20
2-Chlorophenol	ug/L	<20	<20	<20	<20
4-Chlorophenyl Phenyl Ether	ug/L	<10	<10	<10	<10

Table 2
2018 - Clay County Landfill
Untreated Leachate Analytical Laboratory Data

	Units	2/10/2020	4/27/2020	8/18/2020	11/23/2020
Chrysene	ug/L	<20	<20	<20	<20
Di-n-butyl phthalate	ug/L	<10	<10	<10	<10
Di-n-octyl phthalate	ug/L	<40	<20	<20	<20
Dibenzo(a,h)anthracene	ug/L	<20	<20	<20	<20
3,3-Dichlorobenzidine	ug/L	<40	<40	<40	<40
2,4-Dichlorophenol	ug/L	<20	<20	<20	<20
Diethyl phthalate	ug/L	<10	<10	<10	<10
Dimethyl phthalate	ug/L	<10	<10	<10	<10
2,4-Dimethylphenol	ug/L	<40	<40	<40	<40
2,4-Dinitrophenol	ug/L	<100	<100	<100	<100
2,4-Dinitrotoluene	ug/L	<40	<40	<40	<40
2,6-Dinitrotoluene	ug/L	<40	<40	<40	<40
1,2-Diphenylhydrazine	ug/L	<10	<10	<10	<10
Fluoranthene	ug/L	<10	<10	<10	<10
Fluorene	ug/L	<10	<10	<10	<10
Hexachlorobenzene	ug/L	<20	<20	<20	<20
Hexachlorobutadiene	ug/L	<20	<20	<20	<20
Hexachlorocyclopentadiene	ug/L	<40	<40	<40	<40
Hexachloroethane	ug/L	<10	<10	<10	<10
Indeno(1,2,3-cd)pyrene	ug/L	<20	<20	<20	<20
Isophorone	ug/L	<10	<10	<10	<10
2-Methyl-4,6-dinitrophenol	ug/L	<100	<100	<100	<100
N-Nitrosodi-n-propylamine	ug/L	<20	<20	<20	<20
N-Nitrosodimethylamine	ug/L	<40	<40	<40	<40
N-Nitrosodiphenylamine	ug/L	<40	<40	<40	<40
Naphthalene	ug/L	<10	<10	<10	<10
Nitrobenzene	ug/L	<10	<10	<10	<10
2-Nitrophenol	ug/L	<20	<20	<100	<20
4-Nitrophenol	ug/L	<100	<100	<100	<100
2,2-oxybis(1chloropropane)	ug/L	<10	<10	<10	<10
Pentachlorophenol	ug/L	<100	<100	<100	<100
Phenanthrene	ug/L	<10	<10	<10	<10
Phenol	ug/L	<20	<20	<20	<20
Pyrene	ug/L	<10	<10	<10	<10
1,2,4-Trichlorobenzene	ug/L	<10	<10	<10	<10
2,4,6-Trichlorophenol	ug/L	<20	<20	<20	<20
Acetone	ug/L	<50	<50	187.4	<50
Acrolein	ug/L	<10	<10	<10	<10
Acrylonitrile	ug/L	<10	<10	<10	<10
Allyl Chloride	ug/L	<2.5	<2.5	<2.5	<2.5
Benzene	ug/L	3.45	<2.5	4.7	4.45
bis(chloromethyl) ether	ug/L	NP	NP	NP	NP
Bromobenzene	ug/L	<2.5	<2.5	<2.5	<2.5
Bromochloromethane	ug/L	<2.5	<2.5	<2.5	<2.5
Bromodichloromethane	ug/L	<2.5	<2.5	<2.5	<2.5

Table 2
2018 - Clay County Landfill
Untreated Leachate Analytical Laboratory Data

	Units	2/10/2020	4/27/2020	8/18/2020	11/23/2020
Bromoform	ug/L	<2.5	<2.5	<2.5	<2.5
Bromomethane	ug/L	<5	<5	<5	<5
n-Butylbenzene	ug/L	<2.5	<2.5	<2.5	<2.5
sec-Butylbenzene	ug/L	<2.5	<2.5	<2.5	<2.5
t-Butylbenzene	ug/L	<2.5	<2.5	<2.5	<2.5
Carbon Tetrachloride	ug/L	<1	<1	<1	<1
Chlorobenzene	ug/L	<2.5	<2.5	<2.5	<2.5
Chlorodibromomethane	ug/L	<2.5	<2.5	<2.5	<2.5
Chloroethane	ug/L	<2.5	<2.5	<2.5	<2.5
2-Chloroethyl Vinyl Ether	ug/L	<5	<5	<5	<5
Chloroform	ug/L	<5	<5	<5	<5
Chloromethane	ug/L	<5	<5	<5	<5
2-Chlorotoluene	ug/L	<2.5	<2.5	<2.5	<2.5
4-Chlorotoluene	ug/L	<2.5	<2.5	<2.5	<2.5
Cumene	ug/L	<2.5	<2.5	<2.5	<2.5
1,2-Dibromo-3-chloropropane	ug/L	<0.25	<0.25	<0.25	<0.25
1,2-Dibromoethane	ug/L	<0.25	<0.25	<0.25	<0.25
Dibromomethane	ug/L	<2.5	<2.5	<2.5	<2.5
1,2-Dichlorobenzene	ug/L	<2.5	<2.5	<2.5	<2.5
1,3-Dichlorobenzene	ug/L	<2.5	<2.5	<2.5	<2.5
1,4-Dichlorobenzene	ug/L	2.9	<2.5	3.15	<2.5
Dichlorodifluoromethane	ug/L	<2.5	<2.5	<2.5	<2.5
1,1-Dichloroethene	ug/L	<2.5	<2.5	<2.5	<2.5
1,2-Dichloroethane	ug/L	<0.5	<0.5	0.6	<0.5
1,1-Dichloroethane	ug/L	<2.5	<2.5	<2.5	<2.5
cis-1,2-Dichloroethene	ug/L	<2.5	<2.5	<2.5	<2.5
trans-1,2-Dichloroethene	ug/L	<2.5	<2.5	<2.5	<2.5
Dichlorofluoromethane	ug/L	<2.5	<2.5	<2.5	<2.5
1,2-Dichloropropane	ug/L	<2.5	<2.5	<2.5	<2.5
1,3-Dichloropropane	ug/L	<2.5	<2.5	<2.5	<2.5
2,2-Dichloropropane	ug/L	<2.5	<2.5	<2.5	<2.5
1,1-Dichloropropene	ug/L	<2.5	<2.5	<2.5	<2.5
cis-1,3-Dichloropropene	ug/L	<2.5	<2.5	<2.5	<2.5
trans-1,3-Dichloropropene	ug/L	<2.5	<2.5	<2.5	<2.5
Ethyl Benzene	ug/L	<2.5	<2.5	7	4.45
Ethyl Ether	ug/L	17.5	11.95	13.25	19.65
Hexachlorobutadiene	ug/L	<1	<1	<1	<1
p-Isopropyltoluene	ug/L	<2.5	<2.5	2.9	<2.5
Methyl Ethyl Ketone	ug/L	<25	<25	116.7	<25
Methyl Isobutyl Ketone	ug/L	<10	<10	<10	39.1
Methyl tert-butyl Ether	ug/L	<2.5	<2.5	<2.5	<2.5
Methylene Chloride	ug/L	<5	<5	<5	<5
Naphthalene	ug/L	<5	<5	<5	<5
n-Propylbenzene	ug/L	<2.5	<2.5	<2.5	<2.5
Styrene	ug/L	<2.5	<2.5	<2.5	<2.5
1,1,1,2-Tetrachloroethane	ug/L	<2.5	<2.5	<2.5	<2.5
1,1,2,2-Tetrachloroethane	ug/L	<2.5	<2.5	<2.5	<2.5
Tetrachloroethene	ug/L	<2.5	<2.5	<2.5	<2.5
Tetrahydrofuran	ug/L	164.9	99.3	400.1	322.1

Table 2
2018 - Clay County Landfill
Untreated Leachate Analytical Laboratory Data

	Units	2/10/2020	4/27/2020	8/18/2020	11/23/2020
Toluene	ug/L	<2.5	<2.5	4.5	2.85
1,2,3-Trichlorobenzene	ug/L	<2.5	<2.5	<2.5	<2.5
1,2,4-Trichlorobenzene	ug/L	<2.5	<2.5	<2.5	<2.5
1,1,1-Trichloroethane	ug/L	<2.5	<2.5	<2.5	<2.5
1,1,2-Trichloroethane	ug/L	<2.5	<2.5	<2.5	<2.5
Trichloroethene	ug/L	<0.5	<0.5	<0.5	<0.5
Trichlorofluoromethane	ug/L	<2.5	<2.5	<2.5	<2.5
1,2,3-Trichloropropane	ug/L	<0.5	<0.5	<0.5	<0.5
Trichlorotrifluoroethane	ug/L	<2.5	<2.5	<2.5	<2.5
1,2,4-Trimethylbenzene	ug/L	<2.5	<2.5	4	2.7
1,3,5-Trimethylbenzene	ug/L	<2.5	<2.5	<2.5	<2.5
Vinyl Chloride	ug/L	0.25	0.35	0.65	0.6
m-Xylene and p-Xylene	ug/L	<5	<5	9.85	7.85
o-Xylene	ug/L	<2.5	<2.5	8.7	6.05

Antimony	ug/L	<2.5	<5	25.6	8
Arsenic	ug/L	99.8	31.1	653	272
Beryllium	mg/L	<0.005	< 0.025	<0.025	<0.05
Cadmium	ug/L	< 0.5	<0.5	1.8	0.58
Chromium	mg/L	0.067	<0.05	0.754	0.329
Copper	mg/L	<0.005	<0.05	0.046	<0.025
Flash Point	° F	>160	>159	>160	>161
Lead	ug/L	<2.5	<2.5	6.08	<2.5
Mercury	ug/L	<0.025	<0.025	0.096	<0.005
Nickel	mg/L	0.062	<0.05	0.25	0.152
Selenium	ug/L	8.33	<5	9.76	6.96
Silver	mg/L	<0.005	<0.025	<0.025	<0.025
Thallium	ug/L	<0.5	<0.5	<0.5	<0.5
Zinc	mg/L	<0.01	<0.05	0.076	<0.05

Table 3
Clay County, MN
Leachate Recirculation

January 2020

PMC=[(Lo*M)+P+LA-LCH]/M

PMC= Potential Moisture Content (%MC by weight)
Lo= moisture content of incoming waste by weight
M= total weight of waste received in recirculation area
P= precipitation received over the area by weight
LA= total weight of liquids added to the waste mass
LCH= total weight of leachate collected from the recirculation area

			Waste Depth			
			15 feet	20 feet	25 feet	30 feet
Lo=	20%	default value	20%	20%	20%	20%
P=	77.06	inches per year over the recirculation area				
P=	400.60	lbs per sf of recirc area	6.6	8.4	10.2	12.0
LA=	488,667	gallons	4.1	4.1	4.1	4.1
LCH=	1,168,863		9.7	9.7	9.7	9.7
M=		Mass of waste in recirculation area (Mlbs)	11	19	28	39
PMC=			28%	34%	36%	36%

Assume that total leachate recirculated is divided equally into the 3 trenches

Precip data is from Weather Underground for Detroit Lakes.

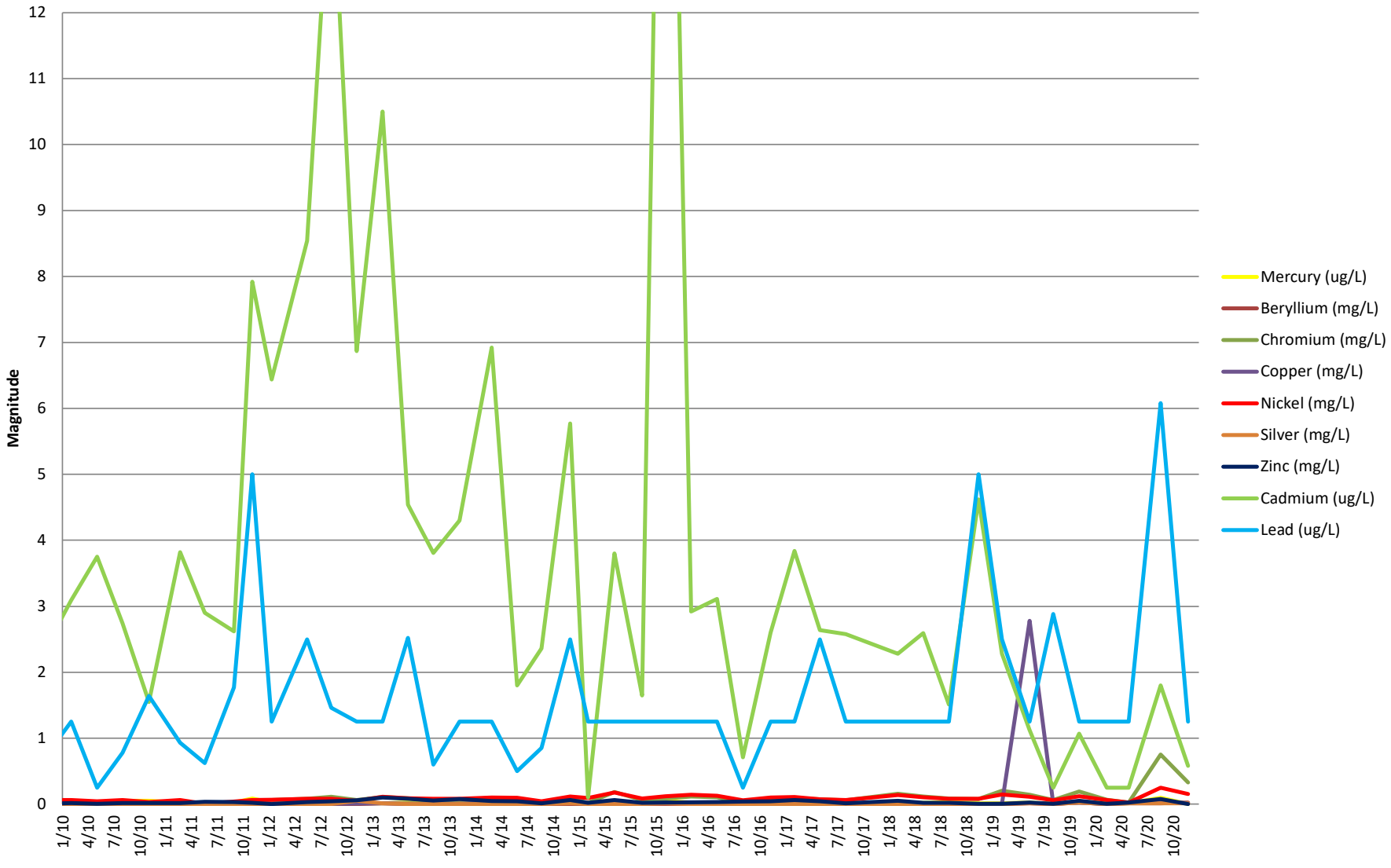
	Leachate Recirculated	Recirc / Trench	Total Leachate Removed	[(1)]Leachate Removed From	Leachate removed per trench
2011	234,000	78,000	2,809,800	561,960	187,320
2012	644,000	214,667	1,423,800	284,760	94,920
2013	420,000	140,000	3,263,400	652,680	217,560
2014	168,000	56,000	2,987,900	597,580	199,193
2015	0	0	1,951,900	390,380	130,127
2016	0	0	1,353,900	135,390	45,130
2017	0	0	1,588,104	158,810	52,937
2018	0	0	1,587,600	158,760	52,920
2019	0	0	2,173,800	217,380	72,460
2020	0	0	3,488,900	348,890	116,297
	1,466,000	488,667	22,629,104	3,506,590	1,168,863

Precipitation (inches)

	Total	**[(2)]Amount infiltrated**
2011	18	18
2012	13	13
2013	24	12
2014	18	4.5
2015	14.31	3.5775
2016	19.1	4.775
2017	14.4	3.6
2018	22.74	5.685
2019	28.6	7.15
2020	19.09	4.7725
	191.24	77.06

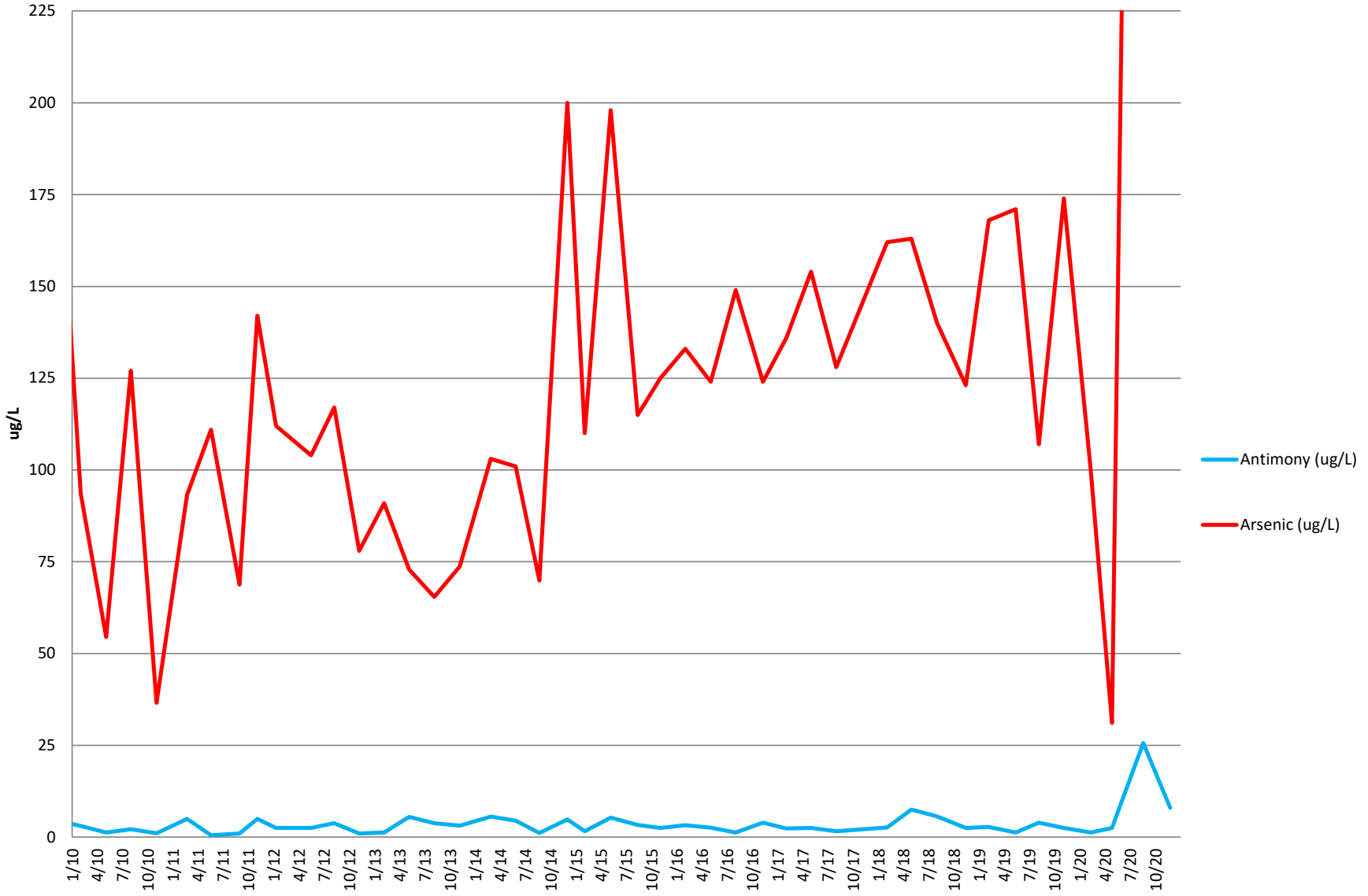
Notes:
[(1)] Assumes 2011 - 2015 that 20% of the total leachate removed from the site came from the recirculation area. In 2016 this was reduced to 10% since intermediate cover has been in-place for several years and total leachate generated was considerably less than previous years given the precipitation amount.
[(2)] Based on a CN of 80 for the intermediate cover placed over the area; conservatively assume that 75% of precip is runoff for 2014 - 2020 and 50% for 2013

Figure 5A
Clay County Landfill
Heavy Metal Trend



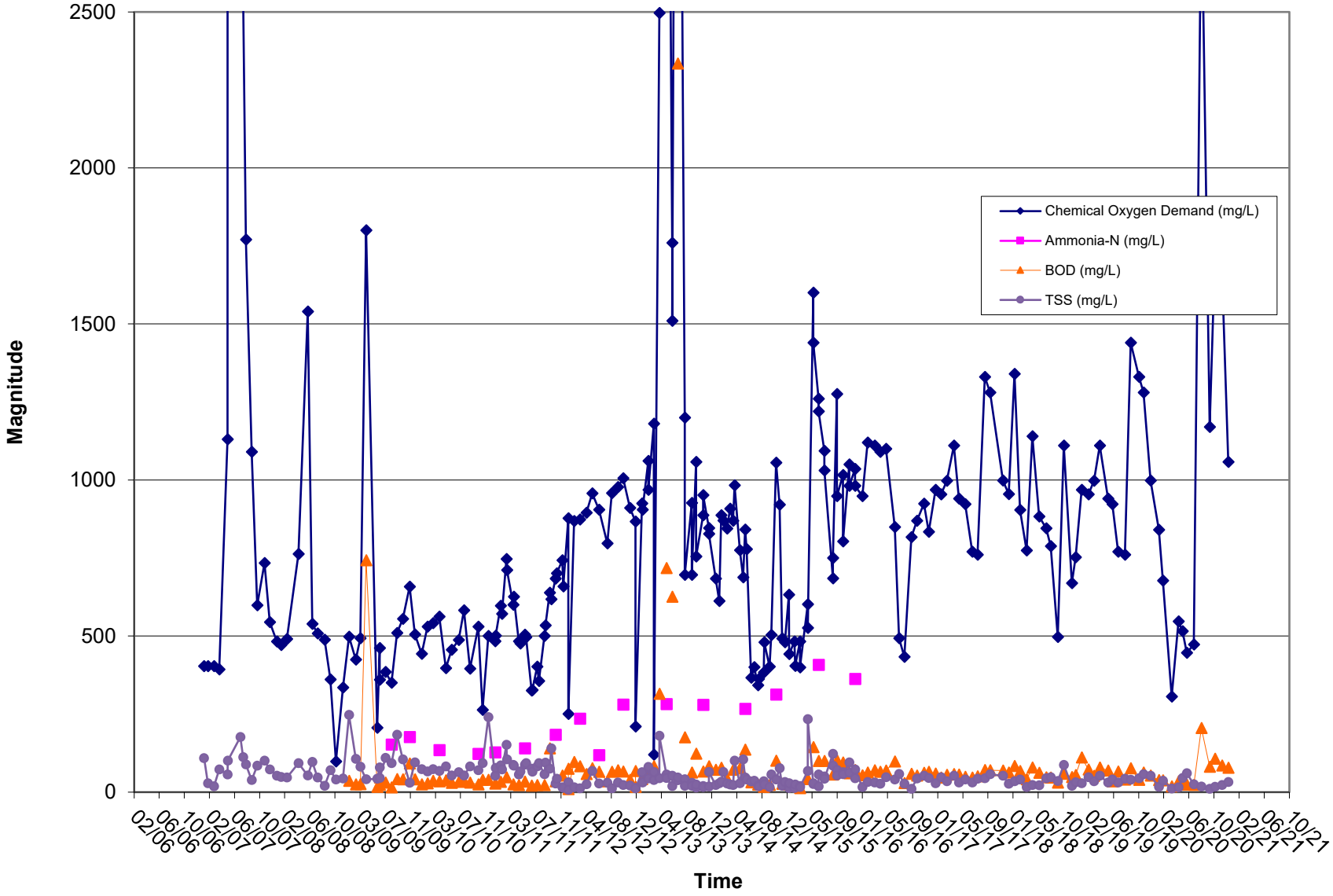
*Nondetects are reported at half value

Figure 5B
Clay County Landfill
Heavy Metal Trend



*Nondetects are reported at half value

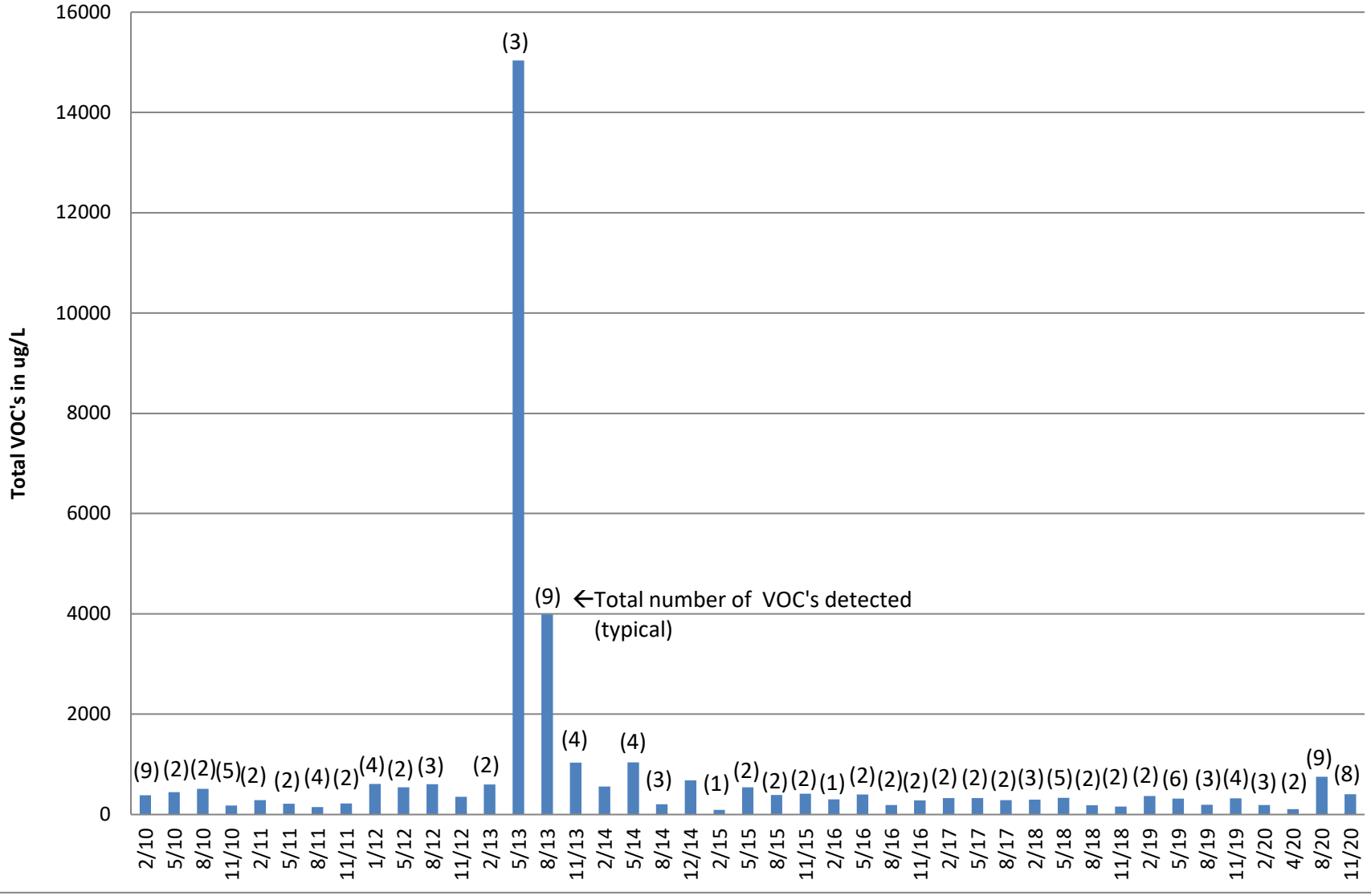
Figure 6
Clay County Landfill
Leachate Quality Trends



*Nondetects are reported at half value

T:\1337 Clay Co\Annual Reports\2020\Appendix F - Leachate\TrendsB

Figure 7
Clay County Landfill
Total VOC Concentration in Leachate



MINNESOTA VALLEY TESTING LABORATORIES, INC.

MVTL

1126 N. Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890
2616 E. Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724
1201 Lincoln Highway ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885
www.mvtl.com

MEMBER ACIL

COLLEEN ECK
CLAY COUNTY SOLID WASTE MGMT
807 11TH ST N
MOORHEAD MN 56560-1500

Report Date: 27 Jan 2020
Lab Number: 20-A3289
Work Order #: 12-3662
Account #: 013177
Sample Matrix: WASTEWATER
Date Sampled: 21 Jan 2020 13:00
Date Received: 22 Jan 2020 10:15

Sample Description: LEACHATE

Temp at Receipt: 1.1C

	As Received Result		Method RL	Method Reference	Date Analyzed	Analyst
Solids, Total Suspended	7	mg/L	2	USGS I-3765-85	22 Jan 20 12:00	DK
pH	* 7.2	units	1.0	SM 4500 H+ B-2000	22 Jan 20 12:03	DK
Chemical Oxygen Demand	650 @	mg/L	10	410.4	24 Jan 20 10:32	RMV

This sample was either unpreserved or needed additional preservation upon receipt at the laboratory. The following preservation was added by MVTL: sulfuric acid.

* Holding Time Exceeded

Approved by:

Dan O'Connell
Chemistry Laboratory Managers

David Smahel
New Ulm, MN

RL = Reporting Limit
Analyses performed under our Minnesota Department of Health Accreditation conform to the current TNI standards.
The reporting limit was elevated for any analyte requiring a dilution as coded below:
@ = Due to sample matrix # = Due to concentration of other analytes
! = Due to sample quantity + = Due to internal standard response
CERTIFICATION: MN LAB # 027-015-125 ND WW/DW # R-040

MVTL guarantees the accuracy of the analysis done on the sample submitted for testing. It is not possible for MVTL to guarantee that a test result obtained on a particular sample will be the same on any other sample unless all conditions affecting the sample are the same, including sampling by MVTL. As a mutual protection to clients, the public and ourselves, all reports are submitted as the confidential property of clients, and authorization for publication of statements, conclusions or extracts from or regarding our reports is reserved pending our written approval.

AN EQUAL OPPORTUNITY EMPLOYER

MINNESOTA VALLEY TESTING LABORATORIES, INC.

MVTL

1126 N. Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890
2616 E. Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724
1201 Lincoln Highway ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885
www.mvtl.com

MEMBER ACIL

Report Date: 14 Feb 2020
Lab Number: 20-A5815
Work Order #: 12-4306
Account #: 013177
Sample Matrix: WASTEWATER
Date Sampled: 10 Feb 2020 9:15
Date Received: 11 Feb 2020 9:15

COLLEEN ECK
CLAY COUNTY SOLID WASTE MGMT
807 11TH ST N
MOORHEAD MN 56560-1500

Sample Description: LEACHATE

Temp at Receipt: -0.5C

		As Received Result		Method RL	Method Reference	Date Analyzed	Analyst
Solids, Total Suspended		19	mg/L	2	USGS I-3765-85	11 Feb 20 10:33	RLY
pH	*	7.4	units	1.0	SM 4500 H+ B-2000	11 Feb 20 11:03	RLY
Chemical Oxygen Demand		645 @	mg/L	10	410.4	13 Feb 20 10:30	RMB

This sample was either unpreserved or needed additional preservation upon receipt at the laboratory. The following preservation was added by MVTL: sulfuric acid.

* Holding Time Exceeded

Approved by:

Dan O'Connell David Smahel
Chemistry Laboratory Managers New Ulm, MN

RL = Reporting Limit
Analyses performed under our Minnesota Department of Health Accreditation conform to the current TNI standards.
The reporting limit was elevated for any analyte requiring a dilution as coded below:
@ = Due to sample matrix # = Due to concentration of other analytes
! = Due to sample quantity + = Due to internal standard response
CERTIFICATION: MN LAB # 027-015-125 ND WW/DW # R-040

MVTL guarantees the accuracy of the analysis done on the sample submitted for testing. It is not possible for MVTL to guarantee that a test result obtained on a particular sample will be the same on any other sample unless all conditions affecting the sample are the same, including sampling by MVTL. As a mutual protection to clients, the public and ourselves, all reports are submitted as the confidential property of clients, and authorization for publication of statements, conclusions or extracts from or regarding our reports is reserved pending our written approval.

AN EQUAL OPPORTUNITY EMPLOYER

MINNESOTA VALLEY TESTING LABORATORIES, INC.

MVTL

1126 N. Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890
2616 E. Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724
1201 Lincoln Highway ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885
www.mvtl.com

MEMBER ACIL

Report Date: 3 Apr 2020
Lab Number: 20-A13210
Work Order #: 12-5947
Account #: 013177
Sample Matrix: WASTEWATER
Date Sampled: 24 Mar 2020 9:15
Date Received: 25 Mar 2020 9:25

COLLEEN ECK
CLAY COUNTY SOLID WASTE MGMT
807 11TH ST N
MOORHEAD MN 56560-1500

Sample Description: LEACHATE

Temp at Receipt: 2.9C

		As Received Result		Method RL	Method Reference	Date Analyzed	Analyst
Solids, Total Suspended		10	mg/L	2	USGS I-3765-85	25 Mar 20 12:47	DK
pH	*	7.6	units	1.0	SM 4500 H+ B-2000	25 Mar 20 12:40	DK
Chemical Oxygen Demand		270	mg/L	10	410.4	2 Apr 20 11:25	RMB

This sample was either unpreserved or needed additional preservation upon receipt at the laboratory. The following preservation was added by MVTL: sulfuric acid.

* Holding Time Exceeded

Approved by:

Dan O'Connell David Smahel
Chemistry Laboratory Managers New Ulm, MN

RL = Reporting Limit
Analyses performed under our Minnesota Department of Health Accreditation conform to the current TNI standards.
The reporting limit was elevated for any analyte requiring a dilution as coded below:
@ = Due to sample matrix # = Due to concentration of other analytes
! = Due to sample quantity + = Due to internal standard response
CERTIFICATION: MN LAB # 027-015-125 ND WW/DW # R-040

MVTL guarantees the accuracy of the analysis done on the sample submitted for testing. It is not possible for MVTL to guarantee that a test result obtained on a particular sample will be the same on any other sample unless all conditions affecting the sample are the same, including sampling by MVTL. As a mutual protection to clients, the public and ourselves, all reports are submitted as the confidential property of clients, and authorization for publication of statements, conclusions or extracts from or regarding our reports is reserved pending our written approval.

AN EQUAL OPPORTUNITY EMPLOYER

MINNESOTA VALLEY TESTING LABORATORIES, INC.

MVTL

1126 N. Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890
2616 E. Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724
1201 Lincoln Highway ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885
www.mvtl.com

MEMBER ACIL

Report Date: 4 May 2020
Lab Number: 20-A17921
Work Order #: 12-7426
Account #: 013177
Sample Matrix: WASTEWATER
Date Sampled: 27 Apr 2020 14:00
Date Received: 28 Apr 2020 9:05

COLLEEN ECK
CLAY COUNTY SOLID WASTE MGMT
807 11TH ST N
MOORHEAD MN 56560-1500

Sample Description: LEACHATE

Temp at Receipt: 3.4C

		As Received Result		Method RL	Method Reference	Date Analyzed	Analyst
Solids, Total Suspended		30	mg/L	2	USGS I-3765-85	28 Apr 20 11:03	RLY
pH	*	7.3	units	1.0	SM 4500 H+ B-2000	28 Apr 20 10:27	RLY
Chemical Oxygen Demand		428 @	mg/L	10	410.4	1 May 20 11:05	RMB

This sample was either unpreserved or needed additional preservation upon receipt at the laboratory. The following preservation was added by MVTL: sulfuric acid.

* Holding Time Exceeded

Approved by:

Dan O'Connell David Smahel
Chemistry Laboratory Managers New Ulm, MN

RL = Reporting Limit
Analyses performed under our Minnesota Department of Health Accreditation conform to the current TNI standards.
The reporting limit was elevated for any analyte requiring a dilution as coded below:
@ = Due to sample matrix # = Due to concentration of other analytes
! = Due to sample quantity + = Due to internal standard response
CERTIFICATION: MN LAB # 027-015-125 ND WW/DW # R-040

MVTL guarantees the accuracy of the analysis done on the sample submitted for testing. It is not possible for MVTL to guarantee that a test result obtained on a particular sample will be the same on any other sample unless all conditions affecting the sample are the same, including sampling by MVTL. As a mutual protection to clients, the public and ourselves, all reports are submitted as the confidential property of clients, and authorization for publication of statements, conclusions or extracts from or regarding our reports is reserved pending our written approval.

AN EQUAL OPPORTUNITY EMPLOYER

MINNESOTA VALLEY TESTING LABORATORIES, INC.

MVTL

1126 N. Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890
2616 E. Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724
1201 Lincoln Highway ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885
www.mvtl.com

MEMBER ACIL

Report Date: 22 May 2020
Lab Number: 20-A21867
Work Order #: 12-8470
Account #: 013177
Sample Matrix: WASTEWATER
Date Sampled: 18 May 2020 9:30
Date Received: 19 May 2020 9:15

COLLEEN ECK
CLAY COUNTY SOLID WASTE MGMT
807 11TH ST N
MOORHEAD MN 56560-1500

Sample Description: LEACHATE

Temp at Receipt: 3.8C

	As Received Result		Method RL	Method Reference	Date Analyzed	Analyst
Solids, Total Suspended	48	mg/L	2	USGS I-3765-85	19 May 20 13:43	BA
pH	* 7.2	units	1.0	SM 4500 H+ B-2000	19 May 20 10:52	BA
Chemical Oxygen Demand	377 @	mg/L	10	410.4	21 May 20 9:30	GG

* Holding Time Exceeded

Approved by:

Dan O'Connell David Smahel
Chemistry Laboratory Managers New Ulm, MN

RL = Reporting Limit
Analyses performed under our Minnesota Department of Health Accreditation conform to the current TNI standards.
The reporting limit was elevated for any analyte requiring a dilution as coded below:
@ = Due to sample matrix # = Due to concentration of other analytes
! = Due to sample quantity + = Due to internal standard response
CERTIFICATION: MN LAB # 027-015-125 ND WW/DW # R-040

MVTL guarantees the accuracy of the analysis done on the sample submitted for testing. It is not possible for MVTL to guarantee that a test result obtained on a particular sample will be the same on any other sample unless all conditions affecting the sample are the same, including sampling by MVTL. As a mutual protection to clients, the public and ourselves, all reports are submitted as the confidential property of clients, and authorization for publication of statements, conclusions or extracts from or regarding our reports is reserved pending our written approval.

AN EQUAL OPPORTUNITY EMPLOYER

MINNESOTA VALLEY TESTING LABORATORIES, INC.

MVTL

1126 N. Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890
2616 E. Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724
1201 Lincoln Highway ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885
www.mvtl.com

MEMBER ACIL

Report Date: 17 Jun 2020
Lab Number: 20-A25924
Work Order #: 12-9489
Account #: 013177
Sample Matrix: WASTEWATER
Date Sampled: 8 Jun 2020 8:30
Date Received: 9 Jun 2020 9:40

COLLEEN ECK
CLAY COUNTY SOLID WASTE MGMT
807 11TH ST N
MOORHEAD MN 56560-1500

Sample Description: LEACHATE

Temp at Receipt: 3.8C

	As Received Result		Method RL	Method Reference	Date Analyzed	Analyst
Solids, Total Suspended	59	mg/L	2	USGS I-3765-85	9 Jun 20 10:25	BA
pH	* 7.3	units	1.0	SM 4500 H+ B-2000	9 Jun 20 10:00	BA
Chemical Oxygen Demand	406	mg/L	10	410.4	16 Jun 20 9:45	RMB

* Holding Time Exceeded

Approved by:

Dan O'Connell David Smahel
Chemistry Laboratory Managers New Ulm, MN

RL = Reporting Limit
Analyses performed under our Minnesota Department of Health Accreditation conform to the current TNI standards.
The reporting limit was elevated for any analyte requiring a dilution as coded below:
@ = Due to sample matrix # = Due to concentration of other analytes
! = Due to sample quantity + = Due to internal standard response
CERTIFICATION: MN LAB # 027-015-125 ND WW/DW # R-040

MVTL guarantees the accuracy of the analysis done on the sample submitted for testing. It is not possible for MVTL to guarantee that a test result obtained on a particular sample will be the same on any other sample unless all conditions affecting the sample are the same, including sampling by MVTL. As a mutual protection to clients, the public and ourselves, all reports are submitted as the confidential property of clients, and authorization for publication of statements, conclusions or extracts from or regarding our reports is reserved pending our written approval.

AN EQUAL OPPORTUNITY EMPLOYER

MINNESOTA VALLEY TESTING LABORATORIES, INC.

MVTL

1126 N. Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890
2616 E. Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724
1201 Lincoln Highway ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885
www.mvtl.com

MEMBER ACIL

Report Date: 27 Jul 2020
Lab Number: 20-A32510
Work Order #: 12-11097
Account #: 013177
Sample Matrix: WASTEWATER
Date Sampled: 13 Jul 2020 8:15
Date Received: 14 Jul 2020 9:25

COLLEEN ECK
CLAY COUNTY SOLID WASTE MGMT
807 11TH ST N
MOORHEAD MN 56560-1500

Sample Description: LEACHATE

Temp at Receipt: 1.2C

		As Received Result		Method RL	Method Reference	Date Analyzed	Analyst
Solids, Total Suspended		32	mg/L	2	USGS I-3765-85	14 Jul 20 10:48	BA
pH	*	7.3	units	1.0	SM 4500 H+ B-2000	14 Jul 20 10:44	BA
Chemical Oxygen Demand		398 @	mg/L	10	410.4	23 Jul 20 10:00	GG

* Holding Time Exceeded

Approved by:

Dan O'Connell David Smahel
Chemistry Laboratory Managers New Ulm, MN

RL = Reporting Limit
Analyses performed under our Minnesota Department of Health Accreditation conform to the current TNI standards.
The reporting limit was elevated for any analyte requiring a dilution as coded below:
@ = Due to sample matrix # = Due to concentration of other analytes
! = Due to sample quantity + = Due to internal standard response
CERTIFICATION: MN LAB # 027-015-125 ND WW/DW # R-040

MVTL guarantees the accuracy of the analysis done on the sample submitted for testing. It is not possible for MVTL to guarantee that a test result obtained on a particular sample will be the same on any other sample unless all conditions affecting the sample are the same, including sampling by MVTL. As a mutual protection to clients, the public and ourselves, all reports are submitted as the confidential property of clients, and authorization for publication of statements, conclusions or extracts from or regarding our reports is reserved pending our written approval.

AN EQUAL OPPORTUNITY EMPLOYER

MINNESOTA VALLEY TESTING LABORATORIES, INC.

MVTL

1126 N. Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890
2616 E. Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724
1201 Lincoln Highway ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885
www.mvtl.com

MEMBER ACIL

Report Date: 26 Aug 2020
Lab Number: 20-A39947
Work Order #: 12-12703
Account #: 013177
Sample Matrix: WASTEWATER
Date Sampled: 18 Aug 2020 10:00
Date Received: 19 Aug 2020 9:25

COLLEEN ECK
CLAY COUNTY SOLID WASTE MGMT
807 11TH ST N
MOORHEAD MN 56560-1500

Sample Description: LEACHATE

Temp at Receipt: 0.1C

		As Received Result		Method RL	Method Reference	Date Analyzed	Analyst
Solids, Total Suspended		41	mg/L	2	USGS I-3765-85	19 Aug 20 12:16	DK
pH	*	7.6	units	1.0	SM 4500 H+ B-2000	19 Aug 20 10:43	DK
Chemical Oxygen Demand		2110 ~	mg/L	10	410.4	25 Aug 20 9:15	RMB

This sample was either unpreserved or needed additional preservation upon receipt at the laboratory. The following preservation was added by MVTL: sulfuric acid.

* Holding Time Exceeded

~ Sample diluted due to result above calibration of linear range.

Approved by:

Dan O'Connell David Smahel
Chemistry Laboratory Managers New Ulm, MN

RL = Reporting Limit
Analyses performed under our Minnesota Department of Health Accreditation conform to the current TNI standards.
The reporting limit was elevated for any analyte requiring a dilution as coded below:
@ = Due to sample matrix # = Due to concentration of other analytes
! = Due to sample quantity + = Due to internal standard response
CERTIFICATION: MN LAB # 027-015-125 ND WW/DW # R-040

MVTL guarantees the accuracy of the analysis done on the sample submitted for testing. It is not possible for MVTL to guarantee that a test result obtained on a particular sample will be the same on any other sample unless all conditions affecting the sample are the same, including sampling by MVTL. As a mutual protection to clients, the public and ourselves, all reports are submitted as the confidential property of clients, and authorization for publication of statements, conclusions or extracts from or regarding our reports is reserved pending our written approval.

AN EQUAL OPPORTUNITY EMPLOYER

MINNESOTA VALLEY TESTING LABORATORIES, INC.

MVTL

1126 N. Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890
2616 E. Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724
1201 Lincoln Highway ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885
www.mvtl.com

MEMBER ACIL

Report Date: 16 Sep 2020
Lab Number: 20-A43695
Work Order #: 12-13591
Account #: 013177
Sample Matrix: WASTEWATER
Date Sampled: 8 Sep 2020 9:00
Date Received: 9 Sep 2020 9:15

COLLEEN ECK
CLAY COUNTY SOLID WASTE MGMT
807 11TH ST N
MOORHEAD MN 56560-1500

Sample Description: LEACHATE

Temp at Receipt: 2.9C

		As Received Result		Method RL	Method Reference	Date Analyzed	Analyst
Solids, Total Suspended		23	mg/L	2	USGS I-3765-85	9 Sep 20 15:07	DK
pH	*	7.7	units	1.0	SM 4500 H+ B-2000	9 Sep 20 14:13	DK
Chemical Oxygen Demand		1870 ~	mg/L	10	410.4	15 Sep 20 11:05	RMB

* Holding Time Exceeded

~ Sample diluted due to result above calibration of linear range.

Approved by:

Dan O'Connell David Smahel
Chemistry Laboratory Managers New Ulm, MN

RL = Reporting Limit
Analyses performed under our Minnesota Department of Health Accreditation conform to the current TNI standards.
The reporting limit was elevated for any analyte requiring a dilution as coded below:
@ = Due to sample matrix # = Due to concentration of other analytes
! = Due to sample quantity + = Due to internal standard response
CERTIFICATION: MN LAB # 027-015-125 ND WW/DW # R-040

MVTL guarantees the accuracy of the analysis done on the sample submitted for testing. It is not possible for MVTL to guarantee that a test result obtained on a particular sample will be the same on any other sample unless all conditions affecting the sample are the same, including sampling by MVTL. As a mutual protection to clients, the public and ourselves, all reports are submitted as the confidential property of clients, and authorization for publication of statements, conclusions or extracts from or regarding our reports is reserved pending our written approval.

AN EQUAL OPPORTUNITY EMPLOYER

MINNESOTA VALLEY TESTING LABORATORIES, INC.

MVTL

1126 N. Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890
2616 E. Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724
1201 Lincoln Highway ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885
www.mvtl.com

MEMBER ACIL

Report Date: 4 Nov 2020
Lab Number: 20-A53644
Work Order #: 12-16031
Account #: 013177
Sample Matrix: WASTEWATER
Date Sampled: 28 Oct 2020 11:15
Date Received: 30 Oct 2020 9:20

COLLEEN ECK
CLAY COUNTY SOLID WASTE MGMT
807 11TH ST N
MOORHEAD MN 56560-1500

Sample Description: LEACHATE

Temp at Receipt: 0.9C

	As Received Result		Method RL	Method Reference	Date Analyzed	Analyst
Solids, Total Suspended	44	mg/L	2	USGS I-3765-85	30 Oct 20 13:57	HO
pH	* 7.5	units	1.0	SM 4500 H+ B-2000	30 Oct 20 14:24	HO
Chemical Oxygen Demand	1610 ~	mg/L	10	410.4	3 Nov 20 9:50	RMB

* Holding Time Exceeded

~ Sample diluted due to result above calibration of linear range.

Approved by:

Dan O'Connell David Smahel
Chemistry Laboratory Managers New Ulm, MN

RL = Reporting Limit
Analyses performed under our Minnesota Department of Health Accreditation conform to the current TNI standards.
The reporting limit was elevated for any analyte requiring a dilution as coded below:
@ = Due to sample matrix # = Due to concentration of other analytes
! = Due to sample quantity + = Due to internal standard response
CERTIFICATION: MN LAB # 027-015-125 ND WW/DW # R-040

MVTL guarantees the accuracy of the analysis done on the sample submitted for testing. It is not possible for MVTL to guarantee that a test result obtained on a particular sample will be the same on any other sample unless all conditions affecting the sample are the same, including sampling by MVTL. As a mutual protection to clients, the public and ourselves, all reports are submitted as the confidential property of clients, and authorization for publication of statements, conclusions or extracts from or regarding our reports is reserved pending our written approval.

AN EQUAL OPPORTUNITY EMPLOYER

MINNESOTA VALLEY TESTING LABORATORIES, INC.

MVTL

1126 N. Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890
2616 E. Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724
1201 Lincoln Highway ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885
www.mvtl.com

MEMBER ACIL

Report Date: 28 Dec 2020
Lab Number: 20-A60786
Work Order #: 12-17853
Account #: 013177
Sample Matrix: WASTEWATER
Date Sampled: 15 Dec 2020 8:50
Date Received: 16 Dec 2020 9:20

COLLEEN ECK
CLAY COUNTY SOLID WASTE MGMT
807 11TH ST N
MOORHEAD MN 56560-1500

Sample Description: LEACHATE

Temp at Receipt: 0.7 C

	As Received Result		Method RL	Method Reference	Date Analyzed	Analyst
Solids, Total Suspended	30	mg/L	2	USGS I-3765-85	16 Dec 20 13:49	PJH
pH	* 7.4	units	1.0	SM 4500 H+ B-2000	16 Dec 20 13:13	PJH
Chemical Oxygen Demand	1370 ~	mg/L	10	410.4	24 Dec 20 9:10	RMB

* Holding Time Exceeded

~ Sample diluted due to result above calibration of linear range.

Approved by:

Dan O'Connell David Smahel
Chemistry Laboratory Managers New Ulm, MN

RL = Reporting Limit
Analyses performed under our Minnesota Department of Health Accreditation conform to the current TNI standards.
The reporting limit was elevated for any analyte requiring a dilution as coded below:
@ = Due to sample matrix # = Due to concentration of other analytes
! = Due to sample quantity + = Due to internal standard response
CERTIFICATION: MN LAB # 027-015-125 ND WW/DW # R-040

MVTL guarantees the accuracy of the analysis done on the sample submitted for testing. It is not possible for MVTL to guarantee that a test result obtained on a particular sample will be the same on any other sample unless all conditions affecting the sample are the same, including sampling by MVTL. As a mutual protection to clients, the public and ourselves, all reports are submitted as the confidential property of clients, and authorization for publication of statements, conclusions or extracts from or regarding our reports is reserved pending our written approval.

AN EQUAL OPPORTUNITY EMPLOYER

MINNESOTA VALLEY TESTING LABORATORIES, INC.

MVTL

1126 N. Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890
2616 E. Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724
1201 Lincoln Highway ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885
www.mvtl.com

MEMBER ACIL

Report Date: 27 Feb 2020
Lab Number: 20-A5816
Work Order #: 12-4307
Account #: 013177
Sample Matrix: WASTEWATER
Date Sampled: 10 Feb 2020 9:15
Date Received: 11 Feb 2020 9:15

COLLEEN ECK
CLAY COUNTY SOLID WASTE MGMT
807 11TH ST N
MOORHEAD MN 56560-1500

Sample Description: LEACHATE

Temp at Receipt: 4.2C

	As Received Result		Method RL	Method Reference	Date Analyzed	Analyst
608/8081/8082 Extraction					14 Feb 20	KLM
MS Water Digestions					13 Feb 20	JMS
Water Digestions					13 Feb 20	JMS
Flash Point	> 160	degrees F	0	ASTM D3278	14 Feb 20 12:07	RAG
Mercury	< 0.025 @	ug/L	0.005	EPA 245.7	20 Feb 20 11:42	RMB
Beryllium	< 0.005	mg/L	0.005	200.7	17 Feb 20 10:40	KCD
Chromium	0.067	mg/L	0.010	200.7	17 Feb 20 10:40	KCD
Copper	< 0.005	mg/L	0.005	200.7	17 Feb 20 10:40	KCD
Nickel	0.062	mg/L	0.010	200.7	17 Feb 20 10:40	KCD
Silver	< 0.005	mg/L	0.005	200.7	17 Feb 20 10:40	KCD
Zinc	< 0.01	mg/L	0.01	200.7	17 Feb 20 10:40	KCD
Antimony	< 2.5 @	ug/L	0.5	200.8	17 Feb 20 11:13	KAM
Arsenic	99.8 ~	ug/L	0.50	200.8	17 Feb 20 11:13	KAM
Cadmium	< 0.5 @	ug/L	0.1	200.8	17 Feb 20 11:13	KAM
Lead	< 2.5 @	ug/L	0.5	200.8	17 Feb 20 11:13	KAM
Selenium	8.33 @	ug/L	0.50	200.8	17 Feb 20 11:13	KAM
Thallium	< 0.5 @	ug/L	0.1	200.8	17 Feb 20 11:13	KAM
Aldrin	< 0.15 @	ug/L	0.03	EPA 608	18 Feb 20	TMP
Alpha-BHC	< 0.15 @	ug/L	0.03	EPA 608	18 Feb 20	TMP
Beta-BHC	< 0.3 @	ug/L	0.06	EPA 608	18 Feb 20	TMP
Delta-BHC	< 0.15 @	ug/L	0.03	EPA 608	18 Feb 20	TMP
Gamma-BHC [Lindane]	< 0.15 @	ug/L	0.03	EPA 608	18 Feb 20	TMP
4,4'-DDD [P,P-DDD]	< 0.15 @	ug/L	0.03	EPA 608	18 Feb 20	TMP
4,4'-DDE [P,P-DDE]	< 0.15 @	ug/L	0.03	EPA 608	18 Feb 20	TMP
4,4'-DDT [P,P-DDT]	< 0.3 @	ug/L	0.06	EPA 608	18 Feb 20	TMP
Dieldrin	< 0.15 @	ug/L	0.03	EPA 608	18 Feb 20	TMP
Endosulfan I	< 0.15 @	ug/L	0.03	EPA 608	18 Feb 20	TMP
Endosulfan II	< 0.15 @	ug/L	0.03	EPA 608	18 Feb 20	TMP
Endosulfan sulfate	< 0.3 @	ug/L	0.06	EPA 608	18 Feb 20	TMP

RL = Reporting Limit
Analyses performed under our Minnesota Department of Health Accreditation conform to the current TNI standards.
The reporting limit was elevated for any analyte requiring a dilution as coded below:
@ = Due to sample matrix # = Due to concentration of other analytes
! = Due to sample quantity + = Due to internal standard response
CERTIFICATION: MN LAB # 027-015-125 ND WW/DW # R-040

MVTL guarantees the accuracy of the analysis done on the sample submitted for testing. It is not possible for MVTL to guarantee that a test result obtained on a particular sample will be the same on any other sample unless all conditions affecting the sample are the same, including sampling by MVTL. As a mutual protection to clients, the public and ourselves, all reports are submitted as the confidential property of clients, and authorization for publication of statements, conclusions or extracts from or regarding our reports is reserved pending our written approval.

AN EQUAL OPPORTUNITY EMPLOYER

MVTL

MINNESOTA VALLEY TESTING LABORATORIES, INC.

1126 N. Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890
2616 E. Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724
1201 Lincoln Highway ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885
www.mvtl.com

MEMBER ACIL

COLLEEN ECK
CLAY COUNTY SOLID WASTE MGMT
807 11TH ST N
MOORHEAD MN 56560-1500

Report Date: 27 Feb 2020
Lab Number: 20-A5816
Work Order #: 12-4307
Account #: 013177
Sample Matrix: WASTEWATER
Date Sampled: 10 Feb 2020 9:15
Date Received: 11 Feb 2020 9:15

Sample Description: LEACHATE

Temp at Receipt: 4.2C

	As Received Result		Method RL	Method Reference	Date Analyzed	Analyst
Endrin	< 0.15 @	ug/L	0.03	EPA 608	18 Feb 20	TMP
Endrin aldehyde	< 0.3 @	ug/L	0.06	EPA 608	18 Feb 20	TMP
Heptachlor	< 0.15 @	ug/L	0.03	EPA 608	18 Feb 20	TMP
Heptachlor Epoxide	< 0.15 @	ug/L	0.03	EPA 608	18 Feb 20	TMP
Methoxychlor	< 0.5 @	ug/L	0.1	EPA 608	18 Feb 20	TMP
Toxaphene	< 6 @	ug/L	1.2	EPA 608	18 Feb 20	TMP
Chlordane	< 3.25 @	ug/L	0.65	EPA 608	18 Feb 20	TMP
PCB-1016	< 3.5 @	ug/L	0.7	EPA 608	18 Feb 20	TMP
PCB-1221	< 5 @	ug/L	1	EPA 608	18 Feb 20	TMP
PCB-1232	< 3 @	ug/L	0.6	EPA 608	18 Feb 20	TMP
PCB-1242	< 3 @	ug/L	0.6	EPA 608	18 Feb 20	TMP
PCB-1248	< 4 @	ug/L	0.8	EPA 608	18 Feb 20	TMP
PCB-1254	< 3 @	ug/L	0.6	EPA 608	18 Feb 20	TMP
PCB-1260	< 1.5 @	ug/L	0.3	EPA 608	18 Feb 20	TMP

Flash Point subcontracted to:
Minnesota Valley Testing Labs Inc.
2616 East Broadway Ave
Bismarck, ND 58501
701-258-9720
MDH State Lab ID: 038-999-267

~ Sample diluted due to result above calibration of linear range.

Decachlorobiphenyl surrogate out of acceptable range due to sample matrix.

2,4,5,6-TETRACHLORO-m-XYLENE (SURROGATE) RECOVERY: 55 %

DECACHLOROBIPHENYL (SURROGATE) RECOVERY: 43 %

Approved by:

Dan O'Connell David Smahel
Chemistry Laboratory Managers New Ulm, MN

RL = Reporting Limit
Analyses performed under our Minnesota Department of Health Accreditation conform to the current TNI standards.
The reporting limit was elevated for any analyte requiring a dilution as coded below:
@ = Due to sample matrix # = Due to concentration of other analytes
! = Due to sample quantity + = Due to internal standard response
CERTIFICATION: MN LAB # 027-015-125 ND WW/DW # R-040

MVTL guarantees the accuracy of the analysis done on the sample submitted for testing. It is not possible for MVTL to guarantee that a test result obtained on a particular sample will be the same on any other sample unless all conditions affecting the sample are the same, including sampling by MVTL. As a mutual protection to clients, the public and ourselves, all reports are submitted as the confidential property of clients, and authorization for publication of statements, conclusions or extracts from or regarding our reports is reserved pending our written approval.

AN EQUAL OPPORTUNITY EMPLOYER

MINNESOTA VALLEY TESTING LABORATORIES, INC.

MVTL

1126 N. Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890
2616 E. Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724
1201 Lincoln Highway ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885
www.mvtl.com

MEMBER ACIL

Report Date: 27 Feb 2020
Lab Number: 20-A5816
Work Order #: 12-4307
Account #: 013177
Sample Matrix: WASTEWATER
Date Sampled: 10 Feb 2020 9:15
Sampled By:
Date Received: 11 Feb 2020 9:15

COLLEEN ECK
CLAY COUNTY SOLID WASTE MGMT
807 11TH ST N
MOORHEAD MN 56560-1500

Sample Description: LEACHATE

Temp at Receipt: 4.2C

	CAS #	As Received Result		Method RL	Method Reference	Date Analyzed	Analyst
625/8270 SVMS Extraction						17 Feb 20	TMP
Acenaphthene	83-32-9	< 10 @	ug/L	1	EPA 625	21 Feb 20	TMM
Acenaphthylene	208-96-8	< 10 @	ug/L	1	EPA 625	21 Feb 20	TMM
Anthracene	120-12-7	< 10 @	ug/L	1	EPA 625	21 Feb 20	TMM
Benzidine	92-87-5	< 100 @	ug/L	10	EPA 625	21 Feb 20	TMM
Benzo(a)anthracene	56-55-3	< 20 @	ug/L	2	EPA 625	21 Feb 20	TMM
Benzo(a)pyrene	50-32-8	< 20 @	ug/L	2	EPA 625	21 Feb 20	TMM
Benzo(b)fluoranthene	205-99-2	< 20 @	ug/L	2	EPA 625	21 Feb 20	TMM
Benzo(ghi)perylene	191-24-2	< 20 @	ug/L	2	EPA 625	21 Feb 20	TMM
Benzo(k)fluoranthene	207-08-9	< 20 @	ug/L	2	EPA 625	21 Feb 20	TMM
Benzyl Butyl Phthalate	85-68-7	< 10 @	ug/L	1	EPA 625	21 Feb 20	TMM
Bis(2-chloroethoxy)methane	111-91-1	< 10 @	ug/L	1	EPA 625	21 Feb 20	TMM
Bis(2-chloroethyl)ether	111-44-4	< 20 @	ug/L	2	EPA 625	21 Feb 20	TMM
Bis(2-ethylhexyl)phthalate	117-81-7	< 20 @	ug/L	2	EPA 625	21 Feb 20	TMM
4-Bromophenyl Phenyl Ether	101-55-3	< 20 @	ug/L	2	EPA 625	21 Feb 20	TMM
4-Chloro-3-methyl phenol	59-50-7	< 20 @	ug/L	2	EPA 625	21 Feb 20	TMM
2-Chloronaphthalene	91-58-7	< 20 @	ug/L	2	EPA 625	21 Feb 20	TMM
2-Chlorophenol	95-57-8	< 20 @	ug/L	2	EPA 625	21 Feb 20	TMM
4-Chlorophenyl Phenyl Ether	7005-72-3	< 10 @	ug/L	1	EPA 625	21 Feb 20	TMM
Chrysene	218-01-9	< 20 @	ug/L	2	EPA 625	21 Feb 20	TMM
Di-n-butyl phthalate	84-74-2	< 10 @	ug/L	1	EPA 625	21 Feb 20	TMM
Di-n-octyl phthalate	117-84-0	< 40 @^	ug/L	2	EPA 625	21 Feb 20	TMM
Dibenzo(a,h)anthracene	53-70-3	< 20 @	ug/L	2	EPA 625	21 Feb 20	TMM
3,3-Dichlorobenzidine	91-94-1	< 40 @	ug/L	4	EPA 625	21 Feb 20	TMM
2,4-Dichlorophenol	120-83-2	< 20 @	ug/L	2	EPA 625	21 Feb 20	TMM
Diethyl phthalate	84-66-2	< 10 @	ug/L	1	EPA 625	21 Feb 20	TMM
Dimethyl phthalate	131-11-3	< 10 @	ug/L	1	EPA 625	21 Feb 20	TMM
2,4-Dimethylphenol	105-67-9	< 40 @	ug/L	4	EPA 625	21 Feb 20	TMM

RL = Reporting Limit
Analyses performed under our Minnesota Department of Health Accreditation conform to the current TNI standards.
The reporting limit was elevated for any analyte requiring a dilution as coded below:
@ = Due to sample matrix # = Due to concentration of other analytes
! = Due to sample quantity + = Due to internal standard response
CERTIFICATION: MN LAB # 027-015-125 ND MICRO # 1013-M ND WW/DW # R-040

MVTL guarantees the accuracy of the analysis done on the sample submitted for testing. It is not possible for MVTL to guarantee that a test result obtained on a particular sample will be the same on any other sample unless all conditions affecting the sample are the same, including sampling by MVTL. As a mutual protection to clients, the public and ourselves, all reports are submitted as the confidential property of clients, and authorization for publication of statements, conclusions or extracts from or regarding our reports is reserved pending our written approval.

AN EQUAL OPPORTUNITY EMPLOYER

MINNESOTA VALLEY TESTING LABORATORIES, INC.

MVTL

1126 N. Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890
2616 E. Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724
1201 Lincoln Highway ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885
www.mvtl.com

MEMBER ACIL

Report Date: 27 Feb 2020
Lab Number: 20-A5816
Work Order #: 12-4307
Account #: 013177
Sample Matrix: WASTEWATER
Date Sampled: 10 Feb 2020 9:15
Sampled By:
Date Received: 11 Feb 2020 9:15

COLLEEN ECK
CLAY COUNTY SOLID WASTE MGMT
807 11TH ST N
MOORHEAD MN 56560-1500

Sample Description: LEACHATE

Temp at Receipt: 4.2C

	CAS #	As Received Result		Method RL	Method Reference	Date Analyzed	Analyst
2,4-Dinitrophenol	51-28-5	< 100 @	ug/L	10	EPA 625	21 Feb 20	TMM
2,4-Dinitrotoluene	121-14-2	< 40 @	ug/L	4	EPA 625	21 Feb 20	TMM
2,6-Dinitrotoluene	606-20-2	< 40 @	ug/L	4	EPA 625	21 Feb 20	TMM
1,2-Diphenylhydrazine	122-66-7	< 10 @	ug/L	1	EPA 625	21 Feb 20	TMM
Fluoranthene	206-44-0	< 10 @	ug/L	1	EPA 625	21 Feb 20	TMM
Fluorene	86-73-7	< 10 @	ug/L	1	EPA 625	21 Feb 20	TMM
Hexachlorobenzene	118-74-1	< 20 @	ug/L	2	EPA 625	21 Feb 20	TMM
Hexachlorobutadiene	87-68-3	< 20 @	ug/L	2	EPA 625	21 Feb 20	TMM
Hexachlorocyclopentadiene	77-47-4	< 40 @	ug/L	4	EPA 625	21 Feb 20	TMM
Hexachloroethane	67-72-1	< 10 @	ug/L	1	EPA 625	21 Feb 20	TMM
Indeno(1,2,3-cd)pyrene	193-39-5	< 20 @	ug/L	2	EPA 625	21 Feb 20	TMM
Isophorone	78-59-1	< 10 @	ug/L	1	EPA 625	21 Feb 20	TMM
2-Methyl-4,6-dinitrophenol	534-52-1	< 100 @	ug/L	10	EPA 625	21 Feb 20	TMM
N-Nitrosodi-n-propylamine	621-64-7	< 20 @	ug/L	2	EPA 625	21 Feb 20	TMM
N-Nitrosodimethylamine	62-75-9	< 40 @	ug/L	4	EPA 625	21 Feb 20	TMM
N-Nitrosodiphenylamine	86-30-6	< 40 @	ug/L	4	EPA 625	21 Feb 20	TMM
Naphthalene	91-20-3	< 10 @	ug/L	1	EPA 625	21 Feb 20	TMM
Nitrobenzene	98-95-3	< 10 @	ug/L	1	EPA 625	21 Feb 20	TMM
2-Nitrophenol	88-75-5	< 20 @	ug/L	2	EPA 625	21 Feb 20	TMM
4-Nitrophenol	100-02-7	< 100 @	ug/L	10	EPA 625	21 Feb 20	TMM
2,2-oxybis(1chloropropane)	108-60-1	< 10 @	ug/L	1	EPA 625	21 Feb 20	TMM
Pentachlorophenol	87-86-5	< 100 @	ug/L	10	EPA 625	21 Feb 20	TMM
Phenanthrene	85-01-8	< 10 @	ug/L	1	EPA 625	21 Feb 20	TMM
Phenol	108-95-2	< 20 @	ug/L	2	EPA 625	21 Feb 20	TMM
Pyrene	129-00-0	< 10 @	ug/L	1	EPA 625	21 Feb 20	TMM
1,2,4-Trichlorobenzene	120-82-1	< 10 @	ug/L	1	EPA 625	21 Feb 20	TMM
2,4,6-Trichlorophenol	88-06-2	< 20 @	ug/L	2	EPA 625	21 Feb 20	TMM
Acetone	67-64-1	< 50 @	ug/L	10	EPA 624	14 Feb 20	TMM

RL = Reporting Limit
Analyses performed under our Minnesota Department of Health Accreditation conform to the current TNI standards.
The reporting limit was elevated for any analyte requiring a dilution as coded below:
@ = Due to sample matrix # = Due to concentration of other analytes
! = Due to sample quantity + = Due to internal standard response
CERTIFICATION: MN LAB # 027-015-125 ND MICRO # 1013-M ND WW/DW # R-040

MVTL guarantees the accuracy of the analysis done on the sample submitted for testing. It is not possible for MVTL to guarantee that a test result obtained on a particular sample will be the same on any other sample unless all conditions affecting the sample are the same, including sampling by MVTL. As a mutual protection to clients, the public and ourselves, all reports are submitted as the confidential property of clients, and authorization for publication of statements, conclusions or extracts from or regarding our reports is reserved pending our written approval.

AN EQUAL OPPORTUNITY EMPLOYER

MINNESOTA VALLEY TESTING LABORATORIES, INC.

MVTL

1126 N. Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890
2616 E. Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724
1201 Lincoln Highway ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885
www.mvtl.com

MEMBER ACIL

COLLEEN ECK
CLAY COUNTY SOLID WASTE MGMT
807 11TH ST N
MOORHEAD MN 56560-1500

Report Date: 27 Feb 2020
Lab Number: 20-A5816
Work Order #: 12-4307
Account #: 013177
Sample Matrix: WASTEWATER
Date Sampled: 10 Feb 2020 9:15
Sampled By:
Date Received: 11 Feb 2020 9:15

Sample Description: LEACHATE

Temp at Receipt: 4.2C

	CAS #	As Received Result		Method RL	Method Reference	Date Analyzed	Analyst
Acrolein	107-02-8	< 10 @	ug/L	2	EPA 624	14 Feb 20	TMM
Acrylonitrile	107-13-1	< 10 @	ug/L	2	EPA 624	14 Feb 20	TMM
Allyl Chloride	107-05-1	< 2.5 @	ug/L	0.5	EPA 624	14 Feb 20	TMM
Benzene	71-43-2	3.45 @	ug/L	0.50	EPA 624	14 Feb 20	TMM
bis(chloromethyl) ether	542881	NP	ug/L	ND	EPA 624		
Bromobenzene	108-86-1	< 2.5 @	ug/L	0.5	EPA 624	14 Feb 20	TMM
Bromochloromethane	74-97-5	< 2.5 @	ug/L	0.5	EPA 624	14 Feb 20	TMM
Bromodichloromethane	75-27-4	< 2.5 @	ug/L	0.5	EPA 624	14 Feb 20	TMM
Bromoform	75-25-2	< 2.5 @	ug/L	0.5	EPA 624	14 Feb 20	TMM
Bromomethane	74-83-9	< 5 @	ug/L	1	EPA 624	14 Feb 20	TMM
n-Butylbenzene	104-51-8	< 2.5 @	ug/L	0.5	EPA 624	14 Feb 20	TMM
sec-Butylbenzene	135-98-8	< 2.5 @	ug/L	0.5	EPA 624	14 Feb 20	TMM
t-Butylbenzene	98-06-6	< 2.5 @	ug/L	0.5	EPA 624	14 Feb 20	TMM
Carbon Tetrachloride	56-23-5	< 1 @	ug/L	0.2	EPA 624	14 Feb 20	TMM
Chlorobenzene	108-90-7	< 2.5 @	ug/L	0.5	EPA 624	14 Feb 20	TMM
Chlorodibromomethane	124-48-1	< 2.5 @	ug/L	0.5	EPA 624	14 Feb 20	TMM
Chloroethane	75-00-3	< 2.5 @	ug/L	0.5	EPA 624	14 Feb 20	TMM
2-Chloroethyl Vinyl Ether	110-75-8	< 5 @	ug/L	1	EPA 624	14 Feb 20	TMM
Chloroform	67-66-3	< 5 @	ug/L	1	EPA 624	14 Feb 20	TMM
Chloromethane	74-87-3	< 5 @	ug/L	1	EPA 624	14 Feb 20	TMM
2-Chlorotoluene	95-49-8	< 2.5 @	ug/L	0.5	EPA 624	14 Feb 20	TMM
4-Chlorotoluene	106-43-4	< 2.5 @	ug/L	0.5	EPA 624	14 Feb 20	TMM
Cumene	98-82-8	< 2.5 @	ug/L	0.5	EPA 624	14 Feb 20	TMM
1,2-Dibromo-3-chloropropane	96-12-8	< 0.25 @	ug/L	0.05	EPA 624	14 Feb 20	TMM
1,2-Dibromoethane	106-93-4	< 0.25 @	ug/L	0.05	EPA 624	14 Feb 20	TMM
Dibromomethane	74-95-3	< 2.5 @	ug/L	0.5	EPA 624	14 Feb 20	TMM
1,2-Dichlorobenzene	95-50-1	< 2.5 @	ug/L	0.5	EPA 624	14 Feb 20	TMM
1,3-Dichlorobenzene	541-73-1	< 2.5 @	ug/L	0.5	EPA 624	14 Feb 20	TMM

RL = Reporting Limit
Analyses performed under our Minnesota Department of Health Accreditation conform to the current TNI standards.
The reporting limit was elevated for any analyte requiring a dilution as coded below:
@ = Due to sample matrix # = Due to concentration of other analytes
! = Due to sample quantity + = Due to internal standard response
CERTIFICATION: MN LAB # 027-015-125 ND MICRO # 1013-M ND WW/DW # R-040

MVTL guarantees the accuracy of the analysis done on the sample submitted for testing. It is not possible for MVTL to guarantee that a test result obtained on a particular sample will be the same on any other sample unless all conditions affecting the sample are the same, including sampling by MVTL. As a mutual protection to clients, the public and ourselves, all reports are submitted as the confidential property of clients, and authorization for publication of statements, conclusions or extracts from or regarding our reports is reserved pending our written approval.

AN EQUAL OPPORTUNITY EMPLOYER

MINNESOTA VALLEY TESTING LABORATORIES, INC.

MVTL

1126 N. Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890
2616 E. Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724
1201 Lincoln Highway ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885
www.mvtl.com

MEMBER ACIL

Report Date: 27 Feb 2020
Lab Number: 20-A5816
Work Order #: 12-4307
Account #: 013177
Sample Matrix: WASTEWATER
Date Sampled: 10 Feb 2020 9:15
Sampled By:
Date Received: 11 Feb 2020 9:15

COLLEEN ECK
CLAY COUNTY SOLID WASTE MGMT
807 11TH ST N
MOORHEAD MN 56560-1500

Sample Description: LEACHATE

Temp at Receipt: 4.2C

	CAS #	As Received Result		Method RL	Method Reference	Date Analyzed	Analyst
1,4-Dichlorobenzene	106-46-7	2.90 @	ug/L	0.50	EPA 624	14 Feb 20	TMM
Dichlorodifluoromethane	75-71-8	< 2.5 @	ug/L	0.5	EPA 624	14 Feb 20	TMM
1,1-Dichloroethane	75-34-3	< 2.5 @	ug/L	0.5	EPA 624	14 Feb 20	TMM
1,2-Dichloroethane	107-06-2	< 0.5 @	ug/L	0.1	EPA 624	14 Feb 20	TMM
1,1-Dichloroethene	75-35-4	< 2.5 @	ug/L	0.5	EPA 624	14 Feb 20	TMM
cis-1,2-Dichloroethene	156-59-2	< 2.5 @	ug/L	0.5	EPA 624	14 Feb 20	TMM
trans-1,2-Dichloroethene	156-60-5	< 2.5 @	ug/L	0.5	EPA 624	14 Feb 20	TMM
Dichlorofluoromethane	75-43-4	< 2.5 @	ug/L	0.5	EPA 624	14 Feb 20	TMM
1,2-Dichloropropane	78-87-5	< 2.5 @	ug/L	0.5	EPA 624	14 Feb 20	TMM
1,3-Dichloropropane	142-28-9	< 2.5 @	ug/L	0.5	EPA 624	14 Feb 20	TMM
2,2-Dichloropropane	594-20-7	< 2.5 @	ug/L	0.5	EPA 624	14 Feb 20	TMM
1,1-Dichloropropene	563-58-6	< 2.5 @	ug/L	0.5	EPA 624	14 Feb 20	TMM
cis-1,3-Dichloropropene	10061-01-5	< 2.5 @	ug/L	0.5	EPA 624	14 Feb 20	TMM
trans-1,3-Dichloropropene	10061-02-6	< 2.5 @	ug/L	0.5	EPA 624	14 Feb 20	TMM
Ethyl Benzene	100-41-4	< 2.5 @	ug/L	0.5	EPA 624	14 Feb 20	TMM
Ethyl Ether	60-29-7	17.45 @	ug/L	0.50	EPA 624	14 Feb 20	TMM
Hexachlorobutadiene	87-68-3	< 1 @	ug/L	0.2	EPA 624	14 Feb 20	TMM
p-Isopropyltoluene	99-87-6	< 2.5 @	ug/L	0.5	EPA 624	14 Feb 20	TMM
Methyl Ethyl Ketone	78-93-3	< 25 @	ug/L	5	EPA 624	14 Feb 20	TMM
Methyl Isobutyl Ketone	108-10-1	< 10 @	ug/L	2	EPA 624	14 Feb 20	TMM
Methyl tert-butyl Ether	1634-04-4	< 2.5 @	ug/L	0.5	EPA 624	14 Feb 20	TMM
Methylene Chloride	75-09-2	< 5 @	ug/L	1	EPA 624	14 Feb 20	TMM
Naphthalene	91-20-3	< 5 @	ug/L	1	EPA 624	14 Feb 20	TMM
n-Propylbenzene	103-65-1	< 2.5 @	ug/L	0.5	EPA 624	14 Feb 20	TMM
Styrene	100-42-5	< 2.5 @	ug/L	0.5	EPA 624	14 Feb 20	TMM
1,1,1,2-Tetrachloroethane	630-20-6	< 2.5 @	ug/L	0.5	EPA 624	14 Feb 20	TMM
1,1,2,2-Tetrachloroethane	79-34-5	< 2.5 @	ug/L	0.5	EPA 624	14 Feb 20	TMM
Tetrachloroethene	127-18-4	< 2.5 @	ug/L	0.5	EPA 624	14 Feb 20	TMM

RL = Reporting Limit
Analyses performed under our Minnesota Department of Health Accreditation conform to the current TNI standards.
The reporting limit was elevated for any analyte requiring a dilution as coded below:
@ = Due to sample matrix # = Due to concentration of other analytes
! = Due to sample quantity + = Due to internal standard response
CERTIFICATION: MN LAB # 027-015-125 ND MICRO # 1013-M ND WW/DW # R-040

MVTL guarantees the accuracy of the analysis done on the sample submitted for testing. It is not possible for MVTL to guarantee that a test result obtained on a particular sample will be the same on any other sample unless all conditions affecting the sample are the same, including sampling by MVTL. As a mutual protection to clients, the public and ourselves, all reports are submitted as the confidential property of clients, and authorization for publication of statements, conclusions or extracts from or regarding our reports is reserved pending our written approval.

AN EQUAL OPPORTUNITY EMPLOYER

MINNESOTA VALLEY TESTING LABORATORIES, INC.

MVTL

1126 N. Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890
2616 E. Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724
1201 Lincoln Highway ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885
www.mvtl.com

MEMBER ACIL

Report Date: 27 Feb 2020
Lab Number: 20-A5816
Work Order #: 12-4307
Account #: 013177
Sample Matrix: WASTEWATER
Date Sampled: 10 Feb 2020 9:15
Sampled By:
Date Received: 11 Feb 2020 9:15

COLLEEN ECK
CLAY COUNTY SOLID WASTE MGMT
807 11TH ST N
MOORHEAD MN 56560-1500

Sample Description: LEACHATE

Temp at Receipt: 4.2C

	CAS #	As Received Result		Method RL	Method Reference	Date Analyzed	Analyst
Tetrahydrofuran	109-99-9	164.9 @	ug/L	5.00	EPA 624	14 Feb 20	TMM
Toluene	108-88-3	< 2.5 @	ug/L	0.5	EPA 624	14 Feb 20	TMM
1,2,3-Trichlorobenzene	87-61-6	< 2.5 @	ug/L	0.5	EPA 624	14 Feb 20	TMM
1,2,4-Trichlorobenzene	120-82-1	< 2.5 @	ug/L	0.5	EPA 624	14 Feb 20	TMM
1,1,1-Trichloroethane	71-55-6	< 2.5 @	ug/L	0.5	EPA 624	14 Feb 20	TMM
1,1,2-Trichloroethane	79-00-5	< 2.5 @	ug/L	0.5	EPA 624	14 Feb 20	TMM
Trichloroethene	79-01-6	< 0.5 @	ug/L	0.1	EPA 624	14 Feb 20	TMM
Trichlorofluoromethane	75-69-4	< 2.5 @	ug/L	0.5	EPA 624	14 Feb 20	TMM
1,2,3-Trichloropropane	96-18-4	< 0.5 @	ug/L	0.1	EPA 624	14 Feb 20	TMM
Trichlorotrifluoroethane	76-13-1	< 2.5 @	ug/L	0.5	EPA 624	14 Feb 20	TMM
1,2,4-Trimethylbenzene	95-63-6	< 2.5 @	ug/L	0.5	EPA 624	14 Feb 20	TMM
1,3,5-Trimethylbenzene	108-67-8	< 2.5 @	ug/L	0.5	EPA 624	14 Feb 20	TMM
Vinyl Chloride	75-01-4	0.250 @	ug/L	0.050	EPA 624	14 Feb 20	TMM
m-Xylene and p-Xylene	179601-23-1	< 5 @	ug/L	1	EPA 624	14 Feb 20	TMM
o-Xylene	95-47-6	< 2.5 @	ug/L	0.5	EPA 624	14 Feb 20	TMM

RL = Reporting Limit
Analyses performed under our Minnesota Department of Health Accreditation conform to the current TNI standards.
The reporting limit was elevated for any analyte requiring a dilution as coded below:
@ = Due to sample matrix # = Due to concentration of other analytes
! = Due to sample quantity + = Due to internal standard response
CERTIFICATION: MN LAB # 027-015-125 ND MICRO # 1013-M ND WW/DW # R-040

MVTL guarantees the accuracy of the analysis done on the sample submitted for testing. It is not possible for MVTL to guarantee that a test result obtained on a particular sample will be the same on any other sample unless all conditions affecting the sample are the same, including sampling by MVTL. As a mutual protection to clients, the public and ourselves, all reports are submitted as the confidential property of clients, and authorization for publication of statements, conclusions or extracts from or regarding our reports is reserved pending our written approval.

AN EQUAL OPPORTUNITY EMPLOYER

MVTL

MINNESOTA VALLEY TESTING LABORATORIES, INC.

1126 N. Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890
2616 E. Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724
1201 Lincoln Highway ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885
www.mvtl.com

MEMBER ACIL

Report Date: 27 Feb 2020
Lab Number: 20-A5816
Work Order #: 12-4307
Account #: 013177
Sample Matrix: WASTEWATER
Date Sampled: 10 Feb 2020 9:15
Sampled By:
Date Received: 11 Feb 2020 9:15

COLLEEN ECK
CLAY COUNTY SOLID WASTE MGMT
807 11TH ST N
MOORHEAD MN 56560-1500

Sample Description: LEACHATE

Temp at Receipt: 4.2C

	CAS #	As Received Result	Method RL	Method Reference	Date Analyzed	Analyst

^Reporting limits adjusted due to instrument performance.
Some of the SW 8270E surrogate and spike criteria were not met due to sample matrix and applied dilution factor.

Some of the SW 8260D surrogate and spike criteria were not met due to sample matrix and sample concentration.

GC/MS VOC Sample pH > 2

NITROBENZENE (SURROGATE) RECOVERY: 84 %
2-FLUOROBIPHENYL (SURROGATE) RECOVERY: 82 %
TERPHENYL-d14 (SURROGATE) RECOVERY: 93 %

2-FLUOROPHENOL (SURROGATE) RECOVERY: 64 %
PHENOL-d5 (SURROGATE) RECOVERY: 45 %
2,4,6-TRIBROMOPHENOL (SURROGATE) RECOVERY: 95 %

DIBROMOFLUOROMETHANE (SURROGATE) RECOVERY: 102 %
TOLUENE-d8 (SURROGATE) RECOVERY: 97 %
4-BROMOFLUOROBENZENE (SURROGATE) RECOVERY: 99 %
NP = Not Present PQ = Present, Qualitative Only ND = Not Determined

Approved by:

Dan O'Connell David Smahel
Chemistry Laboratory Managers New Ulm, MN

RL = Reporting Limit
Analyses performed under our Minnesota Department of Health Accreditation conform to the current TNI standards.
The reporting limit was elevated for any analyte requiring a dilution as coded below:
@ = Due to sample matrix # = Due to concentration of other analytes
! = Due to sample quantity + = Due to internal standard response
CERTIFICATION: MN LAB # 027-015-125 ND MICRO # 1013-M ND WW/DW # R-040

MVTL guarantees the accuracy of the analysis done on the sample submitted for testing. It is not possible for MVTL to guarantee that a test result obtained on a particular sample will be the same on any other sample unless all conditions affecting the sample are the same, including sampling by MVTL. As a mutual protection to clients, the public and ourselves, all reports are submitted as the confidential property of clients, and authorization for publication of statements, conclusions or extracts from or regarding our reports is reserved pending our written approval.

AN EQUAL OPPORTUNITY EMPLOYER

MINNESOTA VALLEY TESTING LABORATORIES, INC.

MVTL

1126 N. Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890
2616 E. Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724
1201 Lincoln Highway ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885
www.mvtl.com

MEMBER ACIL

Report Date: 27 Feb 2020
Lab Number: 20-A5817
Work Order #: 12-4307
Account #: 013177
Sample Matrix: WASTEWATER
Date Sampled: 10 Feb 2020 9:15
Sampled By:
Date Received: 11 Feb 2020 9:15

COLLEEN ECK
CLAY COUNTY SOLID WASTE MGMT
807 11TH ST N
MOORHEAD MN 56560-1500

Sample Description: TRIP BLANK

Temp at Receipt: 4.2C

	CAS #	As Received Result		Method RL	Method Reference	Date Analyzed	Analyst
Acetone	67-64-1	< 10	ug/L	10	EPA 624	14 Feb 20	TMM
Allyl Chloride	107-05-1	< 0.5	ug/L	0.5	EPA 624	14 Feb 20	TMM
Benzene	71-43-2	< 0.5	ug/L	0.5	EPA 624	14 Feb 20	TMM
Bromobenzene	108-86-1	< 0.5	ug/L	0.5	EPA 624	14 Feb 20	TMM
Bromochloromethane	74-97-5	< 0.5	ug/L	0.5	EPA 624	14 Feb 20	TMM
Bromodichloromethane	75-27-4	< 0.5	ug/L	0.5	EPA 624	14 Feb 20	TMM
Bromoform	75-25-2	< 0.5	ug/L	0.5	EPA 624	14 Feb 20	TMM
Bromomethane	74-83-9	< 1	ug/L	1	EPA 624	14 Feb 20	TMM
n-Butylbenzene	104-51-8	< 0.5	ug/L	0.5	EPA 624	14 Feb 20	TMM
sec-Butylbenzene	135-98-8	< 0.5	ug/L	0.5	EPA 624	14 Feb 20	TMM
t-Butylbenzene	98-06-6	< 0.5	ug/L	0.5	EPA 624	14 Feb 20	TMM
Carbon Tetrachloride	56-23-5	< 0.2	ug/L	0.2	EPA 624	14 Feb 20	TMM
Chlorobenzene	108-90-7	< 0.5	ug/L	0.5	EPA 624	14 Feb 20	TMM
Chlorodibromomethane	124-48-1	< 0.5	ug/L	0.5	EPA 624	14 Feb 20	TMM
Chloroethane	75-00-3	< 0.5	ug/L	0.5	EPA 624	14 Feb 20	TMM
Chloroform	67-66-3	< 1	ug/L	1	EPA 624	14 Feb 20	TMM
Chloromethane	74-87-3	< 1	ug/L	1	EPA 624	14 Feb 20	TMM
2-Chlorotoluene	95-49-8	< 0.5	ug/L	0.5	EPA 624	14 Feb 20	TMM
4-Chlorotoluene	106-43-4	< 0.5	ug/L	0.5	EPA 624	14 Feb 20	TMM
Cumene	98-82-8	< 0.5	ug/L	0.5	EPA 624	14 Feb 20	TMM
1,2-Dibromo-3-chloropropane	96-12-8	< 0.05	ug/L	0.05	EPA 624	14 Feb 20	TMM
1,2-Dibromoethane	106-93-4	< 0.05	ug/L	0.05	EPA 624	14 Feb 20	TMM
Dibromomethane	74-95-3	< 0.5	ug/L	0.5	EPA 624	14 Feb 20	TMM
1,2-Dichlorobenzene	95-50-1	< 0.5	ug/L	0.5	EPA 624	14 Feb 20	TMM
1,3-Dichlorobenzene	541-73-1	< 0.5	ug/L	0.5	EPA 624	14 Feb 20	TMM
1,4-Dichlorobenzene	106-46-7	< 0.5	ug/L	0.5	EPA 624	14 Feb 20	TMM
Dichlorodifluoromethane	75-71-8	< 0.5	ug/L	0.5	EPA 624	14 Feb 20	TMM
1,1-Dichloroethane	75-34-3	< 0.5	ug/L	0.5	EPA 624	14 Feb 20	TMM

RL = Reporting Limit
Analyses performed under our Minnesota Department of Health Accreditation conform to the current TNI standards.
The reporting limit was elevated for any analyte requiring a dilution as coded below:
@ = Due to sample matrix # = Due to concentration of other analytes
! = Due to sample quantity + = Due to internal standard response
CERTIFICATION: MN LAB # 027-015-125 ND MICRO # 1013-M ND WW/DW # R-040

MVTL guarantees the accuracy of the analysis done on the sample submitted for testing. It is not possible for MVTL to guarantee that a test result obtained on a particular sample will be the same on any other sample unless all conditions affecting the sample are the same, including sampling by MVTL. As a mutual protection to clients, the public and ourselves, all reports are submitted as the confidential property of clients, and authorization for publication of statements, conclusions or extracts from or regarding our reports is reserved pending our written approval.

AN EQUAL OPPORTUNITY EMPLOYER

MINNESOTA VALLEY TESTING LABORATORIES, INC.

MVTL

1126 N. Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890
2616 E. Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724
1201 Lincoln Highway ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885
www.mvtl.com

MEMBER ACIL

COLLEEN ECK
CLAY COUNTY SOLID WASTE MGMT
807 11TH ST N
MOORHEAD MN 56560-1500

Report Date: 27 Feb 2020
Lab Number: 20-A5817
Work Order #: 12-4307
Account #: 013177
Sample Matrix: WASTEWATER
Date Sampled: 10 Feb 2020 9:15
Sampled By:
Date Received: 11 Feb 2020 9:15

Sample Description: TRIP BLANK

Temp at Receipt: 4.2C

	CAS #	As Received Result		Method RL	Method Reference	Date Analyzed	Analyst
1,2-Dichloroethane	107-06-2	< 0.1	ug/L	0.1	EPA 624	14 Feb 20	TMM
1,1-Dichloroethene	75-35-4	< 0.5	ug/L	0.5	EPA 624	14 Feb 20	TMM
cis-1,2-Dichloroethene	156-59-2	< 0.5	ug/L	0.5	EPA 624	14 Feb 20	TMM
trans-1,2-Dichloroethene	156-60-5	< 0.5	ug/L	0.5	EPA 624	14 Feb 20	TMM
Dichlorofluoromethane	75-43-4	< 0.5	ug/L	0.5	EPA 624	14 Feb 20	TMM
1,2-Dichloropropane	78-87-5	< 0.5	ug/L	0.5	EPA 624	14 Feb 20	TMM
1,3-Dichloropropane	142-28-9	< 0.5	ug/L	0.5	EPA 624	14 Feb 20	TMM
2,2-Dichloropropane	594-20-7	< 0.5	ug/L	0.5	EPA 624	14 Feb 20	TMM
1,1-Dichloropropene	563-58-6	< 0.5	ug/L	0.5	EPA 624	14 Feb 20	TMM
cis-1,3-Dichloropropene	10061-01-5	< 0.5	ug/L	0.5	EPA 624	14 Feb 20	TMM
trans-1,3-Dichloropropene	10061-02-6	< 0.5	ug/L	0.5	EPA 624	14 Feb 20	TMM
Ethyl Benzene	100-41-4	< 0.5	ug/L	0.5	EPA 624	14 Feb 20	TMM
Ethyl Ether	60-29-7	< 0.5	ug/L	0.5	EPA 624	14 Feb 20	TMM
Hexachlorobutadiene	87-68-3	< 0.2	ug/L	0.2	EPA 624	14 Feb 20	TMM
p-Isopropyltoluene	99-87-6	< 0.5	ug/L	0.5	EPA 624	14 Feb 20	TMM
Methyl Ethyl Ketone	78-93-3	< 5	ug/L	5	EPA 624	14 Feb 20	TMM
Methyl Isobutyl Ketone	108-10-1	< 2	ug/L	2	EPA 624	14 Feb 20	TMM
Methyl tert-butyl Ether	1634-04-4	< 0.5	ug/L	0.5	EPA 624	14 Feb 20	TMM
Methylene Chloride	75-09-2	< 1	ug/L	1	EPA 624	14 Feb 20	TMM
Naphthalene	91-20-3	< 1	ug/L	1	EPA 624	14 Feb 20	TMM
n-Propylbenzene	103-65-1	< 0.5	ug/L	0.5	EPA 624	14 Feb 20	TMM
Styrene	100-42-5	< 0.5	ug/L	0.5	EPA 624	14 Feb 20	TMM
1,1,1,2-Tetrachloroethane	630-20-6	< 0.5	ug/L	0.5	EPA 624	14 Feb 20	TMM
1,1,2,2-Tetrachloroethane	79-34-5	< 0.5	ug/L	0.5	EPA 624	14 Feb 20	TMM
Tetrachloroethene	127-18-4	< 0.5	ug/L	0.5	EPA 624	14 Feb 20	TMM
Tetrahydrofuran	109-99-9	< 5	ug/L	5	EPA 624	14 Feb 20	TMM
Toluene	108-88-3	< 0.5	ug/L	0.5	EPA 624	14 Feb 20	TMM
1,2,3-Trichlorobenzene	87-61-6	< 0.5	ug/L	0.5	EPA 624	14 Feb 20	TMM

RL = Reporting Limit
Analyses performed under our Minnesota Department of Health Accreditation conform to the current TNI standards.
The reporting limit was elevated for any analyte requiring a dilution as coded below:
@ = Due to sample matrix # = Due to concentration of other analytes
! = Due to sample quantity + = Due to internal standard response
CERTIFICATION: MN LAB # 027-015-125 ND MICRO # 1013-M ND WW/DW # R-040

MVTL guarantees the accuracy of the analysis done on the sample submitted for testing. It is not possible for MVTL to guarantee that a test result obtained on a particular sample will be the same on any other sample unless all conditions affecting the sample are the same, including sampling by MVTL. As a mutual protection to clients, the public and ourselves, all reports are submitted as the confidential property of clients, and authorization for publication of statements, conclusions or extracts from or regarding our reports is reserved pending our written approval.

AN EQUAL OPPORTUNITY EMPLOYER

MINNESOTA VALLEY TESTING LABORATORIES, INC.

MVTL

1126 N. Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890
2616 E. Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724
1201 Lincoln Highway ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885
www.mvtl.com

MEMBER ACIL

COLLEEN ECK
CLAY COUNTY SOLID WASTE MGMT
807 11TH ST N
MOORHEAD MN 56560-1500

Report Date: 27 Feb 2020
Lab Number: 20-A5817
Work Order #: 12-4307
Account #: 013177
Sample Matrix: WASTEWATER
Date Sampled: 10 Feb 2020 9:15
Sampled By:
Date Received: 11 Feb 2020 9:15

Sample Description: TRIP BLANK

Temp at Receipt: 4.2C

	CAS #	As Received Result		Method RL	Method Reference	Date Analyzed	Analyst
1,2,4-Trichlorobenzene	120-82-1	< 0.5	ug/L	0.5	EPA 624	14 Feb 20	TMM
1,1,1-Trichloroethane	71-55-6	< 0.5	ug/L	0.5	EPA 624	14 Feb 20	TMM
1,1,2-Trichloroethane	79-00-5	< 0.5	ug/L	0.5	EPA 624	14 Feb 20	TMM
Trichloroethene	79-01-6	< 0.1	ug/L	0.1	EPA 624	14 Feb 20	TMM
Trichlorofluoromethane	75-69-4	< 0.5	ug/L	0.5	EPA 624	14 Feb 20	TMM
1,2,3-Trichloropropane	96-18-4	< 0.1	ug/L	0.1	EPA 624	14 Feb 20	TMM
Trichlorotrifluoroethane	76-13-1	< 0.5	ug/L	0.5	EPA 624	14 Feb 20	TMM
1,2,4-Trimethylbenzene	95-63-6	< 0.5	ug/L	0.5	EPA 624	14 Feb 20	TMM
1,3,5-Trimethylbenzene	108-67-8	< 0.5	ug/L	0.5	EPA 624	14 Feb 20	TMM
Vinyl Chloride	75-01-4	< 0.05	ug/L	0.05	EPA 624	14 Feb 20	TMM
m-Xylene and p-Xylene	179601-23-1	< 1	ug/L	1	EPA 624	14 Feb 20	TMM
o-Xylene	95-47-6	< 0.5	ug/L	0.5	EPA 624	14 Feb 20	TMM

GC/MS VOC Sample pH < 2

DIBROMOFLUOROMETHANE (SURROGATE) RECOVERY: 104 %
TOLUENE-d8 (SURROGATE) RECOVERY: 97 %
4-BROMOFLUOROBENZENE (SURROGATE) RECOVERY: 95 %

Approved by:

Dan O'Connell David Smahel
Chemistry Laboratory Managers New Ulm, MN

RL = Reporting Limit
Analyses performed under our Minnesota Department of Health Accreditation conform to the current TNI standards.
The reporting limit was elevated for any analyte requiring a dilution as coded below:
@ = Due to sample matrix # = Due to concentration of other analytes
! = Due to sample quantity + = Due to internal standard response
CERTIFICATION: MN LAB # 027-015-125 ND MICRO # 1013-M ND WW/DW # R-040

MVTL guarantees the accuracy of the analysis done on the sample submitted for testing. It is not possible for MVTL to guarantee that a test result obtained on a particular sample will be the same on any other sample unless all conditions affecting the sample are the same, including sampling by MVTL. As a mutual protection to clients, the public and ourselves, all reports are submitted as the confidential property of clients, and authorization for publication of statements, conclusions or extracts from or regarding our reports is reserved pending our written approval.

AN EQUAL OPPORTUNITY EMPLOYER

MINNESOTA VALLEY TESTING LABORATORIES, INC.

MVTL

1126 N. Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890
2616 E. Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724
1201 Lincoln Highway ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885
www.mvtl.com

MEMBER ACIL

Report Date: 12 May 2020
Lab Number: 20-A17944
Work Order #: 12-7431
Account #: 013177
Sample Matrix: WASTEWATER
Date Sampled: 27 Apr 2020 9:00
Date Received: 28 Apr 2020 9:05

COLLEEN ECK
CLAY COUNTY SOLID WASTE MGMT
807 11TH ST N
MOORHEAD MN 56560-1500

Sample Description: LEACHATE

Temp at Receipt: 9.7C

	As Received Result		Method RL	Method Reference	Date Analyzed	Analyst
608/8081/8082 Extraction					29 Apr 20	KLM
MS Water Digestions					30 Apr 20	JMS
Water Digestions					29 Apr 20	KAM
Flash Point	> 159	degrees F	0	ASTM D3278	4 May 20 16:28	RAG
Mercury	< 0.025 @	ug/L	0.005	EPA 245.7	8 May 20 14:11	RMB
Beryllium	< 0.025 #	mg/L	0.005	200.7	30 Apr 20 12:45	KAM
Chromium	< 0.05 #	mg/L	0.01	200.7	30 Apr 20 12:45	KAM
Copper	< 0.05 #^	mg/L	0.005	200.7	30 Apr 20 12:45	KAM
Nickel	< 0.05 #	mg/L	0.01	200.7	30 Apr 20 12:45	KAM
Silver	< 0.025 #	mg/L	0.005	200.7	30 Apr 20 12:45	KAM
Zinc	< 0.05 #	mg/L	0.01	200.7	30 Apr 20 12:45	KAM
Antimony	< 5 @^	ug/L	0.5	200.8	5 May 20 13:35	KAM
Arsenic	31.1 @	ug/L	0.50	200.8	5 May 20 13:35	KAM
Cadmium	< 0.5 @	ug/L	0.1	200.8	5 May 20 13:35	KAM
Lead	< 2.5 @	ug/L	0.5	200.8	5 May 20 13:35	KAM
Selenium	< 5 @^	ug/L	0.5	200.8	5 May 20 13:35	KAM
Thallium	< 0.5 @	ug/L	0.1	200.8	5 May 20 13:35	KAM
Aldrin	< 0.15 @	ug/L	0.03	EPA 608	6 May 20	TMP
Alpha-BHC	< 0.15 @	ug/L	0.03	EPA 608	6 May 20	TMP
Beta-BHC	< 0.3 @	ug/L	0.06	EPA 608	6 May 20	TMP
Delta-BHC	< 0.15 @	ug/L	0.03	EPA 608	6 May 20	TMP
Gamma-BHC [Lindane]	< 0.15 @	ug/L	0.03	EPA 608	6 May 20	TMP
4,4'-DDD [P,P-DDD]	< 0.15 @	ug/L	0.03	EPA 608	6 May 20	TMP
4,4'-DDE [P,P-DDE]	< 0.15 @	ug/L	0.03	EPA 608	6 May 20	TMP
4,4'-DDT [P,P-DDT]	< 0.3 @	ug/L	0.06	EPA 608	6 May 20	TMP
Dieldrin	< 0.15 @	ug/L	0.03	EPA 608	6 May 20	TMP
Endosulfan I	< 0.15 @	ug/L	0.03	EPA 608	6 May 20	TMP
Endosulfan II	< 0.15 @	ug/L	0.03	EPA 608	6 May 20	TMP
Endosulfan sulfate	< 0.3 @	ug/L	0.06	EPA 608	6 May 20	TMP

RL = Reporting Limit
Analyses performed under our Minnesota Department of Health Accreditation conform to the current TNI standards.
The reporting limit was elevated for any analyte requiring a dilution as coded below:
@ = Due to sample matrix # = Due to concentration of other analytes
! = Due to sample quantity + = Due to internal standard response
CERTIFICATION: MN LAB # 027-015-125 ND WW/DW # R-040

MVTL guarantees the accuracy of the analysis done on the sample submitted for testing. It is not possible for MVTL to guarantee that a test result obtained on a particular sample will be the same on any other sample unless all conditions affecting the sample are the same, including sampling by MVTL. As a mutual protection to clients, the public and ourselves, all reports are submitted as the confidential property of clients, and authorization for publication of statements, conclusions or extracts from or regarding our reports is reserved pending our written approval.

AN EQUAL OPPORTUNITY EMPLOYER

MINNESOTA VALLEY TESTING LABORATORIES, INC.

MVTL

1126 N. Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890
2616 E. Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724
1201 Lincoln Highway ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885
www.mvtl.com

MEMBER ACIL

Report Date: 12 May 2020
Lab Number: 20-A17944
Work Order #: 12-7431
Account #: 013177
Sample Matrix: WASTEWATER
Date Sampled: 27 Apr 2020 9:00
Date Received: 28 Apr 2020 9:05

COLLEEN ECK
CLAY COUNTY SOLID WASTE MGMT
807 11TH ST N
MOORHEAD MN 56560-1500

Sample Description: LEACHATE

Temp at Receipt: 9.7C

	As Received Result		Method RL	Method Reference	Date Analyzed	Analyst
Endrin	< 0.15 @	ug/L	0.03	EPA 608	6 May 20	TMP
Endrin aldehyde	< 0.3 @	ug/L	0.06	EPA 608	6 May 20	TMP
Heptachlor	< 0.15 @	ug/L	0.03	EPA 608	6 May 20	TMP
Heptachlor Epoxide	< 0.15 @	ug/L	0.03	EPA 608	6 May 20	TMP
Methoxychlor	< 0.5 @	ug/L	0.1	EPA 608	6 May 20	TMP
Toxaphene	< 6 @	ug/L	1.2	EPA 608	6 May 20	TMP
Chlordane	< 3.25 @	ug/L	0.65	EPA 608	6 May 20	TMP
PCB-1016	< 3.5 @	ug/L	0.7	EPA 608	6 May 20	TMP
PCB-1221	< 5 @	ug/L	1	EPA 608	6 May 20	TMP
PCB-1232	< 3 @	ug/L	0.6	EPA 608	6 May 20	TMP
PCB-1242	< 3 @	ug/L	0.6	EPA 608	6 May 20	TMP
PCB-1248	< 4 @	ug/L	0.8	EPA 608	6 May 20	TMP
PCB-1254	< 3 @	ug/L	0.6	EPA 608	6 May 20	TMP
PCB-1260	< 1.5 @	ug/L	0.3	EPA 608	6 May 20	TMP

RL = Reporting Limit
Analyses performed under our Minnesota Department of Health Accreditation conform to the current TNI standards.
The reporting limit was elevated for any analyte requiring a dilution as coded below:
@ = Due to sample matrix # = Due to concentration of other analytes
! = Due to sample quantity + = Due to internal standard response
CERTIFICATION: MN LAB # 027-015-125 ND WW/DW # R-040

MVTL guarantees the accuracy of the analysis done on the sample submitted for testing. It is not possible for MVTL to guarantee that a test result obtained on a particular sample will be the same on any other sample unless all conditions affecting the sample are the same, including sampling by MVTL. As a mutual protection to clients, the public and ourselves, all reports are submitted as the confidential property of clients, and authorization for publication of statements, conclusions or extracts from or regarding our reports is reserved pending our written approval.

AN EQUAL OPPORTUNITY EMPLOYER

MVTL

MINNESOTA VALLEY TESTING LABORATORIES, INC.

1126 N. Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890
2616 E. Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724
1201 Lincoln Highway ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885
www.mvtl.com

MEMBER ACIL

Report Date: 12 May 2020
Lab Number: 20-A17944
Work Order #: 12-7431
Account #: 013177
Sample Matrix: WASTEWATER
Date Sampled: 27 Apr 2020 9:00
Date Received: 28 Apr 2020 9:05

COLLEEN ECK
CLAY COUNTY SOLID WASTE MGMT
807 11TH ST N
MOORHEAD MN 56560-1500

Sample Description: LEACHATE

Temp at Receipt: 9.7C

	As Received Result	Method RL	Method Reference	Date Analyzed	Analyst

Temperature outside the requirement specified in Minnesota Statute 4740.2087 Subpart 2.A. Client contacted and has authorized MVTL to proceed with analysis.

Flash Point subcontracted to:
Minnesota Valley Testing Labs Inc.
2616 East Broadway Ave
Bismarck, ND 58501
701-258-9720
MDH State Lab ID: 038-999-267

^ The reporting limit (RL) was elevated due to instrument performance at the lower limit of quantitation (LLOQ). This will only impact results that are found to be below the elevated RL. Results above the elevated RL are unaffected.

Some of the SW 8081 spike criteria was not met due to sample matrix and applied dilution factor.

2,4,5,6-TETRACHLORO-m-XYLENE (SURROGATE) RECOVERY: 66 %

DECACHLOROBIPHENYL (SURROGATE) RECOVERY: 70 %

Approved by:

Dan O'Connell David Smahel
Chemistry Laboratory Managers New Ulm, MN

RL = Reporting Limit
Analyses performed under our Minnesota Department of Health Accreditation conform to the current TNI standards.
The reporting limit was elevated for any analyte requiring a dilution as coded below:
@ = Due to sample matrix # = Due to concentration of other analytes
! = Due to sample quantity + = Due to internal standard response
CERTIFICATION: MN LAB # 027-015-125 ND WW/DW # R-040

MVTL guarantees the accuracy of the analysis done on the sample submitted for testing. It is not possible for MVTL to guarantee that a test result obtained on a particular sample will be the same on any other sample unless all conditions affecting the sample are the same, including sampling by MVTL. As a mutual protection to clients, the public and ourselves, all reports are submitted as the confidential property of clients, and authorization for publication of statements, conclusions or extracts from or regarding our reports is reserved pending our written approval.

AN EQUAL OPPORTUNITY EMPLOYER

MINNESOTA VALLEY TESTING LABORATORIES, INC.

MVTL

1126 N. Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890
2616 E. Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724
1201 Lincoln Highway ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885
www.mvtl.com

MEMBER ACIL

Report Date: 12 May 2020
Lab Number: 20-A17944
Work Order #: 12-7431
Account #: 013177
Sample Matrix: WASTEWATER
Date Sampled: 27 Apr 2020 9:00
Sampled By:
Date Received: 28 Apr 2020 9:05

COLLEEN ECK
CLAY COUNTY SOLID WASTE MGMT
807 11TH ST N
MOORHEAD MN 56560-1500

Sample Description: LEACHATE

Temp at Receipt: 9.7C

	CAS #	As Received Result		Method RL	Method Reference	Date Analyzed	Analyst
625/8270 SVMS Extraction						1 May 20	KLM
Acenaphthene	83-32-9	< 10 @	ug/L	1	EPA 625	5 May 20	TMM
Acenaphthylene	208-96-8	< 10 @	ug/L	1	EPA 625	5 May 20	TMM
Anthracene	120-12-7	< 10 @	ug/L	1	EPA 625	5 May 20	TMM
Benzidine	92-87-5	< 100 @	ug/L	10	EPA 625	5 May 20	TMM
Benzo(a)anthracene	56-55-3	< 20 @	ug/L	2	EPA 625	5 May 20	TMM
Benzo(a)pyrene	50-32-8	< 20 @	ug/L	2	EPA 625	5 May 20	TMM
Benzo(b)fluoranthene	205-99-2	< 20 @	ug/L	2	EPA 625	5 May 20	TMM
Benzo(ghi)perylene	191-24-2	< 20 @	ug/L	2	EPA 625	5 May 20	TMM
Benzo(k)fluoranthene	207-08-9	< 20 @	ug/L	2	EPA 625	5 May 20	TMM
Benzyl Butyl Phthalate	85-68-7	< 10 @	ug/L	1	EPA 625	5 May 20	TMM
Bis(2-chloroethoxy)methane	111-91-1	< 10 @	ug/L	1	EPA 625	5 May 20	TMM
Bis(2-chloroethyl)ether	111-44-4	< 20 @	ug/L	2	EPA 625	5 May 20	TMM
Bis(2-ethylhexyl)phthalate	117-81-7	< 20 @	ug/L	2	EPA 625	5 May 20	TMM
4-Bromophenyl Phenyl Ether	101-55-3	< 20 @	ug/L	2	EPA 625	5 May 20	TMM
4-Chloro-3-methyl phenol	59-50-7	< 20 @	ug/L	2	EPA 625	5 May 20	TMM
2-Chloronaphthalene	91-58-7	< 20 @	ug/L	2	EPA 625	5 May 20	TMM
2-Chlorophenol	95-57-8	< 20 @	ug/L	2	EPA 625	5 May 20	TMM
4-Chlorophenyl Phenyl Ether	7005-72-3	< 10 @	ug/L	1	EPA 625	5 May 20	TMM
Chrysene	218-01-9	< 20 @	ug/L	2	EPA 625	5 May 20	TMM
Di-n-butyl phthalate	84-74-2	< 10 @	ug/L	1	EPA 625	5 May 20	TMM
Di-n-octyl phthalate	117-84-0	< 20 @	ug/L	2	EPA 625	5 May 20	TMM
Dibenzo(a,h)anthracene	53-70-3	< 20 @	ug/L	2	EPA 625	5 May 20	TMM
3,3-Dichlorobenzidine	91-94-1	< 40 @	ug/L	4	EPA 625	5 May 20	TMM
2,4-Dichlorophenol	120-83-2	< 20 @	ug/L	2	EPA 625	5 May 20	TMM
Diethyl phthalate	84-66-2	< 10 @	ug/L	1	EPA 625	5 May 20	TMM
Dimethyl phthalate	131-11-3	< 10 @	ug/L	1	EPA 625	5 May 20	TMM
2,4-Dimethylphenol	105-67-9	< 40 @	ug/L	4	EPA 625	5 May 20	TMM

RL = Reporting Limit
Analyses performed under our Minnesota Department of Health Accreditation conform to the current TNI standards.
The reporting limit was elevated for any analyte requiring a dilution as coded below:
@ = Due to sample matrix # = Due to concentration of other analytes
! = Due to sample quantity + = Due to internal standard response
CERTIFICATION: MN LAB # 027-015-125 ND MICRO # 1013-M ND WW/DW # R-040

MVTL guarantees the accuracy of the analysis done on the sample submitted for testing. It is not possible for MVTL to guarantee that a test result obtained on a particular sample will be the same on any other sample unless all conditions affecting the sample are the same, including sampling by MVTL. As a mutual protection to clients, the public and ourselves, all reports are submitted as the confidential property of clients, and authorization for publication of statements, conclusions or extracts from or regarding our reports is reserved pending our written approval.

AN EQUAL OPPORTUNITY EMPLOYER

MINNESOTA VALLEY TESTING LABORATORIES, INC.

MVTL

1126 N. Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890
2616 E. Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724
1201 Lincoln Highway ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885
www.mvtl.com

MEMBER ACIL

COLLEEN ECK
CLAY COUNTY SOLID WASTE MGMT
807 11TH ST N
MOORHEAD MN 56560-1500

Report Date: 12 May 2020
Lab Number: 20-A17944
Work Order #: 12-7431
Account #: 013177
Sample Matrix: WASTEWATER
Date Sampled: 27 Apr 2020 9:00
Sampled By:
Date Received: 28 Apr 2020 9:05

Sample Description: LEACHATE

Temp at Receipt: 9.7C

	CAS #	As Received Result		Method RL	Method Reference	Date Analyzed	Analyst
2,4-Dinitrophenol	51-28-5	< 100 @	ug/L	10	EPA 625	5 May 20	TMM
2,4-Dinitrotoluene	121-14-2	< 40 @	ug/L	4	EPA 625	5 May 20	TMM
2,6-Dinitrotoluene	606-20-2	< 40 @	ug/L	4	EPA 625	5 May 20	TMM
1,2-Diphenylhydrazine	122-66-7	< 10 @	ug/L	1	EPA 625	5 May 20	TMM
Fluoranthene	206-44-0	< 10 @	ug/L	1	EPA 625	5 May 20	TMM
Fluorene	86-73-7	< 10 @	ug/L	1	EPA 625	5 May 20	TMM
Hexachlorobenzene	118-74-1	< 20 @	ug/L	2	EPA 625	5 May 20	TMM
Hexachlorobutadiene	87-68-3	< 20 @	ug/L	2	EPA 625	5 May 20	TMM
Hexachlorocyclopentadiene	77-47-4	< 40 @	ug/L	4	EPA 625	5 May 20	TMM
Hexachloroethane	67-72-1	< 10 @	ug/L	1	EPA 625	5 May 20	TMM
Indeno(1,2,3-cd)pyrene	193-39-5	< 20 @	ug/L	2	EPA 625	5 May 20	TMM
Isophorone	78-59-1	< 10 @	ug/L	1	EPA 625	5 May 20	TMM
2-Methyl-4,6-dinitrophenol	534-52-1	< 100 @	ug/L	10	EPA 625	5 May 20	TMM
N-Nitrosodi-n-propylamine	621-64-7	< 20 @	ug/L	2	EPA 625	5 May 20	TMM
N-Nitrosodimethylamine	62-75-9	< 40 @	ug/L	4	EPA 625	5 May 20	TMM
N-Nitrosodiphenylamine	86-30-6	< 40 @	ug/L	4	EPA 625	5 May 20	TMM
Naphthalene	91-20-3	< 10 @	ug/L	1	EPA 625	5 May 20	TMM
Nitrobenzene	98-95-3	< 10 @	ug/L	1	EPA 625	5 May 20	TMM
2-Nitrophenol	88-75-5	< 20 @	ug/L	2	EPA 625	5 May 20	TMM
4-Nitrophenol	100-02-7	< 100 @	ug/L	10	EPA 625	5 May 20	TMM
2,2-oxybis(1chloropropane)	108-60-1	< 10 @	ug/L	1	EPA 625	5 May 20	TMM
Pentachlorophenol	87-86-5	< 100 @	ug/L	10	EPA 625	5 May 20	TMM
Phenanthrene	85-01-8	< 10 @	ug/L	1	EPA 625	5 May 20	TMM
Phenol	108-95-2	< 20 @	ug/L	2	EPA 625	5 May 20	TMM
Pyrene	129-00-0	< 10 @	ug/L	1	EPA 625	5 May 20	TMM
1,2,4-Trichlorobenzene	120-82-1	< 10 @	ug/L	1	EPA 625	5 May 20	TMM
2,4,6-Trichlorophenol	88-06-2	< 20 @	ug/L	2	EPA 625	5 May 20	TMM
Acetone	67-64-1	< 50 @	ug/L	10	EPA 624	30 Apr 20	TMM

RL = Reporting Limit
Analyses performed under our Minnesota Department of Health Accreditation conform to the current TNI standards.
The reporting limit was elevated for any analyte requiring a dilution as coded below:
@ = Due to sample matrix # = Due to concentration of other analytes
! = Due to sample quantity + = Due to internal standard response
CERTIFICATION: MN LAB # 027-015-125 ND MICRO # 1013-M ND WW/DW # R-040

MVTL guarantees the accuracy of the analysis done on the sample submitted for testing. It is not possible for MVTL to guarantee that a test result obtained on a particular sample will be the same on any other sample unless all conditions affecting the sample are the same, including sampling by MVTL. As a mutual protection to clients, the public and ourselves, all reports are submitted as the confidential property of clients, and authorization for publication of statements, conclusions or extracts from or regarding our reports is reserved pending our written approval.

AN EQUAL OPPORTUNITY EMPLOYER

MINNESOTA VALLEY TESTING LABORATORIES, INC.

MVTL

1126 N. Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890
2616 E. Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724
1201 Lincoln Highway ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885
www.mvtl.com

MEMBER ACIL

COLLEEN ECK
CLAY COUNTY SOLID WASTE MGMT
807 11TH ST N
MOORHEAD MN 56560-1500

Report Date: 12 May 2020
Lab Number: 20-A17944
Work Order #: 12-7431
Account #: 013177
Sample Matrix: WASTEWATER
Date Sampled: 27 Apr 2020 9:00
Sampled By:
Date Received: 28 Apr 2020 9:05

Sample Description: LEACHATE

Temp at Receipt: 9.7C

	CAS #	As Received Result		Method RL	Method Reference	Date Analyzed	Analyst
Acrolein	107-02-8	< 10 @	ug/L	2	EPA 624	30 Apr 20	TMM
Acrylonitrile	107-13-1	< 10 @	ug/L	2	EPA 624	30 Apr 20	TMM
Allyl Chloride	107-05-1	< 2.5 @	ug/L	0.5	EPA 624	30 Apr 20	TMM
Benzene	71-43-2	< 2.5 @	ug/L	0.5	EPA 624	30 Apr 20	TMM
bis(chloromethyl) ether	542881	NP	ug/L	ND	EPA 624		
Bromobenzene	108-86-1	< 2.5 @	ug/L	0.5	EPA 624	30 Apr 20	TMM
Bromochloromethane	74-97-5	< 2.5 @	ug/L	0.5	EPA 624	30 Apr 20	TMM
Bromodichloromethane	75-27-4	< 2.5 @	ug/L	0.5	EPA 624	30 Apr 20	TMM
Bromoform	75-25-2	< 2.5 @	ug/L	0.5	EPA 624	30 Apr 20	TMM
Bromomethane	74-83-9	< 5 @	ug/L	1	EPA 624	30 Apr 20	TMM
n-Butylbenzene	104-51-8	< 2.5 @	ug/L	0.5	EPA 624	30 Apr 20	TMM
sec-Butylbenzene	135-98-8	< 2.5 @	ug/L	0.5	EPA 624	30 Apr 20	TMM
t-Butylbenzene	98-06-6	< 2.5 @	ug/L	0.5	EPA 624	30 Apr 20	TMM
Carbon Tetrachloride	56-23-5	< 1 @	ug/L	0.2	EPA 624	30 Apr 20	TMM
Chlorobenzene	108-90-7	< 2.5 @	ug/L	0.5	EPA 624	30 Apr 20	TMM
Chlorodibromomethane	124-48-1	< 2.5 @	ug/L	0.5	EPA 624	30 Apr 20	TMM
Chloroethane	75-00-3	< 2.5 @	ug/L	0.5	EPA 624	30 Apr 20	TMM
2-Chloroethyl Vinyl Ether	110-75-8	< 5 @	ug/L	1	EPA 624	30 Apr 20	TMM
Chloroform	67-66-3	< 5 @	ug/L	1	EPA 624	30 Apr 20	TMM
Chloromethane	74-87-3	< 5 @	ug/L	1	EPA 624	30 Apr 20	TMM
2-Chlorotoluene	95-49-8	< 2.5 @	ug/L	0.5	EPA 624	30 Apr 20	TMM
4-Chlorotoluene	106-43-4	< 2.5 @	ug/L	0.5	EPA 624	30 Apr 20	TMM
Cumene	98-82-8	< 2.5 @	ug/L	0.5	EPA 624	30 Apr 20	TMM
1,2-Dibromo-3-chloropropane	96-12-8	< 0.25 @	ug/L	0.05	EPA 624	30 Apr 20	TMM
1,2-Dibromoethane	106-93-4	< 0.25 @	ug/L	0.05	EPA 624	30 Apr 20	TMM
Dibromomethane	74-95-3	< 2.5 @	ug/L	0.5	EPA 624	30 Apr 20	TMM
1,2-Dichlorobenzene	95-50-1	< 2.5 @	ug/L	0.5	EPA 624	30 Apr 20	TMM
1,3-Dichlorobenzene	541-73-1	< 2.5 @	ug/L	0.5	EPA 624	30 Apr 20	TMM

RL = Reporting Limit
Analyses performed under our Minnesota Department of Health Accreditation conform to the current TNI standards.
The reporting limit was elevated for any analyte requiring a dilution as coded below:
@ = Due to sample matrix # = Due to concentration of other analytes
! = Due to sample quantity + = Due to internal standard response
CERTIFICATION: MN LAB # 027-015-125 ND MICRO # 1013-M ND WW/DW # R-040

MVTL guarantees the accuracy of the analysis done on the sample submitted for testing. It is not possible for MVTL to guarantee that a test result obtained on a particular sample will be the same on any other sample unless all conditions affecting the sample are the same, including sampling by MVTL. As a mutual protection to clients, the public and ourselves, all reports are submitted as the confidential property of clients, and authorization for publication of statements, conclusions or extracts from or regarding our reports is reserved pending our written approval.

AN EQUAL OPPORTUNITY EMPLOYER

MINNESOTA VALLEY TESTING LABORATORIES, INC.

MVTL

1126 N. Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890
2616 E. Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724
1201 Lincoln Highway ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885
www.mvtl.com

MEMBER ACIL

COLLEEN ECK
CLAY COUNTY SOLID WASTE MGMT
807 11TH ST N
MOORHEAD MN 56560-1500

Report Date: 12 May 2020
Lab Number: 20-A17944
Work Order #: 12-7431
Account #: 013177
Sample Matrix: WASTEWATER
Date Sampled: 27 Apr 2020 9:00
Sampled By:
Date Received: 28 Apr 2020 9:05

Sample Description: LEACHATE

Temp at Receipt: 9.7C

	CAS #	As Received Result		Method RL	Method Reference	Date Analyzed	Analyst
1,4-Dichlorobenzene	106-46-7	< 2.5 @	ug/L	0.5	EPA 624	30 Apr 20	TMM
Dichlorodifluoromethane	75-71-8	< 2.5 @	ug/L	0.5	EPA 624	30 Apr 20	TMM
1,1-Dichloroethane	75-34-3	< 2.5 @	ug/L	0.5	EPA 624	30 Apr 20	TMM
1,2-Dichloroethane	107-06-2	< 0.5 @	ug/L	0.1	EPA 624	30 Apr 20	TMM
1,1-Dichloroethene	75-35-4	< 2.5 @	ug/L	0.5	EPA 624	30 Apr 20	TMM
cis-1,2-Dichloroethene	156-59-2	< 2.5 @	ug/L	0.5	EPA 624	30 Apr 20	TMM
trans-1,2-Dichloroethene	156-60-5	< 2.5 @	ug/L	0.5	EPA 624	30 Apr 20	TMM
Dichlorofluoromethane	75-43-4	< 2.5 @	ug/L	0.5	EPA 624	30 Apr 20	TMM
1,2-Dichloropropane	78-87-5	< 2.5 @	ug/L	0.5	EPA 624	30 Apr 20	TMM
1,3-Dichloropropane	142-28-9	< 2.5 @	ug/L	0.5	EPA 624	30 Apr 20	TMM
2,2-Dichloropropane	594-20-7	< 2.5 @	ug/L	0.5	EPA 624	30 Apr 20	TMM
1,1-Dichloropropene	563-58-6	< 2.5 @	ug/L	0.5	EPA 624	30 Apr 20	TMM
cis-1,3-Dichloropropene	10061-01-5	< 2.5 @	ug/L	0.5	EPA 624	30 Apr 20	TMM
trans-1,3-Dichloropropene	10061-02-6	< 2.5 @	ug/L	0.5	EPA 624	30 Apr 20	TMM
Ethyl Benzene	100-41-4	< 2.5 @	ug/L	0.5	EPA 624	30 Apr 20	TMM
Ethyl Ether	60-29-7	11.95 @	ug/L	0.50	EPA 624	30 Apr 20	TMM
Hexachlorobutadiene	87-68-3	< 1 @	ug/L	0.2	EPA 624	30 Apr 20	TMM
p-Isopropyltoluene	99-87-6	< 2.5 @	ug/L	0.5	EPA 624	30 Apr 20	TMM
Methyl Ethyl Ketone	78-93-3	< 25 @	ug/L	5	EPA 624	30 Apr 20	TMM
Methyl Isobutyl Ketone	108-10-1	< 10 @	ug/L	2	EPA 624	30 Apr 20	TMM
Methyl tert-butyl Ether	1634-04-4	< 2.5 @	ug/L	0.5	EPA 624	30 Apr 20	TMM
Methylene Chloride	75-09-2	< 5 @	ug/L	1	EPA 624	30 Apr 20	TMM
Naphthalene	91-20-3	< 5 @	ug/L	1	EPA 624	30 Apr 20	TMM
n-Propylbenzene	103-65-1	< 2.5 @	ug/L	0.5	EPA 624	30 Apr 20	TMM
Styrene	100-42-5	< 2.5 @	ug/L	0.5	EPA 624	30 Apr 20	TMM
1,1,1,2-Tetrachloroethane	630-20-6	< 2.5 @	ug/L	0.5	EPA 624	30 Apr 20	TMM
1,1,2,2-Tetrachloroethane	79-34-5	< 2.5 @	ug/L	0.5	EPA 624	30 Apr 20	TMM
Tetrachloroethene	127-18-4	< 2.5 @	ug/L	0.5	EPA 624	30 Apr 20	TMM

RL = Reporting Limit
Analyses performed under our Minnesota Department of Health Accreditation conform to the current TNI standards.
The reporting limit was elevated for any analyte requiring a dilution as coded below:
@ = Due to sample matrix # = Due to concentration of other analytes
! = Due to sample quantity + = Due to internal standard response
CERTIFICATION: MN LAB # 027-015-125 ND MICRO # 1013-M ND WW/DW # R-040

MVTL guarantees the accuracy of the analysis done on the sample submitted for testing. It is not possible for MVTL to guarantee that a test result obtained on a particular sample will be the same on any other sample unless all conditions affecting the sample are the same, including sampling by MVTL. As a mutual protection to clients, the public and ourselves, all reports are submitted as the confidential property of clients, and authorization for publication of statements, conclusions or extracts from or regarding our reports is reserved pending our written approval.

AN EQUAL OPPORTUNITY EMPLOYER

MINNESOTA VALLEY TESTING LABORATORIES, INC.

MVTL

1126 N. Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890
2616 E. Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724
1201 Lincoln Highway ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885
www.mvtl.com

MEMBER ACIL

Report Date: 12 May 2020
Lab Number: 20-A17944
Work Order #: 12-7431
Account #: 013177
Sample Matrix: WASTEWATER
Date Sampled: 27 Apr 2020 9:00
Sampled By:
Date Received: 28 Apr 2020 9:05

COLLEEN ECK
CLAY COUNTY SOLID WASTE MGMT
807 11TH ST N
MOORHEAD MN 56560-1500

Sample Description: LEACHATE

Temp at Receipt: 9.7C

	CAS #	As Received Result		Method RL	Method Reference	Date Analyzed	Analyst
Tetrahydrofuran	109-99-9	99.30 @	ug/L	5.00	EPA 624	30 Apr 20	TMM
Toluene	108-88-3	< 2.5 @	ug/L	0.5	EPA 624	30 Apr 20	TMM
1,2,3-Trichlorobenzene	87-61-6	< 2.5 @	ug/L	0.5	EPA 624	30 Apr 20	TMM
1,2,4-Trichlorobenzene	120-82-1	< 2.5 @	ug/L	0.5	EPA 624	30 Apr 20	TMM
1,1,1-Trichloroethane	71-55-6	< 2.5 @	ug/L	0.5	EPA 624	30 Apr 20	TMM
1,1,2-Trichloroethane	79-00-5	< 2.5 @	ug/L	0.5	EPA 624	30 Apr 20	TMM
Trichloroethene	79-01-6	< 0.5 @	ug/L	0.1	EPA 624	30 Apr 20	TMM
Trichlorofluoromethane	75-69-4	< 2.5 @	ug/L	0.5	EPA 624	30 Apr 20	TMM
1,2,3-Trichloropropane	96-18-4	< 0.5 @	ug/L	0.1	EPA 624	30 Apr 20	TMM
Trichlorotrifluoroethane	76-13-1	< 2.5 @	ug/L	0.5	EPA 624	30 Apr 20	TMM
1,2,4-Trimethylbenzene	95-63-6	< 2.5 @	ug/L	0.5	EPA 624	30 Apr 20	TMM
1,3,5-Trimethylbenzene	108-67-8	< 2.5 @	ug/L	0.5	EPA 624	30 Apr 20	TMM
Vinyl Chloride	75-01-4	0.350 @	ug/L	0.050	EPA 624	30 Apr 20	TMM
m-Xylene and p-Xylene	179601-23-1	< 5 @	ug/L	1	EPA 624	30 Apr 20	TMM
o-Xylene	95-47-6	< 2.5 @	ug/L	0.5	EPA 624	30 Apr 20	TMM

RL = Reporting Limit
Analyses performed under our Minnesota Department of Health Accreditation conform to the current TNI standards.
The reporting limit was elevated for any analyte requiring a dilution as coded below:
@ = Due to sample matrix # = Due to concentration of other analytes
! = Due to sample quantity + = Due to internal standard response
CERTIFICATION: MN LAB # 027-015-125 ND MICRO # 1013-M ND WW/DW # R-040

MVTL guarantees the accuracy of the analysis done on the sample submitted for testing. It is not possible for MVTL to guarantee that a test result obtained on a particular sample will be the same on any other sample unless all conditions affecting the sample are the same, including sampling by MVTL. As a mutual protection to clients, the public and ourselves, all reports are submitted as the confidential property of clients, and authorization for publication of statements, conclusions or extracts from or regarding our reports is reserved pending our written approval.

AN EQUAL OPPORTUNITY EMPLOYER

MVTL

MINNESOTA VALLEY TESTING LABORATORIES, INC.

1126 N. Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890
2616 E. Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724
1201 Lincoln Highway ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885
www.mvtl.com

MEMBER ACIL

Report Date: 12 May 2020
Lab Number: 20-A17944
Work Order #: 12-7431
Account #: 013177
Sample Matrix: WASTEWATER
Date Sampled: 27 Apr 2020 9:00
Sampled By:
Date Received: 28 Apr 2020 9:05

COLLEEN ECK
CLAY COUNTY SOLID WASTE MGMT
807 11TH ST N
MOORHEAD MN 56560-1500

Sample Description: LEACHATE

Temp at Receipt: 9.7C

	CAS #	As Received Result	Method RL	Method Reference	Date Analyzed	Analyst

Some of the SW 8270E surrogate and spike criteria were not met due to sample matrix.

Some of the SW 8260D spike criteria were not met due to sample matrix.

GC/MS VOC Sample pH > 2

NITROBENZENE (SURROGATE) RECOVERY: 109 %
2-FLUOROBIPHENYL (SURROGATE) RECOVERY: 99 %
TERPHENYL-d14 (SURROGATE) RECOVERY: 114 %

2-FLUOROPHENOL (SURROGATE) RECOVERY: 86 %
PHENOL-d5 (SURROGATE) RECOVERY: 62 %
2,4,6-TRIBROMOPHENOL (SURROGATE) RECOVERY: 143 %

DIBROMOFLUOROMETHANE (SURROGATE) RECOVERY: 100 %
TOLUENE-d8 (SURROGATE) RECOVERY: 92 %
4-BROMOFLUOROBENZENE (SURROGATE) RECOVERY: 99 %
NP = Not Present PQ = Present, Qualitative Only ND = Not Determined

Approved by:

Dan O'Connell David Smahel
Chemistry Laboratory Managers New Ulm, MN

RL = Reporting Limit
Analyses performed under our Minnesota Department of Health Accreditation conform to the current TNI standards.
The reporting limit was elevated for any analyte requiring a dilution as coded below:
@ = Due to sample matrix # = Due to concentration of other analytes
! = Due to sample quantity + = Due to internal standard response
CERTIFICATION: MN LAB # 027-015-125 ND MICRO # 1013-M ND WW/DW # R-040

MVTL guarantees the accuracy of the analysis done on the sample submitted for testing. It is not possible for MVTL to guarantee that a test result obtained on a particular sample will be the same on any other sample unless all conditions affecting the sample are the same, including sampling by MVTL. As a mutual protection to clients, the public and ourselves, all reports are submitted as the confidential property of clients, and authorization for publication of statements, conclusions or extracts from or regarding our reports is reserved pending our written approval.

AN EQUAL OPPORTUNITY EMPLOYER

MVTL

MINNESOTA VALLEY TESTING LABORATORIES, INC.

1126 N. Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890
2616 E. Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724
1201 Lincoln Highway ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885
www.mvtl.com

MEMBER ACIL

Report Date: 12 May 2020
Lab Number: 20-A17945
Work Order #: 12-7431
Account #: 013177
Sample Matrix: WASTEWATER
Date Sampled: 27 Apr 2020 9:00
Date Received: 28 Apr 2020 9:05

COLLEEN ECK
CLAY COUNTY SOLID WASTE MGMT
807 11TH ST N
MOORHEAD MN 56560-1500

Sample Description: TRIP BLANK

Temp at Receipt: 9.7C

	As Received Result	Method RL	Method Reference	Date Analyzed	Analyst

Temperature outside the requirement specified in Minnesota Statute 4740.2087 Subpart 2.A. Client contacted and has authorized MVTL to proceed with analysis.

Approved by:

Dan O'Connell David Smahel
Chemistry Laboratory Managers New Ulm, MN

RL = Reporting Limit
Analyses performed under our Minnesota Department of Health Accreditation conform to the current TNI standards.
The reporting limit was elevated for any analyte requiring a dilution as coded below:
@ = Due to sample matrix # = Due to concentration of other analytes
! = Due to sample quantity + = Due to internal standard response
CERTIFICATION: MN LAB # 027-015-125 ND WW/DW # R-040

MVTL guarantees the accuracy of the analysis done on the sample submitted for testing. It is not possible for MVTL to guarantee that a test result obtained on a particular sample will be the same on any other sample unless all conditions affecting the sample are the same, including sampling by MVTL. As a mutual protection to clients, the public and ourselves, all reports are submitted as the confidential property of clients, and authorization for publication of statements, conclusions or extracts from or regarding our reports is reserved pending our written approval.

AN EQUAL OPPORTUNITY EMPLOYER

MINNESOTA VALLEY TESTING LABORATORIES, INC.

MVTL

1126 N. Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890
2616 E. Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724
1201 Lincoln Highway ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885
www.mvtl.com

MEMBER ACIL

Report Date: 12 May 2020
Lab Number: 20-A17945
Work Order #: 12-7431
Account #: 013177
Sample Matrix: WASTEWATER
Date Sampled: 27 Apr 2020 9:00
Sampled By:
Date Received: 28 Apr 2020 9:05

COLLEEN ECK
CLAY COUNTY SOLID WASTE MGMT
807 11TH ST N
MOORHEAD MN 56560-1500

Sample Description: TRIP BLANK

Temp at Receipt: 9.7C

	CAS #	As Received Result		Method RL	Method Reference	Date Analyzed	Analyst
Acetone	67-64-1	< 10	ug/L	10	EPA 624	30 Apr 20	TMM
Allyl Chloride	107-05-1	< 0.5	ug/L	0.5	EPA 624	30 Apr 20	TMM
Benzene	71-43-2	< 0.5	ug/L	0.5	EPA 624	30 Apr 20	TMM
Bromobenzene	108-86-1	< 0.5	ug/L	0.5	EPA 624	30 Apr 20	TMM
Bromochloromethane	74-97-5	< 0.5	ug/L	0.5	EPA 624	30 Apr 20	TMM
Bromodichloromethane	75-27-4	< 0.5	ug/L	0.5	EPA 624	30 Apr 20	TMM
Bromoform	75-25-2	< 0.5	ug/L	0.5	EPA 624	30 Apr 20	TMM
Bromomethane	74-83-9	< 1	ug/L	1	EPA 624	30 Apr 20	TMM
n-Butylbenzene	104-51-8	< 0.5	ug/L	0.5	EPA 624	30 Apr 20	TMM
sec-Butylbenzene	135-98-8	< 0.5	ug/L	0.5	EPA 624	30 Apr 20	TMM
t-Butylbenzene	98-06-6	< 0.5	ug/L	0.5	EPA 624	30 Apr 20	TMM
Carbon Tetrachloride	56-23-5	< 0.2	ug/L	0.2	EPA 624	30 Apr 20	TMM
Chlorobenzene	108-90-7	< 0.5	ug/L	0.5	EPA 624	30 Apr 20	TMM
Chlorodibromomethane	124-48-1	< 0.5	ug/L	0.5	EPA 624	30 Apr 20	TMM
Chloroethane	75-00-3	< 0.5	ug/L	0.5	EPA 624	30 Apr 20	TMM
Chloroform	67-66-3	< 1	ug/L	1	EPA 624	30 Apr 20	TMM
Chloromethane	74-87-3	< 1	ug/L	1	EPA 624	30 Apr 20	TMM
2-Chlorotoluene	95-49-8	< 0.5	ug/L	0.5	EPA 624	30 Apr 20	TMM
4-Chlorotoluene	106-43-4	< 0.5	ug/L	0.5	EPA 624	30 Apr 20	TMM
Cumene	98-82-8	< 0.5	ug/L	0.5	EPA 624	30 Apr 20	TMM
1,2-Dibromo-3-chloropropane	96-12-8	< 0.05	ug/L	0.05	EPA 624	30 Apr 20	TMM
1,2-Dibromoethane	106-93-4	< 0.05	ug/L	0.05	EPA 624	30 Apr 20	TMM
Dibromomethane	74-95-3	< 0.5	ug/L	0.5	EPA 624	30 Apr 20	TMM
1,2-Dichlorobenzene	95-50-1	< 0.5	ug/L	0.5	EPA 624	30 Apr 20	TMM
1,3-Dichlorobenzene	541-73-1	< 0.5	ug/L	0.5	EPA 624	30 Apr 20	TMM
1,4-Dichlorobenzene	106-46-7	< 0.5	ug/L	0.5	EPA 624	30 Apr 20	TMM
Dichlorodifluoromethane	75-71-8	< 0.5	ug/L	0.5	EPA 624	30 Apr 20	TMM
1,1-Dichloroethane	75-34-3	< 0.5	ug/L	0.5	EPA 624	30 Apr 20	TMM

RL = Reporting Limit
Analyses performed under our Minnesota Department of Health Accreditation conform to the current TNI standards.
The reporting limit was elevated for any analyte requiring a dilution as coded below:
@ = Due to sample matrix # = Due to concentration of other analytes
! = Due to sample quantity + = Due to internal standard response
CERTIFICATION: MN LAB # 027-015-125 ND MICRO # 1013-M ND WW/DW # R-040

MVTL guarantees the accuracy of the analysis done on the sample submitted for testing. It is not possible for MVTL to guarantee that a test result obtained on a particular sample will be the same on any other sample unless all conditions affecting the sample are the same, including sampling by MVTL. As a mutual protection to clients, the public and ourselves, all reports are submitted as the confidential property of clients, and authorization for publication of statements, conclusions or extracts from or regarding our reports is reserved pending our written approval.

AN EQUAL OPPORTUNITY EMPLOYER

MINNESOTA VALLEY TESTING LABORATORIES, INC.

MVTL

1126 N. Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890
2616 E. Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724
1201 Lincoln Highway ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885
www.mvtl.com

MEMBER ACIL

COLLEEN ECK
CLAY COUNTY SOLID WASTE MGMT
807 11TH ST N
MOORHEAD MN 56560-1500

Report Date: 12 May 2020
Lab Number: 20-A17945
Work Order #: 12-7431
Account #: 013177
Sample Matrix: WASTEWATER
Date Sampled: 27 Apr 2020 9:00
Sampled By:
Date Received: 28 Apr 2020 9:05

Sample Description: TRIP BLANK

Temp at Receipt: 9.7C

	CAS #	As Received Result		Method RL	Method Reference	Date Analyzed	Analyst
1,2-Dichloroethane	107-06-2	< 0.1	ug/L	0.1	EPA 624	30 Apr 20	TMM
1,1-Dichloroethene	75-35-4	< 0.5	ug/L	0.5	EPA 624	30 Apr 20	TMM
cis-1,2-Dichloroethene	156-59-2	< 0.5	ug/L	0.5	EPA 624	30 Apr 20	TMM
trans-1,2-Dichloroethene	156-60-5	< 0.5	ug/L	0.5	EPA 624	30 Apr 20	TMM
Dichlorofluoromethane	75-43-4	< 0.5	ug/L	0.5	EPA 624	30 Apr 20	TMM
1,2-Dichloropropane	78-87-5	< 0.5	ug/L	0.5	EPA 624	30 Apr 20	TMM
1,3-Dichloropropane	142-28-9	< 0.5	ug/L	0.5	EPA 624	30 Apr 20	TMM
2,2-Dichloropropane	594-20-7	< 0.5	ug/L	0.5	EPA 624	30 Apr 20	TMM
1,1-Dichloropropene	563-58-6	< 0.5	ug/L	0.5	EPA 624	30 Apr 20	TMM
cis-1,3-Dichloropropene	10061-01-5	< 0.5	ug/L	0.5	EPA 624	30 Apr 20	TMM
trans-1,3-Dichloropropene	10061-02-6	< 0.5	ug/L	0.5	EPA 624	30 Apr 20	TMM
Ethyl Benzene	100-41-4	< 0.5	ug/L	0.5	EPA 624	30 Apr 20	TMM
Ethyl Ether	60-29-7	< 0.5	ug/L	0.5	EPA 624	30 Apr 20	TMM
Hexachlorobutadiene	87-68-3	< 0.2	ug/L	0.2	EPA 624	30 Apr 20	TMM
p-Isopropyltoluene	99-87-6	< 0.5	ug/L	0.5	EPA 624	30 Apr 20	TMM
Methyl Ethyl Ketone	78-93-3	< 5	ug/L	5	EPA 624	30 Apr 20	TMM
Methyl Isobutyl Ketone	108-10-1	< 2	ug/L	2	EPA 624	30 Apr 20	TMM
Methyl tert-butyl Ether	1634-04-4	< 0.5	ug/L	0.5	EPA 624	30 Apr 20	TMM
Methylene Chloride	75-09-2	< 1	ug/L	1	EPA 624	30 Apr 20	TMM
Naphthalene	91-20-3	< 1	ug/L	1	EPA 624	30 Apr 20	TMM
n-Propylbenzene	103-65-1	< 0.5	ug/L	0.5	EPA 624	30 Apr 20	TMM
Styrene	100-42-5	< 0.5	ug/L	0.5	EPA 624	30 Apr 20	TMM
1,1,1,2-Tetrachloroethane	630-20-6	< 0.5	ug/L	0.5	EPA 624	30 Apr 20	TMM
1,1,2,2-Tetrachloroethane	79-34-5	< 0.5	ug/L	0.5	EPA 624	30 Apr 20	TMM
Tetrachloroethene	127-18-4	< 0.5	ug/L	0.5	EPA 624	30 Apr 20	TMM
Tetrahydrofuran	109-99-9	< 5	ug/L	5	EPA 624	30 Apr 20	TMM
Toluene	108-88-3	< 0.5	ug/L	0.5	EPA 624	30 Apr 20	TMM
1,2,3-Trichlorobenzene	87-61-6	< 0.5	ug/L	0.5	EPA 624	30 Apr 20	TMM

RL = Reporting Limit
Analyses performed under our Minnesota Department of Health Accreditation conform to the current TNI standards.
The reporting limit was elevated for any analyte requiring a dilution as coded below:
@ = Due to sample matrix # = Due to concentration of other analytes
! = Due to sample quantity + = Due to internal standard response
CERTIFICATION: MN LAB # 027-015-125 ND MICRO # 1013-M ND WW/DW # R-040

MVTL guarantees the accuracy of the analysis done on the sample submitted for testing. It is not possible for MVTL to guarantee that a test result obtained on a particular sample will be the same on any other sample unless all conditions affecting the sample are the same, including sampling by MVTL. As a mutual protection to clients, the public and ourselves, all reports are submitted as the confidential property of clients, and authorization for publication of statements, conclusions or extracts from or regarding our reports is reserved pending our written approval.

AN EQUAL OPPORTUNITY EMPLOYER

MVTL

MINNESOTA VALLEY TESTING LABORATORIES, INC.

1126 N. Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890
2616 E. Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724
1201 Lincoln Highway ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885
www.mvtl.com

MEMBER ACIL

Report Date: 12 May 2020
Lab Number: 20-A17945
Work Order #: 12-7431
Account #: 013177
Sample Matrix: WASTEWATER
Date Sampled: 27 Apr 2020 9:00
Sampled By:
Date Received: 28 Apr 2020 9:05

COLLEEN ECK
CLAY COUNTY SOLID WASTE MGMT
807 11TH ST N
MOORHEAD MN 56560-1500

Sample Description: TRIP BLANK

Temp at Receipt: 9.7C

	CAS #	As Received Result		Method RL	Method Reference	Date Analyzed	Analyst
1,2,4-Trichlorobenzene	120-82-1	< 0.5	ug/L	0.5	EPA 624	30 Apr 20	TMM
1,1,1-Trichloroethane	71-55-6	< 0.5	ug/L	0.5	EPA 624	30 Apr 20	TMM
1,1,2-Trichloroethane	79-00-5	< 0.5	ug/L	0.5	EPA 624	30 Apr 20	TMM
Trichloroethene	79-01-6	< 0.1	ug/L	0.1	EPA 624	30 Apr 20	TMM
Trichlorofluoromethane	75-69-4	< 0.5	ug/L	0.5	EPA 624	30 Apr 20	TMM
1,2,3-Trichloropropane	96-18-4	< 0.1	ug/L	0.1	EPA 624	30 Apr 20	TMM
Trichlorotrifluoroethane	76-13-1	< 0.5	ug/L	0.5	EPA 624	30 Apr 20	TMM
1,2,4-Trimethylbenzene	95-63-6	< 0.5	ug/L	0.5	EPA 624	30 Apr 20	TMM
1,3,5-Trimethylbenzene	108-67-8	< 0.5	ug/L	0.5	EPA 624	30 Apr 20	TMM
Vinyl Chloride	75-01-4	< 0.05	ug/L	0.05	EPA 624	30 Apr 20	TMM
m-Xylene and p-Xylene	179601-23-1	< 1	ug/L	1	EPA 624	30 Apr 20	TMM
o-Xylene	95-47-6	< 0.5	ug/L	0.5	EPA 624	30 Apr 20	TMM

Some of the SW 8260D spike criteria were not met due to sample matrix.

GC/MS VOC Sample pH < 2

DIBROMOFLUOROMETHANE (SURROGATE) RECOVERY: 101 %
TOLUENE-d8 (SURROGATE) RECOVERY: 92 %
4-BROMOFLUOROBENZENE (SURROGATE) RECOVERY: 94 %

Approved by:

Dan O'Connell David Smahel
Chemistry Laboratory Managers New Ulm, MN

RL = Reporting Limit
Analyses performed under our Minnesota Department of Health Accreditation conform to the current TNI standards.
The reporting limit was elevated for any analyte requiring a dilution as coded below:
@ = Due to sample matrix # = Due to concentration of other analytes
! = Due to sample quantity + = Due to internal standard response
CERTIFICATION: MN LAB # 027-015-125 ND MICRO # 1013-M ND WW/DW # R-040

MVTL guarantees the accuracy of the analysis done on the sample submitted for testing. It is not possible for MVTL to guarantee that a test result obtained on a particular sample will be the same on any other sample unless all conditions affecting the sample are the same, including sampling by MVTL. As a mutual protection to clients, the public and ourselves, all reports are submitted as the confidential property of clients, and authorization for publication of statements, conclusions or extracts from or regarding our reports is reserved pending our written approval.

AN EQUAL OPPORTUNITY EMPLOYER

MINNESOTA VALLEY TESTING LABORATORIES, INC.

MVTL

1126 N. Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890
2616 E. Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724
1201 Lincoln Highway ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885
www.mvtl.com

MEMBER ACIL

Report Date: 1 Sep 2020
Lab Number: 20-A39948
Work Order #: 12-12704
Account #: 013177
Sample Matrix: WASTEWATER
Date Sampled: 18 Aug 2020 10:00
Date Received: 19 Aug 2020 9:25

COLLEEN ECK
CLAY COUNTY SOLID WASTE MGMT
807 11TH ST N
MOORHEAD MN 56560-1500

Sample Description: LEACHATE

Temp at Receipt: 4.1C

	As Received Result		Method RL	Method Reference	Date Analyzed	Analyst
608/8081/8082 Extraction					20 Aug 20	JE
MS Water Digestions					25 Aug 20	JMS
Water Digestions					25 Aug 20	JMS
Flash Point	> 160	degrees F	0	ASTM D3278	21 Aug 20 13:00	RAG
Mercury	0.096 @	ug/L	0.005	EPA 245.7	28 Aug 20 15:55	RMB
Beryllium	< 0.025 @	mg/L	0.005	200.7	28 Aug 20 22:30	RMV
Chromium	0.754 @	mg/L	0.010	200.7	28 Aug 20 22:30	RMV
Copper	0.046 @	mg/L	0.005	200.7	28 Aug 20 22:30	RMV
Nickel	0.250 @	mg/L	0.010	200.7	28 Aug 20 22:30	RMV
Silver	< 0.025 @	mg/L	0.005	200.7	28 Aug 20 22:30	RMV
Zinc	0.076 @	mg/L	0.010	200.7	28 Aug 20 22:30	RMV
Antimony	25.6 @^	ug/L	0.50	200.8	26 Aug 20 10:34	KAM
Arsenic	653 ~@	ug/L	0.50	200.8	26 Aug 20 10:34	KAM
Cadmium	1.80 @	ug/L	0.10	200.8	26 Aug 20 10:34	KAM
Lead	6.08 @	ug/L	0.50	200.8	26 Aug 20 10:34	KAM
Selenium	9.76 @^	ug/L	0.50	200.8	26 Aug 20 10:34	KAM
Thallium	< 0.5 @	ug/L	0.1	200.8	26 Aug 20 10:34	KAM
Aldrin	< 0.15 @	ug/L	0.03	EPA 608	25 Aug 20	TMP
Alpha-BHC	< 0.15 @	ug/L	0.03	EPA 608	25 Aug 20	TMP
Beta-BHC	< 0.3 @	ug/L	0.06	EPA 608	25 Aug 20	TMP
Delta-BHC	< 0.15 @	ug/L	0.03	EPA 608	25 Aug 20	TMP
Gamma-BHC [Lindane]	< 0.15 @	ug/L	0.03	EPA 608	25 Aug 20	TMP
4,4'-DDD [P,P-DDD]	< 0.15 @	ug/L	0.03	EPA 608	25 Aug 20	TMP
4,4'-DDE [P,P-DDE]	< 0.15 @	ug/L	0.03	EPA 608	25 Aug 20	TMP
4,4'-DDT [P,P-DDT]	< 0.3 @	ug/L	0.06	EPA 608	25 Aug 20	TMP
Dieldrin	< 0.15 @	ug/L	0.03	EPA 608	25 Aug 20	TMP
Endosulfan I	< 0.15 @	ug/L	0.03	EPA 608	25 Aug 20	TMP
Endosulfan II	< 0.15 @	ug/L	0.03	EPA 608	25 Aug 20	TMP
Endosulfan sulfate	< 0.3 @	ug/L	0.06	EPA 608	25 Aug 20	TMP

RL = Reporting Limit
Analyses performed under our Minnesota Department of Health Accreditation conform to the current TNI standards.
The reporting limit was elevated for any analyte requiring a dilution as coded below:
@ = Due to sample matrix # = Due to concentration of other analytes
! = Due to sample quantity + = Due to internal standard response
CERTIFICATION: MN LAB # 027-015-125 ND WW/DW # R-040

MVTL guarantees the accuracy of the analysis done on the sample submitted for testing. It is not possible for MVTL to guarantee that a test result obtained on a particular sample will be the same on any other sample unless all conditions affecting the sample are the same, including sampling by MVTL. As a mutual protection to clients, the public and ourselves, all reports are submitted as the confidential property of clients, and authorization for publication of statements, conclusions or extracts from or regarding our reports is reserved pending our written approval.

AN EQUAL OPPORTUNITY EMPLOYER

MINNESOTA VALLEY TESTING LABORATORIES, INC.

MVTL

1126 N. Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890
2616 E. Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724
1201 Lincoln Highway ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885
www.mvtl.com

MEMBER ACIL

Report Date: 1 Sep 2020
Lab Number: 20-A39948
Work Order #: 12-12704
Account #: 013177
Sample Matrix: WASTEWATER
Date Sampled: 18 Aug 2020 10:00
Date Received: 19 Aug 2020 9:25

COLLEEN ECK
CLAY COUNTY SOLID WASTE MGMT
807 11TH ST N
MOORHEAD MN 56560-1500

Sample Description: LEACHATE

Temp at Receipt: 4.1C

	As Received Result		Method RL	Method Reference	Date Analyzed	Analyst
Endrin	< 0.15 @	ug/L	0.03	EPA 608	25 Aug 20	TMP
Endrin aldehyde	< 0.3 @	ug/L	0.06	EPA 608	25 Aug 20	TMP
Heptachlor	< 0.15 @	ug/L	0.03	EPA 608	25 Aug 20	TMP
Heptachlor Epoxide	< 0.15 @	ug/L	0.03	EPA 608	25 Aug 20	TMP
Methoxychlor	< 0.5 @	ug/L	0.1	EPA 608	25 Aug 20	TMP
Toxaphene	< 6 @	ug/L	1.2	EPA 608	25 Aug 20	TMP
Chlordane	< 3.25 @	ug/L	0.65	EPA 608	25 Aug 20	TMP
PCB-1016	< 3.5 @	ug/L	0.7	EPA 608	25 Aug 20	TMP
PCB-1221	< 5 @	ug/L	1	EPA 608	25 Aug 20	TMP
PCB-1232	< 3 @	ug/L	0.6	EPA 608	25 Aug 20	TMP
PCB-1242	< 3 @	ug/L	0.6	EPA 608	25 Aug 20	TMP
PCB-1248	< 4 @	ug/L	0.8	EPA 608	25 Aug 20	TMP
PCB-1254	< 3 @	ug/L	0.6	EPA 608	25 Aug 20	TMP
PCB-1260	< 1.5 @	ug/L	0.3	EPA 608	25 Aug 20	TMP

Flash Point subcontracted to:
Minnesota Valley Testing Labs Inc.
2616 East Broadway Ave
Bismarck, ND 58501
701-258-9720
MDH State Lab ID: 038-999-267

~ Sample diluted due to result above calibration of linear range.

^ The reporting limit (RL) was elevated due to instrument performance at the lower limit of quantitation (LLOQ). This will only impact results that are found to be below the elevated RL. Results above the elevated RL are unaffected.

Some of the SW 8081 surrogate and spike criteria were not met due to sample matrix.

2,4,5,6-TETRACHLORO-m-XYLENE (SURROGATE) RECOVERY: 58 %

DECACHLOROBIPHENYL (SURROGATE) RECOVERY: 77 %

RL = Reporting Limit
Analyses performed under our Minnesota Department of Health Accreditation conform to the current TNI standards.
The reporting limit was elevated for any analyte requiring a dilution as coded below:
@ = Due to sample matrix # = Due to concentration of other analytes
! = Due to sample quantity + = Due to internal standard response
CERTIFICATION: MN LAB # 027-015-125 ND WW/DW # R-040

MVTL guarantees the accuracy of the analysis done on the sample submitted for testing. It is not possible for MVTL to guarantee that a test result obtained on a particular sample will be the same on any other sample unless all conditions affecting the sample are the same, including sampling by MVTL. As a mutual protection to clients, the public and ourselves, all reports are submitted as the confidential property of clients, and authorization for publication of statements, conclusions or extracts from or regarding our reports is reserved pending our written approval.

AN EQUAL OPPORTUNITY EMPLOYER

MVTL

MINNESOTA VALLEY TESTING LABORATORIES, INC.

1126 N. Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890
2616 E. Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724
1201 Lincoln Highway ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885
www.mvtl.com

MEMBER ACIL

Report Date: 1 Sep 2020
Lab Number: 20-A39948
Work Order #: 12-12704
Account #: 013177
Sample Matrix: WASTEWATER
Date Sampled: 18 Aug 2020 10:00
Date Received: 19 Aug 2020 9:25

COLLEEN ECK
CLAY COUNTY SOLID WASTE MGMT
807 11TH ST N
MOORHEAD MN 56560-1500

Sample Description: LEACHATE

Temp at Receipt: 4.1C

	As Received Result	Method RL	Method Reference	Date Analyzed	Analyst

Approved by:

Dan O'Connell David Smahel
Chemistry Laboratory Managers New Ulm, MN

RL = Reporting Limit
Analyses performed under our Minnesota Department of Health Accreditation conform to the current TNI standards.
The reporting limit was elevated for any analyte requiring a dilution as coded below:
@ = Due to sample matrix # = Due to concentration of other analytes
! = Due to sample quantity + = Due to internal standard response
CERTIFICATION: MN LAB # 027-015-125 ND WW/DW # R-040

MVTL guarantees the accuracy of the analysis done on the sample submitted for testing. It is not possible for MVTL to guarantee that a test result obtained on a particular sample will be the same on any other sample unless all conditions affecting the sample are the same, including sampling by MVTL. As a mutual protection to clients, the public and ourselves, all reports are submitted as the confidential property of clients, and authorization for publication of statements, conclusions or extracts from or regarding our reports is reserved pending our written approval.

AN EQUAL OPPORTUNITY EMPLOYER

MVTL

MINNESOTA VALLEY TESTING LABORATORIES, INC.

1126 N. Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890
2616 E. Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724
1201 Lincoln Highway ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885
www.mvtl.com

MEMBER ACIL

Report Date: 1 Sep 2020
Lab Number: 20-A39948
Work Order #: 12-12704
Account #: 013177
Sample Matrix: WASTEWATER
Date Sampled: 18 Aug 2020 10:00
Sampled By:
Date Received: 19 Aug 2020 9:25

COLLEEN ECK
CLAY COUNTY SOLID WASTE MGMT
807 11TH ST N
MOORHEAD MN 56560-1500

Sample Description: LEACHATE

Temp at Receipt: 4.1C

	CAS #	As Received Result		Method RL	Method Reference	Date Analyzed	Analyst
625/8270 SVMS Extraction						21 Aug 20	JE
Acenaphthene	83-32-9	< 10 @	ug/L	1	EPA 625	25 Aug 20	TMM
Acenaphthylene	208-96-8	< 10 @	ug/L	1	EPA 625	25 Aug 20	TMM
Anthracene	120-12-7	< 10 @	ug/L	1	EPA 625	25 Aug 20	TMM
Benzidine	92-87-5	< 100 @	ug/L	10	EPA 625	25 Aug 20	TMM
Benzo(a)anthracene	56-55-3	< 20 @	ug/L	2	EPA 625	25 Aug 20	TMM
Benzo(a)pyrene	50-32-8	< 20 @	ug/L	2	EPA 625	25 Aug 20	TMM
Benzo(b)fluoranthene	205-99-2	< 20 @	ug/L	2	EPA 625	25 Aug 20	TMM
Benzo(ghi)perylene	191-24-2	< 20 @	ug/L	2	EPA 625	25 Aug 20	TMM
Benzo(k)fluoranthene	207-08-9	< 20 @	ug/L	2	EPA 625	25 Aug 20	TMM
Benzyl Butyl Phthalate	85-68-7	< 10 @	ug/L	1	EPA 625	25 Aug 20	TMM
Bis(2-chloroethoxy)methane	111-91-1	< 10 @	ug/L	1	EPA 625	25 Aug 20	TMM
Bis(2-chloroethyl)ether	111-44-4	< 20 @	ug/L	2	EPA 625	25 Aug 20	TMM
Bis(2-ethylhexyl)phthalate	117-81-7	34.1 @	ug/L	2.0	EPA 625	25 Aug 20	TMM
4-Bromophenyl Phenyl Ether	101-55-3	< 20 @	ug/L	2	EPA 625	25 Aug 20	TMM
4-Chloro-3-methyl phenol	59-50-7	< 20 @	ug/L	2	EPA 625	25 Aug 20	TMM
2-Chloronaphthalene	91-58-7	< 20 @	ug/L	2	EPA 625	25 Aug 20	TMM
2-Chlorophenol	95-57-8	< 20 @	ug/L	2	EPA 625	25 Aug 20	TMM
4-Chlorophenyl Phenyl Ether	7005-72-3	< 10 @	ug/L	1	EPA 625	25 Aug 20	TMM
Chrysene	218-01-9	< 20 @	ug/L	2	EPA 625	25 Aug 20	TMM
Di-n-butyl phthalate	84-74-2	< 10 @	ug/L	1	EPA 625	25 Aug 20	TMM
Di-n-octyl phthalate	117-84-0	< 20 @	ug/L	2	EPA 625	25 Aug 20	TMM
Dibenzo(a,h)anthracene	53-70-3	< 20 @	ug/L	2	EPA 625	25 Aug 20	TMM
3,3-Dichlorobenzidine	91-94-1	< 40 @	ug/L	4	EPA 625	25 Aug 20	TMM
2,4-Dichlorophenol	120-83-2	< 20 @	ug/L	2	EPA 625	25 Aug 20	TMM
Diethyl phthalate	84-66-2	< 10 @	ug/L	1	EPA 625	25 Aug 20	TMM
Dimethyl phthalate	131-11-3	< 10 @	ug/L	1	EPA 625	25 Aug 20	TMM
2,4-Dimethylphenol	105-67-9	< 40 @	ug/L	4	EPA 625	25 Aug 20	TMM

RL = Reporting Limit
Analyses performed under our Minnesota Department of Health Accreditation conform to the current TNI standards.
The reporting limit was elevated for any analyte requiring a dilution as coded below:
@ = Due to sample matrix # = Due to concentration of other analytes
! = Due to sample quantity + = Due to internal standard response
CERTIFICATION: MN LAB # 027-015-125 ND MICRO # 1013-M ND WW/DW # R-040

MVTL guarantees the accuracy of the analysis done on the sample submitted for testing. It is not possible for MVTL to guarantee that a test result obtained on a particular sample will be the same on any other sample unless all conditions affecting the sample are the same, including sampling by MVTL. As a mutual protection to clients, the public and ourselves, all reports are submitted as the confidential property of clients, and authorization for publication of statements, conclusions or extracts from or regarding our reports is reserved pending our written approval.

AN EQUAL OPPORTUNITY EMPLOYER

MINNESOTA VALLEY TESTING LABORATORIES, INC.

MVTL

1126 N. Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890
2616 E. Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724
1201 Lincoln Highway ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885
www.mvtl.com

MEMBER ACIL

Report Date: 1 Sep 2020
Lab Number: 20-A39948
Work Order #: 12-12704
Account #: 013177
Sample Matrix: WASTEWATER
Date Sampled: 18 Aug 2020 10:00
Sampled By:
Date Received: 19 Aug 2020 9:25

COLLEEN ECK
CLAY COUNTY SOLID WASTE MGMT
807 11TH ST N
MOORHEAD MN 56560-1500

Sample Description: LEACHATE

Temp at Receipt: 4.1C

	CAS #	As Received Result		Method RL	Method Reference	Date Analyzed	Analyst
2,4-Dinitrophenol	51-28-5	< 100 @	ug/L	10	EPA 625	25 Aug 20	TMM
2,4-Dinitrotoluene	121-14-2	< 40 @	ug/L	4	EPA 625	25 Aug 20	TMM
2,6-Dinitrotoluene	606-20-2	< 40 @	ug/L	4	EPA 625	25 Aug 20	TMM
1,2-Diphenylhydrazine	122-66-7	< 10 @	ug/L	1	EPA 625	25 Aug 20	TMM
Fluoranthene	206-44-0	< 10 @	ug/L	1	EPA 625	25 Aug 20	TMM
Fluorene	86-73-7	< 10 @	ug/L	1	EPA 625	25 Aug 20	TMM
Hexachlorobenzene	118-74-1	< 20 @	ug/L	2	EPA 625	25 Aug 20	TMM
Hexachlorobutadiene	87-68-3	< 20 @	ug/L	2	EPA 625	25 Aug 20	TMM
Hexachlorocyclopentadiene	77-47-4	< 40 @	ug/L	4	EPA 625	25 Aug 20	TMM
Hexachloroethane	67-72-1	< 10 @	ug/L	1	EPA 625	25 Aug 20	TMM
Indeno(1,2,3-cd)pyrene	193-39-5	< 20 @	ug/L	2	EPA 625	25 Aug 20	TMM
Isophorone	78-59-1	< 10 @	ug/L	1	EPA 625	25 Aug 20	TMM
2-Methyl-4,6-dinitrophenol	534-52-1	< 100 @	ug/L	10	EPA 625	25 Aug 20	TMM
N-Nitrosodi-n-propylamine	621-64-7	< 20 @	ug/L	2	EPA 625	25 Aug 20	TMM
N-Nitrosodimethylamine	62-75-9	< 40 @	ug/L	4	EPA 625	25 Aug 20	TMM
N-Nitrosodiphenylamine	86-30-6	< 40 @	ug/L	4	EPA 625	25 Aug 20	TMM
Naphthalene	91-20-3	< 10 @	ug/L	1	EPA 625	25 Aug 20	TMM
Nitrobenzene	98-95-3	< 10 @	ug/L	1	EPA 625	25 Aug 20	TMM
2-Nitrophenol	88-75-5	< 20 @	ug/L	2	EPA 625	25 Aug 20	TMM
4-Nitrophenol	100-02-7	< 100 @	ug/L	10	EPA 625	25 Aug 20	TMM
2,2-oxybis(1chloropropane)	108-60-1	< 10 @	ug/L	1	EPA 625	25 Aug 20	TMM
Pentachlorophenol	87-86-5	< 100 @	ug/L	10	EPA 625	25 Aug 20	TMM
Phenanthrene	85-01-8	< 10 @	ug/L	1	EPA 625	25 Aug 20	TMM
Phenol	108-95-2	< 20 @	ug/L	2	EPA 625	25 Aug 20	TMM
Pyrene	129-00-0	< 10 @	ug/L	1	EPA 625	25 Aug 20	TMM
1,2,4-Trichlorobenzene	120-82-1	< 10 @	ug/L	1	EPA 625	25 Aug 20	TMM
2,4,6-Trichlorophenol	88-06-2	< 20 @	ug/L	2	EPA 625	25 Aug 20	TMM
Acetone	67-64-1	187.4 @	ug/L	10.00	EPA 624	24 Aug 20	TMM

RL = Reporting Limit
Analyses performed under our Minnesota Department of Health Accreditation conform to the current TNI standards.
The reporting limit was elevated for any analyte requiring a dilution as coded below:
@ = Due to sample matrix # = Due to concentration of other analytes
! = Due to sample quantity + = Due to internal standard response
CERTIFICATION: MN LAB # 027-015-125 ND MICRO # 1013-M ND WW/DW # R-040

MVTL guarantees the accuracy of the analysis done on the sample submitted for testing. It is not possible for MVTL to guarantee that a test result obtained on a particular sample will be the same on any other sample unless all conditions affecting the sample are the same, including sampling by MVTL. As a mutual protection to clients, the public and ourselves, all reports are submitted as the confidential property of clients, and authorization for publication of statements, conclusions or extracts from or regarding our reports is reserved pending our written approval.

AN EQUAL OPPORTUNITY EMPLOYER

MVTL

MINNESOTA VALLEY TESTING LABORATORIES, INC.

1126 N. Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890
2616 E. Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724
1201 Lincoln Highway ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885
www.mvtl.com

MEMBER ACIL

Report Date: 1 Sep 2020
Lab Number: 20-A39948
Work Order #: 12-12704
Account #: 013177
Sample Matrix: WASTEWATER
Date Sampled: 18 Aug 2020 10:00
Sampled By:
Date Received: 19 Aug 2020 9:25

COLLEEN ECK
CLAY COUNTY SOLID WASTE MGMT
807 11TH ST N
MOORHEAD MN 56560-1500

Sample Description: LEACHATE

Temp at Receipt: 4.1C

	CAS #	As Received Result		Method RL	Method Reference	Date Analyzed	Analyst
Acrolein	107-02-8	< 10 @	ug/L	2	EPA 624	24 Aug 20	TMM
Acrylonitrile	107-13-1	< 10 @	ug/L	2	EPA 624	24 Aug 20	TMM
Allyl Chloride	107-05-1	< 2.5 @	ug/L	0.5	EPA 624	24 Aug 20	TMM
Benzene	71-43-2	4.70 @	ug/L	0.50	EPA 624	24 Aug 20	TMM
bis(chloromethyl) ether	542881	NP	ug/L	ND	EPA 624		
Bromobenzene	108-86-1	< 2.5 @	ug/L	0.5	EPA 624	24 Aug 20	TMM
Bromochloromethane	74-97-5	< 2.5 @	ug/L	0.5	EPA 624	24 Aug 20	TMM
Bromodichloromethane	75-27-4	< 2.5 @	ug/L	0.5	EPA 624	24 Aug 20	TMM
Bromoform	75-25-2	< 2.5 @	ug/L	0.5	EPA 624	24 Aug 20	TMM
Bromomethane	74-83-9	< 5 @	ug/L	1	EPA 624	24 Aug 20	TMM
n-Butylbenzene	104-51-8	< 2.5 @	ug/L	0.5	EPA 624	24 Aug 20	TMM
sec-Butylbenzene	135-98-8	< 2.5 @	ug/L	0.5	EPA 624	24 Aug 20	TMM
t-Butylbenzene	98-06-6	< 2.5 @	ug/L	0.5	EPA 624	24 Aug 20	TMM
Carbon Tetrachloride	56-23-5	< 1 @	ug/L	0.2	EPA 624	24 Aug 20	TMM
Chlorobenzene	108-90-7	< 2.5 @	ug/L	0.5	EPA 624	24 Aug 20	TMM
Chlorodibromomethane	124-48-1	< 2.5 @	ug/L	0.5	EPA 624	24 Aug 20	TMM
Chloroethane	75-00-3	< 2.5 @	ug/L	0.5	EPA 624	24 Aug 20	TMM
2-Chloroethyl Vinyl Ether	110-75-8	< 5 @	ug/L	1	EPA 624	24 Aug 20	TMM
Chloroform	67-66-3	< 5 @	ug/L	1	EPA 624	24 Aug 20	TMM
Chloromethane	74-87-3	< 5 @	ug/L	1	EPA 624	24 Aug 20	TMM
2-Chlorotoluene	95-49-8	< 2.5 @	ug/L	0.5	EPA 624	24 Aug 20	TMM
4-Chlorotoluene	106-43-4	< 2.5 @	ug/L	0.5	EPA 624	24 Aug 20	TMM
Cumene	98-82-8	< 2.5 @	ug/L	0.5	EPA 624	24 Aug 20	TMM
1,2-Dibromo-3-chloropropane	96-12-8	< 0.25 @	ug/L	0.05	EPA 624	24 Aug 20	TMM
1,2-Dibromoethane	106-93-4	< 0.25 @	ug/L	0.05	EPA 624	24 Aug 20	TMM
Dibromomethane	74-95-3	< 2.5 @	ug/L	0.5	EPA 624	24 Aug 20	TMM
1,2-Dichlorobenzene	95-50-1	< 2.5 @	ug/L	0.5	EPA 624	24 Aug 20	TMM
1,3-Dichlorobenzene	541-73-1	< 2.5 @	ug/L	0.5	EPA 624	24 Aug 20	TMM

RL = Reporting Limit
Analyses performed under our Minnesota Department of Health Accreditation conform to the current TNI standards.
The reporting limit was elevated for any analyte requiring a dilution as coded below:
@ = Due to sample matrix # = Due to concentration of other analytes
! = Due to sample quantity + = Due to internal standard response
CERTIFICATION: MN LAB # 027-015-125 ND MICRO # 1013-M ND WW/DW # R-040

MVTL guarantees the accuracy of the analysis done on the sample submitted for testing. It is not possible for MVTL to guarantee that a test result obtained on a particular sample will be the same on any other sample unless all conditions affecting the sample are the same, including sampling by MVTL. As a mutual protection to clients, the public and ourselves, all reports are submitted as the confidential property of clients, and authorization for publication of statements, conclusions or extracts from or regarding our reports is reserved pending our written approval.

AN EQUAL OPPORTUNITY EMPLOYER

MINNESOTA VALLEY TESTING LABORATORIES, INC.

MVTL

1126 N. Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890
2616 E. Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724
1201 Lincoln Highway ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885
www.mvtl.com

MEMBER ACIL

Report Date: 1 Sep 2020
Lab Number: 20-A39948
Work Order #: 12-12704
Account #: 013177
Sample Matrix: WASTEWATER
Date Sampled: 18 Aug 2020 10:00
Sampled By:
Date Received: 19 Aug 2020 9:25

COLLEEN ECK
CLAY COUNTY SOLID WASTE MGMT
807 11TH ST N
MOORHEAD MN 56560-1500

Sample Description: LEACHATE

Temp at Receipt: 4.1C

	CAS #	As Received Result		Method RL	Method Reference	Date Analyzed	Analyst
1,4-Dichlorobenzene	106-46-7	3.15 @	ug/L	0.50	EPA 624	24 Aug 20	TMM
Dichlorodifluoromethane	75-71-8	< 2.5 @	ug/L	0.5	EPA 624	24 Aug 20	TMM
1,1-Dichloroethane	75-34-3	< 2.5 @	ug/L	0.5	EPA 624	24 Aug 20	TMM
1,2-Dichloroethane	107-06-2	0.60 @	ug/L	0.10	EPA 624	24 Aug 20	TMM
1,1-Dichloroethene	75-35-4	< 2.5 @	ug/L	0.5	EPA 624	24 Aug 20	TMM
cis-1,2-Dichloroethene	156-59-2	< 2.5 @	ug/L	0.5	EPA 624	24 Aug 20	TMM
trans-1,2-Dichloroethene	156-60-5	< 2.5 @	ug/L	0.5	EPA 624	24 Aug 20	TMM
Dichlorofluoromethane	75-43-4	< 2.5 @	ug/L	0.5	EPA 624	24 Aug 20	TMM
1,2-Dichloropropane	78-87-5	< 2.5 @	ug/L	0.5	EPA 624	24 Aug 20	TMM
1,3-Dichloropropane	142-28-9	< 2.5 @	ug/L	0.5	EPA 624	24 Aug 20	TMM
2,2-Dichloropropane	594-20-7	< 2.5 @	ug/L	0.5	EPA 624	24 Aug 20	TMM
1,1-Dichloropropene	563-58-6	< 2.5 @	ug/L	0.5	EPA 624	24 Aug 20	TMM
cis-1,3-Dichloropropene	10061-01-5	< 2.5 @	ug/L	0.5	EPA 624	24 Aug 20	TMM
trans-1,3-Dichloropropene	10061-02-6	< 2.5 @	ug/L	0.5	EPA 624	24 Aug 20	TMM
Ethyl Benzene	100-41-4	7.00 @	ug/L	0.50	EPA 624	24 Aug 20	TMM
Ethyl Ether	60-29-7	13.25 @	ug/L	0.50	EPA 624	24 Aug 20	TMM
Hexachlorobutadiene	87-68-3	< 1 @	ug/L	0.2	EPA 624	24 Aug 20	TMM
p-Isopropyltoluene	99-87-6	2.90 @	ug/L	0.50	EPA 624	24 Aug 20	TMM
Methyl Ethyl Ketone	78-93-3	116.7 @	ug/L	5.00	EPA 624	24 Aug 20	TMM
Methyl Isobutyl Ketone	108-10-1	< 10 @	ug/L	2	EPA 624	24 Aug 20	TMM
Methyl tert-butyl Ether	1634-04-4	< 2.5 @	ug/L	0.5	EPA 624	24 Aug 20	TMM
Methylene Chloride	75-09-2	< 5 @	ug/L	1	EPA 624	24 Aug 20	TMM
Naphthalene	91-20-3	< 5 @	ug/L	1	EPA 624	24 Aug 20	TMM
n-Propylbenzene	103-65-1	< 2.5 @	ug/L	0.5	EPA 624	24 Aug 20	TMM
Styrene	100-42-5	< 2.5 @	ug/L	0.5	EPA 624	24 Aug 20	TMM
1,1,1,2-Tetrachloroethane	630-20-6	< 2.5 @	ug/L	0.5	EPA 624	24 Aug 20	TMM
1,1,2,2-Tetrachloroethane	79-34-5	< 2.5 @	ug/L	0.5	EPA 624	24 Aug 20	TMM
Tetrachloroethene	127-18-4	< 2.5 @	ug/L	0.5	EPA 624	24 Aug 20	TMM

RL = Reporting Limit
Analyses performed under our Minnesota Department of Health Accreditation conform to the current TNI standards.
The reporting limit was elevated for any analyte requiring a dilution as coded below:
@ = Due to sample matrix # = Due to concentration of other analytes
! = Due to sample quantity + = Due to internal standard response
CERTIFICATION: MN LAB # 027-015-125 ND MICRO # 1013-M ND WW/DW # R-040

MVTL guarantees the accuracy of the analysis done on the sample submitted for testing. It is not possible for MVTL to guarantee that a test result obtained on a particular sample will be the same on any other sample unless all conditions affecting the sample are the same, including sampling by MVTL. As a mutual protection to clients, the public and ourselves, all reports are submitted as the confidential property of clients, and authorization for publication of statements, conclusions or extracts from or regarding our reports is reserved pending our written approval.

AN EQUAL OPPORTUNITY EMPLOYER

MINNESOTA VALLEY TESTING LABORATORIES, INC.

MVTL

1126 N. Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890
2616 E. Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724
1201 Lincoln Highway ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885
www.mvtl.com

MEMBER ACIL

Report Date: 1 Sep 2020
Lab Number: 20-A39948
Work Order #: 12-12704
Account #: 013177
Sample Matrix: WASTEWATER
Date Sampled: 18 Aug 2020 10:00
Sampled By:
Date Received: 19 Aug 2020 9:25

COLLEEN ECK
CLAY COUNTY SOLID WASTE MGMT
807 11TH ST N
MOORHEAD MN 56560-1500

Sample Description: LEACHATE

Temp at Receipt: 4.1C

	CAS #	As Received Result		Method RL	Method Reference	Date Analyzed	Analyst
Tetrahydrofuran	109-99-9	400.1 @	ug/L	5.00	EPA 624	24 Aug 20	TMM
Toluene	108-88-3	4.50 @	ug/L	0.50	EPA 624	24 Aug 20	TMM
1,2,3-Trichlorobenzene	87-61-6	< 2.5 @	ug/L	0.5	EPA 624	24 Aug 20	TMM
1,2,4-Trichlorobenzene	120-82-1	< 2.5 @	ug/L	0.5	EPA 624	24 Aug 20	TMM
1,1,1-Trichloroethane	71-55-6	< 2.5 @	ug/L	0.5	EPA 624	24 Aug 20	TMM
1,1,2-Trichloroethane	79-00-5	< 2.5 @	ug/L	0.5	EPA 624	24 Aug 20	TMM
Trichloroethene	79-01-6	< 0.5 @	ug/L	0.1	EPA 624	24 Aug 20	TMM
Trichlorofluoromethane	75-69-4	< 2.5 @	ug/L	0.5	EPA 624	24 Aug 20	TMM
1,2,3-Trichloropropane	96-18-4	< 0.5 @	ug/L	0.1	EPA 624	24 Aug 20	TMM
Trichlorotrifluoroethane	76-13-1	< 2.5 @	ug/L	0.5	EPA 624	24 Aug 20	TMM
1,2,4-Trimethylbenzene	95-63-6	4.00 @	ug/L	0.50	EPA 624	24 Aug 20	TMM
1,3,5-Trimethylbenzene	108-67-8	< 2.5 @	ug/L	0.5	EPA 624	24 Aug 20	TMM
Vinyl Chloride	75-01-4	0.650 @	ug/L	0.050	EPA 624	24 Aug 20	TMM
m-Xylene and p-Xylene	179601-23-1	9.85 @	ug/L	1.00	EPA 624	24 Aug 20	TMM
o-Xylene	95-47-6	8.70 @	ug/L	0.50	EPA 624	24 Aug 20	TMM

RL = Reporting Limit
Analyses performed under our Minnesota Department of Health Accreditation conform to the current TNI standards.
The reporting limit was elevated for any analyte requiring a dilution as coded below:
@ = Due to sample matrix # = Due to concentration of other analytes
! = Due to sample quantity + = Due to internal standard response
CERTIFICATION: MN LAB # 027-015-125 ND MICRO # 1013-M ND WW/DW # R-040

MVTL guarantees the accuracy of the analysis done on the sample submitted for testing. It is not possible for MVTL to guarantee that a test result obtained on a particular sample will be the same on any other sample unless all conditions affecting the sample are the same, including sampling by MVTL. As a mutual protection to clients, the public and ourselves, all reports are submitted as the confidential property of clients, and authorization for publication of statements, conclusions or extracts from or regarding our reports is reserved pending our written approval.

AN EQUAL OPPORTUNITY EMPLOYER

MVTL

MINNESOTA VALLEY TESTING LABORATORIES, INC.

1126 N. Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890
2616 E. Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724
1201 Lincoln Highway ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885
www.mvtl.com

MEMBER ACIL

Report Date: 1 Sep 2020
Lab Number: 20-A39948
Work Order #: 12-12704
Account #: 013177
Sample Matrix: WASTEWATER
Date Sampled: 18 Aug 2020 10:00
Sampled By:
Date Received: 19 Aug 2020 9:25

COLLEEN ECK
CLAY COUNTY SOLID WASTE MGMT
807 11TH ST N
MOORHEAD MN 56560-1500

Sample Description: LEACHATE

Temp at Receipt: 4.1C

	CAS #	As Received Result	Method RL	Method Reference	Date Analyzed	Analyst

Some of the SW 8270E surrogate and spike criteria were not met
due to sample matrix.

Some of the SW 8260D spike criteria were not met due to sample matrix.

GC/MS VOC Sample pH > 2

NITROBENZENE (SURROGATE) RECOVERY: 97 %
2-FLUOROBIPHENYL (SURROGATE) RECOVERY: 90 %
TERPHENYL-d14 (SURROGATE) RECOVERY: 98 %

2-FLUOROPHENOL (SURROGATE) RECOVERY: 73 %
PHENOL-d5 (SURROGATE) RECOVERY: 56 %
2,4,6-TRIBROMOPHENOL (SURROGATE) RECOVERY: 113 %

DIBROMOFLUOROMETHANE (SURROGATE) RECOVERY: 105 %
TOLUENE-d8 (SURROGATE) RECOVERY: 90 %
4-BROMOFLUOROBENZENE (SURROGATE) RECOVERY: 99 %
NP = Not Present PQ = Present, Qualitative Only ND = Not Determined

Approved by:

Dan O'Connell David Smahel
Chemistry Laboratory Managers New Ulm, MN

RL = Reporting Limit
Analyses performed under our Minnesota Department of Health Accreditation conform to the current TNI standards.
The reporting limit was elevated for any analyte requiring a dilution as coded below:
@ = Due to sample matrix # = Due to concentration of other analytes
! = Due to sample quantity + = Due to internal standard response
CERTIFICATION: MN LAB # 027-015-125 ND MICRO # 1013-M ND WW/DW # R-040

MVTL guarantees the accuracy of the analysis done on the sample submitted for testing. It is not possible for MVTL to guarantee that a test result obtained on a particular sample will be the same on any other sample unless all conditions affecting the sample are the same, including sampling by MVTL. As a mutual protection to clients, the public and ourselves, all reports are submitted as the confidential property of clients, and authorization for publication of statements, conclusions or extracts from or regarding our reports is reserved pending our written approval.

AN EQUAL OPPORTUNITY EMPLOYER

MINNESOTA VALLEY TESTING LABORATORIES, INC.

MVTL

1126 N. Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890
2616 E. Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724
1201 Lincoln Highway ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885
www.mvtl.com

MEMBER ACIL

Report Date: 1 Sep 2020
Lab Number: 20-A39949
Work Order #: 12-12704
Account #: 013177
Sample Matrix: WASTEWATER
Date Sampled: 18 Aug 2020 10:00
Sampled By:
Date Received: 19 Aug 2020 9:25

COLLEEN ECK
CLAY COUNTY SOLID WASTE MGMT
807 11TH ST N
MOORHEAD MN 56560-1500

Sample Description: TRIP BLANK

Temp at Receipt: 4.1C

	CAS #	As Received Result		Method RL	Method Reference	Date Analyzed	Analyst
Acetone	67-64-1	< 10	ug/L	10	EPA 624	24 Aug 20	TMM
Allyl Chloride	107-05-1	< 0.5	ug/L	0.5	EPA 624	24 Aug 20	TMM
Benzene	71-43-2	< 0.5	ug/L	0.5	EPA 624	24 Aug 20	TMM
Bromobenzene	108-86-1	< 0.5	ug/L	0.5	EPA 624	24 Aug 20	TMM
Bromochloromethane	74-97-5	< 0.5	ug/L	0.5	EPA 624	24 Aug 20	TMM
Bromodichloromethane	75-27-4	< 0.5	ug/L	0.5	EPA 624	24 Aug 20	TMM
Bromoform	75-25-2	< 0.5	ug/L	0.5	EPA 624	24 Aug 20	TMM
Bromomethane	74-83-9	< 1	ug/L	1	EPA 624	24 Aug 20	TMM
n-Butylbenzene	104-51-8	< 0.5	ug/L	0.5	EPA 624	24 Aug 20	TMM
sec-Butylbenzene	135-98-8	< 0.5	ug/L	0.5	EPA 624	24 Aug 20	TMM
t-Butylbenzene	98-06-6	< 0.5	ug/L	0.5	EPA 624	24 Aug 20	TMM
Carbon Tetrachloride	56-23-5	< 0.2	ug/L	0.2	EPA 624	24 Aug 20	TMM
Chlorobenzene	108-90-7	< 0.5	ug/L	0.5	EPA 624	24 Aug 20	TMM
Chlorodibromomethane	124-48-1	< 0.5	ug/L	0.5	EPA 624	24 Aug 20	TMM
Chloroethane	75-00-3	< 0.5	ug/L	0.5	EPA 624	24 Aug 20	TMM
Chloroform	67-66-3	< 1	ug/L	1	EPA 624	24 Aug 20	TMM
Chloromethane	74-87-3	< 1	ug/L	1	EPA 624	24 Aug 20	TMM
2-Chlorotoluene	95-49-8	< 0.5	ug/L	0.5	EPA 624	24 Aug 20	TMM
4-Chlorotoluene	106-43-4	< 0.5	ug/L	0.5	EPA 624	24 Aug 20	TMM
Cumene	98-82-8	< 0.5	ug/L	0.5	EPA 624	24 Aug 20	TMM
1,2-Dibromo-3-chloropropane	96-12-8	< 0.05	ug/L	0.05	EPA 624	24 Aug 20	TMM
1,2-Dibromoethane	106-93-4	< 0.05	ug/L	0.05	EPA 624	24 Aug 20	TMM
Dibromomethane	74-95-3	< 0.5	ug/L	0.5	EPA 624	24 Aug 20	TMM
1,2-Dichlorobenzene	95-50-1	< 0.5	ug/L	0.5	EPA 624	24 Aug 20	TMM
1,3-Dichlorobenzene	541-73-1	< 0.5	ug/L	0.5	EPA 624	24 Aug 20	TMM
1,4-Dichlorobenzene	106-46-7	< 0.5	ug/L	0.5	EPA 624	24 Aug 20	TMM
Dichlorodifluoromethane	75-71-8	< 0.5	ug/L	0.5	EPA 624	24 Aug 20	TMM
1,1-Dichloroethane	75-34-3	< 0.5	ug/L	0.5	EPA 624	24 Aug 20	TMM

RL = Reporting Limit
Analyses performed under our Minnesota Department of Health Accreditation conform to the current TNI standards.
The reporting limit was elevated for any analyte requiring a dilution as coded below:
@ = Due to sample matrix # = Due to concentration of other analytes
! = Due to sample quantity + = Due to internal standard response
CERTIFICATION: MN LAB # 027-015-125 ND MICRO # 1013-M ND WW/DW # R-040

MVTL guarantees the accuracy of the analysis done on the sample submitted for testing. It is not possible for MVTL to guarantee that a test result obtained on a particular sample will be the same on any other sample unless all conditions affecting the sample are the same, including sampling by MVTL. As a mutual protection to clients, the public and ourselves, all reports are submitted as the confidential property of clients, and authorization for publication of statements, conclusions or extracts from or regarding our reports is reserved pending our written approval.

AN EQUAL OPPORTUNITY EMPLOYER

MINNESOTA VALLEY TESTING LABORATORIES, INC.

MVTL

1126 N. Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890
2616 E. Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724
1201 Lincoln Highway ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885
www.mvtl.com

MEMBER ACIL

Report Date: 1 Sep 2020
Lab Number: 20-A39949
Work Order #: 12-12704
Account #: 013177
Sample Matrix: WASTEWATER
Date Sampled: 18 Aug 2020 10:00
Sampled By:
Date Received: 19 Aug 2020 9:25

COLLEEN ECK
CLAY COUNTY SOLID WASTE MGMT
807 11TH ST N
MOORHEAD MN 56560-1500

Sample Description: TRIP BLANK

Temp at Receipt: 4.1C

	CAS #	As Received Result		Method RL	Method Reference	Date Analyzed	Analyst
1,2-Dichloroethane	107-06-2	< 0.1	ug/L	0.1	EPA 624	24 Aug 20	TMM
1,1-Dichloroethene	75-35-4	< 0.5	ug/L	0.5	EPA 624	24 Aug 20	TMM
cis-1,2-Dichloroethene	156-59-2	< 0.5	ug/L	0.5	EPA 624	24 Aug 20	TMM
trans-1,2-Dichloroethene	156-60-5	< 0.5	ug/L	0.5	EPA 624	24 Aug 20	TMM
Dichlorofluoromethane	75-43-4	< 0.5	ug/L	0.5	EPA 624	24 Aug 20	TMM
1,2-Dichloropropane	78-87-5	< 0.5	ug/L	0.5	EPA 624	24 Aug 20	TMM
1,3-Dichloropropane	142-28-9	< 0.5	ug/L	0.5	EPA 624	24 Aug 20	TMM
2,2-Dichloropropane	594-20-7	< 0.5	ug/L	0.5	EPA 624	24 Aug 20	TMM
1,1-Dichloropropene	563-58-6	< 0.5	ug/L	0.5	EPA 624	24 Aug 20	TMM
cis-1,3-Dichloropropene	10061-01-5	< 0.5	ug/L	0.5	EPA 624	24 Aug 20	TMM
trans-1,3-Dichloropropene	10061-02-6	< 0.5	ug/L	0.5	EPA 624	24 Aug 20	TMM
Ethyl Benzene	100-41-4	< 0.5	ug/L	0.5	EPA 624	24 Aug 20	TMM
Ethyl Ether	60-29-7	< 0.5	ug/L	0.5	EPA 624	24 Aug 20	TMM
Hexachlorobutadiene	87-68-3	< 0.2	ug/L	0.2	EPA 624	24 Aug 20	TMM
p-Isopropyltoluene	99-87-6	< 0.5	ug/L	0.5	EPA 624	24 Aug 20	TMM
Methyl Ethyl Ketone	78-93-3	< 5	ug/L	5	EPA 624	24 Aug 20	TMM
Methyl Isobutyl Ketone	108-10-1	< 2	ug/L	2	EPA 624	24 Aug 20	TMM
Methyl tert-butyl Ether	1634-04-4	< 0.5	ug/L	0.5	EPA 624	24 Aug 20	TMM
Methylene Chloride	75-09-2	< 1	ug/L	1	EPA 624	24 Aug 20	TMM
Naphthalene	91-20-3	< 1	ug/L	1	EPA 624	24 Aug 20	TMM
n-Propylbenzene	103-65-1	< 0.5	ug/L	0.5	EPA 624	24 Aug 20	TMM
Styrene	100-42-5	< 0.5	ug/L	0.5	EPA 624	24 Aug 20	TMM
1,1,1,2-Tetrachloroethane	630-20-6	< 0.5	ug/L	0.5	EPA 624	24 Aug 20	TMM
1,1,2,2-Tetrachloroethane	79-34-5	< 0.5	ug/L	0.5	EPA 624	24 Aug 20	TMM
Tetrachloroethene	127-18-4	< 0.5	ug/L	0.5	EPA 624	24 Aug 20	TMM
Tetrahydrofuran	109-99-9	< 5	ug/L	5	EPA 624	24 Aug 20	TMM
Toluene	108-88-3	< 0.5	ug/L	0.5	EPA 624	24 Aug 20	TMM
1,2,3-Trichlorobenzene	87-61-6	< 0.5	ug/L	0.5	EPA 624	24 Aug 20	TMM

RL = Reporting Limit
Analyses performed under our Minnesota Department of Health Accreditation conform to the current TNI standards.
The reporting limit was elevated for any analyte requiring a dilution as coded below:
@ = Due to sample matrix # = Due to concentration of other analytes
! = Due to sample quantity + = Due to internal standard response
CERTIFICATION: MN LAB # 027-015-125 ND MICRO # 1013-M ND WW/DW # R-040

MVTL guarantees the accuracy of the analysis done on the sample submitted for testing. It is not possible for MVTL to guarantee that a test result obtained on a particular sample will be the same on any other sample unless all conditions affecting the sample are the same, including sampling by MVTL. As a mutual protection to clients, the public and ourselves, all reports are submitted as the confidential property of clients, and authorization for publication of statements, conclusions or extracts from or regarding our reports is reserved pending our written approval.

AN EQUAL OPPORTUNITY EMPLOYER

MINNESOTA VALLEY TESTING LABORATORIES, INC.

MVTL

1126 N. Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890
2616 E. Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724
1201 Lincoln Highway ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885
www.mvtl.com

MEMBER ACIL

COLLEEN ECK
CLAY COUNTY SOLID WASTE MGMT
807 11TH ST N
MOORHEAD MN 56560-1500

Report Date: 1 Sep 2020
Lab Number: 20-A39949
Work Order #: 12-12704
Account #: 013177
Sample Matrix: WASTEWATER
Date Sampled: 18 Aug 2020 10:00
Sampled By:
Date Received: 19 Aug 2020 9:25

Sample Description: TRIP BLANK

Temp at Receipt: 4.1C

	CAS #	As Received Result		Method RL	Method Reference	Date Analyzed	Analyst
1,2,4-Trichlorobenzene	120-82-1	< 0.5	ug/L	0.5	EPA 624	24 Aug 20	TMM
1,1,1-Trichloroethane	71-55-6	< 0.5	ug/L	0.5	EPA 624	24 Aug 20	TMM
1,1,2-Trichloroethane	79-00-5	< 0.5	ug/L	0.5	EPA 624	24 Aug 20	TMM
Trichloroethene	79-01-6	< 0.1	ug/L	0.1	EPA 624	24 Aug 20	TMM
Trichlorofluoromethane	75-69-4	< 0.5	ug/L	0.5	EPA 624	24 Aug 20	TMM
1,2,3-Trichloropropane	96-18-4	< 0.1	ug/L	0.1	EPA 624	24 Aug 20	TMM
Trichlorotrifluoroethane	76-13-1	< 0.5	ug/L	0.5	EPA 624	24 Aug 20	TMM
1,2,4-Trimethylbenzene	95-63-6	< 0.5	ug/L	0.5	EPA 624	24 Aug 20	TMM
1,3,5-Trimethylbenzene	108-67-8	< 0.5	ug/L	0.5	EPA 624	24 Aug 20	TMM
Vinyl Chloride	75-01-4	< 0.05	ug/L	0.05	EPA 624	24 Aug 20	TMM
m-Xylene and p-Xylene	179601-23-1	< 1	ug/L	1	EPA 624	24 Aug 20	TMM
o-Xylene	95-47-6	< 0.5	ug/L	0.5	EPA 624	24 Aug 20	TMM

Some of the SW 8260D spike criteria were not met due to sample matrix.

GC/MS VOC Sample pH < 2

DIBROMOFLUOROMETHANE (SURROGATE) RECOVERY: 106 %
TOLUENE-d8 (SURROGATE) RECOVERY: 90 %
4-BROMOFLUOROBENZENE (SURROGATE) RECOVERY: 94 %

Approved by:

Dan O'Connell David Smahel
Chemistry Laboratory Managers New Ulm, MN

RL = Reporting Limit
Analyses performed under our Minnesota Department of Health Accreditation conform to the current TNI standards.
The reporting limit was elevated for any analyte requiring a dilution as coded below:
@ = Due to sample matrix # = Due to concentration of other analytes
! = Due to sample quantity + = Due to internal standard response
CERTIFICATION: MN LAB # 027-015-125 ND MICRO # 1013-M ND WW/DW # R-040

MVTL guarantees the accuracy of the analysis done on the sample submitted for testing. It is not possible for MVTL to guarantee that a test result obtained on a particular sample will be the same on any other sample unless all conditions affecting the sample are the same, including sampling by MVTL. As a mutual protection to clients, the public and ourselves, all reports are submitted as the confidential property of clients, and authorization for publication of statements, conclusions or extracts from or regarding our reports is reserved pending our written approval.

AN EQUAL OPPORTUNITY EMPLOYER

MINNESOTA VALLEY TESTING LABORATORIES, INC.

MVTL

1126 N. Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890
2616 E. Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724
1201 Lincoln Highway ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885
www.mvtl.com

MEMBER ACIL

COLLEEN ECK
CLAY COUNTY SOLID WASTE MGMT
807 11TH ST N
MOORHEAD MN 56560-1500

Report Date: 16 Dec 2020
Lab Number: 20-A58031
Work Order #: 12-17101
Account #: 013177
Sample Matrix: WASTEWATER
Date Sampled: 23 Nov 2020 10:15
Date Received: 25 Nov 2020 9:10

Sample Description: LEACHATE

Temp at Receipt: 2.5C

	As Received Result		Method RL	Method Reference	Date Analyzed	Analyst
608/8081/8082 Extraction					30 Nov 20	TMM
MS Water Digestions					30 Nov 20	JMS
Water Digestions					30 Nov 20	JMS
Flash Point	> 161	degrees F	0	ASTM D3278	8 Dec 20 13:24	RAG
Mercury	< 0.005	ug/L	0.005	EPA 245.7	15 Dec 20 10:54	RMB
Beryllium	< 0.025 @	mg/L	0.005	200.7	1 Dec 20 17:27	RMV
Chromium	0.329 @	mg/L	0.010	200.7	1 Dec 20 17:27	RMV
Copper	< 0.025 @	mg/L	0.005	200.7	1 Dec 20 17:27	RMV
Nickel	0.152 @	mg/L	0.010	200.7	1 Dec 20 17:27	RMV
Silver	< 0.025 @	mg/L	0.005	200.7	1 Dec 20 17:27	RMV
Zinc	< 0.05 @	mg/L	0.01	200.7	1 Dec 20 17:27	RMV
Antimony	8.00 @	ug/L	0.50	200.8	2 Dec 20 11:23	KAM
Arsenic	272 ~@	ug/L	0.50	200.8	1 Dec 20 11:18	KAM
Cadmium	0.58 @	ug/L	0.10	200.8	1 Dec 20 11:18	KAM
Lead	< 2.5 @	ug/L	0.5	200.8	1 Dec 20 11:18	KAM
Selenium	6.96 @^	ug/L	0.50	200.8	1 Dec 20 11:18	KAM
Thallium	< 0.5 @	ug/L	0.1	200.8	1 Dec 20 11:18	KAM
Aldrin	< 0.15 @	ug/L	0.03	EPA 608	8 Dec 20	JTG
Alpha-BHC	< 0.15 @	ug/L	0.03	EPA 608	8 Dec 20	JTG
Beta-BHC	< 0.3 @	ug/L	0.06	EPA 608	8 Dec 20	JTG
Delta-BHC	< 0.15 @	ug/L	0.03	EPA 608	8 Dec 20	JTG
Gamma-BHC [Lindane]	< 0.15 @	ug/L	0.03	EPA 608	8 Dec 20	JTG
4,4'-DDD [P,P-DDD]	< 0.15 @	ug/L	0.03	EPA 608	8 Dec 20	JTG
4,4'-DDE [P,P-DDE]	< 0.15 @	ug/L	0.03	EPA 608	8 Dec 20	JTG
4,4'-DDT [P,P-DDT]	< 0.3 @	ug/L	0.06	EPA 608	8 Dec 20	JTG
Dieldrin	< 0.15 @	ug/L	0.03	EPA 608	8 Dec 20	JTG
Endosulfan I	< 0.15 @	ug/L	0.03	EPA 608	8 Dec 20	JTG
Endosulfan II	< 0.15 @	ug/L	0.03	EPA 608	8 Dec 20	JTG
Endosulfan sulfate	< 0.3 @	ug/L	0.06	EPA 608	8 Dec 20	JTG

RL = Reporting Limit
Analyses performed under our Minnesota Department of Health Accreditation conform to the current TNI standards.
The reporting limit was elevated for any analyte requiring a dilution as coded below:
@ = Due to sample matrix # = Due to concentration of other analytes
! = Due to sample quantity + = Due to internal standard response
CERTIFICATION: MN LAB # 027-015-125 ND WW/DW # R-040

MVTL guarantees the accuracy of the analysis done on the sample submitted for testing. It is not possible for MVTL to guarantee that a test result obtained on a particular sample will be the same on any other sample unless all conditions affecting the sample are the same, including sampling by MVTL. As a mutual protection to clients, the public and ourselves, all reports are submitted as the confidential property of clients, and authorization for publication of statements, conclusions or extracts from or regarding our reports is reserved pending our written approval.

AN EQUAL OPPORTUNITY EMPLOYER

MINNESOTA VALLEY TESTING LABORATORIES, INC.

MVTL

1126 N. Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890
2616 E. Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724
1201 Lincoln Highway ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885
www.mvtl.com

MEMBER ACIL

Report Date: 16 Dec 2020
Lab Number: 20-A58031
Work Order #: 12-17101
Account #: 013177
Sample Matrix: WASTEWATER
Date Sampled: 23 Nov 2020 10:15
Date Received: 25 Nov 2020 9:10

COLLEEN ECK
CLAY COUNTY SOLID WASTE MGMT
807 11TH ST N
MOORHEAD MN 56560-1500

Sample Description: LEACHATE

Temp at Receipt: 2.5C

	As Received Result		Method RL	Method Reference	Date Analyzed	Analyst
Endrin	< 0.15 @	ug/L	0.03	EPA 608	8 Dec 20	JTG
Endrin aldehyde	< 0.3 @	ug/L	0.06	EPA 608	8 Dec 20	JTG
Heptachlor	< 0.15 @	ug/L	0.03	EPA 608	8 Dec 20	JTG
Heptachlor Epoxide	< 0.15 @	ug/L	0.03	EPA 608	8 Dec 20	JTG
Methoxychlor	< 0.5 @	ug/L	0.1	EPA 608	8 Dec 20	JTG
Toxaphene	< 6 @	ug/L	1.2	EPA 608	8 Dec 20	JTG
Chlordane	< 3.25 @	ug/L	0.65	EPA 608	8 Dec 20	JTG
PCB-1016	< 3.5 @	ug/L	0.7	EPA 608	8 Dec 20	JTG
PCB-1221	< 5 @	ug/L	1	EPA 608	8 Dec 20	JTG
PCB-1232	< 3 @	ug/L	0.6	EPA 608	8 Dec 20	JTG
PCB-1242	< 3 @	ug/L	0.6	EPA 608	8 Dec 20	JTG
PCB-1248	< 4 @	ug/L	0.8	EPA 608	8 Dec 20	JTG
PCB-1254	< 3 @	ug/L	0.6	EPA 608	8 Dec 20	JTG
PCB-1260	< 1.5 @	ug/L	0.3	EPA 608	8 Dec 20	JTG

Flash Point subcontracted to:
Minnesota Valley Testing Labs Inc.
2616 East Broadway Ave
Bismarck, ND 58501
701-258-9720
MDH State Lab ID: 038-999-267

~ Sample diluted due to result above calibration of linear range.

^ The reporting limit (RL) was elevated due to instrument performance at the lower limit of quantitation (LLOQ). This will only impact results that are found to be below the elevated RL. Results above the elevated RL are unaffected.

Some of the SW 8081 surrogate criteria were not met due to sample matrix and applied dilution factor.

2,4,5,6-TETRACHLORO-m-XYLENE (SURROGATE) RECOVERY: 52 %

DECACHLOROBIPHENYL (SURROGATE) RECOVERY: 49 %

RL = Reporting Limit
Analyses performed under our Minnesota Department of Health Accreditation conform to the current TNI standards.
The reporting limit was elevated for any analyte requiring a dilution as coded below:
@ = Due to sample matrix # = Due to concentration of other analytes
! = Due to sample quantity + = Due to internal standard response
CERTIFICATION: MN LAB # 027-015-125 ND WW/DW # R-040

MVTL guarantees the accuracy of the analysis done on the sample submitted for testing. It is not possible for MVTL to guarantee that a test result obtained on a particular sample will be the same on any other sample unless all conditions affecting the sample are the same, including sampling by MVTL. As a mutual protection to clients, the public and ourselves, all reports are submitted as the confidential property of clients, and authorization for publication of statements, conclusions or extracts from or regarding our reports is reserved pending our written approval.

AN EQUAL OPPORTUNITY EMPLOYER

MVTL

MINNESOTA VALLEY TESTING LABORATORIES, INC.

1126 N. Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890
2616 E. Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724
1201 Lincoln Highway ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885
www.mvtl.com

MEMBER ACIL

Report Date: 16 Dec 2020
Lab Number: 20-A58031
Work Order #: 12-17101
Account #: 013177
Sample Matrix: WASTEWATER
Date Sampled: 23 Nov 2020 10:15
Date Received: 25 Nov 2020 9:10

COLLEEN ECK
CLAY COUNTY SOLID WASTE MGMT
807 11TH ST N
MOORHEAD MN 56560-1500

Sample Description: LEACHATE

Temp at Receipt: 2.5C

	As Received Result	Method RL	Method Reference	Date Analyzed	Analyst

Approved by:

Dan O'Connell David Smahel
Chemistry Laboratory Managers New Ulm, MN

RL = Reporting Limit
Analyses performed under our Minnesota Department of Health Accreditation conform to the current TNI standards.
The reporting limit was elevated for any analyte requiring a dilution as coded below:
@ = Due to sample matrix # = Due to concentration of other analytes
! = Due to sample quantity + = Due to internal standard response
CERTIFICATION: MN LAB # 027-015-125 ND WW/DW # R-040

MVTL guarantees the accuracy of the analysis done on the sample submitted for testing. It is not possible for MVTL to guarantee that a test result obtained on a particular sample will be the same on any other sample unless all conditions affecting the sample are the same, including sampling by MVTL. As a mutual protection to clients, the public and ourselves, all reports are submitted as the confidential property of clients, and authorization for publication of statements, conclusions or extracts from or regarding our reports is reserved pending our written approval.

AN EQUAL OPPORTUNITY EMPLOYER

MINNESOTA VALLEY TESTING LABORATORIES, INC.

MVTL

1126 N. Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890
2616 E. Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724
1201 Lincoln Highway ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885
www.mvtl.com

MEMBER ACIL

Report Date: 16 Dec 2020
Lab Number: 20-A58031
Work Order #: 12-17101
Account #: 013177
Sample Matrix: WASTEWATER
Date Sampled: 23 Nov 2020 10:15
Sampled By:
Date Received: 25 Nov 2020 9:10

COLLEEN ECK
CLAY COUNTY SOLID WASTE MGMT
807 11TH ST N
MOORHEAD MN 56560-1500

Sample Description: LEACHATE

Temp at Receipt: 2.5C

	CAS #	As Received Result		Method RL	Method Reference	Date Analyzed	Analyst
625/8270 SVMS Extraction						27 Nov 20	JE
Acenaphthene	83-32-9	< 10 @	ug/L	1	EPA 625	7 Dec 20	JTG
Acenaphthylene	208-96-8	< 10 @	ug/L	1	EPA 625	7 Dec 20	JTG
Anthracene	120-12-7	< 10 @	ug/L	1	EPA 625	7 Dec 20	JTG
Benzidine	92-87-5	< 100 @	ug/L	10	EPA 625	7 Dec 20	JTG
Benzo(a)anthracene	56-55-3	< 20 @	ug/L	2	EPA 625	7 Dec 20	JTG
Benzo(a)pyrene	50-32-8	< 20 @	ug/L	2	EPA 625	7 Dec 20	JTG
Benzo(b)fluoranthene	205-99-2	< 20 @	ug/L	2	EPA 625	7 Dec 20	JTG
Benzo(ghi)perylene	191-24-2	< 20 @	ug/L	2	EPA 625	7 Dec 20	JTG
Benzo(k)fluoranthene	207-08-9	< 20 @	ug/L	2	EPA 625	7 Dec 20	JTG
Benzyl Butyl Phthalate	85-68-7	< 10 @	ug/L	1	EPA 625	7 Dec 20	JTG
Bis(2-chloroethoxy)methane	111-91-1	< 10 @	ug/L	1	EPA 625	7 Dec 20	JTG
Bis(2-chloroethyl)ether	111-44-4	< 20 @	ug/L	2	EPA 625	7 Dec 20	JTG
Bis(2-ethylhexyl)phthalate	117-81-7	< 20 @	ug/L	2	EPA 625	7 Dec 20	JTG
4-Bromophenyl Phenyl Ether	101-55-3	< 20 @	ug/L	2	EPA 625	7 Dec 20	JTG
4-Chloro-3-methyl phenol	59-50-7	< 20 @	ug/L	2	EPA 625	7 Dec 20	JTG
2-Chloronaphthalene	91-58-7	< 20 @	ug/L	2	EPA 625	7 Dec 20	JTG
2-Chlorophenol	95-57-8	< 20 @	ug/L	2	EPA 625	7 Dec 20	JTG
4-Chlorophenyl Phenyl Ether	7005-72-3	< 10 @	ug/L	1	EPA 625	7 Dec 20	JTG
Chrysene	218-01-9	< 20 @	ug/L	2	EPA 625	7 Dec 20	JTG
Di-n-butyl phthalate	84-74-2	< 10 @	ug/L	1	EPA 625	7 Dec 20	JTG
Di-n-octyl phthalate	117-84-0	< 20 @	ug/L	2	EPA 625	7 Dec 20	JTG
Dibenzo(a,h)anthracene	53-70-3	< 20 @	ug/L	2	EPA 625	7 Dec 20	JTG
3,3-Dichlorobenzidine	91-94-1	< 40 @	ug/L	4	EPA 625	7 Dec 20	JTG
2,4-Dichlorophenol	120-83-2	< 20 @	ug/L	2	EPA 625	7 Dec 20	JTG
Diethyl phthalate	84-66-2	< 10 @	ug/L	1	EPA 625	7 Dec 20	JTG
Dimethyl phthalate	131-11-3	< 10 @	ug/L	1	EPA 625	7 Dec 20	JTG
2,4-Dimethylphenol	105-67-9	< 40 @	ug/L	4	EPA 625	7 Dec 20	JTG

RL = Reporting Limit
Analyses performed under our Minnesota Department of Health Accreditation conform to the current TNI standards.
The reporting limit was elevated for any analyte requiring a dilution as coded below:
@ = Due to sample matrix # = Due to concentration of other analytes
! = Due to sample quantity + = Due to internal standard response
CERTIFICATION: MN LAB # 027-015-125 ND MICRO # 1013-M ND WW/DW # R-040

MVTL guarantees the accuracy of the analysis done on the sample submitted for testing. It is not possible for MVTL to guarantee that a test result obtained on a particular sample will be the same on any other sample unless all conditions affecting the sample are the same, including sampling by MVTL. As a mutual protection to clients, the public and ourselves, all reports are submitted as the confidential property of clients, and authorization for publication of statements, conclusions or extracts from or regarding our reports is reserved pending our written approval.

AN EQUAL OPPORTUNITY EMPLOYER

MINNESOTA VALLEY TESTING LABORATORIES, INC.

MVTL

1126 N. Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890
2616 E. Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724
1201 Lincoln Highway ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885
www.mvtl.com

MEMBER ACIL

Report Date: 16 Dec 2020
Lab Number: 20-A58031
Work Order #: 12-17101
Account #: 013177
Sample Matrix: WASTEWATER
Date Sampled: 23 Nov 2020 10:15
Sampled By:
Date Received: 25 Nov 2020 9:10

COLLEEN ECK
CLAY COUNTY SOLID WASTE MGMT
807 11TH ST N
MOORHEAD MN 56560-1500

Sample Description: LEACHATE

Temp at Receipt: 2.5C

	CAS #	As Received Result		Method RL	Method Reference	Date Analyzed	Analyst
2,4-Dinitrophenol	51-28-5	< 100 @	ug/L	10	EPA 625	7 Dec 20	JTG
2,4-Dinitrotoluene	121-14-2	< 40 @	ug/L	4	EPA 625	7 Dec 20	JTG
2,6-Dinitrotoluene	606-20-2	< 40 @	ug/L	4	EPA 625	7 Dec 20	JTG
1,2-Diphenylhydrazine	122-66-7	< 10 @	ug/L	1	EPA 625	7 Dec 20	JTG
Fluoranthene	206-44-0	< 10 @	ug/L	1	EPA 625	7 Dec 20	JTG
Fluorene	86-73-7	< 10 @	ug/L	1	EPA 625	7 Dec 20	JTG
Hexachlorobenzene	118-74-1	< 20 @	ug/L	2	EPA 625	7 Dec 20	JTG
Hexachlorobutadiene	87-68-3	< 20 @	ug/L	2	EPA 625	7 Dec 20	JTG
Hexachlorocyclopentadiene	77-47-4	< 40 @	ug/L	4	EPA 625	7 Dec 20	JTG
Hexachloroethane	67-72-1	< 10 @	ug/L	1	EPA 625	7 Dec 20	JTG
Indeno(1,2,3-cd)pyrene	193-39-5	< 20 @	ug/L	2	EPA 625	7 Dec 20	JTG
Isophorone	78-59-1	< 10 @	ug/L	1	EPA 625	7 Dec 20	JTG
2-Methyl-4,6-dinitrophenol	534-52-1	< 100 @	ug/L	10	EPA 625	7 Dec 20	JTG
N-Nitrosodi-n-propylamine	621-64-7	< 20 @	ug/L	2	EPA 625	7 Dec 20	JTG
N-Nitrosodimethylamine	62-75-9	< 40 @	ug/L	4	EPA 625	7 Dec 20	JTG
N-Nitrosodiphenylamine	86-30-6	< 40 @	ug/L	4	EPA 625	7 Dec 20	JTG
Naphthalene	91-20-3	< 10 @	ug/L	1	EPA 625	7 Dec 20	JTG
Nitrobenzene	98-95-3	< 10 @	ug/L	1	EPA 625	7 Dec 20	JTG
2-Nitrophenol	88-75-5	< 20 @	ug/L	2	EPA 625	7 Dec 20	JTG
4-Nitrophenol	100-02-7	< 100 @	ug/L	10	EPA 625	7 Dec 20	JTG
2,2-oxybis(1chloropropane)	108-60-1	< 10 @	ug/L	1	EPA 625	7 Dec 20	JTG
Pentachlorophenol	87-86-5	< 100 @	ug/L	10	EPA 625	7 Dec 20	JTG
Phenanthrene	85-01-8	< 10 @	ug/L	1	EPA 625	7 Dec 20	JTG
Phenol	108-95-2	< 20 @	ug/L	2	EPA 625	7 Dec 20	JTG
Pyrene	129-00-0	< 10 @	ug/L	1	EPA 625	7 Dec 20	JTG
1,2,4-Trichlorobenzene	120-82-1	< 10 @	ug/L	1	EPA 625	7 Dec 20	JTG
2,4,6-Trichlorophenol	88-06-2	< 20 @	ug/L	2	EPA 625	7 Dec 20	JTG
Acetone	67-64-1	< 50 @	ug/L	10	EPA 624	1 Dec 20	TMM

RL = Reporting Limit
Analyses performed under our Minnesota Department of Health Accreditation conform to the current TNI standards.
The reporting limit was elevated for any analyte requiring a dilution as coded below:
@ = Due to sample matrix # = Due to concentration of other analytes
! = Due to sample quantity + = Due to internal standard response
CERTIFICATION: MN LAB # 027-015-125 ND MICRO # 1013-M ND WW/DW # R-040

MVTL guarantees the accuracy of the analysis done on the sample submitted for testing. It is not possible for MVTL to guarantee that a test result obtained on a particular sample will be the same on any other sample unless all conditions affecting the sample are the same, including sampling by MVTL. As a mutual protection to clients, the public and ourselves, all reports are submitted as the confidential property of clients, and authorization for publication of statements, conclusions or extracts from or regarding our reports is reserved pending our written approval.

AN EQUAL OPPORTUNITY EMPLOYER

MINNESOTA VALLEY TESTING LABORATORIES, INC.

MVTL

1126 N. Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890
2616 E. Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724
1201 Lincoln Highway ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885
www.mvtl.com

MEMBER ACIL

Report Date: 16 Dec 2020
Lab Number: 20-A58031
Work Order #: 12-17101
Account #: 013177
Sample Matrix: WASTEWATER
Date Sampled: 23 Nov 2020 10:15
Sampled By:
Date Received: 25 Nov 2020 9:10

COLLEEN ECK
CLAY COUNTY SOLID WASTE MGMT
807 11TH ST N
MOORHEAD MN 56560-1500

Sample Description: LEACHATE

Temp at Receipt: 2.5C

	CAS #	As Received Result		Method RL	Method Reference	Date Analyzed	Analyst
Acrolein	107-02-8	< 10 @	ug/L	2	EPA 624	1 Dec 20	TMM
Acrylonitrile	107-13-1	< 10 @	ug/L	2	EPA 624	1 Dec 20	TMM
Allyl Chloride	107-05-1	< 2.5 @	ug/L	0.5	EPA 624	1 Dec 20	TMM
Benzene	71-43-2	4.45 @	ug/L	0.50	EPA 624	1 Dec 20	TMM
bis(chloromethyl) ether	542881	NP	ug/L	ND	EPA 624		
Bromobenzene	108-86-1	< 2.5 @	ug/L	0.5	EPA 624	1 Dec 20	TMM
Bromochloromethane	74-97-5	< 2.5 @	ug/L	0.5	EPA 624	1 Dec 20	TMM
Bromodichloromethane	75-27-4	< 2.5 @	ug/L	0.5	EPA 624	1 Dec 20	TMM
Bromoform	75-25-2	< 2.5 @	ug/L	0.5	EPA 624	1 Dec 20	TMM
Bromomethane	74-83-9	< 5 @	ug/L	1	EPA 624	1 Dec 20	TMM
n-Butylbenzene	104-51-8	< 2.5 @	ug/L	0.5	EPA 624	1 Dec 20	TMM
sec-Butylbenzene	135-98-8	< 2.5 @	ug/L	0.5	EPA 624	1 Dec 20	TMM
t-Butylbenzene	98-06-6	< 2.5 @	ug/L	0.5	EPA 624	1 Dec 20	TMM
Carbon Tetrachloride	56-23-5	< 1 @	ug/L	0.2	EPA 624	1 Dec 20	TMM
Chlorobenzene	108-90-7	< 2.5 @	ug/L	0.5	EPA 624	1 Dec 20	TMM
Chlorodibromomethane	124-48-1	< 2.5 @	ug/L	0.5	EPA 624	1 Dec 20	TMM
Chloroethane	75-00-3	< 2.5 @	ug/L	0.5	EPA 624	1 Dec 20	TMM
2-Chloroethyl Vinyl Ether	110-75-8	< 5 @	ug/L	1	EPA 624	1 Dec 20	TMM
Chloroform	67-66-3	< 5 @	ug/L	1	EPA 624	1 Dec 20	TMM
Chloromethane	74-87-3	< 5 @	ug/L	1	EPA 624	1 Dec 20	TMM
2-Chlorotoluene	95-49-8	< 2.5 @	ug/L	0.5	EPA 624	1 Dec 20	TMM
4-Chlorotoluene	106-43-4	< 2.5 @	ug/L	0.5	EPA 624	1 Dec 20	TMM
Cumene	98-82-8	< 2.5 @	ug/L	0.5	EPA 624	1 Dec 20	TMM
1,2-Dibromo-3-chloropropane	96-12-8	< 0.25 @	ug/L	0.05	EPA 624	1 Dec 20	TMM
1,2-Dibromoethane	106-93-4	< 0.25 @	ug/L	0.05	EPA 624	1 Dec 20	TMM
Dibromomethane	74-95-3	< 2.5 @	ug/L	0.5	EPA 624	1 Dec 20	TMM
1,2-Dichlorobenzene	95-50-1	< 2.5 @	ug/L	0.5	EPA 624	1 Dec 20	TMM
1,3-Dichlorobenzene	541-73-1	< 2.5 @	ug/L	0.5	EPA 624	1 Dec 20	TMM

RL = Reporting Limit
Analyses performed under our Minnesota Department of Health Accreditation conform to the current TNI standards.
The reporting limit was elevated for any analyte requiring a dilution as coded below:
@ = Due to sample matrix # = Due to concentration of other analytes
! = Due to sample quantity + = Due to internal standard response
CERTIFICATION: MN LAB # 027-015-125 ND MICRO # 1013-M ND WW/DW # R-040

MVTL guarantees the accuracy of the analysis done on the sample submitted for testing. It is not possible for MVTL to guarantee that a test result obtained on a particular sample will be the same on any other sample unless all conditions affecting the sample are the same, including sampling by MVTL. As a mutual protection to clients, the public and ourselves, all reports are submitted as the confidential property of clients, and authorization for publication of statements, conclusions or extracts from or regarding our reports is reserved pending our written approval.

AN EQUAL OPPORTUNITY EMPLOYER

MINNESOTA VALLEY TESTING LABORATORIES, INC.

MVTL

1126 N. Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890
2616 E. Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724
1201 Lincoln Highway ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885
www.mvtl.com

MEMBER ACIL

Report Date: 16 Dec 2020
Lab Number: 20-A58031
Work Order #: 12-17101
Account #: 013177
Sample Matrix: WASTEWATER
Date Sampled: 23 Nov 2020 10:15
Sampled By:
Date Received: 25 Nov 2020 9:10

COLLEEN ECK
CLAY COUNTY SOLID WASTE MGMT
807 11TH ST N
MOORHEAD MN 56560-1500

Sample Description: LEACHATE

Temp at Receipt: 2.5C

	CAS #	As Received Result		Method RL	Method Reference	Date Analyzed	Analyst
1,4-Dichlorobenzene	106-46-7	< 2.5 @	ug/L	0.5	EPA 624	1 Dec 20	TMM
Dichlorodifluoromethane	75-71-8	< 2.5 @	ug/L	0.5	EPA 624	1 Dec 20	TMM
1,1-Dichloroethane	75-34-3	< 2.5 @	ug/L	0.5	EPA 624	1 Dec 20	TMM
1,2-Dichloroethane	107-06-2	< 0.5 @	ug/L	0.1	EPA 624	3 Dec 20	TMM
1,1-Dichloroethene	75-35-4	< 2.5 @	ug/L	0.5	EPA 624	1 Dec 20	TMM
cis-1,2-Dichloroethene	156-59-2	< 2.5 @	ug/L	0.5	EPA 624	1 Dec 20	TMM
trans-1,2-Dichloroethene	156-60-5	< 2.5 @	ug/L	0.5	EPA 624	1 Dec 20	TMM
Dichlorofluoromethane	75-43-4	< 2.5 @	ug/L	0.5	EPA 624	1 Dec 20	TMM
1,2-Dichloropropane	78-87-5	< 2.5 @	ug/L	0.5	EPA 624	1 Dec 20	TMM
1,3-Dichloropropane	142-28-9	< 2.5 @	ug/L	0.5	EPA 624	1 Dec 20	TMM
2,2-Dichloropropane	594-20-7	< 2.5 @	ug/L	0.5	EPA 624	1 Dec 20	TMM
1,1-Dichloropropene	563-58-6	< 2.5 @	ug/L	0.5	EPA 624	1 Dec 20	TMM
cis-1,3-Dichloropropene	10061-01-5	< 2.5 @	ug/L	0.5	EPA 624	1 Dec 20	TMM
trans-1,3-Dichloropropene	10061-02-6	< 2.5 @	ug/L	0.5	EPA 624	1 Dec 20	TMM
Ethyl Benzene	100-41-4	4.45 @	ug/L	0.50	EPA 624	1 Dec 20	TMM
Ethyl Ether	60-29-7	19.65 @	ug/L	0.50	EPA 624	1 Dec 20	TMM
Hexachlorobutadiene	87-68-3	< 1 @	ug/L	0.2	EPA 624	1 Dec 20	TMM
p-Isopropyltoluene	99-87-6	< 2.5 @	ug/L	0.5	EPA 624	1 Dec 20	TMM
Methyl Ethyl Ketone	78-93-3	< 25 @	ug/L	5	EPA 624	1 Dec 20	TMM
Methyl Isobutyl Ketone	108-10-1	39.10 @	ug/L	2.00	EPA 624	1 Dec 20	TMM
Methyl tert-butyl Ether	1634-04-4	< 2.5 @	ug/L	0.5	EPA 624	1 Dec 20	TMM
Methylene Chloride	75-09-2	< 5 @	ug/L	1	EPA 624	1 Dec 20	TMM
Naphthalene	91-20-3	< 5 @	ug/L	1	EPA 624	1 Dec 20	TMM
n-Propylbenzene	103-65-1	< 2.5 @	ug/L	0.5	EPA 624	1 Dec 20	TMM
Styrene	100-42-5	< 2.5 @	ug/L	0.5	EPA 624	1 Dec 20	TMM
1,1,1,2-Tetrachloroethane	630-20-6	< 2.5 @	ug/L	0.5	EPA 624	1 Dec 20	TMM
1,1,2,2-Tetrachloroethane	79-34-5	< 2.5 @	ug/L	0.5	EPA 624	1 Dec 20	TMM
Tetrachloroethene	127-18-4	< 2.5 @	ug/L	0.5	EPA 624	1 Dec 20	TMM

RL = Reporting Limit
Analyses performed under our Minnesota Department of Health Accreditation conform to the current TNI standards.
The reporting limit was elevated for any analyte requiring a dilution as coded below:
@ = Due to sample matrix # = Due to concentration of other analytes
! = Due to sample quantity + = Due to internal standard response
CERTIFICATION: MN LAB # 027-015-125 ND MICRO # 1013-M ND WW/DW # R-040

MVTL guarantees the accuracy of the analysis done on the sample submitted for testing. It is not possible for MVTL to guarantee that a test result obtained on a particular sample will be the same on any other sample unless all conditions affecting the sample are the same, including sampling by MVTL. As a mutual protection to clients, the public and ourselves, all reports are submitted as the confidential property of clients, and authorization for publication of statements, conclusions or extracts from or regarding our reports is reserved pending our written approval.

AN EQUAL OPPORTUNITY EMPLOYER

MINNESOTA VALLEY TESTING LABORATORIES, INC.

MVTL

1126 N. Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890
2616 E. Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724
1201 Lincoln Highway ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885
www.mvtl.com

MEMBER ACIL

Report Date: 16 Dec 2020
Lab Number: 20-A58031
Work Order #: 12-17101
Account #: 013177
Sample Matrix: WASTEWATER
Date Sampled: 23 Nov 2020 10:15
Sampled By:
Date Received: 25 Nov 2020 9:10

COLLEEN ECK
CLAY COUNTY SOLID WASTE MGMT
807 11TH ST N
MOORHEAD MN 56560-1500

Sample Description: LEACHATE

Temp at Receipt: 2.5C

	CAS #	As Received Result		Method RL	Method Reference	Date Analyzed	Analyst
Tetrahydrofuran	109-99-9	322.1 @	ug/L	5.00	EPA 624	1 Dec 20	TMM
Toluene	108-88-3	2.85 @	ug/L	0.50	EPA 624	1 Dec 20	TMM
1,2,3-Trichlorobenzene	87-61-6	< 2.5 @	ug/L	0.5	EPA 624	1 Dec 20	TMM
1,2,4-Trichlorobenzene	120-82-1	< 2.5 @	ug/L	0.5	EPA 624	1 Dec 20	TMM
1,1,1-Trichloroethane	71-55-6	< 2.5 @	ug/L	0.5	EPA 624	1 Dec 20	TMM
1,1,2-Trichloroethane	79-00-5	< 2.5 @	ug/L	0.5	EPA 624	1 Dec 20	TMM
Trichloroethene	79-01-6	< 0.5 @	ug/L	0.1	EPA 624	1 Dec 20	TMM
Trichlorofluoromethane	75-69-4	< 2.5 @	ug/L	0.5	EPA 624	1 Dec 20	TMM
1,2,3-Trichloropropane	96-18-4	< 0.5 @	ug/L	0.1	EPA 624	1 Dec 20	TMM
Trichlorotrifluoroethane	76-13-1	< 2.5 @	ug/L	0.5	EPA 624	1 Dec 20	TMM
1,2,4-Trimethylbenzene	95-63-6	2.70 @	ug/L	0.50	EPA 624	1 Dec 20	TMM
1,3,5-Trimethylbenzene	108-67-8	< 2.5 @	ug/L	0.5	EPA 624	1 Dec 20	TMM
Vinyl Chloride	75-01-4	0.600 @	ug/L	0.050	EPA 624	1 Dec 20	TMM
m-Xylene and p-Xylene	179601-23-1	7.85 @	ug/L	1.00	EPA 624	1 Dec 20	TMM
o-Xylene	95-47-6	6.05 @	ug/L	0.50	EPA 624	1 Dec 20	TMM

GC/MS VOC Sample pH > 2

NITROBENZENE (SURROGATE) RECOVERY: 85 %
2-FLUOROBIPHENYL (SURROGATE) RECOVERY: 76 %
TERPHENYL-d14 (SURROGATE) RECOVERY: 89 %

2-FLUOROPHENOL (SURROGATE) RECOVERY: 57 %
PHENOL-d5 (SURROGATE) RECOVERY: 40 %
2,4,6-TRIBROMOPHENOL (SURROGATE) RECOVERY: 100 %

DIBROMOFLUOROMETHANE (SURROGATE) RECOVERY: 112 %
TOLUENE-d8 (SURROGATE) RECOVERY: 95 %
4-BROMOFLUOROBENZENE (SURROGATE) RECOVERY: 101 %
NP = Not Present PQ = Present, Qualitative Only ND = Not Determined

RL = Reporting Limit
Analyses performed under our Minnesota Department of Health Accreditation conform to the current TNI standards.
The reporting limit was elevated for any analyte requiring a dilution as coded below:
@ = Due to sample matrix # = Due to concentration of other analytes
! = Due to sample quantity + = Due to internal standard response
CERTIFICATION: MN LAB # 027-015-125 ND MICRO # 1013-M ND WW/DW # R-040

MVTL guarantees the accuracy of the analysis done on the sample submitted for testing. It is not possible for MVTL to guarantee that a test result obtained on a particular sample will be the same on any other sample unless all conditions affecting the sample are the same, including sampling by MVTL. As a mutual protection to clients, the public and ourselves, all reports are submitted as the confidential property of clients, and authorization for publication of statements, conclusions or extracts from or regarding our reports is reserved pending our written approval.

AN EQUAL OPPORTUNITY EMPLOYER

MINNESOTA VALLEY TESTING LABORATORIES, INC.

MVTL

1126 N. Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890
2616 E. Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724
1201 Lincoln Highway ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885
www.mvtl.com

MEMBER ACIL

Report Date: 16 Dec 2020
Lab Number: 20-A58031
Work Order #: 12-17101
Account #: 013177
Sample Matrix: WASTEWATER
Date Sampled: 23 Nov 2020 10:15
Sampled By:
Date Received: 25 Nov 2020 9:10

COLLEEN ECK
CLAY COUNTY SOLID WASTE MGMT
807 11TH ST N
MOORHEAD MN 56560-1500

Sample Description: LEACHATE

Temp at Receipt: 2.5C

	CAS #	As Received Result	Method RL	Method Reference	Date Analyzed	Analyst

Approved by:

Dan O'Connell David Smahel
Chemistry Laboratory Managers New Ulm, MN

RL = Reporting Limit
Analyses performed under our Minnesota Department of Health Accreditation conform to the current TNI standards.
The reporting limit was elevated for any analyte requiring a dilution as coded below:
@ = Due to sample matrix # = Due to concentration of other analytes
! = Due to sample quantity + = Due to internal standard response
CERTIFICATION: MN LAB # 027-015-125 ND MICRO # 1013-M ND WW/DW # R-040

MVTL guarantees the accuracy of the analysis done on the sample submitted for testing. It is not possible for MVTL to guarantee that a test result obtained on a particular sample will be the same on any other sample unless all conditions affecting the sample are the same, including sampling by MVTL. As a mutual protection to clients, the public and ourselves, all reports are submitted as the confidential property of clients, and authorization for publication of statements, conclusions or extracts from or regarding our reports is reserved pending our written approval.

AN EQUAL OPPORTUNITY EMPLOYER

MINNESOTA VALLEY TESTING LABORATORIES, INC.

MVTL

1126 N. Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890
2616 E. Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724
1201 Lincoln Highway ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885
www.mvtl.com

MEMBER ACIL

Report Date: 16 Dec 2020
Lab Number: 20-A58032
Work Order #: 12-17101
Account #: 013177
Sample Matrix: WASTEWATER
Date Sampled: 23 Nov 2020 10:15
Sampled By:
Date Received: 25 Nov 2020 9:10

COLLEEN ECK
CLAY COUNTY SOLID WASTE MGMT
807 11TH ST N
MOORHEAD MN 56560-1500

Sample Description: TRIP BLANK

Temp at Receipt: 2.5C

	CAS #	As Received Result		Method RL	Method Reference	Date Analyzed	Analyst
Acetone	67-64-1	< 10	ug/L	10	EPA 624	1 Dec 20	TMM
Allyl Chloride	107-05-1	< 0.5	ug/L	0.5	EPA 624	1 Dec 20	TMM
Benzene	71-43-2	< 0.5	ug/L	0.5	EPA 624	1 Dec 20	TMM
Bromobenzene	108-86-1	< 0.5	ug/L	0.5	EPA 624	1 Dec 20	TMM
Bromochloromethane	74-97-5	< 0.5	ug/L	0.5	EPA 624	1 Dec 20	TMM
Bromodichloromethane	75-27-4	< 0.5	ug/L	0.5	EPA 624	1 Dec 20	TMM
Bromoform	75-25-2	< 0.5	ug/L	0.5	EPA 624	1 Dec 20	TMM
Bromomethane	74-83-9	< 1	ug/L	1	EPA 624	1 Dec 20	TMM
n-Butylbenzene	104-51-8	< 0.5	ug/L	0.5	EPA 624	1 Dec 20	TMM
sec-Butylbenzene	135-98-8	< 0.5	ug/L	0.5	EPA 624	1 Dec 20	TMM
t-Butylbenzene	98-06-6	< 0.5	ug/L	0.5	EPA 624	1 Dec 20	TMM
Carbon Tetrachloride	56-23-5	< 0.2	ug/L	0.2	EPA 624	1 Dec 20	TMM
Chlorobenzene	108-90-7	< 0.5	ug/L	0.5	EPA 624	1 Dec 20	TMM
Chlorodibromomethane	124-48-1	< 0.5	ug/L	0.5	EPA 624	1 Dec 20	TMM
Chloroethane	75-00-3	< 0.5	ug/L	0.5	EPA 624	1 Dec 20	TMM
Chloroform	67-66-3	< 1	ug/L	1	EPA 624	1 Dec 20	TMM
Chloromethane	74-87-3	< 1	ug/L	1	EPA 624	1 Dec 20	TMM
2-Chlorotoluene	95-49-8	< 0.5	ug/L	0.5	EPA 624	1 Dec 20	TMM
4-Chlorotoluene	106-43-4	< 0.5	ug/L	0.5	EPA 624	1 Dec 20	TMM
Cumene	98-82-8	< 0.5	ug/L	0.5	EPA 624	1 Dec 20	TMM
1,2-Dibromo-3-chloropropane	96-12-8	< 0.05	ug/L	0.05	EPA 624	1 Dec 20	TMM
1,2-Dibromoethane	106-93-4	< 0.05	ug/L	0.05	EPA 624	1 Dec 20	TMM
Dibromomethane	74-95-3	< 0.5	ug/L	0.5	EPA 624	1 Dec 20	TMM
1,2-Dichlorobenzene	95-50-1	< 0.5	ug/L	0.5	EPA 624	1 Dec 20	TMM
1,3-Dichlorobenzene	541-73-1	< 0.5	ug/L	0.5	EPA 624	1 Dec 20	TMM
1,4-Dichlorobenzene	106-46-7	< 0.5	ug/L	0.5	EPA 624	1 Dec 20	TMM
Dichlorodifluoromethane	75-71-8	< 0.5	ug/L	0.5	EPA 624	1 Dec 20	TMM
1,1-Dichloroethane	75-34-3	< 0.5	ug/L	0.5	EPA 624	1 Dec 20	TMM

RL = Reporting Limit
Analyses performed under our Minnesota Department of Health Accreditation conform to the current TNI standards.
The reporting limit was elevated for any analyte requiring a dilution as coded below:
@ = Due to sample matrix # = Due to concentration of other analytes
! = Due to sample quantity + = Due to internal standard response
CERTIFICATION: MN LAB # 027-015-125 ND MICRO # 1013-M ND WW/DW # R-040

MVTL guarantees the accuracy of the analysis done on the sample submitted for testing. It is not possible for MVTL to guarantee that a test result obtained on a particular sample will be the same on any other sample unless all conditions affecting the sample are the same, including sampling by MVTL. As a mutual protection to clients, the public and ourselves, all reports are submitted as the confidential property of clients, and authorization for publication of statements, conclusions or extracts from or regarding our reports is reserved pending our written approval.

AN EQUAL OPPORTUNITY EMPLOYER

MINNESOTA VALLEY TESTING LABORATORIES, INC.

MVTL

1126 N. Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890
2616 E. Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724
1201 Lincoln Highway ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885
www.mvtl.com

MEMBER ACIL

COLLEEN ECK
CLAY COUNTY SOLID WASTE MGMT
807 11TH ST N
MOORHEAD MN 56560-1500

Report Date: 16 Dec 2020
Lab Number: 20-A58032
Work Order #: 12-17101
Account #: 013177
Sample Matrix: WASTEWATER
Date Sampled: 23 Nov 2020 10:15
Sampled By:
Date Received: 25 Nov 2020 9:10

Sample Description: TRIP BLANK

Temp at Receipt: 2.5C

	CAS #	As Received Result		Method RL	Method Reference	Date Analyzed	Analyst
1,2-Dichloroethane	107-06-2	< 0.1	ug/L	0.1	EPA 624	1 Dec 20	TMM
1,1-Dichloroethene	75-35-4	< 0.5	ug/L	0.5	EPA 624	1 Dec 20	TMM
cis-1,2-Dichloroethene	156-59-2	< 0.5	ug/L	0.5	EPA 624	1 Dec 20	TMM
trans-1,2-Dichloroethene	156-60-5	< 0.5	ug/L	0.5	EPA 624	1 Dec 20	TMM
Dichlorofluoromethane	75-43-4	< 0.5	ug/L	0.5	EPA 624	1 Dec 20	TMM
1,2-Dichloropropane	78-87-5	< 0.5	ug/L	0.5	EPA 624	1 Dec 20	TMM
1,3-Dichloropropane	142-28-9	< 0.5	ug/L	0.5	EPA 624	1 Dec 20	TMM
2,2-Dichloropropane	594-20-7	< 0.5	ug/L	0.5	EPA 624	1 Dec 20	TMM
1,1-Dichloropropene	563-58-6	< 0.5	ug/L	0.5	EPA 624	1 Dec 20	TMM
cis-1,3-Dichloropropene	10061-01-5	< 0.5	ug/L	0.5	EPA 624	1 Dec 20	TMM
trans-1,3-Dichloropropene	10061-02-6	< 0.5	ug/L	0.5	EPA 624	1 Dec 20	TMM
Ethyl Benzene	100-41-4	< 0.5	ug/L	0.5	EPA 624	1 Dec 20	TMM
Ethyl Ether	60-29-7	< 0.5	ug/L	0.5	EPA 624	1 Dec 20	TMM
Hexachlorobutadiene	87-68-3	< 0.2	ug/L	0.2	EPA 624	1 Dec 20	TMM
p-Isopropyltoluene	99-87-6	< 0.5	ug/L	0.5	EPA 624	1 Dec 20	TMM
Methyl Ethyl Ketone	78-93-3	< 5	ug/L	5	EPA 624	1 Dec 20	TMM
Methyl Isobutyl Ketone	108-10-1	< 2	ug/L	2	EPA 624	1 Dec 20	TMM
Methyl tert-butyl Ether	1634-04-4	< 0.5	ug/L	0.5	EPA 624	1 Dec 20	TMM
Methylene Chloride	75-09-2	< 1	ug/L	1	EPA 624	1 Dec 20	TMM
Naphthalene	91-20-3	< 1	ug/L	1	EPA 624	1 Dec 20	TMM
n-Propylbenzene	103-65-1	< 0.5	ug/L	0.5	EPA 624	1 Dec 20	TMM
Styrene	100-42-5	< 0.5	ug/L	0.5	EPA 624	1 Dec 20	TMM
1,1,1,2-Tetrachloroethane	630-20-6	< 0.5	ug/L	0.5	EPA 624	1 Dec 20	TMM
1,1,2,2-Tetrachloroethane	79-34-5	< 0.5	ug/L	0.5	EPA 624	1 Dec 20	TMM
Tetrachloroethene	127-18-4	< 0.5	ug/L	0.5	EPA 624	1 Dec 20	TMM
Tetrahydrofuran	109-99-9	< 5	ug/L	5	EPA 624	1 Dec 20	TMM
Toluene	108-88-3	< 0.5	ug/L	0.5	EPA 624	1 Dec 20	TMM
1,2,3-Trichlorobenzene	87-61-6	< 0.5	ug/L	0.5	EPA 624	1 Dec 20	TMM

RL = Reporting Limit
Analyses performed under our Minnesota Department of Health Accreditation conform to the current TNI standards.
The reporting limit was elevated for any analyte requiring a dilution as coded below:
@ = Due to sample matrix # = Due to concentration of other analytes
! = Due to sample quantity + = Due to internal standard response
CERTIFICATION: MN LAB # 027-015-125 ND MICRO # 1013-M ND WW/DW # R-040

MVTL guarantees the accuracy of the analysis done on the sample submitted for testing. It is not possible for MVTL to guarantee that a test result obtained on a particular sample will be the same on any other sample unless all conditions affecting the sample are the same, including sampling by MVTL. As a mutual protection to clients, the public and ourselves, all reports are submitted as the confidential property of clients, and authorization for publication of statements, conclusions or extracts from or regarding our reports is reserved pending our written approval.

AN EQUAL OPPORTUNITY EMPLOYER

MINNESOTA VALLEY TESTING LABORATORIES, INC.

MVTL

1126 N. Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890
2616 E. Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724
1201 Lincoln Highway ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885
www.mvtl.com

MEMBER ACIL

COLLEEN ECK
CLAY COUNTY SOLID WASTE MGMT
807 11TH ST N
MOORHEAD MN 56560-1500

Report Date: 16 Dec 2020
Lab Number: 20-A58032
Work Order #: 12-17101
Account #: 013177
Sample Matrix: WASTEWATER
Date Sampled: 23 Nov 2020 10:15
Sampled By:
Date Received: 25 Nov 2020 9:10

Sample Description: TRIP BLANK

Temp at Receipt: 2.5C

	CAS #	As Received Result		Method RL	Method Reference	Date Analyzed	Analyst
1,2,4-Trichlorobenzene	120-82-1	< 0.5	ug/L	0.5	EPA 624	1 Dec 20	TMM
1,1,1-Trichloroethane	71-55-6	< 0.5	ug/L	0.5	EPA 624	1 Dec 20	TMM
1,1,2-Trichloroethane	79-00-5	< 0.5	ug/L	0.5	EPA 624	1 Dec 20	TMM
Trichloroethene	79-01-6	< 0.1	ug/L	0.1	EPA 624	1 Dec 20	TMM
Trichlorofluoromethane	75-69-4	< 0.5	ug/L	0.5	EPA 624	1 Dec 20	TMM
1,2,3-Trichloropropane	96-18-4	< 0.1	ug/L	0.1	EPA 624	1 Dec 20	TMM
Trichlorotrifluoroethane	76-13-1	< 0.5	ug/L	0.5	EPA 624	1 Dec 20	TMM
1,2,4-Trimethylbenzene	95-63-6	< 0.5	ug/L	0.5	EPA 624	1 Dec 20	TMM
1,3,5-Trimethylbenzene	108-67-8	< 0.5	ug/L	0.5	EPA 624	1 Dec 20	TMM
Vinyl Chloride	75-01-4	< 0.05	ug/L	0.05	EPA 624	1 Dec 20	TMM
m-Xylene and p-Xylene	179601-23-1	< 1	ug/L	1	EPA 624	1 Dec 20	TMM
o-Xylene	95-47-6	< 0.5	ug/L	0.5	EPA 624	1 Dec 20	TMM

GC/MS VOC Sample pH < 2

DIBROMOFLUOROMETHANE (SURROGATE) RECOVERY: 111 %
TOLUENE-d8 (SURROGATE) RECOVERY: 94 %
4-BROMOFLUOROBENZENE (SURROGATE) RECOVERY: 95 %

Approved by:

Dan O'Connell David Smahel
Chemistry Laboratory Managers New Ulm, MN

RL = Reporting Limit
Analyses performed under our Minnesota Department of Health Accreditation conform to the current TNI standards.
The reporting limit was elevated for any analyte requiring a dilution as coded below:
@ = Due to sample matrix # = Due to concentration of other analytes
! = Due to sample quantity + = Due to internal standard response
CERTIFICATION: MN LAB # 027-015-125 ND MICRO # 1013-M ND WW/DW # R-040

MVTL guarantees the accuracy of the analysis done on the sample submitted for testing. It is not possible for MVTL to guarantee that a test result obtained on a particular sample will be the same on any other sample unless all conditions affecting the sample are the same, including sampling by MVTL. As a mutual protection to clients, the public and ourselves, all reports are submitted as the confidential property of clients, and authorization for publication of statements, conclusions or extracts from or regarding our reports is reserved pending our written approval.

AN EQUAL OPPORTUNITY EMPLOYER

Summary Report

From: Jet-Way Multiple Services, Inc.

Service Date: 07/02/2020

Re: Clay County Landfill – Leachate Lines

Date of service: 07/02/2020

Lines Cleaned By: Jet-Way Multiple Services, Inc.

Method of Cleaning: High pressure jet – Vacuum truck to remove debris after jetting

Location of Cleaning: Clay County Landfill – Minnesota (Near Hawley, MN)

3301 190th St S, Hawley, MN 56549

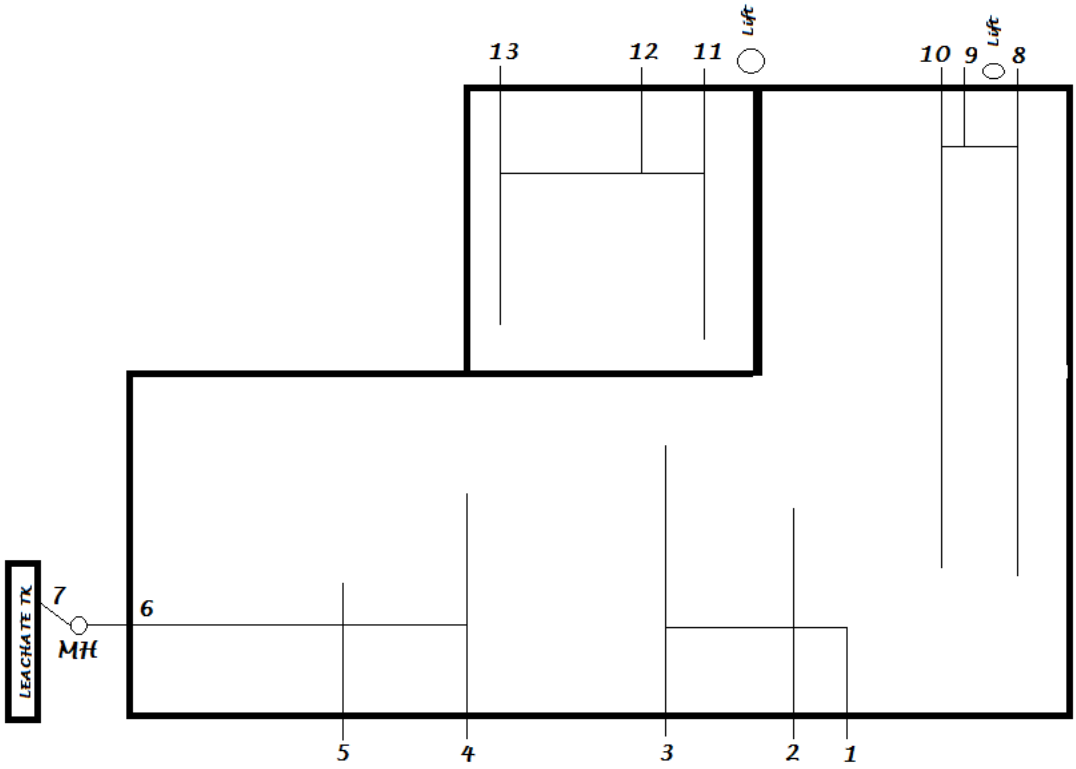
What was done: Leachate lines were jetted to remove debris and sediment and then debris was vacuumed out of the system

Work Requested By: Brett Rice Ph. 218-299-5079

Issues Reported: NONE

Attachments: Leachate Line Map

CLAY COUNTY LANDFILL LEACHATE FIELD



1. 320 Feet
2. 330 Feet
3. 500 Feet
4. 350 Feet
5. 240 Feet
6. 780 Feet
7. 120 Feet
8. 900 Feet
9. 370 Feet
10. 900 Feet
11. 550 Feet
12. 215 Feet
13. 550 Feet

Appendix G

NMOC Calculations

WENCK File # B1337-20-079
January 2021

Tier 2 NMOC Air Sampling Report and Five Year NMOC Emission Rate Report

CLAY COUNTY SANITARY LANDFILL
3301 190th Street South
Hawley, MN 56549

Prepared for:
Clay County

807 11th Street North
PO Box 280
Moorhead, MN 56561

Prepared by:

Wenck, a Stantec company
1800 Pioneer Creek Center
Maple Plain, MN 55359
Phone: 763-479-4200
Fax: 763-479-4242

Table of Contents

1.0 EXECUTIVE SUMMARY 1-1

2.0 FIELD SAMPLING METHODOLOGY 2-1

2.1 General Information 2-1
2.2 Equipment 2-1
2.3 Procedures 2-1

3.0 LABORATORY PROCEDURES AND ANALYTICAL RESULTS 3-1

3.1 Laboratory Procedures 3-1
3.2 Analytical results 3-1

4.0 NMOC EMISSION CALCULATIONS 4-1

5.0 CONCLUSIONS 5-1

FIGURES
Figure 1A: 2019 Aerial Photography
Figure 1B: Site Map

Tables
Table 1: Summary of Laboratory Test Results
Table 2: C_{NMOC} Calculations

APPENDICES

A Chain-of-Custody Forms
B Laboratory Reports
C LandGEM Emission Calculations

1.0 Executive Summary

Clay County Sanitary Landfill (Clay County Landfill) currently owns and operates a 192-acre municipal solid waste (MSW) landfill located in the SE quarter of Section 19, Township 139 North, Range 45 West in Hawley, Clay County, Minnesota. Clay County Landfill began receiving waste in 1972 and is still currently active.

Clay County Landfill operates under a Solid Waste Management Facility Permit issued by the Minnesota Pollution Control Agency (MPCA) (Permit No. SW-34-008). Clay County Landfill began construction of the Areas III and IV vertical expansion on June 15, 2020.

Clay County Landfill is currently permitted for a waste capacity of over 2.5 million cubic meters and has undergone modification after July 17, 2014; therefore, it is subject to the federal New Source Performance Standard (NSPS) for Municipal Solid Waste Landfills under 40 CFR 60 Subpart XXX. EPA finalized revisions to 40 CFR 60 Subp. WWW on March 26, 2020, clarifying that landfills subject to Subpart XXX are not subject to Subpart WWW. Subp. XXX requires the total NMOC emission rate to be below 34 Mg per year, to avoid collection and control requirements under this standard.

On October 22, 2020, Clay County submitted a landfill gas sampling plan to the MPCA proposing to complete Tier 2 Sampling to determine a site-specific NMOC concentration. Tier 2 samples were collected on Nov. 18, 2020. The Tier 2 sampling report is due to the MPCA within 60 days of collecting samples, or by Jan. 17, 2021. The Tier 1 NMOC Emission Rate Report was submitted to the MPCA on July 28, 2020. The revised NMOC Emission Report is due Jan. 24, 2021, or 180 days after submittal of the July 28, 2020 Tier 1 NMOC Emission Rate Report, under 40 CFR 60.767(c)(4)(i).

At the time of the sampling, Clay County was completing expansion of its active gas collection system. Three samples were taken at the gas header, before the flare. In addition, Wenck pulled samples at each wellhead, where connection to the active gas system was not yet complete. Expansion of the active gas system was on-going during the Tier 2 sampling event. These sampled wells were closed during the Tier 2 sampling event. By using the combination of the active gas collection system samples, and the wellhead samples, landfill gas samples were drawn from the entire landfill.

EPA allows sampling from passive and active gas systems as an alternative to installing surface probes under 40 CFR 60.764(a)(3). Sampling at the Clay County wellheads avoids damaging the landfill cover materials. Probes were not used for sample collection for the Clay County Tier 2 sampling.

To reduce analytical costs, composite samples were collected from the closed wellheads at the time of sampling. A one-liter sample volume was drawn into the summa canisters from each sample location. Either three or four locations are included in each composite sample of the wellheads.

An average NMOC concentration from the gas header was identified, along with an average NMOC concentration from the wellheads. The Tier 2 Sampling Plan proposed using the landfill surface areas to determine the overall NMOC weighted average from the active gas collection NMOC concentration and the closed wells NMOC concentration. At the time that the sampling plan was submitted, Clay County did not anticipate that part of Area IV Phases 1&2 would have active gas collection, and part of the wells would not yet be connected to

the collection system. For averaging the active and wellhead NMOC concentrations, Clay County identified the Area IV Phase 1&2 active fraction vs. the Area IV Phase 1&2 total area, based on the number of wells associated with each.

The remaining procedure to determine the overall weighted average NMOC concentration from the gas header and wellhead NMOC concentrations remains the same as proposed in the sampling plan. The landfill surface area of the active gas collection vs. the closed wells was used to determine a weighted average.

An average NMOC concentration of 174 ppmv NMOC as hexane was identified. NMOC emissions were estimated to be 7.17 Mg/yr for the year 2025, compared to the landfill gas control NSPS threshold of 34 Mg/yr. Based on those results, an active gas collection and control requirements are not yet triggered for Clay County Landfill.

Clay County Landfill will continue to operate its existing collection and control system on a voluntary basis for odor control and to minimize off-site gas migration. The collected gas is flared. The collection and control system, however, will not be subject to additional monitoring, recordkeeping and reporting requirements contained in Subpart XXX.

2.0 Field Sampling Methodology

2.1 GENERAL INFORMATION

The objective of the present sampling effort was to use a combination of existing gas collection wells that are part of the existing collect and control system. Three landfill gas samples were collected from the gas header. The gas collection system was under construction at the time of the Tier 2 sampling. To ensure that the entire landfill was covered by the sampling, samples were also collected from the landfill areas which were not connected to the gas collection system at the time of the sampling. As an alternative to installing gas probes, samples were also collected from thirteen gas wellheads. Sampling at active and passive gas systems is allowed by EPA as an alternative to installing surface probes to collect gas samples under 40 CFR 60.764(a)(3). Sampling at the wellheads avoided damaging the cover materials at Clay County Landfill. The thirteen gas wells were closed at the time of the sampling.

The Project Participants and their roles/responsibilities are as follows:

Mr. Kirk Rosenberger	Clay County Landfill Solid Waste Management Director
Marlon Mackowick/ Stephanie Kuphal Wenck, a Stantec company	Field Sampler and Report Preparation
Air Technology Laboratories, Inc.	Provider of canisters and Method 25C & 3C analysis
MPCA	Part 70 Permitting and Subpart XXX authority
USEPA Region V	Subpart XXX oversight

2.2 EQUIPMENT

The equipment utilized for this sampling effort was based Section 6 of Method 25C. A brief description of the equipment used for collecting the samples is shown as follows:

- Rotameter, with flow control valve,
- Stainless steel sampling valve,
- Pressure gauge, capable of measuring pressure to within 1 mm Hg in the range of 1 to 1,100 mm Hg, and
- Stainless steel sampling tank.

The summa canisters were evacuated and leak-checked by the laboratory that conducted the analytical work.

2.3 PROCEDURES

As described in this executive summary, Tier 2 NMOC sampling was conducted at Clay County Landfill on November 18, 2020. Seven (7) gas canisters samples and a field blank were obtained from locations distributed over the area of the landfill. Three (3) samples were collected from the gas header pipe. Four (4) composite samples were used to collect

landfill gas from the thirteen (13) gas wells. These thirteen wells were not yet connected to the gas collection system at the time of the sampling, and instead were closed.

The wellhead samples were collected by a composite method using 6-liter summa canisters. There were three separate, 1-liter gas samples collected from the gas header. Either three or four wells were included in each composite sample. A 1-liter sample was collected from each sample location. A total of seven (7) summa canisters, with 3 gas header and 4 composite wellhead samples, were collected. These sampling locations were proposed to MPCA in the Tier 2 Sampling Plan. Please see the attached figure for the location of each of these samples. All gas wells noted as "GEW" in the figure, including GEW-TW-1 through GEW-TW-5, were exhausting to the gas header at the time of the Tier 2 sampling. The remaining gas wells, identified as "TW" in this figure, were included in the composite wellhead samples.

Chain of custody forms for these samples are presented as Appendix A to this report.

3.0 Laboratory Procedures and Analytical Results

3.1 LABORATORY PROCEDURES

A qualified independent laboratory, Air Technology Laboratories, Inc., was selected as analytical services provider. Method 25C was the chosen analysis for the Clay County Landfill. As stated in Method 25C:

> "The NMOC content of the gas is determined by injecting a portion of the gas into a gas chromatographic column to separate the NMOC from carbon monoxide (CO), carbon dioxide (CO_2) and methane (CH_4); the NMOC are oxidized to CO_2, reduced to CH_4, and measured by a flame ionization detector (FID). In this manner, the variable response of the FID associated with different types of organics is eliminated."

NSPS Subpart XXX also provides that either nitrogen or oxygen be performed on each sample, under USEPA Method 3C, to demonstrate that excess air has not infiltrated the samples. The purpose of the Method 3C testing is to provide an extra measure of quality assurance. Samples with less than 20 percent by volume nitrogen (%v/v N_2) or less than 5 percent oxygen (%v/v O_2) are valid. Method 3C testing was performed on all Tier 2 samples.

3.2 ANALYTICAL RESULTS

The Method 25C and 3C laboratory results are summarized in Table 1 at the end of this report and presented in Appendix B. Levels of O_2 or N_2 were within 5% and 20%, respectively.

The lab results show that NMOC Concentrations (C_{NMOC}) range from 880 to 1,400 parts per million as carbon (ppmv-C). The average C_{NMOC} for the gas header samples is 987 ppmv-C, and the average weighted C_{NMOC} for the gas wellheads is 1,188 ppmv-C. The total $C_{NMOC\text{-}weighted}$ for the samples is 1,046 ppmv-C. The Tier 2 calculation procedures [40 CFR 60.754 (a)(3)] specify that the "landfill owner or operator shall divide the NMOC concentration from Method 25C by six to convert from C_{NMOC} as carbon to C_{NMOC} as hexane." Dividing the value shown above by six (6) yields an average C_{NMOC} value of 174 ppmv-Hexane for the Clay County Landfill. As required by Method 25C, the NMOC sample results were adjusted based on the nitrogen concentration in each sample. The C_{NMOC} calculations are shown in Table 2 at the end of this report.

4.0 NMOC Emission Calculations

Using the average C_{NMOC} value shown in Section 3.2, annual NMOC emissions were estimated using the EPA's Landfill Gas Emissions Model (LandGEM), version 3.02, which follows the provisions of NSPS Subpart XXX section CFR 60.764(a)(1).

Waste acceptance rates for years 2016 and later are available for the Clay County Landfill. Yearly average waste acceptance rates were calculated for years prior to 2016 using periodic waste surveys taken at the landfill. For 2020 to 2025, waste acceptance rates were assumed to be 125% of the maximum waste acceptance from 2015 to 2019. A methane content of 50% by volume were assumed for the calculations.

LandGEM NMOC calculations for the Clay County Landfill are presented in Appendix C. The calculations predict annual NMOC emissions of 7.17 Mg/year in 2025. NSPS Subpart XXX requires collection and control equipment at sites with emissions above 34 Mg/yr.

Since emissions are calculated for 2025, this report satisfies the requirement to submit an annual NMOC emission rate report for this year, and the next four years. Waste acceptance for calendar year 2020 through 2024 was projected as 125% of the maximum waste acceptance rate from 2015 to 2019, or 53,767 ton/yr. If actual waste acceptance rates are above this assumption, then a revised NMOC emission rate report is required.

5.0 Conclusions

Based on the NMOC sampling results and calculations contained in this report, an active gas collection and control system is not required for the Clay County Landfill at this time. NMOC emissions for 2025 were estimated to be 7.17 Mg/yr, compared to the NSPS collection and control equipment threshold of 34 Mg/yr under Subpart XXX.

Clay County understands that reporting and retesting of NMOC emissions are required under 40 CFR 60.767 (b)(1) every five (5) years. This report estimates annual NMOC emissions for 2025 using a projected annual waste acceptance rate of 125% of the maximum rate from 2015 to 2019. As long as 2020 through 2025 annual waste acceptance rates are not greater than this projection, this five-year NMOC emission rate calculation satisfies the requirement to submit an annual NMOC emission rate report until 2025. In 2025, Tier 2 NMOC sampling must be repeated.

Figures

Figure 1A: 2019 Aerial Photography
Figure 1B: Site Map

N

400 0 200 400

GRAPHIC SCALE IN FEET

LEGEND

- PROPERTY BOUNDARY
- PHASE BOUNDARY LINE
- C-13 EMS WELLS/PIEZOMETERS
- DEUTSHER RESIDENTIAL WELL
- S-1 SURFACE WATER POINT
- LYS IV-3 LANDFILL LYSIMETER
- GP-2 GAS PROBE
- RW-8 REMEDIATION WELL

WEAVER

W-112
W-109
NORTH ACREAGE
APPLIANCE STORAGE (APPROX. 15' X 22')
TIRE STORAGE (APPROX. 13' X 14')
DEMOLITION DUMPSTER (20 CY CONTAINER)
GP-4AR
W-302A
W-302B
LANDFILL OFFICE, ELECTRONIC STORAGE AND HIGHWAY DEPT. SHOP
LANDFILL TRUCK SCALE
W-301A
W-301B
W-104A
W-104B
W-106A
W-106B
W-102B
W-102A
METAL RECYCLING BIN (40 CY CONTAINER)
ELECTRONICS STORAGE (APPROX. 13' X 20' SHED)
C-2
W-15
W-11
W-16
T2-C
T2-B
T2-A
GP-1
C-1
GP-2
J-2
W-3
W-5
S-1
GP-3
LANDFILL SHOP
EAST SEDIMENTATION POND
C-4
PP-2
PP-3
PP-1
C-3
LYS IV-3
LYS IV-1&2
RW-1
RW-2
RW-3
RW-4
RW-5
RW-6
RW-7
RW-8
RW-9
RW-10
TW-2
PUBLIC DROP OFF BINS (14 CY CONTAINERS)
TW-1
FUTURE AREA IV PHASE 5
GP-5A
AREA IV PHASE 3 (ACTIVE)
EKRE
TW-3
W201B
W-201A
S-2
W-10
WETLANDS
NORTH HALF AREA IV PHASE 4 (ACTIVE)
FUTURE AREA IV PHASE 6
GP-6A
C-8
AREA IV PHASES I & 2 (ACTIVE)
C.S.A.H. NO. 23 /190TH ST S
C-12
C-13
GP-7A
W-2
W-2B
W-9
W-17
T1-B
T1-C
T1-A
FUTURE SOUTH HALF AREA IV PHASE 4
AREA III PHASE 3 (CLOSED)
C-9
AREA II (CLOSED)
GP-8A
W202B
W-202A
ENCLOSED FLARE
AREA III PHASE 2 (CLOSED)
AREA III PHASE 1 (CLOSED)
W-13
C-10
LYS III-1
LYS III-2
LYS III-3
GP-9
GP-10
GP-11
GP-12
W-12
C-11
W-6
W-1
S-3
SOUTHWEST SEDIMENTATION POND
DEUTSHER
C.S.A.H. NO. 12

REV	REVISION DESCRIPTION	DWN	APP	REV DATE
A	ISSUED TO CLIENT	ANH	MPM	1-30-20

WENCK ASSOCIATES
Responsive partner. Exceptional outcomes.

DWN BY	CHK'D	APP'D
ANH	AJF	MPM

DWG DATE: JANUARY 2020
SCALE: AS SHOWN

PROJECT: CLAY COUNTY SANITARY LANDFILL 2019 ANNUAL LANDFILL REPORT
CLIENT: CLAY COUNTY HAWLEY, MINNESOTA

SHEET TITLE: 2019 AERIAL PHOTOGRAPH

PROJECT NO.	SHEET NO.	REV NO.
1337-0072	FIGURE 1A	A

N

400 0 200 400

GRAPHIC SCALE IN FEET

LEGEND

EXISTING ROAD
EXISTING BUILDING
PROPERTY BOUNDARY
FENCE
PHASE BOUNDARY LINE
COMPLIANCE BOUNDARY
C–1 EXISTING MONITORING WELL/PIEZOMETER
GP–11 EXISTING GAS PROBE
RW–1 EXISTING REMEDIATION WELL/VENT
GEW–8 EXISTING GAS EXTRACTION WELLS
LYS III–1 LYSIMETER
PHYTOREMEDIATION PLANTATION

W–112
W–109
NORTH ACREAGE
APPLIANCE STORAGE (APPROX. 15' X 22')
TIRE STORAGE (APPROX. 13' X 14')
DEMOLITION DUMPSTER (20 CY CONTAINER)
LANDFILL GARAGE
GP–4AR
W–302A
W–302B
LANDFILL OFFICE
EXISTING LEACHATE LOADOUT
LANDFILL TRUCK SCALE
LANDFILL ENTRANCE
W–301A
W–301B
W–104A
W–104B
W–106A
W–106B
W102B
W102A
MAINTENANCE GARAGE & ELECTRONIC STORAGE
METAL RECYCLING BIN (40 CY CONTAINER)
W–15
C–1
GP–1
C–2
W–16
T2–C
T2–B
T2–A
GP–3
J–2
W–5
W–3
C–4
PP–2
C–3
PP–3
PP–1
LYS IV–3
LYS IV–1&2
AREA IV, PHASES I & II FINAL COVERED
RW–1
RW–2
RW–3
RW–4
RW–5
RW–6
RW–7
RW–8
RW–9
RW–10
TW–2
TW–1
TW–3
EXISTING FORCEMAIN
FUTURE AREA IV PHASE 5
AREA IV PHASE 3 (ACTIVE)
GP–5A
EAST SEDIMENTATION POND
W201B
W–201A
W–10
SOUTH HALF AREA IV PHASE 4 (UNDER CONSTRUCTION)
NORTH HALF AREA IV PHASE (ACTIVE)
GP–6A
C–8
FUTURE AREA IV PHASE 6
C.S.A.H. NO. 23 (BITUMINOUS SURFACE)
C–12
C–13
GP–7A
AREA IV PHASES I & 2 (ACTIVE)
W–2
W–2B
W–9
T1–B
W–17
T1–C
T1–A
AREA III PHASE 3 (CLOSED)
C–9
AREA II (CLOSED)
GP–8A
W202B
W–202A
AREA III PHASE 2 (CLOSED)
ENCLOSED FLARE
EXISTING LEACHATE LOADOUT
AREA III PHASE 1 (CLOSED)
W–13
C–10
LYS III–1
LYS III–2
LYS III–3
GP–9
GP–10
GP–11
GP–12
W–12
W–203B
W–1
W–6
C–11
CLAY COUNTY MONUMENT AT SE CORNER SECT 19–139–45 HAWLEY TOWNSHIP, MN.
C.S.A.H. NO. 12 (GRAVEL SURFACE)
EXISTING LYSIMETER
EXISTING FORCEMAIN
SOUTHWEST SEDIMENTATION POND

REV	REVISION DESCRIPTION	DWN	APP	REV DATE
A	ISSUED TO CLIENT	ANH	MPM	1–30–20

WENCK ASSOCIATES
Responsive partner. Exceptional outcomes.

DWN BY	CHK'D	APP'D
ANH	AJF	MPM

DWG DATE OCTOBER 2020
SCALE AS SHOWN

PROJECT CLAY COUNTY SANITARY LANDFILL
CLIENT CLAY COUNTY HAWLEY, MINNESOTA

SHEET TITLE SITE MAP

PROJECT NO.	SHEET NO.	REV NO.
1337–0072	FIGURE 1B	A

Tables

Table 1: Summary of Laboratory Test Results
Table 2: C_{NMOC} Calculations
Table 3: Surface Areas Associated with Gas Header Samples and Composite Wellhead Samples

Clay County Landfill Tier 2 Test Results

Table 1: Summary of Laboratory Test Results

Lab No.	Client Sample I.D.	NMOC Concentration corrected (ppmv-Carbon)
L112004-01	Gas Heater-1	980
L112004-02	Gas Heater-2	980
L112004-03	Gas Heater-3	1000
L112004-05	Gas Well 1 (TW 7, 6, 18)	880
L112004-06	Gas Well 2 (TW 9, 10, 8)	1300
L112004-07	Gas Well 3 (TW 14, 11, 17)	1100
L112004-08	Gas Well 4 (TW 15, 16, 12, 13)	1400

The NMOC concentrations were corrected based on nitrogen concentrations as a worst case. Oxygen concentrations can also be used under Method 25C.

Table 2: C_{NMOC} Calculations

Parameter	Value	Unit	
$C_{NMOC\text{-}Active}$	987	ppmv-C	
$C_{NMOC\text{-}Wellhead}$	1188	ppmv-C	This concentration was weighted based on the number of wells in each composite sample.
SA_{Active}	18.28	hectare	See Table 3 below for basis
$SA_{Wellhead}$	7.74	hectare	See Table 3 below for basis
SA_{Total}	26.02	hectare	
$C_{NMOC\text{-}weighted}$	1046	ppmv-C	Calculated as (987 ppm x 18.28 hectare) + (1,188 ppm x 7.74 hectare) / 26.02 hectare
$C_{NMOC\text{-}weighted}$	174	ppmv-Hexane	$C_{NMOC\text{-}C}$ / 6, from Method 25C, one hexane molecule has six carbon atoms

Table 3. Surface Areas Associated with Gas Header Samples and Composite Wellhead Samples

Disposal Area/Cell	Surface Area			Well Status	Tier 2 Samples	Active	Wellhead	
	(ft2)	(Acre)	(Hectare)			(Hectare)	(Hectare)	
Area II	396,076	9.09	3.68	Active Collection	Gas Header	3.68		
Area III, Phase 1	285,019	6.54	2.65	Active Collection	Gas Header	2.65		
Area III, Phase 2	437,045	10.03	4.06	Active Collection	Gas Header	4.06		
Area III, Phase 3	386,327	8.87	3.59	Active Collection	Gas Header	3.59		
Area IV, Phases 1&2	751,546	17.25	6.99	Mix of active gas collection and wells that were not yet operating	Gas Header for GEW-TW-1, GEW-TW-2, GEW-TW-3, GEW-TW-4, and GEW-TW-5. Wells TW-11, TW-14, TW-15, TW-16, TW-17, TW-18 were not yet connected to the collection system during sampling.	3.18	3.81	Fraction active vs. wellhead is identified based on numbers of wells.
Area IV, Phase 3	246,346	5.66	2.29	Not yet operating	TW-6, TW-7, TW-8, TW-9, TW-10		2.29	
Area IV, Phase 4 North	175,984	4.04	1.64	Not yet operating	TW-12, TW-13		1.64	
Area IV, Phase 4 South	121,242	2.78	1.13	Active Collection	Gas Header	1.13		
Total	**2,799,585**	**64**	**26**			**18.28**	**7.74**	

Notes

At the time of Tier 2 sampling, expansion of the active gas collection system into Areas III and IV was not yet complete. Wells had been placed, but these wells had yet been connected to the active gas collection system. Area IV Phase 3 and Area IV, Phase 4 North had samples collected from the wellheads. Area IV, Phases 1&2 included a combination of wells connected to the collection system, and wells that were not yet connected. GEW-TW-1 through GEW-TW-5 were active, and gas collected is reflected in the gas header samples. TW-11, TW-14, TW-15, TW-16, TW-17, TW-18 had been placed, but were not yet connected to the collection system at the time of sampling.

The surface area of Area IV Phase 1&2 assumed to be covered by active gas collection, vs the fraction covered by the passive venting at the time of the sampling was estimated based on the number of wells. This approach is expected to be a worst case. There are 11 wells located in this area. The surface area of the gas collection system in this area was estimated at 5/11 of the total surface area. This approach is consistent with how passive vent samples would be averaged under 40 CFR 60 Subp. XXX.

Appendix A

Chain-of-Custody Forms

AirTECHNOLOGY Laboratories, Inc.

18501 E. Gale Ave., Suite 130
City of Industry, CA 91748
Ph: 626-964-4032
Fx: 626-964-5832

CHAIN OF CUSTODY RECORD

TURNAROUND TIME
Standard [X] 48 hours [ ]
Same Day [ ] 72 hours [ ]
24 hours [ ] 96 hours [ ]
Other:

DELIVERABLES
EDD [ ]
EDF [ ]
LEVEL 3 [ ]
LEVEL 4 [ ]

PAGE: OF

Condition upon receipt:
Sealed Yes [ ] No [ ]
Intact Yes [ ] No [ ]
Chilled _____ deg C

Project No.: 300133T-17-0T6
Project Name: Clay Co. Tier 2 Testing
Report To: Marlon Mackowick
Company: Wenck
Street: 3303 Fiechtner Dr S # 100
City/State/Zip: Fargo, ND 58103
Phone& Fax: 701-367-5244
e-mail: mmackowick@wenck.com

BILLING
P.O. No.:
Bill to: Wenck

ANALYSIS REQUEST
25C/3C include CH4, CO2

LAB USE ONLY	SAMPLE IDENTIFICATION	SAMPLE DATE	SAMPLE TIME	MATRIX	CONTAINER TYPE	25C/3C include CH4, CO2
L112004 -01	Gas Header-1	11-18	10:06	landfill gas		X
-02	Gas Header-2	11-18	10:16	↓		X
-03	Gas Header-3	11-18	10:27	↓		X
-04	Gas Header-4 (Extra)	11-18	10:36	↓		X
-05	Gas Well #1 (TW ~~8~~, 7, 6, 18)	11-18	11:39	↓		X
-06	Gas well #2 (TW 9, 10, ~~11~~, ~~12~~) 8	11-18	12:06	↓		X
-07	Gas well #3 (TW ~~13~~, 13, 14, ~~15~~, ~~16~~) 11 17	11-18	12:26	↓		X
-08	Gas well #4 (15, 16, 12, 13)	11-18	12:49	↓		X

SAMPLED BY	COMPANY	DATE/TIME
Marlon Mackowick	Wenck	11-18-20 12:49

RELINQUISHED BY	DATE/TIME	RECEIVED BY	DATE/TIME
NAME/COMPANY: Marlon Mackowich	11-18-20 3:30	NAME/COMPANY: Fedex	
NAME/COMPANY: Fedex		NAME/COMPANY: Lorine Johnson	11/20/20 9:40
NAME/COMPANY:		NAME/COMPANY:	

COMMENTS
Only analyze Gas Header-4 Container if there is an issue with Gas Header Samples 1-3

DISTRIBUTION: White & Yellow - Lab Copies / Pink - Customer Copy

Appendix B

Laboratory Report

Client:	**Wenck Associates**
Attn:	**Marlon Mackowick**
Project Name:	**Clay County Tier 2 Testing**
Project No.:	**B001337-17-076**
Date Received:	**11/20/2020**
Matrix:	**Air**

TNMOC by EPA METHOD 25C
Fixed Gases by EPA METHOD 3C

Lab No.:	L112004-01		L112004-02		L112004-03		L112004-05	
Client Sample I.D.:	Gas Header-1		Gas Header-2		Gas Header-3		Gas Well 1 (TW 7, 6, 18)	
Date/Time Sampled:	11/18/20 10:06		11/18/20 10:16		11/18/20 10:27		11/18/20 11:39	
Date/Time Analyzed:	11/30/20 14:17		11/30/20 15:01		11/30/20 16:37		11/30/20 18:04	
QC Batch No.:	201130GC8A1		201130GC8A1		201130GC8A1		201130GC8A1	
Analyst Initials:	CM		CM		CM		CM	
Dilution Factor:	3.0		3.0		3.2		3.2	
ANALYTE (Units)	**Result**	**RL**	**Result**	**RL**	**Result**	**RL**	**Result**	**RL**
TNMOC N2 corrected (ppmv-C)	980	30	980	30	1,000	32	880	32
TNMOC O2 corrected (ppmv-C)	890	30	890	30	910	32	870	32
TNMOC uncorrected (ppmv-C)	840	30	840	30	850	32	820	32
Nitrogen (% v/v)	9.1	3.0	8.8	3.0	9.8	3.2	3.3	3.2
Oxygen/Argon (% v/v)	ND	1.5	ND	1.5	ND	1.6	ND	1.6
Carbon Dioxide (% v/v)	34	0.030	35	0.030	36	0.032	38	0.032
Methane (% v/v)	54	0.0030	55	0.0030	57	0.0032	61	0.0032

RL = Reporting Limit
ND = Not detected at or above the RL.
TNMOC = Total Non-Methane Organic Compounds
ppmv-C = parts per million by volume as carbon
TNMOC N2 corrected (applicable if N2 < 20%)
TNMOC O2 corrected (applicable if N2 > 20% and O2 < 5%)
TNMOC uncorrected = not corrected for N2, O2 or moisture
NA = Nitrogen/oxygen/moisture correction causes division by zero.

Reviewed/Approved By: _____ Date 12/7/20
Mark Johnson
Operations Manager

The cover letter is an integral part of this analytical report

Client:	**Wenck Associates**
Attn:	**Marlon Mackowick**
Project Name:	**Clay County Tier 2 Testing**
Project No.:	**B001337-17-076**
Date Received:	**11/20/2020**
Matrix:	**Air**

TNMOC by EPA METHOD 25C
Fixed Gases by EPA METHOD 3C

Lab No.:	L112004-06		L112004-07		L112004-08			
Client Sample I.D.:	Gas Well 2 (TW 9, 10, 8)		Gas Well 3 (TW 14, 11, 17)		Gas Well 4 (TW 15, 16, 12, 13)			
Date/Time Sampled:	11/18/20 12:06		11/18/20 12:26		11/18/20 12:49			
Date/Time Analyzed:	11/30/20 18:48		11/30/20 19:31		11/30/20 20:15			
QC Batch No.:	201130GC8A1		201130GC8A1		201130GC8A1			
Analyst Initials:	CM		CM		CM			
Dilution Factor:	3.2		3.2		3.2			
ANALYTE (Units)	**Result**	**RL**	**Result**	**RL**	**Result**	**RL**		
TNMOC N2 corrected (ppmv-C)	1,300	32	1,100	32	1,400	32		
TNMOC O2 corrected (ppmv-C)	1,300	32	1,000	32	1,400	32		
TNMOC uncorrected (ppmv-C)	1,200	32	980	32	1,200	32		
Nitrogen (% v/v)	7.0	3.2	6.5	3.2	10	3.2		
Oxygen/Argon (% v/v)	ND	1.6	ND	1.6	2.3	1.6		
Carbon Dioxide (% v/v)	40	0.032	38	0.032	39	0.032		
Methane (% v/v)	54	0.0032	54	0.0032	51	0.0032		

RL = Reporting Limit
ND = Not detected at or above the RL.
TNMOC = Total Non-Methane Organic Compounds
ppmv-C = parts per million by volume as carbon
TNMOC N2 corrected (applicable if N2 < 20%)
TNMOC O2 corrected (applicable if N2 > 20% and O2 < 5%)
TNMOC uncorrected = not corrected for N2, O2 or moisture
NA = Nitrogen/oxygen/moisture correction causes division by zero.

Reviewed/Approved By: _____ Date 12/7/20

Mark Johnson
Operations Manager

The cover letter is an integral part of this analytical report

Appendix C

LandGEM Emission Calculations

INPUT REVIEW

Landfill Name or Identifier: Clay County Landfill

LANDFILL CHARACTERISTICS

Landfill Open Year	**1972**	
Landfill Closure Year (with 80-year limit)	**2051**	
Actual Closure Year (without limit)	***2067***	**Landfill Closure Year entered exceeds the 80-year waste acceptance limit. See Section 2.6 of the User's Manual.**
Have Model Calculate Closure Year?	**No**	
Waste Design Capacity		*megagrams*

MODEL PARAMETERS

Methane Generation Rate, k	**0.050**	$year^{-1}$
Potential Methane Generation Capacity, L_o	**170**	m^3/Mg
NMOC Concentration	**174**	*ppmv as hexane*
Methane Content	**50**	*% by volume*

GASES / POLLUTANTS SELECTED

Gas / Pollutant #1: **Total landfill gas**
Gas / Pollutant #2: **Methane**
Gas / Pollutant #3: **Carbon dioxide**
Gas / Pollutant #4: **NMOC**

Description/Comments:

WASTE ACCEPTANCE RATES

Year	*(Mg/year)*	*(short tons/year)*
1972	32,700	35,970
1973	32,700	35,970
1974	32,700	35,970
1975	32,700	35,970
1976	32,700	35,970
1977	32,700	35,970
1978	32,700	35,970
1979	32,700	35,970
1980	32,700	35,970
1981	32,700	35,970
1982	32,700	35,970
1983	32,700	35,970
1984	32,700	35,970
1985	32,700	35,970
1986	32,700	35,970
1987	32,700	35,970
1988	32,700	35,970
1989	32,600	35,860
1990	32,600	35,860
1991	32,600	35,860
1992	32,600	35,860
1993	32,600	35,860
1994	32,600	35,860
1995	32,600	35,860
1996	32,600	35,860
1997	32,600	35,860
1998	32,600	35,860
1999	32,600	35,860
2000	32,600	35,860
2001	32,600	35,860
2002	32,600	35,860
2003	32,600	35,860
2004	32,600	35,860
2005	32,600	35,860
2006	33,000	36,300
2007	33,000	36,300
2008	33,000	36,300
2009	30,000	33,000
2010	30,000	33,000
2011	30,000	33,000
2012	30,000	33,000
2013	31,326	34,459
2014	31,326	34,459

WASTE ACCEPTANCE RATES

Year	*(Mg/year)*	*(short tons/year)*
2015	31,326	34,459
2016	22,453	24,698
2017	39,103	43,014
2018	38,457	42,303
2019	33,989	37,388
2020	48,879	53,767
2021	48,879	53,767
2022	48,879	53,767
2023	48,879	53,767
2024	48,879	53,767
2025	48,879	53,767
2026	48,879	53,767
2027	48,879	53,767
2028	48,879	53,767
2029	48,879	53,767
2030	48,879	53,767
2031	48,879	53,767
2032	48,879	53,767
2033	48,879	53,767
2034	48,879	53,767
2035	48,879	53,767
2036	48,879	53,767
2037	48,879	53,767
2038	48,879	53,767
2039	48,879	53,767
2040	48,879	53,767
2041	48,879	53,767
2042	48,879	53,767
2043	48,879	53,767
2044	48,879	53,767
2045	48,879	53,767
2046	48,879	53,767
2047	48,879	53,767
2048	48,879	53,767
2049	48,879	53,767
2050	48,879	53,767
2051	48,879	53,767

INVENTORY

Landfill Name or Identifier: Clay County Landfill

Enter year of emissions inventory: 2020

Gas / Pollutant	Emission Rate				
	(Mg/year)	*(m^3/year)*	*(av ft^3/min)*	*(ft^3/year)*	*(short tons/year)*
Total landfill gas	1.252E+04	1.002E+07	6.735E+02	3.540E+08	1.377E+04
Methane	3.344E+03	5.012E+06	3.368E+02	1.770E+08	3.678E+03
Carbon dioxide	9.175E+03	5.012E+06	3.368E+02	1.770E+08	1.009E+04
NMOC	6.252E+00	1.744E+03	1.172E-01	6.160E+04	6.877E+00
1,1,1-Trichloroethane (methyl chloroform) - HAP	2.670E-02	4.812E+00	3.233E-04	1.699E+02	2.937E-02
1,1,2,2-Tetrachloroethane - HAP/VOC	7.698E-02	1.103E+01	7.409E-04	3.894E+02	8.468E-02
1,1-Dichloroethane (ethylidene dichloride) - HAP/VOC	9.904E-02	2.406E+01	1.616E-03	8.496E+02	1.089E-01
1,1-Dichloroethene (vinylidene chloride) - HAP/VOC	8.084E-03	2.005E+00	1.347E-04	7.080E+01	8.892E-03
1,2-Dichloroethane (ethylene dichloride) - HAP/VOC	1.692E-02	4.110E+00	2.762E-04	1.451E+02	1.861E-02
1,2-Dichloropropane (propylene dichloride) - HAP/VOC	8.480E-03	1.804E+00	1.212E-04	6.372E+01	9.328E-03
2-Propanol (isopropyl alcohol) - VOC	1.253E+00	5.012E+02	3.368E-02	1.770E+04	1.378E+00
Acetone	1.695E-01	7.017E+01	4.715E-03	2.478E+03	1.865E-01
Acrylonitrile - HAP/VOC	1.394E-01	6.315E+01	4.243E-03	2.230E+03	1.533E-01
Benzene - No or Unknown Co-disposal - HAP/VOC	6.188E-02	1.905E+01	1.280E-03	6.726E+02	6.807E-02
Benzene - Co-disposal - HAP/VOC	3.582E-01	1.103E+02	7.409E-03	3.894E+03	3.941E-01
Bromodichloromethane - VOC	2.118E-01	3.108E+01	2.088E-03	1.097E+03	2.329E-01
Butane - VOC	1.212E-01	5.012E+01	3.368E-03	1.770E+03	1.333E-01
Carbon disulfide - HAP/VOC	1.841E-02	5.814E+00	3.907E-04	2.053E+02	2.025E-02
Carbon monoxide	1.635E+00	1.403E+03	9.430E-02	4.956E+04	1.799E+00
Carbon tetrachloride - HAP/VOC	2.566E-04	4.010E-02	2.694E-06	1.416E+00	2.822E-04
Carbonyl sulfide - HAP/VOC	1.227E-02	4.912E+00	3.300E-04	1.735E+02	1.350E-02
Chlorobenzene - HAP/VOC	1.173E-02	2.506E+00	1.684E-04	8.850E+01	1.291E-02
Chlorodifluoromethane	4.687E-02	1.303E+01	8.756E-04	4.602E+02	5.156E-02
Chloroethane (ethyl chloride) - HAP/VOC	3.497E-02	1.303E+01	8.756E-04	4.602E+02	3.847E-02
Chloroform - HAP/VOC	1.493E-03	3.007E-01	2.021E-05	1.062E+01	1.643E-03
Chloromethane - VOC	2.526E-02	1.203E+01	8.082E-04	4.248E+02	2.779E-02
Dichlorobenzene - (HAP for para isomer/VOC)	1.287E-02	2.105E+00	1.414E-04	7.434E+01	1.416E-02
Dichlorodifluoromethane	8.066E-01	1.604E+02	1.078E-02	5.664E+03	8.873E-01
Dichlorofluoromethane - VOC	1.116E-01	2.606E+01	1.751E-03	9.204E+02	1.227E-01
Dichloromethane (methylene chloride) - HAP	4.958E-01	1.403E+02	9.430E-03	4.956E+03	5.454E-01
Dimethyl sulfide (methyl sulfide) - VOC	2.021E-01	7.819E+01	5.254E-03	2.761E+03	2.223E-01
Ethane	1.116E+01	8.922E+03	5.994E-01	3.151E+05	1.227E+01
Ethanol - VOC	5.187E-01	2.707E+02	1.819E-02	9.558E+03	5.706E-01
Ethyl mercaptan (ethanethiol) - VOC	5.958E-02	2.306E+01	1.549E-03	8.142E+02	6.554E-02
Ethylbenzene - HAP/VOC	2.036E-01	4.611E+01	3.098E-03	1.628E+03	2.240E-01
Ethylene dibromide - HAP/VOC	7.834E-05	1.002E-02	6.735E-07	3.540E-01	8.617E-05
Fluorotrichloromethane - VOC	4.353E-02	7.619E+00	5.119E-04	2.690E+02	4.789E-02
Hexane - HAP/VOC	2.372E-01	6.616E+01	4.445E-03	2.336E+03	2.609E-01
Hydrogen sulfide	5.115E-01	3.609E+02	2.425E-02	1.274E+04	5.627E-01
Mercury (total) - HAP	2.426E-05	2.907E-03	1.953E-07	1.027E-01	2.668E-05
Methyl ethyl ketone - HAP/VOC	2.135E-01	7.117E+01	4.782E-03	2.513E+03	2.348E-01
Methyl isobutyl ketone - HAP/VOC	7.935E-02	1.905E+01	1.280E-03	6.726E+02	8.728E-02
Methyl mercaptan - VOC	5.015E-02	2.506E+01	1.684E-03	8.850E+02	5.516E-02
Pentane - VOC	9.927E-02	3.308E+01	2.223E-03	1.168E+03	1.092E-01
Perchloroethylene (tetrachloroethylene) - HAP	2.558E-01	3.709E+01	2.492E-03	1.310E+03	2.814E-01
Propane - VOC	2.022E-01	1.103E+02	7.409E-03	3.894E+03	2.224E-01
t-1,2-Dichloroethene - VOC	1.132E-01	2.807E+01	1.886E-03	9.912E+02	1.245E-01
Toluene - No or Unknown Co-disposal - HAP/VOC	1.498E+00	3.910E+02	2.627E-02	1.381E+04	1.648E+00
Toluene - Co-disposal - HAP/VOC	6.530E+00	1.704E+03	1.145E-01	6.018E+04	7.183E+00
Trichloroethylene (trichloroethene) - HAP/VOC	1.534E-01	2.807E+01	1.886E-03	9.912E+02	1.687E-01
Vinyl chloride - HAP/VOC	1.902E-01	7.318E+01	4.917E-03	2.584E+03	2.093E-01
Xylenes - HAP/VOC	5.312E-01	1.203E+02	8.082E-03	4.248E+03	5.843E-01

INVENTORY

Landfill Name or Identifier: Clay County Landfill

Enter year of emissions inventory: 2021

Gas / Pollutant	Emission Rate				
	(Mg/year)	*(m^3/year)*	*(av ft^3/min)*	*(ft^3/year)*	*(short tons/year)*
Total landfill gas	1.292E+04	1.035E+07	6.953E+02	3.654E+08	1.422E+04
Methane	3.452E+03	5.174E+06	3.476E+02	1.827E+08	3.797E+03
Carbon dioxide	9.471E+03	5.174E+06	3.476E+02	1.827E+08	1.042E+04
NMOC	6.454E+00	1.801E+03	1.210E-01	6.359E+04	7.099E+00
1,1,1-Trichloroethane (methyl chloroform) - HAP	2.756E-02	4.967E+00	3.337E-04	1.754E+02	3.032E-02
1,1,2,2-Tetrachloroethane - HAP/VOC	7.947E-02	1.138E+01	7.648E-04	4.020E+02	8.741E-02
1,1-Dichloroethane (ethylidene dichloride) - HAP/VOC	1.022E-01	2.484E+01	1.669E-03	8.771E+02	1.125E-01
1,1-Dichloroethene (vinylidene chloride) - HAP/VOC	8.345E-03	2.070E+00	1.391E-04	7.309E+01	9.179E-03
1,2-Dichloroethane (ethylene dichloride) - HAP/VOC	1.746E-02	4.243E+00	2.851E-04	1.498E+02	1.921E-02
1,2-Dichloropropane (propylene dichloride) - HAP/VOC	8.754E-03	1.863E+00	1.252E-04	6.578E+01	9.629E-03
2-Propanol (isopropyl alcohol) - VOC	1.294E+00	5.174E+02	3.476E-02	1.827E+04	1.423E+00
Acetone	1.750E-01	7.244E+01	4.867E-03	2.558E+03	1.925E-01
Acrylonitrile - HAP/VOC	1.439E-01	6.519E+01	4.380E-03	2.302E+03	1.583E-01
Benzene - No or Unknown Co-disposal - HAP/VOC	6.388E-02	1.966E+01	1.321E-03	6.943E+02	7.026E-02
Benzene - Co-disposal - HAP/VOC	3.698E-01	1.138E+02	7.648E-03	4.020E+03	4.068E-01
Bromodichloromethane - VOC	2.186E-01	3.208E+01	2.155E-03	1.133E+03	2.404E-01
Butane - VOC	1.251E-01	5.174E+01	3.476E-03	1.827E+03	1.376E-01
Carbon disulfide - HAP/VOC	1.900E-02	6.002E+00	4.033E-04	2.120E+02	2.091E-02
Carbon monoxide	1.688E+00	1.449E+03	9.734E-02	5.116E+04	1.857E+00
Carbon tetrachloride - HAP/VOC	2.649E-04	4.139E-02	2.781E-06	1.462E+00	2.913E-04
Carbonyl sulfide - HAP/VOC	1.267E-02	5.071E+00	3.407E-04	1.791E+02	1.394E-02
Chlorobenzene - HAP/VOC	1.211E-02	2.587E+00	1.738E-04	9.136E+01	1.332E-02
Chlorodifluoromethane	4.838E-02	1.345E+01	9.039E-04	4.751E+02	5.322E-02
Chloroethane (ethyl chloride) - HAP/VOC	3.610E-02	1.345E+01	9.039E-04	4.751E+02	3.971E-02
Chloroform - HAP/VOC	1.542E-03	3.104E-01	2.086E-05	1.096E+01	1.696E-03
Chloromethane - VOC	2.608E-02	1.242E+01	8.343E-04	4.385E+02	2.869E-02
Dichlorobenzene - (HAP for para isomer/VOC)	1.329E-02	2.173E+00	1.460E-04	7.674E+01	1.462E-02
Dichlorodifluoromethane	8.326E-01	1.656E+02	1.112E-02	5.847E+03	9.159E-01
Dichlorofluoromethane - VOC	1.152E-01	2.690E+01	1.808E-03	9.501E+02	1.267E-01
Dichloromethane (methylene chloride) - HAP	5.118E-01	1.449E+02	9.734E-03	5.116E+03	5.630E-01
Dimethyl sulfide (methyl sulfide) - VOC	2.086E-01	8.071E+01	5.423E-03	2.850E+03	2.294E-01
Ethane	1.152E+01	9.210E+03	6.188E-01	3.252E+05	1.267E+01
Ethanol - VOC	5.355E-01	2.794E+02	1.877E-02	9.867E+03	5.890E-01
Ethyl mercaptan (ethanethiol) - VOC	6.150E-02	2.380E+01	1.599E-03	8.405E+02	6.765E-02
Ethylbenzene - HAP/VOC	2.102E-01	4.760E+01	3.198E-03	1.681E+03	2.312E-01
Ethylene dibromide - HAP/VOC	8.086E-05	1.035E-02	6.953E-07	3.654E-01	8.895E-05
Fluorotrichloromethane - VOC	4.494E-02	7.865E+00	5.284E-04	2.777E+02	4.943E-02
Hexane - HAP/VOC	2.448E-01	6.830E+01	4.589E-03	2.412E+03	2.693E-01
Hydrogen sulfide	5.281E-01	3.725E+02	2.503E-02	1.316E+04	5.809E-01
Mercury (total) - HAP	2.504E-05	3.001E-03	2.016E-07	1.060E-01	2.754E-05
Methyl ethyl ketone - HAP/VOC	2.204E-01	7.347E+01	4.937E-03	2.595E+03	2.424E-01
Methyl isobutyl ketone - HAP/VOC	8.191E-02	1.966E+01	1.321E-03	6.943E+02	9.010E-02
Methyl mercaptan - VOC	5.177E-02	2.587E+01	1.738E-03	9.136E+02	5.694E-02
Pentane - VOC	1.025E-01	3.415E+01	2.294E-03	1.206E+03	1.127E-01
Perchloroethylene (tetrachloroethylene) - HAP	2.641E-01	3.829E+01	2.573E-03	1.352E+03	2.905E-01
Propane - VOC	2.087E-01	1.138E+02	7.648E-03	4.020E+03	2.296E-01
t-1,2-Dichloroethene - VOC	1.168E-01	2.897E+01	1.947E-03	1.023E+03	1.285E-01
Toluene - No or Unknown Co-disposal - HAP/VOC	1.546E+00	4.036E+02	2.712E-02	1.425E+04	1.701E+00
Toluene - Co-disposal - HAP/VOC	6.741E+00	1.759E+03	1.182E-01	6.213E+04	7.415E+00
Trichloroethylene (trichloroethene) - HAP/VOC	1.584E-01	2.897E+01	1.947E-03	1.023E+03	1.742E-01
Vinyl chloride - HAP/VOC	1.964E-01	7.554E+01	5.076E-03	2.668E+03	2.160E-01
Xylenes - HAP/VOC	5.483E-01	1.242E+02	8.343E-03	4.385E+03	6.031E-01

INVENTORY

Landfill Name or Identifier: Clay County Landfill

Enter year of emissions inventory: 2022

Gas / Pollutant	Emission Rate				
	(Mg/year)	*(m^3/year)*	*(av ft^3/min)*	*(ft^3/year)*	*(short tons/year)*
Total landfill gas	1.331E+04	1.066E+07	7.160E+02	3.763E+08	1.464E+04
Methane	3.555E+03	5.328E+06	3.580E+02	1.882E+08	3.910E+03
Carbon dioxide	9.753E+03	5.328E+06	3.580E+02	1.882E+08	1.073E+04
NMOC	6.646E+00	1.854E+03	1.246E-01	6.548E+04	7.311E+00
1,1,1-Trichloroethane (methyl chloroform) - HAP	2.838E-02	5.115E+00	3.437E-04	1.806E+02	3.122E-02
1,1,2,2-Tetrachloroethane - HAP/VOC	8.183E-02	1.172E+01	7.876E-04	4.139E+02	9.002E-02
1,1-Dichloroethane (ethylidene dichloride) - HAP/VOC	1.053E-01	2.557E+01	1.718E-03	9.032E+02	1.158E-01
1,1-Dichloroethene (vinylidene chloride) - HAP/VOC	8.593E-03	2.131E+00	1.432E-04	7.526E+01	9.452E-03
1,2-Dichloroethane (ethylene dichloride) - HAP/VOC	1.798E-02	4.369E+00	2.935E-04	1.543E+02	1.978E-02
1,2-Dichloropropane (propylene dichloride) - HAP/VOC	9.014E-03	1.918E+00	1.289E-04	6.774E+01	9.915E-03
2-Propanol (isopropyl alcohol) - VOC	1.332E+00	5.328E+02	3.580E-02	1.882E+04	1.465E+00
Acetone	1.802E-01	7.459E+01	5.012E-03	2.634E+03	1.982E-01
Acrylonitrile - HAP/VOC	1.482E-01	6.713E+01	4.511E-03	2.371E+03	1.630E-01
Benzene - No or Unknown Co-disposal - HAP/VOC	6.578E-02	2.025E+01	1.360E-03	7.150E+02	7.235E-02
Benzene - Co-disposal - HAP/VOC	3.808E-01	1.172E+02	7.876E-03	4.139E+03	4.189E-01
Bromodichloromethane - VOC	2.251E-01	3.303E+01	2.220E-03	1.167E+03	2.476E-01
Butane - VOC	1.288E-01	5.328E+01	3.580E-03	1.882E+03	1.417E-01
Carbon disulfide - HAP/VOC	1.957E-02	6.180E+00	4.153E-04	2.183E+02	2.153E-02
Carbon monoxide	1.738E+00	1.492E+03	1.002E-01	5.268E+04	1.912E+00
Carbon tetrachloride - HAP/VOC	2.727E-04	4.262E-02	2.864E-06	1.505E+00	3.000E-04
Carbonyl sulfide - HAP/VOC	1.305E-02	5.221E+00	3.508E-04	1.844E+02	1.435E-02
Chlorobenzene - HAP/VOC	1.247E-02	2.664E+00	1.790E-04	9.408E+01	1.372E-02
Chlorodifluoromethane	4.982E-02	1.385E+01	9.308E-04	4.892E+02	5.480E-02
Chloroethane (ethyl chloride) - HAP/VOC	3.717E-02	1.385E+01	9.308E-04	4.892E+02	4.089E-02
Chloroform - HAP/VOC	1.587E-03	3.197E-01	2.148E-05	1.129E+01	1.746E-03
Chloromethane - VOC	2.685E-02	1.279E+01	8.592E-04	4.516E+02	2.954E-02
Dichlorobenzene - (HAP for para isomer/VOC)	1.368E-02	2.238E+00	1.504E-04	7.903E+01	1.505E-02
Dichlorodifluoromethane	8.574E-01	1.705E+02	1.146E-02	6.021E+03	9.432E-01
Dichlorofluoromethane - VOC	1.186E-01	2.771E+01	1.862E-03	9.784E+02	1.305E-01
Dichloromethane (methylene chloride) - HAP	5.270E-01	1.492E+02	1.002E-02	5.268E+03	5.798E-01
Dimethyl sulfide (methyl sulfide) - VOC	2.148E-01	8.312E+01	5.585E-03	2.935E+03	2.363E-01
Ethane	1.186E+01	9.484E+03	6.372E-01	3.349E+05	1.305E+01
Ethanol - VOC	5.514E-01	2.877E+02	1.933E-02	1.016E+04	6.066E-01
Ethyl mercaptan (ethanethiol) - VOC	6.333E-02	2.451E+01	1.647E-03	8.655E+02	6.967E-02
Ethylbenzene - HAP/VOC	2.164E-01	4.902E+01	3.293E-03	1.731E+03	2.381E-01
Ethylene dibromide - HAP/VOC	8.327E-05	1.066E-02	7.160E-07	3.763E-01	9.160E-05
Fluorotrichloromethane - VOC	4.627E-02	8.098E+00	5.441E-04	2.860E+02	5.090E-02
Hexane - HAP/VOC	2.521E-01	7.033E+01	4.725E-03	2.484E+03	2.773E-01
Hydrogen sulfide	5.438E-01	3.836E+02	2.577E-02	1.355E+04	5.981E-01
Mercury (total) - HAP	2.578E-05	3.090E-03	2.076E-07	1.091E-01	2.836E-05
Methyl ethyl ketone - HAP/VOC	2.269E-01	7.566E+01	5.083E-03	2.672E+03	2.496E-01
Methyl isobutyl ketone - HAP/VOC	8.434E-02	2.025E+01	1.360E-03	7.150E+02	9.278E-02
Methyl mercaptan - VOC	5.331E-02	2.664E+01	1.790E-03	9.408E+02	5.864E-02
Pentane - VOC	1.055E-01	3.516E+01	2.363E-03	1.242E+03	1.161E-01
Perchloroethylene (tetrachloroethylene) - HAP	2.719E-01	3.943E+01	2.649E-03	1.392E+03	2.991E-01
Propane - VOC	2.150E-01	1.172E+02	7.876E-03	4.139E+03	2.364E-01
t-1,2-Dichloroethene - VOC	1.203E-01	2.984E+01	2.005E-03	1.054E+03	1.323E-01
Toluene - No or Unknown Co-disposal - HAP/VOC	1.592E+00	4.156E+02	2.792E-02	1.468E+04	1.752E+00
Toluene - Co-disposal - HAP/VOC	6.942E+00	1.812E+03	1.217E-01	6.397E+04	7.636E+00
Trichloroethylene (trichloroethene) - HAP/VOC	1.631E-01	2.984E+01	2.005E-03	1.054E+03	1.794E-01
Vinyl chloride - HAP/VOC	2.022E-01	7.779E+01	5.227E-03	2.747E+03	2.224E-01
Xylenes - HAP/VOC	5.646E-01	1.279E+02	8.592E-03	4.516E+03	6.211E-01

INVENTORY

Landfill Name or Identifier: Clay County Landfill

Enter year of emissions inventory: 2023

Gas / Pollutant	Emission Rate				
	(Mg/year)	*(m^3/year)*	*(av ft^3/min)*	*(ft^3/year)*	*(short tons/year)*
Total landfill gas	1.367E+04	1.095E+07	7.356E+02	3.867E+08	1.504E+04
Methane	3.652E+03	5.474E+06	3.678E+02	1.933E+08	4.017E+03
Carbon dioxide	1.002E+04	5.474E+06	3.678E+02	1.933E+08	1.102E+04
NMOC	6.829E+00	1.905E+03	1.280E-01	6.728E+04	7.512E+00
1,1,1-Trichloroethane (methyl chloroform) - HAP	2.916E-02	5.255E+00	3.531E-04	1.856E+02	3.208E-02
1,1,2,2-Tetrachloroethane - HAP/VOC	8.408E-02	1.204E+01	8.092E-04	4.253E+02	9.249E-02
1,1-Dichloroethane (ethylidene dichloride) - HAP/VOC	1.082E-01	2.628E+01	1.766E-03	9.280E+02	1.190E-01
1,1-Dichloroethene (vinylidene chloride) - HAP/VOC	8.829E-03	2.190E+00	1.471E-04	7.733E+01	9.712E-03
1,2-Dichloroethane (ethylene dichloride) - HAP/VOC	1.848E-02	4.489E+00	3.016E-04	1.585E+02	2.032E-02
1,2-Dichloropropane (propylene dichloride) - HAP/VOC	9.262E-03	1.971E+00	1.324E-04	6.960E+01	1.019E-02
2-Propanol (isopropyl alcohol) - VOC	1.369E+00	5.474E+02	3.678E-02	1.933E+04	1.506E+00
Acetone	1.851E-01	7.664E+01	5.150E-03	2.707E+03	2.037E-01
Acrylonitrile - HAP/VOC	1.522E-01	6.898E+01	4.635E-03	2.436E+03	1.674E-01
Benzene - No or Unknown Co-disposal - HAP/VOC	6.758E-02	2.080E+01	1.398E-03	7.346E+02	7.434E-02
Benzene - Co-disposal - HAP/VOC	3.913E-01	1.204E+02	8.092E-03	4.253E+03	4.304E-01
Bromodichloromethane - VOC	2.313E-01	3.394E+01	2.281E-03	1.199E+03	2.544E-01
Butane - VOC	1.323E-01	5.474E+01	3.678E-03	1.933E+03	1.456E-01
Carbon disulfide - HAP/VOC	2.011E-02	6.350E+00	4.267E-04	2.243E+02	2.212E-02
Carbon monoxide	1.786E+00	1.533E+03	1.030E-01	5.413E+04	1.964E+00
Carbon tetrachloride - HAP/VOC	2.802E-04	4.380E-02	2.943E-06	1.547E+00	3.083E-04
Carbonyl sulfide - HAP/VOC	1.340E-02	5.365E+00	3.605E-04	1.895E+02	1.474E-02
Chlorobenzene - HAP/VOC	1.281E-02	2.737E+00	1.839E-04	9.666E+01	1.410E-02
Chlorodifluoromethane	5.119E-02	1.423E+01	9.563E-04	5.027E+02	5.631E-02
Chloroethane (ethyl chloride) - HAP/VOC	3.820E-02	1.423E+01	9.563E-04	5.027E+02	4.202E-02
Chloroform - HAP/VOC	1.631E-03	3.285E-01	2.207E-05	1.160E+01	1.794E-03
Chloromethane - VOC	2.759E-02	1.314E+01	8.828E-04	4.640E+02	3.035E-02
Dichlorobenzene - (HAP for para isomer/VOC)	1.406E-02	2.299E+00	1.545E-04	8.120E+01	1.546E-02
Dichlorodifluoromethane	8.810E-01	1.752E+02	1.177E-02	6.186E+03	9.691E-01
Dichlorofluoromethane - VOC	1.219E-01	2.847E+01	1.913E-03	1.005E+03	1.340E-01
Dichloromethane (methylene chloride) - HAP	5.415E-01	1.533E+02	1.030E-02	5.413E+03	5.957E-01
Dimethyl sulfide (methyl sulfide) - VOC	2.207E-01	8.540E+01	5.738E-03	3.016E+03	2.428E-01
Ethane	1.219E+01	9.744E+03	6.547E-01	3.441E+05	1.341E+01
Ethanol - VOC	5.666E-01	2.956E+02	1.986E-02	1.044E+04	6.232E-01
Ethyl mercaptan (ethanethiol) - VOC	6.507E-02	2.518E+01	1.692E-03	8.893E+02	7.158E-02
Ethylbenzene - HAP/VOC	2.224E-01	5.036E+01	3.384E-03	1.779E+03	2.446E-01
Ethylene dibromide - HAP/VOC	8.556E-05	1.095E-02	7.356E-07	3.867E-01	9.411E-05
Fluorotrichloromethane - VOC	4.755E-02	8.321E+00	5.591E-04	2.939E+02	5.230E-02
Hexane - HAP/VOC	2.590E-01	7.226E+01	4.855E-03	2.552E+03	2.849E-01
Hydrogen sulfide	5.587E-01	3.942E+02	2.648E-02	1.392E+04	6.146E-01
Mercury (total) - HAP	2.649E-05	3.175E-03	2.133E-07	1.121E-01	2.914E-05
Methyl ethyl ketone - HAP/VOC	2.332E-01	7.774E+01	5.223E-03	2.745E+03	2.565E-01
Methyl isobutyl ketone - HAP/VOC	8.666E-02	2.080E+01	1.398E-03	7.346E+02	9.533E-02
Methyl mercaptan - VOC	5.477E-02	2.737E+01	1.839E-03	9.666E+02	6.025E-02
Pentane - VOC	1.084E-01	3.613E+01	2.428E-03	1.276E+03	1.193E-01
Perchloroethylene (tetrachloroethylene) - HAP	2.794E-01	4.051E+01	2.722E-03	1.431E+03	3.074E-01
Propane - VOC	2.209E-01	1.204E+02	8.092E-03	4.253E+03	2.429E-01
t-1,2-Dichloroethene - VOC	1.236E-01	3.066E+01	2.060E-03	1.083E+03	1.360E-01
Toluene - No or Unknown Co-disposal - HAP/VOC	1.636E+00	4.270E+02	2.869E-02	1.508E+04	1.800E+00
Toluene - Co-disposal - HAP/VOC	7.132E+00	1.861E+03	1.251E-01	6.573E+04	7.846E+00
Trichloroethylene (trichloroethene) - HAP/VOC	1.675E-01	3.066E+01	2.060E-03	1.083E+03	1.843E-01
Vinyl chloride - HAP/VOC	2.078E-01	7.993E+01	5.370E-03	2.823E+03	2.285E-01
Xylenes - HAP/VOC	5.801E-01	1.314E+02	8.828E-03	4.640E+03	6.381E-01

INVENTORY

Landfill Name or Identifier: Clay County Landfill

Enter year of emissions inventory: 2024

Gas / Pollutant	Emission Rate				
	(Mg/year)	*(m^3/year)*	*(av ft^3/min)*	*(ft^3/year)*	*(short tons/year)*
Total landfill gas	1.402E+04	1.123E+07	7.544E+02	3.965E+08	1.542E+04
Methane	3.745E+03	5.614E+06	3.772E+02	1.982E+08	4.120E+03
Carbon dioxide	1.028E+04	5.614E+06	3.772E+02	1.982E+08	1.130E+04
NMOC	7.002E+00	1.954E+03	1.313E-01	6.899E+04	7.703E+00
1,1,1-Trichloroethane (methyl chloroform) - HAP	2.990E-02	5.389E+00	3.621E-04	1.903E+02	3.289E-02
1,1,2,2-Tetrachloroethane - HAP/VOC	8.622E-02	1.235E+01	8.298E-04	4.361E+02	9.484E-02
1,1-Dichloroethane (ethylidene dichloride) - HAP/VOC	1.109E-01	2.695E+01	1.810E-03	9.516E+02	1.220E-01
1,1-Dichloroethene (vinylidene chloride) - HAP/VOC	9.054E-03	2.245E+00	1.509E-04	7.930E+01	9.959E-03
1,2-Dichloroethane (ethylene dichloride) - HAP/VOC	1.895E-02	4.603E+00	3.093E-04	1.626E+02	2.084E-02
1,2-Dichloropropane (propylene dichloride) - HAP/VOC	9.497E-03	2.021E+00	1.358E-04	7.137E+01	1.045E-02
2-Propanol (isopropyl alcohol) - VOC	1.403E+00	5.614E+02	3.772E-02	1.982E+04	1.544E+00
Acetone	1.899E-01	7.859E+01	5.281E-03	2.775E+03	2.088E-01
Acrylonitrile - HAP/VOC	1.561E-01	7.073E+01	4.752E-03	2.498E+03	1.717E-01
Benzene - No or Unknown Co-disposal - HAP/VOC	6.930E-02	2.133E+01	1.433E-03	7.533E+02	7.623E-02
Benzene - Co-disposal - HAP/VOC	4.012E-01	1.235E+02	8.298E-03	4.361E+03	4.414E-01
Bromodichloromethane - VOC	2.372E-01	3.480E+01	2.339E-03	1.229E+03	2.609E-01
Butane - VOC	1.357E-01	5.614E+01	3.772E-03	1.982E+03	1.493E-01
Carbon disulfide - HAP/VOC	2.062E-02	6.512E+00	4.375E-04	2.300E+02	2.268E-02
Carbon monoxide	1.831E+00	1.572E+03	1.056E-01	5.551E+04	2.014E+00
Carbon tetrachloride - HAP/VOC	2.874E-04	4.491E-02	3.017E-06	1.586E+00	3.161E-04
Carbonyl sulfide - HAP/VOC	1.375E-02	5.501E+00	3.696E-04	1.943E+02	1.512E-02
Chlorobenzene - HAP/VOC	1.314E-02	2.807E+00	1.886E-04	9.912E+01	1.445E-02
Chlorodifluoromethane	5.249E-02	1.460E+01	9.807E-04	5.154E+02	5.774E-02
Chloroethane (ethyl chloride) - HAP/VOC	3.917E-02	1.460E+01	9.807E-04	5.154E+02	4.308E-02
Chloroform - HAP/VOC	1.673E-03	3.368E-01	2.263E-05	1.189E+01	1.840E-03
Chloromethane - VOC	2.829E-02	1.347E+01	9.052E-04	4.758E+02	3.112E-02
Dichlorobenzene - (HAP for para isomer/VOC)	1.442E-02	2.358E+00	1.584E-04	8.326E+01	1.586E-02
Dichlorodifluoromethane	9.034E-01	1.796E+02	1.207E-02	6.344E+03	9.937E-01
Dichlorofluoromethane - VOC	1.250E-01	2.919E+01	1.961E-03	1.031E+03	1.375E-01
Dichloromethane (methylene chloride) - HAP	5.553E-01	1.572E+02	1.056E-02	5.551E+03	6.108E-01
Dimethyl sulfide (methyl sulfide) - VOC	2.263E-01	8.757E+01	5.884E-03	3.093E+03	2.489E-01
Ethane	1.250E+01	9.992E+03	6.714E-01	3.529E+05	1.375E+01
Ethanol - VOC	5.810E-01	3.031E+02	2.037E-02	1.071E+04	6.391E-01
Ethyl mercaptan (ethanethiol) - VOC	6.673E-02	2.582E+01	1.735E-03	9.119E+02	7.340E-02
Ethylbenzene - HAP/VOC	2.280E-01	5.165E+01	3.470E-03	1.824E+03	2.508E-01
Ethylene dibromide - HAP/VOC	8.774E-05	1.123E-02	7.544E-07	3.965E-01	9.651E-05
Fluorotrichloromethane - VOC	4.876E-02	8.533E+00	5.733E-04	3.013E+02	5.363E-02
Hexane - HAP/VOC	2.656E-01	7.410E+01	4.979E-03	2.617E+03	2.922E-01
Hydrogen sulfide	5.729E-01	4.042E+02	2.716E-02	1.427E+04	6.302E-01
Mercury (total) - HAP	2.717E-05	3.256E-03	2.188E-07	1.150E-01	2.988E-05
Methyl ethyl ketone - HAP/VOC	2.391E-01	7.971E+01	5.356E-03	2.815E+03	2.630E-01
Methyl isobutyl ketone - HAP/VOC	8.887E-02	2.133E+01	1.433E-03	7.533E+02	9.775E-02
Methyl mercaptan - VOC	5.617E-02	2.807E+01	1.886E-03	9.912E+02	6.178E-02
Pentane - VOC	1.112E-01	3.705E+01	2.489E-03	1.308E+03	1.223E-01
Perchloroethylene (tetrachloroethylene) - HAP	2.865E-01	4.154E+01	2.791E-03	1.467E+03	3.152E-01
Propane - VOC	2.265E-01	1.235E+02	8.298E-03	4.361E+03	2.491E-01
t-1,2-Dichloroethene - VOC	1.268E-01	3.144E+01	2.112E-03	1.110E+03	1.394E-01
Toluene - No or Unknown Co-disposal - HAP/VOC	1.678E+00	4.379E+02	2.942E-02	1.546E+04	1.846E+00
Toluene - Co-disposal - HAP/VOC	7.314E+00	1.909E+03	1.282E-01	6.740E+04	8.045E+00
Trichloroethylene (trichloroethene) - HAP/VOC	1.718E-01	3.144E+01	2.112E-03	1.110E+03	1.890E-01
Vinyl chloride - HAP/VOC	2.131E-01	8.196E+01	5.507E-03	2.894E+03	2.344E-01
Xylenes - HAP/VOC	5.949E-01	1.347E+02	9.052E-03	4.758E+03	6.544E-01

INVENTORY

Landfill Name or Identifier: Clay County Landfill

Enter year of emissions inventory: 2025

Gas / Pollutant	Emission Rate				
	(Mg/year)	*(m^3/year)*	*(av ft^3/min)*	*(ft^3/year)*	*(short tons/year)*
Total landfill gas	1.435E+04	1.149E+07	7.722E+02	4.059E+08	1.579E+04
Methane	3.834E+03	5.746E+06	3.861E+02	2.029E+08	4.217E+03
Carbon dioxide	1.052E+04	5.746E+06	3.861E+02	2.029E+08	1.157E+04
NMOC	7.168E+00	2.000E+03	1.344E-01	7.062E+04	7.884E+00
1,1,1-Trichloroethane (methyl chloroform) - HAP	3.061E-02	5.516E+00	3.706E-04	1.948E+02	3.367E-02
1,1,2,2-Tetrachloroethane - HAP/VOC	8.825E-02	1.264E+01	8.494E-04	4.464E+02	9.708E-02
1,1-Dichloroethane (ethylidene dichloride) - HAP/VOC	1.135E-01	2.758E+01	1.853E-03	9.740E+02	1.249E-01
1,1-Dichloroethene (vinylidene chloride) - HAP/VOC	9.267E-03	2.298E+00	1.544E-04	8.117E+01	1.019E-02
1,2-Dichloroethane (ethylene dichloride) - HAP/VOC	1.939E-02	4.712E+00	3.166E-04	1.664E+02	2.133E-02
1,2-Dichloropropane (propylene dichloride) - HAP/VOC	9.722E-03	2.069E+00	1.390E-04	7.305E+01	1.069E-02
2-Propanol (isopropyl alcohol) - VOC	1.437E+00	5.746E+02	3.861E-02	2.029E+04	1.580E+00
Acetone	1.943E-01	8.045E+01	5.405E-03	2.841E+03	2.138E-01
Acrylonitrile - HAP/VOC	1.598E-01	7.240E+01	4.865E-03	2.557E+03	1.758E-01
Benzene - No or Unknown Co-disposal - HAP/VOC	7.094E-02	2.184E+01	1.467E-03	7.711E+02	7.803E-02
Benzene - Co-disposal - HAP/VOC	4.107E-01	1.264E+02	8.494E-03	4.464E+03	4.518E-01
Bromodichloromethane - VOC	2.428E-01	3.563E+01	2.394E-03	1.258E+03	2.670E-01
Butane - VOC	1.389E-01	5.746E+01	3.861E-03	2.029E+03	1.528E-01
Carbon disulfide - HAP/VOC	2.111E-02	6.666E+00	4.479E-04	2.354E+02	2.322E-02
Carbon monoxide	1.874E+00	1.609E+03	1.081E-01	5.682E+04	2.062E+00
Carbon tetrachloride - HAP/VOC	2.941E-04	4.597E-02	3.089E-06	1.623E+00	3.236E-04
Carbonyl sulfide - HAP/VOC	1.407E-02	5.631E+00	3.784E-04	1.989E+02	1.548E-02
Chlorobenzene - HAP/VOC	1.345E-02	2.873E+00	1.930E-04	1.015E+02	1.480E-02
Chlorodifluoromethane	5.373E-02	1.494E+01	1.004E-03	5.276E+02	5.911E-02
Chloroethane (ethyl chloride) - HAP/VOC	4.009E-02	1.494E+01	1.004E-03	5.276E+02	4.410E-02
Chloroform - HAP/VOC	1.712E-03	3.448E-01	2.316E-05	1.218E+01	1.883E-03
Chloromethane - VOC	2.896E-02	1.379E+01	9.266E-04	4.870E+02	3.186E-02
Dichlorobenzene - (HAP for para isomer/VOC)	1.476E-02	2.413E+00	1.622E-04	8.523E+01	1.623E-02
Dichlorodifluoromethane	9.247E-01	1.839E+02	1.235E-02	6.494E+03	1.017E+00
Dichlorofluoromethane - VOC	1.279E-01	2.988E+01	2.008E-03	1.055E+03	1.407E-01
Dichloromethane (methylene chloride) - HAP	5.684E-01	1.609E+02	1.081E-02	5.682E+03	6.253E-01
Dimethyl sulfide (methyl sulfide) - VOC	2.316E-01	8.964E+01	6.023E-03	3.166E+03	2.548E-01
Ethane	1.279E+01	1.023E+04	6.872E-01	3.612E+05	1.407E+01
Ethanol - VOC	5.947E-01	3.103E+02	2.085E-02	1.096E+04	6.542E-01
Ethyl mercaptan (ethanethiol) - VOC	6.831E-02	2.643E+01	1.776E-03	9.335E+02	7.514E-02
Ethylbenzene - HAP/VOC	2.334E-01	5.286E+01	3.552E-03	1.867E+03	2.568E-01
Ethylene dibromide - HAP/VOC	8.981E-05	1.149E-02	7.722E-07	4.059E-01	9.879E-05
Fluorotrichloromethane - VOC	4.991E-02	8.734E+00	5.868E-04	3.084E+02	5.490E-02
Hexane - HAP/VOC	2.719E-01	7.585E+01	5.096E-03	2.679E+03	2.991E-01
Hydrogen sulfide	5.864E-01	4.137E+02	2.780E-02	1.461E+04	6.451E-01
Mercury (total) - HAP	2.781E-05	3.333E-03	2.239E-07	1.177E-01	3.059E-05
Methyl ethyl ketone - HAP/VOC	2.447E-01	8.160E+01	5.482E-03	2.882E+03	2.692E-01
Methyl isobutyl ketone - HAP/VOC	9.096E-02	2.184E+01	1.467E-03	7.711E+02	1.001E-01
Methyl mercaptan - VOC	5.749E-02	2.873E+01	1.930E-03	1.015E+03	6.324E-02
Pentane - VOC	1.138E-01	3.792E+01	2.548E-03	1.339E+03	1.252E-01
Perchloroethylene (tetrachloroethylene) - HAP	2.933E-01	4.252E+01	2.857E-03	1.502E+03	3.226E-01
Propane - VOC	2.318E-01	1.264E+02	8.494E-03	4.464E+03	2.550E-01
t-1,2-Dichloroethene - VOC	1.297E-01	3.218E+01	2.162E-03	1.136E+03	1.427E-01
Toluene - No or Unknown Co-disposal - HAP/VOC	1.717E+00	4.482E+02	3.011E-02	1.583E+04	1.889E+00
Toluene - Co-disposal - HAP/VOC	7.486E+00	1.954E+03	1.313E-01	6.899E+04	8.235E+00
Trichloroethylene (trichloroethene) - HAP/VOC	1.759E-01	3.218E+01	2.162E-03	1.136E+03	1.935E-01
Vinyl chloride - HAP/VOC	2.181E-01	8.389E+01	5.637E-03	2.963E+03	2.399E-01
Xylenes - HAP/VOC	6.089E-01	1.379E+02	9.266E-03	4.870E+03	6.698E-01


WENCK
now part of
Stantec

Appendix H

2020 Re-TRAC Connect Survey

ANNUAL REPORT SUBMITTAL FORM

ANNUAL | 2020

Clay County Sanitary Landfill

Facility Name: *

Clay County Landfill

Permit Number: *

SW-34 *Refer to the Facility Information survey.*

Facility Address: *

3301 190th Street South

City: *

Hawley

State: *

Minnesota

Zip Code: *

56549

Owner Contact Information (Please update contact information if there are changes needed)

Name: *	Title: *	Organization: *
Kirk Rosenberger	Solid Waste Director	Clay County

Address: *	City: *	State: *
807 11th Street North	Moorhead	Minnesota

Email: *	Phone: *
Kirk.Rosenberger@co.clay.mn.us	218-299-7332

Is the contact information for the Operator and Land Owner the same as above? *

- (●) Yes
- ( ) No

Does your report contain proprietary data? *

○ Yes

◉ No

In order to create a single document containing all Re-TRAC forms, make sure to save this form and mark complete, then click the below link called "PDF Surveys" to generate a pdf file containing all completed Re-TRAC forms. If you have any additional supporting information needed for your annual report, you will have to combine the Re-TRAC forms with the additional pdfs. Please refer to your permit or to the General Information form for additional information.

PDF Surveys

Merging PDFs: Put the separate pdfs in a central location on your computer so that you are ready to combine the documents once you have clicked the link. If you have access to Adobe Pro then you can use the Combine tool, otherwise the below links will take you to free pdf merge service sites.

Links to PDF merge software:
https://smallpdf.com/merge-pdf
https://pdfsam.org/

Uploading Annual Report: Upload one File Copy PDF document. If necessary, upload a second redacted File Copy PDF document. Please use the following for the file name:
[Permit No] [Facility Name] 2020 Annual Report
Here are some examples:

- SW-45 Pine Bend Sanitary Landfill 2020 Annual Report.pdf
- PBR000345 Rock County Transfer 2020 Annual Report.pdf
- UT0120 SKB Utilization Project 2020 Annual Report.pdf

Click here to submit your public report

Check the following box and fill out your name, email address and phone number to certify under penalty of law that this document and all attachments were prepared under your direction or supervision under a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on your inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of your knowledge and belief, true, accurate, and complete. Further, check the box to certify that you are aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment. *

☑ I certify

Name * Kirk Rosenberger

Email: * Kirk.Rosenberger@co.clay.mn.us

Phone * 218-299-7332

Response created on: Jan 25, 2021 at 10:53 AM CST by Kirk.Rosenberger@co.clay.mn.us

Response last updated on: Jan 29, 2021 at 10:28 AM CST by Kirk.Rosenberger@co.clay.mn.us

GENERAL INFORMATION

ANNUAL | 2020

Clay County Sanitary Landfill

Is this facility a closed Landfill? *

- ○ Yes
- ◉ No

Waste Received

Please enter the incoming amount of material that you received and the management method of the material. Material that will be stored onsite and was not managed during the current year will also be reported. Waste Received does not include compost produced from a previous year (reported in the Composting Activity Form) and is a high-level view of the waste managed at the facility. If you have a variety of units (e.g. items and cubic yards), please use this conversion guide to convert to one unit per material category. If you extract material from the incoming, that will be reported on additional forms as the focus of this table is incoming material and initial management (i.e. report the MSW received even though that MSW is processed into RDF where metal is extracted and sent to end markets for recycling).

Acronyms

- MSW – Municipal Solid Waste
- C&D – Construction & Demolition
- SSOM – Source-Separated Organic Materials
- RDF – Refuse-Derived Fuel
- WTE – Waste-to-Energy

WASTE RECEIVED TYPE	UNIT OF MEASUREMENT	2020 LAND DISPOSED	2020 PROCESSED (SORTED/SHREDDED/RDF/WTE)	2020 TRANSFERRED	2020 COMPOSTED/CHIPPED/BURNED	2020 SEND TO END MARKET/OUT OF STATE	2020 STORED ON-SITE	Total Managed in 2020
MSW	Tons	41,852.75	0.00	8,490.63	0.00		0.00	50,343.38
MSW Combustor Ash	Tons	0.00	0.00	0.00			0.00	0.00
Industrial	Tons	3,237.88	0.00	0.00	0.00		0.00	3,237.88
C&D	Tons	2,962.64	0.00	217.00			0.00	3,179.64
SSOM	Tons			0.00	0.00		0.00	0.00
Yard Waste	Tons			0.00	0.00		0.00	0.00
Brush/Wood Waste	Cubic Yards			0.00	29.00		0.00	29.00
Commingled/single/dual stream Recyclables	Tons		0.00	0.00			0.00	0.00

Materials collected for Beneficial Use (i.e. concrete, wood, shingles, etc)	Tons		0.00	0.00		0.00	0.00	0.00
Source-separated Recyclables (i.e. individual materials such as cardboard, metal, glass, etc)	Tons			0.00		168.00	0.00	168.00

Counties Served - Waste

Please list all of the counties that you have received waste from and the amount of your total tonnage that comes from each county. Please enter amounts for each waste type (i.e. MSW, MSW Combustor Ash, C&D, Industrial,) separately and the total amount for each waste type should match the amount entered on Page 1 – Waste Received. Units should also be the same as what was entered previously. If the amount entered for a given waste type does not match the amount reported on Page 1, you will receive an error. Please review and correct the appropriate entry.

	COUNTY *	MSW AMOUNT	MSW COMBUSTOR ASH AMOUNT	C&D AMOUNT	INDUSTRIAL AMOUNT
1	Clay County	43,944.38	0.00	3,179.64	3,237.88
2	Becker County	1,656.00	0.00	0.00	0.00
3	Otter Tail County	2,936.00	0.00	0.00	0.00
4	Wadena County	753.00	0.00	0.00	0.00
5	Todd County	1,054.00	0.00	0.00	0.00

MSW Total: 50,343.38

MSW Combustor Ash Total: 0.00

C&D Total: 3,179.64

Industrial Total: 3,237.88

Counties Served - Recyclables

Please list all of the counties that you have received waste from and the amount of your total tonnage that comes from each county. Please enter amounts for each waste type (i.e. Commingled/Single/Dual Stream Recyclables, Materials collected for Beneficial Use, Source-separated Recyclables, SSOM, Yard Waste, Brush/Wood Waste) separately and the total amount for each waste type should match the amount entered on Page 1 – Waste Received. Units should also be the same as what was entered previously. If the amount entered for a given waste type does not match the amount reported on Page 1, you will receive an error. Please review and correct the appropriate entry.

	COUNTY *	COMMINGLED/SINGLE/DUAL STREAM RECYCLABLES	MATERIALS COLLECTED FOR BENEFICIAL USE (I.E. CONCRETE, WOOD, SHINGLES, ETC)	SOURCE-SEPARATED RECYCLABLES (I.E. INDIVIDUAL MATERIALS SUCH AS CARDBOARD, METAL, GLASS, ETC)	SSOM AMOUNT	YARD WASTE AMOUNT	BRUSH/WOOD WASTE AMOUNT
1	Clay County	0.00	0.00	168.00	0.00	0.00	29.00

Commingled/single/dual stream Recyclables Total: 0.00

Materials collected for Beneficial Use Total: 0.00

Source-Separated Recyclables Total: 168.00

SSOM Total: 0.00

Yard Waste Total: 0.00

Brush/Wood Waste Total: 29.00

Emergency/Correction Action and Plan Review

Emergency/Correction Action

Did your facility have any emergency or corrective actions during the reporting year?

- ○ Yes
- ◉ No

Plan Review

Closure

Did you review your plan? *

- (●) Yes
- ( ) No

Did you make changes to the plan? *

- ( ) Yes
- (●) No

Post-Closure

Did you review the plan? *

- (●) Yes
- ( ) No

Did you make changes to the plan? *

- ( ) Yes
- (●) No

Contingency Action

Did you review your plan? *

- (●) Yes
- ( ) No

Did you make changes to the plan? *

- ( ) Yes
- (●) No

Summary of Personnel Training Program

Training includes both classroom instruction and on-the-job training about procedures relevant to dealing with situations at the facility.

Please use the table below to indicate if on-the-job training was conducted on a particular topic in calendar year 2020.

For the “other” category, please specify if any employee completed a program of classroom instruction. This could include MPCA, County, City, EPA, RAM/SWANA, or other on-the-job training events.

For all training, please record the employee names in the facility operating record and maintain this information on-site, please see Minn. R. 7035.2545 for more detail. (https://www.revisor.mn.gov/rules/7035.2545/)

TRAINING TYPE *	DATE OF LAST TRAINING *	FREQUENCY OF TRAINING *
Other PLEASE SPECIFY Solid Waste Operations Issu	09/17/2020	Annually
Other PLEASE SPECIFY 2020 OSHA Safety & Health	05/21/2020	Annually
Other PLEASE SPECIFY DOT Initial HHW Training	05/21/2020	Annually
Other PLEASE SPECIFY Landfill Operator License	11/11/2020	Other PLEASE SPECIFY Once

Certified operators for Landfill

List all the facility's certified operators and their dates of certification by type. For additional clarification regarding the types of operator certification please see Minn. R. 7048.0300 (https://www.revisor.mn.gov/rules/7048.0300/)

NAME OF CERTIFIED OPERATOR *	CERTIFICATION TYPE *	DATE CERTIFIED *	CONTACT HOURS IN 2020 *	REMAINING CONTACT HOURS NEEDED *
Brett Rice	Type II	05/17/2019	0	18
Ross Olson	Type II	07/01/2020	0	18
Wayne Leitheiser	Type II	11/15/2019	6	12
Ryan Pederson	Type II	11/13/2020	6	12
Corey Bang	Type II	05/19/2020	0	18

Average Price at Gate

Please specify the unit rates (in $/ton or $/cubic yard) charged at the facility in each of the following categories. If you do not charge a tipping fee, please enter a zero and a unit of measure.

WASTE TYPE	AVERAGE TIP FEE *	AVERAGE TIP FEE UNIT *	AVERAGE BASIC TIP FEE	AVERAGE BASIC TIP FEE UNIT	COUNTY FEE (M.S. 115A.919)	COUNTY FEE UNIT	CITY OR TOWN FEE (M.S. 115A.921)	CITY FEE UNIT
Brush/ Wood Waste	23.00	$/cubic yard	23.00	$/cubic yard	0.00	$/cubic yard	0.00	$/cubic yard
C&D	15.00	$/cubic yard	14.40	$/cubic yard	0.00	$/cubic yard	0.60	$/cubic yard
Source Separated Organic Materials	0.00	$/ton	0.00	$/ton	0.00	$/ton	0.00	$/ton
Yard Waste (leaves and grass clippings)	0.00	$/ton	0.00	$/ton	0.00	$/ton	0.00	$/ton
MSW Ash	0.00	$/ton	0.00	$/ton	0.00	$/ton	0.00	$/ton
MSW	50.00	$/ton	49.40	$/ton	0.00	$/ton	0.60	$/ton
Industrial Waste	50.00	$/ton	49.40	$/ton	0.00	$/ton	0.60	$/ton

If you have other fees, please describe

ACSC ash and contaminated soils $15.00/ton

Supplemental Information and Certification

For landfills, the following are also required:

- An assesment of the adequacy of closure, post-closure, and contingency action plans (Minn. R. 7035.2585, subitem G)
- An updated existing conditions survey showing permitted boundaries, elevation due to facility operations or settlement. The remaining fill capacity (volume caluclations) must be calculated and shown on the plan
  - Survey must be signed by a land surveyor registered in Minnesota (Minn. R. 7035.2815, subp. 13(S))
- Evaluation of surface and groundwater monitoring data. (Minn. R. 7035.2585 (H) and 7035.2815, subp. 14 (Q))
- Evaluation of gas monitoring data, includin LandGEM modeling for landfills with passive landfill gas vents and/or not gas collection system (Minn. R. 7035.2815, subp. 13 (Q))
- Evaluation of leachate monitoring data and volume generated. (Minn. R. 7035.2815, subp 13(L) and 14(A))
- Required monitoring data submitted to EQuIS (Minn. R. 7035.2815, subp 14(P))

MONITORING TYPE	IS MONITORING TYPE REQUIRED BY PERMIT *	SPRING QUARTER SUBMITTED	SUMMER QUARTER SUBMITTED	FALL QUARTER SUBMITTED	WINTER QUARTER SUBMITTED
Groundwater monitoring data	Yes	05/11/2020		10/15/2020	
Surface water monitoring data	Yes	05/11/2020		10/15/2020	
Leachate monitoring data	Yes	02/10/2020	04/27/2020	08/18/2020	11/23/2020
Landfill gas monitoring	Yes	01/09/2020	04/28/2020	07/29/2020	12/28/2020

For compost facilities, the following is also required:

- A summary of all lab analyses conducted according to the sampling plan as required under Minn. R. 7035.2836, subp. 5,item J . Identify any trends in compost quality and indicate any problems or difficulties in sampling or analyzing the compost. Identify any changes in the operation of the facility which may have an affect on the quality of the compost produced.
- Summary of temperature and retention time for all compost produced. Verify that the process to further reduce pathogens is being met i.e. did you use the windrow method, static aerated pile method, or the enclosed vessel method. Do not include daily temperature readings.
- The results of all inspections and repairs done to the concrete or asphalt pad.

Please also provide a record of each Class II compost distribution, including the following:

- A copy of the information sheet or label accompanying all class II compost distributions according to the compost distribution plan

- The name of the compost user and legal description of the application site location, including the quantity of the compost and acreage over which it was distributed.
- Copies of the letters of notification to the local governments.
- A copy of the United States Geological survey map of the application site and the surrounding areas showing contours and surface waters.

Check the following box and fill out your name, email address and phone number to certify under penalty of law that this document and all attachments were prepared under your direction or supervision under a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on your inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of your knowledge and belief, true, accurate, and complete. Further, check the box to certify that you are aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment. *

☑ I Certify

Name * Kirk Rosenberger

Email: * Kirk.Rosenberger@co.clay.mn.us

Phone * 218-299-7332

Response created on: Jan 25, 2021 at 11:13 AM CST by Kirk.Rosenberger@co.clay.mn.us

Response last updated on: Jan 29, 2021 at 10:29 AM CST by Kirk.Rosenberger@co.clay.mn.us

WASTE RECEIVED FOR LAND DISPOSAL

ANNUAL | 2020

Clay County Sanitary Landfill

Instructions:

Due Date February 1st

Please list the quantity of waste received for each individual disposal area permitted at your facility and the corresponding unit of measure. The preferred unit of measure is tons. If reporting in cubic yards, please report 'in-place' volume. If demolition debris or industrial waste is disposed of in a Municipal Solid Waste (MSW) area, then the quantity of those wastes should be recorded under "MSW Disposal Area". If demolition debris or industrial waste is managed in a separate disposal area, please record that waste data in the appropriate section.

	MATERIAL *	QUANTITY RECIEVED *	QUANTITY USED AS ALTERNATE DAILY COVER (ADC) *	UNIT OF MEASURE *	DISPOSAL AREA *
1	Mixed Municipal Solid Waste	51,967.78	12,395.40	Tons	MSW - lined cell

Estimated Compaction Rate for MSW (lined cell) Disposal Area * 1,700.00 *lbs/cy*

Estimated Compaction Rate for Industrial (lined cell) Disposal Area * 0.00 *lbs/cy*

Estimated Compaction Rate for Industrial (unlined cell) Disposal Area * 0.00 *lbs/cy*

Estimated Compaction Rate for Demolition (class 1 unlined) Disposal Area * 0.00 *lbs/cy*

Estimated Compaction Rate for Demolition (class 2 unlined) Disposal Area * 0.00 *lbs/cy*

Estimated Compaction Rate for Demolition (class 2 lined) Disposal Area * 0.00 *lbs/cy*

Estimated Compaction Rate for Demolition (class 3 lined) Disposal Area * 0.00 *lbs/cy*

Total Waste Rejected

	MATERIAL *	QUANTITY *	UNITS *	HOW MANAGED *	DESTINATION NAME *	ADDRESS & PHONE *
1	Mixed Municipal Solid Waste	0.00	Tons	Transferred	Clay County Sanitary Landfill - SW-34	3301 190th Street South Hawly, MN 56549 218-299-5079

Comments

No waste was rejected

Final Annual Report Submittal

Please follow instructions on the Annual Report Submittal Form.

Check the following box and fill out your name, email address and phone number to certify under penalty of law that this document and all attachments were prepared under your direction or supervision under a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on your inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of your knowledge and belief, true, accurate, and complete. Further, check the box to certify that you are aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment. *

☑ I Certify

Name * Kirk Rosenberger

Email: * Kirk.Rosenberger@co.clay.mn.us

Phone * 218-299-7332

Response created on: Jan 25, 2021 at 02:34 PM CST by Kirk.Rosenberger@co.clay.mn.us

Response last updated on: Jan 29, 2021 at 10:29 AM CST by Kirk.Rosenberger@co.clay.mn.us

SOLID WASTE LAND DISPOSAL ACTIVITY

ANNUAL | 2020

Clay County Sanitary Landfill

Instructions:

SW Due Date February 1

Is the landfill open or closed? *

(●) Open

( ) Closed

Open Landfills

Disposal Capacity

Please provide the permitted capacity, as stated in your MPCA permit. Also provide the capacity used and remaining permitted capacity, based on the most recent Annual Survey of Fill Area. If you are unsure of your permit capacity, please contact your permit engineer.

Permitted Capacity

WASTE DISPOSAL AREA	PERMITTED CAPACITY (AIRSPACE INCLUDING FINAL COVER IN CUBIC YARDS) *	CAPACITY ACTUALLY USED IN 2020 (AIRSPACE INCLUDING FINAL COVER IN CUBIC YARDS) *	CON USED IN 2020 (AIRSPACE INCLUDING FINAL COVER IN CUBIC YARDS) *	REMAINING PERMITTED CAPACITY (AIRSPACE INCLUDING FINAL COVER IN CUBIC YARDS) *
MSW	4,000,000	51,402	45,000	797,459
Demolition	0	0		0
Industrial	0	0		0
MSW Combustor Ash	0	0		0

In the following table, identify the facility's design capacity, the remaining design capacity, and the estimated remaining operating life of the facility. Each of these items is defined below.

Design Capacity

WASTE DISPOSAL AREA	DESIGN CAPACITY (AIRSPACE INCLUDING FINAL COVER IN CUBIC YARDS)[1] *	REMAINING DESIGN CAPACITY (AIRSPACE INCLUDING FINAL COVER IN CUBIC YARDS)[2] *	REMAINING CON CAPACITY (AIRSPACE INCLUDING FINAL COVER IN CUBIC YARDS) *	REMAINING OPERATING LIFE (YEARS)[3] *
MSW	6,284,963	3,082,422	185,780	59.97
Demolition	0	0		0.00
Industrial	0	0		0.00
MSW Combustor Ash	0	0		0.00

[1]: Design capacity is the maximum potential capacity of a land disposal facility based on the engineering design. It includes daily, intermittent, intermediate, and final cover as well as waste. Design capacity may be equal to or greater than permitted capacity.

[2]: Remaining design capacity is the difference between the design capacity and the volume of in-place waste and cover, as determined by the most recent annual site survey.

[3]: Remaining operating life is the estimated number of years that the facility may continue to accept waste based on the remaining design capacity and the amount of air space used annually. Please use the following formula for calculating the remaining operating life of the facility:

$$Y = RC / A$$

Y = remaining design operating life, in years.
RC = remaining design capacity, in cubic yards.
A = airspace used in one year (cubic yards/yr), as calculated by the difference between the two most recent annual site surveys.

Annual Survey of Fill Area and Phase Development

The fill area must be surveyed annually before November 1 by a land surveyor registered in Minnesota. An updated existing conditions plan must be submitted with the annual report. For more information, see item 5 under "Final Annual Report Submittal."

	DISPOSAL TYPE *	DESIGNATION *	OCCUPIED FOOTPRINT (ACRES) *	IN-PLACE VOLUME (CY) *	AREA AT FINAL ELEVATION NO FINAL COVER (ACRES) *	AREA AT FINAL ELEVATION WITH FINAL COVER (ACRES) *	DATE OF LAST ANNUAL SURVEY *	DATE OF LAST MOWING *
1	MSW - lined	SA 003	71.00	3,202,541	21.40	0.00	10/16/2020	09/14/2020

Landfill Gas Management - MSW Landfills Only

Please specify your landfill gas management system: *

- (●) Active
- ( ) Passive
- ( ) No collection

Gas destroyed in flare *	1,012,066.00 *Cubic Meters*
Gas destroyed in engine *	0.00 *Cubic Meters*
Gas destroyed in direct use *	0.00 *Cubic Meters*
Total Gas Collected *	1,012,066.00 *Cubic Meters*
Type of Engine Used *	NA *Caterpillar, Turbine, etc.*
Concentration of CO_2 *	35.00 *%*
Concentration of CH_4 *	50.00 *%*
Amount of Electricity Generated *	0.00 *Megawatts Hours*

Landfills with passive landfill gas vents and/or no gas collection wells must run U.S. Environmental Protection Agency's (EPA) LandGEM, version 3.02 to calculate potential landfill gas emissions. A copy of the LandGEM report must be attached to this annual report. (see below)

The following default values must be used in the LandGEM model run:

Model Parameters & Values:

k (year-1): 0.05
L_o (m^3/Mg): 170
NMOC (ppmv as hexane): 4000
Methane Content (%): 50

Total Landfill Gas (m^3/yr) *	0.00
Carbon Dioxide (m^3/yr) *	0.00
Methane (m^3/yr) *	0.00
NMOC (m^3/yr) *	0.00

Leachate Management and Volumes Handled

Does your facility have a leachate collection system? *

- (●) Yes
- ( ) No

What is the required frequency for leachate line clean-out as specified in your approved plans? *

Once per year

Date of last leachate line clean out: *

07/02/2020

Please list each method of leachate management used at your facility and the total volume of leachate managed with that method.

	GALLONS *	WASTE ACTIVITY AREA *	MANAGEMENT METHOD *	DESTINATION *
1	3,488,900.00	MSW cell	Sent to WWTP	City of Fargo, ND WWTP

Was any leachate recirculated at your facility? *

- ○ Yes
- ◉ No

Financial Assurance

Updated Cost Estimates

MANAGE ONLY

Inflation Rate	0.6028 %

MANAGE ONLY

Interest Rate (Discount Rate)	0.250 %

Download Payment Rate Estimate Table

COST ESTIMATE	2020 MPCA APPROVED CURRENT COSTS[3] *	2020 MPCA APPROVED CURRENT COSTS EFFECTIVE DATE *	2021 ADJUSTED CURRENT COSTS[4] *	2021 ADJUSTED CURRENT COSTS EFFECTIVE DATE *	2021 PRESENT VALUE COSTS[5] *	2021 PRESENT VALUE COSTS EFFECTIVE DATE *
Closure	1,724,870	01/01/2020	2,218,278	01/01/2021	2,168,984	01/01/2021
Annual post-closure[1]	111,209	01/01/2020	114,939	01/01/2021	112,962	01/01/2021
Total post-closure[2]	2,074,462	01/01/2020	2,395,396	01/01/2021	2,336,391	01/01/2021
Contingency action	708,847	01/01/2020	720,019	01/01/2021		01/01/2021

[1]: Please list the cost estimate for only one year of post-closure care.

[2]: Include an inflationary element as part of your total post-closure care estimate.

[3]: MPCA approved current costs: Please list the most recent MPCA approved cost estimates in current dollars. Insert the correct "Effective Date" if different from January 1, 2020.

[4]: 2021 Adjusted costs: Multiply the prior year's approved current cost estimate by the inflation rate above to calculate the 2021 Adjusted Current Cost.

[5]: Only complete this column if you are using a trust fund or dedicated long-term care trust fund and applying all interest earnings to your fund. (Note: contingency action costs cannot be discounted). Please use the formulas in Minn. R. 7035.2685 to calculate present values for closure and post-closure care costs.

Financial Assurance Mechanism Status

Is your facility required to maintain a financial assurance mechanism by your MPCA solid waste permit? *

- (●) Yes
- ( ) No

Select the financial assurance mechanism(s) that you use *

- [x] Trust fund
- [ ] Dedicated long-term care trust fund
- [ ] Surety bond guaranteeing performance
- [ ] Letter of credit
- [ ] Surety bond guaranteeing payment
- [ ] Self-test with other collateral
- [ ] Self-test with reduced letter of credit
- [ ] Financial test with corporate guarantee

Trust fund or dedicated long-term care trust fund details

Trustees of facilities with dedicated long-term trust funds must send financial statements showing the account balance from January 1, 2020 through December 31, 2020, by March 31st or ninety (90) days after the end of the municipality's fiscal year. This information must be accompanied by a letter from the Trustee confirming account balances, payments, and disbursements made throughout the year. **Please send this information to:** Johanna Benke, MPCA, 520 Lafayette Road North, St. Paul, Minnesota 55155-4194.

Include interest earnings if applying interest to financial obligation.

TYPE *	BENEFICIARY *	ACCOUNT BALANCE ON DECEMBER 31, 2020 ($) *	2020 PAYMENT RATE ($) *	2021 PAYMENT RATE ($) *	UNIT OF MEASURE FOR PAYMENT RATE *	2020 ANNUAL PAYMENTS MADE (PRINCIPAL PAID) ($) *	2020 ANNUAL INTEREST EARNINGS ($) *	2020 CLOSURE REIMBURSEMENT ($) *	2020 POST-CLOSURE REIMBURSEMENT ($) *	2020 CONTINGENCY ACTION REIMBURSEMENT ($) *
Trust fund	County	4,030,541.00	3,980.32	9,957.11	per Month	47,763.84	42,690.00	0.00	0.00	0.00

2020 Total Reimbursements $ 0.00

Hydrogeologic Certification

Check the following box and fill out your name, email address and phone number to certify under penalty of law that the hydrogeologic portions of this survey response and all attachments were prepared under your direction or supervision under a system designed to assure that qualified personnel gathered and evaluated the information submitted. Based on your inquiry of the person or persons who manage the system, or those persons directly responsible for fathering the information, the information submitted is, to the best of your knowledge and belief, true, accurate, and complete. Furthermore, you certify that you am knowledgeable in field of hydrogeology. *

☑ I Certify

Name * Andrew Feia

Email * afeia@wenck.com

Phone * 701-297-9600

Final Annual Report Submittal

Please follow instructions on the Annual Report Submittal Form.

Annual Report Certification

Check the following box and fill out your name, email address and phone number to certify under penalty of law that this document and all attachments were prepared under your direction or supervision under a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on your inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of your knowledge and belief, true, accurate, and complete. Further, check the box to certify that you are aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment. *

☑ I Certify

Name * Kirk Rosenberger

Email: * Kirk.Rosenberger@co.clay.mn.us

Phone * 218-299-7332

Response created on: Jan 25, 2021 at 04:01 PM CST by Kirk.Rosenberger@co.clay.mn.us

Response last updated on: Jan 29, 2021 at 10:29 AM CST by Kirk.Rosenberger@co.clay.mn.us

SOLID WASTE CAPACITY INFORMATION

ANNUAL | 2020

Clay County Sanitary Landfill

Instructions:

SW Due Date February 1
PBR Due Date March 1

You only need to complete this form if the MPCA has modified and/or reissued your permit during calendar year 2020 resulting in an increase in permitted or ultimate capacity, or if your facility capacity is equal to or greater than 2.5 million Mega grams (Mg) or 2.5 million cubic meters (m^3).

Estimate of solid waste capacity of landfill	3,058,400.00
Unit	Cubic Meters

Minn. R. 7011.3505, subp. 4, required the owner or operator of each open Municipal Solid Waste (MSW) landfill to report the facility's "solid waste capacity". **Solid waste capacity** is the total amount of compacted solid waste (excluding the volume of soil used for daily, intermediate and final cover that is prescribed by rule or in a permit) that will be in place when the facility's solid waste permit expires or when ultimate capacity is reached.

You may choose to estimate solid waste capacity in either Mg or m^3. Any future proposed changes to increase the total solid waste capacity to at least 2.5 million mega grams, or 2.5 million cubic meters, should be included in the facility's permit application.

To simplify the solid waste capacity calculation, the volume of daily, intermediate, and final cover can be included. If the resultant figure exceeds the 2.5 million Mg, or 2.5 million m^3 threshold, you may wish to calculate the solid waste capacity, excluding cover materials.

Please provide an attachment that shows your calculations and explains how you derived your estimate of solid waste capacity in the Final Annual Report Document submitted to the Agency.

Helpful Conversions:

1. To convert estimated solid waste capacity in tons (short) to Mg, multiply tons by 0.9072
2. To convert estimated solid waste capacity in Mg, but only have information in cubic yards, you may use the following equation:

Waste in Mg = ((Estimated Solid Waste Capacity in yd^3) x ($27ft^3/yd^3$) x (Density * in lbs/ft^3)) / 2204.6 lbs/Mg

* If you choose to convert from volume to mass or from mass to volume, the calculation must include a site-specific density.

Is your facility's permitted or ultimate capacity greater than or equal to 2.5 million Mega grams (Mg) or 2.5 million cubic meters (m^3)? *

- (●) Yes
- ( ) No

This section fulfills the requirement for an annual Non-Methane Organic Compound (MNOC) emission rate report. Owners or operators of Municipal Solid Waste (MSW) landfills with a solid waste capacity greater than or equal to 2.5 million Mg or 2.5 m3 must obtain a Part 70 air emissions permit in accordance with Minn. R. 7007. They also must annually report NMOC emission rates in accordance with 40 CFR 60, subp. WWW, and Minn. R. 7011.3505 and 7011.3510, or install a collection and control system. Please check one of the following:

Will you submit a collection and control system design plan that meets the requirements of 40 CFR 60.752(b)(2)(ii) or will you estimate the landfill's annual NMOC emission rate on this survey? The owner or operator of an MSW landfill must install a gas collection and control system within one year of calculating an NMOC emission rate of 50 Mg per year or more.

- ( ) I have submitted
- ( ) I will submit
- (●) I will estimate below

Note: If the estimated NMOC emission rate as reported in the annual report is less than 50 Mg per year in each of the next five consecutive years, the owner or operator may elect to submit an estimate of the NMOC emission rate for the next five-year period in lieu of the annual report (40 CFR 60, subp. WWW, §60.757(b)(1)(ii)).

There are three equations and four methods for calculating the NMOC emission rate. These are outlined in the Code of Federal Regulations at 40CFR 60, subp. WWW, § 60.754, and in Minn. R. 7011.3505, subp. 7. The calculations are used to determine whether or not the rule requirements apply to the landfill.

Identify which equation you are using to calculate the NMOC emission rate:

- ( ) Equation 1: for landfills where the annual solid waste acceptance rate if not known (Reference: 40 CFR § 60.754(a)(1)(i))
- (●) Equation 2: for landfills where the annual solid waste acceptance rate is known (Reference: 40 CFR § 60.754(a)(1)(ii))

- ( ) Equation 3: for landfills using the method in Minn. R. 7011.3505, subp. 7 (See below)

Identify which method you are using to calculate the NMOC emission rate

- ( ) Tier 1: default values (Reference: 40 CFR §60.754(a)(2))
- (•) Tier 2: site-specific NMOC concentration in landfill gas (Reference: 40 CFR §60.754(a)(3))
- ( ) Tier 3: site-specific methane generation constant and site-specific NMOC concentration in landfill gas (Reference: 40 CFR §50.754(a)(4))
- ( ) Minn. R. 7011.3505, subp. 7: landfill with an existing landfill gas collection and control system.

Calculated NMOC Emission Rate

7.17 *Mg per year*

You must show all data, calculations, sample reports and measurements used to estimate the annual NMOC emissions. Please attach these items to this report form and include in Final Report submitted to the Agency. If you are using performance test data to support your calculations, the performance test must have been conducted in accordance with the applicable U.S. Environmental Protection Agency (EPA) test methods and Minn. R. 7017.2001 to 7017.2060.

Final Annual Report Submittal

Please follow instructions on the Annual Report Submittal Form.

Check the following box and fill out your name, email address and phone number to certify under penalty of law that this document and all attachments were prepared under your direction or supervision under a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on your inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of your knowledge and belief, true, accurate, and complete. Further, check the box to certify that you are aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment. *

☑ I Certify

Name * Kirk Rosenberger

Email: * Kirk.Rosenberger@co.clay.mn.us

Phone * 218-299-7332

Response created on: Jan 25, 2021 at 04:42 PM CST by Kirk.Rosenberger@co.clay.mn.us

Response last updated on: Jan 29, 2021 at 10:30 AM CST by Kirk.Rosenberger@co.clay.mn.us

SOLID WASTE TRANSFER AREA

ANNUAL | 2020

Clay County Sanitary Landfill

Instructions:

SW Due Date February 1
PBR Due Date March 1

Quantity of Waste Handled

Please list the quantity of waste handled at the transfer station. Include the corresponding unit of measure, and the destination(s) of material leaving your facility.

	WASTE TYPE *	QUANTITY *	UNIT OF MEASURE *	HOW HANDLED *	DESTINATION NAME *	DESTINATION ADDRESS & PHONE *
1	Demolition Waste	620.00	Cubic Yards	Sent to Landfills	Clay Demolition Landfill - SW-277	367 160th St S Glyndon, MN 56547 218-498-2430
2	MSW	8,490.63	Tons	Sent to Facility for Secondary Processing	Perham Resource Recovery Facility - SW-641	201 6th Ave NE Perham, MN 56573 218-346-4404

Comments

Leachate Management and Volumes Handled

Please list each method of leachate management used at your facility and the total volume of leachate managed with that method.

	GALLONS *	MANAGEMENT METHOD/DESTINATION *	DESTINATION *
1	0.00	None Generated	NA

Final Annual Report Submittal

Please follow instructions on the Annual Report Submittal Form.

Check the following box and fill out your name, email address and phone number to certify under penalty of law that this document and all attachments were prepared under your direction or supervision under a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on your inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of your knowledge and belief, true, accurate, and complete. Further, check the box to certify that you are aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment. *

☑ I Certify

Name * Kirk Rosenberger

Email: * Kirk.Rosenberger@co.clay.mn.us

Phone * 218-299-7332

Response created on: Jan 25, 2021 at 04:43 PM CST by Kirk.Rosenberger@co.clay.mn.us

Response last updated on: Jan 29, 2021 at 10:30 AM CST by Kirk.Rosenberger@co.clay.mn.us

COMPOSTING ACTIVITY

ANNUAL | 2020

Clay County Sanitary Landfill

Instructions:

Due Date March 1st

Instructions:

Due Date March 1st

* Denotes required field

Which of these best describes your facility? *

(●) Facility manages yard waste only

( ) Facility also manages other compostable materials in addition to yard waste (i.e food scraps, MSW, contaminated soils, compostable products, etc)

Quantity Of Material Stored From Previous Year

Please list the quantity of waste stored on-site from the previous year. Include the corresponding unit of measure. The sum of Waste Received and Material Stored from Previous Year must be equal to the quantity of Waste Managed.

	QUANTITY *	UNIT OF MEASURE *
Brush/Wood Waste	29.00	Cubic Yards
Source Separated Organic Materials	0.00	Cubic Yards
Yard Waste (leaves, weeds, and grass clippings)	0.00	Cubic Yards
Yard Waste Compost	0.00	Cubic Yards
Mulch	0.00	Cubic Yards
Class I Compost	0.00	Cubic Yards
Class II Compost	0.00	Cubic Yards

Quantity of Waste Managed

Please list the quantity of waste managed. Include the corresponding unit of measure, and the destination(s) of material **leaving your facility. The quantity of waste managed must be equal to the quantity of waste received at the facility.**

If you process the material (i.e. composting, chipping, etc) then the Destination Name and Address will be On-site and the address of your facility. The destination of processed material will be entered in the Distribution of Compost Produced table below.

	WASTE TYPE *	QUANTITY *	UNIT OF MEASURE *	HOW HANDLED *	DESTINATION NAME *	DESTINATION ADDRESS & PHONE *
1	Brush/Wood Waste	29.00	Cubic Yards	Burned on Site	Onsite	on-site

Inert material - means the uncompostable material remaining in a compost system after decomposition. Inert material does not include soil particles or other naturally occurring materials that may be found in the compost system.

Did you test the yard waste for inert material (plastic, metal, glass)? *

- ○ Yes
- ◉ No

Distribution of Compost Produced

For explanation of class I and class II compost, see rule 7035.2836 Subp 6

	PRODUCT *	SOLD/DISTRIBUTED OR STORED *	QUANTITY *	UNIT OF MEASURE *	DESTINATION *
1	Yard Waste Compost	Stored	0.00	Cubic Yards	Other PLEASE SPECIFY burned

Rejects (i.e. Contamination)

Rejects are defined as inorganic materials that cannot be rendered into a humus-like material; materials that are unacceptable due to permit conditions; or materials that are unacceptable according to definitions Minn. R. 7035.0300, subparts 99a(B), 105a(B), or 105a(C). Rejects may include fats, oils, manure, diapers, plastic and glass. This does not include residuals that are reincorporated into the compost pile (Sub 93b and Rule 7035.3).

Please list the quantity of rejects removed from the compost or yard waste.

WASTE TYPE *	QUANTITY *	UNIT OF MEASURE *	HOW HANDLED *	DESTINATION NAME *	DESTINATION ADDRESS & PHONE *
MSW	0.00	Cubic Yards	Burned on Site	Onsite	on-site

Surface Water (Leachate/Contact Water Management)

Please list each method of surface water management used at your facility and the total volume managed with that method if it is measured.
Note: If surface water is reincorporated into the compost, use either "Recirculate" or "Used in Compost" as the management method.

	MANAGEMENT METHOD/DESTINATION *	GALLONS *	DESTINATION *
1	Other PLEASE SPECIFY none generated from tree	0.00	on-site

By-products, including Residuals and Recyclables

	WASTE TYPE *	QUANTITY *	UNIT OF MEASURE *	HOW HANDLED *	DESTINATION NAME *	DESTINATION ADDRESS & PHONE *
1	MSW	0.00	Cubic Yards	Burned on Site	Onsite	on-site

Residuals are defined as organic materials that require further composting due to their large size.

Please complete the following voluntary questions regarding compost market development for the state of MN. If you have any questions regarding the below please contact Kayla Walsh.

Drop off Information

Are you open to the public for yard-waste drop-off?

- ○ Yes
- ◉ No

Are you open to the public for food-waste drop-off?

- ○ Yes
- ◉ No

Compost Information

Are you STA-Certified?

- ○ Yes
- ◉ No

Are you a MNDOT approved vendor?

- ○ Yes
- ◉ No

Where is your product available?

- [ ] Onsite/at facility
- [ ] Retail
- [ ] Free
- [x] Not distributed

Is your product sold with a different name than your company?

- ( ) Yes
- (•) No

Is the compost available at your facility as bagged compost?

- ( ) Yes
- (•) No

Is the compost available for sale as bulk compost?

- ( ) Yes
- (•) No

Will you make custom blends to customer specs?

- ( ) Yes
- (•) No

Do you accept BPI Certified Compostable Products?

- ( ) Yes
- (•) No

Please provide a link to your Website:

Final Annual Report Submittal

Please follow instructions on the Annual Report Submittal Form.

Check the following box and fill out your name, email address and phone number to certify under penalty of law that this document and all attachments were prepared under your direction or supervision under a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on your inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of your knowledge and belief, true, accurate, and complete. Further, check the box to certify that you are aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment. *

☑ I Certify

Name * Kirk Rosenberger

Email: * Kirk.Rosenberger@co.clay.mn.us

Phone * 218-299-7332

Response created on: Jan 25, 2021 at 04:44 PM CST by Kirk.Rosenberger@co.clay.mn.us

Response last updated on: Jan 29, 2021 at 10:30 AM CST by Kirk.Rosenberger@co.clay.mn.us

RECYCLING ACTIVITY - ALL

ANNUAL | 2020

Clay County Sanitary Landfill

Instructions:

SW Due Date February 1
PBR Due Date March 1

Please list the quantity of recyclable material by material type that was transferred to another permitted solid waste facility, stored on-site, rejected, sent to end market for recycling, or beneficially used. Include the corresponding unit of measure, how the material was managed, and the destination(s) of material leaving your facility. Use the “Add” button if you have more than one material and/or destination. Only one destination should be entered per row.

Please follow this procedure if you would like the "Destination Name" and "Destination Address & Phone" fields classified as not public data pursuant to Minn. Stat. § 116.075, subd. 2 and the procedures set forth in Minn. R. 7000.1300, subp. 1.

First, choose the "Yes" option in the "Proprietary" field dropdown box. If Proprietary is “Yes”, the Destination Name and Address are not-public data and will not be shared outside of the MPCA. If you select the "No" option in the "Proprietary" field dropdown box, the information that you provide in the "Destination Name" and "Destination Address & Phone" fields are classified as public data. If you want the destination name and destination address and phone to be classified as not public data, you will need to submit two versions of the annual report. One version should include all the information on the Re-TRAC form(s), including the proprietary information. The other version will be the public version with the proprietary information redacted (Destination Name and Destination Address & Phone ONLY). More instructions are on the Annual Report Submittal Form.

NOTE: If you only submit one report to the MPCA, the report is considered public even if it includes proprietary information.

Material *

Ferrous Metals

Material sent to End Market (Recycling/Beneficial Reuse) or Out of State

	QUANTITY *	UNIT OF MEASURE *	HOW MANAGED *	DESTINATION *	DESTINATION ADDRESS AND PHONE *	PROPRIETARY? *
1	57.60	Tons	Sent to End Market (Recycled)	Northern Metal Recycling - West Fargo ND	654 7th St NW, West Fargo, ND 58078 701-282-4454	No

Material managed at permitted solid waste facility in State

	QUANTITY *	UNIT OF MEASURE *	HOW MANAGED *	DESTINATION *	PROPRIETARY? *
1	0	Cubic Yards	Stored	Onsite	No

Comments

Final Annual Report Submittal

Please follow instructions on the Annual Report Submittal Form.

Check the following box and fill out your name, email address and phone number to certify under penalty of law that this document and all attachments were prepared under your direction or supervision under a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on your inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of your knowledge and belief, true, accurate, and complete. Further, check the box to certify that you are aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment. *

☑ I Certify

Name * Kirk Rosenberger

Email: * Kirk.Rosenberger@co.clay.mn.us

Phone * 218-299-7332

Response created on: Jan 26, 2021 at 08:52 AM CST by Kirk.Rosenberger@co.clay.mn.us

Response last updated on: Jan 29, 2021 at 10:31 AM CST by Kirk.Rosenberger@co.clay.mn.us

RECYCLING ACTIVITY - ALL

ANNUAL | 2020

Clay County Sanitary Landfill

Instructions:

SW Due Date February 1
PBR Due Date March 1

Please list the quantity of recyclable material by material type that was transferred to another permitted solid waste facility, stored on-site, rejected, sent to end market for recycling, or beneficially used. Include the corresponding unit of measure, how the material was managed, and the destination(s) of material leaving your facility. Use the “Add” button if you have more than one material and/or destination. Only one destination should be entered per row.

Please follow this procedure if you would like the "Destination Name" and "Destination Address & Phone" fields classified as not public data pursuant to Minn. Stat. § 116.075, subd. 2 and the procedures set forth in Minn. R. 7000.1300, subp. 1.

First, choose the "Yes" option in the "Proprietary" field dropdown box. If Proprietary is “Yes”, the Destination Name and Address are not-public data and will not be shared outside of the MPCA. If you select the "No" option in the "Proprietary" field dropdown box, the information that you provide in the "Destination Name" and "Destination Address & Phone" fields are classified as public data. If you want the destination name and destination address and phone to be classified as not public data, you will need to submit two versions of the annual report. One version should include all the information on the Re-TRAC form(s), including the proprietary information. The other version will be the public version with the proprietary information redacted (Destination Name and Destination Address & Phone ONLY). More instructions are on the Annual Report Submittal Form.

NOTE: If you only submit one report to the MPCA, the report is considered public even if it includes proprietary information.

Material *

Appliances

Material sent to End Market (Recycling/Beneficial Reuse) or Out of State

	QUANTITY *	UNIT OF MEASURE *	HOW MANAGED *	DESTINATION *	DESTINATION ADDRESS AND PHONE *	PROPRIETARY? *
1	573.00	Items	Sent to End Market (Recycled)	Gerdau Metals Recycling - Fargo ND	3240 Main Ave. Fargo, ND 58103 701-232-2429	No

Material managed at permitted solid waste facility in State

	QUANTITY *	UNIT OF MEASURE *	HOW MANAGED *	DESTINATION *	PROPRIETARY? *
1	0	Items	Stored	Onsite	No

Comments

Final Annual Report Submittal

Please follow instructions on the Annual Report Submittal Form.

Check the following box and fill out your name, email address and phone number to certify under penalty of law that this document and all attachments were prepared under your direction or supervision under a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on your inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of your knowledge and belief, true, accurate, and complete. Further, check the box to certify that you are aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment. *

☑ I Certify

Name * Kirk Rosenberger

Email: * Kirk.Rosenberger@co.clay.mn.us

Phone * 218-299-7332

Response created on: Jan 26, 2021 at 08:50 AM CST by Kirk.Rosenberger@co.clay.mn.us

Response last updated on: Jan 29, 2021 at 10:31 AM CST by Kirk.Rosenberger@co.clay.mn.us

RECYCLING ACTIVITY - ALL

ANNUAL | 2020

Clay County Sanitary Landfill

Instructions:

SW Due Date February 1
PBR Due Date March 1

Please list the quantity of recyclable material by material type that was transferred to another permitted solid waste facility, stored on-site, rejected, sent to end market for recycling, or beneficially used. Include the corresponding unit of measure, how the material was managed, and the destination(s) of material leaving your facility. Use the “Add” button if you have more than one material and/or destination. Only one destination should be entered per row.

Please follow this procedure if you would like the "Destination Name" and "Destination Address & Phone" fields classified as not public data pursuant to Minn. Stat. § 116.075, subd. 2 and the procedures set forth in Minn. R. 7000.1300, subp. 1.

First, choose the "Yes" option in the "Proprietary" field dropdown box. If Proprietary is “Yes”, the Destination Name and Address are not-public data and will not be shared outside of the MPCA. If you select the "No" option in the "Proprietary" field dropdown box, the information that you provide in the "Destination Name" and "Destination Address & Phone" fields are classified as public data. If you want the destination name and destination address and phone to be classified as not public data, you will need to submit two versions of the annual report. One version should include all the information on the Re-TRAC form(s), including the proprietary information. The other version will be the public version with the proprietary information redacted (Destination Name and Destination Address & Phone ONLY). More instructions are on the Annual Report Submittal Form.

NOTE: If you only submit one report to the MPCA, the report is considered public even if it includes proprietary information.

Material *

Tires

Material sent to End Market (Recycling/Beneficial Reuse) or Out of State

	QUANTITY *	UNIT OF MEASURE *	HOW MANAGED *	DESTINATION *	DESTINATION ADDRESS AND PHONE *	PROPRIETARY? *
1	3,279.00	Items	Sent to End Market (Recycled)	Liberty Tire - Pittsburgh PA	12498 Wyoming Ave. Savage, MN 55378 1-800-526-0860	No

Material managed at permitted solid waste facility in State

	QUANTITY *	UNIT OF MEASURE *	HOW MANAGED *	DESTINATION *	PROPRIETARY? *
1	0	Tons	Stored	Onsite	No

Comments

Final Annual Report Submittal

Please follow instructions on the Annual Report Submittal Form.

Check the following box and fill out your name, email address and phone number to certify under penalty of law that this document and all attachments were prepared under your direction or supervision under a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on your inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of your knowledge and belief, true, accurate, and complete. Further, check the box to certify that you are aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment. *

☑ I Certify

Name * Kirk.Rosenberger

Email: * Kirk.Rosenberger@co.clay.mn.us

Phone * 218-299-7332

Response created on: Jan 26, 2021 at 08:35 AM CST by Kirk.Rosenberger@co.clay.mn.us

Response last updated on: Jan 29, 2021 at 10:31 AM CST by Kirk.Rosenberger@co.clay.mn.us

RECYCLING ACTIVITY - ALL

ANNUAL | 2020

Clay County Sanitary Landfill

Instructions:

SW Due Date February 1
PBR Due Date March 1

Please list the quantity of recyclable material by material type that was transferred to another permitted solid waste facility, stored on-site, rejected, sent to end market for recycling, or beneficially used. Include the corresponding unit of measure, how the material was managed, and the destination(s) of material leaving your facility. Use the “Add” button if you have more than one material and/or destination. Only one destination should be entered per row.

Please follow this procedure if you would like the "Destination Name" and "Destination Address & Phone" fields classified as not public data pursuant to Minn. Stat. § 116.075, subd. 2 and the procedures set forth in Minn. R. 7000.1300, subp. 1.

First, choose the "Yes" option in the "Proprietary" field dropdown box. If Proprietary is “Yes”, the Destination Name and Address are not-public data and will not be shared outside of the MPCA. If you select the "No" option in the "Proprietary" field dropdown box, the information that you provide in the "Destination Name" and "Destination Address & Phone" fields are classified as public data. If you want the destination name and destination address and phone to be classified as not public data, you will need to submit two versions of the annual report. One version should include all the information on the Re-TRAC form(s), including the proprietary information. The other version will be the public version with the proprietary information redacted (Destination Name and Destination Address & Phone ONLY). More instructions are on the Annual Report Submittal Form.

NOTE: If you only submit one report to the MPCA, the report is considered public even if it includes proprietary information.

Material *

Mixed Electronics

Material sent to End Market (Recycling/Beneficial Reuse) or Out of State

	QUANTITY *	UNIT OF MEASURE *	HOW MANAGED *	DESTINATION *	DESTINATION ADDRESS AND PHONE *	PROPRIETARY? *
1	26.10	Tons	Sent to End Market (Recycled)	The Retrofit Companies, Inc. - Little Canada	The Retrofit Companies, Inc. 2960 Yorkton Blvd, Little Canada, MN 55117 651-717-4982	No

Material managed at permitted solid waste facility in State

	QUANTITY *	UNIT OF MEASURE *	HOW MANAGED *	DESTINATION *	PROPRIETARY? *
1	0	Tons	Transferred	Onsite	No

Comments

Final Annual Report Submittal

Please follow instructions on the Annual Report Submittal Form.

Check the following box and fill out your name, email address and phone number to certify under penalty of law that this document and all attachments were prepared under your direction or supervision under a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on your inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of your knowledge and belief, true, accurate, and complete. Further, check the box to certify that you are aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment. *

☑ I Certify

Name * Kirk.Rosenberger

Email: * Kirk.Rosenberger@co.clay.mn.us

Phone * 218-299-7332

Response created on: Jan 25, 2021 at 10:18 PM CST by Kirk.Rosenberger@co.clay.mn.us

Response last updated on: Jan 29, 2021 at 10:32 AM CST by Kirk.Rosenberger@co.clay.mn.us


WENCK
now part of
Stantec