**REPORT**

# Second Quarter 2022 Monitoring Report

*Smiths Creek Landfill*

Submitted to:

**Michigan Department of Environmental Quality**
Southeast Michigan District
27700 Donald Court
Warren, Michigan 48092-2793

Submitted by:

**Golder Associates USA Inc.**
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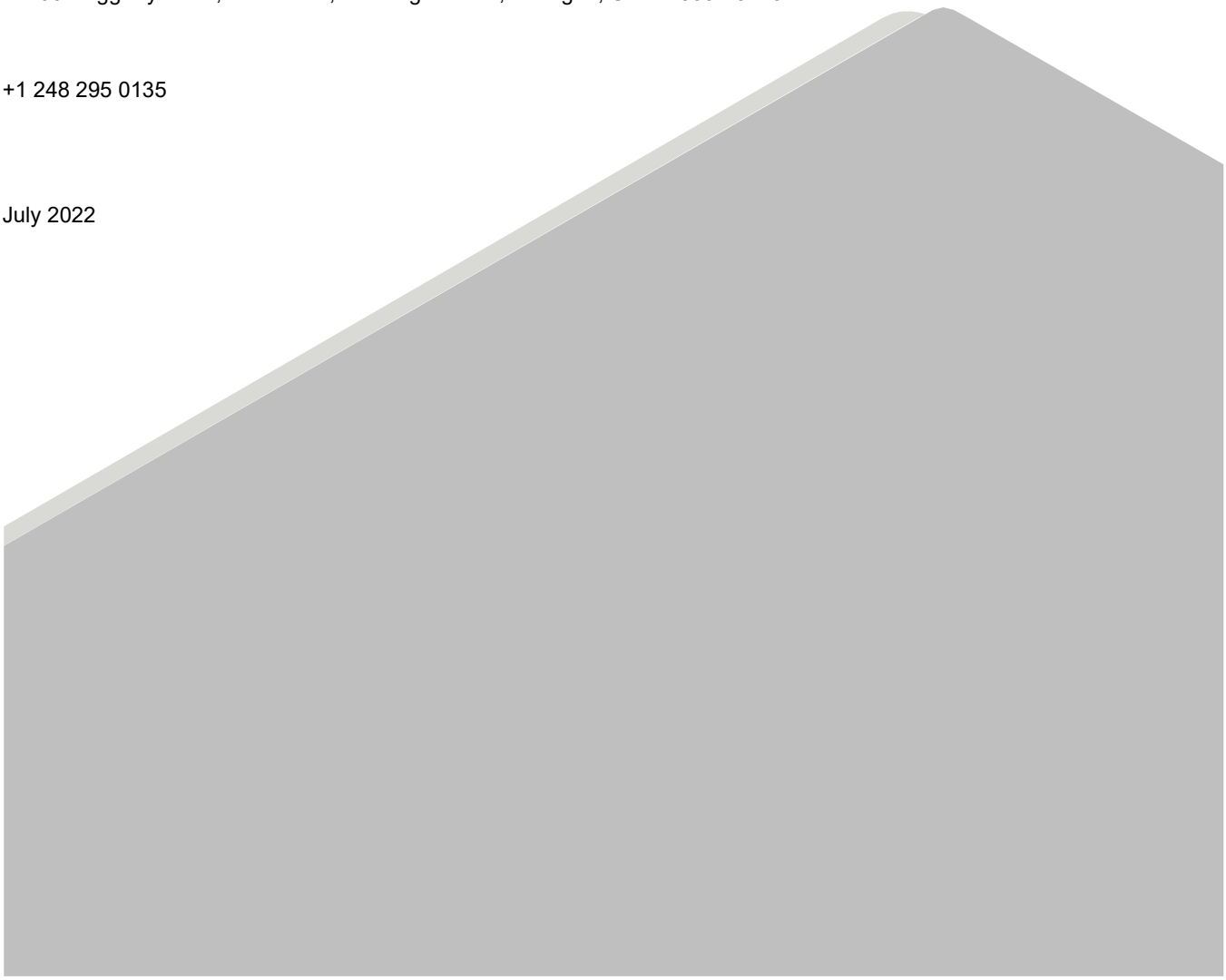
July 2022



July 28, 2022 Project No. 31405076.000

**Mary Carnagie**
Michigan Department of Environment, Great Lakes, and Energy
27700 Donald Court
Warren, Michigan 48092-2793

**SECOND QUARTER 2022 ENVIRONMENTAL MONITORING REPORT**
**SMITHS CREEK LANDFILL**
**ST. CLAIR COUNTY, MICHIGAN**

Dear Ms. Carnagie:

Golder Associates USA Inc. is providing this report to summarize monitoring efforts from the above referenced sampling event. This report is submitted on behalf of St. Clair County, Michigan under the direction of Mr. Matt Williams.

# 1.0 INTRODUCTION

The Smiths Creek Landfill (SCL) is a Type II landfill located at 6779 Smiths Creek Road in Kimball Township, St. Clair County, Michigan. The SCL occupies approximately 264.5 acres, and is bordered on the north by residential and agricultural properties, on the south by undeveloped private and county owned property, on the east by the Wolvin Drain, and on the west by Smiths Creek and undeveloped and residential properties. Figure 1, Site Location Map, depicts the location and approximate areal extent of SCL in relation to nearby roads and topography.

Groundwater monitoring and reporting were performed in accordance with the Michigan Department of Environmental Quality (MDEQ, now Environment, Great Lakes and Energy [EGLE]) approved Hydrogeologic Monitoring Plan (HMP) dated December 2014, which included a reduction in sampling frequency from quarterly to semiannually (during the second and fourth quarters of each calendar year). Leachate and surface water continue to be sampled on a quarterly basis. Table 1, Monitoring Well Network Summary, includes a summary of the monitoring well network. Designated sampling parameters, test methods, reporting limits, and corresponding containers, preservatives, and holding times are summarized in the HMP. Water level measurement procedures, groundwater and surface water sample collection methods, decontamination procedures, and leachate sample collection procedures were performed in accordance with the HMP and applicable Public Act 451, Part 115 Rules.

# 2.0 MONITORING RESULTS

Samples were collected by Golder personnel from 15 monitoring wells and 1 leachate sampling location between June 14 and 16, 2022. Table 1 identifies the monitoring wells included in the monitoring program. Figure 2,

Monitoring Location Map, depicts the design/permitted cell boundaries and sampling locations. Copies of laboratory reports are included in Appendix A, Laboratory Results.

# 3.0 GROUNDWATER SEEPAGE CHARACTERISTICS

Prior to well purging, Golder field personnel collected depth to groundwater measurements from each of the monitoring wells sampled, and groundwater elevations were calculated. The elevations are presented on Table 2, Historical Groundwater Elevations and Figure 3, Groundwater Elevation Contour Map – June 2022. Review of the map indicates that groundwater flow is toward the east, which is consistent with past determinations.

In accordance with Rule 299.4907(5), the groundwater seepage velocity was determined based on groundwater elevations. As presented in the HMP, Darcy's equation was used to calculate the horizontal seepage velocity, as shown below:

$$V = K\frac{i}{n}$$

Where,

V = seepage velocity
K = hydraulic conductivity
i = hydraulic gradient
n = effective porosity

Table 3, Groundwater Seepage Velocity Calculations, presents values taken from the HMP and used in the calculations, the calculated flow gradients, and the velocity across the site. As shown on Table 3, the calculated average groundwater seepage velocity was 0.0047 feet per day (ft/day) (1.7 feet per year (ft/year)), which is consistent with historical determinations.

# 4.0 STATISTICAL ANALYSIS RESULTS

Golder completed statistical analyses in accordance with the approved statistical analysis plan, entitled, "Statistical Analysis of Background Groundwater Monitoring Data (SABGMD)", that was prepared in accordance with R299.4908, and last updated in August 2014. Table 4, Second Quarter 2022 Monitoring Results, includes the comparisons of the current and previous semiannual event with the updated tolerance limits.

## 4.1 Exceedances

Based on a review of Table 4, three (3) initial and three (3) confirmed exceedances were reported during the second quarter 2022 monitoring event:

- Sodium in monitoring well MW-203B – Initial
- Potassium in monitoring well MW-210 – Initial
- Arsenic in monitoring well MW-303A – Initial
- Potassium in monitoring well MW-203B – Verified
- Total organic carbon in monitoring well MW-207A – Verified
- Sodium in monitoring well MW-210 – Verified

## 4.2 Statistically Significant Increases

As shown in Table 5, Summary of Statistical Exceedances (required by MDEQ RMD-115-29), six (6) total exceedances (three initial and three verified) were reported during the second quarter 2022 monitoring event. An ASD is provided below for each of the exceedances.

### 4.2.1 Potassium and Sodium in Monitoring Well MW-203B

As discussed in a report from Golder to EGLE dated October 4, 2021, monitoring well MW-203B was installed on April 29, 2021 as a replacement well for monitoring well MW-203. Like monitoring well MW-203 before it, monitoring well MW-203B purges dry, and was thus only subject to limited well development following installation. As described in Golder's October 4, 2021 letter, additional purging of monitoring well MW-203B during continued sampling events may result in additional decreases in the concentrations of chloride, sodium, and potassium. As also proposed in the October 4, 2021 letter, if concentrations did not decrease with time, the limits would be recalculated once a minimum of eight new background values are available from the replacement well. Monitoring well MW-203B was installed immediately prior to the second quarter 2021 monitoring event and currently has a total of four (4) background monitoring observations per constituent. Golder proposes to collect four (4) additional samples over the next four quarterly monitoring periods and then recalculate the statistical limits for all constituents. The procedure to be used for recalculating the statistical limits for a replacement well is described in Section 6.5 of the HMP.

### 4.2.2 Total Organic Carbon in Monitoring Well MW-207A

As shown in Table 4, the exceedance for total organic carbon (TOC) in downgradient monitoring well MW-207A is a statistically significant increase (SSI) with the result for June 2022 confirming the previous result reported for October 2021.

It is Golder's opinion that the SSI reported for TOC in downgradient monitoring well MW-207A is not a result of landfill influence on the groundwater but is rather a result of natural geochemical variability. As shown in Appendix C, Time Series Plots for Select Constituents, the current concentration of TOC is elevated with respect to TOC concentrations in upgradient monitoring wells at SCL. However, the concentrations of other indicator constituents, particularly chloride, potassium, sodium, and total inorganic nitrogen, decreased or stayed the same at the same time that TOC concentrations increased. If the increased concentration for TOC was a result of landfill influence on the landfill, it would be expected that the landfill indicator parameters would all increase simultaneously. Because only TOC and dissolved barium showed increased concentrations during recent sampling events, it is Golder's opinion that the recent change in TOC is not a result of landfill influence on the groundwater, but is a result of another source. Golder proposes to perform additional well development on monitoring well MW-207A prior to the next sampling event to remove additional volumes of water from the well and to restore the groundwater chemistry in the well. Other than redevelopment, no additional response is considered necessary with respect to these observations.

### 4.2.3 Potassium and Sodium in Monitoring Well MW-210

An initial exceedance was identified for potassium in monitoring well MW-210 during the second quarter 2022 monitoring period. Potassium in monitoring well MW-210 has been historically low over the last several years, this being the first initial exceedance (see Table 5 and Figure 4). It is Golder's opinion that the concentration reported for potassium in MW-210 is an outlier as the other constituents are the same or lower than historic levels (see Appendix D). Based on these results, it is Golder's opinion that continued detection monitoring is appropriate.

The potassium concentration reported during the second quarter 2022 will be confirmed during the fourth quarter 2022 monitoring period, but no additional response is necessary at this time.

As shown in Table 4, the exceedance for sodium in monitoring well MW-210 is a statistically significant increase (SSI) with the result for June 2022 confirming the previous result reported for October 2021.

It is Golder's opinion that the SSI reported for sodium in monitoring well MW-210 is not a result of landfill influence on the groundwater, but is rather a result of natural geochemical variability. As shown in Figure 9, Time Series Plot for Sodium in Selected Monitoring Wells, the current concentration of sodium is within the range of historical values reported in monitoring well MW-210. In addition, sodium concentrations have been stable over the last three to four years. Further, the concentration of sodium in monitoring well MW-210 is within the range of sodium concentrations in upgradient monitoring wells at the SCL, particularly upgradient monitoring well MW-303A. Because the concentration in downgradient monitoring well MW-210 is similar to that in upgradient monitoring wells, it is likely that the concentration in the downgradient well is a result natural geochemical variability in the uppermost aquifer.

Finally, none of the other leachate indicator parameters in monitoring well MW-210 are showing exceedances or trends (as shown in Appendix D) and the reported concentrations for indicator parameters are within the range of concentrations for other monitoring wells at the SCL. Based on these observations, no additional response is necessary with respect to the recent exceedances for potassium and sodium in monitoring well MW-210. Continued detection monitoring is appropriate.

### 4.2.4 Arsenic in Monitoring Well MW-303A

An initial exceedance was identified for arsenic in upgradient monitoring well MW-303A during the second quarter 2022 monitoring period. The statistical limit for arsenic in monitoring well MW-303A (1 micrograms per liter [ug/L]) is low relative to prediction limits for other monitoring wells, which range from 2 to 16 ug/L. Because this exceedance is in an upgradient monitoring well and because the statistical limit for monitoring well MW-303A is relatively low, it is Golder's opinion that the initial exceedance for arsenic is a false positive observation which is not a result of landfill influence on the groundwater. Based on these results, it is Golder's opinion that continued detection monitoring is appropriate, but Golder also recommends that the background statistical limit for arsenic be reviewed and updated if appropriate to eliminate future false positive observations.

### 4.2.5 Statistical Summary

Rule 299.4440(9) of Part 115 allows a site 30 days to prepare an ASD which asserts that a SSI indicated by groundwater monitoring data is the result of a source other than a release from the site. As indicated above, a total of six exceedances (3 initial and 3 verified) were reported for the second quarter 2022 monitoring event. However, none of the exceedances reported during the second quarter 2022 monitoring period are attributable to landfill influence on the groundwater; thus, other than the proposed actions described above, no additional response is necessary and continued detection monitoring is appropriate. Due to the relatively low seepage velocity for the SCL (1.4 feet per year), it is Golder's opinion that, where applicable, confirmation sampling during the next semiannual monitoring event is appropriate.

## 5.0 CHAIN OF CUSTODY INFORMATION & FIELD FORMS

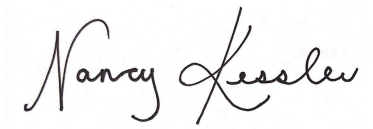
All samples were submitted under standard chain-of custody protocol. Copies of the chains of custody for this event are included with the laboratory results in Appendix A. Field forms are prepared at each sampling location. Copies of the field forms are included in Appendix B, Field Data Sheets.

## CLOSING

This report is submitted as required by the site's approved HMP by the undersigned professionals. Please do not hesitate to contact either of us at 248/295-0135, if you have any questions.

Sincerely,

**Golder Associates USA Inc.**



Nancy J. Kessler
*Staff Environmental Scientist*

Sean C. Paulsen, PG
*Senior Lead Consultant*

NJK/SCP/njk

CC: Matt Williams, St. Clair County/Smiths Creek Landfill

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# TABLES

# TABLE 1.
## MONITORING WELL NETWORK SUMMARY
## Smiths Creek Landfill

| Well ID | Gradient Direction | Northing | Easting | Top of Casing Elevation (ft msl) | Bottom of Screen Elevation (ft msl) | Total Well Depth (ft) | Well Screen and Riser Materials |
|---|---|---|---|---|---|---|---|
| MW-101 | Up | 18374.3 | 14719.3 | 634.76 | 557.9 | 76.9 | PVC |
| MW-106A | Down | 14643.2 | 17132.0 | 633.43 | 558.2 | 75.2 | PVC |
| MW-201 | Up | 18488.1 | 15529.3 | 634.57 | 559.2 | 75.4 | PVC |
| MW-202 | Up | 17786.6 | 14714.4 | 635.22 | 570.6 | 64.6 | PVC |
| MW-203 | Down | 14644.5 | 16028.9 | 632.05 | 558.9 | 73.2 | PVC |
| MW-203B | Down | 14546.9 | 16027.9 | 633.00 | 631.3 | 72 | PVC |
| MW-207A | Down | 15225.7 | 17099.4 | 634.29 | 551.4 | 82.9 | PVC |
| MW-208B | Down | 15533.4 | 17136.7 | 633.91 | NA | NA | PVC |
| MW-209 | Down | 16102.6 | 17180.1 | 630.58 | 551.4 | 79.2 | PVC |
| MW-210 | Down | 16937.0 | 17218.1 | 628.38 | 556.5 | 71.9 | PVC |
| MW-212 | Down | 17719.0 | 16985.5 | 628.16 | 563.0 | 65.2 | PVC |
| MW-301 | Down | 15814.4 | 17134.8 | 635.10 | 550.8 | 84.3 | PVC |
| MW-302 | Down | 16545.2 | 17191.4 | 626.75 | 546.4 | 80.4 | PVC |
| MW-303A | Up | 15709.1 | 14987.9 | 633.41 | 557.7 | 75.7 | PVC |
| MW-304 | Up | 16769.8 | 14812.1 | 635.12 | 559.4 | 75.7 | PVC |
| MW-305 | Down | 17269.0 | 17204.0 | 628.93 | 553.1 | 75.8 | PVC |

**Notes:**

NA - Not available

Information from CTI, 2010

MSL - Mean Sea Level

PVC - Polyvinyl Chloride

# TABLE 2.
## HISTORICAL GROUNDWATER ELEVATIONS
## Smiths Creek Landfill

| Well ID | Top of Casing Elevation | 2016 | | 2017 | | 2018 | | 2019 | | 2020 | | 2021 | | 2022 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 4/1/2016 | 10/1/2016 | 6/1/2017 | 11/1/2017 | 5/1/2018 | 10/23/2018 | 5/14/2019 | 11/5/2019 | 5/29/2020 | 12/1/2020 | 5/4/2021 | 10/19/2021 | 6/15/2022 |
| MW-101 | 634.76 | 612.52 | 611.44 | 611.44 | 612.17 | 612.31 | 611.19 | 611.30 | 611.73 | 611.38 | 611.08 | 611.79 | 612.03 | 611.57 |
| MW-106A | 633.43 | 601.39 | 601.59 | 601.93 | 602.21 | 601.61 | 602.74 | 602.14 | 602.48 | 602.41 | 602.14 | 602.06 | 602.39 | 602.11 |
| MW-201 | 634.57 | 611.97 | 610.87 | 611.04 | 611.99 | 611.78 | 610.79 | 610.68 | 611.13 | 611.39 | 610.73 | 611.38 | 611.49 | 611.34 |
| MW-202 | 635.22 | 612.04 | 610.91 | 610.98 | 611.66 | 611.69 | 610.62 | 610.81 | 611.18 | 610.92 | 610.57 | 611.24 | 611.65 | 611.19 |
| MW-203 | 632.05 | 607.33 | 606.87 | 607.54 | 608.18 | 607.71 | 606.39 | 606.02 | 607.28 | 607.66 | 607.62 | n/a | n/a | n/a |
| MW-203B | 633.00 | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | 609.02 | 608.77 | 608.45 |
| MW-207A | 634.29 | 598.46 | 598.43 | 598.84 | 598.99 | 598.61 | 597.95 | 597.78 | 598.38 | 598.59 | 598.11 | 598.45 | 598.92 | 598.47 |
| MW-208B | 633.91 | 599.78 | 599.62 | 599.89 | 600.31 | 599.93 | 599.13 | 598.96 | 599.58 | 599.87 | 599.41 | 599.80 | 600.21 | 599.80 |
| MW-209 | 630.58 | 603.60 | 602.40 | 602.68 | 603.36 | 602.83 | 602.16 | 601.83 | 602.41 | 602.78 | 602.44 | 602.72 | 603.00 | 602.73 |
| MW-210 | 628.38 | 600.62 | 600.36 | 600.60 | 601.23 | 600.55 | 600.07 | 599.70 | 600.39 | 600.83 | 600.62 | 600.84 | 601.02 | 600.85 |
| MW-212 | 628.16 | 600.25 | 599.61 | 599.64 | 600.66 | 599.84 | 599.35 | 599.07 | 599.64 | 600.23 | 600.11 | 600.42 | 600.46 | 600.26 |
| MW-301 | 635.10 | 601.38 | 601.14 | 601.51 | 601.94 | 601.54 | 600.76 | 600.49 | 601.20 | 601.40 | 601.01 | 601.36 | 601.74 | 601.38 |
| MW-302 | 626.75 | 601.82 | 601.23 | 601.41 | 602.23 | 601.53 | 600.96 | 600.73 | 601.34 | 601.86 | 601.63 | 601.92 | 602.04 | 601.81 |
| MW-303A | 633.41 | 611.33 | 610.70 | 610.90 | 611.56 | 611.41 | 610.38 | 610.20 | 610.91 | 608.91 | 610.30 | 610.88 | 611.22 | 610.93 |
| MW-304 | 635.12 | 610.49 | 609.74 | 609.84 | 610.46 | 610.36 | 609.47 | 609.42 | 609.89 | 612.34 | 609.27 | 609.93 | 610.21 | 609.86 |
| MW-305 | 628.93 | 599.38 | 599.03 | 599.11 | 599.83 | 599.11 | 598.60 | 598.28 | 590.80 | 599.45 | 599.15 | 599.49 | 599.75 | 599.45 |

**Notes:**
All measurements recorded in feet above Mean Sea Level

# TABLE 3.
# GROUNDWATER SEEPAGE VELOCITY CALCULATIONS
# Smiths Creek Landfill

| Flow Paths | Δ h (feet)[2] | Δ l (feet)[3] | Hydraulic Gradient (Δ h/Δ l) | Average Permeability, K (feet per day)[1] | Assumed Effective Porosity ($n_e$) | Average Linear Groundwater Velocity (feet per day)[4] |
|---|---|---|---|---|---|---|
| A (MW-101/MW-212) | 11.31 | 2356 | 0.0048 | 0.283 | 0.30 | 0.0045 |
| B (MW-303A/MW-207A) | 12.46 | 2168 | 0.0057 | | | 0.0054 |
| C (MW-304/MW-305) | 10.41 | 2443 | 0.0043 | | | 0.0040 |

Notes:

1. Average K values from CTI (2012).
2. Δ h = Change in groundwater elevation.
3. Δ l = Distance along flow paths.
4. Velocity = (Δ h /Δ l x K) / $n_e$.

# TABLE 4.
# SMITHS CREEK LANDFILL
# Second Quarter 2022 Monitoring Results

| Constituent Name | Units | Prediction Limit | Previous Quarterly Result | Current Quarterly Result |
|---|---|---|---|---|
| **MW-101** | | | **10/19/2021** | **6/15/2022** |
| Inorganic Indicators - Semiannual | | | | |
| Chloride | mg/L | 30.1 | 25.4 | 25.1 |
| Potassium | mg/L | 2.4 | 1.52 | 1.82 |
| Sodium | mg/L | 75.3 | 67.6 | 64.4 |
| Total Organic Carbon | mg/L | 9.1 | 1.01 | 1.24 |
| Total Inorganic Nitrogen | mg/L | 0.72 | 0.146 | 0.126 |
| Metals - Annual | | | | |
| Arsenic | ug/L | 4.2 | n/a | 1.9 |
| Barium | ug/L | 48 | n/a | 44.1 |
| Zinc | ug/L | 110 | n/a | <10 |
| **MW-106A** | | | **10/19/2021** | **6/15/2022** |
| Inorganic Indicators - Semiannual | | | | |
| Chloride | mg/L | 39.8 | 38.7 | 35.7 |
| Potassium | mg/L | 3.7 | 1.14 | 1.27 |
| Sodium | mg/L | 89.1 | 77.5 | 74.3 |
| Total Organic Carbon | mg/L | 5.1 | 1.44 | 1.64 |
| Total Inorganic Nitrogen | mg/L | 0.48 | 0.0813 | <0.2 |
| Metals - Annual | | | | |
| Arsenic | ug/L | 12.5 | n/a | 8.1 |
| Barium | ug/L | 106 | n/a | 59.9 |
| Zinc | ug/L | 5.3 | n/a | <10 |
| **MW-201** | | | **10/19/2021** | **6/14/2022** |
| Inorganic Indicators - Semiannual | | | | |
| Chloride | mg/L | 30.2 | 18.1 | 15.9 |
| Potassium | mg/L | 2.6 | 1.26 | 1.45 |
| Sodium | mg/L | 75.2 | 66.3 | 66.4 |
| Total Organic Carbon | mg/L | 7.2 | 1.01 | 1.14 |
| Total Inorganic Nitrogen | mg/L | 5.07 | 0.102 | 0.0601 |
| Metals - Annual | | | | |
| Arsenic | ug/L | 6.2 | n/a | 3.3 |
| Barium | ug/L | 50 | n/a | 45.3 |
| Zinc | ug/L | 40 | n/a | <10 |

Notes:

Shaded values represent exceedance of statistical prediction limit

mg/L = milligrams per liter; ug/L = micrograms per liter.

* = limits shown are from MW-203; additional data being gathered to determine whether revised limits are required for MW-2

# TABLE 4.
# SMITHS CREEK LANDFILL
# Second Quarter 2022 Monitoring Results

| Constituent Name | Units | Prediction Limit | Previous Quarterly Result | Current Quarterly Result |
|---|---|---|---|---|
| **MW-202** | | | **10/19/2021** | **6/15/2022** |
| Inorganic Indicators - Semiannual | | | | |
| Chloride | mg/L | 40 | 30.2 | 29.3 |
| Potassium | mg/L | 2.1 | 1.22 | 1.41 |
| Sodium | mg/L | 79 | 67.9 | 69.9 |
| Total Inorganic Nitrogen | mg/L | 0.64 | 0.136 | 0.133 |
| Total Organic Carbon | mg/L | 8.2 | 0.943 | 1.15 |
| Metals - Annual | | | | |
| Arsenic | ug/L | 2.0 | n/a | <1 |
| Barium | ug/L | 110 | n/a | 67.2 |
| Zinc | ug/L | 60 | n/a | <10 |
| **MW-203B** | | | **10/20/2021** | **6/15/2022** |
| Inorganic Indicators - Semiannual | | | | |
| Chloride | mg/L | 39.9* | 40 | 37.7 |
| Potassium | mg/L | 1.5* | 5.94 | 7.88 |
| Sodium | mg/L | 87.5* | 86.7 | 90.3 |
| Total Organic Carbon | mg/L | 5.1* | 1.48 | 1.66 |
| Total Inorganic Nitrogen | mg/L | 1.05* | 0.205 | 0.211 |
| Metals - Annual | | | | |
| Arsenic | ug/L | 18.2* | n/a | 9.3 |
| Barium | ug/L | 87* | n/a | 60.8 |
| Zinc | ug/L | 60* | n/a | <10 |
| **MW-207A** | | | **10/20/2021** | **6/15/2022** |
| Inorganic Indicators - Semiannual | | | | |
| Chloride | mg/L | 33.5 | 19.2 | 17.2 |
| Potassium | mg/L | 3.5 | 1.5 | 2.2 |
| Sodium | mg/L | 94.2 | 70 | 68.6 |
| Total Inorganic Nitrogen | mg/L | 1.62 | 0.0469 | 0.0484 |
| Total Organic Carbon | mg/L | 4.2 | 11.4 | 7.74 |
| Metals - Annual | | | | |
| Arsenic | ug/L | 14.3 | n/a | 1.6 |
| Barium | ug/L | 125.7 | n/a | 116 |
| Zinc | ug/L | 30 | n/a | <10 |

Notes:

Shaded values represent exceedance of statistical prediction limit

mg/L = milligrams per liter; ug/L = micrograms per liter.

* = limits shown are from MW-203; additional data being gathered to determine whether revised limits are required for MW-2

# TABLE 4.
# SMITHS CREEK LANDFILL
# Second Quarter 2022 Monitoring Results

| Constituent Name | Units | Prediction Limit | Previous Quarterly Result | Current Quarterly Result |
|---|---|---|---|---|
| **MW-208B** | | | **10/19/2021** | **6/15/2022** |
| Inorganic Indicators - Semiannual | | | | |
| Chloride | mg/L | 36.8 | 32.5 | 30.2 |
| Potassium | mg/L | 2.4 | 1.28 | 1.14 |
| Sodium | mg/L | 117.3 | 82.5 | 83.6 |
| Total Inorganic Nitrogen | mg/L | 4.4 | 0.275 | <0.2 |
| Total Organic Carbon | mg/L | 6.2 | 1.5 | 1.32 |
| Metals - Annual | | | | |
| Arsenic | ug/L | 17.0 | n/a | 6.4 |
| Barium | ug/L | 80.6 | n/a | 49.4 |
| Zinc | ug/L | 9.7 | n/a | <10 |
| **MW-209** | | | **10/19/2021** | **6/15/2022** |
| Inorganic Indicators - Semiannual | | | | |
| Chloride | mg/L | 44.5 | 35.2 | 33 |
| Potassium | mg/L | 1.5 | 1.02 | 1.25 |
| Sodium | mg/L | 99.8 | 90.9 | 91.4 |
| Total Inorganic Nitrogen | mg/L | 5.72 | 0.104 | 0.0415 |
| Total Organic Carbon | mg/L | 7.8 | 1.41 | 1.07 |
| Metals - Annual | | | | |
| Arsenic | ug/L | 3.0 | n/a | 1.5 |
| Barium | ug/L | 55 | n/a | 44.3 |
| Zinc | ug/L | 39 | n/a | <10 |
| **MW-210** | | | **10/19/2021** | **6/14/2022** |
| Inorganic Indicators - Semiannual | | | | |
| Chloride | mg/L | 40.1 | 29.3 | 28.3 |
| Potassium | mg/L | 2.45 | 1.69 | 2.46 |
| Sodium | mg/L | 90.6 | 114 | 142 |
| Total Organic Carbon | mg/L | 10.6 | 1.73 | 1.41 |
| Total Inorganic Nitrogen | mg/L | 1.71 | 0.0827 | 0.148 |
| Metals - Annual | | | | |
| Arsenic | ug/L | 16 | n/a | 4 |
| Zinc | ug/L | 50 | n/a | <10 |

Notes:

Shaded values represent exceedance of statistical prediction limit

mg/L = milligrams per liter; ug/L = micrograms per liter.

* = limits shown are from MW-203; additional data being gathered to determine whether revised limits are required for MW-2

# TABLE 4.
# SMITHS CREEK LANDFILL
# Second Quarter 2022 Monitoring Results

| Constituent Name | Units | Prediction Limit | Previous Quarterly Result | Current Quarterly Result |
|---|---|---|---|---|
| **MW-212** | | | **10/19/2021** | **6/14/2022** |
| Inorganic Indicators - Semiannual | | | | |
| Chloride | mg/L | 41.4 | 31.7 | 30.6 |
| Potassium | mg/L | 1.8 | 0.951 | 1.06 |
| Sodium | mg/L | 101.2 | 88.2 | 87 |
| Total Organic Carbon | mg/L | 7.1 | 1.83 | 1.52 |
| Total Inorganic Nitrogen | mg/L | 0.72 | 0.0242 | <0.02 |
| Metals - Annual | | | | |
| Arsenic | ug/L | 60 | n/a | 4.1 |
| Barium | ug/L | 362.1 | n/a | 66.1 |
| Zinc | ug/L | 20 | n/a | <10 |
| **MW-301** | | | **10/18/2021** | **6/14/2022** |
| Inorganic Indicators - Semiannual | | | | |
| Chloride | mg/L | 54.3 | 41.4 | 39.9 |
| Potassium | mg/L | 11.8 | 1.06 | 1.29 |
| Sodium | mg/L | 110.4 | 97.3 | 95 |
| Total Inorganic Nitrogen | mg/L | 1.13 | 0.19 | 0.199 |
| Total Organic Carbon | mg/L | 12.3 | 1.35 | 1.09 |
| Metals - Annual | | | | |
| Arsenic | ug/L | 7.1 | n/a | 3.1 |
| Barium | ug/L | 60 | n/a | 29.4 |
| Zinc | ug/L | 21 | n/a | <10 |
| **MW-302** | | | **10/18/2021** | **6/13/2022** |
| Inorganic Indicators - Semiannual | | | | |
| Chloride | mg/L | 67 | 37.4 | 36.9 |
| Potassium | mg/L | 7.9 | 1.45 | 1.55 |
| Sodium | mg/L | 111.9 | 94.5 | 92.5 |
| Total Organic Carbon | mg/L | 11.9 | 1.31 | 1.16 |
| Total Inorganic Nitrogen | mg/L | 0.92 | 0.177 | 0.184 |
| Metals - Annual | | | | |
| Arsenic | ug/L | 6.0 | n/a | <1 |
| Barium | ug/L | 40 | n/a | 35.8 |
| Zinc | ug/L | 29 | n/a | <10 |

Notes:

Shaded values represent exceedance of statistical prediction limit

mg/L = milligrams per liter; ug/L = micrograms per liter.

* = limits shown are from MW-203; additional data being gathered to determine whether revised limits are required for MW-2

# TABLE 4.
# SMITHS CREEK LANDFILL
# Second Quarter 2022 Monitoring Results

| Constituent Name | Units | Prediction Limit | Previous Quarterly Result | Current Quarterly Result |
|---|---|---|---|---|
| **MW-303A** | | | **10/20/2021** | **6/15/2022** |
| Inorganic Indicators - Semiannual | | | | |
| Chloride | mg/L | 48.6 | 41.9 | 41.3 |
| Potassium | mg/L | 2.2 | 1.01 | 1.03 |
| Sodium | mg/L | 157.6 | 103 | 97.8 |
| Total Organic Carbon | mg/L | 1.89 | 1.31 | 1.14 |
| Total Inorganic Nitrogen | mg/L | 0.21 | 0.1 | <0.2 |
| Metals - Annual | | | | |
| Arsenic | ug/L | 1.0 | n/a | 2.6 |
| Barium | ug/L | 24.25 | n/a | <5 |
| Zinc | ug/L | 10 | n/a | <10 |
| **MW-304** | | | **10/19/2021** | **6/16/2022** |
| Inorganic Indicators - Semiannual | | | | |
| Chloride | mg/L | 40.2 | 31.1 | 30.7 |
| Potassium | mg/L | 4.2 | 1.38 | 1.6 |
| Sodium | mg/L | 90 | 78.9 | 77.8 |
| Total Inorganic Nitrogen | mg/L | 1.3 | 0.157 | 0.166 |
| Total Organic Carbon | mg/L | 3.1 | 1.21 | 1 |
| Metals - Annual | | | | |
| Arsenic | ug/L | 2.0 | n/a | <1 |
| Barium | ug/L | 43 | n/a | 22.3 |
| Zinc | ug/L | 30 | n/a | <10 |
| **MW-305** | | | **10/19/2021** | **6/14/2022** |
| Inorganic Indicators - Semiannual | | | | |
| Chloride | mg/L | 49.2 | 33.4 | 32.4 |
| Potassium | mg/L | 11.1 | 1.48 | 1.57 |
| Sodium | mg/L | 96.1 | 89.7 | 87.8 |
| Total Organic Carbon | mg/L | 11.9 | 1.66 | 1.52 |
| Total Inorganic Nitrogen | mg/L | 2.16 | 0.0352 | 0.0649 |
| Metals - Annual | | | | |
| Arsenic | ug/L | 6.4 | n/a | 3.2 |
| Barium | ug/L | 60 | n/a | 39.1 |
| Zinc | ug/L | 40 | n/a | <10 |

Notes:

Shaded values represent exceedance of statistical prediction limit

mg/L = milligrams per liter; ug/L = micrograms per liter.

* = limits shown are from MW-203; additional data being gathered to determine whether revised limits are required for MW-2

# TABLE 5.
# SUMMARY OF STATISTICAL EXCEEDANCES
## Second Quarter 2022 Monitoring Event
## Smiths Creek Landfill

| Parameter | Well # | Location (U/D/S) | Part 201 GRCC DWC | Statistical Limit | 2Q2022 (bold>201) | 4Q2021 (bold>201) | 2Q2021 (bold>201) | 4Q2020 (bold>201) |
|---|---|---|---|---|---|---|---|---|
| Chloride (mg/L) | MW-203B | S | 250 | 39.9 | 37.7 | 40.0 | 38.7 | n/a |
| Potassium (mg/l) | MW-203B | S | n/a | 1.5 | 7.88 | 5.94 | 5.88 | n/a |
| Sodium (mg/L) | MW-203B | S | 230 | 87.5 | 90.3 | 86.7 | 83.8 | n/a |
| Total Organic Carbon (mg/L) | MW-207A | D | NC | 4.2 | 7.74 | 11.4 | 0.509 | 1.34 |
| Potassium (ug/L) | MW-210 | D | n/a | 2.45 | 2.46 | 1.69 | 1.41 | 1.66 |
| Sodium (mg/L) | MW-210 | D | 230 | 90.6 | 142 | 114 | 106 | 118 |
| Arsenic (ug/L) | MW-303A | U | 10 | 1.0 | 2.6 | n/a | 2.3 | n/a |

COMMENTS: Shaded values exceed the statistical limit.
n/a = not applicable, not required during specified sampling event
n/s = not sampled, recently installed replacement well
NL=No Limit, NC=Not Calculated
U=upgradient, D=downgradient, S=sidegradient
GRCC = generic residential cleanup criteria; DWC = drinking water criteria

# FIGURES

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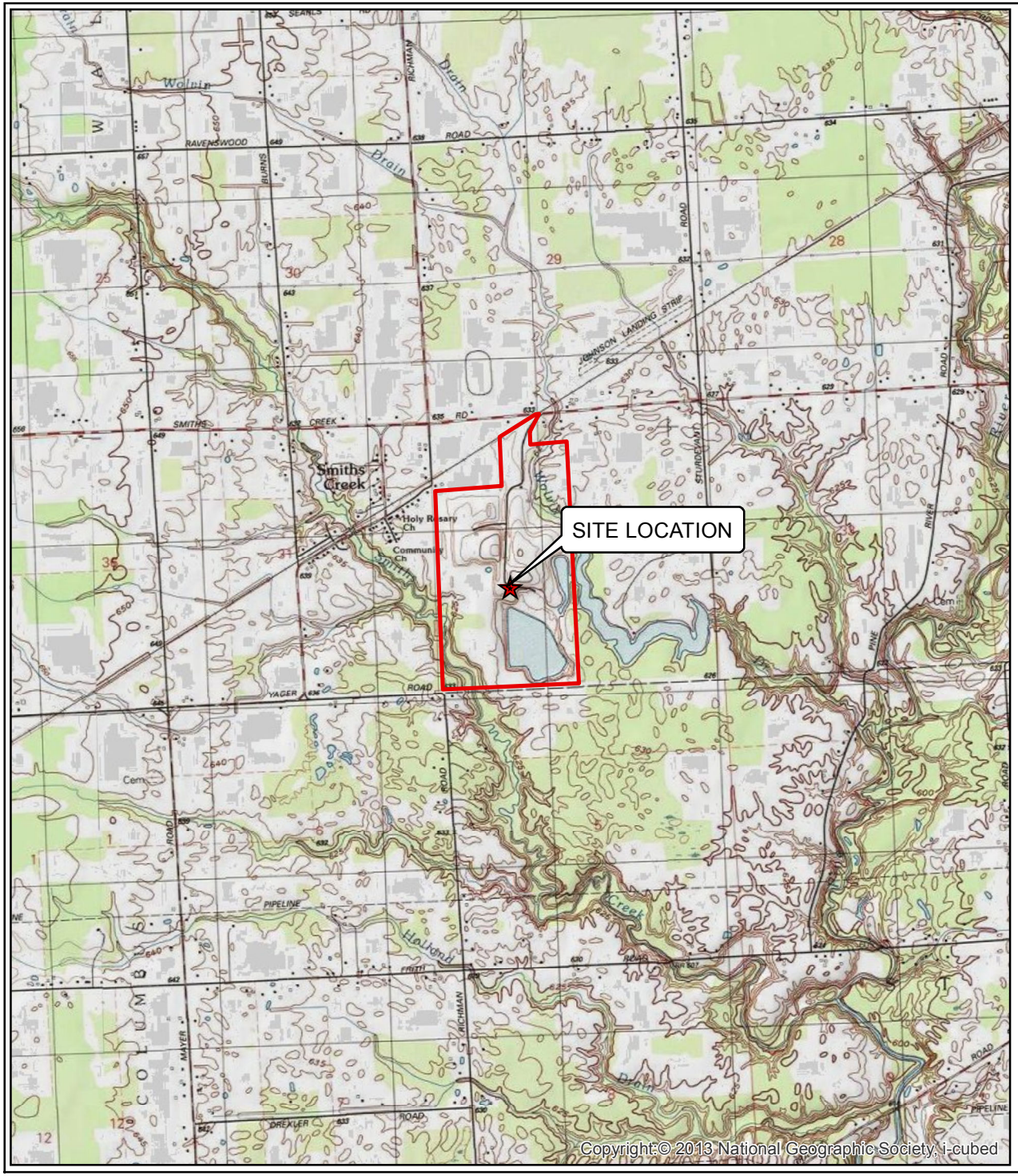


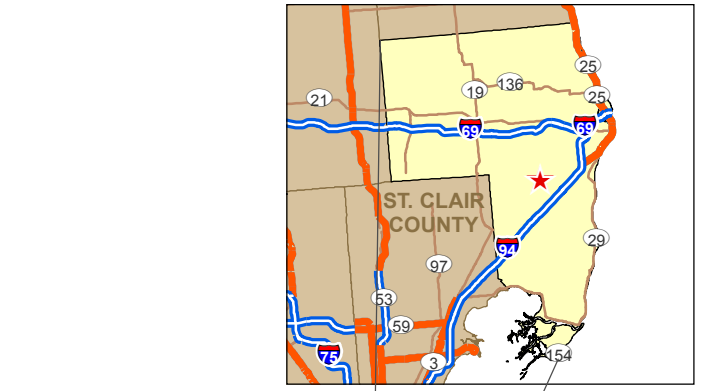


CLIENT
SMITHS CREEK LANDFILL
6779 SMITHS CREEK ROAD
SMITHS CREEK, MICHIGAN

PROJECT
2020 GROUNDWATER MONITORING

TITLE
**SITE LOCATION MAP**

CONSULTANT
GOLDER

| | |
|---|---|
| YYYY-MM-DD | 2016-07-18 |
| PREPARED | DJC |
| DESIGN | SCP |
| REVIEW | JSI |
| APPROVED | SCP |

| PROJECT No. | CONTROL | Rev. | FIGURE |
|---|---|---|---|
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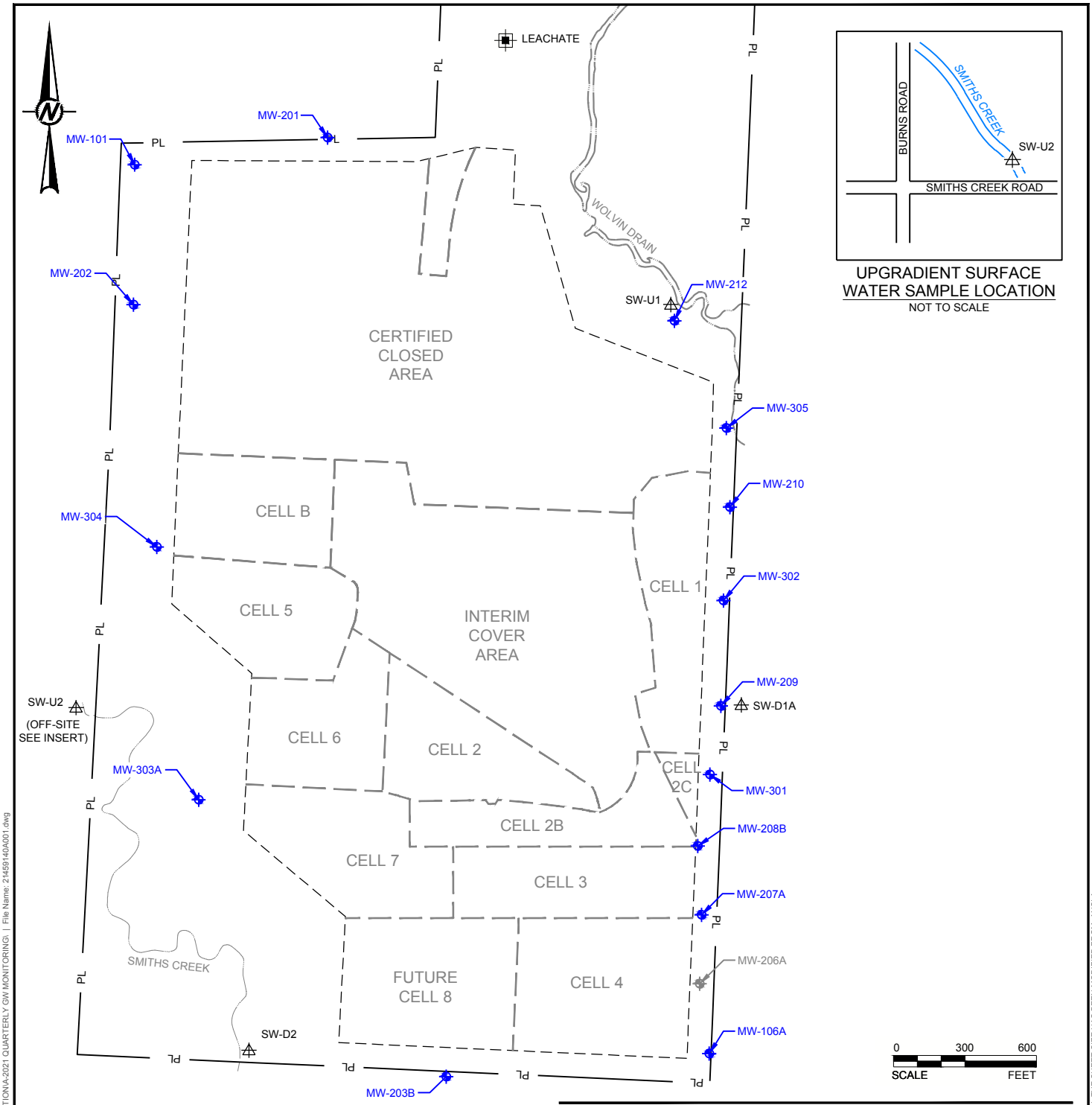





UPGRADIENT SURFACE WATER SAMPLE LOCATION
NOT TO SCALE

## LEGEND

- PROPERTY BOUNDARY
- SOLID WASTE BOUNDARY
- CELL BOUNDARY
- MW-XXX — MONITORING WELL LOCATION
- SW-XX — SURFACE WATER SAMPLING LOCATION
- LEACHATE — LEACHATE SAMPLING LOCATION
- MW-XXX — WELL ABANDONED

CLIENT
SMITHS CREEK LANDFILL
6779 SMITHS CREEK ROAD
SMITHS CREEK, MICHIGAN

PROJECT
2021 GROUNDWATER MONITORING

TITLE
**MONITORING LOCATION MAP**

CONSULTANT
GOLDER
MEMBER OF WSP

| | |
|---|---|
| YYYY-MM-DD | 2021-05-14 |
| PREPARED | DJC |
| DESIGN | END |
| REVIEW | RAK |
| APPROVED | SCP |

| PROJECT No. | CONTROL | Rev. | FIGURE |
|---|---|---|---|
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IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI A

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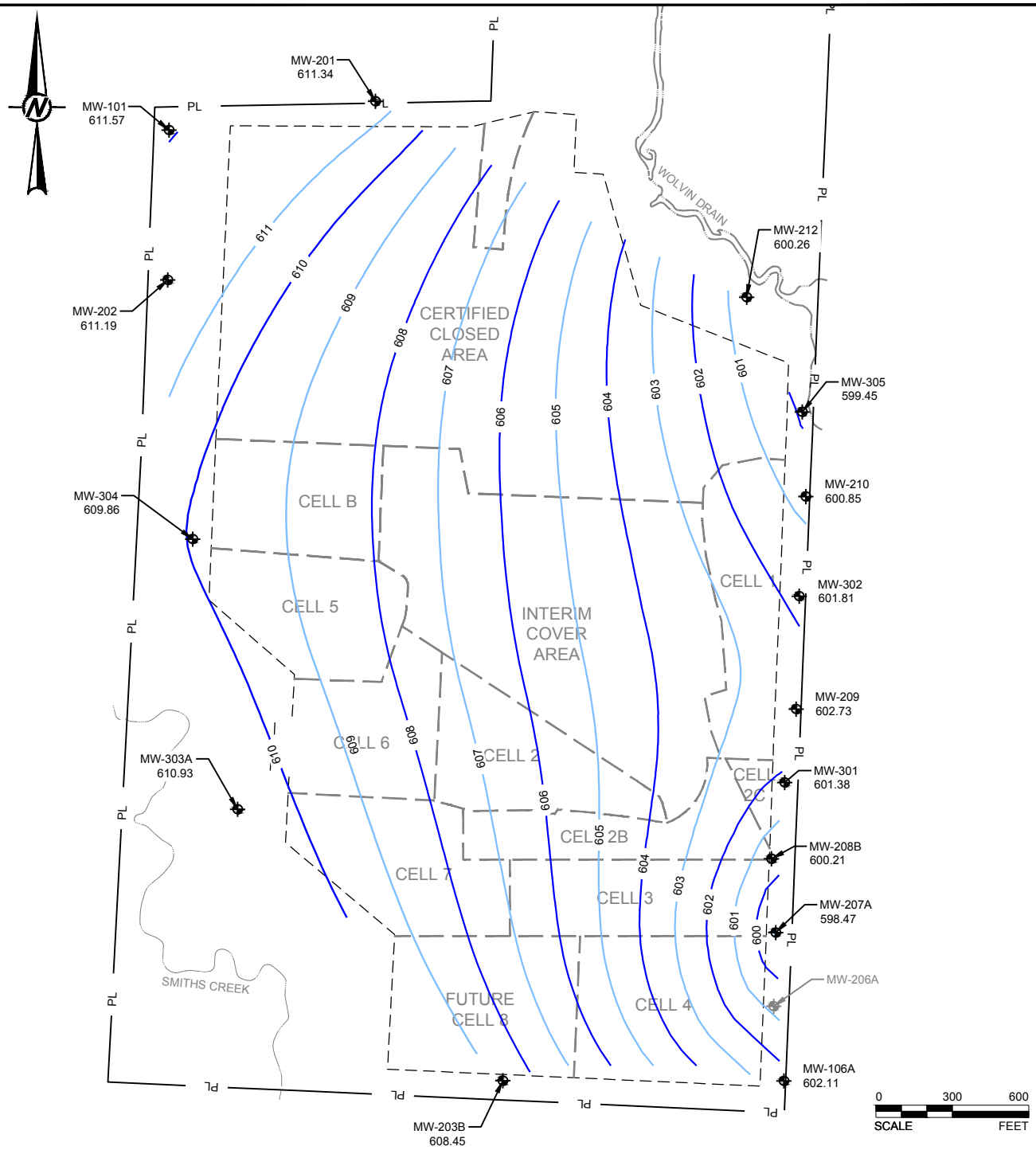


## LEGEND

- PL — PROPERTY BOUNDARY
- SOLID WASTE BOUNDARY
- CELL BOUNDARY
- 600 — GROUNDWATER ELEVATION CONTOUR
- MW-XXX XXX.XX — MONITORING WELL LOCATION AND GROUNDWATER ELEVATION
- MW-XXX — WELL ABANDONED

CLIENT
SMITHS CREEK LANDFILL
6779 SMITHS CREEK ROAD
SMITHS CREEK, MICHIGAN

PROJECT
2022 GROUNDWATER MONITORING

TITLE
**GROUNDWATER ELEVATION CONTOUR MAP**
*JUNE 15, 2022*

CONSULTANT
GOLDER
MEMBER OF WSP

| | |
|---|---|
| YYYY-MM-DD | 2021-11-17 |
| PREPARED | DJC |
| DESIGN | END |
| REVIEW | NJK |
| APPROVED | SCP |

| PROJECT No. | CONTROL | Rev. | FIGURE |
|---|---|---|---|
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**APPENDIX A**

# Laboratory Results

**Pace Analytical Services, LLC**
4171 40th St. SE
Grand Rapids, MI 49512
(616)975-4500

July 08, 2022

Sean Paulsen
WSP/Golder
27200 Haggerty Rd. Suite B-12
Farmington, MI 48331

RE: Project: Smith's Creek Landfill GW
Pace Project No.: 50319142

Dear Sean Paulsen:

Enclosed are the analytical results for sample(s) received by the laboratory on June 16, 2022. 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 - Indianapolis

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

Sincerely,

Jennifer L Rice

Jennifer Rice
jennifer.rice@pacelabs.com
(616)975-4500
Project Manager

Enclosures

**Pace Analytical Services, LLC**
4171 40th St. SE
Grand Rapids, MI 49512
(616)975-4500

## CERTIFICATIONS

Project: Smith's Creek Landfill GW
Pace Project No.: 50319142

**Pace Analytical Services Indianapolis**

7726 Moller Road, Indianapolis, IN 46268
Illinois Accreditation #: 200074
Indiana Drinking Water Laboratory #: C-49-06
Kansas/TNI Certification #: E-10177
Kentucky UST Agency Interest #: 80226
Kentucky WW Laboratory ID #: 98019
Michigan Drinking Water Laboratory #9050
Ohio VAP Certified Laboratory #: CL0065
Oklahoma Laboratory #: 9204
Texas Certification #: T104704355
Wisconsin Laboratory #: 999788130
USDA Soil Permit #: P330-19-00257

## REPORT OF LABORATORY ANALYSIS

**Pace Analytical Services, LLC**
4171 40th St. SE
Grand Rapids, MI 49512
(616)975-4500

## SAMPLE SUMMARY

Project: Smith's Creek Landfill GW
Pace Project No.: 50319142

| Lab ID | Sample ID | Matrix | Date Collected | Date Received |
|---|---|---|---|---|
| **50319142001** | **MW-101** | Water | 06/15/22 16:35 | 06/16/22 15:40 |
| **50319142002** | **MW-106A** | Water | 06/15/22 10:15 | 06/16/22 15:40 |
| **50319142003** | **MW-201** | Water | 06/14/22 08:40 | 06/16/22 15:40 |
| **50319142004** | **MW-202** | Water | 06/15/22 14:40 | 06/16/22 15:40 |
| **50319142005** | **MW-203B** | Water | 06/15/22 11:10 | 06/16/22 15:40 |
| **50319142006** | **MW-207A** | Water | 06/15/22 09:15 | 06/16/22 15:40 |
| **50319142007** | **MW-208** | Water | 06/15/22 09:45 | 06/16/22 15:40 |
| **50319142008** | **MW-209** | Water | 06/15/22 08:45 | 06/16/22 15:40 |
| **50319142009** | **MW-210** | Water | 06/14/22 10:30 | 06/16/22 15:40 |
| **50319142010** | **MW-212** | Water | 06/14/22 09:30 | 06/16/22 15:40 |
| **50319142011** | **MW-213** | Water | 06/15/22 12:40 | 06/16/22 15:40 |
| **50319142012** | **MW-301** | Water | 06/14/22 12:40 | 06/16/22 15:40 |
| **50319142013** | **MW-302** | Water | 06/13/22 16:05 | 06/16/22 15:40 |
| **50319142014** | **MW-303A** | Water | 06/15/22 12:40 | 06/16/22 15:40 |
| **50319142015** | **MW-304** | Water | 06/16/22 10:15 | 06/16/22 15:40 |
| **50319142016** | **MW-305** | Water | 06/14/22 10:00 | 06/16/22 15:40 |
| **50319142017** | **Field Blank** | Water | 06/16/22 10:15 | 06/16/22 15:40 |
| **50319142018** | **Trip Blank** | Water | 06/13/22 00:00 | 06/16/22 15:40 |

Pace Analytical Services, LLC
4171 40th St. SE
Grand Rapids, MI 49512
(616)975-4500

## SAMPLE ANALYTE COUNT

Project: Smith's Creek Landfill GW
Pace Project No.: 50319142

| Lab ID | Sample ID | Method | Analysts | Analytes Reported | Laboratory |
|---|---|---|---|---|---|
| **50319142001** | **MW-101** | EPA 6010 | MTM | 2 | PASI-I |
| | | EPA 6020 | CAW | 3 | PASI-I |
| | | EPA 5030B/8260 | ALA | 49 | PASI-I |
| | | NO2+NO3+NH3 Calculation | MMS | 1 | PASI-I |
| | | EPA 353.2 | OAS | 1 | PASI-I |
| | | SM 4500-Cl-E | OAS | 1 | PASI-I |
| | | SM-4500-NH3 G | MMS | 1 | PASI-I |
| | | SM 5310C | MMS | 1 | PASI-I |
| **50319142002** | **MW-106A** | EPA 6010 | MTM | 2 | PASI-I |
| | | EPA 6020 | CAW | 3 | PASI-I |
| | | EPA 5030B/8260 | ALA | 49 | PASI-I |
| | | NO2+NO3+NH3 Calculation | MMS | 1 | PASI-I |
| | | EPA 353.2 | OAS | 1 | PASI-I |
| | | SM 4500-Cl-E | OAS | 1 | PASI-I |
| | | SM-4500-NH3 G | STS | 1 | PASI-I |
| | | SM 5310C | MMS | 1 | PASI-I |
| **50319142003** | **MW-201** | EPA 6010 | MTM | 2 | PASI-I |
| | | EPA 6020 | CAW | 3 | PASI-I |
| | | EPA 5030B/8260 | ALA | 49 | PASI-I |
| | | NO2+NO3+NH3 Calculation | MMS | 1 | PASI-I |
| | | EPA 353.2 | OAS | 1 | PASI-I |
| | | SM 4500-Cl-E | OAS | 1 | PASI-I |
| | | SM-4500-NH3 G | STS | 1 | PASI-I |
| | | SM 5310C | MMS | 1 | PASI-I |
| **50319142004** | **MW-202** | EPA 6010 | MTM | 2 | PASI-I |
| | | EPA 6020 | CAW | 3 | PASI-I |
| | | EPA 5030B/8260 | ALA | 49 | PASI-I |
| | | NO2+NO3+NH3 Calculation | MMS | 1 | PASI-I |
| | | EPA 353.2 | OAS | 1 | PASI-I |
| | | SM 4500-Cl-E | OAS | 1 | PASI-I |
| | | SM-4500-NH3 G | STS | 1 | PASI-I |
| | | SM 5310C | MMS | 1 | PASI-I |
| **50319142005** | **MW-203B** | EPA 6010 | MTM | 2 | PASI-I |
| | | EPA 6020 | CAW | 3 | PASI-I |
| | | EPA 5030B/8260 | ALA | 49 | PASI-I |
| | | NO2+NO3+NH3 Calculation | MMS | 1 | PASI-I |
| | | EPA 353.2 | OAS | 1 | PASI-I |

**Pace Analytical Services, LLC**
4171 40th St. SE
Grand Rapids, MI 49512
(616)975-4500

## SAMPLE ANALYTE COUNT

Project: Smith's Creek Landfill GW
Pace Project No.: 50319142

| Lab ID | Sample ID | Method | Analysts | Analytes Reported | Laboratory |
|---|---|---|---|---|---|
| | | SM 4500-Cl-E | OAS | 1 | PASI-I |
| | | SM-4500-NH3 G | STS | 1 | PASI-I |
| | | SM 5310C | MMS | 1 | PASI-I |
| **50319142006** | **MW-207A** | EPA 6010 | MTM | 2 | PASI-I |
| | | EPA 6020 | CAW | 3 | PASI-I |
| | | EPA 5030B/8260 | ALA | 49 | PASI-I |
| | | NO2+NO3+NH3 Calculation | MMS | 1 | PASI-I |
| | | EPA 353.2 | OAS | 1 | PASI-I |
| | | SM 4500-Cl-E | OAS | 1 | PASI-I |
| | | SM-4500-NH3 G | STS | 1 | PASI-I |
| | | SM 5310C | MMS | 1 | PASI-I |
| **50319142007** | **MW-208** | EPA 6010 | MTM | 2 | PASI-I |
| | | EPA 6020 | CAW | 3 | PASI-I |
| | | EPA 5030B/8260 | ALA | 49 | PASI-I |
| | | NO2+NO3+NH3 Calculation | MMS | 1 | PASI-I |
| | | EPA 353.2 | OAS | 1 | PASI-I |
| | | SM 4500-Cl-E | OAS | 1 | PASI-I |
| | | SM-4500-NH3 G | STS | 1 | PASI-I |
| | | SM 5310C | MMS | 1 | PASI-I |
| **50319142008** | **MW-209** | EPA 6010 | MTM | 2 | PASI-I |
| | | EPA 6020 | CAW | 3 | PASI-I |
| | | EPA 5030B/8260 | ALA | 49 | PASI-I |
| | | NO2+NO3+NH3 Calculation | MMS | 1 | PASI-I |
| | | EPA 353.2 | OAS | 1 | PASI-I |
| | | SM 4500-Cl-E | OAS | 1 | PASI-I |
| | | SM-4500-NH3 G | STS | 1 | PASI-I |
| | | SM 5310C | MMS | 1 | PASI-I |
| **50319142009** | **MW-210** | EPA 6010 | MTM | 2 | PASI-I |
| | | EPA 6020 | CAW | 3 | PASI-I |
| | | EPA 5030B/8260 | ALA | 49 | PASI-I |
| | | NO2+NO3+NH3 Calculation | MMS | 1 | PASI-I |
| | | EPA 353.2 | OAS | 1 | PASI-I |
| | | SM 4500-Cl-E | OAS | 1 | PASI-I |
| | | SM-4500-NH3 G | STS | 1 | PASI-I |
| | | SM 5310C | MMS | 1 | PASI-I |
| **50319142010** | **MW-212** | EPA 6010 | MTM | 2 | PASI-I |
| | | EPA 6020 | CAW | 3 | PASI-I |

**Pace Analytical Services, LLC**
4171 40th St. SE
Grand Rapids, MI 49512
(616)975-4500

## SAMPLE ANALYTE COUNT

Project: Smith's Creek Landfill GW
Pace Project No.: 50319142

| Lab ID | Sample ID | Method | Analysts | Analytes Reported | Laboratory |
|---|---|---|---|---|---|
| | | EPA 5030B/8260 | ALA | 49 | PASI-I |
| | | NO2+NO3+NH3 Calculation | MMS | 1 | PASI-I |
| | | EPA 353.2 | OAS | 1 | PASI-I |
| | | SM 4500-Cl-E | OAS | 1 | PASI-I |
| | | SM-4500-NH3 G | STS | 1 | PASI-I |
| | | SM 5310C | MMS | 1 | PASI-I |
| **50319142011** | **MW-213** | EPA 6010 | MTM | 2 | PASI-I |
| | | EPA 6020 | CAW | 3 | PASI-I |
| | | EPA 5030B/8260 | ALA | 49 | PASI-I |
| | | NO2+NO3+NH3 Calculation | MMS | 1 | PASI-I |
| | | EPA 353.2 | OAS | 1 | PASI-I |
| | | SM 4500-Cl-E | OAS | 1 | PASI-I |
| | | SM-4500-NH3 G | STS | 1 | PASI-I |
| | | SM 5310C | MMS | 1 | PASI-I |
| **50319142012** | **MW-301** | EPA 6010 | DJS | 2 | PASI-I |
| | | EPA 6010 | MTM | 2 | PASI-I |
| | | EPA 6020 | CAW | 3 | PASI-I |
| | | EPA 6020 | CAW | 3 | PASI-I |
| | | EPA 5030B/8260 | ALA | 49 | PASI-I |
| | | NO2+NO3+NH3 Calculation | MMS | 1 | PASI-I |
| | | EPA 353.2 | OAS | 1 | PASI-I |
| | | SM 4500-Cl-E | OAS | 1 | PASI-I |
| | | SM-4500-NH3 G | STS | 1 | PASI-I |
| | | SM 5310C | MMS | 1 | PASI-I |
| **50319142013** | **MW-302** | EPA 6010 | MTM | 2 | PASI-I |
| | | EPA 6020 | CAW | 3 | PASI-I |
| | | EPA 5030B/8260 | ALA | 49 | PASI-I |
| | | NO2+NO3+NH3 Calculation | MMS | 1 | PASI-I |
| | | EPA 353.2 | OAS | 1 | PASI-I |
| | | SM 4500-Cl-E | OAS | 1 | PASI-I |
| | | SM-4500-NH3 G | STS | 1 | PASI-I |
| | | SM 5310C | MMS | 1 | PASI-I |
| **50319142014** | **MW-303A** | EPA 6010 | MTM | 2 | PASI-I |
| | | EPA 6020 | CAW | 3 | PASI-I |
| | | EPA 5030B/8260 | ALA | 49 | PASI-I |
| | | NO2+NO3+NH3 Calculation | MMS | 1 | PASI-I |
| | | EPA 353.2 | OAS | 1 | PASI-I |

Pace Analytical Services, LLC
4171 40th St. SE
Grand Rapids, MI 49512
(616)975-4500

## SAMPLE ANALYTE COUNT

Project: Smith's Creek Landfill GW
Pace Project No.: 50319142

| Lab ID | Sample ID | Method | Analysts | Analytes Reported | Laboratory |
|---|---|---|---|---|---|
| | | SM 4500-Cl-E | OAS | 1 | PASI-I |
| | | SM-4500-NH3 G | STS | 1 | PASI-I |
| | | SM 5310C | MMS | 1 | PASI-I |
| **50319142015** | **MW-304** | EPA 6010 | DJS | 2 | PASI-I |
| | | EPA 6010 | MTM | 2 | PASI-I |
| | | EPA 6020 | CAW | 3 | PASI-I |
| | | EPA 6020 | CAW | 3 | PASI-I |
| | | EPA 5030B/8260 | ALA | 49 | PASI-I |
| | | NO2+NO3+NH3 Calculation | MMS | 1 | PASI-I |
| | | EPA 353.2 | OAS | 1 | PASI-I |
| | | SM 4500-Cl-E | OAS | 1 | PASI-I |
| | | SM-4500-NH3 G | STS | 1 | PASI-I |
| | | SM 5310C | MMS | 1 | PASI-I |
| **50319142016** | **MW-305** | EPA 6010 | MTM | 2 | PASI-I |
| | | EPA 6020 | CAW | 3 | PASI-I |
| | | EPA 5030B/8260 | ALA | 49 | PASI-I |
| | | NO2+NO3+NH3 Calculation | MMS | 1 | PASI-I |
| | | EPA 353.2 | OAS | 1 | PASI-I |
| | | SM 4500-Cl-E | OAS | 1 | PASI-I |
| | | SM-4500-NH3 G | STS | 1 | PASI-I |
| | | SM 5310C | MMS | 1 | PASI-I |
| **50319142017** | **Field Blank** | EPA 5030B/8260 | ALA | 49 | PASI-I |
| **50319142018** | **Trip Blank** | EPA 5030B/8260 | ALA | 49 | PASI-I |

PASI-I = Pace Analytical Services - Indianapolis

**Pace Analytical Services, LLC**
4171 40th St. SE
Grand Rapids, MI 49512
(616)975-4500

## ANALYTICAL RESULTS

Project: Smith's Creek Landfill GW
Pace Project No.: 50319142

**Sample: MW-101** **Lab ID: 50319142001** Collected: 06/15/22 16:35 Received: 06/16/22 15:40 Matrix: Water

| Parameters | Results | Units | Report Limit | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|
| **6010 MET ICP, Dissolved** | Analytical Method: EPA 6010 Preparation Method: EPA 3010<br>Pace Analytical Services - Indianapolis | | | | | | | |
| Potassium, Dissolved | **1820** | ug/L | 500 | 1 | 06/24/22 08:22 | 06/28/22 11:22 | 7440-09-7 | |
| Sodium, Dissolved | **64400** | ug/L | 1000 | 1 | 06/24/22 08:22 | 06/28/22 11:22 | 7440-23-5 | |
| **6020 MET ICPMS, Dissolved** | Analytical Method: EPA 6020 Preparation Method: EPA 200.2<br>Pace Analytical Services - Indianapolis | | | | | | | |
| Arsenic, Dissolved | **1.9** | ug/L | 1.0 | 1 | 06/20/22 15:30 | 06/22/22 07:41 | 7440-38-2 | |
| Barium, Dissolved | **44.1** | ug/L | 5.0 | 1 | 06/20/22 15:30 | 06/22/22 07:41 | 7440-39-3 | |
| Zinc, Dissolved | **<10.0** | ug/L | 10.0 | 1 | 06/20/22 15:30 | 06/22/22 07:41 | 7440-66-6 | |
| **8260 MSV Low Level** | Analytical Method: EPA 5030B/8260<br>Pace Analytical Services - Indianapolis | | | | | | | |
| Acetone | **<20.0** | ug/L | 20.0 | 1 | | 06/21/22 03:34 | 67-64-1 | |
| Acrylonitrile | **<5.0** | ug/L | 5.0 | 1 | | 06/21/22 03:34 | 107-13-1 | |
| Benzene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 03:34 | 71-43-2 | |
| Bromochloromethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 03:34 | 74-97-5 | |
| Bromodichloromethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 03:34 | 75-27-4 | |
| Bromoform | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 03:34 | 75-25-2 | |
| Bromomethane | **<5.0** | ug/L | 5.0 | 1 | | 06/21/22 03:34 | 74-83-9 | |
| 2-Butanone (MEK) | **<5.0** | ug/L | 5.0 | 1 | | 06/21/22 03:34 | 78-93-3 | |
| Carbon disulfide | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 03:34 | 75-15-0 | |
| Carbon tetrachloride | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 03:34 | 56-23-5 | |
| Chlorobenzene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 03:34 | 108-90-7 | |
| Chloroethane | **<5.0** | ug/L | 5.0 | 1 | | 06/21/22 03:34 | 75-00-3 | |
| Chloroform | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 03:34 | 67-66-3 | |
| Chloromethane | **<5.0** | ug/L | 5.0 | 1 | | 06/21/22 03:34 | 74-87-3 | |
| 1,2-Dibromo-3-chloropropane | **<5.0** | ug/L | 5.0 | 1 | | 06/21/22 03:34 | 96-12-8 | |
| Dibromochloromethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 03:34 | 124-48-1 | |
| 1,2-Dibromoethane (EDB) | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 03:34 | 106-93-4 | |
| Dibromomethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 03:34 | 74-95-3 | |
| 1,2-Dichlorobenzene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 03:34 | 95-50-1 | |
| 1,4-Dichlorobenzene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 03:34 | 106-46-7 | |
| trans-1,4-Dichloro-2-butene | **<5.0** | ug/L | 5.0 | 1 | | 06/21/22 03:34 | 110-57-6 | |
| 1,1-Dichloroethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 03:34 | 75-34-3 | |
| 1,2-Dichloroethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 03:34 | 107-06-2 | |
| 1,1-Dichloroethene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 03:34 | 75-35-4 | |
| cis-1,2-Dichloroethene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 03:34 | 156-59-2 | |
| trans-1,2-Dichloroethene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 03:34 | 156-60-5 | |
| 1,2-Dichloropropane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 03:34 | 78-87-5 | |
| cis-1,3-Dichloropropene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 03:34 | 10061-01-5 | |
| trans-1,3-Dichloropropene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 03:34 | 10061-02-6 | |
| Ethylbenzene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 03:34 | 100-41-4 | |
| 2-Hexanone | **<5.0** | ug/L | 5.0 | 1 | | 06/21/22 03:34 | 591-78-6 | |
| Iodomethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 03:34 | 74-88-4 | |
| Methylene Chloride | **<5.0** | ug/L | 5.0 | 1 | | 06/21/22 03:34 | 75-09-2 | |
| 4-Methyl-2-pentanone (MIBK) | **<5.0** | ug/L | 5.0 | 1 | | 06/21/22 03:34 | 108-10-1 | |

## REPORT OF LABORATORY ANALYSIS

**Pace Analytical Services, LLC**
4171 40th St. SE
Grand Rapids, MI 49512
(616)975-4500

## ANALYTICAL RESULTS

Project: Smith's Creek Landfill GW
Pace Project No.: 50319142

**Sample: MW-101** **Lab ID: 50319142001** Collected: 06/15/22 16:35 Received: 06/16/22 15:40 Matrix: Water

| Parameters | Results | Units | Report Limit | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|
| **8260 MSV Low Level** | Analytical Method: EPA 5030B/8260 Pace Analytical Services - Indianapolis | | | | | | | |
| Styrene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 03:34 | 100-42-5 | |
| 1,1,1,2-Tetrachloroethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 03:34 | 630-20-6 | |
| 1,1,2,2-Tetrachloroethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 03:34 | 79-34-5 | |
| Tetrachloroethene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 03:34 | 127-18-4 | |
| Toluene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 03:34 | 108-88-3 | |
| 1,1,1-Trichloroethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 03:34 | 71-55-6 | |
| 1,1,2-Trichloroethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 03:34 | 79-00-5 | |
| Trichloroethene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 03:34 | 79-01-6 | |
| Trichlorofluoromethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 03:34 | 75-69-4 | |
| 1,2,3-Trichloropropane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 03:34 | 96-18-4 | |
| Vinyl chloride | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 03:34 | 75-01-4 | |
| Xylene (Total) | **<2.0** | ug/L | 2.0 | 1 | | 06/21/22 03:34 | 1330-20-7 | |
| ***Surrogates*** | | | | | | | | |
| 4-Bromofluorobenzene (S) | 95 | %. | 79-124 | 1 | | 06/21/22 03:34 | 460-00-4 | |
| Dibromofluoromethane (S) | 99 | %. | 82-128 | 1 | | 06/21/22 03:34 | 1868-53-7 | |
| Toluene-d8 (S) | 100 | %. | 73-122 | 1 | | 06/21/22 03:34 | 2037-26-5 | |
| **Total Inorganic Nitrogen** | Analytical Method: NO2+NO3+NH3 Calculation Pace Analytical Services - Indianapolis | | | | | | | |
| Total Inorganic Nitrogen | **126** | ug/L | 20.0 | 1 | | 06/30/22 15:05 | | |
| **353.2 Nitrogen, NO2/NO3 pres.** | Analytical Method: EPA 353.2 Pace Analytical Services - Indianapolis | | | | | | | |
| Nitrogen, NO2 plus NO3 | **<20.0** | ug/L | 20.0 | 1 | | 06/22/22 12:47 | | |
| **4500 Chloride** | Analytical Method: SM 4500-Cl-E Pace Analytical Services - Indianapolis | | | | | | | |
| Chloride | **25100** | ug/L | 1000 | 1 | | 06/23/22 14:57 | 16887-00-6 | |
| **4500 Ammonia Water Low Level** | Analytical Method: SM-4500-NH3 G Pace Analytical Services - Indianapolis | | | | | | | |
| Nitrogen, Ammonia | **126** | ug/L | 20.0 | 1 | | 06/21/22 17:24 | 7664-41-7 | |
| **5310C TOC** | Analytical Method: SM 5310C Pace Analytical Services - Indianapolis | | | | | | | |
| Total Organic Carbon | **1240** | ug/L | 500 | 1 | | 06/23/22 04:36 | 7440-44-0 | |

## REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
4171 40th St. SE
Grand Rapids, MI 49512
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## ANALYTICAL RESULTS

Project: Smith's Creek Landfill GW
Pace Project No.: 50319142

**Sample: MW-106A** **Lab ID: 50319142002** Collected: 06/15/22 10:15 Received: 06/16/22 15:40 Matrix: Water

| Parameters | Results | Units | Report Limit | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|
| **6010 MET ICP, Dissolved** | Analytical Method: EPA 6010 Preparation Method: EPA 3010<br>Pace Analytical Services - Indianapolis | | | | | | | |
| Potassium, Dissolved | **1270** | ug/L | 500 | 1 | 06/24/22 08:22 | 06/28/22 11:24 | 7440-09-7 | |
| Sodium, Dissolved | **74300** | ug/L | 1000 | 1 | 06/24/22 08:22 | 06/28/22 11:24 | 7440-23-5 | |
| **6020 MET ICPMS, Dissolved** | Analytical Method: EPA 6020 Preparation Method: EPA 200.2<br>Pace Analytical Services - Indianapolis | | | | | | | |
| Arsenic, Dissolved | **8.1** | ug/L | 1.0 | 1 | 06/20/22 15:30 | 06/22/22 07:46 | 7440-38-2 | |
| Barium, Dissolved | **59.9** | ug/L | 5.0 | 1 | 06/20/22 15:30 | 06/22/22 07:46 | 7440-39-3 | |
| Zinc, Dissolved | **<10.0** | ug/L | 10.0 | 1 | 06/20/22 15:30 | 06/22/22 07:46 | 7440-66-6 | |
| **8260 MSV Low Level** | Analytical Method: EPA 5030B/8260<br>Pace Analytical Services - Indianapolis | | | | | | | |
| Acetone | **<20.0** | ug/L | 20.0 | 1 | | 06/21/22 04:03 | 67-64-1 | |
| Acrylonitrile | **<5.0** | ug/L | 5.0 | 1 | | 06/21/22 04:03 | 107-13-1 | |
| Benzene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 04:03 | 71-43-2 | |
| Bromochloromethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 04:03 | 74-97-5 | |
| Bromodichloromethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 04:03 | 75-27-4 | |
| Bromoform | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 04:03 | 75-25-2 | |
| Bromomethane | **<5.0** | ug/L | 5.0 | 1 | | 06/21/22 04:03 | 74-83-9 | |
| 2-Butanone (MEK) | **<5.0** | ug/L | 5.0 | 1 | | 06/21/22 04:03 | 78-93-3 | |
| Carbon disulfide | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 04:03 | 75-15-0 | |
| Carbon tetrachloride | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 04:03 | 56-23-5 | |
| Chlorobenzene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 04:03 | 108-90-7 | |
| Chloroethane | **<5.0** | ug/L | 5.0 | 1 | | 06/21/22 04:03 | 75-00-3 | |
| Chloroform | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 04:03 | 67-66-3 | |
| Chloromethane | **<5.0** | ug/L | 5.0 | 1 | | 06/21/22 04:03 | 74-87-3 | |
| 1,2-Dibromo-3-chloropropane | **<5.0** | ug/L | 5.0 | 1 | | 06/21/22 04:03 | 96-12-8 | |
| Dibromochloromethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 04:03 | 124-48-1 | |
| 1,2-Dibromoethane (EDB) | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 04:03 | 106-93-4 | |
| Dibromomethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 04:03 | 74-95-3 | |
| 1,2-Dichlorobenzene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 04:03 | 95-50-1 | |
| 1,4-Dichlorobenzene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 04:03 | 106-46-7 | |
| trans-1,4-Dichloro-2-butene | **<5.0** | ug/L | 5.0 | 1 | | 06/21/22 04:03 | 110-57-6 | |
| 1,1-Dichloroethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 04:03 | 75-34-3 | |
| 1,2-Dichloroethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 04:03 | 107-06-2 | |
| 1,1-Dichloroethene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 04:03 | 75-35-4 | |
| cis-1,2-Dichloroethene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 04:03 | 156-59-2 | |
| trans-1,2-Dichloroethene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 04:03 | 156-60-5 | |
| 1,2-Dichloropropane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 04:03 | 78-87-5 | |
| cis-1,3-Dichloropropene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 04:03 | 10061-01-5 | |
| trans-1,3-Dichloropropene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 04:03 | 10061-02-6 | |
| Ethylbenzene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 04:03 | 100-41-4 | |
| 2-Hexanone | **<5.0** | ug/L | 5.0 | 1 | | 06/21/22 04:03 | 591-78-6 | |
| Iodomethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 04:03 | 74-88-4 | |
| Methylene Chloride | **<5.0** | ug/L | 5.0 | 1 | | 06/21/22 04:03 | 75-09-2 | |
| 4-Methyl-2-pentanone (MIBK) | **<5.0** | ug/L | 5.0 | 1 | | 06/21/22 04:03 | 108-10-1 | |

## REPORT OF LABORATORY ANALYSIS

**Pace Analytical Services, LLC**
4171 40th St. SE
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(616)975-4500

## ANALYTICAL RESULTS

Project: Smith's Creek Landfill GW
Pace Project No.: 50319142

**Sample: MW-106A** **Lab ID: 50319142002** Collected: 06/15/22 10:15 Received: 06/16/22 15:40 Matrix: Water

| Parameters | Results | Units | Report Limit | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|
| **8260 MSV Low Level** | Analytical Method: EPA 5030B/8260 Pace Analytical Services - Indianapolis | | | | | | | |
| Styrene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 04:03 | 100-42-5 | |
| 1,1,1,2-Tetrachloroethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 04:03 | 630-20-6 | |
| 1,1,2,2-Tetrachloroethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 04:03 | 79-34-5 | |
| Tetrachloroethene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 04:03 | 127-18-4 | |
| Toluene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 04:03 | 108-88-3 | |
| 1,1,1-Trichloroethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 04:03 | 71-55-6 | |
| 1,1,2-Trichloroethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 04:03 | 79-00-5 | |
| Trichloroethene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 04:03 | 79-01-6 | |
| Trichlorofluoromethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 04:03 | 75-69-4 | |
| 1,2,3-Trichloropropane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 04:03 | 96-18-4 | |
| Vinyl chloride | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 04:03 | 75-01-4 | |
| Xylene (Total) | **<2.0** | ug/L | 2.0 | 1 | | 06/21/22 04:03 | 1330-20-7 | |
| ***Surrogates*** | | | | | | | | |
| 4-Bromofluorobenzene (S) | 96 | %. | 79-124 | 1 | | 06/21/22 04:03 | 460-00-4 | |
| Dibromofluoromethane (S) | 99 | %. | 82-128 | 1 | | 06/21/22 04:03 | 1868-53-7 | |
| Toluene-d8 (S) | 100 | %. | 73-122 | 1 | | 06/21/22 04:03 | 2037-26-5 | |
| **Total Inorganic Nitrogen** | Analytical Method: NO2+NO3+NH3 Calculation Pace Analytical Services - Indianapolis | | | | | | | |
| Total Inorganic Nitrogen | **<200** | ug/L | 200 | 10 | | 06/30/22 15:05 | | |
| **353.2 Nitrogen, NO2/NO3 pres.** | Analytical Method: EPA 353.2 Pace Analytical Services - Indianapolis | | | | | | | |
| Nitrogen, NO2 plus NO3 | **<200** | ug/L | 200 | 10 | | 06/22/22 12:49 | | D3 |
| **4500 Chloride** | Analytical Method: SM 4500-Cl-E Pace Analytical Services - Indianapolis | | | | | | | |
| Chloride | **35700** | ug/L | 1000 | 1 | | 06/23/22 15:02 | 16887-00-6 | |
| **4500 Ammonia Water Low Level** | Analytical Method: SM-4500-NH3 G Pace Analytical Services - Indianapolis | | | | | | | |
| Nitrogen, Ammonia | **103** | ug/L | 20.0 | 1 | | 06/29/22 13:08 | 7664-41-7 | |
| **5310C TOC** | Analytical Method: SM 5310C Pace Analytical Services - Indianapolis | | | | | | | |
| Total Organic Carbon | **1640** | ug/L | 500 | 1 | | 06/23/22 05:15 | 7440-44-0 | |

## REPORT OF LABORATORY ANALYSIS

**Pace Analytical Services, LLC**
4171 40th St. SE
Grand Rapids, MI 49512
(616)975-4500

## ANALYTICAL RESULTS

Project: Smith's Creek Landfill GW
Pace Project No.: 50319142

**Sample: MW-201** **Lab ID: 50319142003** Collected: 06/14/22 08:40 Received: 06/16/22 15:40 Matrix: Water

| Parameters | Results | Units | Report Limit | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|
| **6010 MET ICP, Dissolved** | Analytical Method: EPA 6010 Preparation Method: EPA 3010<br>Pace Analytical Services - Indianapolis | | | | | | | |
| Potassium, Dissolved | **1450** | ug/L | 500 | 1 | 06/24/22 08:22 | 06/28/22 11:27 | 7440-09-7 | |
| Sodium, Dissolved | **66400** | ug/L | 1000 | 1 | 06/24/22 08:22 | 06/28/22 11:27 | 7440-23-5 | |
| **6020 MET ICPMS, Dissolved** | Analytical Method: EPA 6020 Preparation Method: EPA 200.2<br>Pace Analytical Services - Indianapolis | | | | | | | |
| Arsenic, Dissolved | **3.3** | ug/L | 1.0 | 1 | 06/20/22 15:30 | 06/22/22 07:50 | 7440-38-2 | |
| Barium, Dissolved | **45.3** | ug/L | 5.0 | 1 | 06/20/22 15:30 | 06/22/22 07:50 | 7440-39-3 | |
| Zinc, Dissolved | **<10.0** | ug/L | 10.0 | 1 | 06/20/22 15:30 | 06/22/22 07:50 | 7440-66-6 | |
| **8260 MSV Low Level** | Analytical Method: EPA 5030B/8260<br>Pace Analytical Services - Indianapolis | | | | | | | |
| Acetone | **<20.0** | ug/L | 20.0 | 1 | | 06/21/22 04:32 | 67-64-1 | |
| Acrylonitrile | **<5.0** | ug/L | 5.0 | 1 | | 06/21/22 04:32 | 107-13-1 | |
| Benzene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 04:32 | 71-43-2 | |
| Bromochloromethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 04:32 | 74-97-5 | |
| Bromodichloromethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 04:32 | 75-27-4 | |
| Bromoform | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 04:32 | 75-25-2 | |
| Bromomethane | **<5.0** | ug/L | 5.0 | 1 | | 06/21/22 04:32 | 74-83-9 | |
| 2-Butanone (MEK) | **<5.0** | ug/L | 5.0 | 1 | | 06/21/22 04:32 | 78-93-3 | |
| Carbon disulfide | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 04:32 | 75-15-0 | |
| Carbon tetrachloride | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 04:32 | 56-23-5 | |
| Chlorobenzene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 04:32 | 108-90-7 | |
| Chloroethane | **<5.0** | ug/L | 5.0 | 1 | | 06/21/22 04:32 | 75-00-3 | |
| Chloroform | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 04:32 | 67-66-3 | |
| Chloromethane | **<5.0** | ug/L | 5.0 | 1 | | 06/21/22 04:32 | 74-87-3 | |
| 1,2-Dibromo-3-chloropropane | **<5.0** | ug/L | 5.0 | 1 | | 06/21/22 04:32 | 96-12-8 | |
| Dibromochloromethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 04:32 | 124-48-1 | |
| 1,2-Dibromoethane (EDB) | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 04:32 | 106-93-4 | |
| Dibromomethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 04:32 | 74-95-3 | |
| 1,2-Dichlorobenzene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 04:32 | 95-50-1 | |
| 1,4-Dichlorobenzene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 04:32 | 106-46-7 | |
| trans-1,4-Dichloro-2-butene | **<5.0** | ug/L | 5.0 | 1 | | 06/21/22 04:32 | 110-57-6 | |
| 1,1-Dichloroethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 04:32 | 75-34-3 | |
| 1,2-Dichloroethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 04:32 | 107-06-2 | |
| 1,1-Dichloroethene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 04:32 | 75-35-4 | |
| cis-1,2-Dichloroethene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 04:32 | 156-59-2 | |
| trans-1,2-Dichloroethene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 04:32 | 156-60-5 | |
| 1,2-Dichloropropane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 04:32 | 78-87-5 | |
| cis-1,3-Dichloropropene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 04:32 | 10061-01-5 | |
| trans-1,3-Dichloropropene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 04:32 | 10061-02-6 | |
| Ethylbenzene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 04:32 | 100-41-4 | |
| 2-Hexanone | **<5.0** | ug/L | 5.0 | 1 | | 06/21/22 04:32 | 591-78-6 | |
| Iodomethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 04:32 | 74-88-4 | |
| Methylene Chloride | **<5.0** | ug/L | 5.0 | 1 | | 06/21/22 04:32 | 75-09-2 | |
| 4-Methyl-2-pentanone (MIBK) | **<5.0** | ug/L | 5.0 | 1 | | 06/21/22 04:32 | 108-10-1 | |

## REPORT OF LABORATORY ANALYSIS

**Pace Analytical Services, LLC**
4171 40th St. SE
Grand Rapids, MI 49512
(616)975-4500

## ANALYTICAL RESULTS

Project: Smith's Creek Landfill GW
Pace Project No.: 50319142

**Sample: MW-201** **Lab ID: 50319142003** Collected: 06/14/22 08:40 Received: 06/16/22 15:40 Matrix: Water

| Parameters | Results | Units | Report Limit | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|
| **8260 MSV Low Level** | Analytical Method: EPA 5030B/8260 Pace Analytical Services - Indianapolis | | | | | | | |
| Styrene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 04:32 | 100-42-5 | |
| 1,1,1,2-Tetrachloroethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 04:32 | 630-20-6 | |
| 1,1,2,2-Tetrachloroethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 04:32 | 79-34-5 | |
| Tetrachloroethene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 04:32 | 127-18-4 | |
| Toluene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 04:32 | 108-88-3 | |
| 1,1,1-Trichloroethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 04:32 | 71-55-6 | |
| 1,1,2-Trichloroethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 04:32 | 79-00-5 | |
| Trichloroethene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 04:32 | 79-01-6 | |
| Trichlorofluoromethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 04:32 | 75-69-4 | |
| 1,2,3-Trichloropropane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 04:32 | 96-18-4 | |
| Vinyl chloride | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 04:32 | 75-01-4 | |
| Xylene (Total) | **<2.0** | ug/L | 2.0 | 1 | | 06/21/22 04:32 | 1330-20-7 | |
| ***Surrogates*** | | | | | | | | |
| 4-Bromofluorobenzene (S) | 98 | %. | 79-124 | 1 | | 06/21/22 04:32 | 460-00-4 | |
| Dibromofluoromethane (S) | 98 | %. | 82-128 | 1 | | 06/21/22 04:32 | 1868-53-7 | |
| Toluene-d8 (S) | 100 | %. | 73-122 | 1 | | 06/21/22 04:32 | 2037-26-5 | |
| **Total Inorganic Nitrogen** | Analytical Method: NO2+NO3+NH3 Calculation Pace Analytical Services - Indianapolis | | | | | | | |
| Total Inorganic Nitrogen | **60.1** | ug/L | 20.0 | 1 | | 06/30/22 15:05 | | |
| **353.2 Nitrogen, NO2/NO3 pres.** | Analytical Method: EPA 353.2 Pace Analytical Services - Indianapolis | | | | | | | |
| Nitrogen, NO2 plus NO3 | **60.1** | ug/L | 20.0 | 1 | | 06/22/22 13:27 | | |
| **4500 Chloride** | Analytical Method: SM 4500-Cl-E Pace Analytical Services - Indianapolis | | | | | | | |
| Chloride | **15900** | ug/L | 1000 | 1 | | 06/23/22 15:03 | 16887-00-6 | |
| **4500 Ammonia Water Low Level** | Analytical Method: SM-4500-NH3 G Pace Analytical Services - Indianapolis | | | | | | | |
| Nitrogen, Ammonia | **<20.0** | ug/L | 20.0 | 1 | | 06/29/22 13:09 | 7664-41-7 | |
| **5310C TOC** | Analytical Method: SM 5310C Pace Analytical Services - Indianapolis | | | | | | | |
| Total Organic Carbon | **1140** | ug/L | 500 | 1 | | 06/23/22 05:35 | 7440-44-0 | |

## REPORT OF LABORATORY ANALYSIS

**Pace Analytical Services, LLC**
4171 40th St. SE
Grand Rapids, MI 49512
(616)975-4500

## ANALYTICAL RESULTS

Project: Smith's Creek Landfill GW
Pace Project No.: 50319142

**Sample: MW-202** **Lab ID: 50319142004** Collected: 06/15/22 14:40 Received: 06/16/22 15:40 Matrix: Water

| Parameters | Results | Units | Report Limit | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|
| **6010 MET ICP, Dissolved** | Analytical Method: EPA 6010 Preparation Method: EPA 3010<br>Pace Analytical Services - Indianapolis | | | | | | | |
| Potassium, Dissolved | **1410** | ug/L | 500 | 1 | 06/24/22 08:22 | 06/28/22 11:29 | 7440-09-7 | |
| Sodium, Dissolved | **69900** | ug/L | 1000 | 1 | 06/24/22 08:22 | 06/28/22 11:29 | 7440-23-5 | |
| **6020 MET ICPMS, Dissolved** | Analytical Method: EPA 6020 Preparation Method: EPA 200.2<br>Pace Analytical Services - Indianapolis | | | | | | | |
| Arsenic, Dissolved | **<1.0** | ug/L | 1.0 | 1 | 06/20/22 15:30 | 06/22/22 07:55 | 7440-38-2 | |
| Barium, Dissolved | **67.2** | ug/L | 5.0 | 1 | 06/20/22 15:30 | 06/22/22 07:55 | 7440-39-3 | |
| Zinc, Dissolved | **<10.0** | ug/L | 10.0 | 1 | 06/20/22 15:30 | 06/22/22 07:55 | 7440-66-6 | |
| **8260 MSV Low Level** | Analytical Method: EPA 5030B/8260<br>Pace Analytical Services - Indianapolis | | | | | | | |
| Acetone | **<20.0** | ug/L | 20.0 | 1 | | 06/21/22 05:02 | 67-64-1 | |
| Acrylonitrile | **<5.0** | ug/L | 5.0 | 1 | | 06/21/22 05:02 | 107-13-1 | |
| Benzene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 05:02 | 71-43-2 | |
| Bromochloromethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 05:02 | 74-97-5 | |
| Bromodichloromethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 05:02 | 75-27-4 | |
| Bromoform | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 05:02 | 75-25-2 | |
| Bromomethane | **<5.0** | ug/L | 5.0 | 1 | | 06/21/22 05:02 | 74-83-9 | |
| 2-Butanone (MEK) | **<5.0** | ug/L | 5.0 | 1 | | 06/21/22 05:02 | 78-93-3 | |
| Carbon disulfide | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 05:02 | 75-15-0 | |
| Carbon tetrachloride | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 05:02 | 56-23-5 | |
| Chlorobenzene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 05:02 | 108-90-7 | |
| Chloroethane | **<5.0** | ug/L | 5.0 | 1 | | 06/21/22 05:02 | 75-00-3 | |
| Chloroform | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 05:02 | 67-66-3 | |
| Chloromethane | **<5.0** | ug/L | 5.0 | 1 | | 06/21/22 05:02 | 74-87-3 | |
| 1,2-Dibromo-3-chloropropane | **<5.0** | ug/L | 5.0 | 1 | | 06/21/22 05:02 | 96-12-8 | |
| Dibromochloromethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 05:02 | 124-48-1 | |
| 1,2-Dibromoethane (EDB) | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 05:02 | 106-93-4 | |
| Dibromomethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 05:02 | 74-95-3 | |
| 1,2-Dichlorobenzene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 05:02 | 95-50-1 | |
| 1,4-Dichlorobenzene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 05:02 | 106-46-7 | |
| trans-1,4-Dichloro-2-butene | **<5.0** | ug/L | 5.0 | 1 | | 06/21/22 05:02 | 110-57-6 | |
| 1,1-Dichloroethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 05:02 | 75-34-3 | |
| 1,2-Dichloroethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 05:02 | 107-06-2 | |
| 1,1-Dichloroethene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 05:02 | 75-35-4 | |
| cis-1,2-Dichloroethene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 05:02 | 156-59-2 | |
| trans-1,2-Dichloroethene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 05:02 | 156-60-5 | |
| 1,2-Dichloropropane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 05:02 | 78-87-5 | |
| cis-1,3-Dichloropropene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 05:02 | 10061-01-5 | |
| trans-1,3-Dichloropropene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 05:02 | 10061-02-6 | |
| Ethylbenzene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 05:02 | 100-41-4 | |
| 2-Hexanone | **<5.0** | ug/L | 5.0 | 1 | | 06/21/22 05:02 | 591-78-6 | |
| Iodomethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 05:02 | 74-88-4 | |
| Methylene Chloride | **<5.0** | ug/L | 5.0 | 1 | | 06/21/22 05:02 | 75-09-2 | |
| 4-Methyl-2-pentanone (MIBK) | **<5.0** | ug/L | 5.0 | 1 | | 06/21/22 05:02 | 108-10-1 | |

## REPORT OF LABORATORY ANALYSIS

**Pace Analytical Services, LLC**
4171 40th St. SE
Grand Rapids, MI 49512
(616)975-4500

## ANALYTICAL RESULTS

Project: Smith's Creek Landfill GW
Pace Project No.: 50319142

**Sample: MW-202** **Lab ID: 50319142004** Collected: 06/15/22 14:40 Received: 06/16/22 15:40 Matrix: Water

| Parameters | Results | Units | Report Limit | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|
| **8260 MSV Low Level** | Analytical Method: EPA 5030B/8260 Pace Analytical Services - Indianapolis | | | | | | | |
| Styrene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 05:02 | 100-42-5 | |
| 1,1,1,2-Tetrachloroethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 05:02 | 630-20-6 | |
| 1,1,2,2-Tetrachloroethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 05:02 | 79-34-5 | |
| Tetrachloroethene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 05:02 | 127-18-4 | |
| Toluene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 05:02 | 108-88-3 | |
| 1,1,1-Trichloroethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 05:02 | 71-55-6 | |
| 1,1,2-Trichloroethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 05:02 | 79-00-5 | |
| Trichloroethene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 05:02 | 79-01-6 | |
| Trichlorofluoromethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 05:02 | 75-69-4 | |
| 1,2,3-Trichloropropane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 05:02 | 96-18-4 | |
| Vinyl chloride | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 05:02 | 75-01-4 | |
| Xylene (Total) | **<2.0** | ug/L | 2.0 | 1 | | 06/21/22 05:02 | 1330-20-7 | |
| ***Surrogates*** | | | | | | | | |
| 4-Bromofluorobenzene (S) | 95 | %. | 79-124 | 1 | | 06/21/22 05:02 | 460-00-4 | |
| Dibromofluoromethane (S) | 100 | %. | 82-128 | 1 | | 06/21/22 05:02 | 1868-53-7 | |
| Toluene-d8 (S) | 99 | %. | 73-122 | 1 | | 06/21/22 05:02 | 2037-26-5 | |
| **Total Inorganic Nitrogen** | Analytical Method: NO2+NO3+NH3 Calculation Pace Analytical Services - Indianapolis | | | | | | | |
| Total Inorganic Nitrogen | **133** | ug/L | 20.0 | 1 | | 06/30/22 15:05 | | |
| **353.2 Nitrogen, NO2/NO3 pres.** | Analytical Method: EPA 353.2 Pace Analytical Services - Indianapolis | | | | | | | |
| Nitrogen, NO2 plus NO3 | **<20.0** | ug/L | 20.0 | 1 | | 06/22/22 13:29 | | |
| **4500 Chloride** | Analytical Method: SM 4500-Cl-E Pace Analytical Services - Indianapolis | | | | | | | |
| Chloride | **29300** | ug/L | 1000 | 1 | | 06/23/22 15:04 | 16887-00-6 | |
| **4500 Ammonia Water Low Level** | Analytical Method: SM-4500-NH3 G Pace Analytical Services - Indianapolis | | | | | | | |
| Nitrogen, Ammonia | **133** | ug/L | 20.0 | 1 | | 06/29/22 13:10 | 7664-41-7 | |
| **5310C TOC** | Analytical Method: SM 5310C Pace Analytical Services - Indianapolis | | | | | | | |
| Total Organic Carbon | **1150** | ug/L | 500 | 1 | | 06/23/22 05:54 | 7440-44-0 | |

## REPORT OF LABORATORY ANALYSIS

**Pace Analytical Services, LLC**
4171 40th St. SE
Grand Rapids, MI 49512
(616)975-4500

## ANALYTICAL RESULTS

Project: Smith's Creek Landfill GW
Pace Project No.: 50319142

**Sample: MW-203B** **Lab ID: 50319142005** Collected: 06/15/22 11:10 Received: 06/16/22 15:40 Matrix: Water

| Parameters | Results | Units | Report Limit | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|
| **6010 MET ICP, Dissolved** | Analytical Method: EPA 6010 Preparation Method: EPA 3010<br>Pace Analytical Services - Indianapolis | | | | | | | |
| Potassium, Dissolved | **7880** | ug/L | 500 | 1 | 06/24/22 08:22 | 06/28/22 11:31 | 7440-09-7 | |
| Sodium, Dissolved | **90300** | ug/L | 1000 | 1 | 06/24/22 08:22 | 06/28/22 11:31 | 7440-23-5 | |
| **6020 MET ICPMS, Dissolved** | Analytical Method: EPA 6020 Preparation Method: EPA 200.2<br>Pace Analytical Services - Indianapolis | | | | | | | |
| Arsenic, Dissolved | **9.3** | ug/L | 1.0 | 1 | 06/20/22 15:30 | 06/22/22 08:00 | 7440-38-2 | |
| Barium, Dissolved | **60.8** | ug/L | 5.0 | 1 | 06/20/22 15:30 | 06/22/22 08:00 | 7440-39-3 | |
| Zinc, Dissolved | **<10.0** | ug/L | 10.0 | 1 | 06/20/22 15:30 | 06/22/22 08:00 | 7440-66-6 | |
| **8260 MSV Low Level** | Analytical Method: EPA 5030B/8260<br>Pace Analytical Services - Indianapolis | | | | | | | |
| Acetone | **<20.0** | ug/L | 20.0 | 1 | | 06/21/22 05:31 | 67-64-1 | |
| Acrylonitrile | **<5.0** | ug/L | 5.0 | 1 | | 06/21/22 05:31 | 107-13-1 | |
| Benzene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 05:31 | 71-43-2 | |
| Bromochloromethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 05:31 | 74-97-5 | |
| Bromodichloromethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 05:31 | 75-27-4 | |
| Bromoform | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 05:31 | 75-25-2 | |
| Bromomethane | **<5.0** | ug/L | 5.0 | 1 | | 06/21/22 05:31 | 74-83-9 | |
| 2-Butanone (MEK) | **<5.0** | ug/L | 5.0 | 1 | | 06/21/22 05:31 | 78-93-3 | |
| Carbon disulfide | **2.9** | ug/L | 1.0 | 1 | | 06/21/22 05:31 | 75-15-0 | |
| Carbon tetrachloride | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 05:31 | 56-23-5 | |
| Chlorobenzene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 05:31 | 108-90-7 | |
| Chloroethane | **<5.0** | ug/L | 5.0 | 1 | | 06/21/22 05:31 | 75-00-3 | |
| Chloroform | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 05:31 | 67-66-3 | |
| Chloromethane | **<5.0** | ug/L | 5.0 | 1 | | 06/21/22 05:31 | 74-87-3 | |
| 1,2-Dibromo-3-chloropropane | **<5.0** | ug/L | 5.0 | 1 | | 06/21/22 05:31 | 96-12-8 | |
| Dibromochloromethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 05:31 | 124-48-1 | |
| 1,2-Dibromoethane (EDB) | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 05:31 | 106-93-4 | |
| Dibromomethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 05:31 | 74-95-3 | |
| 1,2-Dichlorobenzene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 05:31 | 95-50-1 | |
| 1,4-Dichlorobenzene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 05:31 | 106-46-7 | |
| trans-1,4-Dichloro-2-butene | **<5.0** | ug/L | 5.0 | 1 | | 06/21/22 05:31 | 110-57-6 | |
| 1,1-Dichloroethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 05:31 | 75-34-3 | |
| 1,2-Dichloroethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 05:31 | 107-06-2 | |
| 1,1-Dichloroethene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 05:31 | 75-35-4 | |
| cis-1,2-Dichloroethene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 05:31 | 156-59-2 | |
| trans-1,2-Dichloroethene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 05:31 | 156-60-5 | |
| 1,2-Dichloropropane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 05:31 | 78-87-5 | |
| cis-1,3-Dichloropropene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 05:31 | 10061-01-5 | |
| trans-1,3-Dichloropropene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 05:31 | 10061-02-6 | |
| Ethylbenzene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 05:31 | 100-41-4 | |
| 2-Hexanone | **<5.0** | ug/L | 5.0 | 1 | | 06/21/22 05:31 | 591-78-6 | |
| Iodomethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 05:31 | 74-88-4 | |
| Methylene Chloride | **<5.0** | ug/L | 5.0 | 1 | | 06/21/22 05:31 | 75-09-2 | |
| 4-Methyl-2-pentanone (MIBK) | **<5.0** | ug/L | 5.0 | 1 | | 06/21/22 05:31 | 108-10-1 | |

## REPORT OF LABORATORY ANALYSIS

**Pace Analytical Services, LLC**
4171 40th St. SE
Grand Rapids, MI 49512
(616)975-4500

## ANALYTICAL RESULTS

Project: Smith's Creek Landfill GW
Pace Project No.: 50319142

**Sample: MW-203B** **Lab ID: 50319142005** Collected: 06/15/22 11:10 Received: 06/16/22 15:40 Matrix: Water

| Parameters | Results | Units | Report Limit | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|
| **8260 MSV Low Level** | Analytical Method: EPA 5030B/8260 Pace Analytical Services - Indianapolis | | | | | | | |
| Styrene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 05:31 | 100-42-5 | |
| 1,1,1,2-Tetrachloroethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 05:31 | 630-20-6 | |
| 1,1,2,2-Tetrachloroethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 05:31 | 79-34-5 | |
| Tetrachloroethene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 05:31 | 127-18-4 | |
| Toluene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 05:31 | 108-88-3 | |
| 1,1,1-Trichloroethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 05:31 | 71-55-6 | |
| 1,1,2-Trichloroethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 05:31 | 79-00-5 | |
| Trichloroethene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 05:31 | 79-01-6 | |
| Trichlorofluoromethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 05:31 | 75-69-4 | |
| 1,2,3-Trichloropropane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 05:31 | 96-18-4 | |
| Vinyl chloride | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 05:31 | 75-01-4 | |
| Xylene (Total) | **<2.0** | ug/L | 2.0 | 1 | | 06/21/22 05:31 | 1330-20-7 | |
| ***Surrogates*** | | | | | | | | |
| 4-Bromofluorobenzene (S) | 95 | %. | 79-124 | 1 | | 06/21/22 05:31 | 460-00-4 | |
| Dibromofluoromethane (S) | 100 | %. | 82-128 | 1 | | 06/21/22 05:31 | 1868-53-7 | |
| Toluene-d8 (S) | 99 | %. | 73-122 | 1 | | 06/21/22 05:31 | 2037-26-5 | |
| **Total Inorganic Nitrogen** | Analytical Method: NO2+NO3+NH3 Calculation Pace Analytical Services - Indianapolis | | | | | | | |
| Total Inorganic Nitrogen | **211** | ug/L | 20.0 | 1 | | 06/30/22 15:05 | | |
| **353.2 Nitrogen, NO2/NO3 pres.** | Analytical Method: EPA 353.2 Pace Analytical Services - Indianapolis | | | | | | | |
| Nitrogen, NO2 plus NO3 | **<20.0** | ug/L | 20.0 | 1 | | 06/22/22 13:34 | | |
| **4500 Chloride** | Analytical Method: SM 4500-Cl-E Pace Analytical Services - Indianapolis | | | | | | | |
| Chloride | **37700** | ug/L | 1000 | 1 | | 06/23/22 15:05 | 16887-00-6 | |
| **4500 Ammonia Water Low Level** | Analytical Method: SM-4500-NH3 G Pace Analytical Services - Indianapolis | | | | | | | |
| Nitrogen, Ammonia | **211** | ug/L | 20.0 | 1 | | 06/29/22 13:12 | 7664-41-7 | |
| **5310C TOC** | Analytical Method: SM 5310C Pace Analytical Services - Indianapolis | | | | | | | |
| Total Organic Carbon | **1660** | ug/L | 500 | 1 | | 06/23/22 01:58 | 7440-44-0 | |

## REPORT OF LABORATORY ANALYSIS

**Pace Analytical Services, LLC**
4171 40th St. SE
Grand Rapids, MI 49512
(616)975-4500

## ANALYTICAL RESULTS

Project: Smith's Creek Landfill GW
Pace Project No.: 50319142

**Sample: MW-207A** **Lab ID: 50319142006** Collected: 06/15/22 09:15 Received: 06/16/22 15:40 Matrix: Water

| Parameters | Results | Units | Report Limit | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|
| **6010 MET ICP, Dissolved** | Analytical Method: EPA 6010 Preparation Method: EPA 3010<br>Pace Analytical Services - Indianapolis | | | | | | | |
| Potassium, Dissolved | **2200** | ug/L | 500 | 1 | 06/24/22 08:22 | 06/28/22 11:37 | 7440-09-7 | |
| Sodium, Dissolved | **68600** | ug/L | 1000 | 1 | 06/24/22 08:22 | 06/28/22 11:37 | 7440-23-5 | |
| **6020 MET ICPMS, Dissolved** | Analytical Method: EPA 6020 Preparation Method: EPA 200.2<br>Pace Analytical Services - Indianapolis | | | | | | | |
| Arsenic, Dissolved | **1.6** | ug/L | 1.0 | 1 | 06/20/22 15:30 | 06/22/22 08:14 | 7440-38-2 | |
| Barium, Dissolved | **116** | ug/L | 5.0 | 1 | 06/20/22 15:30 | 06/22/22 08:14 | 7440-39-3 | |
| Zinc, Dissolved | **<10.0** | ug/L | 10.0 | 1 | 06/20/22 15:30 | 06/22/22 08:14 | 7440-66-6 | |
| **8260 MSV Low Level** | Analytical Method: EPA 5030B/8260<br>Pace Analytical Services - Indianapolis | | | | | | | |
| Acetone | **<20.0** | ug/L | 20.0 | 1 | | 06/21/22 06:00 | 67-64-1 | |
| Acrylonitrile | **<5.0** | ug/L | 5.0 | 1 | | 06/21/22 06:00 | 107-13-1 | |
| Benzene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 06:00 | 71-43-2 | |
| Bromochloromethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 06:00 | 74-97-5 | |
| Bromodichloromethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 06:00 | 75-27-4 | |
| Bromoform | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 06:00 | 75-25-2 | |
| Bromomethane | **<5.0** | ug/L | 5.0 | 1 | | 06/21/22 06:00 | 74-83-9 | |
| 2-Butanone (MEK) | **<5.0** | ug/L | 5.0 | 1 | | 06/21/22 06:00 | 78-93-3 | |
| Carbon disulfide | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 06:00 | 75-15-0 | |
| Carbon tetrachloride | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 06:00 | 56-23-5 | |
| Chlorobenzene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 06:00 | 108-90-7 | |
| Chloroethane | **<5.0** | ug/L | 5.0 | 1 | | 06/21/22 06:00 | 75-00-3 | |
| Chloroform | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 06:00 | 67-66-3 | |
| Chloromethane | **<5.0** | ug/L | 5.0 | 1 | | 06/21/22 06:00 | 74-87-3 | |
| 1,2-Dibromo-3-chloropropane | **<5.0** | ug/L | 5.0 | 1 | | 06/21/22 06:00 | 96-12-8 | |
| Dibromochloromethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 06:00 | 124-48-1 | |
| 1,2-Dibromoethane (EDB) | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 06:00 | 106-93-4 | |
| Dibromomethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 06:00 | 74-95-3 | |
| 1,2-Dichlorobenzene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 06:00 | 95-50-1 | |
| 1,4-Dichlorobenzene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 06:00 | 106-46-7 | |
| trans-1,4-Dichloro-2-butene | **<5.0** | ug/L | 5.0 | 1 | | 06/21/22 06:00 | 110-57-6 | |
| 1,1-Dichloroethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 06:00 | 75-34-3 | |
| 1,2-Dichloroethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 06:00 | 107-06-2 | |
| 1,1-Dichloroethene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 06:00 | 75-35-4 | |
| cis-1,2-Dichloroethene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 06:00 | 156-59-2 | |
| trans-1,2-Dichloroethene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 06:00 | 156-60-5 | |
| 1,2-Dichloropropane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 06:00 | 78-87-5 | |
| cis-1,3-Dichloropropene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 06:00 | 10061-01-5 | |
| trans-1,3-Dichloropropene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 06:00 | 10061-02-6 | |
| Ethylbenzene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 06:00 | 100-41-4 | |
| 2-Hexanone | **<5.0** | ug/L | 5.0 | 1 | | 06/21/22 06:00 | 591-78-6 | |
| Iodomethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 06:00 | 74-88-4 | |
| Methylene Chloride | **<5.0** | ug/L | 5.0 | 1 | | 06/21/22 06:00 | 75-09-2 | |
| 4-Methyl-2-pentanone (MIBK) | **<5.0** | ug/L | 5.0 | 1 | | 06/21/22 06:00 | 108-10-1 | |

## REPORT OF LABORATORY ANALYSIS

**Pace Analytical Services, LLC**
4171 40th St. SE
Grand Rapids, MI 49512
(616)975-4500

## ANALYTICAL RESULTS

Project: Smith's Creek Landfill GW
Pace Project No.: 50319142

**Sample: MW-207A** **Lab ID: 50319142006** Collected: 06/15/22 09:15 Received: 06/16/22 15:40 Matrix: Water

| Parameters | Results | Units | Report Limit | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|
| **8260 MSV Low Level** | Analytical Method: EPA 5030B/8260 Pace Analytical Services - Indianapolis | | | | | | | |
| Styrene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 06:00 | 100-42-5 | |
| 1,1,1,2-Tetrachloroethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 06:00 | 630-20-6 | |
| 1,1,2,2-Tetrachloroethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 06:00 | 79-34-5 | |
| Tetrachloroethene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 06:00 | 127-18-4 | |
| Toluene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 06:00 | 108-88-3 | |
| 1,1,1-Trichloroethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 06:00 | 71-55-6 | |
| 1,1,2-Trichloroethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 06:00 | 79-00-5 | |
| Trichloroethene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 06:00 | 79-01-6 | |
| Trichlorofluoromethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 06:00 | 75-69-4 | |
| 1,2,3-Trichloropropane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 06:00 | 96-18-4 | |
| Vinyl chloride | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 06:00 | 75-01-4 | |
| Xylene (Total) | **<2.0** | ug/L | 2.0 | 1 | | 06/21/22 06:00 | 1330-20-7 | |
| ***Surrogates*** | | | | | | | | |
| 4-Bromofluorobenzene (S) | 96 | %. | 79-124 | 1 | | 06/21/22 06:00 | 460-00-4 | |
| Dibromofluoromethane (S) | 99 | %. | 82-128 | 1 | | 06/21/22 06:00 | 1868-53-7 | |
| Toluene-d8 (S) | 99 | %. | 73-122 | 1 | | 06/21/22 06:00 | 2037-26-5 | |
| **Total Inorganic Nitrogen** | Analytical Method: NO2+NO3+NH3 Calculation Pace Analytical Services - Indianapolis | | | | | | | |
| Total Inorganic Nitrogen | **48.4** | ug/L | 20.0 | 1 | | 06/30/22 15:05 | | |
| **353.2 Nitrogen, NO2/NO3 pres.** | Analytical Method: EPA 353.2 Pace Analytical Services - Indianapolis | | | | | | | |
| Nitrogen, NO2 plus NO3 | **48.4** | ug/L | 20.0 | 1 | | 06/22/22 13:38 | | |
| **4500 Chloride** | Analytical Method: SM 4500-Cl-E Pace Analytical Services - Indianapolis | | | | | | | |
| Chloride | **17200** | ug/L | 1000 | 1 | | 06/23/22 15:06 | 16887-00-6 | |
| **4500 Ammonia Water Low Level** | Analytical Method: SM-4500-NH3 G Pace Analytical Services - Indianapolis | | | | | | | |
| Nitrogen, Ammonia | **<20.0** | ug/L | 20.0 | 1 | | 06/29/22 13:13 | 7664-41-7 | |
| **5310C TOC** | Analytical Method: SM 5310C Pace Analytical Services - Indianapolis | | | | | | | |
| Total Organic Carbon | **7740** | ug/L | 500 | 1 | | 06/23/22 02:09 | 7440-44-0 | |

## REPORT OF LABORATORY ANALYSIS

**Pace Analytical Services, LLC**
4171 40th St. SE
Grand Rapids, MI 49512
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## ANALYTICAL RESULTS

Project: Smith's Creek Landfill GW
Pace Project No.: 50319142

**Sample: MW-208** **Lab ID: 50319142007** Collected: 06/15/22 09:45 Received: 06/16/22 15:40 Matrix: Water

| Parameters | Results | Units | Report Limit | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|
| **6010 MET ICP, Dissolved** | Analytical Method: EPA 6010 Preparation Method: EPA 3010<br>Pace Analytical Services - Indianapolis | | | | | | | |
| Potassium, Dissolved | **1140** | ug/L | 500 | 1 | 06/24/22 08:22 | 06/28/22 11:40 | 7440-09-7 | |
| Sodium, Dissolved | **83600** | ug/L | 1000 | 1 | 06/24/22 08:22 | 06/28/22 11:40 | 7440-23-5 | |
| **6020 MET ICPMS, Dissolved** | Analytical Method: EPA 6020 Preparation Method: EPA 200.2<br>Pace Analytical Services - Indianapolis | | | | | | | |
| Arsenic, Dissolved | **6.4** | ug/L | 1.0 | 1 | 06/20/22 15:30 | 06/22/22 08:19 | 7440-38-2 | |
| Barium, Dissolved | **49.4** | ug/L | 5.0 | 1 | 06/20/22 15:30 | 06/22/22 08:19 | 7440-39-3 | |
| Zinc, Dissolved | **<10.0** | ug/L | 10.0 | 1 | 06/20/22 15:30 | 06/22/22 08:19 | 7440-66-6 | |
| **8260 MSV Low Level** | Analytical Method: EPA 5030B/8260<br>Pace Analytical Services - Indianapolis | | | | | | | |
| Acetone | **<20.0** | ug/L | 20.0 | 1 | | 06/21/22 06:29 | 67-64-1 | |
| Acrylonitrile | **<5.0** | ug/L | 5.0 | 1 | | 06/21/22 06:29 | 107-13-1 | |
| Benzene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 06:29 | 71-43-2 | |
| Bromochloromethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 06:29 | 74-97-5 | |
| Bromodichloromethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 06:29 | 75-27-4 | |
| Bromoform | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 06:29 | 75-25-2 | |
| Bromomethane | **<5.0** | ug/L | 5.0 | 1 | | 06/21/22 06:29 | 74-83-9 | |
| 2-Butanone (MEK) | **<5.0** | ug/L | 5.0 | 1 | | 06/21/22 06:29 | 78-93-3 | |
| Carbon disulfide | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 06:29 | 75-15-0 | |
| Carbon tetrachloride | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 06:29 | 56-23-5 | |
| Chlorobenzene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 06:29 | 108-90-7 | |
| Chloroethane | **<5.0** | ug/L | 5.0 | 1 | | 06/21/22 06:29 | 75-00-3 | |
| Chloroform | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 06:29 | 67-66-3 | |
| Chloromethane | **<5.0** | ug/L | 5.0 | 1 | | 06/21/22 06:29 | 74-87-3 | |
| 1,2-Dibromo-3-chloropropane | **<5.0** | ug/L | 5.0 | 1 | | 06/21/22 06:29 | 96-12-8 | |
| Dibromochloromethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 06:29 | 124-48-1 | |
| 1,2-Dibromoethane (EDB) | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 06:29 | 106-93-4 | |
| Dibromomethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 06:29 | 74-95-3 | |
| 1,2-Dichlorobenzene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 06:29 | 95-50-1 | |
| 1,4-Dichlorobenzene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 06:29 | 106-46-7 | |
| trans-1,4-Dichloro-2-butene | **<5.0** | ug/L | 5.0 | 1 | | 06/21/22 06:29 | 110-57-6 | |
| 1,1-Dichloroethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 06:29 | 75-34-3 | |
| 1,2-Dichloroethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 06:29 | 107-06-2 | |
| 1,1-Dichloroethene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 06:29 | 75-35-4 | |
| cis-1,2-Dichloroethene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 06:29 | 156-59-2 | |
| trans-1,2-Dichloroethene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 06:29 | 156-60-5 | |
| 1,2-Dichloropropane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 06:29 | 78-87-5 | |
| cis-1,3-Dichloropropene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 06:29 | 10061-01-5 | |
| trans-1,3-Dichloropropene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 06:29 | 10061-02-6 | |
| Ethylbenzene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 06:29 | 100-41-4 | |
| 2-Hexanone | **<5.0** | ug/L | 5.0 | 1 | | 06/21/22 06:29 | 591-78-6 | |
| Iodomethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 06:29 | 74-88-4 | |
| Methylene Chloride | **<5.0** | ug/L | 5.0 | 1 | | 06/21/22 06:29 | 75-09-2 | |
| 4-Methyl-2-pentanone (MIBK) | **<5.0** | ug/L | 5.0 | 1 | | 06/21/22 06:29 | 108-10-1 | |

## REPORT OF LABORATORY ANALYSIS

**Pace Analytical Services, LLC**
4171 40th St. SE
Grand Rapids, MI 49512
(616)975-4500

## ANALYTICAL RESULTS

Project: Smith's Creek Landfill GW
Pace Project No.: 50319142

**Sample: MW-208** **Lab ID: 50319142007** Collected: 06/15/22 09:45 Received: 06/16/22 15:40 Matrix: Water

| Parameters | Results | Units | Report Limit | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|
| **8260 MSV Low Level** | Analytical Method: EPA 5030B/8260 Pace Analytical Services - Indianapolis | | | | | | | |
| Styrene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 06:29 | 100-42-5 | |
| 1,1,1,2-Tetrachloroethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 06:29 | 630-20-6 | |
| 1,1,2,2-Tetrachloroethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 06:29 | 79-34-5 | |
| Tetrachloroethene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 06:29 | 127-18-4 | |
| Toluene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 06:29 | 108-88-3 | |
| 1,1,1-Trichloroethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 06:29 | 71-55-6 | |
| 1,1,2-Trichloroethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 06:29 | 79-00-5 | |
| Trichloroethene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 06:29 | 79-01-6 | |
| Trichlorofluoromethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 06:29 | 75-69-4 | |
| 1,2,3-Trichloropropane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 06:29 | 96-18-4 | |
| Vinyl chloride | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 06:29 | 75-01-4 | |
| Xylene (Total) | **<2.0** | ug/L | 2.0 | 1 | | 06/21/22 06:29 | 1330-20-7 | |
| ***Surrogates*** | | | | | | | | |
| 4-Bromofluorobenzene (S) | 96 | %. | 79-124 | 1 | | 06/21/22 06:29 | 460-00-4 | |
| Dibromofluoromethane (S) | 100 | %. | 82-128 | 1 | | 06/21/22 06:29 | 1868-53-7 | |
| Toluene-d8 (S) | 99 | %. | 73-122 | 1 | | 06/21/22 06:29 | 2037-26-5 | |
| **Total Inorganic Nitrogen** | Analytical Method: NO2+NO3+NH3 Calculation Pace Analytical Services - Indianapolis | | | | | | | |
| Total Inorganic Nitrogen | **<200** | ug/L | 200 | 10 | | 06/30/22 15:05 | | |
| **353.2 Nitrogen, NO2/NO3 pres.** | Analytical Method: EPA 353.2 Pace Analytical Services - Indianapolis | | | | | | | |
| Nitrogen, NO2 plus NO3 | **<200** | ug/L | 200 | 10 | | 06/22/22 13:40 | | D3 |
| **4500 Chloride** | Analytical Method: SM 4500-Cl-E Pace Analytical Services - Indianapolis | | | | | | | |
| Chloride | **30200** | ug/L | 1000 | 1 | | 06/23/22 15:07 | 16887-00-6 | |
| **4500 Ammonia Water Low Level** | Analytical Method: SM-4500-NH3 G Pace Analytical Services - Indianapolis | | | | | | | |
| Nitrogen, Ammonia | **106** | ug/L | 20.0 | 1 | | 06/29/22 13:14 | 7664-41-7 | |
| **5310C TOC** | Analytical Method: SM 5310C Pace Analytical Services - Indianapolis | | | | | | | |
| Total Organic Carbon | **1320** | ug/L | 500 | 1 | | 06/23/22 02:19 | 7440-44-0 | |

## REPORT OF LABORATORY ANALYSIS

**Pace Analytical Services, LLC**
4171 40th St. SE
Grand Rapids, MI 49512
(616)975-4500

## ANALYTICAL RESULTS

Project: Smith's Creek Landfill GW
Pace Project No.: 50319142

**Sample: MW-209** **Lab ID: 50319142008** Collected: 06/15/22 08:45 Received: 06/16/22 15:40 Matrix: Water

| Parameters | Results | Units | Report Limit | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|
| **6010 MET ICP, Dissolved** | Analytical Method: EPA 6010 Preparation Method: EPA 3010<br>Pace Analytical Services - Indianapolis | | | | | | | |
| Potassium, Dissolved | **1250** | ug/L | 500 | 1 | 06/24/22 08:22 | 06/28/22 11:42 | 7440-09-7 | |
| Sodium, Dissolved | **91400** | ug/L | 1000 | 1 | 06/24/22 08:22 | 06/28/22 11:42 | 7440-23-5 | |
| **6020 MET ICPMS, Dissolved** | Analytical Method: EPA 6020 Preparation Method: EPA 200.2<br>Pace Analytical Services - Indianapolis | | | | | | | |
| Arsenic, Dissolved | **1.5** | ug/L | 1.0 | 1 | 06/20/22 15:30 | 06/22/22 08:24 | 7440-38-2 | |
| Barium, Dissolved | **44.3** | ug/L | 5.0 | 1 | 06/20/22 15:30 | 06/22/22 08:24 | 7440-39-3 | |
| Zinc, Dissolved | **<10.0** | ug/L | 10.0 | 1 | 06/20/22 15:30 | 06/22/22 08:24 | 7440-66-6 | |
| **8260 MSV Low Level** | Analytical Method: EPA 5030B/8260<br>Pace Analytical Services - Indianapolis | | | | | | | |
| Acetone | **<20.0** | ug/L | 20.0 | 1 | | 06/21/22 06:59 | 67-64-1 | |
| Acrylonitrile | **<5.0** | ug/L | 5.0 | 1 | | 06/21/22 06:59 | 107-13-1 | |
| Benzene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 06:59 | 71-43-2 | |
| Bromochloromethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 06:59 | 74-97-5 | |
| Bromodichloromethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 06:59 | 75-27-4 | |
| Bromoform | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 06:59 | 75-25-2 | |
| Bromomethane | **<5.0** | ug/L | 5.0 | 1 | | 06/21/22 06:59 | 74-83-9 | |
| 2-Butanone (MEK) | **<5.0** | ug/L | 5.0 | 1 | | 06/21/22 06:59 | 78-93-3 | |
| Carbon disulfide | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 06:59 | 75-15-0 | |
| Carbon tetrachloride | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 06:59 | 56-23-5 | |
| Chlorobenzene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 06:59 | 108-90-7 | |
| Chloroethane | **<5.0** | ug/L | 5.0 | 1 | | 06/21/22 06:59 | 75-00-3 | |
| Chloroform | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 06:59 | 67-66-3 | |
| Chloromethane | **<5.0** | ug/L | 5.0 | 1 | | 06/21/22 06:59 | 74-87-3 | |
| 1,2-Dibromo-3-chloropropane | **<5.0** | ug/L | 5.0 | 1 | | 06/21/22 06:59 | 96-12-8 | |
| Dibromochloromethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 06:59 | 124-48-1 | |
| 1,2-Dibromoethane (EDB) | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 06:59 | 106-93-4 | |
| Dibromomethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 06:59 | 74-95-3 | |
| 1,2-Dichlorobenzene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 06:59 | 95-50-1 | |
| 1,4-Dichlorobenzene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 06:59 | 106-46-7 | |
| trans-1,4-Dichloro-2-butene | **<5.0** | ug/L | 5.0 | 1 | | 06/21/22 06:59 | 110-57-6 | |
| 1,1-Dichloroethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 06:59 | 75-34-3 | |
| 1,2-Dichloroethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 06:59 | 107-06-2 | |
| 1,1-Dichloroethene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 06:59 | 75-35-4 | |
| cis-1,2-Dichloroethene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 06:59 | 156-59-2 | |
| trans-1,2-Dichloroethene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 06:59 | 156-60-5 | |
| 1,2-Dichloropropane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 06:59 | 78-87-5 | |
| cis-1,3-Dichloropropene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 06:59 | 10061-01-5 | |
| trans-1,3-Dichloropropene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 06:59 | 10061-02-6 | |
| Ethylbenzene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 06:59 | 100-41-4 | |
| 2-Hexanone | **<5.0** | ug/L | 5.0 | 1 | | 06/21/22 06:59 | 591-78-6 | |
| Iodomethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 06:59 | 74-88-4 | |
| Methylene Chloride | **<5.0** | ug/L | 5.0 | 1 | | 06/21/22 06:59 | 75-09-2 | |
| 4-Methyl-2-pentanone (MIBK) | **<5.0** | ug/L | 5.0 | 1 | | 06/21/22 06:59 | 108-10-1 | |

## REPORT OF LABORATORY ANALYSIS

**Pace Analytical Services, LLC**
4171 40th St. SE
Grand Rapids, MI 49512
(616)975-4500

## ANALYTICAL RESULTS

Project: Smith's Creek Landfill GW
Pace Project No.: 50319142

**Sample: MW-209** **Lab ID: 50319142008** Collected: 06/15/22 08:45 Received: 06/16/22 15:40 Matrix: Water

| Parameters | Results | Units | Report Limit | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|
| **8260 MSV Low Level** | Analytical Method: EPA 5030B/8260 Pace Analytical Services - Indianapolis | | | | | | | |
| Styrene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 06:59 | 100-42-5 | |
| 1,1,1,2-Tetrachloroethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 06:59 | 630-20-6 | |
| 1,1,2,2-Tetrachloroethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 06:59 | 79-34-5 | |
| Tetrachloroethene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 06:59 | 127-18-4 | |
| Toluene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 06:59 | 108-88-3 | |
| 1,1,1-Trichloroethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 06:59 | 71-55-6 | |
| 1,1,2-Trichloroethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 06:59 | 79-00-5 | |
| Trichloroethene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 06:59 | 79-01-6 | |
| Trichlorofluoromethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 06:59 | 75-69-4 | |
| 1,2,3-Trichloropropane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 06:59 | 96-18-4 | |
| Vinyl chloride | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 06:59 | 75-01-4 | |
| Xylene (Total) | **<2.0** | ug/L | 2.0 | 1 | | 06/21/22 06:59 | 1330-20-7 | |
| ***Surrogates*** | | | | | | | | |
| 4-Bromofluorobenzene (S) | 97 | %. | 79-124 | 1 | | 06/21/22 06:59 | 460-00-4 | |
| Dibromofluoromethane (S) | 99 | %. | 82-128 | 1 | | 06/21/22 06:59 | 1868-53-7 | |
| Toluene-d8 (S) | 100 | %. | 73-122 | 1 | | 06/21/22 06:59 | 2037-26-5 | |
| **Total Inorganic Nitrogen** | Analytical Method: NO2+NO3+NH3 Calculation Pace Analytical Services - Indianapolis | | | | | | | |
| Total Inorganic Nitrogen | **41.5** | ug/L | 20.0 | 1 | | 06/30/22 15:05 | | |
| **353.2 Nitrogen, NO2/NO3 pres.** | Analytical Method: EPA 353.2 Pace Analytical Services - Indianapolis | | | | | | | |
| Nitrogen, NO2 plus NO3 | **30.2** | ug/L | 20.0 | 1 | | 06/22/22 13:45 | | |
| **4500 Chloride** | Analytical Method: SM 4500-Cl-E Pace Analytical Services - Indianapolis | | | | | | | |
| Chloride | **33000** | ug/L | 1000 | 1 | | 06/23/22 15:08 | 16887-00-6 | |
| **4500 Ammonia Water Low Level** | Analytical Method: SM-4500-NH3 G Pace Analytical Services - Indianapolis | | | | | | | |
| Nitrogen, Ammonia | **113** | ug/L | 20.0 | 1 | | 06/29/22 13:16 | 7664-41-7 | |
| **5310C TOC** | Analytical Method: SM 5310C Pace Analytical Services - Indianapolis | | | | | | | |
| Total Organic Carbon | **1070** | ug/L | 500 | 1 | | 06/23/22 02:49 | 7440-44-0 | |

## REPORT OF LABORATORY ANALYSIS

**Pace Analytical Services, LLC**
4171 40th St. SE
Grand Rapids, MI 49512
(616)975-4500

## ANALYTICAL RESULTS

Project: Smith's Creek Landfill GW
Pace Project No.: 50319142

**Sample: MW-210** **Lab ID: 50319142009** Collected: 06/14/22 10:30 Received: 06/16/22 15:40 Matrix: Water

| Parameters | Results | Units | Report Limit | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|
| **6010 MET ICP, Dissolved** | Analytical Method: EPA 6010 Preparation Method: EPA 3010<br>Pace Analytical Services - Indianapolis | | | | | | | |
| Potassium, Dissolved | **2460** | ug/L | 500 | 1 | 06/24/22 08:22 | 06/28/22 11:44 | 7440-09-7 | |
| Sodium, Dissolved | **142000** | ug/L | 1000 | 1 | 06/24/22 08:22 | 06/28/22 11:44 | 7440-23-5 | |
| **6020 MET ICPMS, Dissolved** | Analytical Method: EPA 6020 Preparation Method: EPA 200.2<br>Pace Analytical Services - Indianapolis | | | | | | | |
| Arsenic, Dissolved | **4.0** | ug/L | 1.0 | 1 | 06/20/22 15:30 | 06/22/22 08:29 | 7440-38-2 | |
| Barium, Dissolved | **46.1** | ug/L | 5.0 | 1 | 06/20/22 15:30 | 06/22/22 08:29 | 7440-39-3 | |
| Zinc, Dissolved | **<10.0** | ug/L | 10.0 | 1 | 06/20/22 15:30 | 06/22/22 08:29 | 7440-66-6 | |
| **8260 MSV Low Level** | Analytical Method: EPA 5030B/8260<br>Pace Analytical Services - Indianapolis | | | | | | | |
| Acetone | **<20.0** | ug/L | 20.0 | 1 | | 06/21/22 07:28 | 67-64-1 | |
| Acrylonitrile | **<5.0** | ug/L | 5.0 | 1 | | 06/21/22 07:28 | 107-13-1 | |
| Benzene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 07:28 | 71-43-2 | |
| Bromochloromethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 07:28 | 74-97-5 | |
| Bromodichloromethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 07:28 | 75-27-4 | |
| Bromoform | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 07:28 | 75-25-2 | |
| Bromomethane | **<5.0** | ug/L | 5.0 | 1 | | 06/21/22 07:28 | 74-83-9 | |
| 2-Butanone (MEK) | **<5.0** | ug/L | 5.0 | 1 | | 06/21/22 07:28 | 78-93-3 | |
| Carbon disulfide | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 07:28 | 75-15-0 | |
| Carbon tetrachloride | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 07:28 | 56-23-5 | |
| Chlorobenzene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 07:28 | 108-90-7 | |
| Chloroethane | **<5.0** | ug/L | 5.0 | 1 | | 06/21/22 07:28 | 75-00-3 | |
| Chloroform | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 07:28 | 67-66-3 | |
| Chloromethane | **<5.0** | ug/L | 5.0 | 1 | | 06/21/22 07:28 | 74-87-3 | |
| 1,2-Dibromo-3-chloropropane | **<5.0** | ug/L | 5.0 | 1 | | 06/21/22 07:28 | 96-12-8 | |
| Dibromochloromethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 07:28 | 124-48-1 | |
| 1,2-Dibromoethane (EDB) | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 07:28 | 106-93-4 | |
| Dibromomethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 07:28 | 74-95-3 | |
| 1,2-Dichlorobenzene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 07:28 | 95-50-1 | |
| 1,4-Dichlorobenzene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 07:28 | 106-46-7 | |
| trans-1,4-Dichloro-2-butene | **<5.0** | ug/L | 5.0 | 1 | | 06/21/22 07:28 | 110-57-6 | |
| 1,1-Dichloroethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 07:28 | 75-34-3 | |
| 1,2-Dichloroethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 07:28 | 107-06-2 | |
| 1,1-Dichloroethene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 07:28 | 75-35-4 | |
| cis-1,2-Dichloroethene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 07:28 | 156-59-2 | |
| trans-1,2-Dichloroethene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 07:28 | 156-60-5 | |
| 1,2-Dichloropropane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 07:28 | 78-87-5 | |
| cis-1,3-Dichloropropene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 07:28 | 10061-01-5 | |
| trans-1,3-Dichloropropene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 07:28 | 10061-02-6 | |
| Ethylbenzene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 07:28 | 100-41-4 | |
| 2-Hexanone | **<5.0** | ug/L | 5.0 | 1 | | 06/21/22 07:28 | 591-78-6 | |
| Iodomethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 07:28 | 74-88-4 | |
| Methylene Chloride | **<5.0** | ug/L | 5.0 | 1 | | 06/21/22 07:28 | 75-09-2 | |
| 4-Methyl-2-pentanone (MIBK) | **<5.0** | ug/L | 5.0 | 1 | | 06/21/22 07:28 | 108-10-1 | |

## REPORT OF LABORATORY ANALYSIS

**Pace Analytical Services, LLC**
4171 40th St. SE
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## ANALYTICAL RESULTS

Project: Smith's Creek Landfill GW
Pace Project No.: 50319142

**Sample: MW-210** **Lab ID: 50319142009** Collected: 06/14/22 10:30 Received: 06/16/22 15:40 Matrix: Water

| Parameters | Results | Units | Report Limit | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|
| **8260 MSV Low Level** | Analytical Method: EPA 5030B/8260 Pace Analytical Services - Indianapolis | | | | | | | |
| Styrene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 07:28 | 100-42-5 | |
| 1,1,1,2-Tetrachloroethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 07:28 | 630-20-6 | |
| 1,1,2,2-Tetrachloroethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 07:28 | 79-34-5 | |
| Tetrachloroethene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 07:28 | 127-18-4 | |
| Toluene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 07:28 | 108-88-3 | |
| 1,1,1-Trichloroethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 07:28 | 71-55-6 | |
| 1,1,2-Trichloroethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 07:28 | 79-00-5 | |
| Trichloroethene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 07:28 | 79-01-6 | |
| Trichlorofluoromethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 07:28 | 75-69-4 | |
| 1,2,3-Trichloropropane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 07:28 | 96-18-4 | |
| Vinyl chloride | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 07:28 | 75-01-4 | |
| Xylene (Total) | **<2.0** | ug/L | 2.0 | 1 | | 06/21/22 07:28 | 1330-20-7 | |
| ***Surrogates*** | | | | | | | | |
| 4-Bromofluorobenzene (S) | 96 | %. | 79-124 | 1 | | 06/21/22 07:28 | 460-00-4 | |
| Dibromofluoromethane (S) | 99 | %. | 82-128 | 1 | | 06/21/22 07:28 | 1868-53-7 | |
| Toluene-d8 (S) | 101 | %. | 73-122 | 1 | | 06/21/22 07:28 | 2037-26-5 | |
| **Total Inorganic Nitrogen** | Analytical Method: NO2+NO3+NH3 Calculation Pace Analytical Services - Indianapolis | | | | | | | |
| Total Inorganic Nitrogen | **148** | ug/L | 20.0 | 1 | | 06/30/22 15:05 | | |
| **353.2 Nitrogen, NO2/NO3 pres.** | Analytical Method: EPA 353.2 Pace Analytical Services - Indianapolis | | | | | | | |
| Nitrogen, NO2 plus NO3 | **<20.0** | ug/L | 20.0 | 1 | | 06/22/22 13:47 | | |
| **4500 Chloride** | Analytical Method: SM 4500-Cl-E Pace Analytical Services - Indianapolis | | | | | | | |
| Chloride | **28300** | ug/L | 1000 | 1 | | 06/23/22 15:09 | 16887-00-6 | |
| **4500 Ammonia Water Low Level** | Analytical Method: SM-4500-NH3 G Pace Analytical Services - Indianapolis | | | | | | | |
| Nitrogen, Ammonia | **148** | ug/L | 20.0 | 1 | | 06/29/22 13:21 | 7664-41-7 | |
| **5310C TOC** | Analytical Method: SM 5310C Pace Analytical Services - Indianapolis | | | | | | | |
| Total Organic Carbon | **1410** | ug/L | 500 | 1 | | 06/23/22 02:59 | 7440-44-0 | |

## REPORT OF LABORATORY ANALYSIS

**Pace Analytical Services, LLC**
4171 40th St. SE
Grand Rapids, MI 49512
(616)975-4500

## ANALYTICAL RESULTS

Project: Smith's Creek Landfill GW
Pace Project No.: 50319142

**Sample: MW-212** **Lab ID: 50319142010** Collected: 06/14/22 09:30 Received: 06/16/22 15:40 Matrix: Water

| Parameters | Results | Units | Report Limit | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|
| **6010 MET ICP, Dissolved** | Analytical Method: EPA 6010 Preparation Method: EPA 3010<br>Pace Analytical Services - Indianapolis | | | | | | | |
| Potassium, Dissolved | **1060** | ug/L | 500 | 1 | 06/24/22 08:22 | 06/28/22 12:14 | 7440-09-7 | |
| Sodium, Dissolved | **87000** | ug/L | 1000 | 1 | 06/24/22 08:22 | 06/28/22 12:14 | 7440-23-5 | |
| **6020 MET ICPMS, Dissolved** | Analytical Method: EPA 6020 Preparation Method: EPA 200.2<br>Pace Analytical Services - Indianapolis | | | | | | | |
| Arsenic, Dissolved | **4.1** | ug/L | 1.0 | 1 | 06/20/22 15:30 | 06/22/22 08:34 | 7440-38-2 | |
| Barium, Dissolved | **66.1** | ug/L | 5.0 | 1 | 06/20/22 15:30 | 06/22/22 08:34 | 7440-39-3 | |
| Zinc, Dissolved | **<10.0** | ug/L | 10.0 | 1 | 06/20/22 15:30 | 06/22/22 08:34 | 7440-66-6 | |
| **8260 MSV Low Level** | Analytical Method: EPA 5030B/8260<br>Pace Analytical Services - Indianapolis | | | | | | | |
| Acetone | **<20.0** | ug/L | 20.0 | 1 | | 06/21/22 07:58 | 67-64-1 | |
| Acrylonitrile | **<5.0** | ug/L | 5.0 | 1 | | 06/21/22 07:58 | 107-13-1 | |
| Benzene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 07:58 | 71-43-2 | |
| Bromochloromethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 07:58 | 74-97-5 | |
| Bromodichloromethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 07:58 | 75-27-4 | |
| Bromoform | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 07:58 | 75-25-2 | |
| Bromomethane | **<5.0** | ug/L | 5.0 | 1 | | 06/21/22 07:58 | 74-83-9 | |
| 2-Butanone (MEK) | **<5.0** | ug/L | 5.0 | 1 | | 06/21/22 07:58 | 78-93-3 | |
| Carbon disulfide | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 07:58 | 75-15-0 | |
| Carbon tetrachloride | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 07:58 | 56-23-5 | |
| Chlorobenzene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 07:58 | 108-90-7 | |
| Chloroethane | **<5.0** | ug/L | 5.0 | 1 | | 06/21/22 07:58 | 75-00-3 | |
| Chloroform | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 07:58 | 67-66-3 | |
| Chloromethane | **<5.0** | ug/L | 5.0 | 1 | | 06/21/22 07:58 | 74-87-3 | |
| 1,2-Dibromo-3-chloropropane | **<5.0** | ug/L | 5.0 | 1 | | 06/21/22 07:58 | 96-12-8 | |
| Dibromochloromethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 07:58 | 124-48-1 | |
| 1,2-Dibromoethane (EDB) | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 07:58 | 106-93-4 | |
| Dibromomethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 07:58 | 74-95-3 | |
| 1,2-Dichlorobenzene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 07:58 | 95-50-1 | |
| 1,4-Dichlorobenzene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 07:58 | 106-46-7 | |
| trans-1,4-Dichloro-2-butene | **<5.0** | ug/L | 5.0 | 1 | | 06/21/22 07:58 | 110-57-6 | |
| 1,1-Dichloroethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 07:58 | 75-34-3 | |
| 1,2-Dichloroethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 07:58 | 107-06-2 | |
| 1,1-Dichloroethene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 07:58 | 75-35-4 | |
| cis-1,2-Dichloroethene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 07:58 | 156-59-2 | |
| trans-1,2-Dichloroethene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 07:58 | 156-60-5 | |
| 1,2-Dichloropropane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 07:58 | 78-87-5 | |
| cis-1,3-Dichloropropene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 07:58 | 10061-01-5 | |
| trans-1,3-Dichloropropene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 07:58 | 10061-02-6 | |
| Ethylbenzene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 07:58 | 100-41-4 | |
| 2-Hexanone | **<5.0** | ug/L | 5.0 | 1 | | 06/21/22 07:58 | 591-78-6 | |
| Iodomethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 07:58 | 74-88-4 | |
| Methylene Chloride | **<5.0** | ug/L | 5.0 | 1 | | 06/21/22 07:58 | 75-09-2 | |
| 4-Methyl-2-pentanone (MIBK) | **<5.0** | ug/L | 5.0 | 1 | | 06/21/22 07:58 | 108-10-1 | |

## REPORT OF LABORATORY ANALYSIS

**Pace Analytical Services, LLC**
4171 40th St. SE
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(616)975-4500

## ANALYTICAL RESULTS

Project: Smith's Creek Landfill GW
Pace Project No.: 50319142

**Sample: MW-212** **Lab ID: 50319142010** Collected: 06/14/22 09:30 Received: 06/16/22 15:40 Matrix: Water

| Parameters | Results | Units | Report Limit | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|
| **8260 MSV Low Level** | Analytical Method: EPA 5030B/8260 Pace Analytical Services - Indianapolis | | | | | | | |
| Styrene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 07:58 | 100-42-5 | |
| 1,1,1,2-Tetrachloroethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 07:58 | 630-20-6 | |
| 1,1,2,2-Tetrachloroethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 07:58 | 79-34-5 | |
| Tetrachloroethene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 07:58 | 127-18-4 | |
| Toluene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 07:58 | 108-88-3 | |
| 1,1,1-Trichloroethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 07:58 | 71-55-6 | |
| 1,1,2-Trichloroethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 07:58 | 79-00-5 | |
| Trichloroethene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 07:58 | 79-01-6 | |
| Trichlorofluoromethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 07:58 | 75-69-4 | |
| 1,2,3-Trichloropropane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 07:58 | 96-18-4 | |
| Vinyl chloride | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 07:58 | 75-01-4 | |
| Xylene (Total) | **<2.0** | ug/L | 2.0 | 1 | | 06/21/22 07:58 | 1330-20-7 | |
| ***Surrogates*** | | | | | | | | |
| 4-Bromofluorobenzene (S) | 96 | %. | 79-124 | 1 | | 06/21/22 07:58 | 460-00-4 | |
| Dibromofluoromethane (S) | 98 | %. | 82-128 | 1 | | 06/21/22 07:58 | 1868-53-7 | |
| Toluene-d8 (S) | 100 | %. | 73-122 | 1 | | 06/21/22 07:58 | 2037-26-5 | |
| **Total Inorganic Nitrogen** | Analytical Method: NO2+NO3+NH3 Calculation Pace Analytical Services - Indianapolis | | | | | | | |
| Total Inorganic Nitrogen | **<20.0** | ug/L | 20.0 | 1 | | 06/30/22 15:05 | | |
| **353.2 Nitrogen, NO2/NO3 pres.** | Analytical Method: EPA 353.2 Pace Analytical Services - Indianapolis | | | | | | | |
| Nitrogen, NO2 plus NO3 | **<20.0** | ug/L | 20.0 | 1 | | 06/22/22 13:48 | | |
| **4500 Chloride** | Analytical Method: SM 4500-Cl-E Pace Analytical Services - Indianapolis | | | | | | | |
| Chloride | **30600** | ug/L | 1000 | 1 | | 06/23/22 15:10 | 16887-00-6 | |
| **4500 Ammonia Water Low Level** | Analytical Method: SM-4500-NH3 G Pace Analytical Services - Indianapolis | | | | | | | |
| Nitrogen, Ammonia | **<20.0** | ug/L | 20.0 | 1 | | 06/29/22 13:22 | 7664-41-7 | |
| **5310C TOC** | Analytical Method: SM 5310C Pace Analytical Services - Indianapolis | | | | | | | |
| Total Organic Carbon | **1520** | ug/L | 500 | 1 | | 06/23/22 03:09 | 7440-44-0 | |

## REPORT OF LABORATORY ANALYSIS

**Pace Analytical Services, LLC**
4171 40th St. SE
Grand Rapids, MI 49512
(616)975-4500

## ANALYTICAL RESULTS

Project: Smith's Creek Landfill GW
Pace Project No.: 50319142

**Sample: MW-213** **Lab ID: 50319142011** Collected: 06/15/22 12:40 Received: 06/16/22 15:40 Matrix: Water

| Parameters | Results | Units | Report Limit | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|
| **6010 MET ICP, Dissolved** | Analytical Method: EPA 6010 Preparation Method: EPA 3010<br>Pace Analytical Services - Indianapolis | | | | | | | |
| Potassium, Dissolved | **1060** | ug/L | 500 | 1 | 06/24/22 08:22 | 06/28/22 11:49 | 7440-09-7 | |
| Sodium, Dissolved | **102000** | ug/L | 1000 | 1 | 06/24/22 08:22 | 06/28/22 11:49 | 7440-23-5 | |
| **6020 MET ICPMS, Dissolved** | Analytical Method: EPA 6020 Preparation Method: EPA 200.2<br>Pace Analytical Services - Indianapolis | | | | | | | |
| Arsenic, Dissolved | **2.6** | ug/L | 1.0 | 1 | 06/20/22 15:30 | 06/22/22 08:48 | 7440-38-2 | |
| Barium, Dissolved | **<5.0** | ug/L | 5.0 | 1 | 06/20/22 15:30 | 06/22/22 08:48 | 7440-39-3 | |
| Zinc, Dissolved | **<10.0** | ug/L | 10.0 | 1 | 06/20/22 15:30 | 06/22/22 08:48 | 7440-66-6 | |
| **8260 MSV Low Level** | Analytical Method: EPA 5030B/8260<br>Pace Analytical Services - Indianapolis | | | | | | | |
| Acetone | **<20.0** | ug/L | 20.0 | 1 | | 06/21/22 08:27 | 67-64-1 | |
| Acrylonitrile | **<5.0** | ug/L | 5.0 | 1 | | 06/21/22 08:27 | 107-13-1 | |
| Benzene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 08:27 | 71-43-2 | |
| Bromochloromethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 08:27 | 74-97-5 | |
| Bromodichloromethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 08:27 | 75-27-4 | |
| Bromoform | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 08:27 | 75-25-2 | |
| Bromomethane | **<5.0** | ug/L | 5.0 | 1 | | 06/21/22 08:27 | 74-83-9 | |
| 2-Butanone (MEK) | **<5.0** | ug/L | 5.0 | 1 | | 06/21/22 08:27 | 78-93-3 | |
| Carbon disulfide | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 08:27 | 75-15-0 | |
| Carbon tetrachloride | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 08:27 | 56-23-5 | |
| Chlorobenzene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 08:27 | 108-90-7 | |
| Chloroethane | **<5.0** | ug/L | 5.0 | 1 | | 06/21/22 08:27 | 75-00-3 | |
| Chloroform | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 08:27 | 67-66-3 | |
| Chloromethane | **<5.0** | ug/L | 5.0 | 1 | | 06/21/22 08:27 | 74-87-3 | |
| 1,2-Dibromo-3-chloropropane | **<5.0** | ug/L | 5.0 | 1 | | 06/21/22 08:27 | 96-12-8 | |
| Dibromochloromethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 08:27 | 124-48-1 | |
| 1,2-Dibromoethane (EDB) | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 08:27 | 106-93-4 | |
| Dibromomethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 08:27 | 74-95-3 | |
| 1,2-Dichlorobenzene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 08:27 | 95-50-1 | |
| 1,4-Dichlorobenzene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 08:27 | 106-46-7 | |
| trans-1,4-Dichloro-2-butene | **<5.0** | ug/L | 5.0 | 1 | | 06/21/22 08:27 | 110-57-6 | |
| 1,1-Dichloroethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 08:27 | 75-34-3 | |
| 1,2-Dichloroethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 08:27 | 107-06-2 | |
| 1,1-Dichloroethene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 08:27 | 75-35-4 | |
| cis-1,2-Dichloroethene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 08:27 | 156-59-2 | |
| trans-1,2-Dichloroethene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 08:27 | 156-60-5 | |
| 1,2-Dichloropropane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 08:27 | 78-87-5 | |
| cis-1,3-Dichloropropene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 08:27 | 10061-01-5 | |
| trans-1,3-Dichloropropene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 08:27 | 10061-02-6 | |
| Ethylbenzene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 08:27 | 100-41-4 | |
| 2-Hexanone | **<5.0** | ug/L | 5.0 | 1 | | 06/21/22 08:27 | 591-78-6 | |
| Iodomethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 08:27 | 74-88-4 | |
| Methylene Chloride | **<5.0** | ug/L | 5.0 | 1 | | 06/21/22 08:27 | 75-09-2 | |
| 4-Methyl-2-pentanone (MIBK) | **<5.0** | ug/L | 5.0 | 1 | | 06/21/22 08:27 | 108-10-1 | |

## REPORT OF LABORATORY ANALYSIS

**Pace Analytical Services, LLC**
4171 40th St. SE
Grand Rapids, MI 49512
(616)975-4500

## ANALYTICAL RESULTS

Project: Smith's Creek Landfill GW
Pace Project No.: 50319142

**Sample: MW-213** **Lab ID: 50319142011** Collected: 06/15/22 12:40 Received: 06/16/22 15:40 Matrix: Water

| Parameters | Results | Units | Report Limit | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|
| **8260 MSV Low Level** | Analytical Method: EPA 5030B/8260 Pace Analytical Services - Indianapolis | | | | | | | |
| Styrene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 08:27 | 100-42-5 | |
| 1,1,1,2-Tetrachloroethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 08:27 | 630-20-6 | |
| 1,1,2,2-Tetrachloroethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 08:27 | 79-34-5 | |
| Tetrachloroethene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 08:27 | 127-18-4 | |
| Toluene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 08:27 | 108-88-3 | |
| 1,1,1-Trichloroethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 08:27 | 71-55-6 | |
| 1,1,2-Trichloroethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 08:27 | 79-00-5 | |
| Trichloroethene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 08:27 | 79-01-6 | |
| Trichlorofluoromethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 08:27 | 75-69-4 | |
| 1,2,3-Trichloropropane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 08:27 | 96-18-4 | |
| Vinyl chloride | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 08:27 | 75-01-4 | |
| Xylene (Total) | **<2.0** | ug/L | 2.0 | 1 | | 06/21/22 08:27 | 1330-20-7 | |
| ***Surrogates*** | | | | | | | | |
| 4-Bromofluorobenzene (S) | 95 | %. | 79-124 | 1 | | 06/21/22 08:27 | 460-00-4 | |
| Dibromofluoromethane (S) | 100 | %. | 82-128 | 1 | | 06/21/22 08:27 | 1868-53-7 | |
| Toluene-d8 (S) | 100 | %. | 73-122 | 1 | | 06/21/22 08:27 | 2037-26-5 | |
| **Total Inorganic Nitrogen** | Analytical Method: NO2+NO3+NH3 Calculation Pace Analytical Services - Indianapolis | | | | | | | |
| Total Inorganic Nitrogen | **<200** | ug/L | 200 | 10 | | 06/30/22 15:05 | | |
| **353.2 Nitrogen, NO2/NO3 pres.** | Analytical Method: EPA 353.2 Pace Analytical Services - Indianapolis | | | | | | | |
| Nitrogen, NO2 plus NO3 | **<200** | ug/L | 200 | 10 | | 06/22/22 13:50 | | D3 |
| **4500 Chloride** | Analytical Method: SM 4500-Cl-E Pace Analytical Services - Indianapolis | | | | | | | |
| Chloride | **42000** | ug/L | 1000 | 1 | | 06/23/22 15:13 | 16887-00-6 | |
| **4500 Ammonia Water Low Level** | Analytical Method: SM-4500-NH3 G Pace Analytical Services - Indianapolis | | | | | | | |
| Nitrogen, Ammonia | **108** | ug/L | 20.0 | 1 | | 06/29/22 13:23 | 7664-41-7 | |
| **5310C TOC** | Analytical Method: SM 5310C Pace Analytical Services - Indianapolis | | | | | | | |
| Total Organic Carbon | **1240** | ug/L | 500 | 1 | | 06/23/22 03:19 | 7440-44-0 | |

## REPORT OF LABORATORY ANALYSIS

**Pace Analytical Services, LLC**
4171 40th St. SE
Grand Rapids, MI 49512
(616)975-4500

## ANALYTICAL RESULTS

Project: Smith's Creek Landfill GW
Pace Project No.: 50319142

**Sample: MW-301** **Lab ID: 50319142012** Collected: 06/14/22 12:40 Received: 06/16/22 15:40 Matrix: Water

| Parameters | Results | Units | Report Limit | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|
| **6010 MET ICP** | Analytical Method: EPA 6010 Preparation Method: EPA 3010<br>Pace Analytical Services - Indianapolis | | | | | | | |
| Potassium | **1260** | ug/L | 500 | 1 | 06/23/22 08:21 | 06/28/22 12:01 | 7440-09-7 | |
| Sodium | **103000** | ug/L | 1000 | 1 | 06/23/22 08:21 | 06/28/22 12:01 | 7440-23-5 | |
| **6010 MET ICP, Dissolved** | Analytical Method: EPA 6010 Preparation Method: EPA 3010<br>Pace Analytical Services - Indianapolis | | | | | | | |
| Potassium, Dissolved | **1290** | ug/L | 500 | 1 | 06/24/22 08:22 | 06/28/22 11:51 | 7440-09-7 | |
| Sodium, Dissolved | **95000** | ug/L | 1000 | 1 | 06/24/22 08:22 | 06/28/22 11:51 | 7440-23-5 | |
| **6020 MET ICPMS** | Analytical Method: EPA 6020 Preparation Method: EPA 200.2<br>Pace Analytical Services - Indianapolis | | | | | | | |
| Arsenic | **3.0** | ug/L | 1.0 | 1 | 06/20/22 15:30 | 06/22/22 09:31 | 7440-38-2 | |
| Barium | **29.6** | ug/L | 5.0 | 1 | 06/20/22 15:30 | 06/22/22 09:31 | 7440-39-3 | |
| Zinc | **<10.0** | ug/L | 10.0 | 1 | 06/20/22 15:30 | 06/22/22 09:31 | 7440-66-6 | |
| **6020 MET ICPMS, Dissolved** | Analytical Method: EPA 6020 Preparation Method: EPA 200.2<br>Pace Analytical Services - Indianapolis | | | | | | | |
| Arsenic, Dissolved | **3.1** | ug/L | 1.0 | 1 | 06/20/22 15:30 | 06/22/22 08:53 | 7440-38-2 | |
| Barium, Dissolved | **29.4** | ug/L | 5.0 | 1 | 06/20/22 15:30 | 06/22/22 08:53 | 7440-39-3 | |
| Zinc, Dissolved | **<10.0** | ug/L | 10.0 | 1 | 06/20/22 15:30 | 06/22/22 08:53 | 7440-66-6 | |
| **8260 MSV Low Level** | Analytical Method: EPA 5030B/8260<br>Pace Analytical Services - Indianapolis | | | | | | | |
| Acetone | **<20.0** | ug/L | 20.0 | 1 | | 06/21/22 08:56 | 67-64-1 | |
| Acrylonitrile | **<5.0** | ug/L | 5.0 | 1 | | 06/21/22 08:56 | 107-13-1 | |
| Benzene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 08:56 | 71-43-2 | |
| Bromochloromethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 08:56 | 74-97-5 | |
| Bromodichloromethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 08:56 | 75-27-4 | |
| Bromoform | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 08:56 | 75-25-2 | |
| Bromomethane | **<5.0** | ug/L | 5.0 | 1 | | 06/21/22 08:56 | 74-83-9 | |
| 2-Butanone (MEK) | **<5.0** | ug/L | 5.0 | 1 | | 06/21/22 08:56 | 78-93-3 | |
| Carbon disulfide | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 08:56 | 75-15-0 | |
| Carbon tetrachloride | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 08:56 | 56-23-5 | |
| Chlorobenzene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 08:56 | 108-90-7 | |
| Chloroethane | **<5.0** | ug/L | 5.0 | 1 | | 06/21/22 08:56 | 75-00-3 | |
| Chloroform | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 08:56 | 67-66-3 | |
| Chloromethane | **<5.0** | ug/L | 5.0 | 1 | | 06/21/22 08:56 | 74-87-3 | |
| 1,2-Dibromo-3-chloropropane | **<5.0** | ug/L | 5.0 | 1 | | 06/21/22 08:56 | 96-12-8 | |
| Dibromochloromethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 08:56 | 124-48-1 | |
| 1,2-Dibromoethane (EDB) | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 08:56 | 106-93-4 | |
| Dibromomethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 08:56 | 74-95-3 | |
| 1,2-Dichlorobenzene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 08:56 | 95-50-1 | |
| 1,4-Dichlorobenzene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 08:56 | 106-46-7 | |
| trans-1,4-Dichloro-2-butene | **<5.0** | ug/L | 5.0 | 1 | | 06/21/22 08:56 | 110-57-6 | |
| 1,1-Dichloroethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 08:56 | 75-34-3 | |
| 1,2-Dichloroethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 08:56 | 107-06-2 | |

## REPORT OF LABORATORY ANALYSIS

**Pace Analytical Services, LLC**
4171 40th St. SE
Grand Rapids, MI 49512
(616)975-4500

## ANALYTICAL RESULTS

Project: Smith's Creek Landfill GW
Pace Project No.: 50319142

**Sample: MW-301** **Lab ID: 50319142012** Collected: 06/14/22 12:40 Received: 06/16/22 15:40 Matrix: Water

| Parameters | Results | Units | Report Limit | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|
| **8260 MSV Low Level** | Analytical Method: EPA 5030B/8260 Pace Analytical Services - Indianapolis | | | | | | | |
| 1,1-Dichloroethene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 08:56 | 75-35-4 | |
| cis-1,2-Dichloroethene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 08:56 | 156-59-2 | |
| trans-1,2-Dichloroethene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 08:56 | 156-60-5 | |
| 1,2-Dichloropropane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 08:56 | 78-87-5 | |
| cis-1,3-Dichloropropene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 08:56 | 10061-01-5 | |
| trans-1,3-Dichloropropene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 08:56 | 10061-02-6 | |
| Ethylbenzene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 08:56 | 100-41-4 | |
| 2-Hexanone | **<5.0** | ug/L | 5.0 | 1 | | 06/21/22 08:56 | 591-78-6 | |
| Iodomethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 08:56 | 74-88-4 | |
| Methylene Chloride | **<5.0** | ug/L | 5.0 | 1 | | 06/21/22 08:56 | 75-09-2 | |
| 4-Methyl-2-pentanone (MIBK) | **<5.0** | ug/L | 5.0 | 1 | | 06/21/22 08:56 | 108-10-1 | |
| Styrene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 08:56 | 100-42-5 | |
| 1,1,1,2-Tetrachloroethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 08:56 | 630-20-6 | |
| 1,1,2,2-Tetrachloroethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 08:56 | 79-34-5 | |
| Tetrachloroethene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 08:56 | 127-18-4 | |
| Toluene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 08:56 | 108-88-3 | |
| 1,1,1-Trichloroethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 08:56 | 71-55-6 | |
| 1,1,2-Trichloroethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 08:56 | 79-00-5 | |
| Trichloroethene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 08:56 | 79-01-6 | |
| Trichlorofluoromethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 08:56 | 75-69-4 | |
| 1,2,3-Trichloropropane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 08:56 | 96-18-4 | |
| Vinyl chloride | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 08:56 | 75-01-4 | |
| Xylene (Total) | **<2.0** | ug/L | 2.0 | 1 | | 06/21/22 08:56 | 1330-20-7 | |
| ***Surrogates*** | | | | | | | | |
| 4-Bromofluorobenzene (S) | 96 | %. | 79-124 | 1 | | 06/21/22 08:56 | 460-00-4 | |
| Dibromofluoromethane (S) | 99 | %. | 82-128 | 1 | | 06/21/22 08:56 | 1868-53-7 | |
| Toluene-d8 (S) | 99 | %. | 73-122 | 1 | | 06/21/22 08:56 | 2037-26-5 | |
| **Total Inorganic Nitrogen** | Analytical Method: NO2+NO3+NH3 Calculation Pace Analytical Services - Indianapolis | | | | | | | |
| Total Inorganic Nitrogen | **199** | ug/L | 20.0 | 1 | | 06/30/22 15:05 | | |
| **353.2 Nitrogen, NO2/NO3 pres.** | Analytical Method: EPA 353.2 Pace Analytical Services - Indianapolis | | | | | | | |
| Nitrogen, NO2 plus NO3 | **<20.0** | ug/L | 20.0 | 1 | | 06/22/22 13:52 | | |
| **4500 Chloride** | Analytical Method: SM 4500-Cl-E Pace Analytical Services - Indianapolis | | | | | | | |
| Chloride | **39900** | ug/L | 1000 | 1 | | 06/23/22 15:14 | 16887-00-6 | |
| **4500 Ammonia Water Low Level** | Analytical Method: SM-4500-NH3 G Pace Analytical Services - Indianapolis | | | | | | | |
| Nitrogen, Ammonia | **199** | ug/L | 20.0 | 1 | | 06/29/22 13:24 | 7664-41-7 | |

## REPORT OF LABORATORY ANALYSIS

**Pace Analytical Services, LLC**
4171 40th St. SE
Grand Rapids, MI 49512
(616)975-4500

## ANALYTICAL RESULTS

Project: Smith's Creek Landfill GW
Pace Project No.: 50319142

**Sample: MW-301** **Lab ID: 50319142012** Collected: 06/14/22 12:40 Received: 06/16/22 15:40 Matrix: Water

| Parameters | Results | Units | Report Limit | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|
| **5310C TOC** | Analytical Method: SM 5310C<br>Pace Analytical Services - Indianapolis | | | | | | | |
| Total Organic Carbon | **1090** | ug/L | 500 | 1 | | 06/23/22 03:29 | 7440-44-0 | |

## REPORT OF LABORATORY ANALYSIS

**Pace Analytical Services, LLC**
4171 40th St. SE
Grand Rapids, MI 49512
(616)975-4500

## ANALYTICAL RESULTS

Project: Smith's Creek Landfill GW
Pace Project No.: 50319142

**Sample: MW-302** **Lab ID: 50319142013** Collected: 06/13/22 16:05 Received: 06/16/22 15:40 Matrix: Water

| Parameters | Results | Units | Report Limit | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|
| **6010 MET ICP, Dissolved** | Analytical Method: EPA 6010 Preparation Method: EPA 3010<br>Pace Analytical Services - Indianapolis | | | | | | | |
| Potassium, Dissolved | **1550** | ug/L | 500 | 1 | 06/24/22 08:22 | 06/28/22 11:53 | 7440-09-7 | |
| Sodium, Dissolved | **92500** | ug/L | 1000 | 1 | 06/24/22 08:22 | 06/28/22 11:53 | 7440-23-5 | |
| **6020 MET ICPMS, Dissolved** | Analytical Method: EPA 6020 Preparation Method: EPA 200.2<br>Pace Analytical Services - Indianapolis | | | | | | | |
| Arsenic, Dissolved | **<1.0** | ug/L | 1.0 | 1 | 06/20/22 15:30 | 06/22/22 08:58 | 7440-38-2 | |
| Barium, Dissolved | **35.8** | ug/L | 5.0 | 1 | 06/20/22 15:30 | 06/22/22 08:58 | 7440-39-3 | |
| Zinc, Dissolved | **<10.0** | ug/L | 10.0 | 1 | 06/20/22 15:30 | 06/22/22 08:58 | 7440-66-6 | |
| **8260 MSV Low Level** | Analytical Method: EPA 5030B/8260<br>Pace Analytical Services - Indianapolis | | | | | | | |
| Acetone | **<20.0** | ug/L | 20.0 | 1 | | 06/21/22 09:25 | 67-64-1 | |
| Acrylonitrile | **<5.0** | ug/L | 5.0 | 1 | | 06/21/22 09:25 | 107-13-1 | |
| Benzene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 09:25 | 71-43-2 | |
| Bromochloromethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 09:25 | 74-97-5 | |
| Bromodichloromethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 09:25 | 75-27-4 | |
| Bromoform | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 09:25 | 75-25-2 | |
| Bromomethane | **<5.0** | ug/L | 5.0 | 1 | | 06/21/22 09:25 | 74-83-9 | |
| 2-Butanone (MEK) | **<5.0** | ug/L | 5.0 | 1 | | 06/21/22 09:25 | 78-93-3 | |
| Carbon disulfide | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 09:25 | 75-15-0 | |
| Carbon tetrachloride | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 09:25 | 56-23-5 | |
| Chlorobenzene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 09:25 | 108-90-7 | |
| Chloroethane | **<5.0** | ug/L | 5.0 | 1 | | 06/21/22 09:25 | 75-00-3 | |
| Chloroform | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 09:25 | 67-66-3 | |
| Chloromethane | **<5.0** | ug/L | 5.0 | 1 | | 06/21/22 09:25 | 74-87-3 | |
| 1,2-Dibromo-3-chloropropane | **<5.0** | ug/L | 5.0 | 1 | | 06/21/22 09:25 | 96-12-8 | |
| Dibromochloromethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 09:25 | 124-48-1 | |
| 1,2-Dibromoethane (EDB) | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 09:25 | 106-93-4 | |
| Dibromomethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 09:25 | 74-95-3 | |
| 1,2-Dichlorobenzene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 09:25 | 95-50-1 | |
| 1,4-Dichlorobenzene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 09:25 | 106-46-7 | |
| trans-1,4-Dichloro-2-butene | **<5.0** | ug/L | 5.0 | 1 | | 06/21/22 09:25 | 110-57-6 | |
| 1,1-Dichloroethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 09:25 | 75-34-3 | |
| 1,2-Dichloroethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 09:25 | 107-06-2 | |
| 1,1-Dichloroethene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 09:25 | 75-35-4 | |
| cis-1,2-Dichloroethene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 09:25 | 156-59-2 | |
| trans-1,2-Dichloroethene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 09:25 | 156-60-5 | |
| 1,2-Dichloropropane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 09:25 | 78-87-5 | |
| cis-1,3-Dichloropropene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 09:25 | 10061-01-5 | |
| trans-1,3-Dichloropropene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 09:25 | 10061-02-6 | |
| Ethylbenzene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 09:25 | 100-41-4 | |
| 2-Hexanone | **<5.0** | ug/L | 5.0 | 1 | | 06/21/22 09:25 | 591-78-6 | |
| Iodomethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 09:25 | 74-88-4 | |
| Methylene Chloride | **<5.0** | ug/L | 5.0 | 1 | | 06/21/22 09:25 | 75-09-2 | |
| 4-Methyl-2-pentanone (MIBK) | **<5.0** | ug/L | 5.0 | 1 | | 06/21/22 09:25 | 108-10-1 | |

## REPORT OF LABORATORY ANALYSIS

**Pace Analytical Services, LLC**
4171 40th St. SE
Grand Rapids, MI 49512
(616)975-4500

## ANALYTICAL RESULTS

Project: Smith's Creek Landfill GW
Pace Project No.: 50319142

**Sample: MW-302** **Lab ID: 50319142013** Collected: 06/13/22 16:05 Received: 06/16/22 15:40 Matrix: Water

| Parameters | Results | Units | Report Limit | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|
| **8260 MSV Low Level** | Analytical Method: EPA 5030B/8260 Pace Analytical Services - Indianapolis | | | | | | | |
| Styrene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 09:25 | 100-42-5 | |
| 1,1,1,2-Tetrachloroethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 09:25 | 630-20-6 | |
| 1,1,2,2-Tetrachloroethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 09:25 | 79-34-5 | |
| Tetrachloroethene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 09:25 | 127-18-4 | |
| Toluene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 09:25 | 108-88-3 | |
| 1,1,1-Trichloroethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 09:25 | 71-55-6 | |
| 1,1,2-Trichloroethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 09:25 | 79-00-5 | |
| Trichloroethene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 09:25 | 79-01-6 | |
| Trichlorofluoromethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 09:25 | 75-69-4 | |
| 1,2,3-Trichloropropane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 09:25 | 96-18-4 | |
| Vinyl chloride | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 09:25 | 75-01-4 | |
| Xylene (Total) | **<2.0** | ug/L | 2.0 | 1 | | 06/21/22 09:25 | 1330-20-7 | |
| ***Surrogates*** | | | | | | | | |
| 4-Bromofluorobenzene (S) | 95 | %. | 79-124 | 1 | | 06/21/22 09:25 | 460-00-4 | |
| Dibromofluoromethane (S) | 100 | %. | 82-128 | 1 | | 06/21/22 09:25 | 1868-53-7 | |
| Toluene-d8 (S) | 99 | %. | 73-122 | 1 | | 06/21/22 09:25 | 2037-26-5 | |
| **Total Inorganic Nitrogen** | Analytical Method: NO2+NO3+NH3 Calculation Pace Analytical Services - Indianapolis | | | | | | | |
| Total Inorganic Nitrogen | **184** | ug/L | 20.0 | 1 | | 06/30/22 15:05 | | |
| **353.2 Nitrogen, NO2/NO3 pres.** | Analytical Method: EPA 353.2 Pace Analytical Services - Indianapolis | | | | | | | |
| Nitrogen, NO2 plus NO3 | **<20.0** | ug/L | 20.0 | 1 | | 06/22/22 13:54 | | |
| **4500 Chloride** | Analytical Method: SM 4500-Cl-E Pace Analytical Services - Indianapolis | | | | | | | |
| Chloride | **36900** | ug/L | 1000 | 1 | | 06/23/22 15:15 | 16887-00-6 | |
| **4500 Ammonia Water Low Level** | Analytical Method: SM-4500-NH3 G Pace Analytical Services - Indianapolis | | | | | | | |
| Nitrogen, Ammonia | **184** | ug/L | 20.0 | 1 | | 06/29/22 13:26 | 7664-41-7 | |
| **5310C TOC** | Analytical Method: SM 5310C Pace Analytical Services - Indianapolis | | | | | | | |
| Total Organic Carbon | **1160** | ug/L | 500 | 1 | | 06/23/22 03:39 | 7440-44-0 | |

## REPORT OF LABORATORY ANALYSIS

**Pace Analytical Services, LLC**
4171 40th St. SE
Grand Rapids, MI 49512
(616)975-4500

## ANALYTICAL RESULTS

Project: Smith's Creek Landfill GW
Pace Project No.: 50319142

**Sample: MW-303A** **Lab ID: 50319142014** Collected: 06/15/22 12:40 Received: 06/16/22 15:40 Matrix: Water

| Parameters | Results | Units | Report Limit | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|
| **6010 MET ICP, Dissolved** | Analytical Method: EPA 6010 Preparation Method: EPA 3010<br>Pace Analytical Services - Indianapolis | | | | | | | |
| Potassium, Dissolved | **1030** | ug/L | 500 | 1 | 06/24/22 08:22 | 06/28/22 11:55 | 7440-09-7 | |
| Sodium, Dissolved | **97800** | ug/L | 1000 | 1 | 06/24/22 08:22 | 06/28/22 11:55 | 7440-23-5 | |
| **6020 MET ICPMS, Dissolved** | Analytical Method: EPA 6020 Preparation Method: EPA 200.2<br>Pace Analytical Services - Indianapolis | | | | | | | |
| Arsenic, Dissolved | **2.6** | ug/L | 1.0 | 1 | 06/20/22 15:30 | 06/22/22 09:02 | 7440-38-2 | |
| Barium, Dissolved | **<5.0** | ug/L | 5.0 | 1 | 06/20/22 15:30 | 06/22/22 09:02 | 7440-39-3 | |
| Zinc, Dissolved | **<10.0** | ug/L | 10.0 | 1 | 06/20/22 15:30 | 06/22/22 09:02 | 7440-66-6 | |
| **8260 MSV Low Level** | Analytical Method: EPA 5030B/8260<br>Pace Analytical Services - Indianapolis | | | | | | | |
| Acetone | **<20.0** | ug/L | 20.0 | 1 | | 06/21/22 09:55 | 67-64-1 | |
| Acrylonitrile | **<5.0** | ug/L | 5.0 | 1 | | 06/21/22 09:55 | 107-13-1 | |
| Benzene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 09:55 | 71-43-2 | |
| Bromochloromethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 09:55 | 74-97-5 | |
| Bromodichloromethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 09:55 | 75-27-4 | |
| Bromoform | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 09:55 | 75-25-2 | |
| Bromomethane | **<5.0** | ug/L | 5.0 | 1 | | 06/21/22 09:55 | 74-83-9 | |
| 2-Butanone (MEK) | **<5.0** | ug/L | 5.0 | 1 | | 06/21/22 09:55 | 78-93-3 | |
| Carbon disulfide | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 09:55 | 75-15-0 | |
| Carbon tetrachloride | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 09:55 | 56-23-5 | |
| Chlorobenzene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 09:55 | 108-90-7 | |
| Chloroethane | **<5.0** | ug/L | 5.0 | 1 | | 06/21/22 09:55 | 75-00-3 | |
| Chloroform | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 09:55 | 67-66-3 | |
| Chloromethane | **<5.0** | ug/L | 5.0 | 1 | | 06/21/22 09:55 | 74-87-3 | |
| 1,2-Dibromo-3-chloropropane | **<5.0** | ug/L | 5.0 | 1 | | 06/21/22 09:55 | 96-12-8 | |
| Dibromochloromethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 09:55 | 124-48-1 | |
| 1,2-Dibromoethane (EDB) | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 09:55 | 106-93-4 | |
| Dibromomethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 09:55 | 74-95-3 | |
| 1,2-Dichlorobenzene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 09:55 | 95-50-1 | |
| 1,4-Dichlorobenzene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 09:55 | 106-46-7 | |
| trans-1,4-Dichloro-2-butene | **<5.0** | ug/L | 5.0 | 1 | | 06/21/22 09:55 | 110-57-6 | |
| 1,1-Dichloroethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 09:55 | 75-34-3 | |
| 1,2-Dichloroethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 09:55 | 107-06-2 | |
| 1,1-Dichloroethene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 09:55 | 75-35-4 | |
| cis-1,2-Dichloroethene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 09:55 | 156-59-2 | |
| trans-1,2-Dichloroethene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 09:55 | 156-60-5 | |
| 1,2-Dichloropropane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 09:55 | 78-87-5 | |
| cis-1,3-Dichloropropene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 09:55 | 10061-01-5 | |
| trans-1,3-Dichloropropene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 09:55 | 10061-02-6 | |
| Ethylbenzene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 09:55 | 100-41-4 | |
| 2-Hexanone | **<5.0** | ug/L | 5.0 | 1 | | 06/21/22 09:55 | 591-78-6 | |
| Iodomethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 09:55 | 74-88-4 | |
| Methylene Chloride | **<5.0** | ug/L | 5.0 | 1 | | 06/21/22 09:55 | 75-09-2 | |
| 4-Methyl-2-pentanone (MIBK) | **<5.0** | ug/L | 5.0 | 1 | | 06/21/22 09:55 | 108-10-1 | |

## REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
4171 40th St. SE
Grand Rapids, MI 49512
(616)975-4500

## ANALYTICAL RESULTS

Project: Smith's Creek Landfill GW
Pace Project No.: 50319142

**Sample: MW-303A** **Lab ID: 50319142014** Collected: 06/15/22 12:40 Received: 06/16/22 15:40 Matrix: Water

| Parameters | Results | Units | Report Limit | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|
| **8260 MSV Low Level** | Analytical Method: EPA 5030B/8260 Pace Analytical Services - Indianapolis | | | | | | | |
| Styrene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 09:55 | 100-42-5 | |
| 1,1,1,2-Tetrachloroethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 09:55 | 630-20-6 | |
| 1,1,2,2-Tetrachloroethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 09:55 | 79-34-5 | |
| Tetrachloroethene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 09:55 | 127-18-4 | |
| Toluene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 09:55 | 108-88-3 | |
| 1,1,1-Trichloroethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 09:55 | 71-55-6 | |
| 1,1,2-Trichloroethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 09:55 | 79-00-5 | |
| Trichloroethene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 09:55 | 79-01-6 | |
| Trichlorofluoromethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 09:55 | 75-69-4 | |
| 1,2,3-Trichloropropane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 09:55 | 96-18-4 | |
| Vinyl chloride | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 09:55 | 75-01-4 | |
| Xylene (Total) | **<2.0** | ug/L | 2.0 | 1 | | 06/21/22 09:55 | 1330-20-7 | |
| ***Surrogates*** | | | | | | | | |
| 4-Bromofluorobenzene (S) | 94 | %. | 79-124 | 1 | | 06/21/22 09:55 | 460-00-4 | |
| Dibromofluoromethane (S) | 99 | %. | 82-128 | 1 | | 06/21/22 09:55 | 1868-53-7 | |
| Toluene-d8 (S) | 100 | %. | 73-122 | 1 | | 06/21/22 09:55 | 2037-26-5 | |
| **Total Inorganic Nitrogen** | Analytical Method: NO2+NO3+NH3 Calculation Pace Analytical Services - Indianapolis | | | | | | | |
| Total Inorganic Nitrogen | **<200** | ug/L | 200 | 10 | | 06/30/22 15:05 | | |
| **353.2 Nitrogen, NO2/NO3 pres.** | Analytical Method: EPA 353.2 Pace Analytical Services - Indianapolis | | | | | | | |
| Nitrogen, NO2 plus NO3 | **<200** | ug/L | 200 | 10 | | 06/22/22 13:55 | | D3 |
| **4500 Chloride** | Analytical Method: SM 4500-Cl-E Pace Analytical Services - Indianapolis | | | | | | | |
| Chloride | **41300** | ug/L | 1000 | 1 | | 06/23/22 15:16 | 16887-00-6 | |
| **4500 Ammonia Water Low Level** | Analytical Method: SM-4500-NH3 G Pace Analytical Services - Indianapolis | | | | | | | |
| Nitrogen, Ammonia | **106** | ug/L | 20.0 | 1 | | 06/29/22 13:27 | 7664-41-7 | |
| **5310C TOC** | Analytical Method: SM 5310C Pace Analytical Services - Indianapolis | | | | | | | |
| Total Organic Carbon | **1140** | ug/L | 500 | 1 | | 06/23/22 03:49 | 7440-44-0 | |

## REPORT OF LABORATORY ANALYSIS

**Pace Analytical Services, LLC**
4171 40th St. SE
Grand Rapids, MI 49512
(616)975-4500

## ANALYTICAL RESULTS

Project: Smith's Creek Landfill GW
Pace Project No.: 50319142

**Sample: MW-304** **Lab ID: 50319142015** Collected: 06/16/22 10:15 Received: 06/16/22 15:40 Matrix: Water

| Parameters | Results | Units | Report Limit | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|
| **6010 MET ICP** | Analytical Method: EPA 6010 Preparation Method: EPA 3010<br>Pace Analytical Services - Indianapolis | | | | | | | |
| Potassium | **1640** | ug/L | 500 | 1 | 06/23/22 08:21 | 06/28/22 12:04 | 7440-09-7 | |
| Sodium | **83300** | ug/L | 1000 | 1 | 06/23/22 08:21 | 06/28/22 12:04 | 7440-23-5 | |
| **6010 MET ICP, Dissolved** | Analytical Method: EPA 6010 Preparation Method: EPA 3010<br>Pace Analytical Services - Indianapolis | | | | | | | |
| Potassium, Dissolved | **1600** | ug/L | 500 | 1 | 06/24/22 08:22 | 06/28/22 11:57 | 7440-09-7 | |
| Sodium, Dissolved | **77800** | ug/L | 1000 | 1 | 06/24/22 08:22 | 06/28/22 11:57 | 7440-23-5 | |
| **6020 MET ICPMS** | Analytical Method: EPA 6020 Preparation Method: EPA 200.2<br>Pace Analytical Services - Indianapolis | | | | | | | |
| Arsenic | **<1.0** | ug/L | 1.0 | 1 | 06/20/22 15:30 | 06/22/22 09:36 | 7440-38-2 | |
| Barium | **24.0** | ug/L | 5.0 | 1 | 06/20/22 15:30 | 06/22/22 09:36 | 7440-39-3 | |
| Zinc | **<10.0** | ug/L | 10.0 | 1 | 06/20/22 15:30 | 06/22/22 09:36 | 7440-66-6 | |
| **6020 MET ICPMS, Dissolved** | Analytical Method: EPA 6020 Preparation Method: EPA 200.2<br>Pace Analytical Services - Indianapolis | | | | | | | |
| Arsenic, Dissolved | **<1.0** | ug/L | 1.0 | 1 | 06/20/22 15:30 | 06/22/22 07:07 | 7440-38-2 | |
| Barium, Dissolved | **22.3** | ug/L | 5.0 | 1 | 06/20/22 15:30 | 06/22/22 07:07 | 7440-39-3 | |
| Zinc, Dissolved | **<10.0** | ug/L | 10.0 | 1 | 06/20/22 15:30 | 06/22/22 07:07 | 7440-66-6 | |
| **8260 MSV Low Level** | Analytical Method: EPA 5030B/8260<br>Pace Analytical Services - Indianapolis | | | | | | | |
| Acetone | **<20.0** | ug/L | 20.0 | 1 | | 06/21/22 11:52 | 67-64-1 | |
| Acrylonitrile | **<5.0** | ug/L | 5.0 | 1 | | 06/21/22 11:52 | 107-13-1 | |
| Benzene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 11:52 | 71-43-2 | |
| Bromochloromethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 11:52 | 74-97-5 | |
| Bromodichloromethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 11:52 | 75-27-4 | |
| Bromoform | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 11:52 | 75-25-2 | |
| Bromomethane | **<5.0** | ug/L | 5.0 | 1 | | 06/21/22 11:52 | 74-83-9 | R1 |
| 2-Butanone (MEK) | **<5.0** | ug/L | 5.0 | 1 | | 06/21/22 11:52 | 78-93-3 | |
| Carbon disulfide | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 11:52 | 75-15-0 | |
| Carbon tetrachloride | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 11:52 | 56-23-5 | |
| Chlorobenzene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 11:52 | 108-90-7 | |
| Chloroethane | **<5.0** | ug/L | 5.0 | 1 | | 06/21/22 11:52 | 75-00-3 | |
| Chloroform | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 11:52 | 67-66-3 | |
| Chloromethane | **<5.0** | ug/L | 5.0 | 1 | | 06/21/22 11:52 | 74-87-3 | |
| 1,2-Dibromo-3-chloropropane | **<5.0** | ug/L | 5.0 | 1 | | 06/21/22 11:52 | 96-12-8 | |
| Dibromochloromethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 11:52 | 124-48-1 | |
| 1,2-Dibromoethane (EDB) | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 11:52 | 106-93-4 | |
| Dibromomethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 11:52 | 74-95-3 | |
| 1,2-Dichlorobenzene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 11:52 | 95-50-1 | |
| 1,4-Dichlorobenzene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 11:52 | 106-46-7 | |
| trans-1,4-Dichloro-2-butene | **<5.0** | ug/L | 5.0 | 1 | | 06/21/22 11:52 | 110-57-6 | |
| 1,1-Dichloroethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 11:52 | 75-34-3 | |
| 1,2-Dichloroethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 11:52 | 107-06-2 | |

## REPORT OF LABORATORY ANALYSIS

**Pace Analytical Services, LLC**
4171 40th St. SE
Grand Rapids, MI 49512
(616)975-4500

## ANALYTICAL RESULTS

Project: Smith's Creek Landfill GW
Pace Project No.: 50319142

**Sample: MW-304** **Lab ID: 50319142015** Collected: 06/16/22 10:15 Received: 06/16/22 15:40 Matrix: Water

| Parameters | Results | Units | Report Limit | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|
| **8260 MSV Low Level** | Analytical Method: EPA 5030B/8260 | | | | | | | |
| | Pace Analytical Services - Indianapolis | | | | | | | |
| 1,1-Dichloroethene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 11:52 | 75-35-4 | |
| cis-1,2-Dichloroethene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 11:52 | 156-59-2 | |
| trans-1,2-Dichloroethene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 11:52 | 156-60-5 | |
| 1,2-Dichloropropane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 11:52 | 78-87-5 | |
| cis-1,3-Dichloropropene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 11:52 | 10061-01-5 | |
| trans-1,3-Dichloropropene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 11:52 | 10061-02-6 | |
| Ethylbenzene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 11:52 | 100-41-4 | |
| 2-Hexanone | **<5.0** | ug/L | 5.0 | 1 | | 06/21/22 11:52 | 591-78-6 | |
| Iodomethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 11:52 | 74-88-4 | R1 |
| Methylene Chloride | **<5.0** | ug/L | 5.0 | 1 | | 06/21/22 11:52 | 75-09-2 | |
| 4-Methyl-2-pentanone (MIBK) | **<5.0** | ug/L | 5.0 | 1 | | 06/21/22 11:52 | 108-10-1 | |
| Styrene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 11:52 | 100-42-5 | |
| 1,1,1,2-Tetrachloroethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 11:52 | 630-20-6 | |
| 1,1,2,2-Tetrachloroethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 11:52 | 79-34-5 | |
| Tetrachloroethene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 11:52 | 127-18-4 | |
| Toluene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 11:52 | 108-88-3 | |
| 1,1,1-Trichloroethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 11:52 | 71-55-6 | |
| 1,1,2-Trichloroethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 11:52 | 79-00-5 | |
| Trichloroethene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 11:52 | 79-01-6 | |
| Trichlorofluoromethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 11:52 | 75-69-4 | |
| 1,2,3-Trichloropropane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 11:52 | 96-18-4 | |
| Vinyl chloride | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 11:52 | 75-01-4 | |
| Xylene (Total) | **<2.0** | ug/L | 2.0 | 1 | | 06/21/22 11:52 | 1330-20-7 | |
| ***Surrogates*** | | | | | | | | |
| 4-Bromofluorobenzene (S) | 95 | %. | 79-124 | 1 | | 06/21/22 11:52 | 460-00-4 | |
| Dibromofluoromethane (S) | 100 | %. | 82-128 | 1 | | 06/21/22 11:52 | 1868-53-7 | |
| Toluene-d8 (S) | 100 | %. | 73-122 | 1 | | 06/21/22 11:52 | 2037-26-5 | |
| **Total Inorganic Nitrogen** | Analytical Method: NO2+NO3+NH3 Calculation | | | | | | | |
| | Pace Analytical Services - Indianapolis | | | | | | | |
| Total Inorganic Nitrogen | **166** | ug/L | 20.0 | 1 | | 07/08/22 15:10 | | |
| **353.2 Nitrogen, NO2/NO3 pres.** | Analytical Method: EPA 353.2 | | | | | | | |
| | Pace Analytical Services - Indianapolis | | | | | | | |
| Nitrogen, NO2 plus NO3 | **<20.0** | ug/L | 20.0 | 1 | | 07/02/22 12:23 | | |
| **4500 Chloride** | Analytical Method: SM 4500-Cl-E | | | | | | | |
| | Pace Analytical Services - Indianapolis | | | | | | | |
| Chloride | **30700** | ug/L | 1000 | 1 | | 06/23/22 15:17 | 16887-00-6 | |
| **4500 Ammonia Water Low Level** | Analytical Method: SM-4500-NH3 G | | | | | | | |
| | Pace Analytical Services - Indianapolis | | | | | | | |
| Nitrogen, Ammonia | **166** | ug/L | 20.0 | 1 | | 07/08/22 11:18 | 7664-41-7 | |

## REPORT OF LABORATORY ANALYSIS

**Pace Analytical Services, LLC**
4171 40th St. SE
Grand Rapids, MI 49512
(616)975-4500

## ANALYTICAL RESULTS

Project: Smith's Creek Landfill GW
Pace Project No.: 50319142

**Sample: MW-304** **Lab ID: 50319142015** Collected: 06/16/22 10:15 Received: 06/16/22 15:40 Matrix: Water

| Parameters | Results | Units | Report Limit | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|
| **5310C TOC** | Analytical Method: SM 5310C<br>Pace Analytical Services - Indianapolis | | | | | | | |
| Total Organic Carbon | **1000** | ug/L | 500 | 1 | | 06/23/22 03:59 | 7440-44-0 | |

## REPORT OF LABORATORY ANALYSIS

**Pace Analytical Services, LLC**
4171 40th St. SE
Grand Rapids, MI 49512
(616)975-4500

## ANALYTICAL RESULTS

Project: Smith's Creek Landfill GW
Pace Project No.: 50319142

**Sample: MW-305** **Lab ID: 50319142016** Collected: 06/14/22 10:00 Received: 06/16/22 15:40 Matrix: Water

| Parameters | Results | Units | Report Limit | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|
| **6010 MET ICP, Dissolved** | Analytical Method: EPA 6010 Preparation Method: EPA 3010<br>Pace Analytical Services - Indianapolis | | | | | | | |
| Potassium, Dissolved | **1570** | ug/L | 500 | 1 | 06/24/22 08:22 | 06/28/22 12:12 | 7440-09-7 | |
| Sodium, Dissolved | **87800** | ug/L | 1000 | 1 | 06/24/22 08:22 | 06/28/22 12:12 | 7440-23-5 | |
| **6020 MET ICPMS, Dissolved** | Analytical Method: EPA 6020 Preparation Method: EPA 200.2<br>Pace Analytical Services - Indianapolis | | | | | | | |
| Arsenic, Dissolved | **3.2** | ug/L | 1.0 | 1 | 06/20/22 15:30 | 06/22/22 09:07 | 7440-38-2 | |
| Barium, Dissolved | **39.1** | ug/L | 5.0 | 1 | 06/20/22 15:30 | 06/22/22 09:07 | 7440-39-3 | |
| Zinc, Dissolved | **<10.0** | ug/L | 10.0 | 1 | 06/20/22 15:30 | 06/22/22 09:07 | 7440-66-6 | |
| **8260 MSV Low Level** | Analytical Method: EPA 5030B/8260<br>Pace Analytical Services - Indianapolis | | | | | | | |
| Acetone | **<20.0** | ug/L | 20.0 | 1 | | 06/21/22 10:24 | 67-64-1 | |
| Acrylonitrile | **<5.0** | ug/L | 5.0 | 1 | | 06/21/22 10:24 | 107-13-1 | |
| Benzene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 10:24 | 71-43-2 | |
| Bromochloromethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 10:24 | 74-97-5 | |
| Bromodichloromethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 10:24 | 75-27-4 | |
| Bromoform | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 10:24 | 75-25-2 | |
| Bromomethane | **<5.0** | ug/L | 5.0 | 1 | | 06/21/22 10:24 | 74-83-9 | |
| 2-Butanone (MEK) | **<5.0** | ug/L | 5.0 | 1 | | 06/21/22 10:24 | 78-93-3 | |
| Carbon disulfide | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 10:24 | 75-15-0 | |
| Carbon tetrachloride | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 10:24 | 56-23-5 | |
| Chlorobenzene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 10:24 | 108-90-7 | |
| Chloroethane | **<5.0** | ug/L | 5.0 | 1 | | 06/21/22 10:24 | 75-00-3 | |
| Chloroform | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 10:24 | 67-66-3 | |
| Chloromethane | **<5.0** | ug/L | 5.0 | 1 | | 06/21/22 10:24 | 74-87-3 | |
| 1,2-Dibromo-3-chloropropane | **<5.0** | ug/L | 5.0 | 1 | | 06/21/22 10:24 | 96-12-8 | |
| Dibromochloromethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 10:24 | 124-48-1 | |
| 1,2-Dibromoethane (EDB) | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 10:24 | 106-93-4 | |
| Dibromomethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 10:24 | 74-95-3 | |
| 1,2-Dichlorobenzene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 10:24 | 95-50-1 | |
| 1,4-Dichlorobenzene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 10:24 | 106-46-7 | |
| trans-1,4-Dichloro-2-butene | **<5.0** | ug/L | 5.0 | 1 | | 06/21/22 10:24 | 110-57-6 | |
| 1,1-Dichloroethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 10:24 | 75-34-3 | |
| 1,2-Dichloroethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 10:24 | 107-06-2 | |
| 1,1-Dichloroethene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 10:24 | 75-35-4 | |
| cis-1,2-Dichloroethene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 10:24 | 156-59-2 | |
| trans-1,2-Dichloroethene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 10:24 | 156-60-5 | |
| 1,2-Dichloropropane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 10:24 | 78-87-5 | |
| cis-1,3-Dichloropropene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 10:24 | 10061-01-5 | |
| trans-1,3-Dichloropropene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 10:24 | 10061-02-6 | |
| Ethylbenzene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 10:24 | 100-41-4 | |
| 2-Hexanone | **<5.0** | ug/L | 5.0 | 1 | | 06/21/22 10:24 | 591-78-6 | |
| Iodomethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 10:24 | 74-88-4 | |
| Methylene Chloride | **<5.0** | ug/L | 5.0 | 1 | | 06/21/22 10:24 | 75-09-2 | |
| 4-Methyl-2-pentanone (MIBK) | **<5.0** | ug/L | 5.0 | 1 | | 06/21/22 10:24 | 108-10-1 | |

## REPORT OF LABORATORY ANALYSIS

**Pace Analytical Services, LLC**
4171 40th St. SE
Grand Rapids, MI 49512
(616)975-4500

## ANALYTICAL RESULTS

Project: Smith's Creek Landfill GW
Pace Project No.: 50319142

**Sample: MW-305** **Lab ID: 50319142016** Collected: 06/14/22 10:00 Received: 06/16/22 15:40 Matrix: Water

| Parameters | Results | Units | Report Limit | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|
| **8260 MSV Low Level** | Analytical Method: EPA 5030B/8260 Pace Analytical Services - Indianapolis | | | | | | | |
| Styrene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 10:24 | 100-42-5 | |
| 1,1,1,2-Tetrachloroethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 10:24 | 630-20-6 | |
| 1,1,2,2-Tetrachloroethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 10:24 | 79-34-5 | |
| Tetrachloroethene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 10:24 | 127-18-4 | |
| Toluene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 10:24 | 108-88-3 | |
| 1,1,1-Trichloroethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 10:24 | 71-55-6 | |
| 1,1,2-Trichloroethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 10:24 | 79-00-5 | |
| Trichloroethene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 10:24 | 79-01-6 | |
| Trichlorofluoromethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 10:24 | 75-69-4 | |
| 1,2,3-Trichloropropane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 10:24 | 96-18-4 | |
| Vinyl chloride | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 10:24 | 75-01-4 | |
| Xylene (Total) | **<2.0** | ug/L | 2.0 | 1 | | 06/21/22 10:24 | 1330-20-7 | |
| ***Surrogates*** | | | | | | | | |
| 4-Bromofluorobenzene (S) | 96 | %. | 79-124 | 1 | | 06/21/22 10:24 | 460-00-4 | |
| Dibromofluoromethane (S) | 98 | %. | 82-128 | 1 | | 06/21/22 10:24 | 1868-53-7 | |
| Toluene-d8 (S) | 99 | %. | 73-122 | 1 | | 06/21/22 10:24 | 2037-26-5 | |
| **Total Inorganic Nitrogen** | Analytical Method: NO2+NO3+NH3 Calculation Pace Analytical Services - Indianapolis | | | | | | | |
| Total Inorganic Nitrogen | **64.9** | ug/L | 20.0 | 1 | | 06/30/22 15:05 | | |
| **353.2 Nitrogen, NO2/NO3 pres.** | Analytical Method: EPA 353.2 Pace Analytical Services - Indianapolis | | | | | | | |
| Nitrogen, NO2 plus NO3 | **<20.0** | ug/L | 20.0 | 1 | | 06/22/22 13:57 | | |
| **4500 Chloride** | Analytical Method: SM 4500-Cl-E Pace Analytical Services - Indianapolis | | | | | | | |
| Chloride | **32400** | ug/L | 1000 | 1 | | 06/23/22 15:20 | 16887-00-6 | |
| **4500 Ammonia Water Low Level** | Analytical Method: SM-4500-NH3 G Pace Analytical Services - Indianapolis | | | | | | | |
| Nitrogen, Ammonia | **64.9** | ug/L | 20.0 | 1 | | 06/29/22 13:28 | 7664-41-7 | |
| **5310C TOC** | Analytical Method: SM 5310C Pace Analytical Services - Indianapolis | | | | | | | |
| Total Organic Carbon | **1520** | ug/L | 500 | 1 | | 06/23/22 05:01 | 7440-44-0 | |

## REPORT OF LABORATORY ANALYSIS

**Pace Analytical Services, LLC**
4171 40th St. SE
Grand Rapids, MI 49512
(616)975-4500

## ANALYTICAL RESULTS

Project: Smith's Creek Landfill GW
Pace Project No.: 50319142

**Sample: Field Blank** **Lab ID: 50319142017** Collected: 06/16/22 10:15 Received: 06/16/22 15:40 Matrix: Water

| Parameters | Results | Units | Report Limit | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|
| **8260 MSV Low Level** | Analytical Method: EPA 5030B/8260<br>Pace Analytical Services - Indianapolis | | | | | | | |
| Acetone | **<20.0** | ug/L | 20.0 | 1 | | 06/21/22 10:53 | 67-64-1 | |
| Acrylonitrile | **<5.0** | ug/L | 5.0 | 1 | | 06/21/22 10:53 | 107-13-1 | |
| Benzene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 10:53 | 71-43-2 | |
| Bromochloromethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 10:53 | 74-97-5 | |
| Bromodichloromethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 10:53 | 75-27-4 | |
| Bromoform | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 10:53 | 75-25-2 | |
| Bromomethane | **<5.0** | ug/L | 5.0 | 1 | | 06/21/22 10:53 | 74-83-9 | |
| 2-Butanone (MEK) | **<5.0** | ug/L | 5.0 | 1 | | 06/21/22 10:53 | 78-93-3 | |
| Carbon disulfide | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 10:53 | 75-15-0 | |
| Carbon tetrachloride | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 10:53 | 56-23-5 | |
| Chlorobenzene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 10:53 | 108-90-7 | |
| Chloroethane | **<5.0** | ug/L | 5.0 | 1 | | 06/21/22 10:53 | 75-00-3 | |
| Chloroform | **1.2** | ug/L | 1.0 | 1 | | 06/21/22 10:53 | 67-66-3 | 1d |
| Chloromethane | **<5.0** | ug/L | 5.0 | 1 | | 06/21/22 10:53 | 74-87-3 | |
| 1,2-Dibromo-3-chloropropane | **<5.0** | ug/L | 5.0 | 1 | | 06/21/22 10:53 | 96-12-8 | |
| Dibromochloromethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 10:53 | 124-48-1 | |
| 1,2-Dibromoethane (EDB) | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 10:53 | 106-93-4 | |
| Dibromomethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 10:53 | 74-95-3 | |
| 1,2-Dichlorobenzene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 10:53 | 95-50-1 | |
| 1,4-Dichlorobenzene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 10:53 | 106-46-7 | |
| trans-1,4-Dichloro-2-butene | **<5.0** | ug/L | 5.0 | 1 | | 06/21/22 10:53 | 110-57-6 | |
| 1,1-Dichloroethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 10:53 | 75-34-3 | |
| 1,2-Dichloroethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 10:53 | 107-06-2 | |
| 1,1-Dichloroethene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 10:53 | 75-35-4 | |
| cis-1,2-Dichloroethene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 10:53 | 156-59-2 | |
| trans-1,2-Dichloroethene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 10:53 | 156-60-5 | |
| 1,2-Dichloropropane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 10:53 | 78-87-5 | |
| cis-1,3-Dichloropropene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 10:53 | 10061-01-5 | |
| trans-1,3-Dichloropropene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 10:53 | 10061-02-6 | |
| Ethylbenzene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 10:53 | 100-41-4 | |
| 2-Hexanone | **<5.0** | ug/L | 5.0 | 1 | | 06/21/22 10:53 | 591-78-6 | |
| Iodomethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 10:53 | 74-88-4 | |
| Methylene Chloride | **<5.0** | ug/L | 5.0 | 1 | | 06/21/22 10:53 | 75-09-2 | |
| 4-Methyl-2-pentanone (MIBK) | **<5.0** | ug/L | 5.0 | 1 | | 06/21/22 10:53 | 108-10-1 | |
| Styrene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 10:53 | 100-42-5 | |
| 1,1,1,2-Tetrachloroethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 10:53 | 630-20-6 | |
| 1,1,2,2-Tetrachloroethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 10:53 | 79-34-5 | |
| Tetrachloroethene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 10:53 | 127-18-4 | |
| Toluene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 10:53 | 108-88-3 | |
| 1,1,1-Trichloroethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 10:53 | 71-55-6 | |
| 1,1,2-Trichloroethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 10:53 | 79-00-5 | |
| Trichloroethene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 10:53 | 79-01-6 | |
| Trichlorofluoromethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 10:53 | 75-69-4 | |
| 1,2,3-Trichloropropane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 10:53 | 96-18-4 | |
| Vinyl chloride | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 10:53 | 75-01-4 | |
| Xylene (Total) | **<2.0** | ug/L | 2.0 | 1 | | 06/21/22 10:53 | 1330-20-7 | |

## REPORT OF LABORATORY ANALYSIS

**Pace Analytical Services, LLC**
4171 40th St. SE
Grand Rapids, MI 49512
(616)975-4500

## ANALYTICAL RESULTS

Project: Smith's Creek Landfill GW
Pace Project No.: 50319142

**Sample: Field Blank** **Lab ID: 50319142017** Collected: 06/16/22 10:15 Received: 06/16/22 15:40 Matrix: Water

| Parameters | Results | Units | Report Limit | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|
| **8260 MSV Low Level** | Analytical Method: EPA 5030B/8260<br>Pace Analytical Services - Indianapolis | | | | | | | |
| ***Surrogates*** | | | | | | | | |
| 4-Bromofluorobenzene (S) | 96 | %. | 79-124 | 1 | | 06/21/22 10:53 | 460-00-4 | |
| Dibromofluoromethane (S) | 99 | %. | 82-128 | 1 | | 06/21/22 10:53 | 1868-53-7 | |
| Toluene-d8 (S) | 99 | %. | 73-122 | 1 | | 06/21/22 10:53 | 2037-26-5 | |

**Pace Analytical Services, LLC**
4171 40th St. SE
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(616)975-4500

## ANALYTICAL RESULTS

Project: Smith's Creek Landfill GW
Pace Project No.: 50319142

**Sample: Trip Blank** **Lab ID: 50319142018** Collected: 06/13/22 00:00 Received: 06/16/22 15:40 Matrix: Water

| Parameters | Results | Units | Report Limit | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|
| **8260 MSV Low Level** | Analytical Method: EPA 5030B/8260<br>Pace Analytical Services - Indianapolis | | | | | | | |
| Acetone | **<20.0** | ug/L | 20.0 | 1 | | 06/21/22 11:23 | 67-64-1 | |
| Acrylonitrile | **<5.0** | ug/L | 5.0 | 1 | | 06/21/22 11:23 | 107-13-1 | |
| Benzene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 11:23 | 71-43-2 | |
| Bromochloromethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 11:23 | 74-97-5 | |
| Bromodichloromethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 11:23 | 75-27-4 | |
| Bromoform | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 11:23 | 75-25-2 | |
| Bromomethane | **<5.0** | ug/L | 5.0 | 1 | | 06/21/22 11:23 | 74-83-9 | |
| 2-Butanone (MEK) | **<5.0** | ug/L | 5.0 | 1 | | 06/21/22 11:23 | 78-93-3 | |
| Carbon disulfide | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 11:23 | 75-15-0 | |
| Carbon tetrachloride | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 11:23 | 56-23-5 | |
| Chlorobenzene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 11:23 | 108-90-7 | |
| Chloroethane | **<5.0** | ug/L | 5.0 | 1 | | 06/21/22 11:23 | 75-00-3 | |
| Chloroform | **1.1** | ug/L | 1.0 | 1 | | 06/21/22 11:23 | 67-66-3 | 1d |
| Chloromethane | **<5.0** | ug/L | 5.0 | 1 | | 06/21/22 11:23 | 74-87-3 | |
| 1,2-Dibromo-3-chloropropane | **<5.0** | ug/L | 5.0 | 1 | | 06/21/22 11:23 | 96-12-8 | |
| Dibromochloromethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 11:23 | 124-48-1 | |
| 1,2-Dibromoethane (EDB) | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 11:23 | 106-93-4 | |
| Dibromomethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 11:23 | 74-95-3 | |
| 1,2-Dichlorobenzene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 11:23 | 95-50-1 | |
| 1,4-Dichlorobenzene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 11:23 | 106-46-7 | |
| trans-1,4-Dichloro-2-butene | **<5.0** | ug/L | 5.0 | 1 | | 06/21/22 11:23 | 110-57-6 | |
| 1,1-Dichloroethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 11:23 | 75-34-3 | |
| 1,2-Dichloroethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 11:23 | 107-06-2 | |
| 1,1-Dichloroethene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 11:23 | 75-35-4 | |
| cis-1,2-Dichloroethene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 11:23 | 156-59-2 | |
| trans-1,2-Dichloroethene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 11:23 | 156-60-5 | |
| 1,2-Dichloropropane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 11:23 | 78-87-5 | |
| cis-1,3-Dichloropropene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 11:23 | 10061-01-5 | |
| trans-1,3-Dichloropropene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 11:23 | 10061-02-6 | |
| Ethylbenzene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 11:23 | 100-41-4 | |
| 2-Hexanone | **<5.0** | ug/L | 5.0 | 1 | | 06/21/22 11:23 | 591-78-6 | |
| Iodomethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 11:23 | 74-88-4 | |
| Methylene Chloride | **<5.0** | ug/L | 5.0 | 1 | | 06/21/22 11:23 | 75-09-2 | |
| 4-Methyl-2-pentanone (MIBK) | **<5.0** | ug/L | 5.0 | 1 | | 06/21/22 11:23 | 108-10-1 | |
| Styrene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 11:23 | 100-42-5 | |
| 1,1,1,2-Tetrachloroethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 11:23 | 630-20-6 | |
| 1,1,2,2-Tetrachloroethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 11:23 | 79-34-5 | |
| Tetrachloroethene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 11:23 | 127-18-4 | |
| Toluene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 11:23 | 108-88-3 | |
| 1,1,1-Trichloroethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 11:23 | 71-55-6 | |
| 1,1,2-Trichloroethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 11:23 | 79-00-5 | |
| Trichloroethene | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 11:23 | 79-01-6 | |
| Trichlorofluoromethane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 11:23 | 75-69-4 | |
| 1,2,3-Trichloropropane | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 11:23 | 96-18-4 | |
| Vinyl chloride | **<1.0** | ug/L | 1.0 | 1 | | 06/21/22 11:23 | 75-01-4 | |
| Xylene (Total) | **<2.0** | ug/L | 2.0 | 1 | | 06/21/22 11:23 | 1330-20-7 | |

## REPORT OF LABORATORY ANALYSIS

**Pace Analytical Services, LLC**
4171 40th St. SE
Grand Rapids, MI 49512
(616)975-4500

## ANALYTICAL RESULTS

Project: Smith's Creek Landfill GW
Pace Project No.: 50319142

**Sample: Trip Blank** **Lab ID: 50319142018** Collected: 06/13/22 00:00 Received: 06/16/22 15:40 Matrix: Water

| Parameters | Results | Units | Report Limit | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|
| **8260 MSV Low Level** | Analytical Method: EPA 5030B/8260<br>Pace Analytical Services - Indianapolis | | | | | | | |
| ***Surrogates*** | | | | | | | | |
| 4-Bromofluorobenzene (S) | 96 | %. | 79-124 | 1 | | 06/21/22 11:23 | 460-00-4 | |
| Dibromofluoromethane (S) | 99 | %. | 82-128 | 1 | | 06/21/22 11:23 | 1868-53-7 | |
| Toluene-d8 (S) | 99 | %. | 73-122 | 1 | | 06/21/22 11:23 | 2037-26-5 | |

## REPORT OF LABORATORY ANALYSIS

**Pace Analytical Services, LLC**
4171 40th St. SE
Grand Rapids, MI 49512
(616)975-4500

## QUALITY CONTROL DATA

Project: Smith's Creek Landfill GW
Pace Project No.: 50319142

QC Batch: 682823
QC Batch Method: EPA 3010
Analysis Method: EPA 6010
Analysis Description: 6010 MET
Laboratory: Pace Analytical Services - Indianapolis
Associated Lab Samples: 50319142012, 50319142015

METHOD BLANK: 3142526 Matrix: Water
Associated Lab Samples: 50319142012, 50319142015

| Parameter | Units | Blank Result | Reporting Limit | Analyzed | Qualifiers |
|---|---|---|---|---|---|
| Potassium | ug/L | <500 | 500 | 06/28/22 11:06 | |
| Sodium | ug/L | <1000 | 1000 | 06/28/22 11:06 | |

LABORATORY CONTROL SAMPLE: 3142527

| Parameter | Units | Spike Conc. | LCS Result | LCS % Rec | % Rec Limits | Qualifiers |
|---|---|---|---|---|---|---|
| Potassium | ug/L | 10000 | 9910 | 99 | 80-120 | |
| Sodium | ug/L | 10000 | 10000 | 100 | 80-120 | |

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3142528 3142529

| Parameter | Units | 50319142015 Result | MS Spike Conc. | MSD Spike Conc. | MS Result | MSD Result | MS % Rec | MSD % Rec | % Rec Limits | RPD | Max RPD | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Potassium | ug/L | 1640 | 10000 | 10000 | 11600 | 11800 | 100 | 102 | 75-125 | 2 | 20 | |
| Sodium | ug/L | 83300 | 10000 | 10000 | 91200 | 93400 | 79 | 101 | 75-125 | 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

**Pace Analytical Services, LLC**
4171 40th St. SE
Grand Rapids, MI 49512
(616)975-4500

## QUALITY CONTROL DATA

Project: Smith's Creek Landfill GW
Pace Project No.: 50319142

QC Batch: 682816
QC Batch Method: EPA 3010
Analysis Method: EPA 6010
Analysis Description: 6010 MET Dissolved
Laboratory: Pace Analytical Services - Indianapolis
Associated Lab Samples: 50319142001, 50319142002, 50319142003, 50319142004, 50319142005, 50319142006, 50319142007, 50319142008, 50319142009, 50319142010, 50319142011, 50319142012, 50319142013, 50319142014, 50319142015, 50319142016

METHOD BLANK: 3142500 Matrix: Water
Associated Lab Samples: 50319142001, 50319142002, 50319142003, 50319142004, 50319142005, 50319142006, 50319142007, 50319142008, 50319142009, 50319142010, 50319142011, 50319142012, 50319142013, 50319142014, 50319142015, 50319142016

| Parameter | Units | Blank Result | Reporting Limit | Analyzed | Qualifiers |
|---|---|---|---|---|---|
| Potassium, Dissolved | ug/L | <500 | 500 | 06/28/22 11:18 | |
| Sodium, Dissolved | ug/L | <1000 | 1000 | 06/28/22 11:18 | |

LABORATORY CONTROL SAMPLE: 3142501

| Parameter | Units | Spike Conc. | LCS Result | LCS % Rec | % Rec Limits | Qualifiers |
|---|---|---|---|---|---|---|
| Potassium, Dissolved | ug/L | 10000 | 9850 | 98 | 80-120 | |
| Sodium, Dissolved | ug/L | 10000 | 9720 | 97 | 80-120 | |

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3142502 3142503

| Parameter | Units | 50319142015 Result | MS Spike Conc. | MSD Spike Conc. | MS Result | MSD Result | MS % Rec | MSD % Rec | % Rec Limits | RPD | Max RPD | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Potassium, Dissolved | ug/L | 1600 | 10000 | 10000 | 12400 | 12200 | 108 | 106 | 75-125 | 1 | 20 | |
| Sodium, Dissolved | ug/L | 77800 | 10000 | 10000 | 89000 | 88900 | 112 | 110 | 75-125 | 0 | 20 | |

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## REPORT OF LABORATORY ANALYSIS

**Pace Analytical Services, LLC**
4171 40th St. SE
Grand Rapids, MI 49512
(616)975-4500

## QUALITY CONTROL DATA

Project: Smith's Creek Landfill GW
Pace Project No.: 50319142

QC Batch: 682417
QC Batch Method: EPA 200.2
Analysis Method: EPA 6020
Analysis Description: 6020 MET
Laboratory: Pace Analytical Services - Indianapolis
Associated Lab Samples: 50319142012, 50319142015

METHOD BLANK: 3141034 Matrix: Water
Associated Lab Samples: 50319142012, 50319142015

| Parameter | Units | Blank Result | Reporting Limit | Analyzed | Qualifiers |
|---|---|---|---|---|---|
| Arsenic | ug/L | <1.0 | 1.0 | 06/21/22 15:34 | |
| Barium | ug/L | <5.0 | 5.0 | 06/21/22 15:34 | |
| Zinc | ug/L | <10.0 | 10.0 | 06/21/22 15:34 | |

LABORATORY CONTROL SAMPLE: 3141035

| Parameter | Units | Spike Conc. | LCS Result | LCS % Rec | % Rec Limits | Qualifiers |
|---|---|---|---|---|---|---|
| Arsenic | ug/L | 40 | 39.4 | 99 | 80-120 | |
| Barium | ug/L | 40 | 38.7 | 97 | 80-120 | |
| Zinc | ug/L | 40 | 37.8 | 94 | 80-120 | |

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3141036 3141037

| Parameter | Units | 50319140002 Result | MS Spike Conc. | MSD Spike Conc. | MS Result | MSD Result | MS % Rec | MSD % Rec | % Rec Limits | RPD | Max RPD | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arsenic | ug/L | 10.7 | 40 | 40 | 49.0 | 49.5 | 96 | 97 | 75-125 | 1 | 20 | |
| Barium | ug/L | 95.3 | 40 | 40 | 136 | 133 | 101 | 95 | 75-125 | 2 | 20 | |
| Zinc | ug/L | 65.5 | 40 | 40 | 104 | 105 | 96 | 99 | 75-125 | 1 | 20 | |

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3141038 3141039

| Parameter | Units | 50319142015 Result | MS Spike Conc. | MSD Spike Conc. | MS Result | MSD Result | MS % Rec | MSD % Rec | % Rec Limits | RPD | Max RPD | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arsenic | ug/L | <1.0 | 40 | 40 | 39.1 | 39.0 | 96 | 95 | 75-125 | 0 | 20 | |
| Barium | ug/L | 24.0 | 40 | 40 | 61.4 | 62.9 | 94 | 97 | 75-125 | 3 | 20 | |
| Zinc | ug/L | <10.0 | 40 | 40 | 36.7 | 37.7 | 89 | 92 | 75-125 | 3 | 20 | |

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## REPORT OF LABORATORY ANALYSIS

**Pace Analytical Services, LLC**
4171 40th St. SE
Grand Rapids, MI 49512
(616)975-4500

## QUALITY CONTROL DATA

Project: Smith's Creek Landfill GW
Pace Project No.: 50319142

QC Batch: 682416
QC Batch Method: EPA 200.2
Analysis Method: EPA 6020
Analysis Description: 6020 MET Dissolved
Laboratory: Pace Analytical Services - Indianapolis
Associated Lab Samples: 50319142001, 50319142002, 50319142003, 50319142004, 50319142005, 50319142006, 50319142007, 50319142008, 50319142009, 50319142010, 50319142011, 50319142012, 50319142013, 50319142014, 50319142015, 50319142016

METHOD BLANK: 3141030 Matrix: Water
Associated Lab Samples: 50319142001, 50319142002, 50319142003, 50319142004, 50319142005, 50319142006, 50319142007, 50319142008, 50319142009, 50319142010, 50319142011, 50319142012, 50319142013, 50319142014, 50319142015, 50319142016

| Parameter | Units | Blank Result | Reporting Limit | Analyzed | Qualifiers |
|---|---|---|---|---|---|
| Arsenic, Dissolved | ug/L | <1.0 | 1.0 | 06/22/22 06:58 | |
| Barium, Dissolved | ug/L | <5.0 | 5.0 | 06/22/22 06:58 | |
| Zinc, Dissolved | ug/L | <10.0 | 10.0 | 06/22/22 06:58 | |

LABORATORY CONTROL SAMPLE: 3141031

| Parameter | Units | Spike Conc. | LCS Result | LCS % Rec | % Rec Limits | Qualifiers |
|---|---|---|---|---|---|---|
| Arsenic, Dissolved | ug/L | 40 | 39.3 | 98 | 80-120 | |
| Barium, Dissolved | ug/L | 40 | 37.5 | 94 | 80-120 | |
| Zinc, Dissolved | ug/L | 40 | 37.6 | 94 | 80-120 | |

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3141032 3141033

| Parameter | Units | 50319142015 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 | <1.0 | 40 | 40 | 40.0 | 39.3 | 98 | 96 | 75-125 | 2 | 20 | |
| Barium, Dissolved | ug/L | 22.3 | 40 | 40 | 63.7 | 63.3 | 103 | 102 | 75-125 | 1 | 20 | |
| Zinc, Dissolved | ug/L | <10.0 | 40 | 40 | 38.8 | 39.2 | 96 | 97 | 75-125 | 1 | 20 | |

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## REPORT OF LABORATORY ANALYSIS

**Pace Analytical Services, LLC**
4171 40th St. SE
Grand Rapids, MI 49512
(616)975-4500

## QUALITY CONTROL DATA

Project: Smith's Creek Landfill GW
Pace Project No.: 50319142

QC Batch: 682585
QC Batch Method: EPA 5030B/8260
Analysis Method: EPA 5030B/8260
Analysis Description: 8260 MSV Low Level
Laboratory: Pace Analytical Services - Indianapolis
Associated Lab Samples: 50319142001, 50319142002, 50319142003, 50319142004, 50319142005, 50319142006, 50319142007, 50319142008, 50319142009, 50319142010, 50319142011, 50319142012, 50319142013, 50319142014, 50319142015, 50319142016, 50319142017, 50319142018

METHOD BLANK: 3141567
Matrix: Water
Associated Lab Samples: 50319142001, 50319142002, 50319142003, 50319142004, 50319142005, 50319142006, 50319142007, 50319142008, 50319142009, 50319142010, 50319142011, 50319142012, 50319142013, 50319142014, 50319142015, 50319142016, 50319142017, 50319142018

| Parameter | Units | Blank Result | Reporting Limit | Analyzed | Qualifiers |
|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane | ug/L | <1.0 | 1.0 | 06/21/22 03:04 | |
| 1,1,1-Trichloroethane | ug/L | <1.0 | 1.0 | 06/21/22 03:04 | |
| 1,1,2,2-Tetrachloroethane | ug/L | <1.0 | 1.0 | 06/21/22 03:04 | |
| 1,1,2-Trichloroethane | ug/L | <1.0 | 1.0 | 06/21/22 03:04 | |
| 1,1-Dichloroethane | ug/L | <1.0 | 1.0 | 06/21/22 03:04 | |
| 1,1-Dichloroethene | ug/L | <1.0 | 1.0 | 06/21/22 03:04 | |
| 1,2,3-Trichloropropane | ug/L | <1.0 | 1.0 | 06/21/22 03:04 | |
| 1,2-Dibromo-3-chloropropane | ug/L | <5.0 | 5.0 | 06/21/22 03:04 | |
| 1,2-Dibromoethane (EDB) | ug/L | <1.0 | 1.0 | 06/21/22 03:04 | |
| 1,2-Dichlorobenzene | ug/L | <1.0 | 1.0 | 06/21/22 03:04 | |
| 1,2-Dichloroethane | ug/L | <1.0 | 1.0 | 06/21/22 03:04 | |
| 1,2-Dichloropropane | ug/L | <1.0 | 1.0 | 06/21/22 03:04 | |
| 1,4-Dichlorobenzene | ug/L | <1.0 | 1.0 | 06/21/22 03:04 | |
| 2-Butanone (MEK) | ug/L | <5.0 | 5.0 | 06/21/22 03:04 | |
| 2-Hexanone | ug/L | <5.0 | 5.0 | 06/21/22 03:04 | |
| 4-Methyl-2-pentanone (MIBK) | ug/L | <5.0 | 5.0 | 06/21/22 03:04 | |
| Acetone | ug/L | <20.0 | 20.0 | 06/21/22 03:04 | |
| Acrylonitrile | ug/L | <5.0 | 5.0 | 06/21/22 03:04 | |
| Benzene | ug/L | <1.0 | 1.0 | 06/21/22 03:04 | |
| Bromochloromethane | ug/L | <1.0 | 1.0 | 06/21/22 03:04 | |
| Bromodichloromethane | ug/L | <1.0 | 1.0 | 06/21/22 03:04 | |
| Bromoform | ug/L | <1.0 | 1.0 | 06/21/22 03:04 | |
| Bromomethane | ug/L | <5.0 | 5.0 | 06/21/22 03:04 | |
| Carbon disulfide | ug/L | <1.0 | 1.0 | 06/21/22 03:04 | |
| Carbon tetrachloride | ug/L | <1.0 | 1.0 | 06/21/22 03:04 | |
| Chlorobenzene | ug/L | <1.0 | 1.0 | 06/21/22 03:04 | |
| Chloroethane | ug/L | <5.0 | 5.0 | 06/21/22 03:04 | |
| Chloroform | ug/L | <1.0 | 1.0 | 06/21/22 03:04 | |
| Chloromethane | ug/L | <5.0 | 5.0 | 06/21/22 03:04 | |
| cis-1,2-Dichloroethene | ug/L | <1.0 | 1.0 | 06/21/22 03:04 | |
| cis-1,3-Dichloropropene | ug/L | <1.0 | 1.0 | 06/21/22 03:04 | |
| Dibromochloromethane | ug/L | <1.0 | 1.0 | 06/21/22 03:04 | |
| Dibromomethane | ug/L | <1.0 | 1.0 | 06/21/22 03:04 | |
| Ethylbenzene | ug/L | <1.0 | 1.0 | 06/21/22 03:04 | |
| Iodomethane | ug/L | <1.0 | 1.0 | 06/21/22 03:04 | |
| Methylene Chloride | ug/L | <5.0 | 5.0 | 06/21/22 03:04 | |
| Styrene | ug/L | <1.0 | 1.0 | 06/21/22 03:04 | |

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## REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
4171 40th St. SE
Grand Rapids, MI 49512
(616)975-4500

## QUALITY CONTROL DATA

Project: Smith's Creek Landfill GW
Pace Project No.: 50319142

METHOD BLANK: 3141567 Matrix: Water

Associated Lab Samples: 50319142001, 50319142002, 50319142003, 50319142004, 50319142005, 50319142006, 50319142007, 50319142008, 50319142009, 50319142010, 50319142011, 50319142012, 50319142013, 50319142014, 50319142015, 50319142016, 50319142017, 50319142018

| Parameter | Units | Blank Result | Reporting Limit | Analyzed | Qualifiers |
|---|---|---|---|---|---|
| Tetrachloroethene | ug/L | <1.0 | 1.0 | 06/21/22 03:04 | |
| Toluene | ug/L | <1.0 | 1.0 | 06/21/22 03:04 | |
| trans-1,2-Dichloroethene | ug/L | <1.0 | 1.0 | 06/21/22 03:04 | |
| trans-1,3-Dichloropropene | ug/L | <1.0 | 1.0 | 06/21/22 03:04 | |
| trans-1,4-Dichloro-2-butene | ug/L | <5.0 | 5.0 | 06/21/22 03:04 | |
| Trichloroethene | ug/L | <1.0 | 1.0 | 06/21/22 03:04 | |
| Trichlorofluoromethane | ug/L | <1.0 | 1.0 | 06/21/22 03:04 | |
| Vinyl chloride | ug/L | <1.0 | 1.0 | 06/21/22 03:04 | |
| Xylene (Total) | ug/L | <2.0 | 2.0 | 06/21/22 03:04 | |
| 4-Bromofluorobenzene (S) | %. | 96 | 79-124 | 06/21/22 03:04 | |
| Dibromofluoromethane (S) | %. | 99 | 82-128 | 06/21/22 03:04 | |
| Toluene-d8 (S) | %. | 100 | 73-122 | 06/21/22 03:04 | |

LABORATORY CONTROL SAMPLE: 3141568

| Parameter | Units | Spike Conc. | LCS Result | LCS % Rec | % Rec Limits | Qualifiers |
|---|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane | ug/L | 50 | 62.1 | 124 | 77-125 | |
| 1,1,1-Trichloroethane | ug/L | 50 | 55.6 | 111 | 69-125 | |
| 1,1,2,2-Tetrachloroethane | ug/L | 50 | 55.4 | 111 | 72-123 | |
| 1,1,2-Trichloroethane | ug/L | 50 | 56.4 | 113 | 73-124 | |
| 1,1-Dichloroethane | ug/L | 50 | 54.7 | 109 | 71-124 | |
| 1,1-Dichloroethene | ug/L | 50 | 51.4 | 103 | 63-138 | |
| 1,2,3-Trichloropropane | ug/L | 50 | 55.9 | 112 | 75-122 | |
| 1,2-Dibromo-3-chloropropane | ug/L | 50 | 54.7 | 109 | 66-122 | |
| 1,2-Dibromoethane (EDB) | ug/L | 50 | 57.8 | 116 | 75-123 | |
| 1,2-Dichlorobenzene | ug/L | 50 | 56.0 | 112 | 76-118 | |
| 1,2-Dichloroethane | ug/L | 50 | 57.5 | 115 | 68-126 | |
| 1,2-Dichloropropane | ug/L | 50 | 55.4 | 111 | 73-127 | |
| 1,4-Dichlorobenzene | ug/L | 50 | 54.3 | 109 | 74-118 | |
| 2-Butanone (MEK) | ug/L | 250 | 278 | 111 | 57-130 | |
| 2-Hexanone | ug/L | 250 | 305 | 122 | 57-130 | |
| 4-Methyl-2-pentanone (MIBK) | ug/L | 250 | 300 | 120 | 58-134 | |
| Acetone | ug/L | 250 | 225 | 90 | 41-133 | |
| Acrylonitrile | ug/L | 250 | 263 | 105 | 66-131 | |
| Benzene | ug/L | 50 | 54.1 | 108 | 76-121 | |
| Bromochloromethane | ug/L | 50 | 56.0 | 112 | 65-126 | |
| Bromodichloromethane | ug/L | 50 | 58.1 | 116 | 72-125 | |
| Bromoform | ug/L | 50 | 55.3 | 111 | 57-134 | |
| Bromomethane | ug/L | 50 | 25.7 | 51 | 10-187 | |
| Carbon disulfide | ug/L | 50 | 45.0 | 90 | 59-125 | |
| Carbon tetrachloride | ug/L | 50 | 59.7 | 119 | 71-134 | |
| Chlorobenzene | ug/L | 50 | 55.2 | 110 | 74-119 | |

**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

**Pace Analytical Services, LLC**
4171 40th St. SE
Grand Rapids, MI 49512
(616)975-4500

## QUALITY CONTROL DATA

Project: Smith's Creek Landfill GW
Pace Project No.: 50319142

LABORATORY CONTROL SAMPLE: 3141568

| Parameter | Units | Spike Conc. | LCS Result | LCS % Rec | % Rec Limits | Qualifiers |
|---|---|---|---|---|---|---|
| Chloroethane | ug/L | 50 | 45.0 | 90 | 49-152 | |
| Chloroform | ug/L | 50 | 53.7 | 107 | 68-123 | |
| Chloromethane | ug/L | 50 | 34.4 | 69 | 33-133 | |
| cis-1,2-Dichloroethene | ug/L | 50 | 55.7 | 111 | 73-122 | |
| cis-1,3-Dichloropropene | ug/L | 50 | 56.1 | 112 | 69-128 | |
| Dibromochloromethane | ug/L | 50 | 59.9 | 120 | 69-127 | |
| Dibromomethane | ug/L | 50 | 57.2 | 114 | 74-126 | |
| Ethylbenzene | ug/L | 50 | 56.7 | 113 | 74-122 | |
| Iodomethane | ug/L | 50 | 14.0 | 28 | 10-181 | |
| Methylene Chloride | ug/L | 50 | 38.1 | 76 | 71-125 | |
| Styrene | ug/L | 50 | 57.3 | 115 | 74-126 | |
| Tetrachloroethene | ug/L | 50 | 59.9 | 120 | 74-129 | |
| Toluene | ug/L | 50 | 54.5 | 109 | 70-118 | |
| trans-1,2-Dichloroethene | ug/L | 50 | 52.7 | 105 | 69-124 | |
| trans-1,3-Dichloropropene | ug/L | 50 | 55.8 | 112 | 66-125 | |
| trans-1,4-Dichloro-2-butene | ug/L | 50 | 61.7 | 123 | 43-155 | |
| Trichloroethene | ug/L | 50 | 56.4 | 113 | 73-125 | |
| Trichlorofluoromethane | ug/L | 50 | 48.9 | 98 | 56-139 | |
| Vinyl chloride | ug/L | 50 | 42.6 | 85 | 46-134 | |
| Xylene (Total) | ug/L | 150 | 168 | 112 | 71-123 | |
| 4-Bromofluorobenzene (S) | %. | | | 97 | 79-124 | |
| Dibromofluoromethane (S) | %. | | | 101 | 82-128 | |
| Toluene-d8 (S) | %. | | | 99 | 73-122 | |

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3141569 3141570

| Parameter | Units | 50319142015 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 | <1.0 | 50 | 50 | 62.6 | 67.3 | 125 | 135 | 64-142 | 7 | 20 | |
| 1,1,1-Trichloroethane | ug/L | <1.0 | 50 | 50 | 59.0 | 63.7 | 118 | 127 | 60-143 | 8 | 20 | |
| 1,1,2,2-Tetrachloroethane | ug/L | <1.0 | 50 | 50 | 54.7 | 56.5 | 109 | 113 | 64-135 | 3 | 20 | |
| 1,1,2-Trichloroethane | ug/L | <1.0 | 50 | 50 | 56.4 | 59.6 | 113 | 119 | 66-137 | 5 | 20 | |
| 1,1-Dichloroethane | ug/L | <1.0 | 50 | 50 | 56.3 | 60.5 | 113 | 121 | 62-144 | 7 | 20 | |
| 1,1-Dichloroethene | ug/L | <1.0 | 50 | 50 | 53.4 | 57.3 | 107 | 115 | 55-158 | 7 | 20 | |
| 1,2,3-Trichloropropane | ug/L | <1.0 | 50 | 50 | 55.5 | 58.0 | 111 | 116 | 66-135 | 4 | 20 | |
| 1,2-Dibromo-3-chloropropane | ug/L | <5.0 | 50 | 50 | 52.8 | 54.8 | 106 | 110 | 59-132 | 4 | 20 | |
| 1,2-Dibromoethane (EDB) | ug/L | <1.0 | 50 | 50 | 57.6 | 61.3 | 115 | 123 | 68-136 | 6 | 20 | |
| 1,2-Dichlorobenzene | ug/L | <1.0 | 50 | 50 | 56.0 | 58.3 | 112 | 117 | 47-140 | 4 | 20 | |
| 1,2-Dichloroethane | ug/L | <1.0 | 50 | 50 | 57.8 | 62.0 | 116 | 124 | 61-144 | 7 | 20 | |
| 1,2-Dichloropropane | ug/L | <1.0 | 50 | 50 | 56.0 | 60.7 | 112 | 121 | 67-141 | 8 | 20 | |
| 1,4-Dichlorobenzene | ug/L | <1.0 | 50 | 50 | 54.0 | 55.5 | 108 | 111 | 39-140 | 3 | 20 | |
| 2-Butanone (MEK) | ug/L | <5.0 | 250 | 250 | 272 | 287 | 109 | 115 | 49-149 | 6 | 20 | |
| 2-Hexanone | ug/L | <5.0 | 250 | 250 | 307 | 321 | 123 | 129 | 48-147 | 5 | 20 | |
| 4-Methyl-2-pentanone (MIBK) | ug/L | <5.0 | 250 | 250 | 301 | 315 | 120 | 126 | 50-152 | 5 | 20 | |

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## REPORT OF LABORATORY ANALYSIS

**Pace Analytical Services, LLC**
4171 40th St. SE
Grand Rapids, MI 49512
(616)975-4500

## QUALITY CONTROL DATA

Project: Smith's Creek Landfill GW
Pace Project No.: 50319142

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3141569 3141570

| Parameter | Units | 50319142015 Result | MS Spike Conc. | MSD Spike Conc. | MS Result | MSD Result | MS % Rec | MSD % Rec | % Rec Limits | RPD | Max RPD | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Acetone | ug/L | <20.0 | 250 | 250 | 240 | 238 | 96 | 95 | 23-157 | 1 | 20 | |
| Acrylonitrile | ug/L | <5.0 | 250 | 250 | 262 | 275 | 105 | 110 | 56-149 | 5 | 20 | |
| Benzene | ug/L | <1.0 | 50 | 50 | 55.5 | 59.4 | 111 | 119 | 68-139 | 7 | 20 | |
| Bromochloromethane | ug/L | <1.0 | 50 | 50 | 59.4 | 61.9 | 119 | 124 | 58-143 | 4 | 20 | |
| Bromodichloromethane | ug/L | <1.0 | 50 | 50 | 58.5 | 63.5 | 117 | 127 | 65-139 | 8 | 20 | |
| Bromoform | ug/L | <1.0 | 50 | 50 | 52.7 | 57.0 | 105 | 114 | 51-139 | 8 | 20 | |
| Bromomethane | ug/L | <5.0 | 50 | 50 | 17.5 | 26.8 | 35 | 54 | 10-189 | 42 | 20 | R1 |
| Carbon disulfide | ug/L | <1.0 | 50 | 50 | 44.2 | 46.4 | 88 | 93 | 45-143 | 5 | 20 | |
| Carbon tetrachloride | ug/L | <1.0 | 50 | 50 | 62.5 | 68.1 | 125 | 136 | 61-153 | 9 | 20 | |
| Chlorobenzene | ug/L | <1.0 | 50 | 50 | 55.9 | 59.4 | 112 | 119 | 57-137 | 6 | 20 | |
| Chloroethane | ug/L | <5.0 | 50 | 50 | 46.0 | 49.9 | 92 | 100 | 41-183 | 8 | 20 | |
| Chloroform | ug/L | <1.0 | 50 | 50 | 55.0 | 59.3 | 110 | 119 | 61-138 | 8 | 20 | |
| Chloromethane | ug/L | <5.0 | 50 | 50 | 36.2 | 38.3 | 72 | 77 | 25-150 | 6 | 20 | |
| cis-1,2-Dichloroethene | ug/L | <1.0 | 50 | 50 | 56.3 | 60.5 | 113 | 121 | 58-142 | 7 | 20 | |
| cis-1,3-Dichloropropene | ug/L | <1.0 | 50 | 50 | 53.0 | 57.0 | 106 | 114 | 53-140 | 7 | 20 | |
| Dibromochloromethane | ug/L | <1.0 | 50 | 50 | 59.0 | 63.6 | 118 | 127 | 61-139 | 8 | 20 | |
| Dibromomethane | ug/L | <1.0 | 50 | 50 | 57.2 | 60.4 | 114 | 121 | 69-138 | 5 | 20 | |
| Ethylbenzene | ug/L | <1.0 | 50 | 50 | 58.8 | 62.1 | 118 | 124 | 54-141 | 5 | 20 | |
| Iodomethane | ug/L | <1.0 | 50 | 50 | 6.4 | 12.5 | 13 | 25 | 10-184 | 65 | 20 | R1 |
| Methylene Chloride | ug/L | <5.0 | 50 | 50 | 33.6 | 37.5 | 67 | 75 | 59-141 | 11 | 20 | |
| Styrene | ug/L | <1.0 | 50 | 50 | 58.7 | 62.3 | 117 | 125 | 51-146 | 6 | 20 | |
| Tetrachloroethene | ug/L | <1.0 | 50 | 50 | 61.5 | 63.9 | 123 | 128 | 50-149 | 4 | 20 | |
| Toluene | ug/L | <1.0 | 50 | 50 | 55.8 | 59.9 | 112 | 120 | 59-134 | 7 | 20 | |
| trans-1,2-Dichloroethene | ug/L | <1.0 | 50 | 50 | 53.9 | 57.3 | 108 | 115 | 57-141 | 6 | 20 | |
| trans-1,3-Dichloropropene | ug/L | <1.0 | 50 | 50 | 52.4 | 55.7 | 105 | 111 | 51-136 | 6 | 20 | |
| trans-1,4-Dichloro-2-butene | ug/L | <5.0 | 50 | 50 | 56.5 | 58.3 | 113 | 117 | 26-157 | | 20 | |
| Trichloroethene | ug/L | <1.0 | 50 | 50 | 57.5 | 61.7 | 115 | 123 | 55-147 | 7 | 20 | |
| Trichlorofluoromethane | ug/L | <1.0 | 50 | 50 | 49.4 | 52.8 | 99 | 106 | 55-160 | 7 | 20 | |
| Vinyl chloride | ug/L | <1.0 | 50 | 50 | 43.6 | 47.1 | 87 | 94 | 36-154 | 8 | 20 | |
| Xylene (Total) | ug/L | <2.0 | 150 | 150 | 172 | 182 | 114 | 121 | 50-143 | 6 | 20 | |
| 4-Bromofluorobenzene (S) | %. | | | | | | 98 | 97 | 79-124 | | | |
| Dibromofluoromethane (S) | %. | | | | | | 102 | 101 | 82-128 | | | |
| Toluene-d8 (S) | %. | | | | | | 100 | 100 | 73-122 | | | |

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## REPORT OF LABORATORY ANALYSIS

**Pace Analytical Services, LLC**
4171 40th St. SE
Grand Rapids, MI 49512
(616)975-4500

## QUALITY CONTROL DATA

Project: Smith's Creek Landfill GW
Pace Project No.: 50319142

QC Batch: 682926
QC Batch Method: EPA 353.2
Analysis Method: EPA 353.2
Analysis Description: 353.2 Nitrate + Nitrite, preserved
Laboratory: Pace Analytical Services - Indianapolis
Associated Lab Samples: 50319142001, 50319142002

METHOD BLANK: 3142789 Matrix: Water
Associated Lab Samples: 50319142001, 50319142002

| Parameter | Units | Blank Result | Reporting Limit | Analyzed | Qualifiers |
|---|---|---|---|---|---|
| Nitrogen, NO2 plus NO3 | ug/L | <20.0 | 20.0 | 06/22/22 12:01 | |

LABORATORY CONTROL SAMPLE: 3142790

| Parameter | Units | Spike Conc. | LCS Result | LCS % Rec | % Rec Limits | Qualifiers |
|---|---|---|---|---|---|---|
| Nitrogen, NO2 plus NO3 | ug/L | 2000 | 2040 | 102 | 90-110 | |

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3142791 3142792

| Parameter | Units | 50319089022 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 | ug/L | <0.11 mg/L | 20000 | 20000 | 18300 | 18200 | 92 | 91 | 90-110 | 1 | 20 | |

MATRIX SPIKE SAMPLE: 3142793

| Parameter | Units | 50319142002 Result | Spike Conc. | MS Result | MS % Rec | % Rec Limits | Qualifiers |
|---|---|---|---|---|---|---|---|
| Nitrogen, NO2 plus NO3 | ug/L | <200 | 20000 | 20200 | 101 | 90-110 | |

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## REPORT OF LABORATORY ANALYSIS

**Pace Analytical Services, LLC**
4171 40th St. SE
Grand Rapids, MI 49512
(616)975-4500

## QUALITY CONTROL DATA

Project: Smith's Creek Landfill GW
Pace Project No.: 50319142

QC Batch: 682955
QC Batch Method: EPA 353.2
Analysis Method: EPA 353.2
Analysis Description: 353.2 Nitrate + Nitrite, preserved
Laboratory: Pace Analytical Services - Indianapolis
Associated Lab Samples: 50319142003, 50319142004, 50319142005, 50319142006, 50319142007, 50319142008, 50319142009, 50319142010, 50319142011, 50319142012, 50319142013, 50319142014, 50319142016

METHOD BLANK: 3142939 Matrix: Water
Associated Lab Samples: 50319142003, 50319142004, 50319142005, 50319142006, 50319142007, 50319142008, 50319142009, 50319142010, 50319142011, 50319142012, 50319142013, 50319142014, 50319142016

| Parameter | Units | Blank Result | Reporting Limit | Analyzed | Qualifiers |
|---|---|---|---|---|---|
| Nitrogen, NO2 plus NO3 | ug/L | <20.0 | 20.0 | 06/22/22 13:24 | |

LABORATORY CONTROL SAMPLE: 3142940

| Parameter | Units | Spike Conc. | LCS Result | LCS % Rec | % Rec Limits | Qualifiers |
|---|---|---|---|---|---|---|
| Nitrogen, NO2 plus NO3 | ug/L | 2000 | 2030 | 101 | 90-110 | |

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3142941 3142942

| Parameter | Units | 50319142004 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 | ug/L | <20.0 | 2000 | 2000 | 1990 | 2010 | 99 | 100 | 90-110 | 1 | 20 | |

MATRIX SPIKE SAMPLE: 3142943

| Parameter | Units | 50319142005 Result | Spike Conc. | MS Result | MS % Rec | % Rec Limits | Qualifiers |
|---|---|---|---|---|---|---|---|
| Nitrogen, NO2 plus NO3 | ug/L | <20.0 | 2000 | 2000 | 100 | 90-110 | |

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## REPORT OF LABORATORY ANALYSIS

**Pace Analytical Services, LLC**
4171 40th St. SE
Grand Rapids, MI 49512
(616)975-4500

## QUALITY CONTROL DATA

Project: Smith's Creek Landfill GW
Pace Project No.: 50319142

QC Batch: 684599
QC Batch Method: EPA 353.2
Analysis Method: EPA 353.2
Analysis Description: 353.2 Nitrate + Nitrite, preserved
Laboratory: Pace Analytical Services - Indianapolis
Associated Lab Samples: 50319142015

METHOD BLANK: 3150474 Matrix: Water
Associated Lab Samples: 50319142015

| Parameter | Units | Blank Result | Reporting Limit | Analyzed | Qualifiers |
|---|---|---|---|---|---|
| Nitrogen, NO2 plus NO3 | ug/L | <20.0 | 20.0 | 07/02/22 12:20 | |

LABORATORY CONTROL SAMPLE: 3150475

| Parameter | Units | Spike Conc. | LCS Result | LCS % Rec | % Rec Limits | Qualifiers |
|---|---|---|---|---|---|---|
| Nitrogen, NO2 plus NO3 | ug/L | 2000 | 2000 | 100 | 90-110 | |

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3150476 3150477

| Parameter | Units | 50320035007 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 | ug/L | 0.34 mg/L | 2000 | 2000 | 2310 | 2300 | 99 | 98 | 90-110 | 1 | 20 | |

MATRIX SPIKE SAMPLE: 3150478

| Parameter | Units | 50320035008 Result | Spike Conc. | MS Result | MS % Rec | % Rec Limits | Qualifiers |
|---|---|---|---|---|---|---|---|
| Nitrogen, NO2 plus NO3 | ug/L | 0.25 mg/L | 2000 | 2220 | 99 | 90-110 | |

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## REPORT OF LABORATORY ANALYSIS

**Pace Analytical Services, LLC**
4171 40th St. SE
Grand Rapids, MI 49512
(616)975-4500

## QUALITY CONTROL DATA

Project: Smith's Creek Landfill GW
Pace Project No.: 50319142

QC Batch: 683177
QC Batch Method: SM 4500-Cl-E
Analysis Method: SM 4500-Cl-E
Analysis Description: 4500 Chloride
Laboratory: Pace Analytical Services - Indianapolis
Associated Lab Samples: 50319142001, 50319142002, 50319142003, 50319142004, 50319142005, 50319142006, 50319142007, 50319142008, 50319142009, 50319142010, 50319142011, 50319142012, 50319142013, 50319142014, 50319142015, 50319142016

METHOD BLANK: 3143962 Matrix: Water
Associated Lab Samples: 50319142001, 50319142002, 50319142003, 50319142004, 50319142005, 50319142006, 50319142007, 50319142008, 50319142009, 50319142010, 50319142011, 50319142012, 50319142013, 50319142014, 50319142015, 50319142016

| Parameter | Units | Blank Result | Reporting Limit | Analyzed | Qualifiers |
|---|---|---|---|---|---|
| Chloride | ug/L | <1000 | 1000 | 06/23/22 14:54 | |

LABORATORY CONTROL SAMPLE: 3143963

| Parameter | Units | Spike Conc. | LCS Result | LCS % Rec | % Rec Limits | Qualifiers |
|---|---|---|---|---|---|---|
| Chloride | ug/L | 20000 | 19600 | 98 | 90-110 | |

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3143964 3143965

| Parameter | Units | 50319142015 Result | MS Spike Conc. | MSD Spike Conc. | MS Result | MSD Result | MS % Rec | MSD % Rec | % Rec Limits | RPD | Max RPD | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | ug/L | 30700 | 20000 | 20000 | 50300 | 51700 | 98 | 105 | 90-110 | 3 | 20 | |

MATRIX SPIKE SAMPLE: 3143966

| Parameter | Units | 50319142001 Result | Spike Conc. | MS Result | MS % Rec | % Rec Limits | Qualifiers |
|---|---|---|---|---|---|---|---|
| Chloride | ug/L | 25100 | 20000 | 45100 | 100 | 90-110 | |

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## REPORT OF LABORATORY ANALYSIS

**Pace Analytical Services, LLC**
4171 40th St. SE
Grand Rapids, MI 49512
(616)975-4500

## QUALITY CONTROL DATA

Project: Smith's Creek Landfill GW
Pace Project No.: 50319142

QC Batch: 682685
QC Batch Method: SM-4500-NH3 G
Analysis Method: SM-4500-NH3 G
Analysis Description: 4500 Ammonia Low Level
Laboratory: Pace Analytical Services - Indianapolis
Associated Lab Samples: 50319142001

METHOD BLANK: 3141905 Matrix: Water
Associated Lab Samples: 50319142001

| Parameter | Units | Blank Result | Reporting Limit | Analyzed | Qualifiers |
|---|---|---|---|---|---|
| Nitrogen, Ammonia | ug/L | <20.0 | 20.0 | 06/21/22 16:49 | |

LABORATORY CONTROL SAMPLE: 3141906

| Parameter | Units | Spike Conc. | LCS Result | LCS % Rec | % Rec Limits | Qualifiers |
|---|---|---|---|---|---|---|
| Nitrogen, Ammonia | ug/L | 1000 | 1030 | 103 | 90-110 | |

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3141907 3141908

| Parameter | Units | 50318688020 Result | MS Spike Conc. | MSD Spike Conc. | MS Result | MSD Result | MS % Rec | MSD % Rec | % Rec Limits | RPD | Max RPD | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Nitrogen, Ammonia | ug/L | <20.0 | 1000 | 1000 | 974 | 978 | 97 | 97 | 90-110 | 0 | 20 | |

MATRIX SPIKE SAMPLE: 3141909

| Parameter | Units | 50318794002 Result | Spike Conc. | MS Result | MS % Rec | % Rec Limits | Qualifiers |
|---|---|---|---|---|---|---|---|
| Nitrogen, Ammonia | ug/L | 29.7 | 1000 | 1020 | 99 | 90-110 | |

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## REPORT OF LABORATORY ANALYSIS

**Pace Analytical Services, LLC**
4171 40th St. SE
Grand Rapids, MI 49512
(616)975-4500

## QUALITY CONTROL DATA

Project: Smith's Creek Landfill GW
Pace Project No.: 50319142

QC Batch: 683958
QC Batch Method: SM-4500-NH3 G
Analysis Method: SM-4500-NH3 G
Analysis Description: 4500 Ammonia Low Level
Laboratory: Pace Analytical Services - Indianapolis
Associated Lab Samples: 50319142002, 50319142003, 50319142004, 50319142005, 50319142006, 50319142007, 50319142008, 50319142009, 50319142010, 50319142011, 50319142012, 50319142013, 50319142014, 50319142016

METHOD BLANK: 3147643 Matrix: Water
Associated Lab Samples: 50319142002, 50319142003, 50319142004, 50319142005, 50319142006, 50319142007, 50319142008, 50319142009, 50319142010, 50319142011, 50319142012, 50319142013, 50319142014, 50319142016

| Parameter | Units | Blank Result | Reporting Limit | Analyzed | Qualifiers |
|---|---|---|---|---|---|
| Nitrogen, Ammonia | ug/L | <20.0 | 20.0 | 06/29/22 13:05 | |

LABORATORY CONTROL SAMPLE: 3147644

| Parameter | Units | Spike Conc. | LCS Result | LCS % Rec | % Rec Limits | Qualifiers |
|---|---|---|---|---|---|---|
| Nitrogen, Ammonia | ug/L | 1000 | 1030 | 103 | 90-110 | |

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3147645 3147646

| Parameter | Units | 50319621005 Result | MS Spike Conc. | MSD Spike Conc. | MS Result | MSD Result | MS % Rec | MSD % Rec | % Rec Limits | RPD | Max RPD | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Nitrogen, Ammonia | ug/L | 92.8 | 1000 | 1000 | 1000 | 999 | 91 | 91 | 90-110 | 1 | 20 | |

MATRIX SPIKE SAMPLE: 3147647

| Parameter | Units | 50319142008 Result | Spike Conc. | MS Result | MS % Rec | % Rec Limits | Qualifiers |
|---|---|---|---|---|---|---|---|
| Nitrogen, Ammonia | ug/L | 113 | 1000 | 1160 | 105 | 90-110 | |

**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

**Pace Analytical Services, LLC**
4171 40th St. SE
Grand Rapids, MI 49512
(616)975-4500

## QUALITY CONTROL DATA

Project: Smith's Creek Landfill GW
Pace Project No.: 50319142

QC Batch: 685226
QC Batch Method: SM-4500-NH3 G
Analysis Method: SM-4500-NH3 G
Analysis Description: 4500 Ammonia Low Level
Laboratory: Pace Analytical Services - Indianapolis
Associated Lab Samples: 50319142015

METHOD BLANK: 3152967 Matrix: Water
Associated Lab Samples: 50319142015

| Parameter | Units | Blank Result | Reporting Limit | Analyzed | Qualifiers |
|---|---|---|---|---|---|
| Nitrogen, Ammonia | ug/L | <20.0 | 20.0 | 07/08/22 11:15 | |

LABORATORY CONTROL SAMPLE: 3152968

| Parameter | Units | Spike Conc. | LCS Result | LCS % Rec | % Rec Limits | Qualifiers |
|---|---|---|---|---|---|---|
| Nitrogen, Ammonia | ug/L | 1000 | 1030 | 103 | 90-110 | |

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3152969 3152970

| Parameter | Units | 50320119003 Result | MS Spike Conc. | MSD Spike Conc. | MS Result | MSD Result | MS % Rec | MSD % Rec | % Rec Limits | RPD | Max RPD | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Nitrogen, Ammonia | ug/L | 267 | 1000 | 1000 | 1280 | 1280 | 101 | 101 | 90-110 | 0 | 20 | |

MATRIX SPIKE SAMPLE: 3152971

| Parameter | Units | 50320119013 Result | Spike Conc. | MS Result | MS % Rec | % Rec Limits | Qualifiers |
|---|---|---|---|---|---|---|---|
| Nitrogen, Ammonia | ug/L | <20.0 | 1000 | 898 | 90 | 90-110 | |

**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

**Pace Analytical Services, LLC**
4171 40th St. SE
Grand Rapids, MI 49512
(616)975-4500

## QUALITY CONTROL DATA

Project: Smith's Creek Landfill GW
Pace Project No.: 50319142

QC Batch: 682794 | Analysis Method: SM 5310C
QC Batch Method: SM 5310C | Analysis Description: 5310C Total Organic Carbon
Laboratory: Pace Analytical Services - Indianapolis
Associated Lab Samples: 50319142001, 50319142002, 50319142003, 50319142004

METHOD BLANK: 3142358 Matrix: Water
Associated Lab Samples: 50319142001, 50319142002, 50319142003, 50319142004

| Parameter | Units | Blank Result | Reporting Limit | Analyzed | Qualifiers |
|---|---|---|---|---|---|
| Total Organic Carbon | ug/L | <500 | 500 | 06/22/22 20:36 | |

LABORATORY CONTROL SAMPLE: 3142359

| Parameter | Units | Spike Conc. | LCS Result | LCS % Rec | % Rec Limits | Qualifiers |
|---|---|---|---|---|---|---|
| Total Organic Carbon | ug/L | 10000 | 10800 | 108 | 90-110 | |

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3142360 3142361

| Parameter | Units | 50319032008 Result | MS Spike Conc. | MSD Spike Conc. | MS Result | MSD Result | MS % Rec | MSD % Rec | % Rec Limits | RPD | Max RPD | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Total Organic Carbon | ug/L | 4.5 mg/L | 10000 | 10000 | 14600 | 14800 | 102 | 103 | 80-120 | 1 | 20 | |

MATRIX SPIKE SAMPLE: 3142362

| Parameter | Units | 50319142001 Result | Spike Conc. | MS Result | MS % Rec | % Rec Limits | Qualifiers |
|---|---|---|---|---|---|---|---|
| Total Organic Carbon | ug/L | 1240 | 10000 | 11400 | 102 | 80-120 | |

**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

**Pace Analytical Services, LLC**
4171 40th St. SE
Grand Rapids, MI 49512
(616)975-4500

## QUALITY CONTROL DATA

Project: Smith's Creek Landfill GW
Pace Project No.: 50319142

QC Batch: 682795 — Analysis Method: SM 5310C
QC Batch Method: SM 5310C — Analysis Description: 5310C Total Organic Carbon
Laboratory: Pace Analytical Services - Indianapolis
Associated Lab Samples: 50319142005, 50319142006, 50319142007, 50319142008, 50319142009, 50319142010, 50319142011, 50319142012, 50319142013, 50319142014, 50319142015, 50319142016

METHOD BLANK: 3142371 — Matrix: Water
Associated Lab Samples: 50319142005, 50319142006, 50319142007, 50319142008, 50319142009, 50319142010, 50319142011, 50319142012, 50319142013, 50319142014, 50319142015, 50319142016

| Parameter | Units | Blank Result | Reporting Limit | Analyzed | Qualifiers |
|---|---|---|---|---|---|
| Total Organic Carbon | ug/L | <500 | 500 | 06/23/22 01:37 | |

LABORATORY CONTROL SAMPLE: 3142372

| Parameter | Units | Spike Conc. | LCS Result | LCS % Rec | % Rec Limits | Qualifiers |
|---|---|---|---|---|---|---|
| Total Organic Carbon | ug/L | 10000 | 10200 | 102 | 90-110 | |

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3142373 3142374

| Parameter | Units | 50319142015 Result | MS Spike Conc. | MSD Spike Conc. | MS Result | MSD Result | MS % Rec | MSD % Rec | % Rec Limits | RPD | Max RPD | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Total Organic Carbon | ug/L | 1000 | 10000 | 10000 | 11700 | 11500 | 107 | 105 | 80-120 | 2 | 20 | |

MATRIX SPIKE SAMPLE: 3142375

| Parameter | Units | 50319194007 Result | Spike Conc. | MS Result | MS % Rec | % Rec Limits | Qualifiers |
|---|---|---|---|---|---|---|---|
| Total Organic Carbon | ug/L | 1.7 mg/L | 10000 | 12000 | 103 | 80-120 | |

**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

**Pace Analytical Services, LLC**
4171 40th St. SE
Grand Rapids, MI 49512
(616)975-4500

# QUALIFIERS

Project: Smith's Creek Landfill GW
Pace Project No.: 50319142

## 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.

Reported results are not rounded until the final step prior to reporting. Therefore, calculated parameters that are typically reported as "Total" may vary slightly from the sum of the reported component parameters.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

## ANALYTE QUALIFIERS

| | |
|---|---|
| 1d | The presence of this compound indicates the possible use of commercially purchased deionized water. aa 6/21/22 |
| D3 | Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference. |
| R1 | RPD value was outside control limits. |

Pace Analytical Services, LLC
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## QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Smith's Creek Landfill GW
Pace Project No.: 50319142

| Lab ID | Sample ID | QC Batch Method | QC Batch | Analytical Method | Analytical Batch |
|---|---|---|---|---|---|
| **50319142012** | **MW-301** | EPA 3010 | 682823 | EPA 6010 | 683775 |
| **50319142015** | **MW-304** | EPA 3010 | 682823 | EPA 6010 | 683775 |
| **50319142001** | **MW-101** | EPA 3010 | 682816 | EPA 6010 | 683797 |
| **50319142002** | **MW-106A** | EPA 3010 | 682816 | EPA 6010 | 683797 |
| **50319142003** | **MW-201** | EPA 3010 | 682816 | EPA 6010 | 683797 |
| **50319142004** | **MW-202** | EPA 3010 | 682816 | EPA 6010 | 683797 |
| **50319142005** | **MW-203B** | EPA 3010 | 682816 | EPA 6010 | 683797 |
| **50319142006** | **MW-207A** | EPA 3010 | 682816 | EPA 6010 | 683797 |
| **50319142007** | **MW-208** | EPA 3010 | 682816 | EPA 6010 | 683797 |
| **50319142008** | **MW-209** | EPA 3010 | 682816 | EPA 6010 | 683797 |
| **50319142009** | **MW-210** | EPA 3010 | 682816 | EPA 6010 | 683797 |
| **50319142010** | **MW-212** | EPA 3010 | 682816 | EPA 6010 | 683797 |
| **50319142011** | **MW-213** | EPA 3010 | 682816 | EPA 6010 | 683797 |
| **50319142012** | **MW-301** | EPA 3010 | 682816 | EPA 6010 | 683797 |
| **50319142013** | **MW-302** | EPA 3010 | 682816 | EPA 6010 | 683797 |
| **50319142014** | **MW-303A** | EPA 3010 | 682816 | EPA 6010 | 683797 |
| **50319142015** | **MW-304** | EPA 3010 | 682816 | EPA 6010 | 683797 |
| **50319142016** | **MW-305** | EPA 3010 | 682816 | EPA 6010 | 683797 |
| **50319142012** | **MW-301** | EPA 200.2 | 682417 | EPA 6020 | 682734 |
| **50319142015** | **MW-304** | EPA 200.2 | 682417 | EPA 6020 | 682734 |
| **50319142001** | **MW-101** | EPA 200.2 | 682416 | EPA 6020 | 682733 |
| **50319142002** | **MW-106A** | EPA 200.2 | 682416 | EPA 6020 | 682733 |
| **50319142003** | **MW-201** | EPA 200.2 | 682416 | EPA 6020 | 682733 |
| **50319142004** | **MW-202** | EPA 200.2 | 682416 | EPA 6020 | 682733 |
| **50319142005** | **MW-203B** | EPA 200.2 | 682416 | EPA 6020 | 682733 |
| **50319142006** | **MW-207A** | EPA 200.2 | 682416 | EPA 6020 | 682733 |
| **50319142007** | **MW-208** | EPA 200.2 | 682416 | EPA 6020 | 682733 |
| **50319142008** | **MW-209** | EPA 200.2 | 682416 | EPA 6020 | 682733 |
| **50319142009** | **MW-210** | EPA 200.2 | 682416 | EPA 6020 | 682733 |
| **50319142010** | **MW-212** | EPA 200.2 | 682416 | EPA 6020 | 682733 |
| **50319142011** | **MW-213** | EPA 200.2 | 682416 | EPA 6020 | 682733 |
| **50319142012** | **MW-301** | EPA 200.2 | 682416 | EPA 6020 | 682733 |
| **50319142013** | **MW-302** | EPA 200.2 | 682416 | EPA 6020 | 682733 |
| **50319142014** | **MW-303A** | EPA 200.2 | 682416 | EPA 6020 | 682733 |
| **50319142015** | **MW-304** | EPA 200.2 | 682416 | EPA 6020 | 682733 |
| **50319142016** | **MW-305** | EPA 200.2 | 682416 | EPA 6020 | 682733 |
| **50319142001** | **MW-101** | EPA 5030B/8260 | 682585 | | |
| **50319142002** | **MW-106A** | EPA 5030B/8260 | 682585 | | |
| **50319142003** | **MW-201** | EPA 5030B/8260 | 682585 | | |
| **50319142004** | **MW-202** | EPA 5030B/8260 | 682585 | | |
| **50319142005** | **MW-203B** | EPA 5030B/8260 | 682585 | | |
| **50319142006** | **MW-207A** | EPA 5030B/8260 | 682585 | | |
| **50319142007** | **MW-208** | EPA 5030B/8260 | 682585 | | |
| **50319142008** | **MW-209** | EPA 5030B/8260 | 682585 | | |
| **50319142009** | **MW-210** | EPA 5030B/8260 | 682585 | | |
| **50319142010** | **MW-212** | EPA 5030B/8260 | 682585 | | |
| **50319142011** | **MW-213** | EPA 5030B/8260 | 682585 | | |

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## QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Smith's Creek Landfill GW
Pace Project No.: 50319142

| Lab ID | Sample ID | QC Batch Method | QC Batch | Analytical Method | Analytical Batch |
|---|---|---|---|---|---|
| **50319142012** | **MW-301** | EPA 5030B/8260 | 682585 | | |
| **50319142013** | **MW-302** | EPA 5030B/8260 | 682585 | | |
| **50319142014** | **MW-303A** | EPA 5030B/8260 | 682585 | | |
| **50319142015** | **MW-304** | EPA 5030B/8260 | 682585 | | |
| **50319142016** | **MW-305** | EPA 5030B/8260 | 682585 | | |
| **50319142017** | **Field Blank** | EPA 5030B/8260 | 682585 | | |
| **50319142018** | **Trip Blank** | EPA 5030B/8260 | 682585 | | |
| **50319142001** | **MW-101** | NO2+NO3+NH3 Calculation | 684304 | | |
| **50319142002** | **MW-106A** | NO2+NO3+NH3 Calculation | 684304 | | |
| **50319142003** | **MW-201** | NO2+NO3+NH3 Calculation | 684304 | | |
| **50319142004** | **MW-202** | NO2+NO3+NH3 Calculation | 684304 | | |
| **50319142005** | **MW-203B** | NO2+NO3+NH3 Calculation | 684304 | | |
| **50319142006** | **MW-207A** | NO2+NO3+NH3 Calculation | 684304 | | |
| **50319142007** | **MW-208** | NO2+NO3+NH3 Calculation | 684304 | | |
| **50319142008** | **MW-209** | NO2+NO3+NH3 Calculation | 684304 | | |
| **50319142009** | **MW-210** | NO2+NO3+NH3 Calculation | 684304 | | |
| **50319142010** | **MW-212** | NO2+NO3+NH3 Calculation | 684304 | | |
| **50319142011** | **MW-213** | NO2+NO3+NH3 Calculation | 684304 | | |
| **50319142012** | **MW-301** | NO2+NO3+NH3 Calculation | 684304 | | |
| **50319142013** | **MW-302** | NO2+NO3+NH3 Calculation | 684304 | | |
| **50319142014** | **MW-303A** | NO2+NO3+NH3 Calculation | 684304 | | |
| **50319142015** | **MW-304** | NO2+NO3+NH3 Calculation | 685334 | | |
| **50319142016** | **MW-305** | NO2+NO3+NH3 Calculation | 684304 | | |
| **50319142001** | **MW-101** | EPA 353.2 | 682926 | | |
| **50319142002** | **MW-106A** | EPA 353.2 | 682926 | | |
| **50319142003** | **MW-201** | EPA 353.2 | 682955 | | |
| **50319142004** | **MW-202** | EPA 353.2 | 682955 | | |
| **50319142005** | **MW-203B** | EPA 353.2 | 682955 | | |
| **50319142006** | **MW-207A** | EPA 353.2 | 682955 | | |
| **50319142007** | **MW-208** | EPA 353.2 | 682955 | | |
| **50319142008** | **MW-209** | EPA 353.2 | 682955 | | |
| **50319142009** | **MW-210** | EPA 353.2 | 682955 | | |
| **50319142010** | **MW-212** | EPA 353.2 | 682955 | | |
| **50319142011** | **MW-213** | EPA 353.2 | 682955 | | |
| **50319142012** | **MW-301** | EPA 353.2 | 682955 | | |

## REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
4171 40th St. SE
Grand Rapids, MI 49512
(616)975-4500

## QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Smith's Creek Landfill GW
Pace Project No.: 50319142

| Lab ID | Sample ID | QC Batch Method | QC Batch | Analytical Method | Analytical Batch |
|---|---|---|---|---|---|
| **50319142013** | **MW-302** | EPA 353.2 | 682955 | | |
| **50319142014** | **MW-303A** | EPA 353.2 | 682955 | | |
| **50319142015** | **MW-304** | EPA 353.2 | 684599 | | |
| **50319142016** | **MW-305** | EPA 353.2 | 682955 | | |
| **50319142001** | **MW-101** | SM 4500-Cl-E | 683177 | | |
| **50319142002** | **MW-106A** | SM 4500-Cl-E | 683177 | | |
| **50319142003** | **MW-201** | SM 4500-Cl-E | 683177 | | |
| **50319142004** | **MW-202** | SM 4500-Cl-E | 683177 | | |
| **50319142005** | **MW-203B** | SM 4500-Cl-E | 683177 | | |
| **50319142006** | **MW-207A** | SM 4500-Cl-E | 683177 | | |
| **50319142007** | **MW-208** | SM 4500-Cl-E | 683177 | | |
| **50319142008** | **MW-209** | SM 4500-Cl-E | 683177 | | |
| **50319142009** | **MW-210** | SM 4500-Cl-E | 683177 | | |
| **50319142010** | **MW-212** | SM 4500-Cl-E | 683177 | | |
| **50319142011** | **MW-213** | SM 4500-Cl-E | 683177 | | |
| **50319142012** | **MW-301** | SM 4500-Cl-E | 683177 | | |
| **50319142013** | **MW-302** | SM 4500-Cl-E | 683177 | | |
| **50319142014** | **MW-303A** | SM 4500-Cl-E | 683177 | | |
| **50319142015** | **MW-304** | SM 4500-Cl-E | 683177 | | |
| **50319142016** | **MW-305** | SM 4500-Cl-E | 683177 | | |
| **50319142001** | **MW-101** | SM-4500-NH3 G | 682685 | | |
| **50319142002** | **MW-106A** | SM-4500-NH3 G | 683958 | | |
| **50319142003** | **MW-201** | SM-4500-NH3 G | 683958 | | |
| **50319142004** | **MW-202** | SM-4500-NH3 G | 683958 | | |
| **50319142005** | **MW-203B** | SM-4500-NH3 G | 683958 | | |
| **50319142006** | **MW-207A** | SM-4500-NH3 G | 683958 | | |
| **50319142007** | **MW-208** | SM-4500-NH3 G | 683958 | | |
| **50319142008** | **MW-209** | SM-4500-NH3 G | 683958 | | |
| **50319142009** | **MW-210** | SM-4500-NH3 G | 683958 | | |
| **50319142010** | **MW-212** | SM-4500-NH3 G | 683958 | | |
| **50319142011** | **MW-213** | SM-4500-NH3 G | 683958 | | |
| **50319142012** | **MW-301** | SM-4500-NH3 G | 683958 | | |
| **50319142013** | **MW-302** | SM-4500-NH3 G | 683958 | | |
| **50319142014** | **MW-303A** | SM-4500-NH3 G | 683958 | | |
| **50319142015** | **MW-304** | SM-4500-NH3 G | 685226 | | |
| **50319142016** | **MW-305** | SM-4500-NH3 G | 683958 | | |
| **50319142001** | **MW-101** | SM 5310C | 682794 | | |
| **50319142002** | **MW-106A** | SM 5310C | 682794 | | |
| **50319142003** | **MW-201** | SM 5310C | 682794 | | |
| **50319142004** | **MW-202** | SM 5310C | 682794 | | |
| **50319142005** | **MW-203B** | SM 5310C | 682795 | | |
| **50319142006** | **MW-207A** | SM 5310C | 682795 | | |
| **50319142007** | **MW-208** | SM 5310C | 682795 | | |
| **50319142008** | **MW-209** | SM 5310C | 682795 | | |

**Pace Analytical Services, LLC**
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## QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Smith's Creek Landfill GW
Pace Project No.: 50319142

| Lab ID | Sample ID | QC Batch Method | QC Batch | Analytical Method | Analytical Batch |
|---|---|---|---|---|---|
| **50319142009** | **MW-210** | SM 5310C | 682795 | | |
| **50319142010** | **MW-212** | SM 5310C | 682795 | | |
| **50319142011** | **MW-213** | SM 5310C | 682795 | | |
| **50319142012** | **MW-301** | SM 5310C | 682795 | | |
| **50319142013** | **MW-302** | SM 5310C | 682795 | | |
| **50319142014** | **MW-303A** | SM 5310C | 682795 | | |
| **50319142015** | **MW-304** | SM 5310C | 682795 | | |
| **50319142016** | **MW-305** | SM 5310C | 682795 | | |

# CHAIN-OF-CUSTODY / Analytical Request D

WO# : 50319142

50319142

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields mu

Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace Terms and Conditions found at https://info.pac

| Section A<br>Required Client Information: | | Section B<br>Required Project Information: | Section C<br>Invoice Information: | |
|---|---|---|---|---|
| Company: | Golder Associates, Inc. - MI | Report To: Sean Paulsen | Attention: | |
| Address: | 27200 Haggerty Rd. Suite B-12 | Copy To: | Company Name: | Regulatory Agency |
| Farmington, MI 48331 | | | Address: | |
| Email: | sean.paulsen@wsp.com | Purchase Order #: | Pace Quote: | |
| Phone: NONE | Fax: | Project Name: Smith's Creek GW-Annual | Pace Project Manager: jennifer.rice@pacelabs.com, | State / Location |
| Requested Due Date: | | Project #: | Pace Profile #: 8284/1,2 | MI |

| ITEM # | SAMPLE ID<br>One Character per box.<br>(A-Z, 0-9 / , -)<br>Sample Ids must be unique | MATRIX CODE (see valid codes to left) | SAMPLE TYPE (G=GRAB C=COMP) | COLLECTED START DATE | COLLECTED START TIME | COLLECTED END DATE | COLLECTED END TIME | SAMPLE TEMP AT COLLECTION | # OF CONTAINERS | Preservatives: Unpreserved | H2SO4 | HNO3 | HCl | NaOH | Na2S2O3 | Methanol | Other | Analyses Test Y/N | 8260 VOC | Dissolved Metals | Cl | NH3, NPN, TIN | TOC | Total Metals | Residual Chlorine (Y/N) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | MW-101 | | | | | 6-15-22 | 1635 | 14.8 | 7 | 1 | 2 | 1 | 3 | | | | | | X | X | X | X | X | | |
| 2 | MW-106A | | | | | 6-15-22 | 1015 | 14.9 | | | | | | | | | | | | | | | | | |
| 3 | MW-201 | | | | | 6-14-22 | 0840 | 14.3 | | | | | | | | | | | | | | | | | |
| 4 | MW-202 | | | | | 6-15-22 | 1440 | 12.9 | | | | | | | | | | | | | | | | | |
| 5 | MW-203B | | | | | 6-15-22 | 1110 | 17.2 | | | | | | | | | | | | | | | | | |
| 6 | MW-207A | | | | | 6-15-22 | 0915 | 13.7 | | | | | | | | | | | | | | | | | |
| 7 | MW-208 | | | | | 6-15-22 | 0945 | 14.1 | | | | | | | | | | | | | | | | | |
| 8 | MW-209 | | | | | 6-15-22 | 0845 | 14.9 | | | | | | | | | | | | | | | | | |
| 9 | MW-210 | | | | | 6-14-22 | 1030 | 14.0 | | | | | | | | | | | | | | | | | |
| 10 | MW-212 | | | | | 6-14-22 | 0930 | 15.0 | | | | | | | | | | | | | | | | | |
| 11 | MW-213 | | | | | 6-15-22 | 1240 | 14.0 | | | | | | | | | | | | | | | | | |
| 12 | MW-301 | | | | | 6-14-22 | 1240 | 13.8 | | | | | | | | | | | | | | | | X | |

| ADDITIONAL COMMENTS | RELINQUISHED BY / AFFILIATION | DATE | TIME | ACCEPTED BY / AFFILIATION | DATE | TIME | SAMPLE CONDITIONS |
|---|---|---|---|---|---|---|---|
| | Sample | 6-16-22 | 1300 | | 6/16/22 | 1300 | |
| | | 6/16/22 | 1540 | J. Hardin | 6/16/22 | 1540 | |
| | | | | | | | |
| | | | | | | | |

| SAMPLER NAME AND SIGNATURE | | | | | |
|---|---|---|---|---|---|
| PRINT Name of SAMPLER: | Arthur D. Dodge III | TEMP in C | Received on Ice (Y/N) | Custody Sealed Cooler (Y/N) | Samples Intact (Y/N) |
| SIGNATURE of SAMPLER: | DATE Signed: 6-16-22 | | | | |

# CHAIN-OF-CUSTODY / Analytical Reque

**WO# : 50319142**

**PM: JLR1** **Due Date: 06/30/22**

**CLIENT: GR-Golder**

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fie

Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace Terms and Conditions found at https://

| Section A<br>Required Client Information: | Section B<br>Required Project Information: | Section C<br>Invoice Information: | |
|---|---|---|---|
| Company: Golder Associates, Inc. - MI | Report To: Sean Paulsen | Attention: | |
| Address: 27200 Haggerty Rd. Suite B-12 | Copy To: | Company Name: | Regulatory Agency |
| Farmington, MI 48331 | | Address: | |
| Email: sean.paulsen@wsp.com | Purchase Order #: | Pace Quote: | |
| Phone: NONE Fax: | Project Name: Smith's Creek GW-Annual | Pace Project Manager: jennifer.rice@pacelabs.com, | State / Location |
| Requested Due Date: | Project #: | Pace Profile #: 8284/1,2 | MI |

| ITEM # | SAMPLE ID<br>One Character per box.<br>(A-Z, 0-9 / , -)<br>Sample Ids must be unique<br>MATRIX / CODE: Drinking Water DW; Water WT; Waste Water WW; Product P; Soil/Solid SL; Oil OL; Wipe WP; Air AR; Other OT; Tissue TS | MATRIX CODE (see valid codes to left) | SAMPLE TYPE (G=GRAB C=COMP) | COLLECTED START DATE | COLLECTED START TIME | COLLECTED END DATE | COLLECTED END TIME | SAMPLE TEMP AT COLLECTION | # OF CONTAINERS | Preservatives: Unpreserved | H2SO4 | HNO3 | HCl | NaOH | Na2S2O3 | Methanol | Other | Analyses Test Y/N | 8260 VOC | Dissolved Metals | Cl | NH3, NPN, TIN | TOC | Total Metals | Residual Chlorine (Y/N) | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | MW-302 | | | | | 6-13-22 | 1605 | 13.7 | 7 | 1 | 2 | 1 | 3 | | | | | X | X | X | X | X | | | |
| 2 | MW-303A | | | | | 6-15-22 | 1240 | 12.0 | 7 | 1 | 2 | 1 | 3 | | | | | | | | | | | | |
| 3 | MW-304 | | | | | 6-16-22 | 1015 | 13.4 | 22 | 3 | 6 | 4 | 9 | | | | | | | | | X | | | MS/MSD |
| 4 | MW-305 | | | | | 6-14-22 | 1000 | 13.5 | 7 | 1 | 2 | 1 | 3 | | | | | | | | | | | | |
| 5 | Field Blank | | | | | 6-16-22 | 1015 | NA | 3 | | | | 3 | | | | | | | | | | | | |
| 6 | Trip Blank | | | | | NA | NA | NA | 3 | | | | 3 | | | | | | | | | | | | |
| 7 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 8 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 11 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 12 | | | | | | | | | | | | | | | | | | | | | | | | | |

| ADDITIONAL COMMENTS | RELINQUISHED BY / AFFILIATION | DATE | TIME | ACCEPTED BY / AFFILIATION | DATE | TIME | SAMPLE CONDITIONS |
|---|---|---|---|---|---|---|---|
| | Sampler | 6-16-22 | 1300 | | 6/16/22 | 1300 | |
| | | 6-16-22 | 1540 | | 6/16/22 | 1540 | |
| | | | | | | | |
| | | | | | | | |

**SAMPLER NAME AND SIGNATURE**

PRINT Name of SAMPLER: Arthur O. Rose

SIGNATURE of SAMPLER: [signature] DATE Signed: 6-16-22

| TEMP in C | Received on Ice (Y/N) | Custody Sealed Cooler (Y/N) | Samples Intact (Y/N) |
|---|---|---|---|
| | | | |

Pace Analytical®

# Sample Conditions Upon Receipt Form (SCUR)

**WO#: 50319142**
PM: JLR1 Due Date: 06/30/22
CLIENT: GR-Golder

| | | | | |
|---|---|---|---|---|
| **Date/Time:** 2/16/22 | **Evaluated by:** JN | | | |
| **Client:** GOLDER | | | | |
| **Project Manager:** JLR | **Profile ID:** 8284 | | | |
| **Rush TAT Requested:** YES ✓NO **Due Date:** | | | | |
| **Lab Notified of Rush or Short Holds:** YES ✓NO | **Non Conformance Form Required:** ✓YES NO | | | |
| **Samples Received Via:** FedEx UPS Client ✓Pace Courier Other: _____ | | | | **Comments:** |
| **Custody Seals Present and Intact:** | YES | NO | ✓NA | |
| **Received Sample Information Form(s):** Drinking Waters Only | YES | NO | ✓NA | |
| **USDA Regulated Soils:** (AL, AR, CA, FL, GA, ID, LA, MS, NM, NY, NC, OK, OR, SC, TN, TX, WA or Puerto Rico) | YES | NO | ✓N/A | |
| **Short Holds Present** (< 72 Hours): | YES | ✓NO | | |
| **Samples Received in Hold:** | ✓YES | NO | | |
| **Custody Signatures Present:** | ✓YES | NO | | |
| **Collector Signature Present:** | ✓YES | NO | | |
| **Packing Material Used:** | ✓YES | NO | | |
| **Samples Collected Today and On Ice:** | YES | ✓NO | N/A | |
| **IR Gun #:** ✓280 281 | **Digital Thermometer #:** 282 ✓283 | | | |
| **Ice Type:** (✓WET Bagged / WET Loose) BLUE NONE | **1.** Cooler Temp Upon Receipt: 15.9/15.8 °C | | | |
| **Ice Location:** TOP ✓BOTTOM MIDDLE DISPERSED | Temp should be 0-6°C (Initial/Corrected) | | | |
| **Temp Blank Received:** | ✓YES | NO | | |
| **Containers Intact:** | ✓YES | NO | | |
| **Correct Containers:** | YES | ✓NO | | SEE NCF |
| **Sufficient Volume:** | ✓YES | NO | | |
| **Sample pH Acceptable:** All containers needing preservation are found to be in complaince with EPA recommendation<br>**pH Strip Lot #:** HC178690<br>*Exceptions are VOA, coliform, LLHg, O&G, or any container with a septum cap or preserved with HCl* | ✓YES | NO | N/A | |
| **Residual Chlorine Absent:** $Cl_2$ **Strip Lot #:** _____<br>(SVOC/Pest 625, PCB 608, Total/Amenable Cyanide) | YES | NO | ✓N/A | |
| **VOA Headspace Acceptable** (<6mm): | ✓YES | NO | N/A | |
| **Trip Blank Received:** ✓HCl MeOH TSP OTHER | ✓YES | NO | | COOLER #2 |
| **Comments:** | **2.** Cooler Temp Upon Receipt: 7.6/7.5 °C | | | |
| | **3.** Cooler Temp Upon Receipt: _____ °C | | | |
| | **4.** Cooler Temp Upon Receipt: _____ °C | | | |

# Sample Receiving Non-Conformance Form (NCF)

**WO#: 50319142**

PM: JLR1 Due Date: 06/30/22

CLIENT: GR-Golder

| | COC Integrity Issues: Check issues below and add details where appropriate | | Sample Intergrity Issues: Check issues below and add details where appropriate | |
|---|---|---|---|---|
| Date: 6/16/22 | ✓ COC does not match samples received (missing, additional, etc.) | | Custody seal(s) damaged or missing on coolers, samples, or trip blanks | *Insufficient sample volume received |
| Evaluated by: DN | ✓ COC sample ID does not match sample label | | Cooler or sample container broken or compromised | *Sample contains residual chlorine |
| Client: GOLDER - SC | *COC collection date/time missing or does not match sample label | | *Sample past holding time | Improper preservation |
| ***Drinking Water Deficiency:** Samples may be invalid. Analysis must not proceed without client written permission. | *Analyses/ analytes missing or clarification needed | ✓ | *Temperature not within acceptance criteria (typically 0-6°C) | *Sample contains interferences (multi-phasic, solids, color, odor, etc...) |
| | *Required signatures are missing | | *Sample arrived frozen or partially frozen | Vial(s) received with improper headspace (>6mm) |
| *No Sample Information Form (SIF) received with sample(s) | *Residual Chlorine presence/ absence not indicated on COC | | *Incorrect or improper containers received | Other: See notes below |

| COC | | | | | Sample Label | | | | | Sample Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| Sample ID | Date | Time | Container Type | Quantity | Sample ID | Date | Time | Container Type | Quantity | |
| MW-304 | | | 3P3S | 3 | | | | 3P3S | 0 | (3P3S) CONTAINERS WERE EMPTY, NO SAMPLE IN THEM. |
| (MS/MSD) | | | 3P3N | 3 | DOWNGRADANT | | | 3P3N | 1 | |
| MW-301 | | | | | DOWNGRADANT | | | 3P3N | 1 | ONLY 1 CONTAINER FOR (MS/MSD T. METALS) |
| | | | | | | | | | | TEMPS: 15.8°C |
| | | | | | | | | | | ↓ 7.5°C |
| | | | | | | | | | | MOST OF THE ICE WAS |
| | | | | | | | | | | MELTED, SOME BAGGED |

General Comments/ Client Instructions:

ICE. TEMPED THE TB, SAMPLES & MELTWTR.

**Pace Analytical Services, LLC**
4171 40th St. SE
Grand Rapids, MI 49512
(616)975-4500

July 05, 2022

Sean Paulsen
WSP/Golder
27200 Haggerty Rd. Suite B-12
Farmington, MI 48331

RE: Project: Smith's Creek Leachate
Pace Project No.: 50319296

Dear Sean Paulsen:

Enclosed are the analytical results for sample(s) received by the laboratory on June 20, 2022. 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 - Indianapolis

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

Sincerely,

Jennifer L Rice

Jennifer Rice
jennifer.rice@pacelabs.com
(616)975-4500
Project Manager

Enclosures

**Pace Analytical Services, LLC**
4171 40th St. SE
Grand Rapids, MI 49512
(616)975-4500

## CERTIFICATIONS

Project: Smith's Creek Leachate
Pace Project No.: 50319296

**Pace Analytical Services Indianapolis**

7726 Moller Road, Indianapolis, IN 46268
Illinois Accreditation #: 200074
Indiana Drinking Water Laboratory #: C-49-06
Kansas/TNI Certification #: E-10177
Kentucky UST Agency Interest #: 80226
Kentucky WW Laboratory ID #: 98019
Michigan Drinking Water Laboratory #9050
Ohio VAP Certified Laboratory #: CL0065
Oklahoma Laboratory #: 9204
Texas Certification #: T104704355
Wisconsin Laboratory #: 999788130
USDA Soil Permit #: P330-19-00257

## REPORT OF LABORATORY ANALYSIS

**Pace Analytical Services, LLC**
4171 40th St. SE
Grand Rapids, MI 49512
(616)975-4500

## SAMPLE SUMMARY

Project: Smith's Creek Leachate
Pace Project No.: 50319296

| Lab ID | Sample ID | Matrix | Date Collected | Date Received |
|---|---|---|---|---|
| **50319296001** | **Leachate** | Water | 06/16/22 15:30 | 06/20/22 08:55 |

**Pace Analytical Services, LLC**
4171 40th St. SE
Grand Rapids, MI 49512
(616)975-4500

## SAMPLE ANALYTE COUNT

Project: Smith's Creek Leachate
Pace Project No.: 50319296

| Lab ID | Sample ID | Method | Analysts | Analytes Reported | Laboratory |
|---|---|---|---|---|---|
| **50319296001** | **Leachate** | EPA 6010 | DJS | 11 | PASI-I |
| | | EPA 6020 | CAW | 11 | PASI-I |
| | | EPA 5030B/8260 | KLP | 51 | PASI-I |
| | | SM 2320B | TRK | 3 | PASI-I |
| | | SM 2540C | AEL | 1 | PASI-I |
| | | EPA 410.4 | BEP | 1 | PASI-I |
| | | EPA 9038 | BEP | 1 | PASI-I |
| | | NO2+NO3+NH3 Calculation | MMS | 1 | PASI-I |
| | | EPA 353.2 | OAS | 1 | PASI-I |
| | | EPA 420.4 | OAS | 1 | PASI-I |
| | | SM 4500-Cl-E | OAS | 1 | PASI-I |
| | | SM 4500-NH3 G | STS | 1 | PASI-I |
| | | SM 5310C | MMS | 1 | PASI-I |
| | | EPA 9012 | ZM | 1 | PASI-I |

PASI-I = Pace Analytical Services - Indianapolis

## REPORT OF LABORATORY ANALYSIS

**Pace Analytical Services, LLC**
4171 40th St. SE
Grand Rapids, MI 49512
(616)975-4500

## ANALYTICAL RESULTS

Project: Smith's Creek Leachate
Pace Project No.: 50319296

**Sample: Leachate** **Lab ID: 50319296001** Collected: 06/16/22 15:30 Received: 06/20/22 08:55 Matrix: Water

| Parameters | Results | Units | Report Limit | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|
| **6010 MET ICP** | Analytical Method: EPA 6010 Preparation Method: EPA 3010<br>Pace Analytical Services - Indianapolis | | | | | | | |
| Boron | **15300** | ug/L | 20.0 | 1 | 06/24/22 15:02 | 06/30/22 09:06 | 7440-42-8 | |
| Calcium | **147000** | ug/L | 1000 | 1 | 06/24/22 15:02 | 06/30/22 09:06 | 7440-70-2 | |
| Chromium | **325** | ug/L | 20.0 | 1 | 06/24/22 15:02 | 06/30/22 09:06 | 7440-47-3 | |
| Cobalt | **26.1** | ug/L | 15.0 | 1 | 06/24/22 15:02 | 06/30/22 09:06 | 7440-48-4 | |
| Copper | **<10.0** | ug/L | 10.0 | 1 | 06/24/22 15:02 | 06/30/22 09:06 | 7440-50-8 | |
| Iron | **9420** | ug/L | 50.0 | 1 | 06/24/22 15:02 | 06/30/22 09:06 | 7439-89-6 | |
| Lead | **<50.0** | ug/L | 50.0 | 1 | 06/24/22 15:02 | 06/30/22 09:06 | 7439-92-1 | |
| Magnesium | **155000** | ug/L | 1000 | 1 | 06/24/22 15:02 | 06/30/22 09:06 | 7439-95-4 | |
| Manganese | **200** | ug/L | 5.0 | 1 | 06/24/22 15:02 | 06/30/22 09:06 | 7439-96-5 | |
| Potassium | **523000** | ug/L | 12500 | 25 | 06/24/22 15:02 | 06/30/22 09:31 | 7440-09-7 | |
| Sodium | **4500000** | ug/L | 25000 | 25 | 06/24/22 15:02 | 06/30/22 09:31 | 7440-23-5 | |
| **6020 MET ICPMS** | Analytical Method: EPA 6020 Preparation Method: EPA 200.2<br>Pace Analytical Services - Indianapolis | | | | | | | |
| Antimony | **24.0** | ug/L | 5.0 | 1 | 06/22/22 08:30 | 06/24/22 02:22 | 7440-36-0 | |
| Arsenic | **168** | ug/L | 5.0 | 1 | 06/22/22 08:30 | 06/24/22 02:22 | 7440-38-2 | |
| Barium | **964** | ug/L | 25.0 | 1 | 06/22/22 08:30 | 06/24/22 02:22 | 7440-39-3 | |
| Beryllium | **<5.0** | ug/L | 5.0 | 1 | 06/22/22 08:30 | 06/24/22 02:22 | 7440-41-7 | |
| Cadmium | **<1.0** | ug/L | 1.0 | 1 | 06/22/22 08:30 | 06/24/22 02:22 | 7440-43-9 | |
| Nickel | **136** | ug/L | 10.0 | 1 | 06/22/22 08:30 | 06/24/22 02:22 | 7440-02-0 | |
| Selenium | **<5.0** | ug/L | 5.0 | 1 | 06/22/22 08:30 | 06/24/22 02:22 | 7782-49-2 | |
| Silver | **<1.0** | ug/L | 1.0 | 1 | 06/22/22 08:30 | 06/24/22 02:22 | 7440-22-4 | |
| Thallium | **<10.0** | ug/L | 10.0 | 1 | 06/22/22 08:30 | 06/24/22 02:22 | 7440-28-0 | |
| Vanadium | **92.6** | ug/L | 10.0 | 1 | 06/22/22 08:30 | 06/24/22 02:22 | 7440-62-2 | |
| Zinc | **74.3** | ug/L | 50.0 | 1 | 06/22/22 08:30 | 06/24/22 02:22 | 7440-66-6 | |
| **8260 MSV Low Level** | Analytical Method: EPA 5030B/8260<br>Pace Analytical Services - Indianapolis | | | | | | | |
| Acetone | **<200** | ug/L | 200 | 10 | | 06/22/22 20:52 | 67-64-1 | |
| Acrylonitrile | **<50.0** | ug/L | 50.0 | 10 | | 06/22/22 20:52 | 107-13-1 | |
| Benzene | **<10.0** | ug/L | 10.0 | 10 | | 06/22/22 20:52 | 71-43-2 | |
| Bromochloromethane | **<10.0** | ug/L | 10.0 | 10 | | 06/22/22 20:52 | 74-97-5 | |
| Bromodichloromethane | **<10.0** | ug/L | 10.0 | 10 | | 06/22/22 20:52 | 75-27-4 | |
| Bromoform | **<10.0** | ug/L | 10.0 | 10 | | 06/22/22 20:52 | 75-25-2 | |
| Bromomethane | **<50.0** | ug/L | 50.0 | 10 | | 06/22/22 20:52 | 74-83-9 | |
| 2-Butanone (MEK) | **124** | ug/L | 50.0 | 10 | | 06/22/22 20:52 | 78-93-3 | |
| Carbon disulfide | **<10.0** | ug/L | 10.0 | 10 | | 06/22/22 20:52 | 75-15-0 | |
| Carbon tetrachloride | **<10.0** | ug/L | 10.0 | 10 | | 06/22/22 20:52 | 56-23-5 | |
| Chlorobenzene | **<10.0** | ug/L | 10.0 | 10 | | 06/22/22 20:52 | 108-90-7 | |
| Chloroethane | **<50.0** | ug/L | 50.0 | 10 | | 06/22/22 20:52 | 75-00-3 | |
| Chloroform | **<10.0** | ug/L | 10.0 | 10 | | 06/22/22 20:52 | 67-66-3 | |
| Chloromethane | **<50.0** | ug/L | 50.0 | 10 | | 06/22/22 20:52 | 74-87-3 | |
| 1,2-Dibromo-3-chloropropane | **<50.0** | ug/L | 50.0 | 10 | | 06/22/22 20:52 | 96-12-8 | |
| Dibromochloromethane | **<10.0** | ug/L | 10.0 | 10 | | 06/22/22 20:52 | 124-48-1 | |
| 1,2-Dibromoethane (EDB) | **<10.0** | ug/L | 10.0 | 10 | | 06/22/22 20:52 | 106-93-4 | |

## REPORT OF LABORATORY ANALYSIS

**Pace Analytical Services, LLC**
4171 40th St. SE
Grand Rapids, MI 49512
(616)975-4500

## ANALYTICAL RESULTS

Project: Smith's Creek Leachate
Pace Project No.: 50319296

**Sample: Leachate** **Lab ID: 50319296001** Collected: 06/16/22 15:30 Received: 06/20/22 08:55 Matrix: Water

| Parameters | Results | Units | Report Limit | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|
| **8260 MSV Low Level** | Analytical Method: EPA 5030B/8260 | | | | | | | |
| | Pace Analytical Services - Indianapolis | | | | | | | |
| Dibromomethane | **<10.0** | ug/L | 10.0 | 10 | | 06/22/22 20:52 | 74-95-3 | |
| 1,2-Dichlorobenzene | **<10.0** | ug/L | 10.0 | 10 | | 06/22/22 20:52 | 95-50-1 | |
| 1,4-Dichlorobenzene | **<10.0** | ug/L | 10.0 | 10 | | 06/22/22 20:52 | 106-46-7 | |
| trans-1,4-Dichloro-2-butene | **<50.0** | ug/L | 50.0 | 10 | | 06/22/22 20:52 | 110-57-6 | |
| 1,1-Dichloroethane | **<10.0** | ug/L | 10.0 | 10 | | 06/22/22 20:52 | 75-34-3 | |
| 1,2-Dichloroethane | **<10.0** | ug/L | 10.0 | 10 | | 06/22/22 20:52 | 107-06-2 | |
| 1,1-Dichloroethene | **<10.0** | ug/L | 10.0 | 10 | | 06/22/22 20:52 | 75-35-4 | |
| cis-1,2-Dichloroethene | **11.8** | ug/L | 10.0 | 10 | | 06/22/22 20:52 | 156-59-2 | |
| trans-1,2-Dichloroethene | **<10.0** | ug/L | 10.0 | 10 | | 06/22/22 20:52 | 156-60-5 | |
| 1,2-Dichloropropane | **<10.0** | ug/L | 10.0 | 10 | | 06/22/22 20:52 | 78-87-5 | |
| cis-1,3-Dichloropropene | **<10.0** | ug/L | 10.0 | 10 | | 06/22/22 20:52 | 10061-01-5 | |
| trans-1,3-Dichloropropene | **<10.0** | ug/L | 10.0 | 10 | | 06/22/22 20:52 | 10061-02-6 | |
| Ethylbenzene | **11.8** | ug/L | 10.0 | 10 | | 06/22/22 20:52 | 100-41-4 | |
| 2-Hexanone | **<50.0** | ug/L | 50.0 | 10 | | 06/22/22 20:52 | 591-78-6 | |
| Iodomethane | **<10.0** | ug/L | 10.0 | 10 | | 06/22/22 20:52 | 74-88-4 | |
| Methylene Chloride | **<50.0** | ug/L | 50.0 | 10 | | 06/22/22 20:52 | 75-09-2 | |
| 4-Methyl-2-pentanone (MIBK) | **<50.0** | ug/L | 50.0 | 10 | | 06/22/22 20:52 | 108-10-1 | |
| Styrene | **<10.0** | ug/L | 10.0 | 10 | | 06/22/22 20:52 | 100-42-5 | |
| 1,1,1,2-Tetrachloroethane | **<10.0** | ug/L | 10.0 | 10 | | 06/22/22 20:52 | 630-20-6 | |
| 1,1,2,2-Tetrachloroethane | **<10.0** | ug/L | 10.0 | 10 | | 06/22/22 20:52 | 79-34-5 | |
| Tetrachloroethene | **<10.0** | ug/L | 10.0 | 10 | | 06/22/22 20:52 | 127-18-4 | |
| Toluene | **<10.0** | ug/L | 10.0 | 10 | | 06/22/22 20:52 | 108-88-3 | |
| 1,1,1-Trichloroethane | **<10.0** | ug/L | 10.0 | 10 | | 06/22/22 20:52 | 71-55-6 | |
| 1,1,2-Trichloroethane | **<10.0** | ug/L | 10.0 | 10 | | 06/22/22 20:52 | 79-00-5 | |
| Trichloroethene | **<10.0** | ug/L | 10.0 | 10 | | 06/22/22 20:52 | 79-01-6 | |
| Trichlorofluoromethane | **<10.0** | ug/L | 10.0 | 10 | | 06/22/22 20:52 | 75-69-4 | |
| 1,2,3-Trichloropropane | **<10.0** | ug/L | 10.0 | 10 | | 06/22/22 20:52 | 96-18-4 | |
| Vinyl chloride | **<10.0** | ug/L | 10.0 | 10 | | 06/22/22 20:52 | 75-01-4 | |
| Xylene (Total) | **21.3** | ug/L | 20.0 | 10 | | 06/22/22 20:52 | 1330-20-7 | |
| m&p-Xylene | **21.3** | ug/L | 20.0 | 10 | | 06/22/22 20:52 | 179601-23-1 | |
| o-Xylene | **<10.0** | ug/L | 10.0 | 10 | | 06/22/22 20:52 | 95-47-6 | |
| ***Surrogates*** | | | | | | | | |
| 4-Bromofluorobenzene (S) | 96 | %. | 79-124 | 10 | | 06/22/22 20:52 | 460-00-4 | D3,F1 |
| Dibromofluoromethane (S) | 104 | %. | 82-128 | 10 | | 06/22/22 20:52 | 1868-53-7 | |
| Toluene-d8 (S) | 98 | %. | 73-122 | 10 | | 06/22/22 20:52 | 2037-26-5 | |
| **2320B Alkalinity** | Analytical Method: SM 2320B | | | | | | | |
| | Pace Analytical Services - Indianapolis | | | | | | | |
| Alkalinity, Total as CaCO3 | **5260000** | ug/L | 10000 | 1 | | 06/21/22 13:32 | | |
| Alkalinity,Bicarbonate (CaCO3) | **3510000** | ug/L | 10000 | 1 | | 06/21/22 13:32 | | |
| Alkalinity,Carbonate (CaCO3) | **1750000** | ug/L | 10000 | 1 | | 06/21/22 13:32 | | |
| **2540C Total Dissolved Solids** | Analytical Method: SM 2540C | | | | | | | |
| | Pace Analytical Services - Indianapolis | | | | | | | |
| Total Dissolved Solids | **13500000** | ug/L | 667000 | 1 | | 06/22/22 09:45 | | |

## REPORT OF LABORATORY ANALYSIS

**Pace Analytical Services, LLC**
4171 40th St. SE
Grand Rapids, MI 49512
(616)975-4500

## ANALYTICAL RESULTS

Project: Smith's Creek Leachate
Pace Project No.: 50319296

**Sample: Leachate** **Lab ID: 50319296001** Collected: 06/16/22 15:30 Received: 06/20/22 08:55 Matrix: Water

| Parameters | Results | Units | Report Limit | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|
| **410.4 COD** | Analytical Method: EPA 410.4 Preparation Method: EPA 410.4<br>Pace Analytical Services - Indianapolis | | | | | | | |
| Chemical Oxygen Demand | **2310000** | ug/L | 50000 | 1 | 06/28/22 10:43 | 06/28/22 13:12 | | P4 |
| **9038 Sulfate Water** | Analytical Method: EPA 9038<br>Pace Analytical Services - Indianapolis | | | | | | | |
| Sulfate | **<50000** | ug/L | 50000 | 5 | | 06/21/22 09:47 | 14808-79-8 | D3 |
| **Total Inorganic Nitrogen** | Analytical Method: NO2+NO3+NH3 Calculation<br>Pace Analytical Services - Indianapolis | | | | | | | |
| Total Inorganic Nitrogen | **1060000** | ug/L | 20.0 | 1 | | 07/05/22 14:51 | | |
| **353.2 Nitrogen, NO2/NO3 pres.** | Analytical Method: EPA 353.2<br>Pace Analytical Services - Indianapolis | | | | | | | |
| Nitrogen, NO2 plus NO3 | **<2000** | ug/L | 2000 | 100 | | 06/22/22 14:10 | | D3,P4 |
| **420.4 Phenolics, Total** | Analytical Method: EPA 420.4 Preparation Method: EPA 420.4<br>Pace Analytical Services - Indianapolis | | | | | | | |
| Phenolics, Total Recoverable | **<250** | ug/L | 250 | 1 | 06/26/22 13:00 | 06/28/22 15:07 | 64743-03-9 | D3,P4 |
| **4500 Chloride** | Analytical Method: SM 4500-Cl-E<br>Pace Analytical Services - Indianapolis | | | | | | | |
| Chloride | **7190000** | ug/L | 200000 | 200 | | 06/23/22 15:41 | 16887-00-6 | |
| **4500 Ammonia Water** | Analytical Method: SM 4500-NH3 G<br>Pace Analytical Services - Indianapolis | | | | | | | |
| Nitrogen, Ammonia | **1060000** | ug/L | 10000 | 100 | | 06/27/22 13:58 | 7664-41-7 | P4 |
| **5310C TOC** | Analytical Method: SM 5310C<br>Pace Analytical Services - Indianapolis | | | | | | | |
| Total Organic Carbon | **708000** | ug/L | 50000 | 100 | | 06/23/22 06:56 | 7440-44-0 | P4 |
| **9012 Cyanide, Total** | Analytical Method: EPA 9012 Preparation Method: EPA 9012<br>Pace Analytical Services - Indianapolis | | | | | | | |
| Cyanide | **64.3** | ug/L | 10.0 | 1 | 06/28/22 09:45 | 06/28/22 13:32 | 57-12-5 | P4 |

## REPORT OF LABORATORY ANALYSIS

**Pace Analytical Services, LLC**
4171 40th St. SE
Grand Rapids, MI 49512
(616)975-4500

## QUALITY CONTROL DATA

Project: Smith's Creek Leachate
Pace Project No.: 50319296

QC Batch: 682830
QC Batch Method: EPA 3010
Analysis Method: EPA 6010
Analysis Description: 6010 MET
Laboratory: Pace Analytical Services - Indianapolis
Associated Lab Samples: 50319296001

METHOD BLANK: 3142542 Matrix: Water
Associated Lab Samples: 50319296001

| Parameter | Units | Blank Result | Reporting Limit | Analyzed | Qualifiers |
|---|---|---|---|---|---|
| Boron | ug/L | <20.0 | 20.0 | 06/30/22 08:30 | |
| Calcium | ug/L | <1000 | 1000 | 06/30/22 08:30 | |
| Chromium | ug/L | <20.0 | 20.0 | 06/30/22 08:30 | |
| Cobalt | ug/L | <15.0 | 15.0 | 06/30/22 08:30 | |
| Copper | ug/L | <10.0 | 10.0 | 06/30/22 08:30 | |
| Iron | ug/L | <50.0 | 50.0 | 06/30/22 08:30 | |
| Lead | ug/L | <50.0 | 50.0 | 06/30/22 08:30 | |
| Magnesium | ug/L | <1000 | 1000 | 06/30/22 08:30 | |
| Manganese | ug/L | <5.0 | 5.0 | 06/30/22 08:30 | |
| Potassium | ug/L | <500 | 500 | 06/30/22 08:30 | |
| Sodium | ug/L | <1000 | 1000 | 06/30/22 08:30 | |

LABORATORY CONTROL SAMPLE: 3142543

| Parameter | Units | Spike Conc. | LCS Result | LCS % Rec | % Rec Limits | Qualifiers |
|---|---|---|---|---|---|---|
| Boron | ug/L | 1000 | 982 | 98 | 80-120 | |
| Calcium | ug/L | 10000 | 10100 | 101 | 80-120 | |
| Chromium | ug/L | 1000 | 988 | 99 | 80-120 | |
| Cobalt | ug/L | 1000 | 945 | 95 | 80-120 | |
| Copper | ug/L | 1000 | 946 | 95 | 80-120 | |
| Iron | ug/L | 10000 | 9780 | 98 | 80-120 | |
| Lead | ug/L | 1000 | 948 | 95 | 80-120 | |
| Magnesium | ug/L | 10000 | 9730 | 97 | 80-120 | |
| Manganese | ug/L | 1000 | 979 | 98 | 80-120 | |
| Potassium | ug/L | 10000 | 9980 | 100 | 80-120 | |
| Sodium | ug/L | 10000 | 9960 | 100 | 80-120 | |

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3142544 3142545

| Parameter | Units | 50319292001 Result | MS Spike Conc. | MSD Spike Conc. | MS Result | MSD Result | MS % Rec | MSD % Rec | % Rec Limits | RPD | Max RPD | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Boron | ug/L | 132 | 1000 | 1000 | 1160 | 1180 | 103 | 104 | 75-125 | 2 | 20 | |
| Calcium | ug/L | 93000 | 10000 | 10000 | 101000 | 103000 | 80 | 97 | 75-125 | 2 | 20 | |
| Chromium | ug/L | ND | 1000 | 1000 | 1010 | 1020 | 101 | 101 | 75-125 | 1 | 20 | |
| Cobalt | ug/L | ND | 1000 | 1000 | 941 | 952 | 94 | 95 | 75-125 | 1 | 20 | |
| Copper | ug/L | ND | 1000 | 1000 | 972 | 982 | 97 | 98 | 75-125 | 1 | 20 | |
| Iron | ug/L | 1640 | 10000 | 10000 | 11500 | 11600 | 99 | 100 | 75-125 | 1 | 20 | |

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## REPORT OF LABORATORY ANALYSIS

**Pace Analytical Services, LLC**
4171 40th St. SE
Grand Rapids, MI 49512
(616)975-4500

## QUALITY CONTROL DATA

Project: Smith's Creek Leachate
Pace Project No.: 50319296

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3142544 3142545

| Parameter | Units | 50319292001 Result | MS Spike Conc. | MSD Spike Conc. | MS Result | MSD Result | MS % Rec | MSD % Rec | % Rec Limits | RPD | Max RPD | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lead | ug/L | ND | 1000 | 1000 | 943 | 954 | 94 | 95 | 75-125 | 1 | 20 | |
| Magnesium | ug/L | 22600 | 10000 | 10000 | 32000 | 32400 | 94 | 99 | 75-125 | 2 | 20 | |
| Manganese | ug/L | 685 | 1000 | 1000 | 1660 | 1690 | 98 | 100 | 75-125 | 1 | 20 | |
| Potassium | ug/L | 5360 | 10000 | 10000 | 15700 | 15900 | 104 | 105 | 75-125 | 1 | 20 | |
| Sodium | ug/L | 23500 | 10000 | 10000 | 33500 | 33900 | 100 | 104 | 75-125 | 1 | 20 | |

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3142546 3142547

| Parameter | Units | 50319327002 Result | MS Spike Conc. | MSD Spike Conc. | MS Result | MSD Result | MS % Rec | MSD % Rec | % Rec Limits | RPD | Max RPD | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Boron | ug/L | 510 | 5000 | 5000 | 5740 | 5620 | 104 | 102 | 75-125 | 2 | 20 | |
| Calcium | ug/L | 3400000 | 50000 | 50000 | 3530000 | 4100000 | 259 | 1380 | 75-125 | 15 | 20 | E,P6 |
| Chromium | ug/L | 734 | 5000 | 5000 | 5560 | 5520 | 97 | 96 | 75-125 | 1 | 20 | |
| Cobalt | ug/L | 409 | 5000 | 5000 | 4750 | 4640 | 87 | 85 | 75-125 | 2 | 20 | |
| Copper | ug/L | 1330 | 5000 | 5000 | 6180 | 6320 | 97 | 100 | 75-125 | 2 | 20 | |
| Iron | ug/L | 896000 | 50000 | 50000 | 978000 | 1150000 | 164 | 515 | 75-125 | 16 | 20 | P6 |
| Lead | ug/L | 550 | 5000 | 5000 | 4860 | 4750 | 86 | 84 | 75-125 | 2 | 20 | |
| Magnesium | ug/L | 1040000 | 50000 | 50000 | 1170000 | 1410000 | 262 | 753 | 75-125 | 19 | 20 | P6 |
| Manganese | ug/L | 28000 | 5000 | 5000 | 32800 | 37500 | 97 | 189 | 75-125 | 13 | 20 | P6 |
| Potassium | ug/L | 64200 | 50000 | 50000 | 138000 | 147000 | 147 | 166 | 75-125 | 7 | 20 | M3 |
| Sodium | ug/L | 34100 | 50000 | 50000 | 89800 | 93300 | 111 | 118 | 75-125 | 4 | 20 | |

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## REPORT OF LABORATORY ANALYSIS

**Pace Analytical Services, LLC**
4171 40th St. SE
Grand Rapids, MI 49512
(616)975-4500

## QUALITY CONTROL DATA

Project: Smith's Creek Leachate
Pace Project No.: 50319296

QC Batch: 682780
QC Batch Method: EPA 200.2
Analysis Method: EPA 6020
Analysis Description: 6020 MET
Laboratory: Pace Analytical Services - Indianapolis
Associated Lab Samples: 50319296001

METHOD BLANK: 3142291 Matrix: Water
Associated Lab Samples: 50319296001

| Parameter | Units | Blank Result | Reporting Limit | Analyzed | Qualifiers |
|---|---|---|---|---|---|
| Antimony | ug/L | <1.0 | 1.0 | 06/23/22 23:09 | |
| Arsenic | ug/L | <1.0 | 1.0 | 06/23/22 23:09 | |
| Barium | ug/L | <5.0 | 5.0 | 06/23/22 23:09 | |
| Beryllium | ug/L | <1.0 | 1.0 | 06/23/22 23:09 | |
| Cadmium | ug/L | <0.20 | 0.20 | 06/23/22 23:09 | |
| Nickel | ug/L | <2.0 | 2.0 | 06/23/22 23:09 | |
| Selenium | ug/L | <1.0 | 1.0 | 06/23/22 23:09 | |
| Silver | ug/L | <0.20 | 0.20 | 06/23/22 23:09 | |
| Thallium | ug/L | <2.0 | 2.0 | 06/23/22 23:09 | |
| Vanadium | ug/L | <2.0 | 2.0 | 06/23/22 23:09 | |
| Zinc | ug/L | <10.0 | 10.0 | 06/23/22 23:09 | |

LABORATORY CONTROL SAMPLE: 3142292

| Parameter | Units | Spike Conc. | LCS Result | LCS % Rec | % Rec Limits | Qualifiers |
|---|---|---|---|---|---|---|
| Antimony | ug/L | 80 | 82.9 | 104 | 80-120 | |
| Arsenic | ug/L | 40 | 39.0 | 98 | 80-120 | |
| Barium | ug/L | 40 | 40.0 | 100 | 80-120 | |
| Beryllium | ug/L | 40 | 37.3 | 93 | 80-120 | |
| Cadmium | ug/L | 40 | 39.2 | 98 | 80-120 | |
| Nickel | ug/L | 40 | 38.8 | 97 | 80-120 | |
| Selenium | ug/L | 40 | 39.2 | 98 | 80-120 | |
| Silver | ug/L | 40 | 41.0 | 103 | 80-120 | |
| Thallium | ug/L | 40 | 40.6 | 102 | 80-120 | |
| Vanadium | ug/L | 40 | 41.0 | 102 | 80-120 | |
| Zinc | ug/L | 40 | 38.3 | 96 | 80-120 | |

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3142293 3142294

| Parameter | Units | 50319320005 Result | MS Spike Conc. | MSD Spike Conc. | MS Result | MSD Result | MS % Rec | MSD % Rec | % Rec Limits | RPD | Max RPD | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Antimony | ug/L | <0.075 | 80 | 80 | 88.1 | 88.4 | 110 | 110 | 75-125 | 0 | 20 | |
| Arsenic | ug/L | 8.1 | 40 | 40 | 46.8 | 48.1 | 97 | 100 | 75-125 | 3 | 20 | |
| Barium | ug/L | 74.4 | 40 | 40 | 120 | 121 | 113 | 115 | 75-125 | 1 | 20 | |
| Beryllium | ug/L | <0.021 | 40 | 40 | 39.4 | 39.8 | 99 | 100 | 75-125 | 1 | 20 | |
| Cadmium | ug/L | 0.045J | 40 | 40 | 40.2 | 40.8 | 100 | 102 | 75-125 | 1 | 20 | |
| Nickel | ug/L | 1.5 | 40 | 40 | 38.8 | 39.1 | 93 | 94 | 75-125 | 1 | 20 | |

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## REPORT OF LABORATORY ANALYSIS

**Pace Analytical Services, LLC**
4171 40th St. SE
Grand Rapids, MI 49512
(616)975-4500

## QUALITY CONTROL DATA

Project: Smith's Creek Leachate
Pace Project No.: 50319296

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3142293 3142294

| Parameter | Units | 50319320005 Result | MS Spike Conc. | MSD Spike Conc. | MS Result | MSD Result | MS % Rec | MSD % Rec | % Rec Limits | RPD | Max RPD | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Selenium | ug/L | <0.33 | 40 | 40 | 38.2 | 38.8 | 95 | 97 | 75-125 | 2 | 20 | |
| Silver | ug/L | <0.029 | 40 | 40 | 41.4 | 42.1 | 103 | 105 | 75-125 | 2 | 20 | |
| Thallium | ug/L | <0.038 | 40 | 40 | 43.1 | 42.9 | 108 | 107 | 75-125 | 1 | 20 | |
| Vanadium | ug/L | <0.13 | 40 | 40 | 39.7 | 41.0 | 99 | 102 | 75-125 | 3 | 20 | |
| Zinc | ug/L | 515 | 40 | 40 | 570 | 582 | 139 | 168 | 75-125 | 2 | 20 | E,P6 |

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3142295 3142296

| Parameter | Units | 50319381002 Result | MS Spike Conc. | MSD Spike Conc. | MS Result | MSD Result | MS % Rec | MSD % Rec | % Rec Limits | RPD | Max RPD | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Antimony | ug/L | ND | 80 | 80 | 86.2 | 86.2 | 108 | 108 | 75-125 | 0 | 20 | |
| Arsenic | ug/L | 0.0037 mg/L | 40 | 40 | 42.7 | 42.9 | 97 | 98 | 75-125 | 0 | 20 | |
| Barium | ug/L | 0.13 mg/L | 40 | 40 | 171 | 171 | 103 | 105 | 75-125 | 1 | 20 | |
| Beryllium | ug/L | ND | 40 | 40 | 39.3 | 39.4 | 98 | 98 | 75-125 | 0 | 20 | |
| Cadmium | ug/L | ND | 40 | 40 | 39.7 | 40.3 | 99 | 101 | 75-125 | 1 | 20 | |
| Nickel | ug/L | 0.00055 mg/L | 40 | 40 | 37.5 | 37.3 | 92 | 92 | 75-125 | 1 | 20 | |
| Selenium | ug/L | ND | 40 | 40 | 39.1 | 38.4 | 98 | 96 | 75-125 | 2 | 20 | |
| Silver | ug/L | ND | 40 | 40 | 41.0 | 41.4 | 102 | 104 | 75-125 | 1 | 20 | |
| Thallium | ug/L | ND | 40 | 40 | 42.5 | 42.7 | 106 | 107 | 75-125 | 1 | 20 | |
| Vanadium | ug/L | ND | 40 | 40 | 40.4 | 40.6 | 101 | 102 | 75-125 | 1 | 20 | |
| Zinc | ug/L | ND | 40 | 40 | 37.9 | 37.5 | 93 | 92 | 75-125 | 1 | 20 | |

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## REPORT OF LABORATORY ANALYSIS

**Pace Analytical Services, LLC**
4171 40th St. SE
Grand Rapids, MI 49512
(616)975-4500

## QUALITY CONTROL DATA

Project: Smith's Creek Leachate
Pace Project No.: 50319296

QC Batch: 682952
QC Batch Method: EPA 5030B/8260
Analysis Method: EPA 5030B/8260
Analysis Description: 8260 MSV Low Level
Laboratory: Pace Analytical Services - Indianapolis
Associated Lab Samples: 50319296001

METHOD BLANK: 3142918 Matrix: Water
Associated Lab Samples: 50319296001

| Parameter | Units | Blank Result | Reporting Limit | Analyzed | Qualifiers |
|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane | ug/L | <1.0 | 1.0 | 06/22/22 12:41 | |
| 1,1,1-Trichloroethane | ug/L | <1.0 | 1.0 | 06/22/22 12:41 | |
| 1,1,2,2-Tetrachloroethane | ug/L | <1.0 | 1.0 | 06/22/22 12:41 | |
| 1,1,2-Trichloroethane | ug/L | <1.0 | 1.0 | 06/22/22 12:41 | |
| 1,1-Dichloroethane | ug/L | <1.0 | 1.0 | 06/22/22 12:41 | |
| 1,1-Dichloroethene | ug/L | <1.0 | 1.0 | 06/22/22 12:41 | |
| 1,2,3-Trichloropropane | ug/L | <1.0 | 1.0 | 06/22/22 12:41 | |
| 1,2-Dibromo-3-chloropropane | ug/L | <5.0 | 5.0 | 06/22/22 12:41 | |
| 1,2-Dibromoethane (EDB) | ug/L | <1.0 | 1.0 | 06/22/22 12:41 | |
| 1,2-Dichlorobenzene | ug/L | <1.0 | 1.0 | 06/22/22 12:41 | |
| 1,2-Dichloroethane | ug/L | <1.0 | 1.0 | 06/22/22 12:41 | |
| 1,2-Dichloropropane | ug/L | <1.0 | 1.0 | 06/22/22 12:41 | |
| 1,4-Dichlorobenzene | ug/L | <1.0 | 1.0 | 06/22/22 12:41 | |
| 2-Butanone (MEK) | ug/L | <5.0 | 5.0 | 06/22/22 12:41 | |
| 2-Hexanone | ug/L | <5.0 | 5.0 | 06/22/22 12:41 | |
| 4-Methyl-2-pentanone (MIBK) | ug/L | <5.0 | 5.0 | 06/22/22 12:41 | |
| Acetone | ug/L | <20.0 | 20.0 | 06/22/22 12:41 | |
| Acrylonitrile | ug/L | <5.0 | 5.0 | 06/22/22 12:41 | |
| Benzene | ug/L | <1.0 | 1.0 | 06/22/22 12:41 | |
| Bromochloromethane | ug/L | <1.0 | 1.0 | 06/22/22 12:41 | |
| Bromodichloromethane | ug/L | <1.0 | 1.0 | 06/22/22 12:41 | |
| Bromoform | ug/L | <1.0 | 1.0 | 06/22/22 12:41 | |
| Bromomethane | ug/L | <5.0 | 5.0 | 06/22/22 12:41 | |
| Carbon disulfide | ug/L | <1.0 | 1.0 | 06/22/22 12:41 | |
| Carbon tetrachloride | ug/L | <1.0 | 1.0 | 06/22/22 12:41 | |
| Chlorobenzene | ug/L | <1.0 | 1.0 | 06/22/22 12:41 | |
| Chloroethane | ug/L | <5.0 | 5.0 | 06/22/22 12:41 | |
| Chloroform | ug/L | <1.0 | 1.0 | 06/22/22 12:41 | |
| Chloromethane | ug/L | <5.0 | 5.0 | 06/22/22 12:41 | |
| cis-1,2-Dichloroethene | ug/L | <1.0 | 1.0 | 06/22/22 12:41 | |
| cis-1,3-Dichloropropene | ug/L | <1.0 | 1.0 | 06/22/22 12:41 | |
| Dibromochloromethane | ug/L | <1.0 | 1.0 | 06/22/22 12:41 | |
| Dibromomethane | ug/L | <1.0 | 1.0 | 06/22/22 12:41 | |
| Ethylbenzene | ug/L | <1.0 | 1.0 | 06/22/22 12:41 | |
| Iodomethane | ug/L | <1.0 | 1.0 | 06/22/22 12:41 | |
| m&p-Xylene | ug/L | <2.0 | 2.0 | 06/22/22 12:41 | |
| Methylene Chloride | ug/L | <5.0 | 5.0 | 06/22/22 12:41 | |
| o-Xylene | ug/L | <1.0 | 1.0 | 06/22/22 12:41 | |
| Styrene | ug/L | <1.0 | 1.0 | 06/22/22 12:41 | |
| Tetrachloroethene | ug/L | <1.0 | 1.0 | 06/22/22 12:41 | |

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## REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
4171 40th St. SE
Grand Rapids, MI 49512
(616)975-4500

## QUALITY CONTROL DATA

Project: Smith's Creek Leachate
Pace Project No.: 50319296

METHOD BLANK: 3142918 Matrix: Water
Associated Lab Samples: 50319296001

| Parameter | Units | Blank Result | Reporting Limit | Analyzed | Qualifiers |
|---|---|---|---|---|---|
| Toluene | ug/L | <1.0 | 1.0 | 06/22/22 12:41 | |
| trans-1,2-Dichloroethene | ug/L | <1.0 | 1.0 | 06/22/22 12:41 | |
| trans-1,3-Dichloropropene | ug/L | <1.0 | 1.0 | 06/22/22 12:41 | |
| trans-1,4-Dichloro-2-butene | ug/L | <5.0 | 5.0 | 06/22/22 12:41 | |
| Trichloroethene | ug/L | <1.0 | 1.0 | 06/22/22 12:41 | |
| Trichlorofluoromethane | ug/L | <1.0 | 1.0 | 06/22/22 12:41 | |
| Vinyl chloride | ug/L | <1.0 | 1.0 | 06/22/22 12:41 | |
| Xylene (Total) | ug/L | <2.0 | 2.0 | 06/22/22 12:41 | |
| 4-Bromofluorobenzene (S) | %. | 97 | 79-124 | 06/22/22 12:41 | |
| Dibromofluoromethane (S) | %. | 104 | 82-128 | 06/22/22 12:41 | |
| Toluene-d8 (S) | %. | 99 | 73-122 | 06/22/22 12:41 | |

LABORATORY CONTROL SAMPLE: 3142919

| Parameter | Units | Spike Conc. | LCS Result | LCS % Rec | % Rec Limits | Qualifiers |
|---|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane | ug/L | 50 | 45.8 | 92 | 77-125 | |
| 1,1,1-Trichloroethane | ug/L | 50 | 47.3 | 95 | 69-125 | |
| 1,1,2,2-Tetrachloroethane | ug/L | 50 | 46.1 | 92 | 72-123 | |
| 1,1,2-Trichloroethane | ug/L | 50 | 46.8 | 94 | 73-124 | |
| 1,1-Dichloroethane | ug/L | 50 | 47.4 | 95 | 71-124 | |
| 1,1-Dichloroethene | ug/L | 50 | 52.2 | 104 | 63-138 | |
| 1,2,3-Trichloropropane | ug/L | 50 | 46.2 | 92 | 75-122 | |
| 1,2-Dibromo-3-chloropropane | ug/L | 50 | 40.7 | 81 | 66-122 | |
| 1,2-Dibromoethane (EDB) | ug/L | 50 | 46.0 | 92 | 75-123 | |
| 1,2-Dichlorobenzene | ug/L | 50 | 43.3 | 87 | 76-118 | |
| 1,2-Dichloroethane | ug/L | 50 | 45.7 | 91 | 68-126 | |
| 1,2-Dichloropropane | ug/L | 50 | 48.6 | 97 | 73-127 | |
| 1,4-Dichlorobenzene | ug/L | 50 | 45.8 | 92 | 74-118 | |
| 2-Butanone (MEK) | ug/L | 250 | 238 | 95 | 57-130 | |
| 2-Hexanone | ug/L | 250 | 209 | 84 | 57-130 | |
| 4-Methyl-2-pentanone (MIBK) | ug/L | 250 | 216 | 86 | 58-134 | |
| Acetone | ug/L | 250 | 190 | 76 | 41-133 | |
| Acrylonitrile | ug/L | 250 | 231 | 92 | 66-131 | |
| Benzene | ug/L | 50 | 46.4 | 93 | 76-121 | |
| Bromochloromethane | ug/L | 50 | 43.7 | 87 | 65-126 | |
| Bromodichloromethane | ug/L | 50 | 46.8 | 94 | 72-125 | |
| Bromoform | ug/L | 50 | 44.5 | 89 | 57-134 | |
| Bromomethane | ug/L | 50 | 23.9 | 48 | 10-187 | |
| Carbon disulfide | ug/L | 50 | 45.2 | 90 | 59-125 | |
| Carbon tetrachloride | ug/L | 50 | 52.3 | 105 | 71-134 | |
| Chlorobenzene | ug/L | 50 | 43.1 | 86 | 74-119 | |
| Chloroethane | ug/L | 50 | 42.3 | 85 | 49-152 | |
| Chloroform | ug/L | 50 | 48.7 | 97 | 68-123 | |
| Chloromethane | ug/L | 50 | 37.3 | 75 | 33-133 | |

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## REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
4171 40th St. SE
Grand Rapids, MI 49512
(616)975-4500

## QUALITY CONTROL DATA

Project: Smith's Creek Leachate
Pace Project No.: 50319296

LABORATORY CONTROL SAMPLE: 3142919

| Parameter | Units | Spike Conc. | LCS Result | LCS % Rec | % Rec Limits | Qualifiers |
|---|---|---|---|---|---|---|
| cis-1,2-Dichloroethene | ug/L | 50 | 50.4 | 101 | 73-122 | |
| cis-1,3-Dichloropropene | ug/L | 50 | 44.7 | 89 | 69-128 | |
| Dibromochloromethane | ug/L | 50 | 46.5 | 93 | 69-127 | |
| Dibromomethane | ug/L | 50 | 49.2 | 98 | 74-126 | |
| Ethylbenzene | ug/L | 50 | 45.5 | 91 | 74-122 | |
| Iodomethane | ug/L | 50 | 16.9 | 34 | 10-181 | |
| m&p-Xylene | ug/L | 100 | 96.4 | 96 | 69-124 | |
| Methylene Chloride | ug/L | 50 | 47.4 | 95 | 71-125 | |
| o-Xylene | ug/L | 50 | 45.3 | 91 | 73-123 | |
| Styrene | ug/L | 50 | 46.9 | 94 | 74-126 | |
| Tetrachloroethene | ug/L | 50 | 47.3 | 95 | 74-129 | |
| Toluene | ug/L | 50 | 47.2 | 94 | 70-118 | |
| trans-1,2-Dichloroethene | ug/L | 50 | 50.8 | 102 | 69-124 | |
| trans-1,3-Dichloropropene | ug/L | 50 | 45.1 | 90 | 66-125 | |
| trans-1,4-Dichloro-2-butene | ug/L | 50 | 48.6 | 97 | 43-155 | |
| Trichloroethene | ug/L | 50 | 49.4 | 99 | 73-125 | |
| Trichlorofluoromethane | ug/L | 50 | 48.9 | 98 | 56-139 | |
| Vinyl chloride | ug/L | 50 | 41.3 | 83 | 46-134 | |
| Xylene (Total) | ug/L | 150 | 142 | 94 | 71-123 | |
| 4-Bromofluorobenzene (S) | %. | | | 99 | 79-124 | |
| Dibromofluoromethane (S) | %. | | | 100 | 82-128 | |
| Toluene-d8 (S) | %. | | | 97 | 73-122 | |

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3142920 3142921

| Parameter | Units | 50319140002 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 | <0.99 | 50 | 50 | 38.2 | 37.7 | 76 | 75 | 64-142 | 1 | 20 | |
| 1,1,1-Trichloroethane | ug/L | <0.74 | 50 | 50 | 38.8 | 39.8 | 78 | 80 | 60-143 | 2 | 20 | |
| 1,1,2,2-Tetrachloroethane | ug/L | <0.92 | 50 | 50 | 36.7 | 38.1 | 73 | 76 | 64-135 | 4 | 20 | |
| 1,1,2-Trichloroethane | ug/L | <0.88 | 50 | 50 | 39.3 | 39.3 | 79 | 79 | 66-137 | 0 | 20 | |
| 1,1-Dichloroethane | ug/L | <0.84 | 50 | 50 | 38.9 | 39.6 | 78 | 79 | 62-144 | 2 | 20 | |
| 1,1-Dichloroethene | ug/L | <0.56 | 50 | 50 | 40.7 | 41.7 | 81 | 83 | 55-158 | 2 | 20 | |
| 1,2,3-Trichloropropane | ug/L | <0.96 | 50 | 50 | 36.5 | 36.3 | 73 | 73 | 66-135 | 0 | 20 | |
| 1,2-Dibromo-3-chloropropane | ug/L | <0.70 | 50 | 50 | 32.6 | 32.6 | 65 | 65 | 59-132 | 0 | 20 | |
| 1,2-Dibromoethane (EDB) | ug/L | <0.97 | 50 | 50 | 37.7 | 36.9 | 75 | 74 | 68-136 | 2 | 20 | |
| 1,2-Dichlorobenzene | ug/L | <0.81 | 50 | 50 | 33.6 | 34.3 | 67 | 69 | 47-140 | 2 | 20 | |
| 1,2-Dichloroethane | ug/L | <0.85 | 50 | 50 | 37.7 | 38.0 | 75 | 76 | 61-144 | 1 | 20 | |
| 1,2-Dichloropropane | ug/L | <0.79 | 50 | 50 | 40.3 | 39.9 | 81 | 80 | 67-141 | 1 | 20 | |
| 1,4-Dichlorobenzene | ug/L | <0.87 | 50 | 50 | 35.1 | 36.6 | 70 | 73 | 39-140 | 4 | 20 | |
| 2-Butanone (MEK) | ug/L | <4.4 | 250 | 250 | 181 | 189 | 72 | 75 | 49-149 | 4 | 20 | |
| 2-Hexanone | ug/L | <3.6 | 250 | 250 | 169 | 177 | 68 | 71 | 48-147 | 4 | 20 | |
| 4-Methyl-2-pentanone (MIBK) | ug/L | <3.6 | 250 | 250 | 175 | 179 | 70 | 72 | 50-152 | 3 | 20 | |
| Acetone | ug/L | <4.8 | 250 | 250 | 140 | 149 | 56 | 60 | 23-157 | 6 | 20 | |

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## REPORT OF LABORATORY ANALYSIS

**Pace Analytical Services, LLC**
4171 40th St. SE
Grand Rapids, MI 49512
(616)975-4500

## QUALITY CONTROL DATA

Project: Smith's Creek Leachate
Pace Project No.: 50319296

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3142920 3142921

| Parameter | Units | 50319140002 Result | MS Spike Conc. | MSD Spike Conc. | MS Result | MSD Result | MS % Rec | MSD % Rec | % Rec Limits | RPD | Max RPD | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Acrylonitrile | ug/L | <2.4 | 250 | 250 | 184 | 188 | 74 | 75 | 56-149 | 2 | 20 | |
| Benzene | ug/L | <0.82 | 50 | 50 | 38.6 | 39.1 | 77 | 78 | 68-139 | 1 | 20 | |
| Bromochloromethane | ug/L | <0.96 | 50 | 50 | 35.1 | 35.4 | 70 | 71 | 58-143 | 1 | 20 | |
| Bromodichloromethane | ug/L | <0.82 | 50 | 50 | 39.2 | 39.2 | 78 | 78 | 65-139 | 0 | 20 | |
| Bromoform | ug/L | <0.73 | 50 | 50 | 34.6 | 34.7 | 69 | 69 | 51-139 | 0 | 20 | |
| Bromomethane | ug/L | <0.44 | 50 | 50 | <5.0 | 8.5 | 9 | 17 | 10-189 | | 20 | M1 |
| Carbon disulfide | ug/L | <0.70 | 50 | 50 | 32.9 | 34.1 | 66 | 68 | 45-143 | 4 | 20 | |
| Carbon tetrachloride | ug/L | <0.68 | 50 | 50 | 42.8 | 43.1 | 86 | 86 | 61-153 | 1 | 20 | |
| Chlorobenzene | ug/L | <0.95 | 50 | 50 | 35.8 | 36.5 | 72 | 73 | 57-137 | 2 | 20 | |
| Chloroethane | ug/L | <0.63 | 50 | 50 | 36.0 | 36.4 | 72 | 73 | 41-183 | 1 | 20 | |
| Chloroform | ug/L | <0.83 | 50 | 50 | 40.4 | 40.7 | 81 | 81 | 61-138 | 1 | 20 | |
| Chloromethane | ug/L | <0.44 | 50 | 50 | 27.7 | 28.2 | 55 | 56 | 25-150 | 2 | 20 | |
| cis-1,2-Dichloroethene | ug/L | <0.88 | 50 | 50 | 41.2 | 41.5 | 82 | 83 | 58-142 | 1 | 20 | |
| cis-1,3-Dichloropropene | ug/L | <0.86 | 50 | 50 | 36.0 | 35.8 | 72 | 72 | 53-140 | 1 | 20 | |
| Dibromochloromethane | ug/L | <0.89 | 50 | 50 | 38.4 | 38.7 | 77 | 77 | 61-139 | 1 | 20 | |
| Dibromomethane | ug/L | <0.87 | 50 | 50 | 40.8 | 41.0 | 82 | 82 | 69-138 | 0 | 20 | |
| Ethylbenzene | ug/L | <0.95 | 50 | 50 | 36.7 | 37.3 | 73 | 75 | 54-141 | 1 | 20 | |
| Iodomethane | ug/L | <0.33 | 50 | 50 | 6.7 | 10.8 | 13 | 22 | 10-184 | 46 | 20 | R1 |
| m&p-Xylene | ug/L | <0.89 | 100 | 100 | 77.8 | 78.8 | 78 | 79 | 49-141 | 1 | 20 | |
| Methylene Chloride | ug/L | <0.70 | 50 | 50 | 36.4 | 36.7 | 73 | 73 | 59-141 | 1 | 20 | |
| o-Xylene | ug/L | <0.92 | 50 | 50 | 37.0 | 37.4 | 74 | 75 | 55-141 | 1 | 20 | |
| Styrene | ug/L | <0.86 | 50 | 50 | 38.0 | 38.7 | 76 | 77 | 51-146 | 2 | 20 | |
| Tetrachloroethene | ug/L | <0.75 | 50 | 50 | 37.0 | 37.7 | 74 | 75 | 50-149 | 2 | 20 | |
| Toluene | ug/L | <0.86 | 50 | 50 | 39.0 | 39.4 | 78 | 79 | 59-134 | 1 | 20 | |
| trans-1,2-Dichloroethene | ug/L | <0.72 | 50 | 50 | 39.7 | 41.9 | 79 | 84 | 57-141 | 5 | 20 | |
| trans-1,3-Dichloropropene | ug/L | <0.92 | 50 | 50 | 35.4 | 35.8 | 71 | 72 | 51-136 | 1 | 20 | |
| trans-1,4-Dichloro-2-butene | ug/L | <0.62 | 50 | 50 | 33.0 | 33.4 | 66 | 67 | 26-157 | | 20 | |
| Trichloroethene | ug/L | <0.80 | 50 | 50 | 40.1 | 41.1 | 80 | 82 | 55-147 | 3 | 20 | |
| Trichlorofluoromethane | ug/L | <0.58 | 50 | 50 | 39.7 | 40.6 | 79 | 81 | 55-160 | 2 | 20 | |
| Vinyl chloride | ug/L | <0.52 | 50 | 50 | 31.5 | 32.7 | 63 | 65 | 36-154 | 4 | 20 | |
| Xylene (Total) | ug/L | <0.92 | 150 | 150 | 115 | 116 | 77 | 77 | 50-143 | 1 | 20 | |
| 4-Bromofluorobenzene (S) | %. | | | | | | 102 | 101 | 79-124 | | | |
| Dibromofluoromethane (S) | %. | | | | | | 100 | 99 | 82-128 | | | |
| Toluene-d8 (S) | %. | | | | | | 98 | 97 | 73-122 | | | |

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## REPORT OF LABORATORY ANALYSIS

**Pace Analytical Services, LLC**
4171 40th St. SE
Grand Rapids, MI 49512
(616)975-4500

## QUALITY CONTROL DATA

Project: Smith's Creek Leachate
Pace Project No.: 50319296

QC Batch: 682716
QC Batch Method: SM 2320B
Analysis Method: SM 2320B
Analysis Description: 2320B Alkalinity
Laboratory: Pace Analytical Services - Indianapolis
Associated Lab Samples: 50319296001

METHOD BLANK: 3142016 Matrix: Water
Associated Lab Samples: 50319296001

| Parameter | Units | Blank Result | Reporting Limit | Analyzed | Qualifiers |
|---|---|---|---|---|---|
| Alkalinity, Total as CaCO3 | ug/L | <10000 | 10000 | 06/21/22 13:32 | |
| Alkalinity,Bicarbonate (CaCO3) | ug/L | <10000 | 10000 | 06/21/22 13:32 | |
| Alkalinity,Carbonate (CaCO3) | ug/L | <10000 | 10000 | 06/21/22 13:32 | |

LABORATORY CONTROL SAMPLE: 3142017

| Parameter | Units | Spike Conc. | LCS Result | LCS % Rec | % Rec Limits | Qualifiers |
|---|---|---|---|---|---|---|
| Alkalinity, Total as CaCO3 | ug/L | 50000 | 52300 | 105 | 90-110 | |

SAMPLE DUPLICATE: 3142018

| Parameter | Units | 50319150001 Result | Dup Result | RPD | Max RPD | Qualifiers |
|---|---|---|---|---|---|---|
| Alkalinity, Total as CaCO3 | ug/L | 9230000 | 9350000 | 1 | 20 | |
| Alkalinity,Bicarbonate (CaCO3) | ug/L | 8220000 | 8190000 | 0 | 20 | |
| Alkalinity,Carbonate (CaCO3) | ug/L | 1010000 | 1160000 | 13 | 20 | |

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## REPORT OF LABORATORY ANALYSIS

**Pace Analytical Services, LLC**
4171 40th St. SE
Grand Rapids, MI 49512
(616)975-4500

## QUALITY CONTROL DATA

Project: Smith's Creek Leachate
Pace Project No.: 50319296

QC Batch: 682884
QC Batch Method: SM 2540C
Analysis Method: SM 2540C
Analysis Description: 2540C Total Dissolved Solids
Laboratory: Pace Analytical Services - Indianapolis
Associated Lab Samples: 50319296001

METHOD BLANK: 3142675 Matrix: Water
Associated Lab Samples: 50319296001

| Parameter | Units | Blank Result | Reporting Limit | Analyzed | Qualifiers |
|---|---|---|---|---|---|
| Total Dissolved Solids | ug/L | <20000 | 20000 | 06/22/22 09:38 | |

LABORATORY CONTROL SAMPLE: 3142676

| Parameter | Units | Spike Conc. | LCS Result | LCS % Rec | % Rec Limits | Qualifiers |
|---|---|---|---|---|---|---|
| Total Dissolved Solids | ug/L | 300000 | 289000 | 96 | 80-120 | |

SAMPLE DUPLICATE: 3142677

| Parameter | Units | 50319122009 Result | Dup Result | RPD | Max RPD | Qualifiers |
|---|---|---|---|---|---|---|
| Total Dissolved Solids | ug/L | 401 mg/L | 416000 | 4 | 10 | |

SAMPLE DUPLICATE: 3142678

| Parameter | Units | 50319122010 Result | Dup Result | RPD | Max RPD | Qualifiers |
|---|---|---|---|---|---|---|
| Total Dissolved Solids | ug/L | 435 mg/L | 424000 | 3 | 10 | |

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## REPORT OF LABORATORY ANALYSIS

**Pace Analytical Services, LLC**
4171 40th St. SE
Grand Rapids, MI 49512
(616)975-4500

## QUALITY CONTROL DATA

Project: Smith's Creek Leachate
Pace Project No.: 50319296

QC Batch: 683794
QC Batch Method: EPA 410.4
Analysis Method: EPA 410.4
Analysis Description: 410.4 COD
Laboratory: Pace Analytical Services - Indianapolis
Associated Lab Samples: 50319296001

METHOD BLANK: 3147003 Matrix: Water
Associated Lab Samples: 50319296001

| Parameter | Units | Blank Result | Reporting Limit | Analyzed | Qualifiers |
|---|---|---|---|---|---|
| Chemical Oxygen Demand | ug/L | <10000 | 10000 | 06/28/22 13:12 | |

LABORATORY CONTROL SAMPLE: 3147004

| Parameter | Units | Spike Conc. | LCS Result | LCS % Rec | % Rec Limits | Qualifiers |
|---|---|---|---|---|---|---|
| Chemical Oxygen Demand | ug/L | 500000 | 486000 | 97 | 90-110 | |

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3147005 3147006

| Parameter | Units | 50319336001 Result | MS Spike Conc. | MSD Spike Conc. | MS Result | MSD Result | MS % Rec | MSD % Rec | % Rec Limits | RPD | Max RPD | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Chemical Oxygen Demand | ug/L | 873 mg/L | 1000000 | 1000000 | 1870000 | 1860000 | 99 | 99 | 90-110 | 0 | 20 | |

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## REPORT OF LABORATORY ANALYSIS

**Pace Analytical Services, LLC**
4171 40th St. SE
Grand Rapids, MI 49512
(616)975-4500

## QUALITY CONTROL DATA

Project: Smith's Creek Leachate
Pace Project No.: 50319296

QC Batch: 682619
QC Batch Method: EPA 9038
Analysis Method: EPA 9038
Analysis Description: 9038 Sulfate Water
Laboratory: Pace Analytical Services - Indianapolis
Associated Lab Samples: 50319296001

METHOD BLANK: 3141666 Matrix: Water
Associated Lab Samples: 50319296001

| Parameter | Units | Blank Result | Reporting Limit | Analyzed | Qualifiers |
|---|---|---|---|---|---|
| Sulfate | ug/L | <10000 | 10000 | 06/21/22 08:50 | |

LABORATORY CONTROL SAMPLE: 3141667

| Parameter | Units | Spike Conc. | LCS Result | LCS % Rec | % Rec Limits | Qualifiers |
|---|---|---|---|---|---|---|
| Sulfate | ug/L | 20000 | 19600 | 98 | 90-110 | |

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3141668 3141669

| Parameter | Units | 50319287008 Result | MS Spike Conc. | MSD Spike Conc. | MS Result | MSD Result | MS % Rec | MSD % Rec | % Rec Limits | RPD | Max RPD | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sulfate | ug/L | 426 mg/L | 1000000 | 1000000 | 1990000 | 1950000 | 156 | 153 | 90-110 | 2 | 20 | M3 |

MATRIX SPIKE SAMPLE: 3141670

| Parameter | Units | 50319190001 Result | Spike Conc. | MS Result | MS % Rec | % Rec Limits | Qualifiers |
|---|---|---|---|---|---|---|---|
| Sulfate | ug/L | 160 mg/L | 500000 | 724000 | 113 | 90-110 | M0 |

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## REPORT OF LABORATORY ANALYSIS

**Pace Analytical Services, LLC**
4171 40th St. SE
Grand Rapids, MI 49512
(616)975-4500

## QUALITY CONTROL DATA

Project: Smith's Creek Leachate
Pace Project No.: 50319296

QC Batch: 682955
QC Batch Method: EPA 353.2
Analysis Method: EPA 353.2
Analysis Description: 353.2 Nitrate + Nitrite, preserved
Laboratory: Pace Analytical Services - Indianapolis
Associated Lab Samples: 50319296001

METHOD BLANK: 3142939 Matrix: Water
Associated Lab Samples: 50319296001

| Parameter | Units | Blank Result | Reporting Limit | Analyzed | Qualifiers |
|---|---|---|---|---|---|
| Nitrogen, NO2 plus NO3 | ug/L | <20.0 | 20.0 | 06/22/22 13:24 | |

LABORATORY CONTROL SAMPLE: 3142940

| Parameter | Units | Spike Conc. | LCS Result | LCS % Rec | % Rec Limits | Qualifiers |
|---|---|---|---|---|---|---|
| Nitrogen, NO2 plus NO3 | ug/L | 2000 | 2030 | 101 | 90-110 | |

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3142941 3142942

| Parameter | Units | 50319142004 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 | ug/L | <20.0 | 2000 | 2000 | 1990 | 2010 | 99 | 100 | 90-110 | 1 | 20 | |

MATRIX SPIKE SAMPLE: 3142943

| Parameter | Units | 50319142005 Result | Spike Conc. | MS Result | MS % Rec | % Rec Limits | Qualifiers |
|---|---|---|---|---|---|---|---|
| Nitrogen, NO2 plus NO3 | ug/L | <20.0 | 2000 | 2000 | 100 | 90-110 | |

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## REPORT OF LABORATORY ANALYSIS

**Pace Analytical Services, LLC**
4171 40th St. SE
Grand Rapids, MI 49512
(616)975-4500

## QUALITY CONTROL DATA

Project: Smith's Creek Leachate
Pace Project No.: 50319296

QC Batch: 683527
QC Batch Method: EPA 420.4
Analysis Method: EPA 420.4
Analysis Description: 420.4 Phenolics
Laboratory: Pace Analytical Services - Indianapolis
Associated Lab Samples: 50319296001

METHOD BLANK: 3146151 Matrix: Water
Associated Lab Samples: 50319296001

| Parameter | Units | Blank Result | Reporting Limit | Analyzed | Qualifiers |
|---|---|---|---|---|---|
| Phenolics, Total Recoverable | ug/L | 28.3 | 10.0 | 06/28/22 15:55 | P8 |

LABORATORY CONTROL SAMPLE: 3146152

| Parameter | Units | Spike Conc. | LCS Result | LCS % Rec | % Rec Limits | Qualifiers |
|---|---|---|---|---|---|---|
| Phenolics, Total Recoverable | ug/L | 50 | 53.5 | 107 | 90-110 | |

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3146154 3146155

| Parameter | Units | 50319632001 Result | MS Spike Conc. | MSD Spike Conc. | MS Result | MSD Result | MS % Rec | MSD % Rec | % Rec Limits | RPD | Max RPD | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Phenolics, Total Recoverable | ug/L | ND | 50 | 50 | 49.3 | 52.4 | 89 | 95 | 90-110 | 6 | 20 | M0 |

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## REPORT OF LABORATORY ANALYSIS

**Pace Analytical Services, LLC**
4171 40th St. SE
Grand Rapids, MI 49512
(616)975-4500

## QUALITY CONTROL DATA

Project: Smith's Creek Leachate
Pace Project No.: 50319296

QC Batch: 683179
QC Batch Method: SM 4500-Cl-E
Analysis Method: SM 4500-Cl-E
Analysis Description: 4500 Chloride
Laboratory: Pace Analytical Services - Indianapolis
Associated Lab Samples: 50319296001

METHOD BLANK: 3143971 Matrix: Water
Associated Lab Samples: 50319296001

| Parameter | Units | Blank Result | Reporting Limit | Analyzed | Qualifiers |
|---|---|---|---|---|---|
| Chloride | ug/L | <1000 | 1000 | 06/23/22 15:26 | |

LABORATORY CONTROL SAMPLE: 3143972

| Parameter | Units | Spike Conc. | LCS Result | LCS % Rec | % Rec Limits | Qualifiers |
|---|---|---|---|---|---|---|
| Chloride | ug/L | 20000 | 18900 | 95 | 90-110 | |

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3143973 3143974

| Parameter | Units | 50319320005 Result | MS Spike Conc. | MSD Spike Conc. | MS Result | MSD Result | MS % Rec | MSD % Rec | % Rec Limits | RPD | Max RPD | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | ug/L | 2.4 mg/L | 20000 | 20000 | 22400 | 22200 | 100 | 99 | 90-110 | 1 | 20 | |

MATRIX SPIKE SAMPLE: 3143975

| Parameter | Units | 50319190002 Result | Spike Conc. | MS Result | MS % Rec | % Rec Limits | Qualifiers |
|---|---|---|---|---|---|---|---|
| Chloride | ug/L | 5.1 mg/L | 20000 | 26000 | 104 | 90-110 | |

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## REPORT OF LABORATORY ANALYSIS

**Pace Analytical Services, LLC**
4171 40th St. SE
Grand Rapids, MI 49512
(616)975-4500

## QUALITY CONTROL DATA

Project: Smith's Creek Leachate
Pace Project No.: 50319296

QC Batch: 683599
QC Batch Method: SM 4500-NH3 G
Analysis Method: SM 4500-NH3 G
Analysis Description: 4500 Ammonia
Laboratory: Pace Analytical Services - Indianapolis
Associated Lab Samples: 50319296001

METHOD BLANK: 3146354 Matrix: Water
Associated Lab Samples: 50319296001

| Parameter | Units | Blank Result | Reporting Limit | Analyzed | Qualifiers |
|---|---|---|---|---|---|
| Nitrogen, Ammonia | ug/L | <100 | 100 | 06/27/22 13:35 | |

LABORATORY CONTROL SAMPLE: 3146355

| Parameter | Units | Spike Conc. | LCS Result | LCS % Rec | % Rec Limits | Qualifiers |
|---|---|---|---|---|---|---|
| Nitrogen, Ammonia | ug/L | 5000 | 5200 | 104 | 90-110 | |

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3146356 3146357

| Parameter | Units | 50319225002 Result | MS Spike Conc. | MSD Spike Conc. | MS Result | MSD Result | MS % Rec | MSD % Rec | % Rec Limits | RPD | Max RPD | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Nitrogen, Ammonia | ug/L | 0.41 mg/L | 5000 | 5000 | 5680 | 5690 | 106 | 106 | 90-110 | 0 | 20 | |

MATRIX SPIKE SAMPLE: 3146358

| Parameter | Units | 50319454001 Result | Spike Conc. | MS Result | MS % Rec | % Rec Limits | Qualifiers |
|---|---|---|---|---|---|---|---|
| Nitrogen, Ammonia | ug/L | 2.1 mg/L | 5000 | 7380 | 106 | 90-110 | |

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## REPORT OF LABORATORY ANALYSIS

**Pace Analytical Services, LLC**
4171 40th St. SE
Grand Rapids, MI 49512
(616)975-4500

## QUALITY CONTROL DATA

Project: Smith's Creek Leachate
Pace Project No.: 50319296

QC Batch: 682795
QC Batch Method: SM 5310C
Analysis Method: SM 5310C
Analysis Description: 5310C Total Organic Carbon
Laboratory: Pace Analytical Services - Indianapolis
Associated Lab Samples: 50319296001

METHOD BLANK: 3142371 Matrix: Water
Associated Lab Samples: 50319296001

| Parameter | Units | Blank Result | Reporting Limit | Analyzed | Qualifiers |
|---|---|---|---|---|---|
| Total Organic Carbon | ug/L | <500 | 500 | 06/23/22 01:37 | |

LABORATORY CONTROL SAMPLE: 3142372

| Parameter | Units | Spike Conc. | LCS Result | LCS % Rec | % Rec Limits | Qualifiers |
|---|---|---|---|---|---|---|
| Total Organic Carbon | ug/L | 10000 | 10200 | 102 | 90-110 | |

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3142373 3142374

| Parameter | Units | 50319142015 Result | MS Spike Conc. | MSD Spike Conc. | MS Result | MSD Result | MS % Rec | MSD % Rec | % Rec Limits | RPD | Max RPD | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Total Organic Carbon | ug/L | 1000 | 10000 | 10000 | 11700 | 11500 | 107 | 105 | 80-120 | 2 | 20 | |

MATRIX SPIKE SAMPLE: 3142375

| Parameter | Units | 50319194007 Result | Spike Conc. | MS Result | MS % Rec | % Rec Limits | Qualifiers |
|---|---|---|---|---|---|---|---|
| Total Organic Carbon | ug/L | 1.7 mg/L | 10000 | 12000 | 103 | 80-120 | |

**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

**Pace Analytical Services, LLC**
4171 40th St. SE
Grand Rapids, MI 49512
(616)975-4500

## QUALITY CONTROL DATA

Project: Smith's Creek Leachate
Pace Project No.: 50319296

QC Batch: 683738
QC Batch Method: EPA 9012
Analysis Method: EPA 9012
Analysis Description: 9012 Cyanide, Total
Laboratory: Pace Analytical Services - Indianapolis
Associated Lab Samples: 50319296001

METHOD BLANK: 3146792 Matrix: Water
Associated Lab Samples: 50319296001

| Parameter | Units | Blank Result | Reporting Limit | Analyzed | Qualifiers |
|---|---|---|---|---|---|
| Cyanide | ug/L | <5.0 | 5.0 | 06/28/22 13:03 | |

LABORATORY CONTROL SAMPLE: 3146793

| Parameter | Units | Spike Conc. | LCS Result | LCS % Rec | % Rec Limits | Qualifiers |
|---|---|---|---|---|---|---|
| Cyanide | ug/L | 100 | 103 | 103 | 90-110 | |

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3146794 3146795

| Parameter | Units | 50319052001 Result | MS Spike Conc. | MSD Spike Conc. | MS Result | MSD Result | MS % Rec | MSD % Rec | % Rec Limits | RPD | Max RPD | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Cyanide | ug/L | ND | 100 | 100 | 97.6 | 96.8 | 98 | 97 | 90-110 | 1 | 20 | |

MATRIX SPIKE SAMPLE: 3146796

| Parameter | Units | 50319288015 Result | Spike Conc. | MS Result | MS % Rec | % Rec Limits | Qualifiers |
|---|---|---|---|---|---|---|---|
| Cyanide | ug/L | ND | 100 | 11.2 | 11 | 90-110 | M0 |

**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

**Pace Analytical Services, LLC**
4171 40th St. SE
Grand Rapids, MI 49512
(616)975-4500

# QUALIFIERS

Project: Smith's Creek Leachate
Pace Project No.: 50319296

## 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.

Reported results are not rounded until the final step prior to reporting. Therefore, calculated parameters that are typically reported as "Total" may vary slightly from the sum of the reported component parameters.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

## ANALYTE QUALIFIERS

| | |
|---|---|
| D3 | Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference. |
| E | Analyte concentration exceeded the calibration range. The reported result is estimated. |
| F1 | The sample was analyzed at a dilution due to foaming of the sample in the purge vessel. |
| M0 | Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits. |
| 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. |
| P4 | Sample field preservation does not meet EPA or method recommendations for this analysis. |
| 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. |

**Pace Analytical Services, LLC**
4171 40th St. SE
Grand Rapids, MI 49512
(616)975-4500

## QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Smith's Creek Leachate
Pace Project No.: 50319296

| Lab ID | Sample ID | QC Batch Method | QC Batch | Analytical Method | Analytical Batch |
|---|---|---|---|---|---|
| **50319296001** | **Leachate** | EPA 3010 | 682830 | EPA 6010 | 684170 |
| **50319296001** | **Leachate** | EPA 200.2 | 682780 | EPA 6020 | 683005 |
| **50319296001** | **Leachate** | EPA 5030B/8260 | 682952 | | |
| **50319296001** | **Leachate** | SM 2320B | 682716 | | |
| **50319296001** | **Leachate** | SM 2540C | 682884 | | |
| **50319296001** | **Leachate** | EPA 410.4 | 683794 | EPA 410.4 | 683817 |
| **50319296001** | **Leachate** | EPA 9038 | 682619 | | |
| **50319296001** | **Leachate** | NO2+NO3+NH3 Calculation | 684739 | | |
| **50319296001** | **Leachate** | EPA 353.2 | 682955 | | |
| **50319296001** | **Leachate** | EPA 420.4 | 683527 | EPA 420.4 | 683805 |
| **50319296001** | **Leachate** | SM 4500-Cl-E | 683179 | | |
| **50319296001** | **Leachate** | SM 4500-NH3 G | 683599 | | |
| **50319296001** | **Leachate** | SM 5310C | 682795 | | |
| **50319296001** | **Leachate** | EPA 9012 | 683738 | EPA 9012 | 683856 |

WO# : 50319296

50319296

# CHAIN-OF-CUSTODY / Analy

The Chain-of-Custody is a LEGAL DOCUME

Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace Terms and Conditi

Page 1 Of 1

| Section A<br>Required Client Information: | Section B<br>Required Project Information: | Section C<br>Invoice Information: |
|---|---|---|
| Company: Golder Associates, Inc. - MI | Report To: Sean Paulsen | Attention: |
| Address: 27200 Haggerty Rd. Suite B-12 | Copy To: | Company Name: |
| Farmington, MI 48331 | | Address: |
| Email: sean.paulsen@wsp.com | Purchase Order #: | Pace Quote: |
| Phone: NONE Fax: | Project Name: Smith's Creek Leachate | Pace Project Manager: jennifer.rice@pacelabs.com, |
| Requested Due Date: | Project #: | Pace Profile #: 8219/2 |

| Regulatory Agency | |
|---|---|
| State / Location | MI |

| ITEM # | SAMPLE ID<br>One Character per box.<br>(A-Z, 0-9 / , -)<br>Sample Ids must be unique | MATRIX CODE<br>Drinking Water DW<br>Water WT<br>Waste Water WW<br>Product P<br>Soil/Solid SL<br>Oil OL<br>Wipe WP<br>Air AR<br>Other OT<br>Tissue TS | MATRIX CODE (see valid codes to left) | SAMPLE TYPE (G=GRAB C=COMP) | COLLECTED START DATE | COLLECTED START TIME | COLLECTED END DATE | COLLECTED END TIME | SAMPLE TEMP AT COLLECTION | # OF CONTAINERS | Preservatives: Unpreserved | H2SO4 | HNO3 | HCl | NaOH | Na2S2O3 | Methanol | Other | Analysis Test Y/N | VOC - 8260 | Total Metals | cl,so4,alk | TDS | NH3, NPN, TIN, COD | Total Cyanide | TOC | Phenol Total | Residual Chlorine (Y/N) | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Leachate | | | | | | 6-16-22 | 1530 | 24.7 | 10 | 2 | 3 | 1 | 3 | 1 | | | | | X | X | X | X | X | X | X | | 001 |
| 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 8 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 11 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 12 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

| ADDITIONAL COMMENTS | RELINQUISHED BY / AFFILIATION | DATE | TIME | ACCEPTED BY / AFFILIATION | DATE | TIME | SAMPLE CONDITIONS | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | sampler | 6-16-22 | 1640 | FedEx | 6-16-22 | 1640 | | | | |
| | FedEx | 6/20/22 | 0855 | | 6/20/22 | 0855 | 23.3 | N | Y | Y |
| | | | | | | | | | | |
| | | | | | | | | | | |

| SAMPLER NAME AND SIGNATURE | | | TEMP in C | Received on Ice (Y/N) | Custody Sealed Cooler (Y/N) | Samples Intact (Y/N) |
|---|---|---|---|---|---|---|
| PRINT Name of SAMPLER: | Arthur D. Dow | | | | | |
| SIGNATURE of SAMPLER: | | DATE Signed: 6-16-22 | | | | |

# SAMPLE CONDITION UPON RECEIPT FORM

**Date/Time and Initials of person examining contents:** MCS 6/20/22 0935

1. **Courier:** ☑ FED EX ☐ UPS ☐ CLIENT ☐ PACE ☐ USPS ☐ OTHER _____

2. **Custody Seal on Cooler/Box Present:** ☑ Yes ☐ No

**(If yes)Seals Intact:** ☑ Yes ☐ No **(leave blank if no seals were present)**

3. **Thermometer:** 1 2 3 4 5 6 A B C D E F

4. **Cooler Temperature(s):** 23.3/23.3 | | | |
**(Initial/Corrected)** RECORD TEMPS OF ALL COOLERS RECEIVED (use Comments below to add more)

5. **Packing Material:** ☐ Bubble Wrap ☑ Bubble Bags ☑ None MCS ☐ Other _____

6. **Ice Type:** ☑ Wet ☐ Blue ☐ None

7. **If temp. is over 6°C or under 0°C, was the PM notified?:** ☐ Yes ☑ No MCS
Cooler temp should be above freezing to 6°C

**All discrepancies will be written out in the comments section below.**

| | Yes | No | | Yes | No | N/A |
|---|---|---|---|---|---|---|
| **USDA Regulated Soils?** (HI, ID, NY, WA, OR,CA, NM, TX, OK, AR, LA, TN, AL, MS, NC, SC, GA, FL, or Puerto Rico) | | ✓ | All containers needing acid/base preservation have been pH CHECKED?: **Exceptions: VOA, coliform, LLHg, O&G, RAD CHEM, and any container with a septum cap or preserved with HCl.** **Circle: HNO3 (<2) H2SO4 (<2) NaOH (>10) NaOH/ZnAc (>9)** Any non-conformance to pH recommendations will be noted on the container count form | ✓ | | |
| **Short Hold Time Analysis (48 hours or less)? Analysis:** | | ✓ | | | | |
| **Time 5035A TC placed in Freezer or Short Holds To Lab** | Time: | | | Present | Absent | N/A |
| | | | Residual Chlorine Check (SVOC 625 Pest/PCB 608) | | | ✓ |
| **Rush TAT Requested (4 days or less):** | | ✓ | Residual Chlorine Check (Total/Amenable/Free Cyanide) | | ✓ | |
| Custody Signatures Present? | ✓ | | Headspace Wisconsin Sulfide? | | | ✓ |
| Containers Intact?: | ✓ | | Headspace in VOA Vials (>6mm): See Containter Count form for details | Present | Absent ✓ | No VOA Vials Sent |
| Sample Label (IDs/Dates/Times) Match COC?: Except TCs, which only require sample ID | ✓ | | Trip Blank Present? | | ✓ | |
| Extra labels on Terracore Vials? (soils only) | | ✓ | Trip Blank Custody Seals?: | | ✓ | |

COMMENTS: No residual ice left in cooler (MCS 6/20/22)

**COC PAGE ____ of ____**

## Sample Container Count

** Place a RED dot on containers that are out of conformance **

| | | MeOH (only) | | VIALS | | | | | AMBER GLASS | | | | | | | PLASTIC | | | | | | | | | OTHER | | | | | Nitric | Sulfuric | Sodium Hydroxide | Sodium Hydroxide/ ZnAc |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | SBS | | | | | | | | | | | | | | | | | | | | | | | | | | | | Red | Yellow | Green | Black |
| COC Line Item | WGFU | DI | R | DG9H VG9P | VOA VIAL HS (>6mm) | VG9U | DG9U | VG9T | AG0U | AG1H | AG1U | AG2U | AG3S | AG3SF | AG3C | BP1U | BP1N | BP2U | BP3U | BP3N | BP3F | BP3S | BP3B | BP3Z | CG3H | Syringe Kit | | | Matrix | HNO3 <2 | H2SO4 <2 | NaOH >10 | NaOH/Zn Ac >9 |
| 1 | | | | 3 | | | | | | | | | 2 | | | | | 1 | 1 | 1 | | 1 | 1 | | | | | | WS | 7 | 7 | 9 | |
| 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 8 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 11 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 12 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

Container Codes

### Glass

| | | | | | |
|---|---|---|---|---|---|
| DG9H | 40mL HCl amber voa vial | BG1T | 1L Na Thiosulfate clear glass | BP1B | 1L NaOH plastic |
| DG9P | 40mL TSP amber vial | BG1U | 1L unpreserved glass | BP1N | 1L HNO3 plastic |
| DG9S | 40mL H2SO4 amber vial | BG3H | 250mL HCl Clear Glass | BP1S | 1L H2SO4 plastic |
| DG9T | 40mL Na Thio amber vial | BG3U | 250mL Unpres Clear Glass | BP1U | 1L unpreserved plastic |
| DG9U | 40mL unpreserved amber vial | AG0U | 100mL unpres amber glass | BP1Z | 1L NaOH, Zn, Ac |
| VG9H | 40mL HCl clear vial | AG1H | 1L HCl amber glass | BP2N | 500mL HNO3 plastic |
| VG9T | 40mL Na Thio. clear vial | AG1S | 1L H2SO4 amber glass | BP2C | 500mL NaOH plastic |
| VG9U | 40mL unpreserved clear vial | AG1T | 1L Na Thiosulfate amber glass | BP2S | 500mL H2SO4 plastic |
| I | 40mL w/hexane wipe vial | AG1U | 1liter unpres amber glass | BP2U | 500mL unpreserved plastic |
| WGKU | 8oz unpreserved clear jar | AG2N | 500mL HNO3 amber glass | BP2Z | 500mL NaOH, Zn Ac |
| WGFU | 4oz clear soil jar | AG2S | 500mL H2SO4 amber glass | BP3B | 250mL NaOH plastic |
| JGFU | 4oz unpreserved amber wide | AG2U | 500mL unpres amber glass | BP3N | 250mL HNO3 plastic |
| CG3H | 250mL clear glass HCl | AG3S | 250mL H2SO4 amber glass | BP3F | 250mL HNO3 plastic-field filtered |
| BG1H | 1L HCl clear glass | AG3SF | 250mL H2SO4 amb glass -field filtered | BP3U | 250mL unpreserved plastic |
| BG1S | 1L H2SO4 clear glass | AG3U | 250mL unpres amber glass | BP3S | 250mL H2SO4 plastic |
| GN | General | AG3C | 250mL NaOH amber glass | BP3Z | 250mL NaOH, ZnAc plastic |

### Plastic

| | |
|---|---|
| BP4U | 125mL unpreserved plastic |
| BP4N | 125mL HNO3 plastic |
| BP4S | 125mL H2SO4 plastic |

### Miscellaneous

| | |
|---|---|
| Syringe Kit | LL Cr+6 sampling kit |
| ZPLC | Ziploc Bag |
| R | Terracore Kit |
| SP5T | 120mL Coliform Sodium Thiosulfate |
| T | Tedlar Bag (air sample) |
| U | Summa Can (air sample) |
| WT | Water |
| SL | Solid Solid |
| OL | Oil |
| NAL | Non-aqueous liquid |
| WP | Wipe |

**APPENDIX B**

# Field Data Sheets

Well ID MW-101

# GROUNDWATER SAMPLE COLLECTION RECORD

## SITE IDENTIFICATION

COMPANY: Smith's Creek Landfill
FACILITY/SITE: Smith's Creek Landfill
PROJECT NUMBER: 21459140
ADDRESS: 6779 Smith's Creek Rd. Smith's Creek, MI
CONTACT: Matt Williams
PHONE: (248) 459-3309

## WEATHER CONDITIONS

SKY: Clear
GROUND: Dry
AIR TEMPERATURE (°F): 91
PRECIPITATION (LAST 24 HRS): no

## WELL SECURITY

PROTECTIVE COVER: OK
BUMPER POSTS: none
EXTERNAL WELL ID: OK
LOCK: OK
WELL DIAMETER: 2"
CONCRETE PAD: OK

## CALCULATIONS

WELL ELEVATION (FT/MSL):
DEPTH TO WATER (FT): 23.19
GROUNDWATER ELEVATION (FT/MSL):
TOTAL WELL DEPTH (FT): 76.9
WELL STICK-UP (FT):
WATER VOLUME IN CASING (GALLONS): 8.8

## PURGING

INITIAL PURGE DATE: 6-15-22
INITIAL PURGE TIME: 1505

## STABILIZATION READINGS

| | 1 | 2 | 3 | 4 | 5 | 6 | Final |
|---|---|---|---|---|---|---|---|
| Time | 1535 | 1605 | | | | | 1635 |
| Volume Removed (gal) | 8.8 | 17.5 | | | | | 26.3 |
| pH (s.u.) | 8.12 | 8.15 | | | | | 8.25 |
| Conductivity. (µmho/cm) | 510 | 488 | | | | | 477 |
| Temperature (°C) | 14.1 | 13.7 | | | | | 14.8 |

## SAMPLING

SAMPLE DATE: 6-15-22
SAMPLE TIME: 1635
TOTAL BOTTLES COLLECTED: 7
FILTERED FOR METALS: Y
SAMPLE CLARITY (clear, sl. turbid, m. turbid, v. turbid):
COLOR (yellow, brown, rust, grey, white, colorless):
ODOR (sulfur, LFG, musty, solvent, petrol, no odor):
SAMPLE COLLECTED BY: AOR

## EQUIPMENT

FIELD METER USED: Horiba 005
CALIBRATION TIME: 0830
PH CALIBRATION STANDARDS (s.u.): 4, 7, 10
CONDUCTIVITY STANDARD (µmho/cm): 1413
PURIFIED WATER SUPPLIED BY: lab
PUMP/BAILER TYP: mp-50

SAMPLING COMPANY: Golder Associates Inc.
SAMPLER'S PHONE: 248-295-0135
SAMPLER'S ADDRESS: 27200 Haggerty Road, Suite B-12 Farmington Hills, Michigan, USA 48331
CLIENT REPRESENTATIVES:
REGULATORY REPRESENTATIVES:

**COMMENTS:**

DATE FORM COMPLETED: 6-15-22
FORM COMPLETED BY (signature):

Well ID MW-106A

# GROUNDWATER SAMPLE COLLECTION RECORD

## SITE IDENTIFICATION

COMPANY: Smith's Creek Landfill
FACILITY/SITE: Smith's Creek Landfill
PROJECT NUMBER: 21459140
ADDRESS: 6779 Smith's Creek Rd. Smith's Creek, MI
CONTACT: Matt Williams
PHONE: (248) 459-3309

## WEATHER CONDITIONS

SKY: Clear
GROUND: moist
AIR TEMPERATURE (°F): 82
PRECIPITATION (LAST 24 HRS): Yes

## WELL SECURITY

PROTECTIVE COVER: OK
BUMPER POSTS: none
EXTERNAL WELL ID: OK
LOCK: OK
WELL DIAMETER: 2"
CONCRETE PAD: OK

## CALCULATIONS

WELL ELEVATION (FT/MSL):
DEPTH TO WATER (FT): 31.32
GROUNDWATER ELEVATION (FT/MSL):
TOTAL WELL DEPTH (FT): 75.2
WELL STICK-UP (FT):
WATER VOLUME IN CASING (GALLONS): 7.2

## PURGING

INITIAL PURGE DATE: 6-14-22
INITIAL PURGE TIME: 1423

## STABILIZATION READINGS

| | 1 | 2 | 3 | 4 | 5 | 6 | Final |
|---|---|---|---|---|---|---|---|
| Time | 1450 | 1452 | | | | | 1015 |
| Volume Removed (gal) | 7.2 | 7.6 | | | | | 7.6 |
| pH (s.u.) | 8.25 | well | | | | | 8.21 |
| Conductivity. (µmho/cm) | 522 | went | | | | | 441 |
| Temperature (°C) | 14.5 | Dry | | | | | 14.9 |

## SAMPLING

SAMPLE DATE: 6-15-22
SAMPLE TIME: 1015
TOTAL BOTTLES COLLECTED: 7
FILTERED FOR METALS: Y
SAMPLE CLARITY (clear, sl. turbid, m. turbid, v. turbid): clear
COLOR (yellow, brown, rust, grey, white, colorless): colorless
ODOR (sulfur, LFG, musty, solvent, petrol, no odor): no odor
SAMPLE COLLECTED BY: AOR

## EQUIPMENT

FIELD METER USED: Horiba U-52
CALIBRATION TIME: 0830
PH CALIBRATION STANDARDS (s.u.): 4, 7, 10
CONDUCTIVITY STANDARD (µmho/cm): 1413
PURIFIED WATER SUPPLIED BY: lab
PUMP/BAILER TYP: mp-50

SAMPLING COMPANY: Golder Associates Inc.
SAMPLER'S PHONE: 248-295-0135
SAMPLER'S ADDRESS: 27200 Haggerty Road, Suite B-12 Farmington Hills, Michigan, USA 48331
CLIENT REPRESENTATIVES:
REGULATORY REPRESENTATIVES:

**COMMENTS:**

Went dry on 11/17

DATE FORM COMPLETED: 6-15-22
FORM COMPLETED BY (signature):

Well ID MW-201

# GROUNDWATER SAMPLE COLLECTION RECORD

## SITE IDENTIFICATION

COMPANY: Smith's Creek Landfill
FACILITY/SITE: Smith's Creek Landfill
PROJECT NUMBER: 21459140
ADDRESS: 6779 Smith's Creek Rd. Smith's Creek, MI
CONTACT: Matt Williams
PHONE: (248) 459-3309

## WEATHER CONDITIONS

SKY: Clear
GROUND: Dry
AIR TEMPERATURE (°F): 73
PRECIPITATION (LAST 24 HRS): none

## WELL SECURITY

PROTECTIVE COVER: OK
BUMPER POSTS: none
EXTERNAL WELL ID: OK
LOCK: OK
WELL DIAMETER: 2"
CONCRETE PAD: ON

## CALCULATIONS

WELL ELEVATION (FT/MSL):
DEPTH TO WATER (FT): 23.23
GROUNDWATER ELEVATION (FT/MSL):
TOTAL WELL DEPTH (FT): 75.4
WELL STICK-UP (FT):
WATER VOLUME IN CASING (GALLONS): 8.5

## PURGING

INITIAL PURGE DATE: 6-13-22
INITIAL PURGE TIME: 1203

## STABILIZATION READINGS

| | 1 | 2 | 3 | 4 | 5 | 6 | Final |
|---|---|---|---|---|---|---|---|
| Time | 1227 | 1229 | | | | | 0840 |
| Volume Removed (gal) | 8.5 | 8.6 | | | | | 8.6 |
| pH (s.u.) | 8.19 | well | | | | | 8.12 |
| Conductivity. (µmho/cm) | 379 | went | | | | | 379 |
| Temperature (°C) | 13.1 | Dry | | | | | 14.3 |

## SAMPLING

SAMPLE DATE: 6-14-22
SAMPLE TIME: 0840
TOTAL BOTTLES COLLECTED: 7
FILTERED FOR METALS: Y
SAMPLE CLARITY (clear, sl. turbid, m. turbid, v. turbid): clear
COLOR (yellow, brown, rust, grey, white, colorless): colorless
ODOR (sulfur, LFG, musty, solvent, petrol, no odor): no odor
SAMPLE COLLECTED BY: AOR

## EQUIPMENT

FIELD METER USED: Horiba U05
CALIBRATION TIME: 1200
PH CALIBRATION STANDARDS (s.u.): 4, 7, 10
CONDUCTIVITY STANDARD (µmho/cm): 1413
PURIFIED WATER SUPPLIED BY: lab
PUMP/BAILER TYP: mp-50

SAMPLING COMPANY: Golder Associates Inc.
SAMPLER'S PHONE: 248-295-0135
SAMPLER'S ADDRESS: 27200 Haggerty Road, Suite B-12 Farmington Hills, Michigan, USA 48331
CLIENT REPRESENTATIVES:
REGULATORY REPRESENTATIVES:

**COMMENTS:**

Went dry on 11/17

DATE FORM COMPLETED: 6-14-22
FORM COMPLETED BY (signature): a

Well ID MW-202

# GROUNDWATER SAMPLE COLLECTION RECORD

**SITE IDENTIFICATION**

COMPANY: Smith's Creek Landfill
FACILITY/SITE: Smith's Creek Landfill
PROJECT NUMBER: 21459140
ADDRESS: 6779 Smith's Creek Rd. Smith's Creek, MI
CONTACT: Matt Williams
PHONE: (248) 459-3309

**WEATHER CONDITIONS**

SKY: Clear
GROUND: Dry
AIR TEMPERATURE (°F): 90
PRECIPITATION (LAST 24 HRS): None

**WELL SECURITY**

PROTECTIVE COVER: OK
BUMPER POSTS: none
EXTERNAL WELL ID: OK
LOCK: OK
WELL DIAMETER: 2"
CONCRETE PAD: OK

**CALCULATIONS**

WELL ELEVATION (FT/MSL):
DEPTH TO WATER (FT): 24.03
GROUNDWATER ELEVATION (FT/MSL):
TOTAL WELL DEPTH (FT): 64.6
WELL STICK-UP (FT):
WATER VOLUME IN CASING (GALLONS): 6.6

**PURGING**

INITIAL PURGE DATE: 6-15-22
INITIAL PURGE TIME: 1305

**STABILIZATION READINGS**

| | 1 | 2 | 3 | 4 | 5 | 6 | Final |
|---|---|---|---|---|---|---|---|
| Time | 1323 | 1400 | | | | | 1440 |
| Volume Removed (gal) | 6.6 | 13.2 | | | | | 19.8 |
| pH (s.u.) | 8.43 | 8.40 | | | | | 8.42 |
| Conductivity. (µmho/cm) | 397 | 399 | | | | | 401 |
| Temperature (°C) | 13.6 | 13.9 | | | | | 13.9 |

**SAMPLING**

SAMPLE DATE: 6-15-22
SAMPLE TIME: 1440
TOTAL BOTTLES COLLECTED: 7
FILTERED FOR METALS: Y
SAMPLE CLARITY (clear, sl. turbid, m. turbid, v. turbid):
COLOR (yellow, brown, rust, grey, white, colorless):
ODOR (sulfur, LFG, musty, solvent, petrol, no odor):
SAMPLE COLLECTED BY: ASR

**EQUIPMENT**

FIELD METER USED: Horiba 005
CALIBRATION TIME: 0830
PH CALIBRATION STANDARDS (s.u.): 4, 7, 10
CONDUCTIVITY STANDARD (µmho/cm): 1413
PURIFIED WATER SUPPLIED BY: Lab
PUMP/BAILER TYP: MP-50

SAMPLING COMPANY: Golder Associates Inc.
SAMPLER'S PHONE: 248-295-0135
SAMPLER'S ADDRESS: 27200 Haggerty Road, Suite B-12 Farmington Hills, Michigan, USA 48331
CLIENT REPRESENTATIVES:
REGULATORY REPRESENTATIVES:

**COMMENTS:**

DATE FORM COMPLETED: 6-15-22
FORM COMPLETED BY (signature):

Well ID MW-203B

# GROUNDWATER SAMPLE COLLECTION RECORD

## SITE IDENTIFICATION

COMPANY: Smith's Creek Landfill
FACILITY/SITE: Smith's Creek Landfill
PROJECT NUMBER: 21459140
ADDRESS: 6779 Smith's Creek Rd. Smith's Creek, MI
CONTACT: Matt Williams
PHONE: (248) 459-3309

## WEATHER CONDITIONS

SKY: Clear
GROUND: moist
AIR TEMPERATURE (°F): 83
PRECIPITATION (LAST 24 HRS): yes

## WELL SECURITY

PROTECTIVE COVER: OK
BUMPER POSTS: none
EXTERNAL WELL ID: OK
LOCK: OK
WELL DIAMETER: 2"
CONCRETE PAD: OK

## CALCULATIONS

WELL ELEVATION (FT/MSL):
DEPTH TO WATER (FT): 24.55
GROUNDWATER ELEVATION (FT/MSL):
TOTAL WELL DEPTH (FT): 73.21
WELL STICK-UP (FT):
WATER VOLUME IN CASING (GALLONS): 7.9

## PURGING

INITIAL PURGE DATE: 6.14.22
INITIAL PURGE TIME: 1501

## STABILIZATION READINGS

| | 1 | 2 | 3 | 4 | 5 | 6 | Final |
|---|---|---|---|---|---|---|---|
| Time | 1605 | 1610 | | | | | 1110 |
| Volume Removed (gal) | 7.9 | 8.2 | | | | | 8.2 |
| pH (s.u.) | 9.59 | well | | | | | 9.12 |
| Conductivity. (µmho/cm) | 497 | went | | | | | 455 |
| Temperature (°C) | 14.0 | Dry | | | | | 17.2 |

## SAMPLING

SAMPLE DATE: 6.15.22
SAMPLE TIME: 1110
TOTAL BOTTLES COLLECTED: 7
FILTERED FOR METALS: Y
SAMPLE CLARITY (clear, sl. turbid, m. turbid, v. turbid): clear
COLOR (yellow, brown, rust, grey, white, colorless): colorless
ODOR (sulfur, LFG, musty, solvent, petrol, no odor): no odor
SAMPLE COLLECTED BY: AOR

## EQUIPMENT

FIELD METER USED: Horiba 005
CALIBRATION TIME: 0830
PH CALIBRATION STANDARDS (s.u.): 4, 7, 10
CONDUCTIVITY STANDARD (µmho/cm): 1413
PURIFIED WATER SUPPLIED BY: Lab
PUMP/BAILER TYP: mp-50

SAMPLING COMPANY: Golder Associates Inc.
SAMPLER'S PHONE: 248-295-0135
SAMPLER'S ADDRESS: 27200 Haggerty Road, Suite B-12 Farmington Hills, Michigan, USA 48331
CLIENT REPRESENTATIVES:
REGULATORY REPRESENTATIVES:

**COMMENTS:**

DATE FORM COMPLETED: 6-15-22 FORM COMPLETED BY (signature):

Well ID MW-207A

# GROUNDWATER SAMPLE COLLECTION RECORD

**SITE IDENTIFICATION**

COMPANY: Smith's Creek Landfill
FACILITY/SITE: Smith's Creek Landfill
PROJECT NUMBER: 21459140
ADDRESS: 6779 Smith's Creek Rd. Smith's Creek, MI
CONTACT: Matt Williams
PHONE: (248) 459-3309

**WEATHER CONDITIONS**

SKY: Clear
GROUND: moist
AIR TEMPERATURE (°F): 80
PRECIPITATION (LAST 24 HRS): yes

**WELL SECURITY**

PROTECTIVE COVER: OK
BUMPER POSTS: none
EXTERNAL WELL ID: OK
LOCK: OK
WELL DIAMETER: 2"
CONCRETE PAD: OK

**CALCULATIONS**

WELL ELEVATION (FT/MSL):
DEPTH TO WATER (FT): 35.82
GROUNDWATER ELEVATION (FT/MSL):
TOTAL WELL DEPTH (FT): 82.9
WELL STICK-UP (FT):
WATER VOLUME IN CASING (GALLONS): 7.7

**PURGING**

INITIAL PURGE DATE: 6-14-22
INITIAL PURGE TIME: 1344

**STABILIZATION READINGS**

| | 1 | 2 | 3 | 4 | 5 | 6 | Final |
|---|---|---|---|---|---|---|---|
| Time | 1410 | 1412 | | | | | 0915 |
| Volume Removed (gal) | 7.7 | 7.8 | | | | | 7.8 |
| pH (s.u.) | 7.60 | well | | | | | 7.61 |
| Conductivity. (µmho/cm) | 1054 | went | | | | | 1034 |
| Temperature (°C) | 14.0 | Dry | | | | | 13.7 |

**SAMPLING**

SAMPLE DATE: 6-15-22
SAMPLE TIME: 0915
TOTAL BOTTLES COLLECTED: 7
FILTERED FOR METALS: Y
SAMPLE CLARITY (clear, sl. turbid, m. turbid, v. turbid):
COLOR (yellow, brown, rust, grey, white, colorless):
ODOR (sulfur, LFG, musty, solvent, petrol, no odor):
SAMPLE COLLECTED BY: AOR

**EQUIPMENT**

FIELD METER USED: Horiba 005
CALIBRATION TIME: 0830
PH CALIBRATION STANDARDS (s.u.): 4,7,10
CONDUCTIVITY STANDARD (µmho/cm): 1413
PURIFIED WATER SUPPLIED BY: lab
PUMP/BAILER TYP: mp-56

SAMPLING COMPANY: Golder Associates Inc.
SAMPLER'S PHONE: 248-295-0135
SAMPLER'S ADDRESS: 27200 Haggerty Road, Suite B-12 Farmington Hills, Michigan, USA 48331
CLIENT REPRESENTATIVES:
REGULATORY REPRESENTATIVES:

**COMMENTS:**

Went dry on 11/17

DATE FORM COMPLETED: 6-15-22
FORM COMPLETED BY (signature):

Well ID MW-208B

# GROUNDWATER SAMPLE COLLECTION RECORD

**SITE IDENTIFICATION**

COMPANY: Smith's Creek Landfill
FACILITY/SITE: Smith's Creek Landfill
PROJECT NUMBER: 21459140
ADDRESS: 6779 Smith's Creek Rd. Smith's Creek, MI
CONTACT: Matt Williams
PHONE: (248) 459-3309

**WEATHER CONDITIONS**

SKY: Clear
GROUND: moist
AIR TEMPERATURE (°F): 78
PRECIPITATION (LAST 24 HRS): yes

**WELL SECURITY**

PROTECTIVE COVER: OK
BUMPER POSTS: none
EXTERNAL WELL ID: OK
LOCK: OK
WELL DIAMETER: 2"
CONCRETE PAD: OK

**CALCULATIONS**

WELL ELEVATION (FT/MSL):
DEPTH TO WATER (FT): 34.11
GROUNDWATER ELEVATION (FT/MSL):
TOTAL WELL DEPTH (FT): NA
WELL STICK-UP (FT):
WATER VOLUME IN CASING (GALLONS):

**PURGING**

INITIAL PURGE DATE: 6-14-22
INITIAL PURGE TIME: 1300

**STABILIZATION READINGS**

| | 1 | 2 | 3 | 4 | 5 | 6 | Final |
|---|---|---|---|---|---|---|---|
| Time | 1325 | 1327 | | | | | 0945 |
| Volume Removed (gal) | 7.0 | 7.1 | | | | | 7.1 |
| pH (s.u.) | 8.21 | well | | | | | 8.28 |
| Conductivity. (µmho/cm) | 445 | went | | | | | 465 |
| Temperature (°C) | 13.8 | Dry | | | | | 14.1 |

**SAMPLING**

SAMPLE DATE: 6-15-22
SAMPLE TIME: 0945
TOTAL BOTTLES COLLECTED: 7
FILTERED FOR METALS: Y
SAMPLE CLARITY (clear, sl. turbid, m. turbid, v. turbid):
COLOR (yellow, brown, rust, grey, white, colorless):
ODOR (sulfur, LFG, musty, solvent, petrol, no odor):
SAMPLE COLLECTED BY: AOR

**EQUIPMENT**

FIELD METER USED: Horiba 005
CALIBRATION TIME: 0830
PH CALIBRATION STANDARDS (s.u.): 4, 7, 10
CONDUCTIVITY STANDARD (µmho/cm): 1413
PURIFIED WATER SUPPLIED BY: lab
PUMP/BAILER TYP: Imp - 50

SAMPLING COMPANY: Golder Associates Inc.
SAMPLER'S PHONE: 248-295-0135
SAMPLER'S ADDRESS: 27200 Haggerty Road, Suite B-12 Farmington Hills, Michigan, USA 48331
CLIENT REPRESENTATIVES:
REGULATORY REPRESENTATIVES:

**COMMENTS:**

Went dry on 11/17

DATE FORM COMPLETED: 6-15-22
FORM COMPLETED BY (signature):

Well ID MW-209

# GROUNDWATER SAMPLE COLLECTION RECORD

## SITE IDENTIFICATION

COMPANY: Smith's Creek Landfill
FACILITY/SITE: Smith's Creek Landfill
PROJECT NUMBER: 21459140
ADDRESS: 6779 Smith's Creek Rd. Smith's Creek, MI
CONTACT: Matt Williams
PHONE: (248) 459-3309

## WEATHER CONDITIONS

SKY: Clear
GROUND: moist
AIR TEMPERATURE (°F): 72
PRECIPITATION (LAST 24 HRS): yes

## WELL SECURITY

PROTECTIVE COVER: OK
BUMPER POSTS: none
EXTERNAL WELL ID: OK
LOCK: OK
WELL DIAMETER: 2"
CONCRETE PAD: OK

## CALCULATIONS

WELL ELEVATION (FT/MSL):
DEPTH TO WATER (FT): 27.85
GROUNDWATER ELEVATION (FT/MSL):
TOTAL WELL DEPTH (FT): 79.2
WELL STICK-UP (FT):
WATER VOLUME IN CASING (GALLONS): 8.4

## PURGING

INITIAL PURGE DATE: 6-14-22
INITIAL PURGE TIME: 1050

## STABILIZATION READINGS

| | 1 | 2 | 3 | 4 | 5 | 6 | Final |
|---|---|---|---|---|---|---|---|
| Time | 1125 | 1130 | | | | | 0845 |
| Volume Removed (gal) | 8.4 | 8.8 | | | | | 8.8 |
| pH (s.u.) | 8.35 | well | | | | | 8.47 |
| Conductivity. (µmho/cm) | 463 | went | | | | | 469 |
| Temperature (°C) | 12.3 | Dry | | | | | 14.9 |

## SAMPLING

SAMPLE DATE: 6-15-22
SAMPLE TIME: 0845
TOTAL BOTTLES COLLECTED: 7
FILTERED FOR METALS: Y
SAMPLE CLARITY (clear, sl. turbid, m. turbid, v. turbid):
COLOR (yellow, brown, rust, grey, white, colorless):
ODOR (sulfur, LFG, musty, solvent, petrol, no odor):
SAMPLE COLLECTED BY: AoR

## EQUIPMENT

FIELD METER USED: Horiba 005
CALIBRATION TIME: 0830
PH CALIBRATION STANDARDS (s.u.): 4, 7, 10
CONDUCTIVITY STANDARD (µmho/cm): 1413
PURIFIED WATER SUPPLIED BY: GA
PUMP/BAILER TYP mp-50

SAMPLING COMPANY: Golder Associates Inc.
SAMPLER'S PHONE: 248-295-0135
SAMPLER'S ADDRESS: 27200 Haggerty Road, Suite B-12 Farmington Hills, Michigan, USA 48331
CLIENT REPRESENTATIVES:
REGULATORY REPRESENTATIVES:

**COMMENTS:**

Went dry on 11/17

DATE FORM COMPLETED: 6-15-22
FORM COMPLETED BY (signature):

Well ID MW-210

# GROUNDWATER SAMPLE COLLECTION RECORD

**SITE IDENTIFICATION**

COMPANY: Smith's Creek Landfill
FACILITY/SITE: Smith's Creek Landfill
PROJECT NUMBER: 21459140
ADDRESS: 6779 Smith's Creek Rd. Smith's Creek, MI
CONTACT: Matt Williams
PHONE: (248) 459-3309

**WEATHER CONDITIONS**

SKY: Clear
GROUND: Dry
AIR TEMPERATURE (°F): 77
PRECIPITATION (LAST 24 HRS): none

**WELL SECURITY**

PROTECTIVE COVER: OK
BUMPER POSTS: none
EXTERNAL WELL ID: OK
LOCK: OK
WELL DIAMETER: 2"
CONCRETE PAD: OK

**CALCULATIONS**

WELL ELEVATION (FT/MSL):
DEPTH TO WATER (FT): 27.53
GROUNDWATER ELEVATION (FT/MSL):
TOTAL WELL DEPTH (FT): 71.9
WELL STICK-UP (FT):
WATER VOLUME IN CASING (GALLONS): 7.2

**PURGING**

INITIAL PURGE DATE: 6-13-22
INITIAL PURGE TIME: 1410

**STABILIZATION READINGS**

| | 1 | 2 | 3 | 4 | 5 | 6 | Final |
|---|---|---|---|---|---|---|---|
| Time | 1430 | 1435 | | | | | 1030 |
| Volume Removed (gal) | 7.2 | 7.7 | | | | | 7.7 |
| pH (s.u.) | 7.59 | well | | | | | 7.98 |
| Conductivity. (µmho/cm) | 1535 | went | | | | | 799 |
| Temperature (°C) | 13.3 | Dry | | | | | 14.0 |

**SAMPLING**

SAMPLE DATE: 6.14-22
SAMPLE TIME: 1030
TOTAL BOTTLES COLLECTED: 7
FILTERED FOR METALS: Y
SAMPLE CLARITY (clear, sl. turbid, m. turbid, v. turbid):
COLOR (yellow, brown, rust, grey, white, colorless):
ODOR (sulfur, LFG, musty, solvent, petrol, no odor):
SAMPLE COLLECTED BY: AOB

**EQUIPMENT**

FIELD METER USED: Horiba 005
CALIBRATION TIME: 1200
PH CALIBRATION STANDARDS (s.u.): 4,7,10
CONDUCTIVITY STANDARD (µmho/cm): 1413
PURIFIED WATER SUPPLIED BY: GG
PUMP/BAILER TYP MP 50

SAMPLING COMPANY: Golder Associates Inc.
SAMPLER'S PHONE: 248-295-0135
SAMPLER'S ADDRESS: 27200 Haggerty Road, Suite B-12 Farmington Hills, Michigan, USA 48331
CLIENT REPRESENTATIVES:
REGULATORY REPRESENTATIVES:

**COMMENTS:**

Went dry on 11/17

DATE FORM COMPLETED: 6-14-22
FORM COMPLETED BY (signature):

Well ID MW-212

# GROUNDWATER SAMPLE COLLECTION RECORD

## SITE IDENTIFICATION

COMPANY: Smith's Creek Landfill
FACILITY/SITE: Smith's Creek Landfill
PROJECT NUMBER: 21459140
ADDRESS: 6779 Smith's Creek Rd. Smith's Creek, MI
CONTACT: Matt Williams
PHONE: (248) 459-3309

## WEATHER CONDITIONS

SKY: Clear
GROUND: Dry
AIR TEMPERATURE (°F): 73
PRECIPITATION (LAST 24 HRS): none

## WELL SECURITY

PROTECTIVE COVER: OK
BUMPER POSTS: none
EXTERNAL WELL ID: OK
LOCK: OK
WELL DIAMETER: 2"
CONCRETE PAD: OK

## CALCULATIONS

WELL ELEVATION (FT/MSL):
DEPTH TO WATER (FT): 27.90
GROUNDWATER ELEVATION (FT/MSL):
TOTAL WELL DEPTH (FT): 65.2
WELL STICK-UP (FT):
WATER VOLUME IN CASING (GALLONS): 6.1

## PURGING

INITIAL PURGE DATE: 6-13-22
INITIAL PURGE TIME: 12:52

## STABILIZATION READINGS

| | 1 | 2 | 3 | 4 | 5 | 6 | Final |
|---|---|---|---|---|---|---|---|
| Time | 1320 | 1330 | | | | | 0930 |
| Volume Removed (gal) | 6.1 | 6.5 | | | | | 6.5 |
| pH (s.u.) | 8.20 | well | | | | | 8.41 |
| Conductivity. (µmho/cm) | 455 | went | | | | | 462 |
| Temperature (°C) | 13.2 | dry | | | | | 15.0 |

## SAMPLING

SAMPLE DATE: 6-14-22
SAMPLE TIME: 0930
TOTAL BOTTLES COLLECTED: 7
FILTERED FOR METALS: Y
SAMPLE CLARITY (clear, sl. turbid, m. turbid, v. turbid):
COLOR (yellow, brown, rust, grey, white, colorless):
ODOR (sulfur, LFG, musty, solvent, petrol, no odor):
SAMPLE COLLECTED BY: AOR

## EQUIPMENT

FIELD METER USED: Horiba 005
CALIBRATION TIME: 1200
PH CALIBRATION STANDARDS (s.u.): 4, 7, 10
CONDUCTIVITY STANDARD (µmho/cm): 1413
PURIFIED WATER SUPPLIED BY: lab
PUMP/BAILER TYP: mp 50

SAMPLING COMPANY: Golder Associates Inc.
SAMPLER'S PHONE: 248-295-0135
SAMPLER'S ADDRESS: 27200 Haggerty Road, Suite B-12 Farmington Hills, Michigan, USA 48331
CLIENT REPRESENTATIVES:
REGULATORY REPRESENTATIVES:

**COMMENTS:**

Went dry on 11/17

DATE FORM COMPLETED: 6-14-22
FORM COMPLETED BY (signature):

Well ID MW-301

# GROUNDWATER SAMPLE COLLECTION RECORD

**SITE IDENTIFICATION**

COMPANY: Smith's Creek Landfill
FACILITY/SITE: Smith's Creek Landfill
PROJECT NUMBER: 21459140
ADDRESS: 6779 Smith's Creek Rd. Smith's Creek, MI
CONTACT: Matt Williams
PHONE: (248) 459-3309

**WEATHER CONDITIONS**

SKY: P. Cloudy
GROUND: moist
AIR TEMPERATURE (°F): 73
PRECIPITATION (LAST 24 HRS): Yes

**WELL SECURITY**

PROTECTIVE COVER: OK
BUMPER POSTS: none
EXTERNAL WELL ID: OK
LOCK: OK
WELL DIAMETER: 2"
CONCRETE PAD: OK

**CALCULATIONS**

WELL ELEVATION (FT/MSL):
DEPTH TO WATER (FT): 33.72
GROUNDWATER ELEVATION (FT/MSL):
TOTAL WELL DEPTH (FT): 84.3
WELL STICK-UP (FT):
WATER VOLUME IN CASING (GALLONS): 8.2

**PURGING**

INITIAL PURGE DATE: 6-14-22
INITIAL PURGE TIME: 1137

**STABILIZATION READINGS**

| | 1 | 2 | 3 | 4 | 5 | 6 | Final |
|---|---|---|---|---|---|---|---|
| Time | 1200 | 1220 | | | | | 1240 |
| Volume Removed (gal) | 8.2 | 16.5 | | | | | 24.7 |
| pH (s.u.) | 8.49 | 8.56 | | | | | 8.56 |
| Conductivity. (µmho/cm) | 484 | 483 | | | | | 482 |
| Temperature (°C) | 12.5 | 12.4 | | | | | 13.8 |

**SAMPLING**

SAMPLE DATE: 6-14-22
SAMPLE TIME: 1240
TOTAL BOTTLES COLLECTED: 8
FILTERED FOR METALS: Y/N
SAMPLE CLARITY (clear, sl. turbid, m. turbid, v. turbid):
COLOR (yellow, brown, rust, grey, white, colorless):
ODOR (sulfur, LFG, musty, solvent, petrol, no odor):
SAMPLE COLLECTED BY: AOR

**EQUIPMENT**

FIELD METER USED: Horiba U-52
CALIBRATION TIME: 0830
PH CALIBRATION STANDARDS (s.u.): 4, 7, 10
CONDUCTIVITY STANDARD (µmho/cm): 1413
PURIFIED WATER SUPPLIED BY: Lab
PUMP/BAILER TYP: MP-50

SAMPLING COMPANY: Golder Associates Inc.
SAMPLER'S PHONE: 248-295-0135
SAMPLER'S ADDRESS: 27200 Haggerty Road, Suite B-12 Farmington Hills, Michigan, USA 48331
CLIENT REPRESENTATIVES:
REGULATORY REPRESENTATIVES:

**COMMENTS:**

total metals downgradient

DATE FORM COMPLETED: 6-14-22 FORM COMPLETED BY (signature):

Well ID MW-302

# GROUNDWATER SAMPLE COLLECTION RECORD

**SITE IDENTIFICATION**

COMPANY: Smith's Creek Landfill
FACILITY/SITE: Smith's Creek Landfill
PROJECT NUMBER: 21459140
ADDRESS: 6779 Smith's Creek Rd. Smith's Creek, MI
CONTACT: Matt Williams
PHONE: (248) 459-3309

**WEATHER CONDITIONS**

SKY: Clear
GROUND: Dry
AIR TEMPERATURE (°F): 77
PRECIPITATION (LAST 24 HRS): none

**WELL SECURITY**

PROTECTIVE COVER: OK
BUMPER POSTS: none
EXTERNAL WELL ID: OK
LOCK: OK
WELL DIAMETER: 2"
CONCRETE PAD: OK

**CALCULATIONS**

WELL ELEVATION (FT/MSL):
DEPTH TO WATER (FT): 24.94
GROUNDWATER ELEVATION (FT/MSL):
TOTAL WELL DEPTH (FT): 80.4
WELL STICK-UP (FT):
WATER VOLUME IN CASING (GALLONS): 9.0

**PURGING**

INITIAL PURGE DATE: 6-13-22
INITIAL PURGE TIME: 1450

**STABILIZATION READINGS**

| | 1 | 2 | 3 | 4 | 5 | 6 | Final |
|---|---|---|---|---|---|---|---|
| Time | 1515 | 1540 | | | | | 1605 |
| Volume Removed (gal) | 9.0 | 18.1 | | | | | 27.1 |
| pH (s.u.) | 8.24 | 8.50 | | | | | 8.55 |
| Conductivity. (µmho/cm) | 581 | 465 | | | | | 469 |
| Temperature (°C) | 13.7 | 14.2 | | | | | 13.7 |

**SAMPLING**

SAMPLE DATE: 6-13-22
SAMPLE TIME: 1605
TOTAL BOTTLES COLLECTED: 7
FILTERED FOR METALS: Y
SAMPLE CLARITY (clear, sl. turbid, m. turbid, v. turbid):
COLOR (yellow, brown, rust, grey, white, colorless):
ODOR (sulfur, LFG, musty, solvent, petrol, no odor):
SAMPLE COLLECTED BY: AQR

**EQUIPMENT**

FIELD METER USED: Horiba 005
CALIBRATION TIME: 1200
PH CALIBRATION STANDARDS (s.u.): 4, 7, 10
CONDUCTIVITY STANDARD (µmho/cm): 1413
PURIFIED WATER SUPPLIED BY: lab
PUMP/BAILER TYP: mp-56

SAMPLING COMPANY: Golder Associates Inc.
SAMPLER'S PHONE: 248-295-0135
SAMPLER'S ADDRESS: 27200 Haggerty Road, Suite B-12 Farmington Hills, Michigan, USA 48331
CLIENT REPRESENTATIVES:
REGULATORY REPRESENTATIVES:

**COMMENTS:**

DATE FORM COMPLETED: 6-13-22 FORM COMPLETED BY (signature):

Well ID MW-303A

# GROUNDWATER SAMPLE COLLECTION RECORD

## SITE IDENTIFICATION

COMPANY: Smith's Creek Landfill
FACILITY/SITE: Smith's Creek Landfill
PROJECT NUMBER: 21459140
ADDRESS: 6779 Smith's Creek Rd. Smith's Creek, MI
CONTACT: Matt Williams
PHONE: (248) 459-3309

## WEATHER CONDITIONS

SKY: Clear
GROUND: Dry
AIR TEMPERATURE (°F): 85
PRECIPITATION (LAST 24 HRS): none

## WELL SECURITY

PROTECTIVE COVER: OK
BUMPER POSTS: none
EXTERNAL WELL ID: OK
LOCK: OK
WELL DIAMETER: 2"
CONCRETE PAD: OK

## CALCULATIONS

WELL ELEVATION (FT/MSL):
DEPTH TO WATER (FT): 22.48
GROUNDWATER ELEVATION (FT/MSL):
TOTAL WELL DEPTH (FT): 75.7
WELL STICK-UP (FT):
WATER VOLUME IN CASING (GALLONS): 8.7

## PURGING

INITIAL PURGE DATE: 6-15-22
INITIAL PURGE TIME: 1125

## STABILIZATION READINGS

| | 1 | 2 | 3 | 4 | 5 | 6 | Final |
|---|---|---|---|---|---|---|---|
| Time | 1150 | 1215 | | | | | 1240 |
| Volume Removed (gal) | 8.7 | 17.3 | | | | | 26.0 |
| pH (s.u.) | 8.51 | 8.71 | | | | | 8.75 |
| Conductivity. (µmho/cm) | 508 | 498 | | | | | 500 |
| Temperature (°C) | 13.1 | 11.6 | | | | | 12.0 |

## SAMPLING

SAMPLE DATE: 6-15-22
SAMPLE TIME: 1240
TOTAL BOTTLES COLLECTED: 14
FILTERED FOR METALS: Y
SAMPLE CLARITY (clear, sl. turbid, m. turbid, v. turbid):
COLOR (yellow, brown, rust, grey, white, colorless):
ODOR (sulfur, LFG, musty, solvent, petrol, no odor):
SAMPLE COLLECTED BY: AOE

## EQUIPMENT

FIELD METER USED: Horiba U05
CALIBRATION TIME: 0830
PH CALIBRATION STANDARDS (s.u.): 4, 7, 10
CONDUCTIVITY STANDARD (µmho/cm): 1413
PURIFIED WATER SUPPLIED BY: lab
PUMP/BAILER TYP: MP-50

SAMPLING COMPANY: Golder Associates Inc.
SAMPLER'S PHONE: 248-295-0135
SAMPLER'S ADDRESS: 27200 Haggerty Road, Suite B-12 Farmington Hills, Michigan, USA 48331
CLIENT REPRESENTATIVES:
REGULATORY REPRESENTATIVES:

**COMMENTS:**

Dup taken for qtka MW-213

DATE FORM COMPLETED: 6-15-22 FORM COMPLETED BY (signature):

Well ID MW-304

# GROUNDWATER SAMPLE COLLECTION RECORD

## SITE IDENTIFICATION

COMPANY: Smith's Creek Landfill
FACILITY/SITE: Smith's Creek Landfill
PROJECT NUMBER: 21459140
ADDRESS: 6779 Smith's Creek Rd. Smith's Creek, MI
CONTACT: Matt Williams
PHONE: (248) 459-3309

## WEATHER CONDITIONS

SKY: Overcast
GROUND: Dry
AIR TEMPERATURE (°F): 80
PRECIPITATION (LAST 24 HRS): Yes

## WELL SECURITY

PROTECTIVE COVER: OK
BUMPER POSTS: none
EXTERNAL WELL ID: OK
LOCK: OK
WELL DIAMETER: 2"
CONCRETE PAD: OK

## CALCULATIONS

WELL ELEVATION (FT/MSL):
DEPTH TO WATER (FT): 25.26
GROUNDWATER ELEVATION (FT/MSL):
TOTAL WELL DEPTH (FT): 75.7
WELL STICK-UP (FT):
WATER VOLUME IN CASING (GALLONS): 8.2

## PURGING

INITIAL PURGE DATE: 6-16-22
INITIAL PURGE TIME: 0915

## STABILIZATION READINGS

| | 1 | 2 | 3 | 4 | 5 | 6 | Final |
|---|---|---|---|---|---|---|---|
| Time | 0935 | 0955 | | | | | 1015 |
| Volume Removed (gal) | 8.2 | 16.4 | | | | | 24.7 |
| pH (s.u.) | 8.29 | 8.45 | | | | | 8.43 |
| Conductivity. (µmho/cm) | 450 | 443 | | | | | 439 |
| Temperature (°C) | 13.7 | 12.2 | | | | | 13.6 |

## SAMPLING

SAMPLE DATE: 6-16-22
SAMPLE TIME: 1015
TOTAL BOTTLES COLLECTED: 25
FILTERED FOR METALS: Y/N
SAMPLE CLARITY: (clear) sl. turbid, m. turbid, v. turbid):
COLOR (yellow, brown, rust, grey, white, (colorless)):
ODOR (sulfur, LFG, musty, solvent, petrol, (no odor)):
SAMPLE COLLECTED BY: AGZ

## EQUIPMENT

FIELD METER USED: Horiba U-52
CALIBRATION TIME: 0840
PH CALIBRATION STANDARDS (s.u.): 4, 7, 10
CONDUCTIVITY STANDARD (µmho/cm): 1413
PURIFIED WATER SUPPLIED BY: Lab
PUMP/BAILER TYP: MP-50

SAMPLING COMPANY: Golder Associates Inc.
SAMPLER'S PHONE: 248-295-0135
SAMPLER'S ADDRESS: 27200 Haggerty Road, Suite B-12 Farmington Hills, Michigan, USA 48331
CLIENT REPRESENTATIVES:
REGULATORY REPRESENTATIVES:

## COMMENTS:

Dup grab2 taken here for total metals
Field Blank taken here
MS/MSD taken here

DATE FORM COMPLETED: 6-16-22
FORM COMPLETED BY (signature):

Well ID MW-305

# GROUNDWATER SAMPLE COLLECTION RECORD

**SITE IDENTIFICATION**

COMPANY: Smith's Creek Landfill
FACILITY/SITE: Smith's Creek Landfill
PROJECT NUMBER: 21459140
ADDRESS: 6779 Smith's Creek Rd. Smith's Creek, MI
CONTACT: Matt Williams
PHONE: (248) 459-3309

**WEATHER CONDITIONS**

SKY: Clear
GROUND: Dry
AIR TEMPERATURE (°F): 76
PRECIPITATION (LAST 24 HRS): none

**WELL SECURITY**

PROTECTIVE COVER: OK
BUMPER POSTS: none OK
EXTERNAL WELL ID:
LOCK: OK
WELL DIAMETER: 2"
CONCRETE PAD: OK

**CALCULATIONS**

WELL ELEVATION (FT/MSL):
DEPTH TO WATER (FT): 29.48
GROUNDWATER ELEVATION (FT/MSL):
TOTAL WELL DEPTH (FT): 75.8
WELL STICK-UP (FT):
WATER VOLUME IN CASING (GALLONS): 7.6

**PURGING**

INITIAL PURGE DATE: 6-13-22
INITIAL PURGE TIME: 1340

**STABILIZATION READINGS**

| | 1 | 2 | 3 | 4 | 5 | 6 | Final |
|---|---|---|---|---|---|---|---|
| Time | 1400 | 1405 | | | | | 1000 |
| Volume Removed (gal) | 7.6 | 7.7 | | | | | 7.7 |
| pH (s.u.) | 7.99 | well | | | | | 8.25 |
| Conductivity. (µmho/cm) | 475 | went | | | | | 462 |
| Temperature (°C) | 12.4 | Dry | | | | | 13.5 |

**SAMPLING**

SAMPLE DATE: 6-14-22
SAMPLE TIME: 1000
TOTAL BOTTLES COLLECTED: 7
FILTERED FOR METALS: Y
SAMPLE CLARITY (clear, sl. turbid, m. turbid, v. turbid):
COLOR (yellow, brown, rust, grey, white, colorless):
ODOR (sulfur, LFG, musty, solvent, petrol, no odor):
SAMPLE COLLECTED BY: ADR

**EQUIPMENT**

FIELD METER USED: Horiba U-52
CALIBRATION TIME: 1200
PH CALIBRATION STANDARDS (s.u.): 4, 7, 10
CONDUCTIVITY STANDARD (µmho/cm): 1413
PURIFIED WATER SUPPLIED BY: lab
PUMP/BAILER TYP: mp-50

SAMPLING COMPANY: Golder Associates Inc.
SAMPLER'S PHONE: 248-295-0135
SAMPLER'S ADDRESS: 27200 Haggerty Road, Suite B-12 Farmington Hills, Michigan, USA 48331
CLIENT REPRESENTATIVES:
REGULATORY REPRESENTATIVES:

**COMMENTS:**

Went dry on 11/17

DATE FORM COMPLETED: 6-14-22
FORM COMPLETED BY (signature):

Sample ID SW-DA1

# SURFACE WATER SAMPLE COLLECTION RECORD

**SITE IDENTIFICATION**

COMPANY: Smith's Creek Landfill
FACILITY/SITE: Smith's Creek Landfill
PROJECT NUMBER: 21459140
ADDRESS: 6779 Smith's Creek Rd. Smith's Creek, MI
CONTACT: Matt Williams
PHONE: (248) 459-3309

**WEATHER CONDITIONS DURING SAMPLING**

SKY: Clear
WIND (mph): ~~5-10~~ 10-13
AIR TEMPERATURE (°F): 83

**SAMPLING**

SAMPLE DATE:
SAMPLE TIME:
TOTAL BOTTLES COLLECTED:
FILTERED FOR METALS:
SAMPLE CLARIT
SAMPLE COLOR:
SAMPLE ODOR:

**FIELD MEASUREMENTS**

FIELD MEASUREMENT TIME:
FINAL pH (S.U.):
FINAL CONDUCTIVITY (µMHO/CM):
SAMPLE TEMPERATURE (°C):
DISSOLVED OXYGEN (mg/L):

**EQUIPMENT**

FIELD METER USED:
CALIBRATION TIME:
FINAL CALIBRATION pH:
FINAL CALIBRATION SC:
DEIONIZED WATER SUPPLIED BY:

SAMPLE COLLECTED BY:
SAMPLING COMPANY: Golder Associates Inc.
SAMPLER'S PHONE: 248-295-0135
SAMPLER'S ADDRESS: 27200 Haggerty Road, Suite B-12 Farmington Hills, Michigan, USA 48331
CLIENT REPRESENTATIVES:
REGULATORY REPRESENTATIVES:

**COMMENTS:** no flow

DATE FORM COMPLETED: 6-16-22 FORM COMPLETED BY (signature):

Sample ID SW-D2

# SURFACE WATER SAMPLE COLLECTION RECORD

**SITE IDENTIFICATION**

COMPANY: Smith's Creek Landfill
FACILITY/SITE: Smith's Creek Landfill
PROJECT NUMBER: 21459140
ADDRESS: 6779 Smith's Creek Rd. Smith's Creek, MI
CONTACT: Matt Williams
PHONE: (248) 459-3309

**WEATHER CONDITIONS DURING SAMPLING**

SKY: Clear
WIND (mph): 10-15
AIR TEMPERATURE (°F): 83

**SAMPLING**

SAMPLE DATE:
SAMPLE TIME:
TOTAL BOTTLES COLLECTED:
FILTERED FOR METALS:
SAMPLE CLARIT
SAMPLE COLOR:
SAMPLE ODOR:

**FIELD MEASUREMENTS**

FIELD MEASUREMENT TIME:
FINAL pH (S.U.):
FINAL CONDUCTIVITY (µMHO/CM):
SAMPLE TEMPERATURE (°C):
DISSOLVED OXYGEN (mg/L):

**EQUIPMENT**

FIELD METER USED:
CALIBRATION TIME:
FINAL CALIBRATION pH:
FINAL CALIBRATION SC:
DEIONIZED WATER SUPPLIED BY:

SAMPLE COLLECTED BY:
SAMPLING COMPANY: Golder Associates Inc.
SAMPLER'S PHONE: 248-295-0135
SAMPLER'S ADDRESS: 27200 Haggerty Road, Suite B-12 Farmington Hills, Michigan, USA 48331
CLIENT REPRESENTATIVES:
REGULATORY REPRESENTATIVES:

**COMMENTS:**

no flow

DATE FORM COMPLETED: 6-16-22
FORM COMPLETED BY (signature):

Sample ID SW-U1

# SURFACE WATER SAMPLE COLLECTION RECORD

**SITE IDENTIFICATION**

COMPANY: Smith's Creek Landfill
FACILITY/SITE: Smith's Creek Landfill
PROJECT NUMBER: 20141318
ADDRESS: 6779 Smith's Creek Rd. Smith's Creek, MI
CONTACT: Matt Williams
PHONE: (248) 459-3309

**WEATHER CONDITIONS DURING SAMPLING**

SKY: Clear
WIND (mph): 10-15
AIR TEMPERATURE (°F): 83

**SAMPLING**

SAMPLE DATE:
SAMPLE TIME:
TOTAL BOTTLES COLLECTED:
FILTERED FOR METALS:
SAMPLE CLARIT
SAMPLE COLOR:
SAMPLE ODOR:

**FIELD MEASUREMENTS**

FIELD MEASUREMENT TIME:
FINAL pH (S.U.):
FINAL CONDUCTIVITY (µMHO/CM):
SAMPLE TEMPERATURE (°C):
DISSOLVED OXYGEN (mg/L):

**EQUIPMENT**

FIELD METER USED:
CALIBRATION TIME:
FINAL CALIBRATION pH:
FINAL CALIBRATION SC:
DEIONIZED WATER SUPPLIED BY:

SAMPLE COLLECTED BY:
SAMPLING COMPANY: Golder Associates Inc.
SAMPLER'S PHONE: 248-295-0135
SAMPLER'S ADDRESS: 27200 Haggerty Road, Suite B-12 Farmington Hills, Michigan, USA 48331
CLIENT REPRESENTATIVES:
REGULATORY REPRESENTATIVES:

**COMMENTS:**

no flow

DATE FORM COMPLETED: 6-16-22
FORM COMPLETED BY (signature):

Sample ID SW-U2

# SURFACE WATER SAMPLE COLLECTION RECORD

**SITE IDENTIFICATION**

COMPANY: Smith's Creek Landfill
FACILITY/SITE: Smith's Creek Landfill
PROJECT NUMBER: 20141318
ADDRESS: 6779 Smith's Creek Rd. Smith's Creek, MI
CONTACT: Matt Williams
PHONE: (248) 459-3309

**WEATHER CONDITIONS DURING SAMPLING**

SKY: Clear
WIND (mph): 10-15
AIR TEMPERATURE (°F): 83

**SAMPLING**

SAMPLE DATE:
SAMPLE TIME:
TOTAL BOTTLES COLLECTED:
FILTERED FOR METALS:
SAMPLE CLARIT
SAMPLE COLOR:
SAMPLE ODOR:

**FIELD MEASUREMENTS**

FIELD MEASUREMENT TIME:
FINAL pH (S.U.):
FINAL CONDUCTIVITY (µMHO/CM):
SAMPLE TEMPERATURE (°C):
DISSOLVED OXYGEN (mg/L):

**EQUIPMENT**

FIELD METER USED:
CALIBRATION TIME:
FINAL CALIBRATION pH:
FINAL CALIBRATION SC:
DEIONIZED WATER SUPPLIED BY:

SAMPLE COLLECTED BY:
SAMPLING COMPANY: Golder Associates Inc.
SAMPLER'S PHONE: 248-295-0135
SAMPLER'S ADDRESS: 27200 Haggerty Road, Suite B-12 Farmington Hills, Michigan, USA 48331
CLIENT REPRESENTATIVES:
REGULATORY REPRESENTATIVES:

**COMMENTS:**

no flow

DATE FORM COMPLETED: 6-16-22 FORM COMPLETED BY (signature):

SAMPLE ID: Leachate

# LEACHATE SAMPLE COLLECTION RECORD

**SITE IDENTIFICATION**

COMPANY: Smith's Creek Landfill
FACILITY/SITE: Smith's Creek Landfill
PROJECT NUMBER: 21459140
ADDRESS: 6779 Smith's Creek Rd. Smith's Creek, MI
CONTACT: Matt Williams
PHONE: (248) 459-3309

**WEATHER CONDITIONS DURING SAMPLING**

SKY: Clear
WIND (mph): 10-15
AIR TEMPERATURE (°F): 91

**SAMPLING**

SAMPLE DATE: 6-16-22
SAMPLE TIME: 1530
TOTAL BOTTLES COLLECTED: 10
FILTERED FOR METALS: N
SAMPLE CLARITY: M. turbid
SAMPLE COLOR: gray
SAMPLE ODOR: LFG

**FIELD MEASUREMENTS**

FIELD MEASUREMENT TIME: 1530
FINAL pH (S.U.): 7.27
FINAL CONDUCTIVITY (µMHO/CM): 25300
SAMPLE TEMPERATURE (°C): 24.7

**EQUIPMENT**

FIELD METER USED: Horiba U-52
CALIBRATION TIME: 0840
FINAL CALIBRATION pH: 4, 7, 10
FINAL CALIBRATION SC: 1413
FILTER TYPE USED: NA
PUMP OR BAILER USED: 4" bailer

SAMPLE COLLECTED BY: AOR
SAMPLING COMPANY: Golder Associates Inc.
SAMPLER'S PHONE: 248-295-0135
SAMPLER'S ADDRESS: 27200 Haggerty Road, Suite B-12 Farmington Hills, Michigan, USA 48331
CLIENT REPRESENTATIVES:
REGULATORY REPRESENTATIVES:

**COMMENTS:**

DATE FORM COMPLETED: 6-16-22
FORM COMPLETED BY (signature):

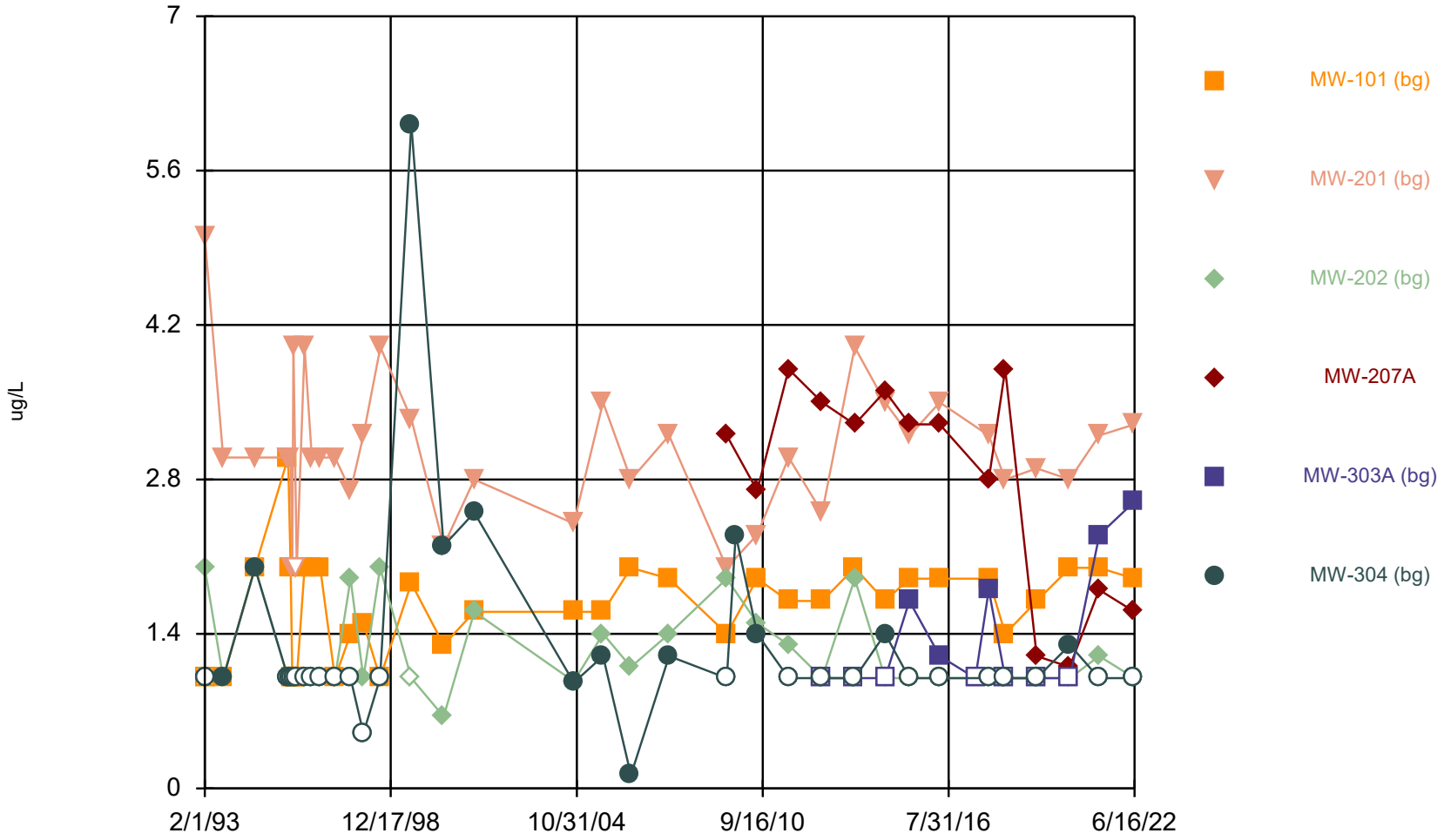
**APPENDIX C**

# Time Series Plots
# MW-207A

Sanitas™ v.9.6.35 For the statistical analyses of ground water by Golder Associates only. UG

Hollow symbols indicate censored values.

# Time Series



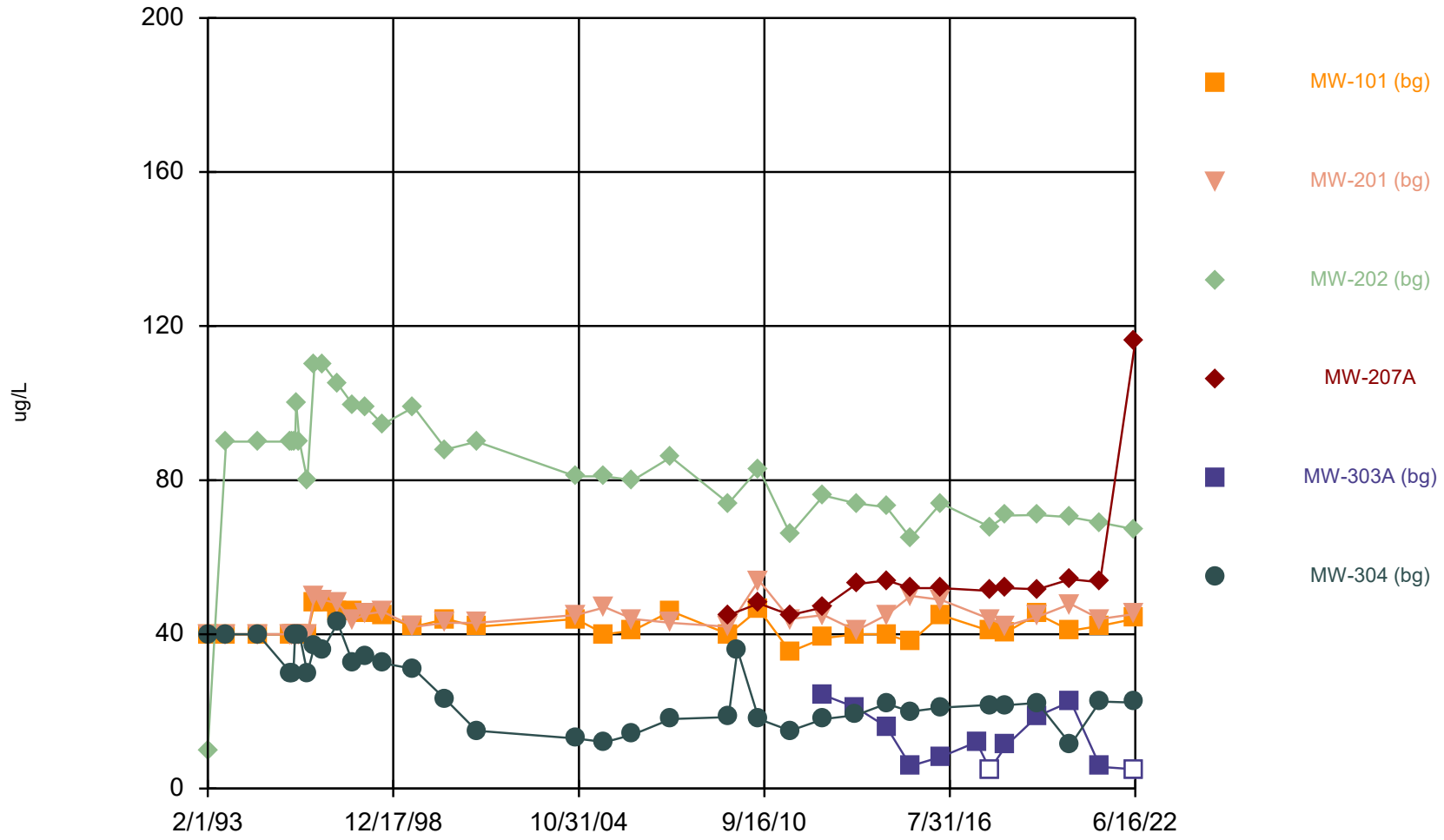

Constituent: Arsenic Analysis Run 7/23/2022 4:11 AM

Smiths Creek LF Client: St. Clair County Data: Dt-scl

Sanitas™ v.9.6.35 For the statistical analyses of ground water by Golder Associates only. UG

Hollow symbols indicate censored values.

# Time Series



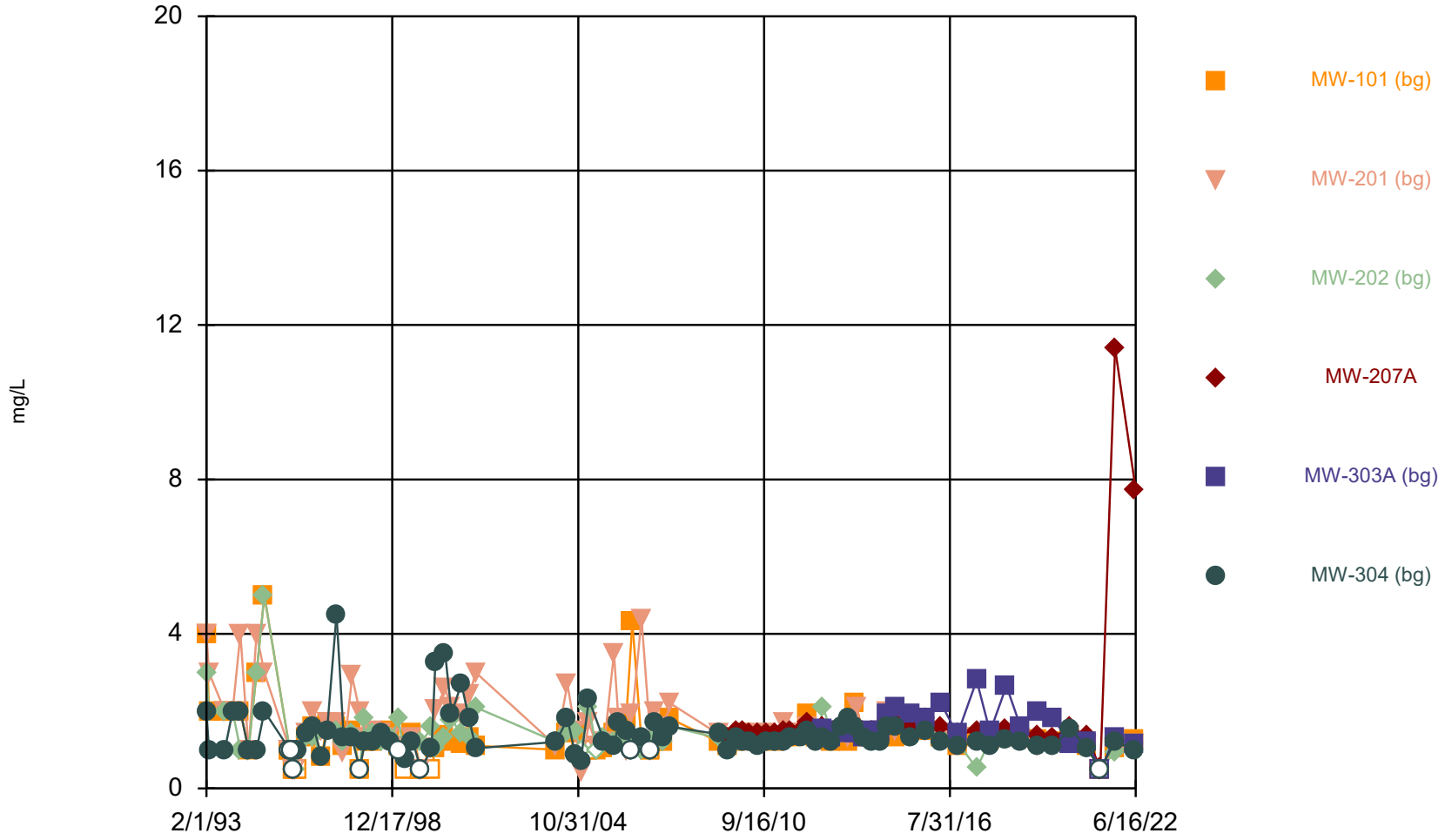

Constituent: Barium Analysis Run 7/23/2022 4:11 AM

Smiths Creek LF Client: St. Clair County Data: Dt-scl

Sanitas™ v.9.6.35 For the statistical analyses of ground water by Golder Associates only. UG

Hollow symbols indicate censored values.

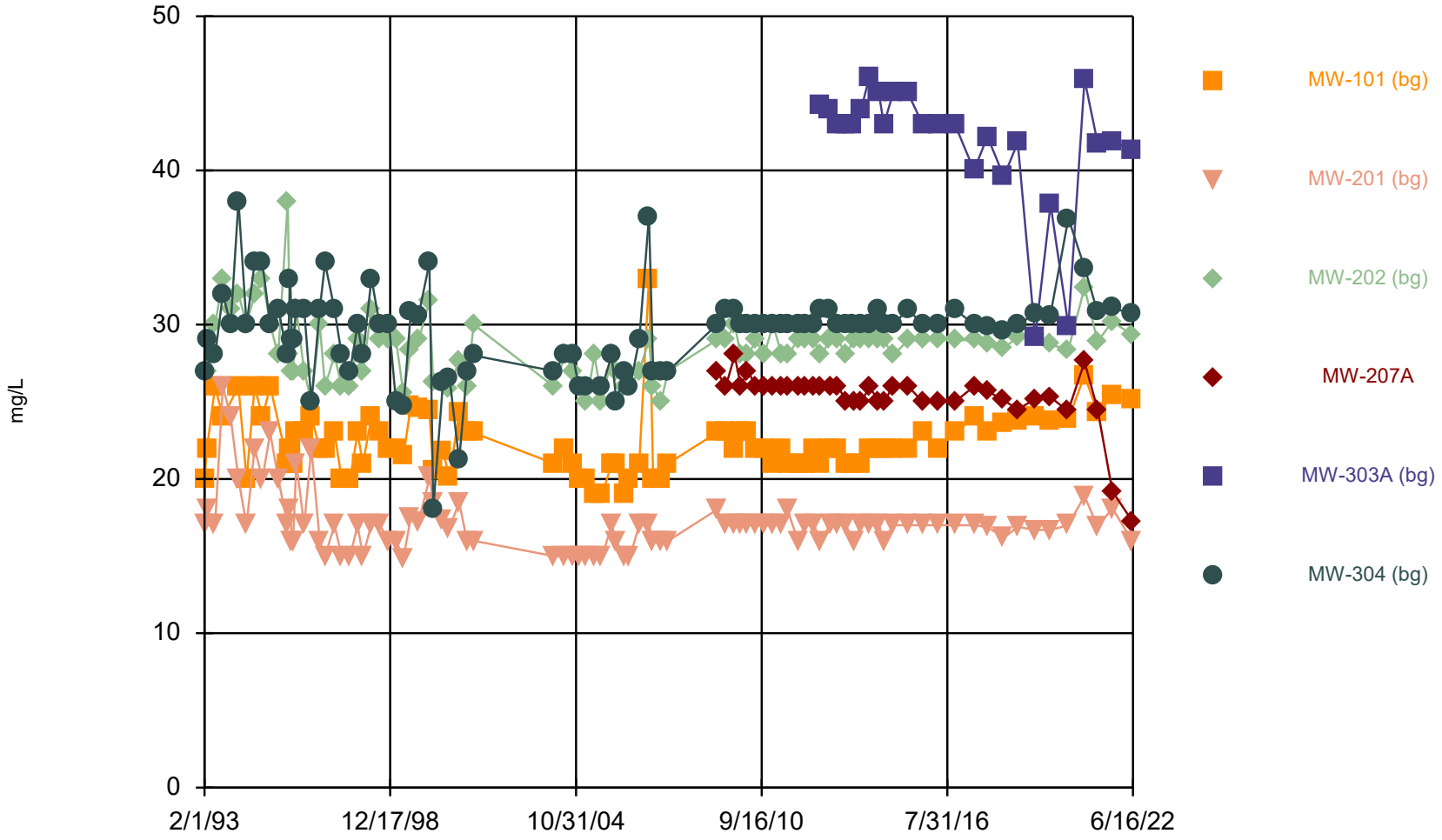
# Time Series




Constituent: Carbon, Total Organic  Analysis Run 7/23/2022 4:11 AM

Smiths Creek LF  Client: St. Clair County  Data: Dt-scl

# Time Series



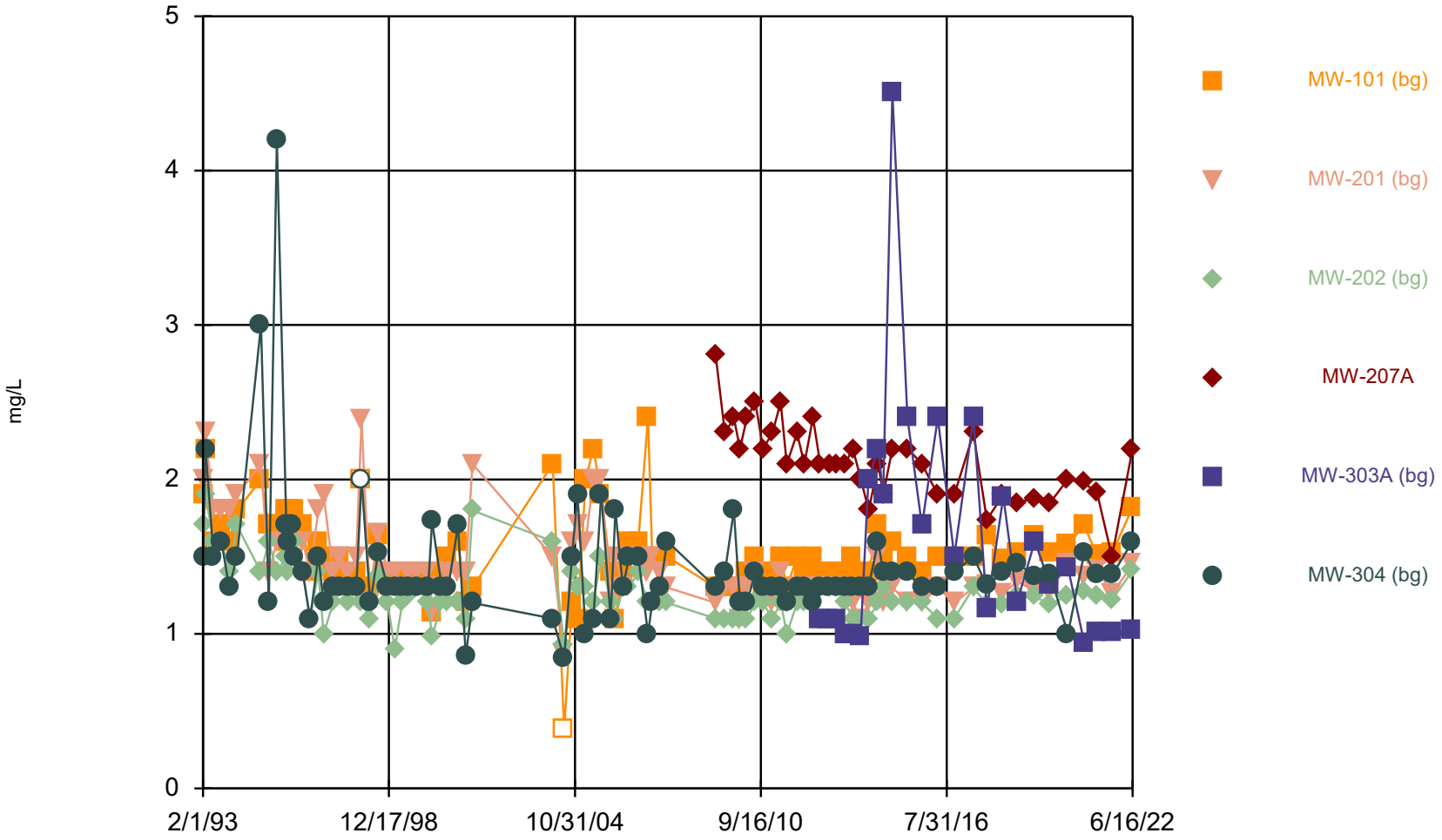

Constituent: Chloride, total  Analysis Run 7/23/2022 4:11 AM

Smiths Creek LF  Client: St. Clair County  Data: Dt-scl

Sanitas™ v.9.6.35 For the statistical analyses of ground water by Golder Associates only. UG

Hollow symbols indicate censored values.

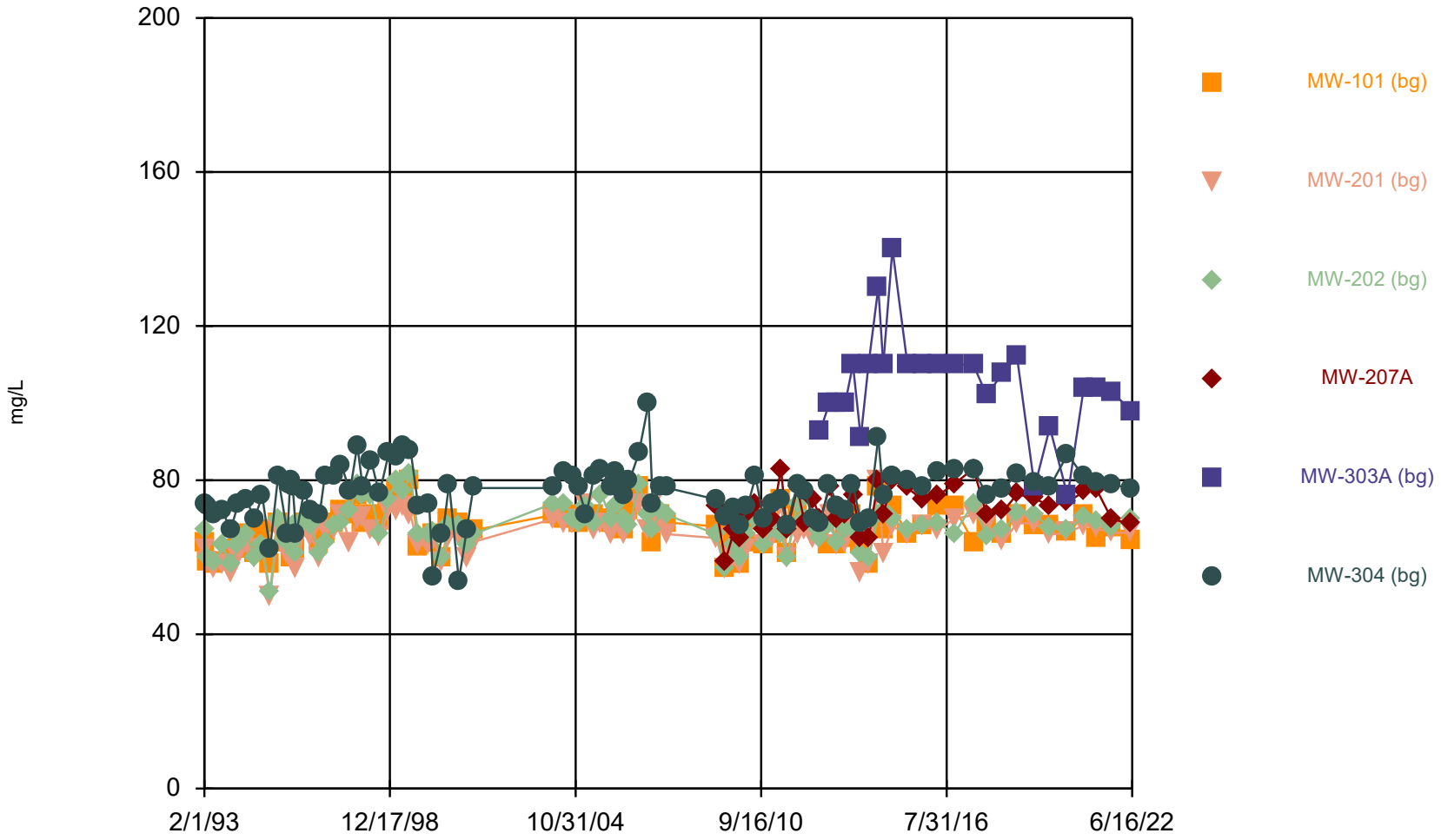
# Time Series




Constituent: Potassium  Analysis Run 7/23/2022 4:11 AM

Smiths Creek LF  Client: St. Clair County  Data: Dt-scl

# Time Series



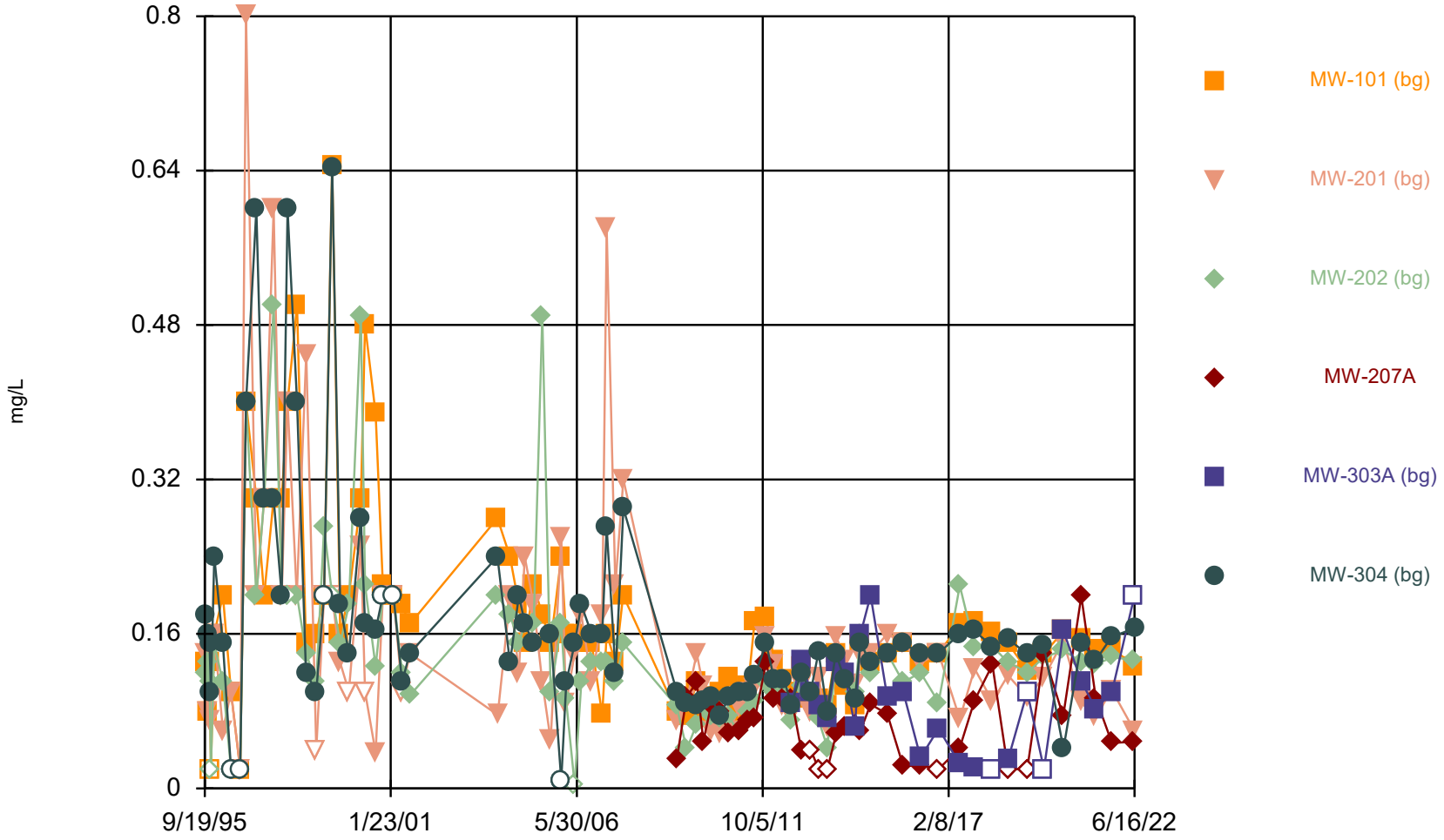

Constituent: Sodium Analysis Run 7/23/2022 4:11 AM

Smiths Creek LF Client: St. Clair County Data: Dt-scl

Sanitas™ v.9.6.35 For the statistical analyses of ground water by Golder Associates only. UG

Hollow symbols indicate censored values.

# Time Series



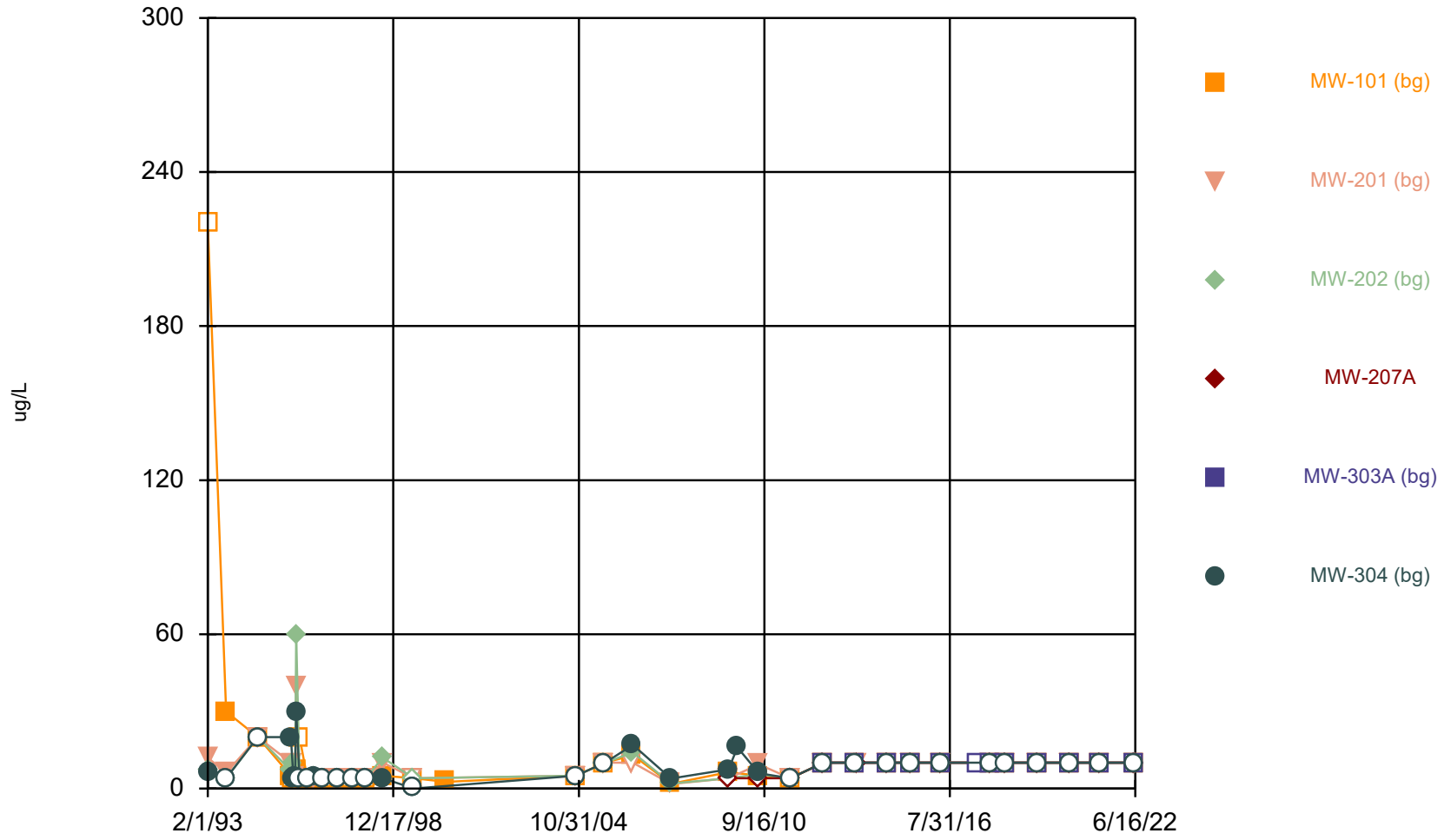

Constituent: Total Inorganic Nitrogen  Analysis Run 7/23/2022 4:11 AM

Smiths Creek LF  Client: St. Clair County  Data: Dt-scl

Sanitas™ v.9.6.35 For the statistical analyses of ground water by Golder Associates only. UG

Hollow symbols indicate censored values.

# Time Series




Constituent: Zinc  Analysis Run 7/23/2022 4:11 AM

Smiths Creek LF  Client: St. Clair County  Data: Dt-scl

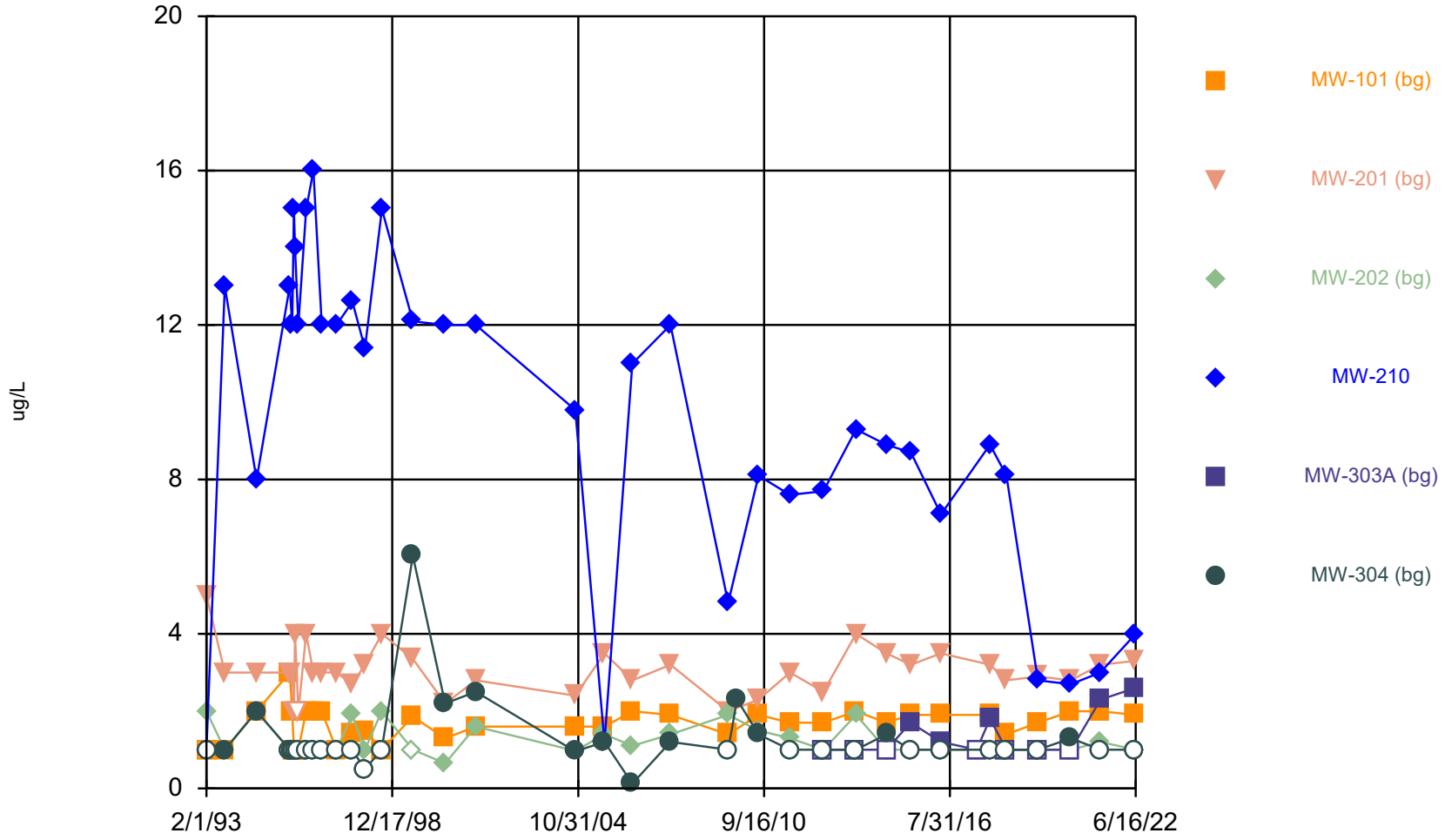
**APPENDIX D**

# Time Series Plots
# MW-210

Sanitas™ v.9.6.35 For the statistical analyses of ground water by Golder Associates only. UG

Hollow symbols indicate censored values.

# Time Series



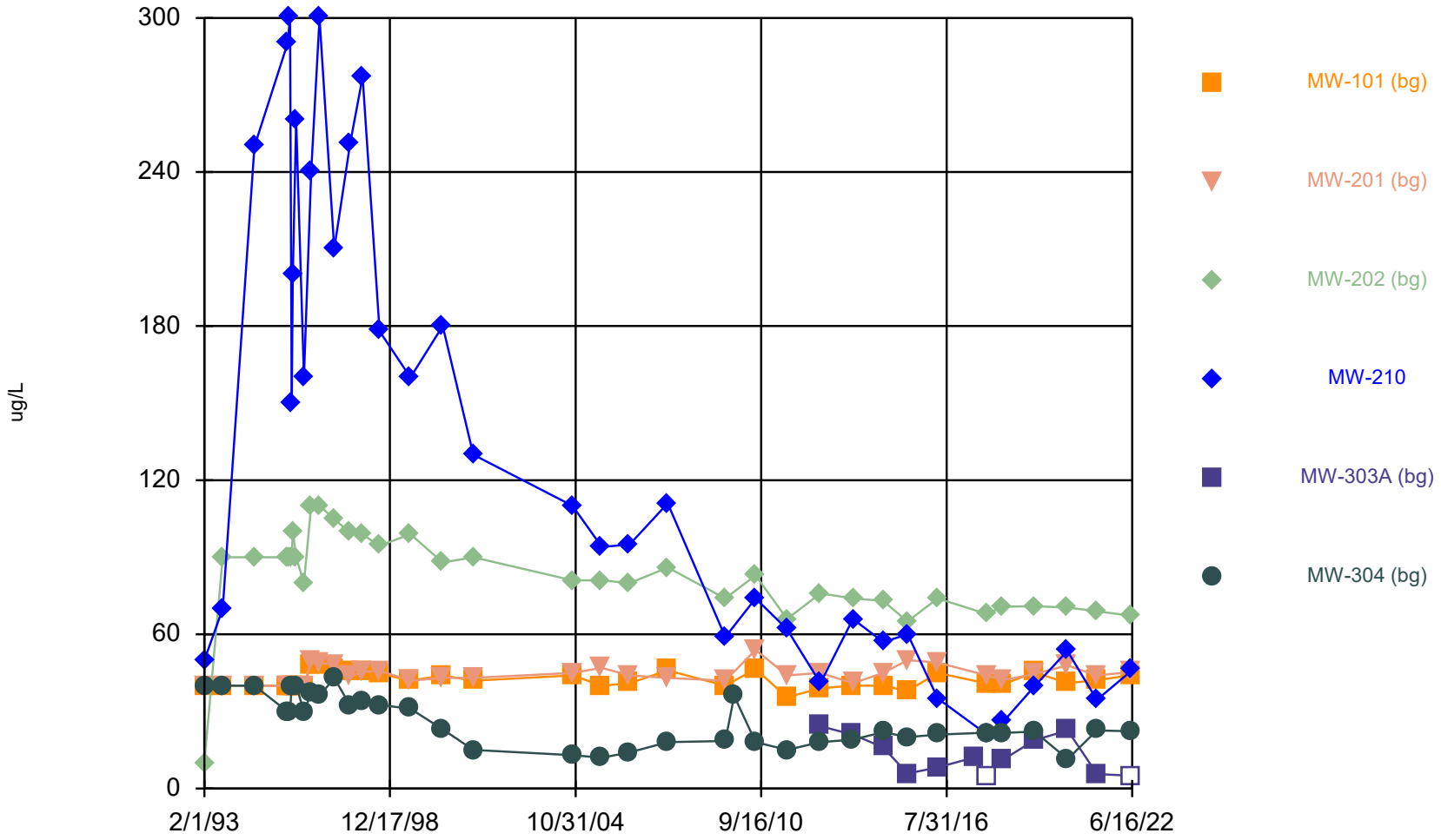

Constituent: Arsenic  Analysis Run 7/23/2022 4:27 AM

Smiths Creek LF  Client: St. Clair County  Data: Dt-scl

Sanitas™ v.9.6.35 For the statistical analyses of ground water by Golder Associates only. UG

Hollow symbols indicate censored values.

# Time Series



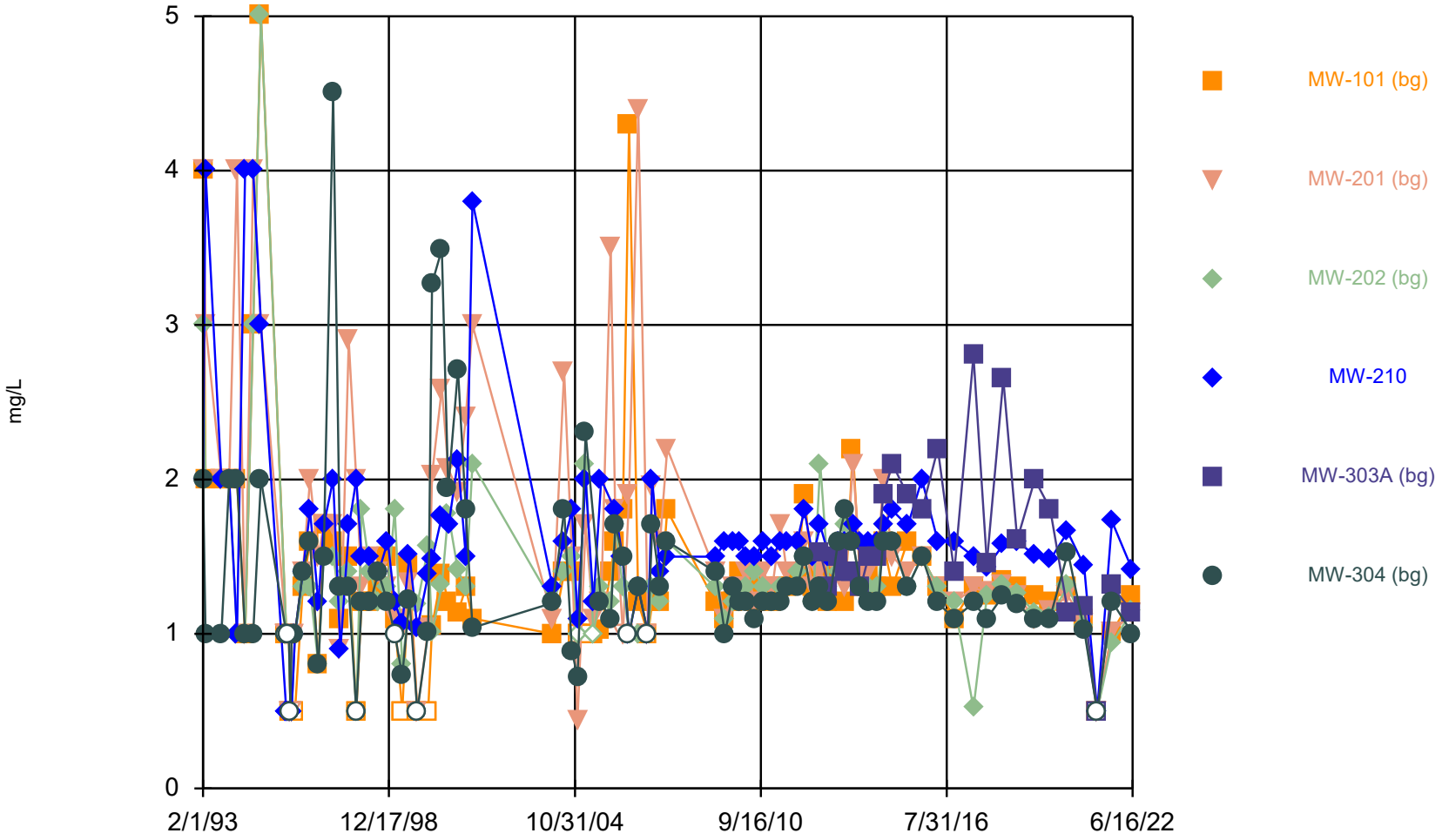

Constituent: Barium Analysis Run 7/23/2022 4:27 AM

Smiths Creek LF Client: St. Clair County Data: Dt-scl

Sanitas™ v.9.6.35 For the statistical analyses of ground water by Golder Associates only. UG

Hollow symbols indicate censored values.

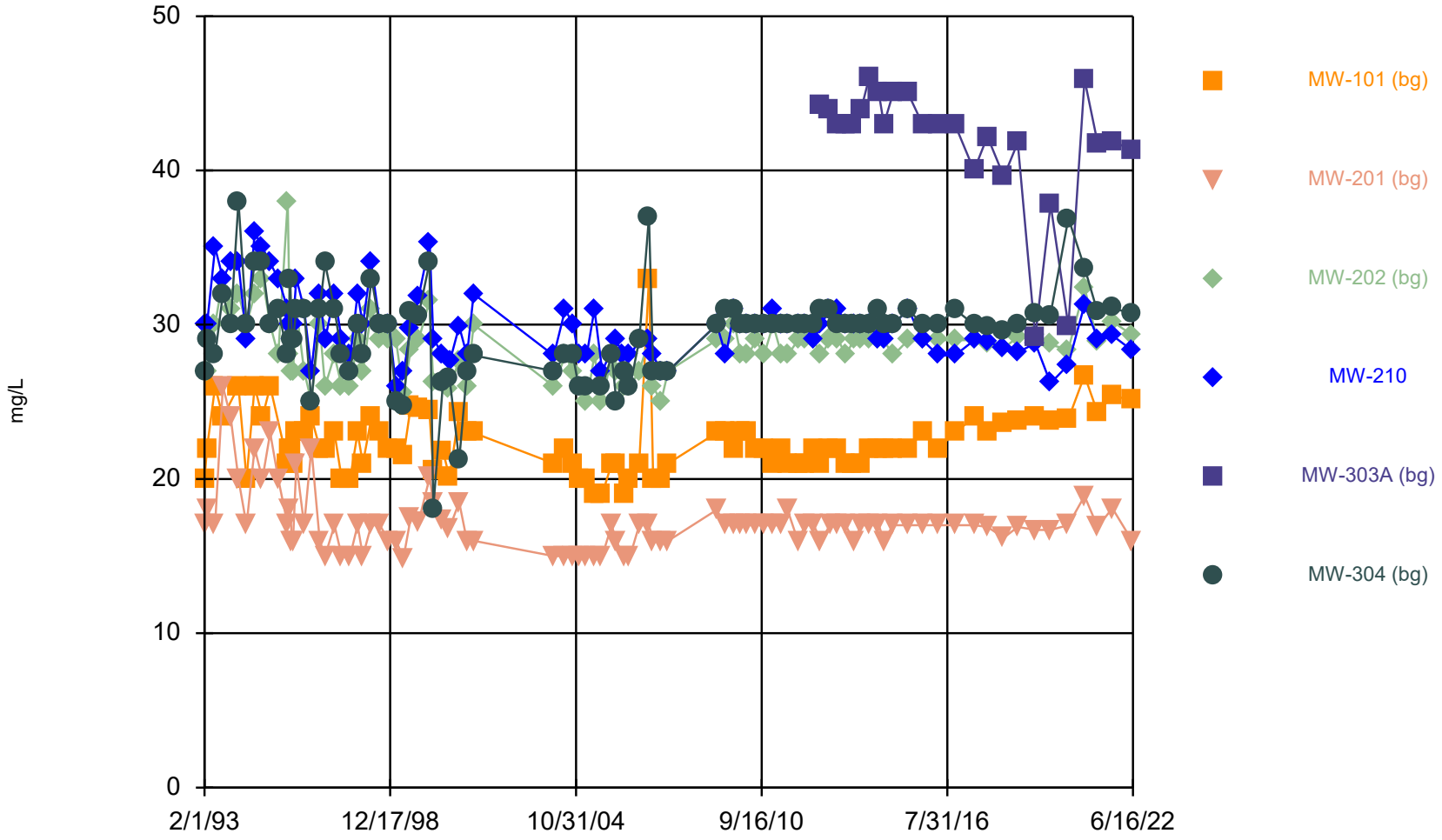
# Time Series




Constituent: Carbon, Total Organic  Analysis Run 7/23/2022 4:27 AM

Smiths Creek LF  Client: St. Clair County  Data: Dt-scl

# Time Series



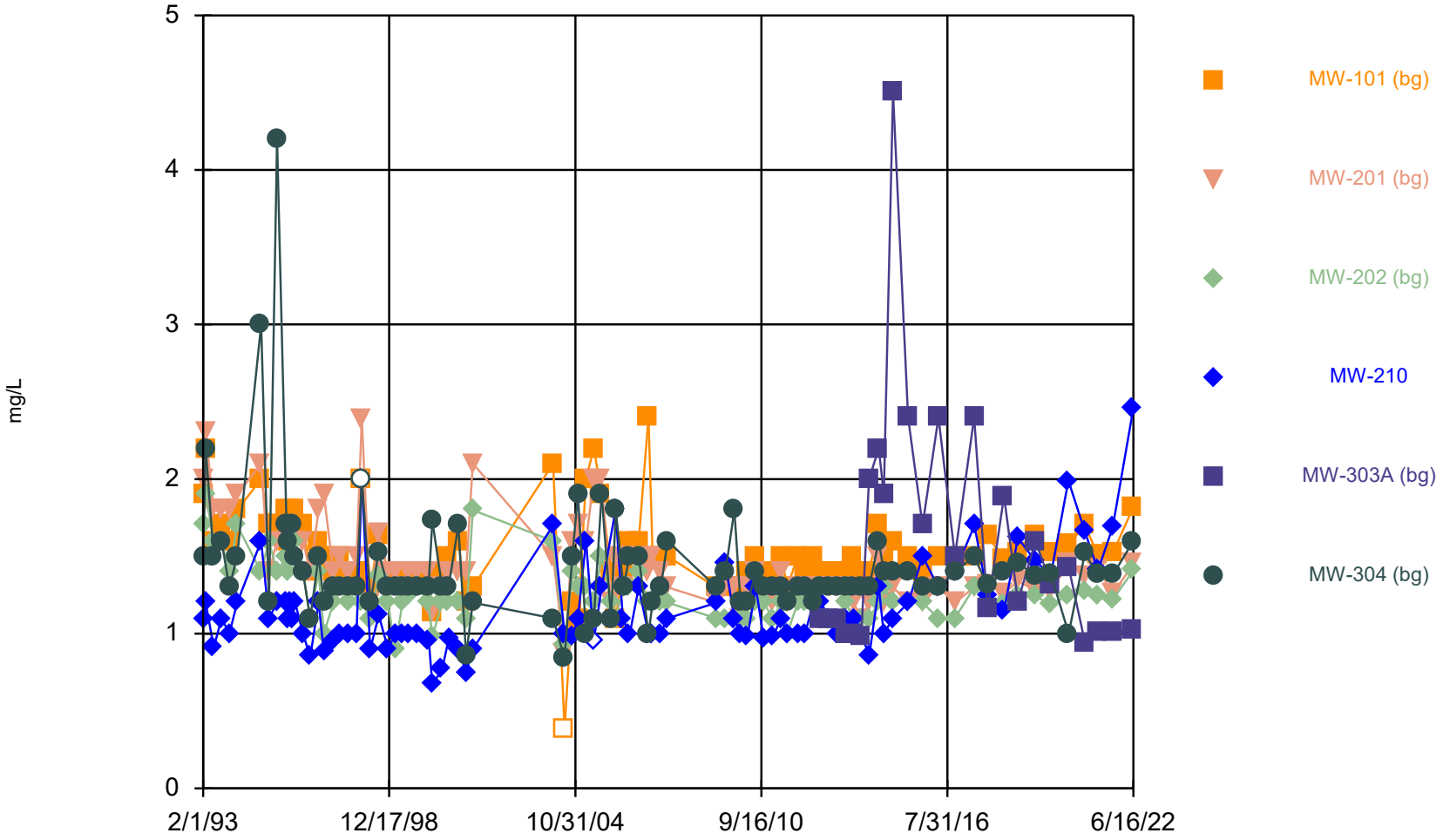

Constituent: Chloride, total Analysis Run 7/23/2022 4:27 AM

Smiths Creek LF Client: St. Clair County Data: Dt-scl

Sanitas™ v.9.6.35 For the statistical analyses of ground water by Golder Associates only. UG

Hollow symbols indicate censored values.

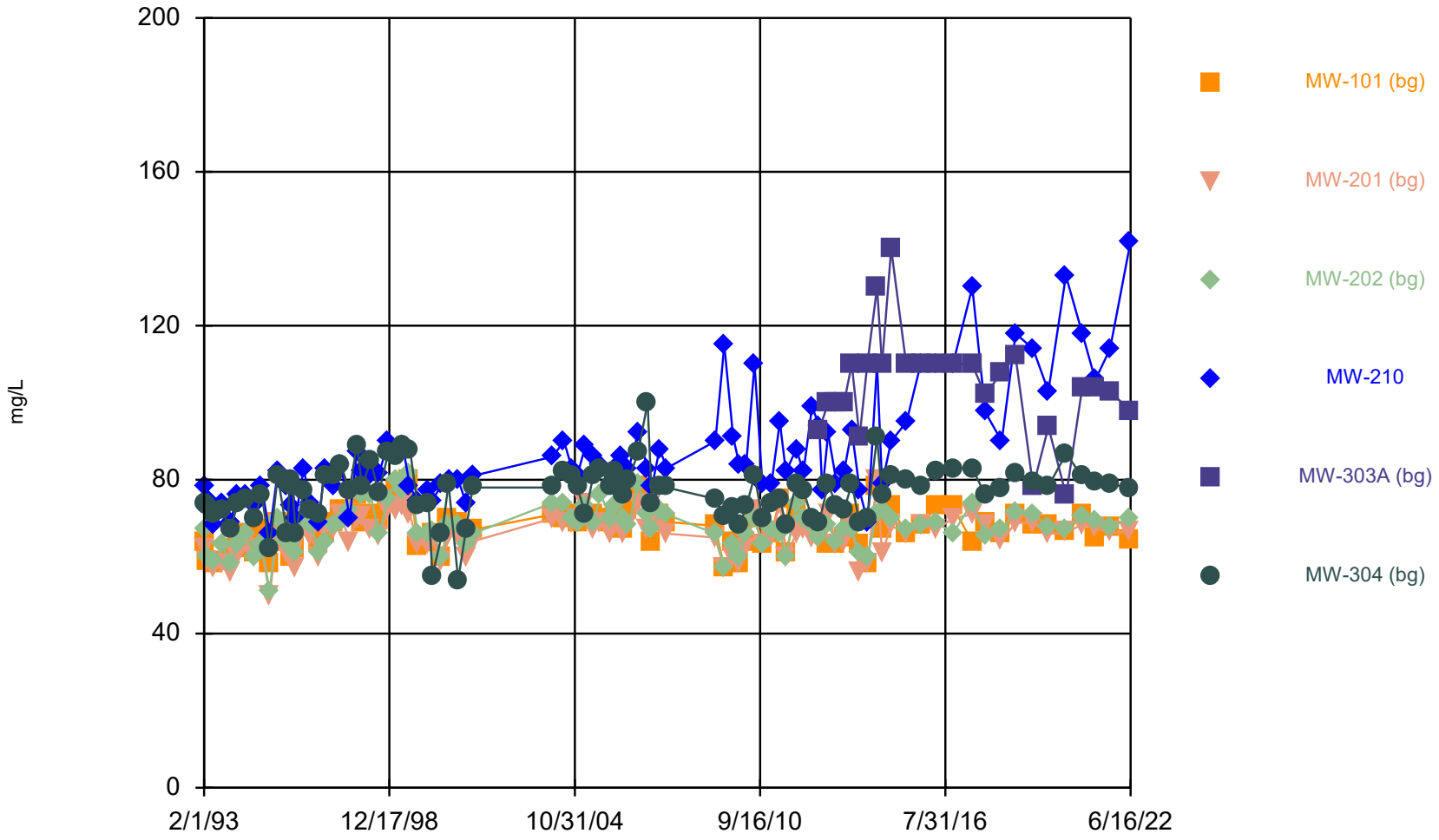
# Time Series




Constituent: Potassium  Analysis Run 7/23/2022 4:27 AM

Smiths Creek LF  Client: St. Clair County  Data: Dt-scl

# Time Series



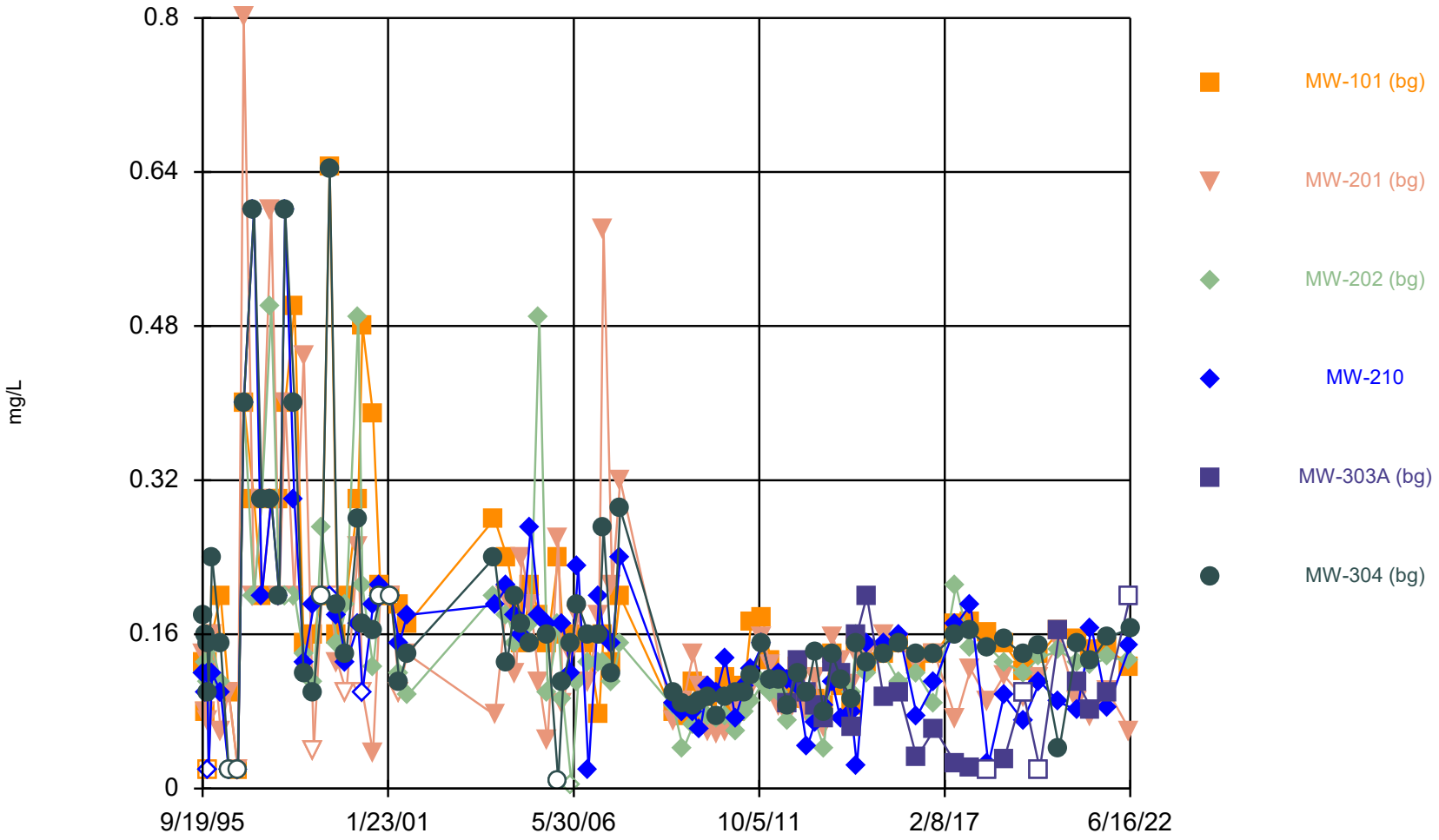

Constituent: Sodium Analysis Run 7/23/2022 4:27 AM

Smiths Creek LF Client: St. Clair County Data: Dt-scl

Sanitas™ v.9.6.35 For the statistical analyses of ground water by Golder Associates only. UG

Hollow symbols indicate censored values.

# Time Series



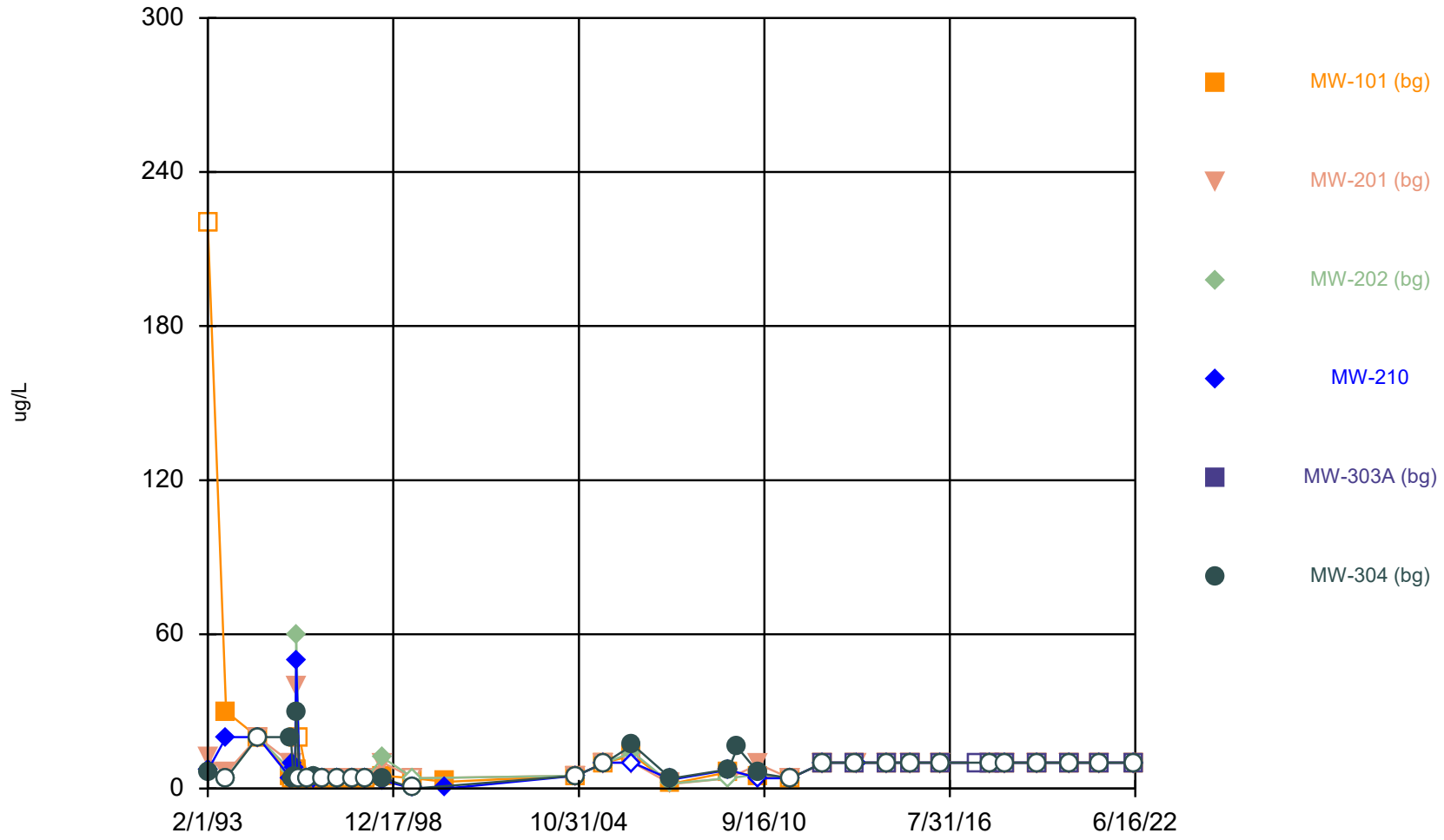

Constituent: Total Inorganic Nitrogen  Analysis Run 7/23/2022 4:27 AM

Smiths Creek LF  Client: St. Clair County  Data: Dt-scl

Sanitas™ v.9.6.35 For the statistical analyses of ground water by Golder Associates only. UG

Hollow symbols indicate censored values.

# Time Series




Constituent: Zinc  Analysis Run 7/23/2022 4:27 AM

Smiths Creek LF  Client: St. Clair County  Data: Dt-scl

golder.com