

GROUNDWATER MONITORING REPORT
JUNE 2021 SAMPLING EVENT

SANDOVAL COUNTY

Sandoval County Landfill

Rio Rancho, New Mexico



August | 2021

Parkhill Project # 01802321

August 25, 2021

Mr. George Schuman
Permit Section Manager
New Mexico Environment Department
Solid Waste Bureau
P.O. Box 5469
Santa Fe, NM 87502

Re: Sandoval County Landfill: Groundwater Monitoring Report
June 2021 Sampling Event [01.8023.20]

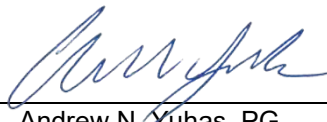
Dear Mr. Schuman:

On behalf of our client, Sandoval County, Parkhill (fka Gordon/PSC) is submitting groundwater monitoring results corresponding to samples collected at the Sandoval County Landfill (SCLF) on June 10, 2021. This event consisted of sample collection at each of the site's five active monitoring wells, as well as field blank documentation. In addition, laboratory analytical results are compared to the established assessment monitoring levels (AMLs) and upper tolerance limit values (UTLVs) approved by NMED on February 9, 2015. Approval was given by SWB on October 6, 2020 for established assessment monitoring levels AML and upper tolerance limit values (UTLV) from both MW-2 and MW-3 to transfer to their replacement wells MW-2R and MW-3R.

We appreciate the Department's ongoing review of the groundwater monitoring program for the Sandoval County Landfill. Please contact us with your questions or comments.

Sincerely,

PARKHILL

By 
Andrew N. Yuhas, PG
Professional Geologist

ANY/pg
Enclosures

cc: Mr. Mark Hatzenbuehler, Director of Public Works, Sandoval County
Mr. Chris Perea, Landfill Manager (Facility Operating Record)

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1	Site Location Map
2	Approved Alternate Parameter List and Monitoring Schedule
3	Groundwater Elevation Contour Map (June 10, 2021)
4	Groundwater Sampling Field Data, Monitoring Well Details & Field Notes
5	Summary of Inorganic Parameter Analytical Results
6	Laboratory Report and Chain-of-Custody Documentation
7	NMED Correspondence
7.1	Notification of Potential Exceedances (07/16/21)
7.2	NMED Approval of Groundwater Monitoring Wells MW-2 and MW-3 Replacement Workplan (09/18/19)
7.3	NMED Approval of Groundwater Monitoring Wells MW-2R and MW-3R Installation Report (08/19/20)
7.4	NMED Approval of Analytical Limits for MW-2R and MW-3R (10/06/20)
8	Qualified Groundwater Scientist Certification

1.0 INTRODUCTION

On June 10, 2021 Parkhill (f.k.a. Gordon Environmental/PSC) performed annual groundwater monitoring at the Sandoval County Landfill (**Attachment 1**) in accordance with the site's existing Solid Waste Facility Permit (Solid Waste Facility I.D. No. SWM-0123365). The 06/10/21 event consisted of sample collection at each of the site's five active monitoring wells.

Samples collected from wells MW-2R, 3R, 5R, 6R, and 7R were analyzed for the current NMED-approved alternate list of parameters (**Attachment 2**). Laboratory analytical results were compared to the established assessment monitoring levels (AMLs) and upper tolerance limit values (UTLVs) approved by the NMED in 2015.

2.0 GROUNDWATER MONITORING PROGRAM

2.1 Groundwater Monitoring Network

The original monitoring well network at Sandoval County Landfill (SCLF) consisted of four monitoring wells (MW-1 through MW-4). Upgradient monitoring well MW-4 was decommissioned in June 2003 in advance of Cell 4A construction and replaced by upgradient monitoring well MW-5 in July/August 2003. On 03/11/10, the Solid Waste Bureau (SWB) approved the exclusion of well MW-1 from sample collection due to steadily decreasing water levels of nearly 1 ft/yr between 1999 and 2009. Two additional monitoring wells (MW-6 and MW-7) were installed in January and March 2004, respectively. On 03/21/16, SWB approved the exclusion of well MW-5 from the sampling network, and the installation of well MW-5R as the replacement upgradient well. Well MW-5 was subsequently replaced by upgradient well MW-5R in April 2016 due to predictable declining recharge issues. On 11/29/17, SWB approved the exclusion of wells MW-6 and MW-7 from the sampling network, and the installation of wells MW-6R and MW-7R as replacement downgradient wells. The field activities related to the installation of replacement monitoring wells MW-6R and MW-7R between 02/22/18 and 05/31/18 are documented in the *Groundwater Monitoring Wells MW-6R and MW-7R Installation Report* (Parkhill, 06/25/18), which was approved by SWB on 07/04/18.

On 08/12/19, Parkhill submitted the *Groundwater Monitoring Wells MW-2 and MW-3 Replacement Workplan* ("the Workplan") to NMED for review and approval. Due to insufficient flows and declining recharge rates observed during routine monitoring, the Workplan provided the rationale for the deactivation of wells MW-2 and MW-3 (i.e., exclusion from the groundwater monitoring network and conversion to piezometers) and replacement with new wells MW-2R and MW-3R. On 09/18/19 SWB

approved the Workplan and the removal of wells MW-2 and MW-3 from the groundwater monitoring network (**Attachment 7.2**). The field activities related to the installation of replacement monitoring wells MW-2R and MW-3R between 03/20/20 and 04/07/20 are documented in the *Groundwater Monitoring Well Installation Report: Wells MW-2R and MW-3R* (Parkhill, 07/02/20), which was approved by SWB on 08/19/20 (**Attachment 7.3**).

On 10/06/2020 (**Attachment 7.4**), SWB determined that the BCVs, AMLs and UTLVs already established for monitoring wells MW-2 and MW-3 were statistically consistent with the 6/17/2020 analytical results from monitoring wells MW-2R and MW-3R, and approved the use of these existing thresholds for determination of exceedances for new wells MW-2R and MW-3R.

2.2 Monitoring Schedule and Parameters

The current groundwater monitoring program for SCLF consists of the annual collection and analysis of samples for the NMED-approved alternate list of parameters (**Attachment 2**). Laboratory analytical results were compared to the established assessment monitoring levels (AMLs) and upper tolerance limit values (UTLVs) approved by the NMED in 2015. Consistent with the requirements of 20.9.9.11.B NMAC, samples collected from each well in 2024 will be analyzed for the entire suite of parameters listed in Subsections A&C of 20.9.9.20 NMAC (i.e., once every five years).

2.3 Groundwater Level Measurements

Depth-to-water (DTW) measurements for all on-site wells were recorded on 06/10/21 prior to purging and sampling, and were used to develop the groundwater elevation contour map provided as **Attachment 3**. The measurements were recorded using a calibrated electronic tape that emits an audible signal when the water surface is penetrated. These event-specific measurements, along with the calculated groundwater elevation for each well, are summarized in **Attachment 4**.

2.4 Monitoring Well Purging and Sampling

Monitoring wells MW-2R, 3R, 5R, 6R, and 7R are equipped with dedicated pump systems designed to control the flow and delivery of groundwater to the ground surface in order to produce the most representative sample of groundwater beneath the facility. The pump system for each well includes a dedicated Grundfos® Redi-Flo4™ submersible pump and motor used for both purging and sampling. The pump/motor combination is operated by a Redi-Flo® variable frequency drive (VFD) controller that allows the flow rate to be controlled at the ground surface as the groundwater exits the discharge tubing. On 06/10/21, a minimum of 3 well volumes of water were removed from wells

MW-5R, MW-6R and MW-7R prior to sampling. Due to low yield, a minimum of one well volume of water was removed from wells MW-2R and MW-3R prior to sampling using the low-flow purging methods.

As presented in the *Groundwater Monitoring System Plan Update (Updated June 20, 2017)*, the objective of low-flow purge and sampling is to collect a sample of water from the natural, unimpeded flow of groundwater across the screened section of the well. The slow removal of water ensures that stagnant water above the screened water column, and/or highly turbid water settling in a sump below the screened section, is not captured with water passing naturally through the screened section.

In the practice of low-flow purge and sampling, purge volumes are dependent upon field parameter stabilization and the recharge rate of each well. Consistent with the low-flow purge/sampling protocol outlined in the *Groundwater Monitoring System Plan Update (Updated June 20, 2017)*, wells MW-2R and 3R were purged until field measurements of pH, temperature, specific conductance (SC), had stabilized to within acceptable ranges for three successive readings.

Following collection, the groundwater samples were immediately placed in a cooler containing ice and maintained at approximately 4°C until delivery to the laboratory on 06/11/21. Samples delivered to the laboratory were accompanied by the appropriate chain-of-custody documentation.

2.5 Monitoring Well Inspection and Maintenance

Each monitoring well is equipped with a locking cap, and each well was found to be secured and in good condition. The protective casings, bollards, and concrete pads were also found to be in good condition at the time of sampling.

3.0 SITE HYDROGEOLOGY

The hydrogeology of the site is summarized in Section 3 of the *Application for Permit for the Sandoval County Landfill, Volume V, updated January 2005*. The following discussion of the site hydrogeology presents select information contained in the Application for Permit:

The landfill site is located on the western flank of the Albuquerque Basin at an elevation of approximately 5,280 to 5,430 feet. The landfill is underlain by a sequence of siltstones and mudstones belonging to the Arroyo Ojito Formation of the upper Santa Fe Group. In this area, the Santa Fe Group is over 4,000 feet thick. The Arroyo Ojito Formation consists of two members, the

Loma Barbon and the Ceja, both of which are exposed at an outcrop near the east-central portion of the property. The Loma Barbon Member is the major unit within the Arroyo Ojito Formation, and underlies the entire facility. The Loma Barbon consists of well-consolidated, fine-grained, yellow-brown to red-brown silty sandstones with interbedded mudstones and scattered lenses of fluvial deposits of coarse-grained and cobbly sandstones.

The Ceja Member of the Arroyo Ojito Formation is a 40- to 60-foot-thick sequence of moderately consolidated, light red to red-brown medium to coarse-grained sandstones and gravels, with minor interbeds of siltstones and mudstones. This unit is present on the topographically highest portion of the property in the area of wells MW-3 and MW-6, and may be seen capping the hills immediately south of the Facility. Unconformably overlying the Arroyo Ojito Formation are thin (20-30 feet thick) Quaternary deposits of Pleistocene age.

3.1 Groundwater Flow Direction and Velocity

The direction of groundwater flow at SCLF has historically been to the east-northeast towards the Rio Grande, and groundwater contour modeling results from the June 2021 event are consistent with the historical trend. **Attachment 3** presents the groundwater elevation contour map based on depth-to-water measurements recorded from the site's eleven existing groundwater monitoring wells on 06/10/21. The contour map was developed using data from the site survey performed on 03/26/15; new data for replacement well MW-5R from a survey performed on 06/21/16; new data for wells MW-6, MW-6R, and MW-7R from a survey performed on 06/11/18; and new data for wells MW-2R, MW-3R, and MW-7 from a survey performed on 05/26/20. The survey data indicate that the current groundwater table ranges in elevation from 4989.02 feet above mean sea level (fmsl) in upgradient well MW-5R to 4971.64 fmsl in downgradient well MW-3R. The groundwater flow direction is generally east-northeastward, following a hydraulic gradient of 0.0060 ft/ft (**Attachment 3**). Assuming a saturated hydraulic conductivity (K_{SAT}) of 3.28×10^{-7} ft/sec to 3.28×10^{-5} ft/sec (10^{-5} cm/sec to 10^{-3} cm/sec, *Freeze and Cherry, 1979*) and an effective porosity (n) of 0.45 (*Domenico and Schwartz, 1998*) for semi-consolidated silty sand, the average linear groundwater velocity ranges from approximately 0.1389 ft/year to 13.89 ft/year.

4.0 LABORATORY ANALYTICAL RESULTS

Groundwater samples were analyzed by Hall Environmental Analysis Laboratory (HEAL) of Albuquerque, NM, using applicable EPA methods or their approved equivalents. A review of the quality assurance/quality control (QA/QC) data provided by the laboratory indicates that applicable QA/QC criteria have been met for this event. Laboratory analytical results for the 06/10/21 sampling

event are summarized in **Attachment 5**. The corresponding laboratory reports and chain-of-custody documentation are provided in **Attachments 6**; which also provides the laboratory practical quantitation limits (PQLs).

4.1 Laboratory Quality Assurance/Quality Control

The following quality assurance/quality control (QA/QC) samples were collected and analyzed for the volatile organic compounds (VOCs) listed in Subsection A of 20.9.9.20 NMAC to ensure field-sampling quality and laboratory reproducibility:

- One field blank (labeled “Field Blank”) collected in the vicinity of well MW-5R
- One duplicate sample (labeled “Dupe”) collected from well MW-5R

In addition, one trip blank, prepared and sealed by the laboratory, was included with the samples to ensure sample quality. The field blank was prepared by filling sample containers with VOC-free deionized water in proximity to the gasoline-powered generator. No VOCs were reported as detected in the duplicate, field blank, or trip blank QA/QC samples.

4.2 Laboratory Analytical Results

Organic Parameters

Groundwater samples were analyzed for the alternate list of organic parameters provided in **Attachment 2**; and the laboratory analytical results were compared to the corresponding established AML. No organic parameter was reported as detected above the respective laboratory PQL in any of the groundwater samples.

Inorganic Parameters

Groundwater samples were also analyzed for the alternate list of inorganic parameters provided in **Attachment 2**; and the laboratory analytical results were compared to the corresponding established AML. With the exceptions of the parameters listed in **Table 1**, no inorganic parameter exceeded its respective, established AML. As required, preliminary notification of the exceedances was provided to NMED Solid Waste Bureau on 07/20/21 (**Attachment 7.1**). **Table 1** provides a summary of the inorganic parameters exhibiting apparent exceedances of the established AML.

Table 2
Inorganic Parameters Exhibiting Established AML or UTLV Exceedances

Well I.D.	Sampling Date	Parameter	Analytical Result (mg/L)	Established AML (mg/L)	Regulatory Presumptive AML (mg/L)	Established UTLV (mg/L)
MW-2R	06/10/21	Fluoride	0.84	0.81	0.80	1.045
		Manganese	0.25	0.15	0.15	0.304
		Arsenic	0.0058	0.0057	0.0057	0.0079
MW-3R	06/10/21	Manganese	0.26	0.15	0.15	N/A
MW-5R	06/10/21	Arsenic	0.0084	0.008	0.005	0.012
MW-7R	06/10/21	Nitrate	5.4	5.0	5.0	N/A
		Arsenic	0.007	0.006	0.005	0.007

Notes:

- N/A indicates UTLV not assigned
- **Bold italics** indicates that Established UTLV has been met or exceeded

MW-2R

Fluoride

Fluoride has been consistently detected in MW-2 from 2012- 2019 and continues to be detected in MW-2R. This event marks the first exceedance of the established AML of 0.81 mg/L, at a concentration of 0.84 mg/L. Historical data demonstrate that no statistically significant increase (SSI) is apparent for this naturally occurring constituent (i.e., the concentration is less than the established UTLV).

Manganese

The concentration of manganese in well MW-2R (i.e., 0.25 mg/L) exceeds the established AML of 0.15 mg/L, but is below the established UTLV of 0.304 mg/L. A comparison of historical total and dissolved manganese concentrations in well MW-2 (**Attachment 5**) indicates that manganese exists primarily in particulate form, likely as a suspended sediment. The manganese detection is, therefore, attributable to a source other than the landfill.

Arsenic

The concentration of arsenic in well MW-2R (i.e., 0.0058 mg/L) exceeds the established AML of 0.0057 mg/L, but is below the established UTLV of 0.0079 mg/L for this well. The data demonstrate that no statistically significant increase (SSI) is apparent for this constituent (i.e., the concentration is less than the established UTLV). In addition, a comparison of historical total and dissolved arsenic

concentrations in well MW-2 (**Attachment 5**) indicates that arsenic exists primarily in particulate form, likely as a suspended sediment. The arsenic detection is, therefore, attributable to a source other than the landfill.

Well MW-3R

Manganese

The concentration of manganese in well MW-3R (i.e., 0.26 mg/L) exceeds the established AML of 0.15 mg/L. A UTLV has not been established for this parameter for well MW-3R. A comparison of historical total and dissolved manganese concentrations in well MW-3 (**Attachment 5**) indicates that manganese exists primarily in particulate form, likely as a suspended sediment. The manganese detection is, therefore, attributable to a source other than the landfill.

Well MW-5R

Arsenic

The concentration of arsenic in well MW-5R (i.e., 0.0084 mg/L) exceeds the established AML of 0.0057 mg/L, but is below the established UTLV of 0.012 mg/L. The data demonstrate that no statistically significant increase (SSI) is apparent for this constituent (i.e., the concentration is less than the established UTLV). A comparison of historical total and dissolved arsenic concentrations in well MW-5 (**Attachment 5**) indicates that arsenic is still within historical ranges (i.e. 0.0042 to 0.011 mg/L). The arsenic detection is, therefore, attributable to a source other than the landfill.

Well MW-7R

Nitrate

Nitrate was reported as detected at a concentration of 5.4 mg/L, above the established AML of 5.0 mg/L, but below the GWPS of 10.0 mg/L. A UTLV has not been established for this parameter for well MW-7R. The June 2021 analytical result is likely a result of natural fluctuations in groundwater quality monitored by this replacement well.

Arsenic

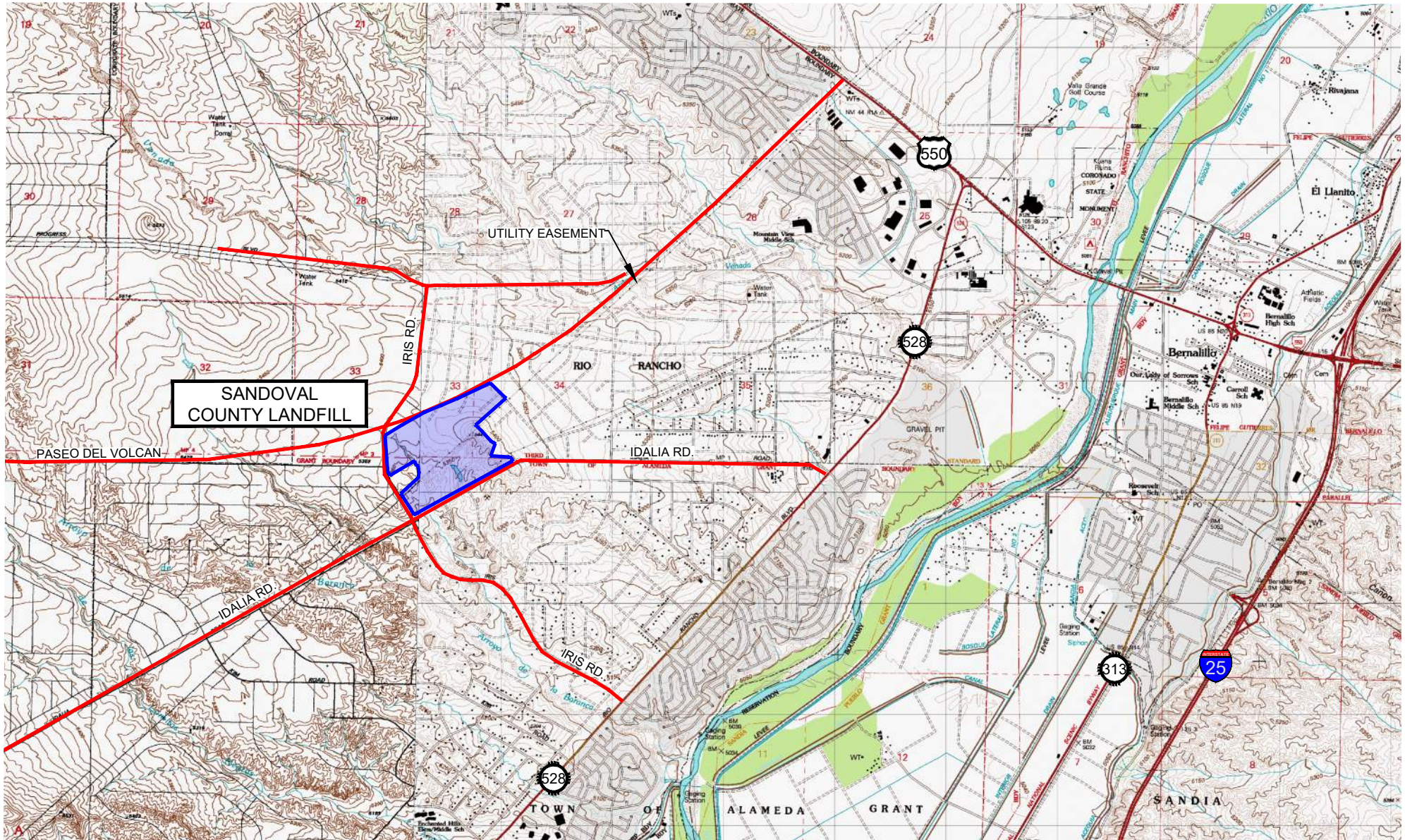
The concentration of arsenic in well MW-7R (i.e., 0.007 mg/L) exceeds the established AML of 0.0057 mg/L, and meets the established UTLV of 0.007 mg/L. Comparison to historical total and dissolved arsenic concentrations indicates that arsenic is still within historical ranges and is likely a result of natural fluctuations in groundwater quality monitored by this replacement well.

5.0 SUMMARY AND CONCLUSIONS

With the few exceptions noted above, the values of detected parameters are generally consistent with values reported for previous monitoring events; and the geochemical signature of site groundwater remains consistent with historical background water quality. Therefore, it is recommended that annual groundwater sampling at wells MW-2R, 3R, 5R, 6R, and 7R for the current approved alternate parameter list (**Attachment 2**) continue at the site. The analytical data evaluation and conclusions presented in this Report have been reviewed and verified by a Qualified Groundwater Scientist; and the Certification Statement of Mr. Andrew N. Yuhas, P.G., is provided as **Attachment 8**.

**GROUNDWATER MONITORING REPORT
SANDOVAL COUNTY LANDFILL
JUNE 2021 SAMPLING EVENT**

ATTACHMENT 1
Site Location Map



Parkhill Sandoval County Landfill

Parkhill.com
Sandoval County
2708 Iris Road
Rio Rancho, NM 87144



SITE LOCATION MAP

Issue: FINAL
Date: 06/24/2021
Project No: 8023.20
Sheet: ATTACHMENT 1

**GROUNDWATER MONITORING REPORT
SANDOVAL COUNTY LANDFILL
JUNE 2021 SAMPLING EVENT**

ATTACHMENT 2

Approved Alternate Parameter List and Monitoring Schedule

Sandoval County Landfill
ALTERNATE PARAMETER LIST

Inorganic Parameters	EPA Method
Ammonia as N, NH ₃ -N	350.2
Bicarbonate, HCO ₃ ⁻ (as CaCO ₃)	310.1
Carbonate, CO ₃ ²⁻ (as CaCO ₃)	310.1
Nitrate as N, NO ₃ -N	300.0
Phosphate, PO ₄	300.0
Chloride, Cl ⁻	300.0
Fluoride, F	300.0
Sulfate, SO ₄ ²⁻	300.0
Total Dissolved Solids, TDS	160.1
Total Kjeldahl Nitrogen, TKN	351.3
Total Nitrogen, TN	Calculated
Total Organic Carbon, TOC	415.2
pH	
Specific Conductivity	
Aluminum, Al	200.7
Arsenic, As	200.8
Barium, Ba	200.7
Calcium, Ca	200.7
Chromium, Cr	200.7
Cobalt, Co	200.7
Iron, Fe	200.7
Lead, Pb	200.8
Magnesium, Mg	200.7
Manganese, Mn	200.7
Potassium, K	200.7
Sodium, Na	200.7
Uranium, U	200.8
Zinc, Zn	200.7
All Standard Landfill VOCs	8260
1,2-Dibromo-3-chloropropane	504
1,2-Dibromoethane	504
Total Phenolics	420.3/9067
Additional bottle Sets:	

8260 Field Blank (3 VOAs)

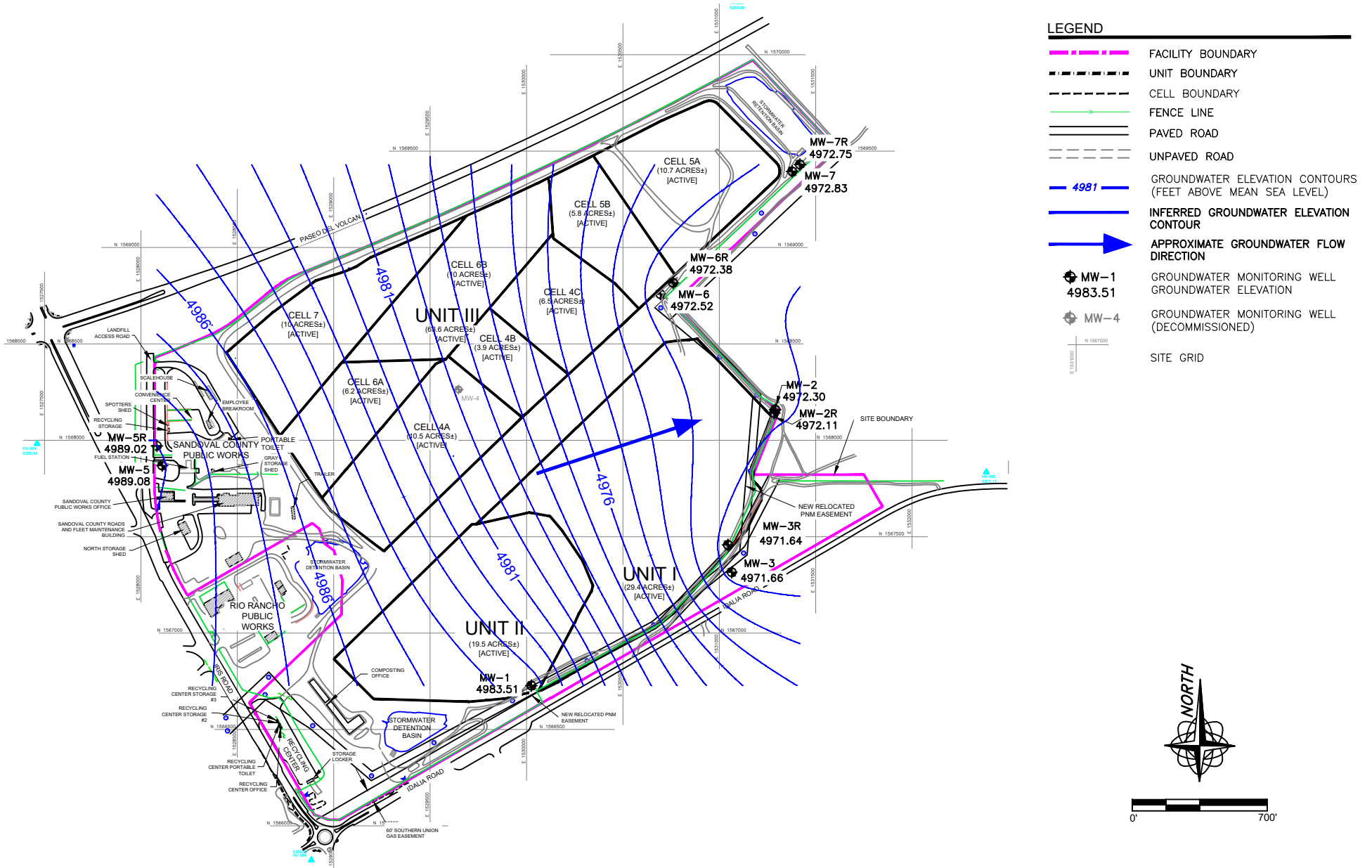
8260 Dupe (3 VOAs)

Trip Blank

**GROUNDWATER MONITORING REPORT
SANDOVAL COUNTY LANDFILL
JUNE 2021 SAMPLING EVENT**

ATTACHMENT 3

Groundwater Elevation Contour Map
(June 10, 2021)



Parkhill

Parkhill.com

SANDOVAL COUNTY LANDFILL GROUNDWATER ELEVATION CONTOUR MAP JUNE 10 2021

**RIO RANCHO NEW MEXICO
SANDOVAL COUNTY, NEW MEXICO**

GROUNDWATER ELEVATION CONTOUR MAP

Issue: FINAL
Date: 07/24/2021
Project No: 8023.20
Sheet: ATTACHMENT_3

**GROUNDWATER MONITORING REPORT
SANDOVAL COUNTY LANDFILL
JUNE 2021 SAMPLING EVENT**

ATTACHMENT 4

Groundwater Sampling Field Data, Monitoring Well Details, & Field Notes

**Groundwater Monitoring Report
Sandoval County Landfill
June 2021 Sampling Event**

Attachment 4 - Groundwater Monitoring Well and Field Data Summary

Groundwater Sampling Field Data

Well I.D.	Sampling Date	Top of Well Elevation ⁽¹⁾ (fmsl)	Depth to Water ⁽²⁾ (fbtow)	Temperature ⁽³⁾ (°C)	pH ⁽³⁾ (standard units)	Specific Conductivity ⁽³⁾ (mS/cm)	Purge Volume ⁽⁴⁾ (gal)	Groundwater Elevation (fmsl)
MW-1	NS	5324.82	341.31	NS	NS	NS	NS	4983.51
MW-2	NS	5416.19	443.89	NS	NS	NS	NS	4972.30
MW-2R	06/10/21	5417.39	445.28	24.0	7.87	766	35.0	4972.11
MW-3	NS	5376.25	404.59	NS	NS	NS	NS	4971.66
MW-3R	06/10/21	5380.42	408.78	24.1	7.74	820	33.0	4971.64
MW-5	NS	5364.40	375.32	NS	NS	NS	NS	4989.08
MW-5R	06/10/21	5366.52	377.50	21.3	7.80	880	115.0	4989.02
MW-6	NS	5423.65	451.13	NS	NS	NS	NS	4972.52
MW-6R	06/10/21	5421.99	449.61	20.1	7.80	749	110.0	4972.38
MW-7	NS	5363.96	391.13	NS	NS	NS	NS	4972.83
MW-7R	06/10/21	5363.32	390.57	19.3	7.90	579	115.0	4972.75

Notes:

⁽¹⁾ Survey data for wells MW-1 through MW-5 (03/26/2015); well MW-5R (06/21/2016); wells MW-6, 6R, and 7R (06/11/2018); and wells MW-2R, 3R, and 7 (05/26/2020).

⁽²⁾ Recorded prior to well purging.

⁽³⁾ Stabilized field parameter values recorded during purging.

⁽⁴⁾ Volume of water purged prior to sample collection.

fmsl: feet above mean sea level

fbtow: feet below top of well

► For wells MW-1, 2, 3, 5, 6, and 7, top of well is top of PVC well casing

► For wells MW-2R through MW-7R, top of well is top of sounding tube

NS: Not Sampled

**Groundwater Monitoring Report
Sandoval County Landfill
June 2021 Sampling Event**

Attachment 4 - Groundwater Monitoring Well and Field Data Summary

Well I.D.	Well Construction Material	Well Diameter (in.)	Top of Well Elevation ^(1, 2) (fmsl)	Total Depth (fbtow)	Boring Depth (fbgs)	Screen Length (ft.)	Location ^(1, 2)		Well Completion Date
							Northing	Easting	
MW-1	Sch 80 PVC	4	5324.82	342.92	340	30	1566727.43	1530025.087	6/10/1993
MW-2	Sch 80 PVC	4	5416.19	450.64	448	30	1568159.39	1531290.849	4/12/1996
MW-2R	Sch 80 PVC	4.8	5417.39	476.39	484	40	1568140.73	1531284.39	4/7/2020
MW-3	Sch 80 PVC	4	5376.25	411.47	410	30	1567315.35	1531065.172	4/2/1996
MW-3R	Sch 80 PVC	4.8	5380.42	443.42	451	40	1567457.23	1531045.3	3/26/2020
MW-5	SDR 17 PVC	4.5	5364.40	381.57	384	30	1567869.08	1528110.294	8/11/2003
MW-5R	Sch 80 PVC	5	5366.52	411.12	430	40	1567970.78	1528082.99	4/15/2016
MW-6	Sch 40 PVC	4	5423.65	458.85	462	30	1568758.24	1530695.53	1/28/2004
MW-6R	Sch 80 PVC	5	5421.99	487.14	495	40	1568816.59	1530759.48	5/31/2018
MW-7	Sch 40 PVC	4	5363.96	399.89	404	30	1569394.01	1531377.30	3/5/2004
MW-7R	Sch 80 PVC	5	5363.32	427.93	430	40	1569430.16	1531418.57	3/19/2018

Notes:

⁽¹⁾ Survey data for wells MW-1 through MW-5 (03/26/2015); well MW-5R (06/21/2016); wells MW-6, 6R, and 7R (06/11/2018); and wells MW-2R, 3R, and 7 (05/26/2020).

⁽²⁾ Well elevation and location data:

- For wells MW-1, 2, 3, 5, 6, and 7, survey data recorded at top of PVC well casing (north side)
- For wells MW-2R through MW-7R, survey data recorded at top of sounding tube (north side)

fmsl: feet above mean sea level

fbtow: feet below top of well

- For wells MW-1, 2, 3, 5, 6, and 7, top of well is top of PVC well casing
- For wells MW-2R through MW-7R, top of well is top of sounding tube

fbgs: feet below ground surface

Site: Sandoval County Landfill

Samplers: AY/AW

Observers: AY/AW

Site/Well Condition: good/good

Equipment Information

Sampling Method

One Well Volume (feet, gallons) 476.34 445.28 = 31.11 feet
 (Total Depth - DTW) = well column
31.11 x 0.95 = 29.55 gallons
 (Well Column x 0.95) = 1 well-volume
 Three Well Volumes 29.55 x 3 = 88.66 gallons
 1 well-volume x 3 = 3 well-volumes

Pump Make: Grundfos® Refi-Flo 4

Pump On: 1244 Water Out: 1251

Generator Fuel:				Electric Pump
	Beginning	Mid	Final	
Hz	<u>94</u>			
disch. Rate				

Notes: almost no flow @ 34g - slow to
recharge probe @ 1325 to allow
recharge

Well ID: MW 28

Depth-to-water: 445.28

Total Depth: 476.39

Measured from:

Date: 6/10

Ambient Temperature: 90°

Wind Direction/Speed: South

Recent Precipitation:

Time	Gallons Removed	°C	pH	SC units	Observations	Pumping Rate
1252	1.6	19.0	7.72	853	dr. sulfur odor	458.28
1255	5	18.9	7.80	823	dr. st. odor	459.95
1258	9	18.9	7.87	799	— " —	461.40
1301	13	19.2	7.83	773	— " —	463.7
1306	18.5	20.0	7.84	773	— " —	466.3
1310	22	21.1	7.91	761	— " —	468.1
1313	26	21.2	7.90	762	— " —	470.0
1318	30	21.3	7.85	765	— " —	471.75
1324	34	21.6	7.87	766	— " —	NA

1343 35 24.0 7.87 766 469.10
 Volume Purged: 35 gallons

Sample Start: 1349

Sample End: 1400

Sampler(s): Andy Vukob

Name

Signature

Field Blank: —

Duplicate: —

Filtered: NO

Name

Signature

Adam Wilcox

Adam Wilcox

Site: Sandoval County Landfill

Samplers: A1 / AWW

Observers: _____

Site/Well Condition: good / good

Well ID: MW 3A

Depth-to-water: 408.78

Total Depth: 443.12

Measured from: top of sounding hole

Date: 6/16/21

Ambient Temperature: _____

Wind Direction/Speed: _____

Recent Precipitation: _____

Equipment Information

Sampling Method:

One Well Volume (feet, gallons)	<u>443.12 - 408.78 = 34.34</u> feet (Total Depth - DTW) = well column
	<u>34.34</u> x 0.95 = <u>32.62</u> gallons (Well Column x 0.95) = 1 well-volume
Three Well Volumes	<u>32.62</u> x 3 = <u>97.87</u> gallons 1 well-volume x 3 = 3 well-volumes

Pump Make: Grundfos® Refi-Flo 4

Pump On: 14:37 Water Out: 14:41

Generator Fuel:				Electric Pump
	Beginning	Mid	Final	
Hz	<u>90</u>	<u>92</u>	<u>92</u>	
disch. Rate				

Notes: pump @ 438 BToc

very low exchange

Sampler(s): Andy Yuhas

Name

Signature

Adam Wilcox

Name

Signature

Time	Gallons Removed	°C	pH	SC units <u>MS</u>	Observations	Pumping Rate
<u>14:43</u>	<u>1.0</u>	<u>21.0</u>	<u>7.77</u>	<u>944</u>	<u>slty / sulfur odor</u>	<u>420.45</u>
<u>14:54</u>	<u>5.0</u>	<u>20.7</u>	<u>7.71</u>	<u>843</u>	<u>clr, slight Sulf. odor</u>	<u>422.20</u>
<u>15:03</u>	<u>9.0</u>	<u>19.9</u>	<u>7.69</u>	<u>835</u>	<u>v. slight sulfur</u>	<u>423.60</u>
<u>15:09</u>	<u>12.0</u>	<u>19.5</u>	<u>7.69</u>	<u>827</u>	<u>---</u>	<u>426.20</u>
<u>15:12</u>	<u>15.0</u>	<u>20.1</u>	<u>7.68</u>	<u>836</u>	<u>clr no odor</u>	<u>427.80</u>
<u>15:15</u>	<u>17.5</u>	<u>20.1</u>	<u>7.69</u>	<u>834</u>	<u>---</u>	<u>429.76</u>
<u>15:18</u>	<u>21</u>	<u>21.3</u>	<u>7.72</u>	<u>822</u>	<u>---</u>	<u>429.76</u>
<u>15:23</u>	<u>25</u>	<u>24.2</u>	<u>7.72</u>	<u>820</u>	<u>---</u>	<u>4365</u>
<u>15:29</u>	<u>30</u>	<u>24.1</u>	<u>7.72</u>	<u>820</u>	<u>---</u>	<u>431.6</u>
<u>15:34</u>	<u>33</u>	<u>24.1</u>	<u>7.74</u>	<u>820</u>	<u>---</u>	<u>435.5</u>

Volume Purged: 33 gallons

Sample Start: 1536

Sample End: 1550

Field Blank: ---

Duplicate: ---

Filtered: NO

Groundwater Monitoring Field Notes

Site: Sandoval County Landfill

Samplers: AY/AW

Observers: —

Site/Well Condition: good / good

Equipment Information

Sampling Method:

One Well Volume (feet, gallons)	<u>411.12 - 377.50 = 33.62</u> feet	
	(Total Depth - DTW) = well column	
	<u>33.62</u> x 0.95 = <u>31.94</u> gallons	
	(Well Column x 0.95) = 1 well-volume	
Three Well Volumes	<u>31.94</u> x 3 = <u>95.82</u> gallons	
	1 well-volume x 3 = 3 well-volumes	

Pump Make: Grundfos® Refi-Flo 4

Pump On: 0829 Water Out: 0810

Generator Fuel:				Electric Pump
	Beginning	Mid	Final	
Hz	<u>90</u>	<u>90</u>	<u>90</u>	
disch. Rate				

Notes: _____

Well ID: MW-5R

Depth-to-water: 377.50

Total Depth: 411.12

Measured from: Mark on PVC

Date: 6-10-21

Ambient Temperature: _____

Wind Direction/Speed: _____

Recent Precipitation: _____

Time	Gallons Removed	°C	pH	SC units ^{US}	Observations	Pumping Rate
08:11	5	17.3°C	7.31	896	Clear/no odor	
08:17	20	19.7°C	7.76	877	Clear/no odor	
08:24	35	20.6	7.80	883	Clear/no odor	
08:29	50	21.5	7.82	879	Clear/no odor	
08:34	65	20.4	7.81	882	Clear/no odor	
08:41	80	20.4	7.80	886	Clear/no odor	378.8
08:46	95	21.0	7.81	887	Clear/no odor	378.9
08:52	115	21.3	7.80	880	Clear/no odor	

Depth of water
378.8 ft
378.8 ft

Groundwater Monitoring Field Notes

Volume Purged: 115 gallons

Sample Start: 0853

Sample End: 0858

Field Blank: 0826

Duplicate: 0900

Filtered: —

Sampler(s): Andy Yuhua

Name

Signature

Adam Wilcox

Name

Signature

Site/Well Condition: mod / good

Equipment Information

Sampling Method:

One Well Volume
(feet, gallons)

$$\frac{444.61 - 487.61}{37.53} = 37.53 \text{ feet}$$

(Total Depth - DTW) = well column

$$\frac{37.53 \times 0.95}{1 \text{ well-volume}} = \frac{35.65}{1 \text{ well-volume}} \text{ gallons}$$

Three Well Volumes

$$\frac{35.65 \times 3}{1 \text{ well-volume} \times 3 = 3 \text{ well-volumes}} = \frac{106.96}{3 \text{ well-volumes}} \text{ gallons}$$

Pump Make: Grundfos® Refi-Flo 4

Pump On: 11:20 Water Out: 11:10

Generator Fuel:				Electric Pump
	Beginning	Mid	Final	
Hz	100			
disch. Rate				

Notes:

Well ID: Mw-GR

Depth-to-water: 449.61

Total Depth: 487.14

Measured from: leaf

Date: 6-10-21

Ambient Temperature: _____

Wind Direction/Speed:

Recent Precipitation

Time	Gallons Removed	°C	pH	SC units <u>ML</u>	Observations	Pumping Rate
11:12	5	18.4	7.87	753	Clear no odor	
11:17	20	18.4	7.85	755	Clear no odor	451.15
11:23	40	20.1	7.86	762	Clear no odor	451.25
11:30	60	20.2	7.87	792	Clear no odor	451.25
11:36	80	20.1	7.87	754	Clear no odor	451.3
11:42	100	20.2	7.87	758	Clear no odor	451.30
11:46	110	20.1	7.86	744	Clear no odor	451.30

Volume Purged: 110 gallons

Sample Start. 11:48

Sample End: 1153

Field Blank. 

Duplicate

Filtered: NO

Sampler(s): Andy Yuhas

Name _____

Signature _____

Adam Wilcox

Name _____

Signature _____

Site: **Sandoval County Landfill**

Samplers: AY / AW

Observers: —

Site/Well Condition: good / good

Well ID: MW 7R

Depth-to-water: 340.57

Total Depth: 421.93

Measured from: top of sounding hole

Date: 6-10-21

Ambient Temperature: —

Wind Direction/Speed: —

Recent Precipitation: —

Equipment Information

Sampling Method:

One Well Volume (feet, gallons) 421.93 - 340.57 = 37.36 feet
 (Total Depth - DTW) = well column
37.36 x 0.95 = 35.49 gallons
 (Well Column x 0.95) = 1 well-volume
 Three Well Volumes 35.49 x 3 = 106.47 gallons
 1 well-volume x 3 = 3 well-volumes

Pump Make: **Grundfos® Refi-Flo 4**

Pump On: 9:39 Water Out: 9:41

Generator Fuel:				Electric Pump
	Beginning	Mid	Final	
Hz	<u>94</u>			
disch. Rate				

Notes: —

Time	Gallons Removed	°C	pH	SC units <u>US</u>	Observations	Pumping Rate <u>dw</u>
9:42	3	17.6	7.78	586	Clear/no odor	
09:46	20	18.8	7.81	575	Clear/no odor	343.15
9:51	40	14.1	7.82	574	Clear/no odor	
9:58	60	14.5	7.86	578	Clear/no odor	
10:01	80	14.4	7.92	578	Clear/no odor	342.55
10:06	100	14.2	7.90	580	Clear/no odor	343.35
10:10	115	14.3	7.90	574	Clear/no odor	

Volume Purged: 115 gallons

Sample Start: 10:12

Sample End: 10:16

Field Blank: —

Duplicate: —

Filtered: No

Sampler(s): Andy Yuhas

Name

Signature

Adam Wilcox

Name

Signature

Site: Sandara City, LF

Samplers: Ag / Aw

Date: 6-10

Ambient Temperature: 94

Wind Direction/Speed: _____

Recent Precipitation: _____

Well ID: NW 5

Depth-to-water: 375.32 FE

Total Depth: 381.57

Measured from: ~~Atchafalaya~~

Notes: _____

Well ID: NW 7

Depth-to-water: 391.13

Total Depth: 399.89

Measured from: ~~Atchafalaya~~

Notes: _____

Well ID: Mw 6

Depth-to-water: 451.13

Total Depth: 458.85

Measured from: ~~Atchafalaya~~

Notes: _____

Well ID: NW 2

Depth-to-water: 443.29

Total Depth: 450.64

Measured from: _____

Notes: _____

Well ID: MW 3

Depth-to-water: 401.59

Total Depth: 411.47

Measured from: _____

Notes: _____

Well ID: MW 1

Depth-to-water: 341.31

Total Depth: 342.92

Measured from: _____

Notes: _____

Well ID: _____

Depth-to-water: _____

Total Depth: _____

Measured from: _____

Notes: _____

Well ID: _____

Depth-to-water: _____

Total Depth: _____

Measured from: _____

Notes: _____

Well ID: _____

Depth-to-water: _____

Total Depth: _____

Measured from: _____

Notes: _____

**GROUNDWATER MONITORING REPORT
SANDOVAL COUNTY LANDFILL
JUNE 2021 SAMPLING EVENT**

ATTACHMENT 5

Summary of Inorganic Parameter Analytical Results:

Wells MW-2R, MW-3R, MW-5R, 6R, and 7R

Attachment 5 - Summary of Organic Parameter Analytical Results

Notes for Summary of Inorganic Parameter Analytical Results

- (1) All parameter concentrations expressed in mg/L, except for Field pH (standard units), Field SC (µs/cm), Field Temperature (°C).

The following statistical parameters were updated on 07/03/14. The well/parameter-specific statistical values (i.e., calculated BCV, calculated/established UTLV, and calculated/established AML) included in **Attachment 5** were approved by NMED on 02/09/15.

Calculated BCV (2014) = Calculated Background Concentration Value

- The simple mean (i.e., arithmetic average) of the concentrations of each parameter reported as detected a minimum of 2 times within the background data set (1996 - 03/2014). If reported as detected only once, the BCV is assigned the value of the single detection. If reported as 100% non-detect, the BCV is assigned the value of the highest laboratory practical quantitation limit (PQL) within the background data set (1996 - 2014).

Regulatory Presumptive AML = Regulatory Presumptive Assessment Monitoring Level (Updated January 2020)

2014 Established AML = Established Assessment Monitoring Level

- Parameter and well-specific value defined as the greater of either the regulatory presumptive AML (05/05/10) or the calculated BCV for each well/parameter combination.

2014 Calculated UTLV = Calculated Upper Tolerance Limit Value

- Parameter and well-specific statistical value calculated via evaluation of applicable background monitoring analytical data by Sanitas®.
- Non-detects are assigned a value of ½ the laboratory PQL for UTLV statistical calculations with Sanitas™.

2014 Established UTLV = Established Upper Tolerance Limit Value

- Equals the Calculated UTLV if Calculated UTLV > Established AML
- Parameters for which the calculated UTLV ≤ the regulatory presumptive AML were not assigned an established UTLV.
- Parameters for which the background dataset contained 100% non-detects were not assigned an established UTLV.

N/A = UTLV not assigned


GWPS = Regulatory Groundwater Protection Standard (Updated January 2020)

Bold laboratory analytical values for the current event indicate an exceedance of the Established AML.


Bold italics laboratory analytical values for the current event indicate an exceedance of the Established UTLV.

Parenthetical values indicate the results of dissolved metals analyses.

 Indicates no sampling/analysis performed for corresponding monitoring date

 The D qualifier indicates the sample was diluted by the laboratory prior to analysis

 Field data not available. Laboratory data provided where available.

 Parenthetical values represent dissolved metals analytical results

Attachment 5 - Summary of Inorganic Parameter Analytical Results

MW-2R	MW-2								MW-2R		2014 Calculated BCV	Regulatory Presumptive AML	2014 Calculated UTLV	2014 Established AML	2014 Established UTLV	GWPS
PARAMETER ⁽¹⁾	03/12/12	03/13/13	03/18/14	03/25/15	06/01/16	03/08/17	06/07/18	04/12/19	06/17/20	06/10/21						
Fluoride, F	0.75	0.75	0.78	0.72	0.76	0.77	0.66	<0.50	0.79	0.84	0.81	0.8	1.045	0.81	1.045	1.6
Chloride, Cl ⁻	73	74	73	76	74	82	69	79	100	87	83.18	187.5	89.36	187.5	N/A	250
Nitrate as N, NO ₃ -N	<1.0	1.0	1.0	1.0	1.1	1.0	1.0	<0.50	<0.50	<0.50	0.94	5.0	1.4	5.0	N/A	10
Sulfate, SO ₄ ²⁻	50	50	51	52	52	51	47	38	96	56	58.56	450	69.76	450	N/A	600
Aluminum, Al	0.74	0.23	0.23	0.11	0.023	0.550	0.160	0.044	0.59	0.040	0.43	3.75	1.5	3.75	N/A	5.0
Barium, Ba	0.062	0.052	0.053	0.053	0.052	0.060	0.050	0.079	0.058	0.054	0.052	1.0	0.06729	0.5	N/A	2.0
Chromium, Cr	0.05	0.021	0.011	0.058	0.0070 (<0.0060)	0.0390	0.0160	0.026	0.0067	<0.0060	0.026	0.025	0.052	0.026	0.052	0.05
Cobalt, Co	<0.025	<0.025	<0.0060	<0.0060	<0.0060	<0.0060	<0.0060	<0.0060	<0.0060	<0.0060	0.030	0.0375	0.015	0.0375	N/A	0.05
Iron, Fe	5.2	1.8	1.4	1.6	0.47 (<0.020)	3.5	1.3	2.3	0.55	0.20	1.43	0.75	6.654	1.43	6.654	1.0
Manganese, Mn	0.061	<0.03	0.012	0.0075	0.0053 (0.0039)	0.0027	0.0099	0.44	0.33	0.25	0.13	0.15	0.304	0.15	0.304	0.2
Zinc, Zn	<0.05	<0.05	<0.010	0.013	<0.010	<0.010	<0.010	0.015	0.032	<0.010	0.071	7.5	0.0729	7.5	N/A	10
Arsenic, As	0.005	<0.005	0.0040	0.0041	0.0033 (0.0031)	0.0051	0.0041	0.012	0.0070	0.0058	0.0057	0.005	0.0079	0.0057	0.0079	0.01
Lead, Pb	<0.01	<0.01	<0.0010	0.0015	0.00057 (<0.00050)	0.0012	0.001	0.0013	0.0024	0.00056	0.01	0.015	0.005	0.025	N/A	0.0075
Uranium, U	<0.015	<0.015	0.0019	0.0024	0.0021	0.0020	0.0018	0.0013	0.0048	0.0029	0.0036	0.015	1.25	0.015	1.25	0.03
Total Dissolved Solids, TDS	366	366	396	350	344	368	372	353	545	460	365.36	750	486	750	N/A	1,000
Field pH (standard units)	7.8	7.9	7.8	7.3	7.72	7.8	8.0	7.47	7.80	7.87	7.70	6 - 9	7.068 - 8.305	6 - 9	N/A	6 - 9
Subsection A Organic Parameter	03/12/12	03/13/13	03/18/14	03/25/15	06/01/16	03/08/17	06/07/18	04/12/19	06/17/20	06/10/21	2014 Calculated BCV	Regulatory Presumptive AML	2014 Calculated UTLV	2014 Established AML	2014 Established UTLV	GWPS
Phenolics (total)	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	0.025	<0.025	0.005	0.00375	0.0025	0.00375	N/A	0.005
Subsection C Parameters	03/12/12	03/13/13	03/18/14	03/25/15	06/01/16	03/08/17	06/07/18	04/12/19	06/17/20	06/10/21	2014 Calculated BCV	Regulatory Presumptive AML	2014 Calculated UTLV	2014 Established AML	2014 Established UTLV	GWPS
Phosphorus, Orthophosphate (As P)	<0.5	<0.5	<0.50	<0.50	<0.50	<2.5	<0.50	<2.5	<2.5	<2.5	1.0	—	—	—	—	—
Calcium, Ca	39	36	38	35	38	41	37	42	41	39	41	—	—	—	—	—
Magnesium, Mg	4.6	4.2	4.2	4.0	4.4	4.6	4.3	4.9	5.8	5.3	4.8	—	—	—	—	—
Potassium, K	4.2	4.2	4.2	4.5	4.1	4.3	4.2	4.2	5.6	5.2	4.5	—	—	—	—	—
Sodium, Na	70	67	70	68	71	71	75	74	140	110	72	—	—	—	—	—
Total Organic Carbon, TOC	15	27	2.5	4.8	5.9	8.6	3.9	15	8.1	3.9	11.8	—	—	—	—	—
Ammonia as N, NH ₃ -N	<0.5	<0.5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.0	—	—	—	—	—
Total Nitrogen, TN	<1.0	1.0	1.0	1.0	1.1	1.0	<1.0	<1.0	<1.0	<2.0	1.0	—	—	—	—	—
Bicarbonate, HCO ₃ ⁻ (as CaCO ₃)	110	110	110	109.7	112.4	113.7	111.5	144.8	172.2	166.6	110	—	—	—	—	—
Carbonate, CO ₃ ²⁻ (as CaCO ₃)	<2.0	<2.0	<2.0	<2.0	<2.000	<2.000	<2.000	<2.000	<2.000	<2.000	2.0	—	—	—	—	—
Total Kjeldahl Nitrogen, TKN	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	0.6	—	—	—	—	—
Field Temperature (°C)	19.8	20.2	19.9	20.7	22.6	22.2	23.3	19.1	22.9	24.0	19.0	—	—	—	—	—
Field SC (mS/cm)	638	598	556	617	546	574	573	648	944	766	550	—	—	—	—	—

Attachment 5 - Summary of Inorganic Parameter Analytical Results

MW-3R	MW-3								MW-3R		2014 Calculated BCV	Regulatory Presumptive AML	2014 Calculated UTLV	2014 Established AML	2014 Established UTLV	GWPS
PARAMETER ⁽¹⁾	03/12/12	03/13/13	03/18/14	03/25/15	06/01/16	03/08/17	06/07/18	04/12/19	06/17/20	06/10/21						
Fluoride, F	0.71	0.65	0.73	0.68	0.71	0.68	<0.50	0.73	0.71	0.76	0.69	0.8	0.8	0.8	0.842	1.6
Chloride, Cl ⁻	75	76	76	81	76	74	78	82	120	88	80.93	187.5	87.5	187.5	N/A	250
Nitrate as N, NO ₃ -N	1.1	1.1	1.1	1.1	1.2	1.1	1.1	<0.50	<0.50	<0.50	1.1	5.0	1.3	5	N/A	10
Sulfate, SO ₄ ²⁻	55	52	54	55	54	55	52	63	120	67	60.93	450	69	450	N/A	600
Aluminum, Al	0.80	0.35	0.038	0.022	0.36	0.22	2.00	0.14	0.41	0.40	0.33	3.75	1.50	3.75	N/A	5.0
Barium, Ba	0.064	0.056	0.047	0.049	0.060	0.052	0.056	0.070	0.066	0.054	0.05	1.0	0.1	0.5	N/A	2.0
Chromium, Cr	0.028	0.018	0.0074	<0.0060	0.16 (<0.0060)	0.018	0.042	0.10	<0.0060	<0.0060	0.027	0.025	0.078	0.0269	0.078	0.05
Cobalt, Co	<0.025	<0.025	<0.0060	<0.0060	<0.0060	<0.0060	<0.0060	0.019	<0.0060	<0.0060	0.03	0.0375	0.0150	0.0375	N/A	0.05
Iron, Fe	5.10	2.20	0.27	0.32	3.5 (<0.020)	1.4	5.4	2.2	0.89	0.81	0.91	0.75	6.14	0.91224	6.135	1.0
Manganese, Mn	0.047	<0.03	0.0024	0.0039	0.057 (0.0021)	0.018	0.055	0.94	0.76	0.26	0.04	0.15	0.05	0.15	N/A	0.2
Zinc, Zn	<0.05	<0.05	<0.010	<0.010	<0.010	<0.010	<0.010	0.013	0.034	0.028	0.06	7.5	0.1	7.5	N/A	10
Arsenic, As	0.0083	0.0083	0.0057	0.0058	0.0080 (0.0050)	0.0056	0.0075	0.0085	0.0068	0.0046	0.0069	0.005	0.010	0.0069	0.01	0.01
Lead, Pb	<0.01	<0.01	<0.0010	<0.0010	0.0024 (<0.00050)	0.00072	0.0015	0.0016	0.0027	0.00079	0.010	0.0150	0.005	0.025	N/A	0.0075
Uranium, U	<0.015	<0.015	0.0020	0.0023	0.0025	0.0020	0.0020	0.0020	0.0046	0.0033	0.0032	0.015	1.250	0.015	1.25	0.03
Total Dissolved Solids, TDS	370	368	382	358	344	360	366	361	661	512	363.20	750	385	750	N/A	1,000
Field pH (standard units)	7.8	7.8	7.8	7.5	7.73	7.9	7.9	7.57	7.63	7.74	7.77	6 - 9	7.378 - 8.314	6 - 9	N/A	6 - 9
Subsection A Organic Parameter	03/12/12	03/13/13	03/18/14	03/25/15	06/01/16	03/08/17	06/07/18	04/12/19	06/17/20	06/10/21	2014 Calculated BCV	Regulatory Presumptive AML	2014 Calculated UTLV	2014 Established AML	2014 Established UTLV	GWPS
Phenolics (total)	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	0.04	<0.0025	0.0050	0.00375	0.00250	0.00375	N/A	0.005
Subsection C Parameters	03/12/12	03/13/13	03/18/14	03/25/15	06/01/16	03/08/17	06/07/18	04/12/19	06/17/20	06/10/21	2014 Calculated BCV	Regulatory Presumptive AML	2014 Calculated UTLV	2014 Established AML	2014 Established UTLV	GWPS
Phosphorus, Orthophosphate (As P)	<0.5	<0.5	<0.50	<0.50	<0.50	<2.5	<2.5	<2.5	<2.5	<2.5	1.0	—	—	—	—	—
Calcium, Ca	41	40	39	38	41	42	40	45	53	46	42	—	—	—	—	—
Magnesium, Mg	5.2	4.9	4.5	4.4	4.9	4.7	4.8	5.0	7.6	6.2	4.8	—	—	—	—	—
Potassium, K	4.5	4.5	4.0	4.6	4.4	4.1	4.5	4.3	5.9	5.2	4.3	—	—	—	—	—
Sodium, Na	73	69	67	70	70	68	72	68	140	100	74	—	—	—	—	—
Total Organic Carbon, TOC	1.3	30	7.1	13	13	1.7	2.1	6.1	21	27	8	—	—	—	—	—
Ammonia as N, NH ₃ -N	<0.5	<0.5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.0	—	—	—	—	—
Total Nitrogen, TN	1.1	1.1	1.1	1.1	1.2	1.1	1.1	<1.0	<1.0	<1.0	1.1	—	—	—	—	—
Bicarbonate, HCO ₃ ⁻ (as CaCO ₃)	110	110	100	106.1	108.8	107.8	107.1	124.6	179.0	170.8	103	—	—	—	—	—
Carbonate, CO ₃ ²⁻ (as CaCO ₃)	<2.0	<2.0	<2.0	<2.0	<2.000	<2.000	<2.000	<2.000	<2.000	<2.000	2.0	—	—	—	—	—
Total Kjeldahl Nitrogen, TKN	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.0	—	—	—	—	—
Field Temperature (°C)	20.9	20.2	18.6	21.1	22.3	22.2	25.1	18.1	22.5	24.1	18.9	—	—	—	—	—
Field SC (mS/cm)	621	599	570	622	552	573	562	667	1,070	820	566	—	—	—	—	—

Attachment 5 - Summary of Inorganic Parameter Analytical Results

MW-5R	MW-5				MW-5R						2014 Calculated BCV	Regulatory Presumptive AML	2014 Established AML	2014 Calculated UTLV	2014 Established UTLV	GWPS
PARAMETER ⁽¹⁾	03/13/12	03/13/13	03/18/14	03/25/15	06/01/16	04/13/17	06/07/18	04/04/19	06/17/20	06/10/21						
Fluoride, F	0.78	1.60	0.70	0.75	0.70	0.65	0.58	0.71	0.62	0.73	0.77	0.8	0.8	0.9399	0.940	1.6
Chloride, Cl ⁻	170	160	170	180	170	170	160	180	160	160	176.00	187.5	187.5	206.4	206.4	250
Nitrate as N, NO ₃ -N	<1.0	<1.0	<0.10	<0.10	0.60	0.75	0.71	0.63	0.60	0.58	1.0	5.0	5.0	0.5	N/A	10
Sulfate, SO ₄ ²⁻	20	<5.0	27	1.3	32	29	31	34	32	28	29.84	450	450	47.94	N/A	600
Aluminum, Al	<0.15	<0.15	0.086	0.050	<0.020	9.6 (<0.020)	<0.020	<0.020	<0.020	<0.020	0.16	3.75	3.75	1.5	N/A	5.0
Barium, Ba	0.12	0.14	0.19	0.20	0.093	0.21	0.09	0.082	0.083	0.090	0.12	1.0	0.5	0.2291	N/A	2.0
Chromium, Cr	<0.01	0.02	0.025	0.0064	0.015 (<0.0060)	0.045	<0.0060	<0.0060	<0.0060	0.0060	0.047	0.025	0.047	0.14	0.14	0.05
Cobalt, Co	<0.025	<0.025	<0.0060	<0.0060	<0.0060	<0.0060	<0.0060	<0.0060	<0.0060	0.0060	0.03	0.0375	0.0375	0.015	N/A	0.05
Iron, Fe	0.98	0.82	1.4	0.83	0.15 (<0.020)	11 (0.020)	0.0220	0.022	<0.050	0.050	1.20	0.75	1.20	1.649	1.649	1.0
Manganese, Mn	0.082	0.073	0.41	0.17	0.024 (0.023)	0.30	<0.0020	<0.0020	<0.0020	<0.0020	0.11	0.15	0.15	0.4475	0.4475	0.2
Zinc, Zn	0.18	0.95	1.2	2.0	0.015	0.029	<0.010	<0.010	<0.010	<0.010	0.80	7.5	7.5	1.3	N/A	10
Arsenic, As	0.0057	0.0091	0.0062	0.0067	0.0044 (0.0042)	0.011	0.0069	0.0073	0.0079	0.0084	0.0080	0.005	0.008	0.012	0.012	0.01
Lead, Pb	<0.01	0.013	0.011	0.025	0.00050 (<0.00050)	0.0060	<0.00050	<0.00050	<0.00050	0.0005	0.020	0.0015	0.025	0.017	N/A	0.0075
Uranium, U	<0.015	<0.015	0.0012	0.0019	0.0024	0.0028	0.0019	0.0017	0.0018	0.0018	0.0026	0.015	0.015	1.25	1.25	0.03
Total Dissolved Solids, TDS	479	472	490	454	460	473	473	462	466	469	478.47	750	750	545.5	N/A	1,000
Field pH (standard units)	7.5	7.4	7.5	7.5	7.69	8.2	8.0	7.67	7.82	7.80	7.53	6 - 9	6 - 9	6.622 - 8.435	N/A	6 - 9
Subsection A Organic Parameter	03/13/12	03/13/12	03/18/14	03/25/15	06/01/16	04/13/17	06/07/18	04/04/19	06/17/20	06/10/21	2014 Calculated BCV	Regulatory Presumptive AML	2014 Established AML	2014 Calculated UTLV	2014 Established UTLV	GWPS
Phenolics (total)	<0.0025	0.0049	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	0.0041	0.00375	0.00407	0.0049	0.0049	0.005
Subsection C Parameters	03/13/12	03/13/12	03/18/14	03/25/15	06/01/16	04/13/17	06/07/18	04/04/19	06/17/20	06/10/21	2014 Calculated BCV	Regulatory Presumptive AML	2014 Established AML	2014 Calculated UTLV	2014 Established UTLV	GWPS
Phosphorus, Orthophosphate (As P)	<0.5	<0.5	<0.50	<0.50	<0.50	<2.5	<0.50	<0.50	<0.50	<2.5	1.0	—	—	—	—	—
Calcium, Ca	51	54	50	48	48	63	45	50	46	49	45	—	—	—	—	—
Magnesium, Mg	5.6	6.3	5.7	5.4	5.2	8.5	4.9	5.4	5.1	5.3	5.1	—	—	—	—	—
Potassium, K	5.8	6.6	6.6	6.7	5.3	7.3	5.2	5.6	5.1	5.5	6.0	—	—	—	—	—
Sodium, Na	100	94	97	100	110	110	110	110	120	100	105	—	—	—	—	—
Total Organic Carbon, TOC	16	9	6.5	1.8	4.0	<1.0	1.6	1.3	1.8	2.2	8	—	—	—	—	—
Ammonia as N, NH ₃ -N	<0.5	<0.5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.0	—	—	—	—	—
Total Nitrogen, TN	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.8	—	—	—	—	—
Bicarbonate, HCO ₃ ⁻ (as CaCO ₃)	130	140	130	138.4	104.5	102.3	101.8	100.4	102.0	100.6	119	—	—	—	—	—
Carbonate, CO ₃ ²⁻ (as CaCO ₃)	<2.0	<2.0	<2.0	<2.0	<2.000	<2.000	<2.000	<2.000	<2.0	<2.000	2.0	—	—	—	—	—
Total Kjeldahl Nitrogen, TKN	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.4	—	—	—	—	—
Field Temperature (°C)	17.4	16.0	15.3	17.1	22.4	19.1	21.5	20.9	20.9	21.3	16.6	—	—	—	—	—
Field SC (mS/cm)	855	835	801	854	768	834	792	868	878	880	798	—	—	—	—	—

Attachment 5 - Summary of Inorganic Parameter Analytical Results

MW-6R	MW-6							MW-6R				2014 Calculated BCV	Regulatory Presumptive AML	2014 Established AML	2014 Calculated UTLV	2014 Established UTLV	GWPS
PARAMETER ⁽¹⁾	03/10/11	03/12/12	03/13/13	03/18/14	03/25/15	06/01/16	03/09/17	06/07/18	04/04/19	06/17/20	06/10/21						
Fluoride, F	0.71	0.66	0.67	0.69	0.62		<0.50	0.53	0.65	0.55	0.62	0.70	0.8	0.8	0.8235	0.8235	1.6
Chloride, Cl ⁻	130	120	120	120	130		120	100	120	110	110	124.29	187.5	187.5	130	N/A	250
Nitrate as N, NO ₃ -N	<1.0	<1.0	<1.0	0.74	0.60		<0.50	1.1	1.2	1.2	1.1	0.89	5.0	5.0	1.0	N/A	10
Sulfate, SO ₄ ²⁻	47	46	43	44	49		<2.5	42	48	44	45	48.86	450	450	53.59	N/A	600
Aluminum, Al	<0.15	0.19	0.15	0.12	0.026		0.040	<0.020	<0.020	<0.020	0.035	0.15	3.75	3.75	1.5	N/A	5.0
Barium, Ba	0.06	0.061	0.056	0.055	0.069		0.10	0.050	0.050	0.050	0.052	0.053	1.0	0.5	0.06468	N/A	2.0
Chromium, Cr	<0.01	<0.01	0.013	0.0064	<0.0060		0.024	<0.0060	<0.0060	<0.0060	<0.0060	0.012	0.025	0.025	0.016	N/A	0.05
Cobalt, Co	<0.025	<0.025	<0.025	<0.0060	<0.0060		<0.0060	<0.0060	<0.0060	<0.0060	<0.0060	0.03	0.0375	0.0375	0.015	N/A	0.05
Iron, Fe	0.11	0.17	0.22	0.14	0.14		3.4 (2.9)	0.081	0.064	<0.050	0.052	0.17	0.75	0.75	0.22	N/A	1.0
Manganese, Mn	<0.03	<0.03	<0.03	0.0079	0.025		0.35 (0.45)	0.0040	0.0032	<0.0020	<0.0020	0.079	0.15	0.15	0.15	N/A	0.2
Zinc, Zn	<0.05	<0.05	<0.05	0.010	<0.010		<0.010	<0.010	<0.010	<0.010	<0.010	0.030	7.5	7.5	0.05	N/A	10
Arsenic, As	0.0091	0.0068	0.0078	0.0066	0.0056		0.0018	0.0062	0.0074	0.0082	0.0088	0.009	0.005	0.009	0.011	0.011	0.01
Lead, Pb	<0.01	<0.01	<0.01	<0.0010	<0.0010		<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.01	0.0015	0.025	0.005	N/A	0.0075
Uranium, U	<0.015	<0.015	<0.015	0.0024	0.0031		<0.00050	0.0018	0.0017	0.0018	0.0018	0.0025	0.015	0.015	1.25	1.25	0.03
Total Dissolved Solids, TDS	427	433	439	224	424		537	407	409	422	420	414.50	750	750	453.4	N/A	1,000
Field pH (standard units)	7.9	7.8	7.8	7.7	7.5		7.0	8.1	7.64	7.84	7.80	7.84	6 - 9	6 - 9	7.555 - 8.217	N/A	6 - 9
Subsection A Organic Parameter	03/10/11	03/12/12	03/12/13	03/18/14	03/25/15	06/01/16	03/09/17	06/07/18	04/04/19	06/17/20	06/10/21	2014 Calculated BCV	Regulatory Presumptive AML	2014 Established AML	2014 Calculated UTLV	2014 Established UTLV	GWPS
Phenolics (total)	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025		0.0058	<0.0025	<0.0025	<0.0025	<0.0025	0.003	0.00375	0.00375	0.0015	N/A	0.005
Subsection C Parameters	03/10/11	03/12/12	03/12/13	03/18/14	03/25/15	06/01/16	03/09/17	06/07/18	04/04/19	06/17/20	06/10/21	2014 Calculated BCV	Regulatory Presumptive AML	2014 Established AML	2014 Calculated UTLV	2014 Established UTLV	GWPS
Phosphorus, Orthophosphate (As P)	<0.5	<0.5	<0.5	<0.50	<0.50		<2.5	<0.50	<0.50	<0.50	<2.5	1.0	—	—	—	—	—
Calcium, Ca	46	46	50	45	42		56	44	45	45	47	44	—	—	—	—	—
Magnesium, Mg	5.7	5.4	5.8	5.0	4.8		5.5	4.9	5.0	5.2	5.2	5.3	—	—	—	—	—
Potassium, K	5.0	4.9	5.4	4.5	5.1		4.6	4.8	4.7	4.8	5.0	4.7	—	—	—	—	—
Sodium, Na	98	93	92	90	88		90	80	82	86	86	91	—	—	—	—	—
Total Organic Carbon, TOC	<1.0	<1.0	14	18	6.9		100	<1.0	<1.0	<1.0	5.5	11.2	—	—	—	—	—
Ammonia as N, NH ₃ -N	<0.5	<0.5	<0.5	<1.0	<1.0		<1.0	<1.0	<1.0	<1.0	<1.0	1.0	—	—	—	—	—
Total Nitrogen, TN	<1.0	<1.0	<1.0	<1.0	<1.0		<1.0	1.1	1.2	1.2	3.3	1.0	—	—	—	—	—
Bicarbonate, HCO ₃ ⁻ (as CaCO ₃)	110	110	110	110	118.0		150.4	102.4	102.2	104.0	102.4	109	—	—	—	—	—
Carbonate, CO ₃ ²⁻ (as CaCO ₃)	<2.0	<2.0	<2.0	<2.0	<2.0		<2.000	<2.000	<2.000	<2.000	<2.000	2.0	—	—	—	—	—
Total Kjeldahl Nitrogen, TKN	<1.0	<1.0	<1.0	<1.0	<1.0		<1.0	<1.0	<1.0	<1.0	2.2	1.0	—	—	—	—	—
Field Temperature (°C)	18.3	21.5	23.9	19.1	19.4		16.3	21.1	19.6	19.8	20.1	21.1	—	—	—	—	—
Field SC (mS/cm)	605	804	734	700	776		771	668	745	735	749	728	—	—	—	—	—

Attachment 5 - Summary of Inorganic Parameter Analytical Results

MW-7R	MW-7							MW-7R				2014 Calculated BCV	Regulatory Presumptive AML	2014 Established AML	2014 Calculated UTLV	2014 Established UTLV	GWPS
PARAMETER ⁽¹⁾	03/10/11	03/12/12	03/13/13	03/18/14	03/25/15	05/24/16	03/08/17	06/07/18	04/04/19	06/17/20	06/10/21						
Fluoride, F	0.88	0.83	0.84	0.85	0.78	0.80	1.2	0.86	0.96	0.84	0.99	0.86	0.8	0.9	0.9776	0.9776	1.6
Chloride, Cl ⁻	46	42	41	42	42	40	49	48	49	49	53	43.43	187.5	187.5	48	N/A	250
Nitrate as N, NO ₃ -N	1.9	1.9	2.0	2.1	0.78	<1.0	<0.10	6.2	6.6	6.2	5.4	2.56	5.0	5.0	3.2	N/A	10
Sulfate, SO ₄ ²⁻	53	55	55	55	44	51	61	43	44	42	44	62.07	450	450	84.24	N/A	600
Aluminum, Al	<0.15	<0.15	0.20	0.19	1.0	0.36	0.58	0.085	0.39	0.11	0.35	0.19	3.75	3.75	1.5	N/A	5.0
Barium, Ba	0.08	0.074	0.062	0.061	0.060	0.061	0.065	0.051	0.059	0.53	0.057	0.060	1.0	0.5	0.08	N/A	2.0
Chromium, Cr	<0.01	<0.01	<0.01	0.011	0.016	0.0085 (<0.0060)	0.030	<0.0060	<0.030	<0.0060	<0.0060	0.017	0.025	0.025	0.028	0.028	0.05
Cobalt, Co	<0.025	<0.025	<0.025	<0.0060	<0.0060	<0.0060	<0.0060	<0.0060	<0.030	<0.0060	<0.0060	0.03	0.0375	0.0375	0.015	N/A	0.05
Iron, Fe	0.13	0.17	0.21	0.20	0.91	0.47 (0.037)	0.99 (0.48)	0.090	0.38	0.14	0.32	0.19	0.75	0.75	0.31	N/A	1.0
Manganese, Mn	0.086	0.05	<0.03	0.022	0.050	0.020 (0.015)	0.022	0.013	0.019	0.013	0.012	0.074	0.15	0.15	0.19	0.190	0.2
Zinc, Zn	<0.05	<0.05	<0.05	<0.010	0.023	0.015	0.023	<0.010	<0.050	<0.010	<0.010	0.050	7.5	7.5	0.025	N/A	10
Arsenic, As	0.0064	<0.005	0.0070	0.0059	0.0065	0.0055 (0.0052)	0.0068	0.0048	0.0064	0.0063	0.0070	0.006	0.005	0.006	0.007	0.007	0.01
Lead, Pb	<0.01	<0.01	<0.01	<0.0010	0.0023	0.0015 (<0.00050)	0.0016	<0.00050	<0.00050	<0.00050	<0.00050	0.01	0.0150	0.025	0.005	N/A	0.0075
Uranium, U	<0.015	<0.015	<0.015	0.0028	0.0023	0.0022	0.0027	0.0020	0.0021	0.0018	0.0019	0.0031	0.015	0.015	1.25	1.25	0.03
Total Dissolved Solids, TDS	326	329	333	172	313	297	324	332	314	316	342	322.64	750	750	358	N/A	1,000
Field pH (standard units)	8.1	7.9	7.9	7.9	7.5	7.79	7.7	8.0	7.67	7.91	7.90	7.86	6 - 9	6 - 9	7.639 - 8.211	N/A	6 - 9
Subsection A Organic Parameter	03/10/11	03/12/12	03/13/13	03/18/14	03/25/15	05/24/16	03/08/17	06/07/18	04/04/19	06/17/20	06/10/21	2014 Calculated BCV	Regulatory Presumptive AML	2014 Established AML	2014 Calculated UTLV	2014 Established UTLV	GWPS
Phenolics (total)	<0.0025	<0.0025	0.0032	<0.0025	<0.0025	<0.0025	0.0029	<2.5	<0.0025	<0.0025	<0.0025	0.003	0.00375	0.00375	0.0015	N/A	0.005
Subsection C Parameters	03/10/11	03/12/12	03/13/13	03/18/14	03/25/15	05/24/16	03/08/17	06/07/18	04/04/19	06/17/20	06/10/21	2014 Calculated BCV	Regulatory Presumptive AML	2014 Established AML	2014 Calculated UTLV	2014 Established UTLV	GWPS
Phosphorus, Orthophosphate (As P)	<0.5	<0.5	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.5	1.0	—	—	—	—	—
Calcium, Ca	40	40	39	39	36	41	44	35	36	36	38	37	—	—	—	—	—
Magnesium, Mg	5.4	5.1	4.8	4.7	4.7	5.2	5.1	4.2	4.6	4.4	4.7	4.9	—	—	—	—	—
Potassium, K	4.5	4.3	4.2	4.6	4.5	4.2	4.4	4.1	4.1	4.2	4.3	4.3	—	—	—	—	—
Sodium, Na	61	58	55	55	54	58	56	68	61	70	66	61	—	—	—	—	—
Total Organic Carbon, TOC	3.4	<1.0	<1.0	3.3	76	4.6	54	<1.0	2.2	2.2	<1.0	3.8	—	—	—	—	—
Ammonia as N, NH ₃ -N	<0.5	<0.5	<0.5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.0	—	—	—	—	—
Total Nitrogen, TN	1.9	1.9	2.0	2.1	1.9	<1.0	<1.0	6.2	6.6	6.2	5.4	2.6	—	—	—	—	—
Bicarbonate, HCO ₃ ⁻ (as CaCO ₃)	130	120	120	120	137.2	135.7	127.9	107.8	107.1	107.8	105.7	119	—	—	—	—	—
Carbonate, CO ₃ ²⁻ (as CaCO ₃)	<2.0	<2.0	<2.0	<2.0	<2.0	<2.000	<2.000	<2.000	<2.000	<2.000	<2.000	2.0	—	—	—	—	—
Total Kjeldahl Nitrogen, TKN	<1.0	<1.0	<1.0	<1.0	1.1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.0	—	—	—	—	—
Field Temperature (°C)	21.5	20.8	21.4	19.3	17.4	19.9	17.5	19.8	19.4	19.3	19.3	21.1	—	—	—	—	—
Field SC (mS/cm)	416	537	519	493	535	488	511	511	570	570	579	512	—	—	—	—	—

**GROUNDWATER MONITORING REPORT
SANDOVAL COUNTY LANDFILL
JUNE 2021 SAMPLING EVENT**

ATTACHMENT 6

Laboratory Report and Chain-of-Custody Documentation



*Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: clients.hallenvironmental.com*

July 06, 2021

Mike Crepeau

Parkhill

333 Rio Rancho Blvd. N.E., Suite 400

Rio Rancho, NM 87124

TEL: (505) 867-6990

FAX

RE: Sandoval County Landfill

OrderNo.: 2106670

Dear Mike Crepeau:

Hall Environmental Analysis Laboratory received 9 sample(s) on 6/11/2021 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0901

Sincerely,

A handwritten signature in black ink, appearing to read "Andy Freeman", is written over a light blue horizontal line.

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **2106670**

Date Reported: **7/6/2021**

CLIENT: Parkhill

Client Sample ID: MW-2R

Project: Sandoval County Landfill

Collection Date: 6/10/2021 1:49:00 PM

Lab ID: 2106670-001

Matrix: AQUEOUS

Received Date: 6/11/2021 8:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 504.1: EDB/DBCP						Analyst: BRM
1,2-Dibromo-3-chloropropane	ND	0.019		µg/L	1	6/22/2021 2:19:01 PM
1,2-Dibromoethane	ND	0.0094		µg/L	1	6/22/2021 2:19:01 PM
EPA METHOD 300.0: ANIONS						Analyst: JMT
Fluoride	0.84	0.50		mg/L	5	6/11/2021 1:43:28 PM
Chloride	87	2.5		mg/L	5	6/11/2021 1:43:28 PM
Nitrogen, Nitrite (As N)	ND	0.50		mg/L	5	6/11/2021 1:43:28 PM
Nitrogen, Nitrate (As N)	ND	0.50		mg/L	5	6/11/2021 1:43:28 PM
Phosphorus, Orthophosphate (As P)	ND	2.5		mg/L	5	6/11/2021 1:43:28 PM
Sulfate	56	2.5		mg/L	5	6/11/2021 1:43:28 PM
EPA METHOD 200.7: METALS						Analyst: ELS
Aluminum	0.040	0.020		mg/L	1	6/15/2021 11:50:38 AM
Barium	0.054	0.0030		mg/L	1	6/15/2021 11:50:38 AM
Calcium	39	1.0		mg/L	1	6/15/2021 11:50:38 AM
Chromium	ND	0.0060		mg/L	1	6/15/2021 11:50:38 AM
Cobalt	ND	0.0060		mg/L	1	6/15/2021 11:50:38 AM
Iron	0.20	0.050		mg/L	1	6/15/2021 11:50:38 AM
Magnesium	5.3	1.0		mg/L	1	6/15/2021 11:50:38 AM
Manganese	0.25	0.0020	*	mg/L	1	6/15/2021 11:50:38 AM
Potassium	5.2	1.0		mg/L	1	6/15/2021 11:50:38 AM
Sodium	110	5.0		mg/L	5	6/15/2021 11:52:14 AM
Zinc	ND	0.010		mg/L	1	6/15/2021 11:50:38 AM
EPA 200.8: METALS						Analyst: bcv
Arsenic	0.0058	0.0010		mg/L	1	6/16/2021 4:12:59 PM
Lead	0.00056	0.00050		mg/L	1	6/16/2021 4:12:59 PM
Uranium	0.0029	0.00050		mg/L	1	6/16/2021 4:12:59 PM
EPA METHOD 8260B: VOLATILES, TABLE I						Analyst: RAA
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	6/16/2021 9:10:04 PM
Benzene	ND	1.0		µg/L	1	6/16/2021 9:10:04 PM
Toluene	ND	1.0		µg/L	1	6/16/2021 9:10:04 PM
Ethylbenzene	ND	1.0		µg/L	1	6/16/2021 9:10:04 PM
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	6/16/2021 9:10:04 PM
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	6/16/2021 9:10:04 PM
Acetone	ND	10		µg/L	1	6/16/2021 9:10:04 PM
Bromodichloromethane	ND	1.0		µg/L	1	6/16/2021 9:10:04 PM
Bromoform	ND	1.0		µg/L	1	6/16/2021 9:10:04 PM
Bromomethane	ND	2.0		µg/L	1	6/16/2021 9:10:04 PM
2-Butanone	ND	10		µg/L	1	6/16/2021 9:10:04 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quantitative Limit
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **2106670**

Date Reported: **7/6/2021**

CLIENT: Parkhill

Client Sample ID: MW-2R

Project: Sandoval County Landfill

Collection Date: 6/10/2021 1:49:00 PM

Lab ID: 2106670-001

Matrix: AQUEOUS

Received Date: 6/11/2021 8:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES, TABLE I						Analyst: RAA
Carbon disulfide	ND	10		µg/L	1	6/16/2021 9:10:04 PM
Carbon Tetrachloride	ND	1.0		µg/L	1	6/16/2021 9:10:04 PM
Chlorobenzene	ND	1.0		µg/L	1	6/16/2021 9:10:04 PM
Chloroethane	ND	2.0		µg/L	1	6/16/2021 9:10:04 PM
Chloroform	ND	1.0		µg/L	1	6/16/2021 9:10:04 PM
Chloromethane	ND	1.0		µg/L	1	6/16/2021 9:10:04 PM
cis-1,2-DCE	ND	1.0		µg/L	1	6/16/2021 9:10:04 PM
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	6/16/2021 9:10:04 PM
Dibromochloromethane	ND	1.0		µg/L	1	6/16/2021 9:10:04 PM
Dibromomethane	ND	1.0		µg/L	1	6/16/2021 9:10:04 PM
1,2-Dichlorobenzene	ND	1.0		µg/L	1	6/16/2021 9:10:04 PM
1,4-Dichlorobenzene	ND	1.0		µg/L	1	6/16/2021 9:10:04 PM
Dichlorodifluoromethane	ND	1.0		µg/L	1	6/16/2021 9:10:04 PM
1,1-Dichloroethane	ND	1.0		µg/L	1	6/16/2021 9:10:04 PM
1,1-Dichloroethene	ND	1.0		µg/L	1	6/16/2021 9:10:04 PM
1,2-Dichloropropane	ND	1.0		µg/L	1	6/16/2021 9:10:04 PM
2-Hexanone	ND	10		µg/L	1	6/16/2021 9:10:04 PM
4-Methyl-2-pentanone	ND	10		µg/L	1	6/16/2021 9:10:04 PM
Methylene Chloride	ND	2.5		µg/L	1	6/16/2021 9:10:04 PM
Styrene	ND	1.0		µg/L	1	6/16/2021 9:10:04 PM
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	6/16/2021 9:10:04 PM
1,1,2,2-Tetrachloroethane	ND	1.0		µg/L	1	6/16/2021 9:10:04 PM
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	6/16/2021 9:10:04 PM
trans-1,2-DCE	ND	1.0		µg/L	1	6/16/2021 9:10:04 PM
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	6/16/2021 9:10:04 PM
1,1,1-Trichloroethane	ND	1.0		µg/L	1	6/16/2021 9:10:04 PM
1,1,2-Trichloroethane	ND	1.0		µg/L	1	6/16/2021 9:10:04 PM
Trichloroethene (TCE)	ND	1.0		µg/L	1	6/16/2021 9:10:04 PM
Trichlorofluoromethane	ND	1.0		µg/L	1	6/16/2021 9:10:04 PM
1,2,3-Trichloropropane	ND	1.0		µg/L	1	6/16/2021 9:10:04 PM
Vinyl chloride	ND	1.0		µg/L	1	6/16/2021 9:10:04 PM
Xylenes, Total	ND	2.0		µg/L	1	6/16/2021 9:10:04 PM
Acrylonitrile	ND	10		µg/L	1	6/16/2021 9:10:04 PM
Bromochloromethane	ND	2.0		µg/L	1	6/16/2021 9:10:04 PM
Iodomethane	ND	10		µg/L	1	6/16/2021 9:10:04 PM
trans-1,4-Dichloro-2-butene	ND	10		µg/L	1	6/16/2021 9:10:04 PM
Vinyl acetate	ND	10		µg/L	1	6/16/2021 9:10:04 PM
Surr: 1,2-Dichloroethane-d4	110	70-130		%Rec	1	6/16/2021 9:10:04 PM
Surr: 4-Bromofluorobenzene	102	70-130		%Rec	1	6/16/2021 9:10:04 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.
	D	Sample Diluted Due to Matrix
	H	Holding times for preparation or analysis exceeded
	ND	Not Detected at the Reporting Limit
	PQL	Practical Quantitative Limit
	S	% Recovery outside of range due to dilution or matrix

B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **2106670**

Date Reported: **7/6/2021**

CLIENT: Parkhill

Client Sample ID: MW-2R

Project: Sandoval County Landfill

Collection Date: 6/10/2021 1:49:00 PM

Lab ID: 2106670-001

Matrix: AQUEOUS

Received Date: 6/11/2021 8:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES, TABLE I						Analyst: RAA
Surr: Dibromofluoromethane	103	70-130		%Rec	1	6/16/2021 9:10:04 PM
Surr: Toluene-d8	99.8	70-130		%Rec	1	6/16/2021 9:10:04 PM
TOTAL PHENOLICS BY SW-846 9067						Analyst: JPM
Phenolics	ND	2.5		µg/L	1	6/30/2021 9:03:00 AM
EPA METHOD 9060 TOC						Analyst: AG
Total Organic Carbon	3.9	1.0		mg/L	1	6/14/2021 3:36:34 PM
SM2510B: SPECIFIC CONDUCTANCE						Analyst: CAS
Conductivity	730	10		µmhos/c	1	6/15/2021 10:41:15 AM
SM 4500 NH3: AMMONIA						Analyst: CJS
Nitrogen, Ammonia	ND	1.0		mg/L	1	6/23/2021 2:08:00 PM
TOTAL NITROGEN						Analyst: CJS
Nitrogen, Total	ND	2.0		mg/L	1	6/30/2021 12:40:00 PM
SM4500-H+B / 9040C: PH						Analyst: CAS
pH	8.00		H	pH units	1	6/15/2021 10:41:15 AM
SM2320B: ALKALINITY						Analyst: CAS
Bicarbonate (As CaCO3)	166.6	20.00		mg/L Ca	1	6/15/2021 10:41:15 AM
Carbonate (As CaCO3)	ND	2.000		mg/L Ca	1	6/15/2021 10:41:15 AM
Total Alkalinity (as CaCO3)	166.6	20.00		mg/L Ca	1	6/15/2021 10:41:15 AM
SM2540C MOD: TOTAL DISSOLVED SOLIDS						Analyst: KS
Total Dissolved Solids	460	20.0		mg/L	1	6/21/2021 5:52:00 PM
SM 4500 NORG C: TKN						Analyst: EKM
Nitrogen, Kjeldahl, Total	ND	2.0	D	mg/L	1	6/29/2021 10:13:00 AM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quantitative Limit
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **2106670**

Date Reported: **7/6/2021**

CLIENT: Parkhill

Client Sample ID: MW-3R

Project: Sandoval County Landfill

Collection Date: 6/10/2021 3:36:00 PM

Lab ID: 2106670-002

Matrix: AQUEOUS

Received Date: 6/11/2021 8:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 504.1: EDB/DBCP						Analyst: BRM
1,2-Dibromo-3-chloropropane	ND	0.019		µg/L	1	6/22/2021 2:34:05 PM
1,2-Dibromoethane	ND	0.0094		µg/L	1	6/22/2021 2:34:05 PM
EPA METHOD 300.0: ANIONS						Analyst: JMT
Fluoride	0.76	0.50		mg/L	5	6/11/2021 2:35:00 PM
Chloride	88	2.5		mg/L	5	6/11/2021 2:35:00 PM
Nitrogen, Nitrite (As N)	ND	0.50		mg/L	5	6/11/2021 2:35:00 PM
Nitrogen, Nitrate (As N)	ND	0.50		mg/L	5	6/11/2021 2:35:00 PM
Phosphorus, Orthophosphate (As P)	ND	2.5		mg/L	5	6/11/2021 2:35:00 PM
Sulfate	67	2.5		mg/L	5	6/11/2021 2:35:00 PM
EPA METHOD 200.7: METALS						Analyst: ELS
Aluminum	0.40	0.020	*	mg/L	1	6/16/2021 9:41:50 AM
Barium	0.054	0.0030		mg/L	1	6/16/2021 9:41:50 AM
Calcium	46	1.0		mg/L	1	6/16/2021 9:41:50 AM
Chromium	ND	0.0060		mg/L	1	6/16/2021 9:41:50 AM
Cobalt	ND	0.0060		mg/L	1	6/16/2021 9:41:50 AM
Iron	0.81	0.050	*	mg/L	1	6/16/2021 9:41:50 AM
Magnesium	6.2	1.0		mg/L	1	6/16/2021 9:41:50 AM
Manganese	0.26	0.0020	*	mg/L	1	6/16/2021 9:41:50 AM
Potassium	5.2	1.0		mg/L	1	6/16/2021 9:41:50 AM
Sodium	100	5.0		mg/L	5	6/16/2021 10:18:12 AM
Zinc	0.028	0.010		mg/L	1	6/16/2021 9:41:50 AM
EPA 200.8: METALS						Analyst: bcv
Arsenic	0.0046	0.0010		mg/L	1	6/16/2021 11:43:17 AM
Lead	0.00079	0.00050		mg/L	1	6/16/2021 11:43:17 AM
Uranium	0.0033	0.00050		mg/L	1	6/16/2021 11:43:17 AM
EPA METHOD 8260B: VOLATILES, TABLE I						Analyst: RAA
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	6/16/2021 10:31:51 PM
Benzene	ND	1.0		µg/L	1	6/16/2021 10:31:51 PM
Toluene	ND	1.0		µg/L	1	6/16/2021 10:31:51 PM
Ethylbenzene	ND	1.0		µg/L	1	6/16/2021 10:31:51 PM
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	6/16/2021 10:31:51 PM
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	6/16/2021 10:31:51 PM
Acetone	ND	10		µg/L	1	6/16/2021 10:31:51 PM
Bromodichloromethane	ND	1.0		µg/L	1	6/16/2021 10:31:51 PM
Bromoform	ND	1.0		µg/L	1	6/16/2021 10:31:51 PM
Bromomethane	ND	2.0		µg/L	1	6/16/2021 10:31:51 PM
2-Butanone	ND	10		µg/L	1	6/16/2021 10:31:51 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quantitative Limit
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **2106670**

Date Reported: **7/6/2021**

CLIENT: Parkhill

Client Sample ID: MW-3R

Project: Sandoval County Landfill

Collection Date: 6/10/2021 3:36:00 PM

Lab ID: 2106670-002

Matrix: AQUEOUS

Received Date: 6/11/2021 8:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES, TABLE I						Analyst: RAA
Carbon disulfide	ND	10		µg/L	1	6/16/2021 10:31:51 PM
Carbon Tetrachloride	ND	1.0		µg/L	1	6/16/2021 10:31:51 PM
Chlorobenzene	ND	1.0		µg/L	1	6/16/2021 10:31:51 PM
Chloroethane	ND	2.0		µg/L	1	6/16/2021 10:31:51 PM
Chloroform	ND	1.0		µg/L	1	6/16/2021 10:31:51 PM
Chloromethane	ND	1.0		µg/L	1	6/16/2021 10:31:51 PM
cis-1,2-DCE	ND	1.0		µg/L	1	6/16/2021 10:31:51 PM
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	6/16/2021 10:31:51 PM
Dibromochloromethane	ND	1.0		µg/L	1	6/16/2021 10:31:51 PM
Dibromomethane	ND	1.0		µg/L	1	6/16/2021 10:31:51 PM
1,2-Dichlorobenzene	ND	1.0		µg/L	1	6/16/2021 10:31:51 PM
1,4-Dichlorobenzene	ND	1.0		µg/L	1	6/16/2021 10:31:51 PM
Dichlorodifluoromethane	ND	1.0		µg/L	1	6/16/2021 10:31:51 PM
1,1-Dichloroethane	ND	1.0		µg/L	1	6/16/2021 10:31:51 PM
1,1-Dichloroethene	ND	1.0		µg/L	1	6/16/2021 10:31:51 PM
1,2-Dichloropropane	ND	1.0		µg/L	1	6/16/2021 10:31:51 PM
2-Hexanone	ND	10		µg/L	1	6/16/2021 10:31:51 PM
4-Methyl-2-pentanone	ND	10		µg/L	1	6/16/2021 10:31:51 PM
Methylene Chloride	ND	2.5		µg/L	1	6/16/2021 10:31:51 PM
Styrene	ND	1.0		µg/L	1	6/16/2021 10:31:51 PM
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	6/16/2021 10:31:51 PM
1,1,2,2-Tetrachloroethane	ND	1.0		µg/L	1	6/16/2021 10:31:51 PM
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	6/16/2021 10:31:51 PM
trans-1,2-DCE	ND	1.0		µg/L	1	6/16/2021 10:31:51 PM
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	6/16/2021 10:31:51 PM
1,1,1-Trichloroethane	ND	1.0		µg/L	1	6/16/2021 10:31:51 PM
1,1,2-Trichloroethane	ND	1.0		µg/L	1	6/16/2021 10:31:51 PM
Trichloroethene (TCE)	ND	1.0		µg/L	1	6/16/2021 10:31:51 PM
Trichlorofluoromethane	ND	1.0		µg/L	1	6/16/2021 10:31:51 PM
1,2,3-Trichloropropane	ND	1.0		µg/L	1	6/16/2021 10:31:51 PM
Vinyl chloride	ND	1.0		µg/L	1	6/16/2021 10:31:51 PM
Xylenes, Total	ND	2.0		µg/L	1	6/16/2021 10:31:51 PM
Acrylonitrile	ND	10		µg/L	1	6/16/2021 10:31:51 PM
Bromochloromethane	ND	2.0		µg/L	1	6/16/2021 10:31:51 PM
Iodomethane	ND	10		µg/L	1	6/16/2021 10:31:51 PM
trans-1,4-Dichloro-2-butene	ND	10		µg/L	1	6/16/2021 10:31:51 PM
Vinyl acetate	ND	10		µg/L	1	6/16/2021 10:31:51 PM
Surr: 1,2-Dichloroethane-d4	107	70-130		%Rec	1	6/16/2021 10:31:51 PM
Surr: 4-Bromofluorobenzene	98.5	70-130		%Rec	1	6/16/2021 10:31:51 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.
	D	Sample Diluted Due to Matrix
	H	Holding times for preparation or analysis exceeded
	ND	Not Detected at the Reporting Limit
	PQL	Practical Quantitative Limit
	S	% Recovery outside of range due to dilution or matrix

B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **2106670**

Date Reported: **7/6/2021**

CLIENT: Parkhill

Client Sample ID: MW-3R

Project: Sandoval County Landfill

Collection Date: 6/10/2021 3:36:00 PM

Lab ID: 2106670-002

Matrix: AQUEOUS

Received Date: 6/11/2021 8:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES, TABLE I						Analyst: RAA
Surr: Dibromofluoromethane	101	70-130		%Rec	1	6/16/2021 10:31:51 PM
Surr: Toluene-d8	95.4	70-130		%Rec	1	6/16/2021 10:31:51 PM
TOTAL PHENOLICS BY SW-846 9067						Analyst: JPM
Phenolics	ND	2.5		µg/L	1	6/30/2021 9:03:00 AM
EPA METHOD 9060 TOC						Analyst: AG
Total Organic Carbon	27	1.0		mg/L	1	6/14/2021 3:53:00 PM
SM2510B: SPECIFIC CONDUCTANCE						Analyst: CAS
Conductivity	760	10		µmhos/c	1	6/15/2021 11:00:54 AM
SM 4500 NH3: AMMONIA						Analyst: CJS
Nitrogen, Ammonia	ND	1.0		mg/L	1	6/23/2021 2:08:00 PM
TOTAL NITROGEN						Analyst: CJS
Nitrogen, Total	ND	1.0		mg/L	1	6/30/2021 12:40:00 PM
SM4500-H+B / 9040C: PH						Analyst: CAS
pH	7.82		H	pH units	1	6/15/2021 11:00:54 AM
SM2320B: ALKALINITY						Analyst: CAS
Bicarbonate (As CaCO3)	170.8	20.00		mg/L Ca	1	6/15/2021 11:00:54 AM
Carbonate (As CaCO3)	ND	2.000		mg/L Ca	1	6/15/2021 11:00:54 AM
Total Alkalinity (as CaCO3)	170.8	20.00		mg/L Ca	1	6/15/2021 11:00:54 AM
SM2540C MOD: TOTAL DISSOLVED SOLIDS						Analyst: KS
Total Dissolved Solids	512	20.0	*	mg/L	1	6/21/2021 5:52:00 PM
SM 4500 NORG C: TKN						Analyst: EKM
Nitrogen, Kjeldahl, Total	ND	1.0		mg/L	1	6/29/2021 10:13:00 AM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quantitative Limit
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **2106670**

Date Reported: **7/6/2021**

CLIENT: Parkhill

Client Sample ID: MW-5R

Project: Sandoval County Landfill

Collection Date: 6/10/2021 8:53:00 AM

Lab ID: 2106670-003

Matrix: AQUEOUS

Received Date: 6/11/2021 8:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 504.1: EDB/DBCP						Analyst: BRM
1,2-Dibromo-3-chloropropane	ND	0.019		µg/L	1	6/22/2021 3:04:22 PM
1,2-Dibromoethane	ND	0.0094		µg/L	1	6/22/2021 3:04:22 PM
EPA METHOD 300.0: ANIONS						Analyst: JMT
Fluoride	0.73	0.50		mg/L	5	6/11/2021 3:00:45 PM
Chloride	160	10		mg/L	20	6/11/2021 3:13:38 PM
Nitrogen, Nitrite (As N)	ND	0.50		mg/L	5	6/11/2021 3:00:45 PM
Nitrogen, Nitrate (As N)	0.58	0.50		mg/L	5	6/11/2021 3:00:45 PM
Phosphorus, Orthophosphate (As P)	ND	2.5		mg/L	5	6/11/2021 3:00:45 PM
Sulfate	28	2.5		mg/L	5	6/11/2021 3:00:45 PM
EPA METHOD 200.7: METALS						Analyst: ELS
Aluminum	ND	0.020		mg/L	1	6/15/2021 11:53:47 AM
Barium	0.090	0.0030		mg/L	1	6/15/2021 11:53:47 AM
Calcium	49	1.0		mg/L	1	6/15/2021 11:53:47 AM
Chromium	ND	0.0060		mg/L	1	6/15/2021 11:53:47 AM
Cobalt	ND	0.0060		mg/L	1	6/15/2021 11:53:47 AM
Iron	ND	0.050		mg/L	1	6/15/2021 11:53:47 AM
Magnesium	5.3	1.0		mg/L	1	6/15/2021 11:53:47 AM
Manganese	ND	0.0020		mg/L	1	6/15/2021 11:53:47 AM
Potassium	5.5	1.0		mg/L	1	6/15/2021 11:53:47 AM
Sodium	100	5.0		mg/L	5	6/15/2021 11:55:20 AM
Zinc	ND	0.010		mg/L	1	6/15/2021 11:53:47 AM
EPA 200.8: METALS						Analyst: bcv
Arsenic	0.0084	0.0010		mg/L	1	6/16/2021 4:17:43 PM
Lead	ND	0.00050		mg/L	1	6/16/2021 4:17:43 PM
Uranium	0.0018	0.00050		mg/L	1	6/16/2021 4:17:43 PM
EPA METHOD 8260B: VOLATILES, TABLE I						Analyst: RAA
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	6/16/2021 10:59:08 PM
Benzene	ND	1.0		µg/L	1	6/16/2021 10:59:08 PM
Toluene	ND	1.0		µg/L	1	6/16/2021 10:59:08 PM
Ethylbenzene	ND	1.0		µg/L	1	6/16/2021 10:59:08 PM
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	6/16/2021 10:59:08 PM
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	6/16/2021 10:59:08 PM
Acetone	ND	10		µg/L	1	6/16/2021 10:59:08 PM
Bromodichloromethane	ND	1.0		µg/L	1	6/16/2021 10:59:08 PM
Bromoform	ND	1.0		µg/L	1	6/16/2021 10:59:08 PM
Bromomethane	ND	2.0		µg/L	1	6/16/2021 10:59:08 PM
2-Butanone	ND	10		µg/L	1	6/16/2021 10:59:08 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.
	D	Sample Diluted Due to Matrix
	H	Holding times for preparation or analysis exceeded
	ND	Not Detected at the Reporting Limit
	PQL	Practical Quantitative Limit
	S	% Recovery outside of range due to dilution or matrix

B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **2106670**

Date Reported: **7/6/2021**

CLIENT: Parkhill

Client Sample ID: MW-5R

Project: Sandoval County Landfill

Collection Date: 6/10/2021 8:53:00 AM

Lab ID: 2106670-003

Matrix: AQUEOUS

Received Date: 6/11/2021 8:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES, TABLE I						Analyst: RAA
Carbon disulfide	ND	10		µg/L	1	6/16/2021 10:59:08 PM
Carbon Tetrachloride	ND	1.0		µg/L	1	6/16/2021 10:59:08 PM
Chlorobenzene	ND	1.0		µg/L	1	6/16/2021 10:59:08 PM
Chloroethane	ND	2.0		µg/L	1	6/16/2021 10:59:08 PM
Chloroform	ND	1.0		µg/L	1	6/16/2021 10:59:08 PM
Chloromethane	ND	1.0		µg/L	1	6/16/2021 10:59:08 PM
cis-1,2-DCE	ND	1.0		µg/L	1	6/16/2021 10:59:08 PM
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	6/16/2021 10:59:08 PM
Dibromochloromethane	ND	1.0		µg/L	1	6/16/2021 10:59:08 PM
Dibromomethane	ND	1.0		µg/L	1	6/16/2021 10:59:08 PM
1,2-Dichlorobenzene	ND	1.0		µg/L	1	6/16/2021 10:59:08 PM
1,4-Dichlorobenzene	ND	1.0		µg/L	1	6/16/2021 10:59:08 PM
Dichlorodifluoromethane	ND	1.0		µg/L	1	6/16/2021 10:59:08 PM
1,1-Dichloroethane	ND	1.0		µg/L	1	6/16/2021 10:59:08 PM
1,1-Dichloroethene	ND	1.0		µg/L	1	6/16/2021 10:59:08 PM
1,2-Dichloropropane	ND	1.0		µg/L	1	6/16/2021 10:59:08 PM
2-Hexanone	ND	10		µg/L	1	6/16/2021 10:59:08 PM
4-Methyl-2-pentanone	ND	10		µg/L	1	6/16/2021 10:59:08 PM
Methylene Chloride	ND	2.5		µg/L	1	6/16/2021 10:59:08 PM
Styrene	ND	1.0		µg/L	1	6/16/2021 10:59:08 PM
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	6/16/2021 10:59:08 PM
1,1,2,2-Tetrachloroethane	ND	1.0		µg/L	1	6/16/2021 10:59:08 PM
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	6/16/2021 10:59:08 PM
trans-1,2-DCE	ND	1.0		µg/L	1	6/16/2021 10:59:08 PM
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	6/16/2021 10:59:08 PM
1,1,1-Trichloroethane	ND	1.0		µg/L	1	6/16/2021 10:59:08 PM
1,1,2-Trichloroethane	ND	1.0		µg/L	1	6/16/2021 10:59:08 PM
Trichloroethene (TCE)	ND	1.0		µg/L	1	6/16/2021 10:59:08 PM
Trichlorofluoromethane	ND	1.0		µg/L	1	6/16/2021 10:59:08 PM
1,2,3-Trichloropropane	ND	1.0		µg/L	1	6/16/2021 10:59:08 PM
Vinyl chloride	ND	1.0		µg/L	1	6/16/2021 10:59:08 PM
Xylenes, Total	ND	2.0		µg/L	1	6/16/2021 10:59:08 PM
Acrylonitrile	ND	10		µg/L	1	6/16/2021 10:59:08 PM
Bromochloromethane	ND	2.0		µg/L	1	6/16/2021 10:59:08 PM
Iodomethane	ND	10		µg/L	1	6/16/2021 10:59:08 PM
trans-1,4-Dichloro-2-butene	ND	10		µg/L	1	6/16/2021 10:59:08 PM
Vinyl acetate	ND	10		µg/L	1	6/16/2021 10:59:08 PM
Surr: 1,2-Dichloroethane-d4	105	70-130		%Rec	1	6/16/2021 10:59:08 PM
Surr: 4-Bromofluorobenzene	99.6	70-130		%Rec	1	6/16/2021 10:59:08 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.
	D	Sample Diluted Due to Matrix
	H	Holding times for preparation or analysis exceeded
	ND	Not Detected at the Reporting Limit
	PQL	Practical Quantitative Limit
	S	% Recovery outside of range due to dilution or matrix

B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **2106670**

Date Reported: **7/6/2021**

CLIENT: Parkhill

Client Sample ID: MW-5R

Project: Sandoval County Landfill

Collection Date: 6/10/2021 8:53:00 AM

Lab ID: 2106670-003

Matrix: AQUEOUS

Received Date: 6/11/2021 8:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES, TABLE I						Analyst: RAA
Surr: Dibromofluoromethane	102	70-130		%Rec	1	6/16/2021 10:59:08 PM
Surr: Toluene-d8	97.6	70-130		%Rec	1	6/16/2021 10:59:08 PM
TOTAL PHENOLICS BY SW-846 9067						Analyst: JPM
Phenolics	ND	2.5		µg/L	1	6/30/2021 9:03:00 AM
EPA METHOD 9060 TOC						Analyst: AG
Total Organic Carbon	2.2	1.0		mg/L	1	6/14/2021 4:09:12 PM
SM2510B: SPECIFIC CONDUCTANCE						Analyst: CAS
Conductivity	840	10		µmhos/c	1	6/15/2021 11:10:51 AM
SM 4500 NH3: AMMONIA						Analyst: CJS
Nitrogen, Ammonia	ND	1.0		mg/L	1	6/23/2021 2:08:00 PM
TOTAL NITROGEN						Analyst: CJS
Nitrogen, Total	ND	1.0		mg/L	1	6/30/2021 12:40:00 PM
SM4500-H+B / 9040C: PH						Analyst: CAS
pH	7.86		H	pH units	1	6/15/2021 11:10:51 AM
SM2320B: ALKALINITY						Analyst: CAS
Bicarbonate (As CaCO3)	100.6	20.00		mg/L Ca	1	6/15/2021 11:10:51 AM
Carbonate (As CaCO3)	ND	2.000		mg/L Ca	1	6/15/2021 11:10:51 AM
Total Alkalinity (as CaCO3)	100.6	20.00		mg/L Ca	1	6/15/2021 11:10:51 AM
SM2540C MOD: TOTAL DISSOLVED SOLIDS						Analyst: KS
Total Dissolved Solids	469	20.0		mg/L	1	6/21/2021 5:52:00 PM
SM 4500 NORG C: TKN						Analyst: EKM
Nitrogen, Kjeldahl, Total	ND	1.0		mg/L	1	6/29/2021 10:13:00 AM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:		*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
		D	Sample Diluted Due to Matrix	E	Value above quantitation range
		H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
		ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
		PQL	Practical Quantitative Limit	RL	Reporting Limit
		S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **2106670**

Date Reported: **7/6/2021**

CLIENT: Parkhill

Client Sample ID: MW-6R

Project: Sandoval County Landfill

Collection Date: 6/10/2021 11:48:00 AM

Lab ID: 2106670-004

Matrix: AQUEOUS

Received Date: 6/11/2021 8:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 504.1: EDB/DBCP						Analyst: BRM
1,2-Dibromo-3-chloropropane	ND	0.019		µg/L	1	6/22/2021 3:19:30 PM
1,2-Dibromoethane	ND	0.0093		µg/L	1	6/22/2021 3:19:30 PM
EPA METHOD 300.0: ANIONS						Analyst: JMT
Fluoride	0.62	0.50		mg/L	5	6/11/2021 3:26:32 PM
Chloride	110	10		mg/L	20	6/11/2021 3:39:25 PM
Nitrogen, Nitrite (As N)	ND	0.50		mg/L	5	6/11/2021 3:26:32 PM
Nitrogen, Nitrate (As N)	1.1	0.50		mg/L	5	6/11/2021 3:26:32 PM
Phosphorus, Orthophosphate (As P)	ND	2.5		mg/L	5	6/11/2021 3:26:32 PM
Sulfate	45	2.5		mg/L	5	6/11/2021 3:26:32 PM
EPA METHOD 200.7: METALS						Analyst: ELS
Aluminum	0.035	0.020		mg/L	1	6/15/2021 11:56:52 AM
Barium	0.052	0.0030		mg/L	1	6/15/2021 11:56:52 AM
Calcium	47	1.0		mg/L	1	6/15/2021 11:56:52 AM
Chromium	ND	0.0060		mg/L	1	6/15/2021 11:56:52 AM
Cobalt	ND	0.0060		mg/L	1	6/15/2021 11:56:52 AM
Iron	0.052	0.050		mg/L	1	6/15/2021 11:56:52 AM
Magnesium	5.2	1.0		mg/L	1	6/15/2021 11:56:52 AM
Manganese	ND	0.0020		mg/L	1	6/15/2021 11:56:52 AM
Potassium	5.0	1.0		mg/L	1	6/15/2021 11:56:52 AM
Sodium	86	1.0		mg/L	1	6/15/2021 11:56:52 AM
Zinc	ND	0.010		mg/L	1	6/15/2021 11:56:52 AM
EPA 200.8: METALS						Analyst: bcv
Arsenic	0.0088	0.0010		mg/L	1	6/16/2021 4:22:27 PM
Lead	ND	0.00050		mg/L	1	6/16/2021 4:22:27 PM
Uranium	0.0018	0.00050		mg/L	1	6/16/2021 4:22:27 PM
EPA METHOD 8260B: VOLATILES, TABLE I						Analyst: RAA
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	6/16/2021 11:26:24 PM
Benzene	ND	1.0		µg/L	1	6/16/2021 11:26:24 PM
Toluene	ND	1.0		µg/L	1	6/16/2021 11:26:24 PM
Ethylbenzene	ND	1.0		µg/L	1	6/16/2021 11:26:24 PM
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	6/16/2021 11:26:24 PM
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	6/16/2021 11:26:24 PM
Acetone	ND	10		µg/L	1	6/16/2021 11:26:24 PM
Bromodichloromethane	ND	1.0		µg/L	1	6/16/2021 11:26:24 PM
Bromoform	ND	1.0		µg/L	1	6/16/2021 11:26:24 PM
Bromomethane	ND	2.0		µg/L	1	6/16/2021 11:26:24 PM
2-Butanone	ND	10		µg/L	1	6/16/2021 11:26:24 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.
	D	Sample Diluted Due to Matrix
	H	Holding times for preparation or analysis exceeded
	ND	Not Detected at the Reporting Limit
	PQL	Practical Quantitative Limit
	S	% Recovery outside of range due to dilution or matrix

B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **2106670**

Date Reported: **7/6/2021**

CLIENT: Parkhill

Client Sample ID: MW-6R

Project: Sandoval County Landfill

Collection Date: 6/10/2021 11:48:00 AM

Lab ID: 2106670-004

Matrix: AQUEOUS

Received Date: 6/11/2021 8:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES, TABLE I						Analyst: RAA
Carbon disulfide	ND	10		µg/L	1	6/16/2021 11:26:24 PM
Carbon Tetrachloride	ND	1.0		µg/L	1	6/16/2021 11:26:24 PM
Chlorobenzene	ND	1.0		µg/L	1	6/16/2021 11:26:24 PM
Chloroethane	ND	2.0		µg/L	1	6/16/2021 11:26:24 PM
Chloroform	ND	1.0		µg/L	1	6/16/2021 11:26:24 PM
Chloromethane	ND	1.0		µg/L	1	6/16/2021 11:26:24 PM
cis-1,2-DCE	ND	1.0		µg/L	1	6/16/2021 11:26:24 PM
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	6/16/2021 11:26:24 PM
Dibromochloromethane	ND	1.0		µg/L	1	6/16/2021 11:26:24 PM
Dibromomethane	ND	1.0		µg/L	1	6/16/2021 11:26:24 PM
1,2-Dichlorobenzene	ND	1.0		µg/L	1	6/16/2021 11:26:24 PM
1,4-Dichlorobenzene	ND	1.0		µg/L	1	6/16/2021 11:26:24 PM
Dichlorodifluoromethane	ND	1.0		µg/L	1	6/16/2021 11:26:24 PM
1,1-Dichloroethane	ND	1.0		µg/L	1	6/16/2021 11:26:24 PM
1,1-Dichloroethene	ND	1.0		µg/L	1	6/16/2021 11:26:24 PM
1,2-Dichloropropane	ND	1.0		µg/L	1	6/16/2021 11:26:24 PM
2-Hexanone	ND	10		µg/L	1	6/16/2021 11:26:24 PM
4-Methyl-2-pentanone	ND	10		µg/L	1	6/16/2021 11:26:24 PM
Methylene Chloride	ND	2.5		µg/L	1	6/16/2021 11:26:24 PM
Styrene	ND	1.0		µg/L	1	6/16/2021 11:26:24 PM
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	6/16/2021 11:26:24 PM
1,1,2,2-Tetrachloroethane	ND	1.0		µg/L	1	6/16/2021 11:26:24 PM
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	6/16/2021 11:26:24 PM
trans-1,2-DCE	ND	1.0		µg/L	1	6/16/2021 11:26:24 PM
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	6/16/2021 11:26:24 PM
1,1,1-Trichloroethane	ND	1.0		µg/L	1	6/16/2021 11:26:24 PM
1,1,2-Trichloroethane	ND	1.0		µg/L	1	6/16/2021 11:26:24 PM
Trichloroethene (TCE)	ND	1.0		µg/L	1	6/16/2021 11:26:24 PM
Trichlorofluoromethane	ND	1.0		µg/L	1	6/16/2021 11:26:24 PM
1,2,3-Trichloropropane	ND	1.0		µg/L	1	6/16/2021 11:26:24 PM
Vinyl chloride	ND	1.0		µg/L	1	6/16/2021 11:26:24 PM
Xylenes, Total	ND	2.0		µg/L	1	6/16/2021 11:26:24 PM
Acrylonitrile	ND	10		µg/L	1	6/16/2021 11:26:24 PM
Bromochloromethane	ND	2.0		µg/L	1	6/16/2021 11:26:24 PM
Iodomethane	ND	10		µg/L	1	6/16/2021 11:26:24 PM
trans-1,4-Dichloro-2-butene	ND	10		µg/L	1	6/16/2021 11:26:24 PM
Vinyl acetate	ND	10		µg/L	1	6/16/2021 11:26:24 PM
Surr: 1,2-Dichloroethane-d4	103	70-130		%Rec	1	6/16/2021 11:26:24 PM
Surr: 4-Bromofluorobenzene	101	70-130		%Rec	1	6/16/2021 11:26:24 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.
	D	Sample Diluted Due to Matrix
	H	Holding times for preparation or analysis exceeded
	ND	Not Detected at the Reporting Limit
	PQL	Practical Quantitative Limit
	S	% Recovery outside of range due to dilution or matrix

B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **2106670**

Date Reported: **7/6/2021**

CLIENT: Parkhill

Client Sample ID: MW-6R

Project: Sandoval County Landfill

Collection Date: 6/10/2021 11:48:00 AM

Lab ID: 2106670-004

Matrix: AQUEOUS

Received Date: 6/11/2021 8:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES, TABLE I						Analyst: RAA
Surr: Dibromofluoromethane	98.6	70-130		%Rec	1	6/16/2021 11:26:24 PM
Surr: Toluene-d8	96.5	70-130		%Rec	1	6/16/2021 11:26:24 PM
TOTAL PHENOLICS BY SW-846 9067						Analyst: JPM
Phenolics	ND	2.5		µg/L	1	6/30/2021 9:03:00 AM
EPA METHOD 9060 TOC						Analyst: AG
Total Organic Carbon	5.5	1.0		mg/L	1	6/14/2021 4:23:17 PM
SM2510B: SPECIFIC CONDUCTANCE						Analyst: CAS
Conductivity	710	10		µmhos/c	1	6/15/2021 11:31:21 AM
SM 4500 NH3: AMMONIA						Analyst: CJS
Nitrogen, Ammonia	ND	1.0		mg/L	1	6/23/2021 2:08:00 PM
TOTAL NITROGEN						Analyst: CJS
Nitrogen, Total	3.3	1.0		mg/L	1	6/30/2021 12:40:00 PM
SM4500-H+B / 9040C: PH						Analyst: CAS
pH	7.86		H	pH units	1	6/15/2021 11:31:21 AM
SM2320B: ALKALINITY						Analyst: CAS
Bicarbonate (As CaCO3)	102.4	20.00		mg/L Ca	1	6/15/2021 11:31:21 AM
Carbonate (As CaCO3)	ND	2.000		mg/L Ca	1	6/15/2021 11:31:21 AM
Total Alkalinity (as CaCO3)	102.4	20.00		mg/L Ca	1	6/15/2021 11:31:21 AM
SM2540C MOD: TOTAL DISSOLVED SOLIDS						Analyst: KS
Total Dissolved Solids	420	20.0		mg/L	1	6/21/2021 5:52:00 PM
SM 4500 NORG C: TKN						Analyst: EKM
Nitrogen, Kjeldahl, Total	2.2	1.0		mg/L	1	6/29/2021 10:13:00 AM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.
	D	Sample Diluted Due to Matrix
	H	Holding times for preparation or analysis exceeded
	ND	Not Detected at the Reporting Limit
	PQL	Practical Quantitative Limit
	S	% Recovery outside of range due to dilution or matrix

B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **2106670**

Date Reported: **7/6/2021**

CLIENT: Parkhill

Client Sample ID: MW-7R

Project: Sandoval County Landfill

Collection Date: 6/10/2021 10:12:00 AM

Lab ID: 2106670-005

Matrix: AQUEOUS

Received Date: 6/11/2021 8:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 504.1: EDB/DBCP						Analyst: BRM
1,2-Dibromo-3-chloropropane	ND	0.019		µg/L	1	6/22/2021 3:34:37 PM
1,2-Dibromoethane	ND	0.0094		µg/L	1	6/22/2021 3:34:37 PM
EPA METHOD 300.0: ANIONS						Analyst: JMT
Fluoride	0.99	0.50		mg/L	5	6/11/2021 3:52:17 PM
Chloride	53	2.5		mg/L	5	6/11/2021 3:52:17 PM
Nitrogen, Nitrite (As N)	ND	0.50		mg/L	5	6/11/2021 3:52:17 PM
Nitrogen, Nitrate (As N)	5.4	0.50		mg/L	5	6/11/2021 3:52:17 PM
Phosphorus, Orthophosphate (As P)	ND	2.5		mg/L	5	6/11/2021 3:52:17 PM
Sulfate	44	2.5		mg/L	5	6/11/2021 3:52:17 PM
EPA METHOD 200.7: METALS						Analyst: ELS
Aluminum	0.35	0.020	*	mg/L	1	6/16/2021 9:44:39 AM
Barium	0.057	0.0030		mg/L	1	6/16/2021 9:44:39 AM
Calcium	38	1.0		mg/L	1	6/16/2021 9:44:39 AM
Chromium	ND	0.0060		mg/L	1	6/16/2021 9:44:39 AM
Cobalt	ND	0.0060		mg/L	1	6/16/2021 9:44:39 AM
Iron	0.32	0.050	*	mg/L	1	6/16/2021 9:44:39 AM
Magnesium	4.7	1.0		mg/L	1	6/16/2021 9:44:39 AM
Manganese	0.012	0.0020		mg/L	1	6/16/2021 9:44:39 AM
Potassium	4.3	1.0		mg/L	1	6/16/2021 9:44:39 AM
Sodium	66	1.0		mg/L	1	6/16/2021 10:19:45 AM
Zinc	ND	0.010		mg/L	1	6/16/2021 9:44:39 AM
EPA 200.8: METALS						Analyst: bcv
Arsenic	0.0070	0.0010		mg/L	1	6/16/2021 11:45:42 AM
Lead	ND	0.00050		mg/L	1	6/16/2021 11:45:42 AM
Uranium	0.0019	0.00050		mg/L	1	6/16/2021 11:45:42 AM
EPA METHOD 8260B: VOLATILES, TABLE I						Analyst: RAA
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	6/16/2021 11:53:35 PM
Benzene	ND	1.0		µg/L	1	6/16/2021 11:53:35 PM
Toluene	ND	1.0		µg/L	1	6/16/2021 11:53:35 PM
Ethylbenzene	ND	1.0		µg/L	1	6/16/2021 11:53:35 PM
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	6/16/2021 11:53:35 PM
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	6/16/2021 11:53:35 PM
Acetone	ND	10		µg/L	1	6/16/2021 11:53:35 PM
Bromodichloromethane	ND	1.0		µg/L	1	6/16/2021 11:53:35 PM
Bromoform	ND	1.0		µg/L	1	6/16/2021 11:53:35 PM
Bromomethane	ND	2.0		µg/L	1	6/16/2021 11:53:35 PM
2-Butanone	ND	10		µg/L	1	6/16/2021 11:53:35 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quantitative Limit
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **2106670**

Date Reported: **7/6/2021**

CLIENT: Parkhill

Client Sample ID: MW-7R

Project: Sandoval County Landfill

Collection Date: 6/10/2021 10:12:00 AM

Lab ID: 2106670-005

Matrix: AQUEOUS

Received Date: 6/11/2021 8:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES, TABLE I						Analyst: RAA
Carbon disulfide	ND	10		µg/L	1	6/16/2021 11:53:35 PM
Carbon Tetrachloride	ND	1.0		µg/L	1	6/16/2021 11:53:35 PM
Chlorobenzene	ND	1.0		µg/L	1	6/16/2021 11:53:35 PM
Chloroethane	ND	2.0		µg/L	1	6/16/2021 11:53:35 PM
Chloroform	ND	1.0		µg/L	1	6/16/2021 11:53:35 PM
Chloromethane	ND	1.0		µg/L	1	6/16/2021 11:53:35 PM
cis-1,2-DCE	ND	1.0		µg/L	1	6/16/2021 11:53:35 PM
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	6/16/2021 11:53:35 PM
Dibromochloromethane	ND	1.0		µg/L	1	6/16/2021 11:53:35 PM
Dibromomethane	ND	1.0		µg/L	1	6/16/2021 11:53:35 PM
1,2-Dichlorobenzene	ND	1.0		µg/L	1	6/16/2021 11:53:35 PM
1,4-Dichlorobenzene	ND	1.0		µg/L	1	6/16/2021 11:53:35 PM
Dichlorodifluoromethane	ND	1.0		µg/L	1	6/16/2021 11:53:35 PM
1,1-Dichloroethane	ND	1.0		µg/L	1	6/16/2021 11:53:35 PM
1,1-Dichloroethene	ND	1.0		µg/L	1	6/16/2021 11:53:35 PM
1,2-Dichloropropane	ND	1.0		µg/L	1	6/16/2021 11:53:35 PM
2-Hexanone	ND	10		µg/L	1	6/16/2021 11:53:35 PM
4-Methyl-2-pentanone	ND	10		µg/L	1	6/16/2021 11:53:35 PM
Methylene Chloride	ND	2.5		µg/L	1	6/16/2021 11:53:35 PM
Styrene	ND	1.0		µg/L	1	6/16/2021 11:53:35 PM
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	6/16/2021 11:53:35 PM
1,1,2,2-Tetrachloroethane	ND	1.0		µg/L	1	6/16/2021 11:53:35 PM
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	6/16/2021 11:53:35 PM
trans-1,2-DCE	ND	1.0		µg/L	1	6/16/2021 11:53:35 PM
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	6/16/2021 11:53:35 PM
1,1,1-Trichloroethane	ND	1.0		µg/L	1	6/16/2021 11:53:35 PM
1,1,2-Trichloroethane	ND	1.0		µg/L	1	6/16/2021 11:53:35 PM
Trichloroethene (TCE)	ND	1.0		µg/L	1	6/16/2021 11:53:35 PM
Trichlorofluoromethane	ND	1.0		µg/L	1	6/16/2021 11:53:35 PM
1,2,3-Trichloropropane	ND	1.0		µg/L	1	6/16/2021 11:53:35 PM
Vinyl chloride	ND	1.0		µg/L	1	6/16/2021 11:53:35 PM
Xylenes, Total	ND	2.0		µg/L	1	6/16/2021 11:53:35 PM
Acrylonitrile	ND	10		µg/L	1	6/16/2021 11:53:35 PM
Bromochloromethane	ND	2.0		µg/L	1	6/16/2021 11:53:35 PM
Iodomethane	ND	10		µg/L	1	6/16/2021 11:53:35 PM
trans-1,4-Dichloro-2-butene	ND	10		µg/L	1	6/16/2021 11:53:35 PM
Vinyl acetate	ND	10		µg/L	1	6/16/2021 11:53:35 PM
Surr: 1,2-Dichloroethane-d4	107	70-130		%Rec	1	6/16/2021 11:53:35 PM
Surr: 4-Bromofluorobenzene	102	70-130		%Rec	1	6/16/2021 11:53:35 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.
	D	Sample Diluted Due to Matrix
	H	Holding times for preparation or analysis exceeded
	ND	Not Detected at the Reporting Limit
	PQL	Practical Quantitative Limit
	S	% Recovery outside of range due to dilution or matrix

B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **2106670**

Date Reported: **7/6/2021**

CLIENT: Parkhill

Client Sample ID: MW-7R

Project: Sandoval County Landfill

Collection Date: 6/10/2021 10:12:00 AM

Lab ID: 2106670-005

Matrix: AQUEOUS

Received Date: 6/11/2021 8:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES, TABLE I						Analyst: RAA
Surr: Dibromofluoromethane	103	70-130		%Rec	1	6/16/2021 11:53:35 PM
Surr: Toluene-d8	96.3	70-130		%Rec	1	6/16/2021 11:53:35 PM
TOTAL PHENOLICS BY SW-846 9067						Analyst: JPM
Phenolics	ND	2.5		µg/L	1	6/30/2021 9:03:00 AM
EPA METHOD 9060 TOC						Analyst: AG
Total Organic Carbon	ND	1.0		mg/L	1	6/14/2021 5:10:42 PM
SM2510B: SPECIFIC CONDUCTANCE						Analyst: CAS
Conductivity	540	10		µmhos/c	1	6/15/2021 11:39:28 AM
SM 4500 NH3: AMMONIA						Analyst: CJS
Nitrogen, Ammonia	ND	1.0		mg/L	1	6/23/2021 2:08:00 PM
TOTAL NITROGEN						Analyst: CJS
Nitrogen, Total	5.4	1.0		mg/L	1	6/30/2021 12:40:00 PM
SM4500-H+B / 9040C: PH						Analyst: CAS
pH	7.94		H	pH units	1	6/15/2021 11:39:28 AM
SM2320B: ALKALINITY						Analyst: CAS
Bicarbonate (As CaCO3)	105.7	20.00		mg/L Ca	1	6/15/2021 11:39:28 AM
Carbonate (As CaCO3)	ND	2.000		mg/L Ca	1	6/15/2021 11:39:28 AM
Total Alkalinity (as CaCO3)	105.7	20.00		mg/L Ca	1	6/15/2021 11:39:28 AM
SM2540C MOD: TOTAL DISSOLVED SOLIDS						Analyst: KS
Total Dissolved Solids	342	20.0		mg/L	1	6/21/2021 5:52:00 PM
SM 4500 NORG C: TKN						Analyst: EKM
Nitrogen, Kjeldahl, Total	ND	1.0		mg/L	1	6/29/2021 10:13:00 AM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:		*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
		D	Sample Diluted Due to Matrix	E	Value above quantitation range
		H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
		ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
		PQL	Practical Quantitative Limit	RL	Reporting Limit
		S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **2106670**

Date Reported: **7/6/2021**

CLIENT: Parkhill

Client Sample ID: DUPE

Project: Sandoval County Landfill

Collection Date: 6/10/2021 9:00:00 AM

Lab ID: 2106670-006

Matrix: AQUEOUS

Received Date: 6/11/2021 8:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES, TABLE I						Analyst: RAA
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	6/17/2021 12:20:53 AM
Benzene	ND	1.0		µg/L	1	6/17/2021 12:20:53 AM
Toluene	ND	1.0		µg/L	1	6/17/2021 12:20:53 AM
Ethylbenzene	ND	1.0		µg/L	1	6/17/2021 12:20:53 AM
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	6/17/2021 12:20:53 AM
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	6/17/2021 12:20:53 AM
Acetone	ND	10		µg/L	1	6/17/2021 12:20:53 AM
Bromodichloromethane	ND	1.0		µg/L	1	6/17/2021 12:20:53 AM
Bromoform	ND	1.0		µg/L	1	6/17/2021 12:20:53 AM
Bromomethane	ND	2.0		µg/L	1	6/17/2021 12:20:53 AM
2-Butanone	ND	10		µg/L	1	6/17/2021 12:20:53 AM
Carbon disulfide	ND	10		µg/L	1	6/17/2021 12:20:53 AM
Carbon Tetrachloride	ND	1.0		µg/L	1	6/17/2021 12:20:53 AM
Chlorobenzene	ND	1.0		µg/L	1	6/17/2021 12:20:53 AM
Chloroethane	ND	2.0		µg/L	1	6/17/2021 12:20:53 AM
Chloroform	ND	1.0		µg/L	1	6/17/2021 12:20:53 AM
Chloromethane	ND	1.0		µg/L	1	6/17/2021 12:20:53 AM
cis-1,2-DCE	ND	1.0		µg/L	1	6/17/2021 12:20:53 AM
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	6/17/2021 12:20:53 AM
Dibromochloromethane	ND	1.0		µg/L	1	6/17/2021 12:20:53 AM
Dibromomethane	ND	1.0		µg/L	1	6/17/2021 12:20:53 AM
1,2-Dichlorobenzene	ND	1.0		µg/L	1	6/17/2021 12:20:53 AM
1,4-Dichlorobenzene	ND	1.0		µg/L	1	6/17/2021 12:20:53 AM
Dichlorodifluoromethane	ND	1.0		µg/L	1	6/17/2021 12:20:53 AM
1,1-Dichloroethane	ND	1.0		µg/L	1	6/17/2021 12:20:53 AM
1,1-Dichloroethene	ND	1.0		µg/L	1	6/17/2021 12:20:53 AM
1,2-Dichloropropane	ND	1.0		µg/L	1	6/17/2021 12:20:53 AM
2-Hexanone	ND	10		µg/L	1	6/17/2021 12:20:53 AM
4-Methyl-2-pentanone	ND	10		µg/L	1	6/17/2021 12:20:53 AM
Methylene Chloride	ND	2.5		µg/L	1	6/17/2021 12:20:53 AM
Styrene	ND	1.0		µg/L	1	6/17/2021 12:20:53 AM
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	6/17/2021 12:20:53 AM
1,1,2,2-Tetrachloroethane	ND	1.0		µg/L	1	6/17/2021 12:20:53 AM
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	6/17/2021 12:20:53 AM
trans-1,2-DCE	ND	1.0		µg/L	1	6/17/2021 12:20:53 AM
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	6/17/2021 12:20:53 AM
1,1,1-Trichloroethane	ND	1.0		µg/L	1	6/17/2021 12:20:53 AM
1,1,2-Trichloroethane	ND	1.0		µg/L	1	6/17/2021 12:20:53 AM
Trichloroethene (TCE)	ND	1.0		µg/L	1	6/17/2021 12:20:53 AM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.
	D	Sample Diluted Due to Matrix
	H	Holding times for preparation or analysis exceeded
	ND	Not Detected at the Reporting Limit
	PQL	Practical Quantitative Limit
	S	% Recovery outside of range due to dilution or matrix

B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **2106670**

Date Reported: **7/6/2021**

CLIENT: Parkhill

Client Sample ID: DUPE

Project: Sandoval County Landfill

Collection Date: 6/10/2021 9:00:00 AM

Lab ID: 2106670-006

Matrix: AQUEOUS

Received Date: 6/11/2021 8:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES, TABLE I						Analyst: RAA
Trichlorofluoromethane	ND	1.0		µg/L	1	6/17/2021 12:20:53 AM
1,2,3-Trichloropropane	ND	1.0		µg/L	1	6/17/2021 12:20:53 AM
Vinyl chloride	ND	1.0		µg/L	1	6/17/2021 12:20:53 AM
Xylenes, Total	ND	2.0		µg/L	1	6/17/2021 12:20:53 AM
Acrylonitrile	ND	10		µg/L	1	6/17/2021 12:20:53 AM
Bromochloromethane	ND	2.0		µg/L	1	6/17/2021 12:20:53 AM
Iodomethane	ND	10		µg/L	1	6/17/2021 12:20:53 AM
trans-1,4-Dichloro-2-butene	ND	10		µg/L	1	6/17/2021 12:20:53 AM
Vinyl acetate	ND	10		µg/L	1	6/17/2021 12:20:53 AM
Surr: 1,2-Dichloroethane-d4	110	70-130		%Rec	1	6/17/2021 12:20:53 AM
Surr: 4-Bromofluorobenzene	99.5	70-130		%Rec	1	6/17/2021 12:20:53 AM
Surr: Dibromofluoromethane	104	70-130		%Rec	1	6/17/2021 12:20:53 AM
Surr: Toluene-d8	98.7	70-130		%Rec	1	6/17/2021 12:20:53 AM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quantitative Limit
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **2106670**

Date Reported: **7/6/2021**

CLIENT: Parkhill

Client Sample ID: Field Blank

Project: Sandoval County Landfill

Collection Date: 6/10/2021 8:26:00 AM

Lab ID: 2106670-007

Matrix: AQUEOUS

Received Date: 6/11/2021 8:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES, TABLE I						Analyst: RAA
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	6/17/2021 12:48:06 AM
Benzene	ND	1.0		µg/L	1	6/17/2021 12:48:06 AM
Toluene	ND	1.0		µg/L	1	6/17/2021 12:48:06 AM
Ethylbenzene	ND	1.0		µg/L	1	6/17/2021 12:48:06 AM
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	6/17/2021 12:48:06 AM
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	6/17/2021 12:48:06 AM
Acetone	ND	10		µg/L	1	6/17/2021 12:48:06 AM
Bromodichloromethane	ND	1.0		µg/L	1	6/17/2021 12:48:06 AM
Bromoform	ND	1.0		µg/L	1	6/17/2021 12:48:06 AM
Bromomethane	ND	2.0		µg/L	1	6/17/2021 12:48:06 AM
2-Butanone	ND	10		µg/L	1	6/17/2021 12:48:06 AM
Carbon disulfide	ND	10		µg/L	1	6/17/2021 12:48:06 AM
Carbon Tetrachloride	ND	1.0		µg/L	1	6/17/2021 12:48:06 AM
Chlorobenzene	ND	1.0		µg/L	1	6/17/2021 12:48:06 AM
Chloroethane	ND	2.0		µg/L	1	6/17/2021 12:48:06 AM
Chloroform	ND	1.0		µg/L	1	6/17/2021 12:48:06 AM
Chloromethane	ND	1.0		µg/L	1	6/17/2021 12:48:06 AM
cis-1,2-DCE	ND	1.0		µg/L	1	6/17/2021 12:48:06 AM
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	6/17/2021 12:48:06 AM
Dibromochloromethane	ND	1.0		µg/L	1	6/17/2021 12:48:06 AM
Dibromomethane	ND	1.0		µg/L	1	6/17/2021 12:48:06 AM
1,2-Dichlorobenzene	ND	1.0		µg/L	1	6/17/2021 12:48:06 AM
1,4-Dichlorobenzene	ND	1.0		µg/L	1	6/17/2021 12:48:06 AM
Dichlorodifluoromethane	ND	1.0		µg/L	1	6/17/2021 12:48:06 AM
1,1-Dichloroethane	ND	1.0		µg/L	1	6/17/2021 12:48:06 AM
1,1-Dichloroethene	ND	1.0		µg/L	1	6/17/2021 12:48:06 AM
1,2-Dichloropropane	ND	1.0		µg/L	1	6/17/2021 12:48:06 AM
2-Hexanone	ND	10		µg/L	1	6/17/2021 12:48:06 AM
4-Methyl-2-pentanone	ND	10		µg/L	1	6/17/2021 12:48:06 AM
Methylene Chloride	ND	2.5		µg/L	1	6/17/2021 12:48:06 AM
Styrene	ND	1.0		µg/L	1	6/17/2021 12:48:06 AM
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	6/17/2021 12:48:06 AM
1,1,2,2-Tetrachloroethane	ND	1.0		µg/L	1	6/17/2021 12:48:06 AM
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	6/17/2021 12:48:06 AM
trans-1,2-DCE	ND	1.0		µg/L	1	6/17/2021 12:48:06 AM
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	6/17/2021 12:48:06 AM
1,1,1-Trichloroethane	ND	1.0		µg/L	1	6/17/2021 12:48:06 AM
1,1,2-Trichloroethane	ND	1.0		µg/L	1	6/17/2021 12:48:06 AM
Trichloroethene (TCE)	ND	1.0		µg/L	1	6/17/2021 12:48:06 AM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.
	D	Sample Diluted Due to Matrix
	H	Holding times for preparation or analysis exceeded
	ND	Not Detected at the Reporting Limit
	PQL	Practical Quantitative Limit
	S	% Recovery outside of range due to dilution or matrix

B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **2106670**

Date Reported: **7/6/2021**

CLIENT: Parkhill

Client Sample ID: Field Blank

Project: Sandoval County Landfill

Collection Date: 6/10/2021 8:26:00 AM

Lab ID: 2106670-007

Matrix: AQUEOUS

Received Date: 6/11/2021 8:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES, TABLE I						Analyst: RAA
Trichlorofluoromethane	ND	1.0		µg/L	1	6/17/2021 12:48:06 AM
1,2,3-Trichloropropane	ND	1.0		µg/L	1	6/17/2021 12:48:06 AM
Vinyl chloride	ND	1.0		µg/L	1	6/17/2021 12:48:06 AM
Xylenes, Total	ND	2.0		µg/L	1	6/17/2021 12:48:06 AM
Acrylonitrile	ND	10		µg/L	1	6/17/2021 12:48:06 AM
Bromochloromethane	ND	2.0		µg/L	1	6/17/2021 12:48:06 AM
Iodomethane	ND	10		µg/L	1	6/17/2021 12:48:06 AM
trans-1,4-Dichloro-2-butene	ND	10		µg/L	1	6/17/2021 12:48:06 AM
Vinyl acetate	ND	10		µg/L	1	6/17/2021 12:48:06 AM
Surr: 1,2-Dichloroethane-d4	101	70-130		%Rec	1	6/17/2021 12:48:06 AM
Surr: 4-Bromofluorobenzene	102	70-130		%Rec	1	6/17/2021 12:48:06 AM
Surr: Dibromofluoromethane	98.5	70-130		%Rec	1	6/17/2021 12:48:06 AM
Surr: Toluene-d8	96.2	70-130		%Rec	1	6/17/2021 12:48:06 AM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quantitative Limit
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **2106670**

Date Reported: **7/6/2021**

CLIENT: Parkhill

Client Sample ID: Trip Blank

Project: Sandoval County Landfill

Collection Date:

Lab ID: 2106670-008

Matrix: TRIP BLANK

Received Date: 6/11/2021 8:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 504.1: EDB/DBCP						Analyst: BRM
1,2-Dibromo-3-chloropropane	ND	0.019		µg/L	1	6/22/2021 4:20:14 PM
1,2-Dibromoethane	ND	0.0094		µg/L	1	6/22/2021 4:20:14 PM
EPA METHOD 8260B: VOLATILES, TABLE I						Analyst: RAA
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	6/17/2021 1:15:18 AM
Benzene	ND	1.0		µg/L	1	6/17/2021 1:15:18 AM
Toluene	ND	1.0		µg/L	1	6/17/2021 1:15:18 AM
Ethylbenzene	ND	1.0		µg/L	1	6/17/2021 1:15:18 AM
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	6/17/2021 1:15:18 AM
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	6/17/2021 1:15:18 AM
Acetone	ND	10		µg/L	1	6/17/2021 1:15:18 AM
Bromodichloromethane	ND	1.0		µg/L	1	6/17/2021 1:15:18 AM
Bromoform	ND	1.0		µg/L	1	6/17/2021 1:15:18 AM
Bromomethane	ND	2.0		µg/L	1	6/17/2021 1:15:18 AM
2-Butanone	ND	10		µg/L	1	6/17/2021 1:15:18 AM
Carbon disulfide	ND	10		µg/L	1	6/17/2021 1:15:18 AM
Carbon Tetrachloride	ND	1.0		µg/L	1	6/17/2021 1:15:18 AM
Chlorobenzene	ND	1.0		µg/L	1	6/17/2021 1:15:18 AM
Chloroethane	ND	2.0		µg/L	1	6/17/2021 1:15:18 AM
Chloroform	ND	1.0		µg/L	1	6/17/2021 1:15:18 AM
Chloromethane	ND	1.0		µg/L	1	6/17/2021 1:15:18 AM
cis-1,2-DCE	ND	1.0		µg/L	1	6/17/2021 1:15:18 AM
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	6/17/2021 1:15:18 AM
Dibromochloromethane	ND	1.0		µg/L	1	6/17/2021 1:15:18 AM
Dibromomethane	ND	1.0		µg/L	1	6/17/2021 1:15:18 AM
1,2-Dichlorobenzene	ND	1.0		µg/L	1	6/17/2021 1:15:18 AM
1,4-Dichlorobenzene	ND	1.0		µg/L	1	6/17/2021 1:15:18 AM
Dichlorodifluoromethane	ND	1.0		µg/L	1	6/17/2021 1:15:18 AM
1,1-Dichloroethane	ND	1.0		µg/L	1	6/17/2021 1:15:18 AM
1,1-Dichloroethene	ND	1.0		µg/L	1	6/17/2021 1:15:18 AM
1,2-Dichloropropane	ND	1.0		µg/L	1	6/17/2021 1:15:18 AM
2-Hexanone	ND	10		µg/L	1	6/17/2021 1:15:18 AM
4-Methyl-2-pentanone	ND	10		µg/L	1	6/17/2021 1:15:18 AM
Methylene Chloride	ND	2.5		µg/L	1	6/17/2021 1:15:18 AM
Styrene	ND	1.0		µg/L	1	6/17/2021 1:15:18 AM
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	6/17/2021 1:15:18 AM
1,1,2,2-Tetrachloroethane	ND	1.0		µg/L	1	6/17/2021 1:15:18 AM
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	6/17/2021 1:15:18 AM
trans-1,2-DCE	ND	1.0		µg/L	1	6/17/2021 1:15:18 AM
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	6/17/2021 1:15:18 AM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
PQL Practical Quantitative Limit
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **2106670**Date Reported: **7/6/2021****CLIENT:** Parkhill**Client Sample ID:** Trip Blank**Project:** Sandoval County Landfill**Collection Date:****Lab ID:** 2106670-008**Matrix:** TRIP BLANK**Received Date:** 6/11/2021 8:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES, TABLE I						Analyst: RAA
1,1,1-Trichloroethane	ND	1.0		µg/L	1	6/17/2021 1:15:18 AM
1,1,2-Trichloroethane	ND	1.0		µg/L	1	6/17/2021 1:15:18 AM
Trichloroethene (TCE)	ND	1.0		µg/L	1	6/17/2021 1:15:18 AM
Trichlorofluoromethane	ND	1.0		µg/L	1	6/17/2021 1:15:18 AM
1,2,3-Trichloropropane	ND	1.0		µg/L	1	6/17/2021 1:15:18 AM
Vinyl chloride	ND	1.0		µg/L	1	6/17/2021 1:15:18 AM
Xylenes, Total	ND	2.0		µg/L	1	6/17/2021 1:15:18 AM
Acrylonitrile	ND	10		µg/L	1	6/17/2021 1:15:18 AM
Bromochloromethane	ND	2.0		µg/L	1	6/17/2021 1:15:18 AM
Iodomethane	ND	10		µg/L	1	6/17/2021 1:15:18 AM
trans-1,4-Dichloro-2-butene	ND	10		µg/L	1	6/17/2021 1:15:18 AM
Vinyl acetate	ND	10		µg/L	1	6/17/2021 1:15:18 AM
Surr: 1,2-Dichloroethane-d4	105	70-130		%Rec	1	6/17/2021 1:15:18 AM
Surr: 4-Bromofluorobenzene	101	70-130		%Rec	1	6/17/2021 1:15:18 AM
Surr: Dibromofluoromethane	105	70-130		%Rec	1	6/17/2021 1:15:18 AM
Surr: Toluene-d8	97.8	70-130		%Rec	1	6/17/2021 1:15:18 AM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quantitative Limit
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **2106670**

Date Reported: **7/6/2021**

CLIENT: Parkhill

Client Sample ID: Trip Blank

Project: Sandoval County Landfill

Collection Date:

Lab ID: 2106670-009

Matrix: TRIP BLANK

Received Date: 6/11/2021 8:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES, TABLE I						Analyst: RAA
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	6/17/2021 1:42:26 AM
Benzene	ND	1.0		µg/L	1	6/17/2021 1:42:26 AM
Toluene	ND	1.0		µg/L	1	6/17/2021 1:42:26 AM
Ethylbenzene	ND	1.0		µg/L	1	6/17/2021 1:42:26 AM
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	6/17/2021 1:42:26 AM
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	6/17/2021 1:42:26 AM
Acetone	ND	10		µg/L	1	6/17/2021 1:42:26 AM
Bromodichloromethane	ND	1.0		µg/L	1	6/17/2021 1:42:26 AM
Bromoform	ND	1.0		µg/L	1	6/17/2021 1:42:26 AM
Bromomethane	ND	2.0		µg/L	1	6/17/2021 1:42:26 AM
2-Butanone	ND	10		µg/L	1	6/17/2021 1:42:26 AM
Carbon disulfide	ND	10		µg/L	1	6/17/2021 1:42:26 AM
Carbon Tetrachloride	ND	1.0		µg/L	1	6/17/2021 1:42:26 AM
Chlorobenzene	ND	1.0		µg/L	1	6/17/2021 1:42:26 AM
Chloroethane	ND	2.0		µg/L	1	6/17/2021 1:42:26 AM
Chloroform	ND	1.0		µg/L	1	6/17/2021 1:42:26 AM
Chloromethane	ND	1.0		µg/L	1	6/17/2021 1:42:26 AM
cis-1,2-DCE	ND	1.0		µg/L	1	6/17/2021 1:42:26 AM
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	6/17/2021 1:42:26 AM
Dibromochloromethane	ND	1.0		µg/L	1	6/17/2021 1:42:26 AM
Dibromomethane	ND	1.0		µg/L	1	6/17/2021 1:42:26 AM
1,2-Dichlorobenzene	ND	1.0		µg/L	1	6/17/2021 1:42:26 AM
1,4-Dichlorobenzene	ND	1.0		µg/L	1	6/17/2021 1:42:26 AM
Dichlorodifluoromethane	ND	1.0		µg/L	1	6/17/2021 1:42:26 AM
1,1-Dichloroethane	ND	1.0		µg/L	1	6/17/2021 1:42:26 AM
1,1-Dichloroethene	ND	1.0		µg/L	1	6/17/2021 1:42:26 AM
1,2-Dichloropropane	ND	1.0		µg/L	1	6/17/2021 1:42:26 AM
2-Hexanone	ND	10		µg/L	1	6/17/2021 1:42:26 AM
4-Methyl-2-pentanone	ND	10		µg/L	1	6/17/2021 1:42:26 AM
Methylene Chloride	ND	2.5		µg/L	1	6/17/2021 1:42:26 AM
Styrene	ND	1.0		µg/L	1	6/17/2021 1:42:26 AM
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	6/17/2021 1:42:26 AM
1,1,2,2-Tetrachloroethane	ND	1.0		µg/L	1	6/17/2021 1:42:26 AM
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	6/17/2021 1:42:26 AM
trans-1,2-DCE	ND	1.0		µg/L	1	6/17/2021 1:42:26 AM
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	6/17/2021 1:42:26 AM
1,1,1-Trichloroethane	ND	1.0		µg/L	1	6/17/2021 1:42:26 AM
1,1,2-Trichloroethane	ND	1.0		µg/L	1	6/17/2021 1:42:26 AM
Trichloroethene (TCE)	ND	1.0		µg/L	1	6/17/2021 1:42:26 AM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quantitative Limit
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **2106670**

Date Reported: **7/6/2021**

CLIENT: Parkhill

Client Sample ID: Trip Blank

Project: Sandoval County Landfill

Collection Date:

Lab ID: 2106670-009

Matrix: TRIP BLANK

Received Date: 6/11/2021 8:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES, TABLE I						Analyst: RAA
Trichlorofluoromethane	ND	1.0		µg/L	1	6/17/2021 1:42:26 AM
1,2,3-Trichloropropane	ND	1.0		µg/L	1	6/17/2021 1:42:26 AM
Vinyl chloride	ND	1.0		µg/L	1	6/17/2021 1:42:26 AM
Xylenes, Total	ND	2.0		µg/L	1	6/17/2021 1:42:26 AM
Acrylonitrile	ND	10		µg/L	1	6/17/2021 1:42:26 AM
Bromochloromethane	ND	2.0		µg/L	1	6/17/2021 1:42:26 AM
Iodomethane	ND	10		µg/L	1	6/17/2021 1:42:26 AM
trans-1,4-Dichloro-2-butene	ND	10		µg/L	1	6/17/2021 1:42:26 AM
Vinyl acetate	ND	10		µg/L	1	6/17/2021 1:42:26 AM
Surr: 1,2-Dichloroethane-d4	107	70-130		%Rec	1	6/17/2021 1:42:26 AM
Surr: 4-Bromofluorobenzene	100	70-130		%Rec	1	6/17/2021 1:42:26 AM
Surr: Dibromofluoromethane	104	70-130		%Rec	1	6/17/2021 1:42:26 AM
Surr: Toluene-d8	99.2	70-130		%Rec	1	6/17/2021 1:42:26 AM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quantitative Limit
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 2106670

06-Jul-21

Client: Parkhill
Project: Sandoval County Landfill

Sample ID: MB	SampType: MBLK	TestCode: EPA Method 200.7: Metals
Client ID: PBW	Batch ID: A79079	RunNo: 79079
Prep Date:	Analysis Date: 6/15/2021	SeqNo: 2775232 Units: mg/L

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	ND	0.020								
Barium	ND	0.0030								
Calcium	ND	1.0								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Iron	ND	0.050								
Magnesium	ND	1.0								
Manganese	ND	0.0020								
Potassium	ND	1.0								
Sodium	ND	1.0								
Zinc	ND	0.010								

Sample ID: LLCS	SampType: LCSLL	TestCode: EPA Method 200.7: Metals
Client ID: BatchQC	Batch ID: A79079	RunNo: 79079
Prep Date:	Analysis Date: 6/15/2021	SeqNo: 2775234 Units: mg/L

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	ND	0.020	0.01000	0	110	50	150			
Barium	ND	0.0030	0.002000	0	58.1	50	150			
Calcium	ND	1.0	0.5000	0	107	50	150			
Chromium	ND	0.0060	0.006000	0	96.6	50	150			
Cobalt	ND	0.0060	0.006000	0	82.3	50	150			
Iron	ND	0.050	0.02000	0	120	50	150			
Magnesium	ND	1.0	0.5000	0	107	50	150			
Manganese	ND	0.0020	0.002000	0	99.1	50	150			
Potassium	ND	1.0	0.5000	0	93.4	50	150			
Sodium	ND	1.0	0.5000	0	100	50	150			
Zinc	0.012	0.010	0.01000	0	120	50	150			

Sample ID: LCS	SampType: LCS	TestCode: EPA Method 200.7: Metals
Client ID: LCSW	Batch ID: A79079	RunNo: 79079
Prep Date:	Analysis Date: 6/15/2021	SeqNo: 2775269 Units: mg/L

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	0.56	0.020	0.5000	0	112	85	115			
Barium	0.50	0.0030	0.5000	0	101	85	115			
Calcium	51	1.0	50.00	0	101	85	115			
Chromium	0.49	0.0060	0.5000	0	97.7	85	115			
Cobalt	0.48	0.0060	0.5000	0	95.9	85	115			
Iron	0.49	0.050	0.5000	0	98.8	85	115			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
PQL Practical Quantitative Limit
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 2106670

06-Jul-21

Client: Parkhill
Project: Sandoval County Landfill

Sample ID: LCS	SampType: LCS		TestCode: EPA Method 200.7: Metals							
Client ID: LCSW	Batch ID: A79079		RunNo: 79079							
Prep Date:	Analysis Date: 6/15/2021		SeqNo: 2775269		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Magnesium	51	1.0	50.00	0	103	85	115			
Manganese	0.49	0.0020	0.5000	0	98.9	85	115			
Potassium	50	1.0	50.00	0	100	85	115			
Sodium	51	1.0	50.00	0	101	85	115			
Zinc	0.50	0.010	0.5000	0	100	85	115			

Sample ID: LCS-60660	SampType: LCS		TestCode: EPA Method 200.7: Metals							
Client ID: LCSW	Batch ID: 60660		RunNo: 79109							
Prep Date: 6/15/2021	Analysis Date: 6/16/2021		SeqNo: 2776769		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	0.54	0.020	0.5000	0	109	85	115			
Barium	0.51	0.0030	0.5000	0	102	85	115			
Calcium	49	1.0	50.00	0	98.9	85	115			
Chromium	0.50	0.0060	0.5000	0	99.2	85	115			
Cobalt	0.49	0.0060	0.5000	0	98.0	85	115			
Iron	0.49	0.050	0.5000	0	97.5	85	115			
Magnesium	51	1.0	50.00	0	102	85	115			
Manganese	0.48	0.0020	0.5000	0	96.6	85	115			
Potassium	50	1.0	50.00	0	99.4	85	115			
Sodium	50	1.0	50.00	0	101	85	115			
Zinc	0.51	0.010	0.5000	0	102	85	115			

Sample ID: MB-60660	SampType: MBLK		TestCode: EPA Method 200.7: Metals							
Client ID: PBW	Batch ID: 60660		RunNo: 79109							
Prep Date: 6/15/2021	Analysis Date: 6/16/2021		SeqNo: 2776799		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	ND	0.020								
Barium	ND	0.0030								
Calcium	ND	1.0								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Iron	ND	0.050								
Magnesium	ND	1.0								
Manganese	ND	0.0020								
Potassium	ND	1.0								
Sodium	ND	1.0								
Zinc	ND	0.010								

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
PQL Practical Quantitative Limit
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 2106670

06-Jul-21

Client: Parkhill
Project: Sandoval County Landfill

Sample ID: LL LCS-60660	SampType: LCSLL		TestCode: EPA Method 200.7: Metals							
Client ID: BatchQC	Batch ID: 60660		RunNo: 79109							
Prep Date: 6/15/2021	Analysis Date: 6/16/2021		SeqNo: 2776801		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	ND	0.020	0.01000	0	126	50	150			
Barium	ND	0.0030	0.002000	0	115	50	150			
Calcium	ND	1.0	0.5000	0	103	50	150			
Chromium	ND	0.0060	0.006000	0	95.2	50	150			
Cobalt	ND	0.0060	0.006000	0	97.3	50	150			
Iron	ND	0.050	0.02000	0	123	50	150			
Magnesium	ND	1.0	0.5000	0	107	50	150			
Manganese	0.0024	0.0020	0.002000	0	121	50	150			
Potassium	ND	1.0	0.5000	0	88.6	50	150			
Sodium	ND	1.0	0.5000	0	102	50	150			
Zinc	0.013	0.010	0.01000	0	129	50	150			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
PQL Practical Quantitative Limit
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 2106670

06-Jul-21

Client: Parkhill
Project: Sandoval County Landfill

Sample ID: MB-60660	SampType: MBLK	TestCode: EPA 200.8: Metals
Client ID: PBW	Batch ID: 60660	RunNo: 79127
Prep Date: 6/15/2021	Analysis Date: 6/16/2021	SeqNo: 2777296 Units: mg/L
Analyte	Result	PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual
Arsenic	ND	0.0010
Lead	ND	0.00050
Uranium	ND	0.00050

Sample ID: MSLLCS-60660	SampType: LCSLL	TestCode: EPA 200.8: Metals
Client ID: BatchQC	Batch ID: 60660	RunNo: 79127
Prep Date: 6/15/2021	Analysis Date: 6/16/2021	SeqNo: 2777297 Units: mg/L
Analyte	Result	PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual
Arsenic	0.0011	0.0010 0.001000 0 106 50 150
Lead	0.00051	0.00050 0.0005000 0 102 50 150
Uranium	ND	0.00050 0.0005000 0 99.6 50 150

Sample ID: MSLCS-60660	SampType: LCS	TestCode: EPA 200.8: Metals
Client ID: LCSW	Batch ID: 60660	RunNo: 79127
Prep Date: 6/15/2021	Analysis Date: 6/16/2021	SeqNo: 2777298 Units: mg/L
Analyte	Result	PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual
Arsenic	0.025	0.0010 0.02500 0 99.8 85 115
Lead	0.012	0.00050 0.01250 0 99.1 85 115
Uranium	0.012	0.00050 0.01250 0 98.6 85 115

Sample ID: MB	SampType: MBLK	TestCode: EPA 200.8: Metals
Client ID: PBW	Batch ID: A79130	RunNo: 79130
Prep Date:	Analysis Date: 6/16/2021	SeqNo: 2777838 Units: mg/L
Analyte	Result	PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual
Arsenic	ND	0.0010
Lead	ND	0.00050
Uranium	ND	0.00050

Sample ID: LCSLL	SampType: LCSLL	TestCode: EPA 200.8: Metals
Client ID: BatchQC	Batch ID: A79130	RunNo: 79130
Prep Date:	Analysis Date: 6/16/2021	SeqNo: 2777839 Units: mg/L
Analyte	Result	PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual
Arsenic	0.0011	0.0010 0.001000 0 108 50 150
Lead	0.00055	0.00050 0.0005000 0 109 50 150
Uranium	0.00054	0.00050 0.0005000 0 107 50 150

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
PQL Practical Quantitative Limit
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 2106670

06-Jul-21

Client: Parkhill
Project: Sandoval County Landfill

Sample ID: LCS	SampType: LCS		TestCode: EPA 200.8: Metals							
Client ID: LCSW	Batch ID: A79130		RunNo: 79130							
Prep Date:	Analysis Date: 6/16/2021		SeqNo: 2777840		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.026	0.0010	0.02500	0	106	85	115			
Lead	0.013	0.00050	0.01250	0	106	85	115			
Uranium	0.013	0.00050	0.01250	0	103	85	115			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
PQL Practical Quantitative Limit
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 2106670

06-Jul-21

Client: Parkhill
Project: Sandoval County Landfill

Sample ID: MB	SampType: mbk	TestCode: EPA Method 300.0: Anions								
Client ID: PBW	Batch ID: R79049	RunNo: 79049								
Prep Date:	Analysis Date: 6/11/2021	SeqNo: 2773677 Units: mg/L								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	ND	0.10								
Chloride	ND	0.50								
Nitrogen, Nitrite (As N)	ND	0.10								
Nitrogen, Nitrate (As N)	ND	0.10								
Phosphorus, Orthophosphate (As P)	ND	0.50								
Sulfate	ND	0.50								

Sample ID: LCS	SampType: lcs	TestCode: EPA Method 300.0: Anions								
Client ID: LCSW	Batch ID: R79049	RunNo: 79049								
Prep Date:	Analysis Date: 6/11/2021	SeqNo: 2773678 Units: mg/L								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.52	0.10	0.5000	0	103	90	110			
Chloride	4.6	0.50	5.000	0	92.4	90	110			
Nitrogen, Nitrite (As N)	0.98	0.10	1.000	0	97.6	90	110			
Nitrogen, Nitrate (As N)	2.4	0.10	2.500	0	96.8	90	110			
Phosphorus, Orthophosphate (As P)	4.5	0.50	5.000	0	90.2	90	110			
Sulfate	9.5	0.50	10.00	0	94.8	90	110			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
PQL Practical Quantitative Limit
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 2106670

06-Jul-21

Client: Parkhill
Project: Sandoval County Landfill

Sample ID: MB-60810	SampType: MBLK	TestCode: EPA Method 504.1: EDB/DBCP								
Client ID: PBW	Batch ID: 60810	RunNo: 79282								
Prep Date: 6/22/2021	Analysis Date: 6/22/2021	SeqNo: 2784735 Units: µg/L								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromo-3-chloropropane	ND	0.020								
1,2-Dibromoethane	ND	0.010								

Sample ID: LCS-60810	SampType: LCS	TestCode: EPA Method 504.1: EDB/DBCP								
Client ID: LCSW	Batch ID: 60810	RunNo: 79282								
Prep Date: 6/22/2021	Analysis Date: 6/22/2021	SeqNo: 2784736 Units: µg/L								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromo-3-chloropropane	0.10	0.020	0.1000	0	100	70	130			
1,2-Dibromoethane	0.10	0.010	0.1000	0	101	70	130			

Sample ID: 2106670-005BMS	SampType: MS	TestCode: EPA Method 504.1: EDB/DBCP								
Client ID: MW-7R	Batch ID: 60810	RunNo: 79282								
Prep Date: 6/22/2021	Analysis Date: 6/22/2021	SeqNo: 2784756 Units: µg/L								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromo-3-chloropropane	0.074	0.019	0.09383	0	78.8	65	135			
1,2-Dibromoethane	0.081	0.0094	0.09383	0	86.3	65	135			

Sample ID: 2106670-005BMSD	SampType: MSD	TestCode: EPA Method 504.1: EDB/DBCP								
Client ID: MW-7R	Batch ID: 60810	RunNo: 79282								
Prep Date: 6/22/2021	Analysis Date: 6/22/2021	SeqNo: 2784757 Units: µg/L								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromo-3-chloropropane	0.076	0.019	0.09383	0	81.1	65	135	2.93	20	
1,2-Dibromoethane	0.082	0.0094	0.09383	0	87.6	65	135	1.48	20	

Sample ID: MB-60810	SampType: MBLK	TestCode: EPA Method 504.1: EDB/DBCP								
Client ID: PBW	Batch ID: 60810	RunNo: 79282								
Prep Date: 6/22/2021	Analysis Date: 6/22/2021	SeqNo: 2784827 Units: µg/L								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromo-3-chloropropane	ND	0.020								
1,2-Dibromoethane	ND	0.010								

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
PQL Practical Quantitative Limit
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 2106670

06-Jul-21

Client: Parkhill
Project: Sandoval County Landfill

Sample ID: 100ng lcs4	SampType: LCS		TestCode: EPA Method 8260B: Volatiles, Table I							
Client ID: LCSW	Batch ID: R79122		RunNo: 79122							
Prep Date:	Analysis Date: 6/16/2021		SeqNo: 2778046		Units: µg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	25	1.0	20.00	0	123	70	130			
Toluene	22	1.0	20.00	0	109	70	130			
Chlorobenzene	22	1.0	20.00	0	108	70	130			
1,1-Dichloroethene	23	1.0	20.00	0	116	70	130			
Trichloroethene (TCE)	24	1.0	20.00	0	118	70	130			
Surr: 1,2-Dichloroethane-d4	11		10.00		114	70	130			
Surr: 4-Bromofluorobenzene	9.0		10.00		90.2	70	130			
Surr: Dibromofluoromethane	11		10.00		112	70	130			
Surr: Toluene-d8	10		10.00		100	70	130			

Sample ID: 2106670-001a ms	SampType: MS		TestCode: EPA Method 8260B: Volatiles, Table I							
Client ID: MW-2R	Batch ID: R79122		RunNo: 79122							
Prep Date:	Analysis Date: 6/16/2021		SeqNo: 2778048		Units: µg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	22	1.0	20.00	0	112	70	130			
Toluene	21	1.0	20.00	0.5068	100	70	130			
Chlorobenzene	20	1.0	20.00	0	98.7	70	130			
1,1-Dichloroethene	21	1.0	20.00	0	103	70	130			
Trichloroethene (TCE)	20	1.0	20.00	0	102	70	130			
Surr: 1,2-Dichloroethane-d4	11		10.00		109	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		105	70	130			
Surr: Dibromofluoromethane	9.9		10.00		99.2	70	130			
Surr: Toluene-d8	9.6		10.00		95.8	70	130			

Sample ID: 2106670-001a msd	SampType: MSD		TestCode: EPA Method 8260B: Volatiles, Table I							
Client ID: MW-2R	Batch ID: R79122		RunNo: 79122							
Prep Date:	Analysis Date: 6/16/2021		SeqNo: 2778049		Units: µg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	21	1.0	20.00	0	105	70	130	6.94	20	
Toluene	20	1.0	20.00	0.5068	97.8	70	130	2.58	20	
Chlorobenzene	19	1.0	20.00	0	96.9	70	130	1.82	20	
1,1-Dichloroethene	18	1.0	20.00	0	89.6	70	130	13.8	20	
Trichloroethene (TCE)	21	1.0	20.00	0	103	70	130	0.308	20	
Surr: 1,2-Dichloroethane-d4	11		10.00		106	70	130	0	0	
Surr: 4-Bromofluorobenzene	10		10.00		100	70	130	0	0	
Surr: Dibromofluoromethane	10		10.00		100	70	130	0	0	
Surr: Toluene-d8	9.5		10.00		95.1	70	130	0	0	

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
PQL Practical Quantitative Limit
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 2106670

06-Jul-21

Client: Parkhill
Project: Sandoval County Landfill

Sample ID: mb	SampType: MBLK	TestCode: EPA Method 8260B: Volatiles, Table I								
Client ID: PBW	Batch ID: R79122	RunNo: 79122								
Prep Date:	Analysis Date: 6/16/2021	SeqNo: 2778058	Units: µg/L							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
Acetone	ND	10								
Bromodichloromethane	ND	1.0								
Bromoform	ND	1.0								
Bromomethane	ND	2.0								
2-Butanone	ND	10								
Carbon disulfide	ND	10								
Carbon Tetrachloride	ND	1.0								
Chlorobenzene	ND	1.0								
Chloroethane	ND	2.0								
Chloroform	ND	1.0								
Chloromethane	ND	1.0								
cis-1,2-DCE	ND	1.0								
cis-1,3-Dichloropropene	ND	1.0								
Dibromochloromethane	ND	1.0								
Dibromomethane	ND	1.0								
1,2-Dichlorobenzene	ND	1.0								
1,4-Dichlorobenzene	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
1,2-Dichloropropane	ND	1.0								
1,2,4-Trichlorobenzene	ND	1.0								
2-Hexanone	ND	10								
4-Methyl-2-pentanone	ND	10								
Methylene Chloride	ND	2.5								
Styrene	ND	1.0								
1,1,1,2-Tetrachloroethane	ND	1.0								
1,1,2,2-Tetrachloroethane	ND	1.0								
Tetrachloroethene (PCE)	ND	1.0								
trans-1,2-DCE	ND	1.0								
trans-1,3-Dichloropropene	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Trichlorofluoromethane	ND	1.0								

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
PQL Practical Quantitative Limit
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 2106670

06-Jul-21

Client: Parkhill
Project: Sandoval County Landfill

Sample ID: mb	SampType: MBLK	TestCode: EPA Method 8260B: Volatiles, Table I								
Client ID: PBW	Batch ID: R79122	RunNo: 79122								
Prep Date:	Analysis Date: 6/16/2021	SeqNo: 2778058 Units: µg/L								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2,3-Trichloropropane	ND	1.0								
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	2.0								
Acrylonitrile	ND	10								
Bromochloromethane	ND	2.0								
Iodomethane	ND	10								
trans-1,4-Dichloro-2-butene	ND	10								
Vinyl acetate	ND	10								
Surr: 1,2-Dichloroethane-d4	11		10.00		111	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		104	70	130			
Surr: Dibromofluoromethane	11		10.00		111	70	130			
Surr: Toluene-d8	10		10.00		102	70	130			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
PQL Practical Quantitative Limit
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 2106670

06-Jul-21

Client: Parkhill
Project: Sandoval County Landfill

Sample ID: MB1	SampType: MBLK	TestCode: EPA Method 9060 TOC								
Client ID: PBW	Batch ID: A79067	RunNo: 79067								
Prep Date:	Analysis Date: 6/14/2021	SeqNo: 2774674 Units: mg/L								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Organic Carbon	ND	1.0								

Sample ID: LCS1	SampType: LCS	TestCode: EPA Method 9060 TOC								
Client ID: LCSW	Batch ID: A79067	RunNo: 79067								
Prep Date:	Analysis Date: 6/14/2021	SeqNo: 2774675 Units: mg/L								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Organic Carbon	5.2	1.0	4.850	0	108	90	110			

Sample ID: 2106670-004cms	SampType: ms	TestCode: EPA Method 9060 TOC								
Client ID: MW-6R	Batch ID: A79067	RunNo: 79067								
Prep Date:	Analysis Date: 6/14/2021	SeqNo: 2774691 Units: mg/L								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Organic Carbon	10	1.0	4.650	5.485	103	85	115			

Sample ID: 2106670-004cmsd	SampType: msd	TestCode: EPA Method 9060 TOC								
Client ID: MW-6R	Batch ID: A79067	RunNo: 79067								
Prep Date:	Analysis Date: 6/14/2021	SeqNo: 2774692 Units: mg/L								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Organic Carbon	10	1.0	4.650	5.485	102	85	115	0.292	15	

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
PQL Practical Quantitative Limit
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 2106670

06-Jul-21

Client: Parkhill
Project: Sandoval County Landfill

Sample ID: MB-61029	SampType: MBLK	TestCode: Total Phenolics by SW-846 9067								
Client ID: PBW	Batch ID: 61029	RunNo: 79480								
Prep Date: 6/30/2021	Analysis Date: 6/30/2021	SeqNo: 2794269	Units: µg/L							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Phenolics	ND	2.5								

Sample ID: LCS-61029	SampType: LCS	TestCode: Total Phenolics by SW-846 9067								
Client ID: LCSW	Batch ID: 61029	RunNo: 79480								
Prep Date: 6/30/2021	Analysis Date: 6/30/2021	SeqNo: 2794270	Units: µg/L							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Phenolics	16	2.5	20.00	0	81.6	54.7	121			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
PQL Practical Quantitative Limit
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 2106670

06-Jul-21

Client: Parkhill
Project: Sandoval County Landfill

Sample ID: LCS-1 100.1US EC	SampType: lcs	TestCode: SM2510B: Specific Conductance								
Client ID: LCSW	Batch ID: R79103	RunNo: 79103								
Prep Date:	Analysis Date: 6/15/2021	SeqNo: 2776630	Units: µmhos/cm							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Conductivity	100	10	100.1	0	100	85	115			

Sample ID: 2106670-001E dup	SampType: dup	TestCode: SM2510B: Specific Conductance								
Client ID: MW-2R	Batch ID: R79103	RunNo: 79103								
Prep Date:	Analysis Date: 6/15/2021	SeqNo: 2776640	Units: µmhos/cm							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Conductivity	740	10						0.217	20	

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
PQL Practical Quantitative Limit
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 2106670

06-Jul-21

Client: Parkhill
Project: Sandoval County Landfill

Sample ID: MB	SampType: MBLK	TestCode: SM 4500 NH3: Ammonia								
Client ID: PBW	Batch ID: R79317	RunNo: 79317								
Prep Date:	Analysis Date: 6/23/2021	SeqNo: 2785904 Units: mg/L								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	ND	1.0								

Sample ID: LCS	SampType: LCS	TestCode: SM 4500 NH3: Ammonia								
Client ID: LCSW	Batch ID: R79317	RunNo: 79317								
Prep Date:	Analysis Date: 6/23/2021	SeqNo: 2785905 Units: mg/L								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	10	1.0	10.00	0	101	80	120			

Sample ID: LCSD	SampType: LCSD	TestCode: SM 4500 NH3: Ammonia								
Client ID: LCSS02	Batch ID: R79317	RunNo: 79317								
Prep Date:	Analysis Date: 6/23/2021	SeqNo: 2785994 Units: mg/L								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	10	1.0	10.00	0	102	80	120	1.38	20	

Sample ID: 2106670-002EMS	SampType: MS	TestCode: SM 4500 NH3: Ammonia								
Client ID: MW-3R	Batch ID: R79317	RunNo: 79317								
Prep Date:	Analysis Date: 6/23/2021	SeqNo: 2786001 Units: mg/L								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	10	1.0	10.00	0	102	75	125			

Sample ID: 2106670-002EMSD	SampType: MSD	TestCode: SM 4500 NH3: Ammonia								
Client ID: MW-3R	Batch ID: R79317	RunNo: 79317								
Prep Date:	Analysis Date: 6/23/2021	SeqNo: 2786002 Units: mg/L								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	10	1.0	10.00	0	102	75	125	0	20	

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
PQL Practical Quantitative Limit
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 2106670

06-Jul-21

Client: Parkhill
Project: Sandoval County Landfill

Sample ID: 2106670-001E dup		SampType: dup		TestCode: SM4500-H+B / 9040C: pH						
Client ID: MW-2R		Batch ID: R79103		RunNo: 79103						
Prep Date:		Analysis Date: 6/15/2021		SeqNo: 2776671		Units: pH units				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
pH	7.98									H

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
PQL Practical Quantitative Limit
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 2106670

06-Jul-21

Client: Parkhill
Project: Sandoval County Landfill

Sample ID: mb-1 alk	SampType: mbk	TestCode: SM2320B: Alkalinity								
Client ID: PBW	Batch ID: R79103	RunNo: 79103								
Prep Date:	Analysis Date: 6/15/2021	SeqNo: 2776574 Units: mg/L CaCO3								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	ND	20.00								

Sample ID: lcs-1 alk	SampType: lcs	TestCode: SM2320B: Alkalinity								
Client ID: LCSW	Batch ID: R79103	RunNo: 79103								
Prep Date:	Analysis Date: 6/15/2021	SeqNo: 2776575 Units: mg/L CaCO3								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	74.52	20.00	80.00	0	93.2	90	110			

Sample ID: 2106670-001E dup	SampType: dup	TestCode: SM2320B: Alkalinity								
Client ID: MW-2R	Batch ID: R79103	RunNo: 79103								
Prep Date:	Analysis Date: 6/15/2021	SeqNo: 2776584 Units: mg/L CaCO3								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	166.4	20.00						0.120	20	

Sample ID: mb-2 alk	SampType: mbk	TestCode: SM2320B: Alkalinity								
Client ID: PBW	Batch ID: R79103	RunNo: 79103								
Prep Date:	Analysis Date: 6/15/2021	SeqNo: 2776597 Units: mg/L CaCO3								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	ND	20.00								

Sample ID: lcs-2 alk	SampType: lcs	TestCode: SM2320B: Alkalinity								
Client ID: LCSW	Batch ID: R79103	RunNo: 79103								
Prep Date:	Analysis Date: 6/15/2021	SeqNo: 2776598 Units: mg/L CaCO3								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	75.16	20.00	80.00	0	93.9	90	110			

Sample ID: mb-3 alk	SampType: mbk	TestCode: SM2320B: Alkalinity								
Client ID: PBW	Batch ID: R79103	RunNo: 79103								
Prep Date:	Analysis Date: 6/15/2021	SeqNo: 2776620 Units: mg/L CaCO3								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	ND	20.00								

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
PQL Practical Quantitative Limit
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 2106670

06-Jul-21

Client: Parkhill
Project: Sandoval County Landfill

Sample ID: lcs-3 alk	SampType: lcs		TestCode: SM2320B: Alkalinity							
Client ID: LCSW	Batch ID: R79103		RunNo: 79103							
Prep Date:	Analysis Date: 6/15/2021		SeqNo: 2776621		Units: mg/L CaCO3					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	73.36	20.00	80.00	0	91.7	90	110			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
PQL Practical Quantitative Limit
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 2106670

06-Jul-21

Client: Parkhill
Project: Sandoval County Landfill

Sample ID: MB-60708	SampType: MBLK	TestCode: SM2540C MOD: Total Dissolved Solids								
Client ID: PBW	Batch ID: 60708	RunNo: 79235								
Prep Date: 6/17/2021	Analysis Date: 6/21/2021	SeqNo: 2782281 Units: mg/L								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	ND	20.0								

Sample ID: LCS-60708	SampType: LCS	TestCode: SM2540C MOD: Total Dissolved Solids								
Client ID: LCSW	Batch ID: 60708	RunNo: 79235								
Prep Date: 6/17/2021	Analysis Date: 6/21/2021	SeqNo: 2782282 Units: mg/L								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	1060	20.0	1000	0	106	80	120			

Sample ID: 2106670-003EDUP	SampType: DUP	TestCode: SM2540C MOD: Total Dissolved Solids								
Client ID: MW-5R	Batch ID: 60708	RunNo: 79235								
Prep Date: 6/17/2021	Analysis Date: 6/21/2021	SeqNo: 2782291 Units: mg/L								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	474	20.0						1.06	10	

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
PQL Practical Quantitative Limit
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 2106670

06-Jul-21

Client: Parkhill
Project: Sandoval County Landfill

Sample ID: MB-60973	SampType: MBLK	TestCode: SM 4500 Norg C: TKN								
Client ID: PBW	Batch ID: 60973	RunNo: 79435								
Prep Date: 6/28/2021	Analysis Date: 6/29/2021	SeqNo: 2792421 Units: mg/L								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrogen, Kjeldahl, Total	ND	1.0								

Sample ID: LCS-60973	SampType: LCS	TestCode: SM 4500 Norg C: TKN								
Client ID: LCSW	Batch ID: 60973	RunNo: 79435								
Prep Date: 6/28/2021	Analysis Date: 6/29/2021	SeqNo: 2792422 Units: mg/L								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrogen, Kjeldahl, Total	9.8	1.0	10.00	0	98.0	80	120			

Sample ID: 2106670-003EMS	SampType: MS	TestCode: SM 4500 Norg C: TKN								
Client ID: MW-5R	Batch ID: 60973	RunNo: 79435								
Prep Date: 6/28/2021	Analysis Date: 6/29/2021	SeqNo: 2792426 Units: mg/L								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrogen, Kjeldahl, Total	9.8	1.0	10.00	0	98.0	75	125			

Sample ID: 2106670-003EMSD	SampType: MSD	TestCode: SM 4500 Norg C: TKN								
Client ID: MW-5R	Batch ID: 60973	RunNo: 79435								
Prep Date: 6/28/2021	Analysis Date: 6/29/2021	SeqNo: 2792427 Units: mg/L								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrogen, Kjeldahl, Total	9.9	1.0	10.00	0	99.4	75	125	1.42	20	

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
PQL Practical Quantitative Limit
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Limit



Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: clients.hallenvironmental.com

Sample Log-In Check List

Client Name: Parkhill

Work Order Number: 2106670

RcptNo: 1

Received By: Juan Rojas

6/11/2021 8:15:00 AM

[Signature]

Completed By: Sean Livingston

6/11/2021 10:04:55 AM

[Signature]

Reviewed By: SPA 6.11.21

Chain of Custody

1. Is Chain of Custody complete? Yes ☒ No ☐ Not Present ☐
2. How was the sample delivered? Client

Log In

3. Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐
4. Were all samples received at a temperature of $>0^{\circ}\text{C}$ to 6.0°C ? Yes ☐ No ☒ NA ☐
5. Sample(s) in proper container(s)? Samples not frozen
Yes ☒ No ☐
6. Sufficient sample volume for indicated test(s)? Yes ☒ No ☐
7. Are samples (except VOA and ONG) properly preserved? Yes ☒ No ☐
8. Was preservative added to bottles? Yes ☐ No ☒ NA ☐
9. Received at least 1 vial with headspace $<1/4$ " for AQ VOA? Yes ☐ No ☐ NA ☒
10. Were any sample containers received broken? Yes ☐ No ☒
11. Does paperwork match bottle labels?
(Note discrepancies on chain of custody) Yes ☒ No ☐
12. Are matrices correctly identified on Chain of Custody? Yes ☒ No ☐
13. Is it clear what analyses were requested? Yes ☒ No ☐
14. Were all holding times able to be met?
(If no, notify customer for authorization.) Yes ☒ No ☐

of preserved
bottles checked
for pH: 16

(2 or >12 unless noted)

Adjusted? NO

Checked by: KRG/TO

6/11/21

Special Handling (if applicable)

15. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☒

Person Notified: _____

Date: _____

By Whom: _____

Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

16. Additional remarks:

17. Cooler Information

Cooler No	Temp $^{\circ}\text{C}$	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	-1.0	Good				
2	0.9	Good				

Sandoval County Landfill
ALTERNATE PARAMETER LIST

Inorganic Parameters	EPA Method
- Ammonia as N, NH ₃ -N	350.2
- Bicarbonate, HCO ₃ ⁻ (as CaCO ₃)	310.1
- Carbonate, CO ₃ ²⁻ (as CaCO ₃)	310.1
- Nitrate as N, NO ₃ -N	300.0
- Phosphate, PO ₄	300.0
- Chloride, Cl ⁻	300.0
- Fluoride, F	300.0
- Sulfate, SO ₄ ²⁻	300.0
- Total Dissolved Solids, TDS	160.1
- Total Kjeldahl Nitrogen, TKN	351.3
- Total Nitrogen, TN	Calculated
- Total Organic Carbon, TOC	415.2
- pH	
- Specific Conductivity	
- Aluminum, Al	200.7
- Arsenic, As	200.8
- Barium, Ba	200.7
- Calcium, Ca	200.7
- Chromium, Cr	200.7
- Cobalt, Co	200.7
- Iron, Fe	200.7
- Lead, Pb	200.8
- Magnesium, Mg	200.7
- Manganese, Mn	200.7
- Potassium, K	200.7
- Sodium, Na	200.7
- Uranium, U	200.8
- Zinc, Zn	200.7
- All Standard Landfill VOCs	8260
- 1,2-Dibromo-3-chloropropane	504
- 1,2-Dibromoethane	504
- Total Phenolics	420.3/9067
Additional bottle Sets:	

8260 Field Blank (3 VOAs)

8260 Dupe (3 VOAs)

Trip Blank

**GROUNDWATER MONITORING REPORT
SANDOVAL COUNTY LANDFILL
JUNE 2021 SAMPLING EVENT**

ATTACHMENT 7
NMED Correspondence

**GROUNDWATER MONITORING REPORT
SANDOVAL COUNTY LANDFILL
JUNE 2021 SAMPLING EVENT**

ATTACHMENT 7.1
Notification of Potential Exceedances
(07/16/21)

July 16, 2021

Mr. George Schuman
Permit Section Manager
New Mexico Environment Department
Solid Waste Bureau
P.O. Box 5469
Santa Fe, NM 87502

Re: Sandoval County Landfill – Groundwater Monitoring Results:
Notification of Potential Exceedances [01.8023.20]

Dear Mr. Schuman:

On behalf of our client, Sandoval County, Parkhill (fka Gordon Environmental/PSC) is providing NMED Solid Waste Bureau (SWB) this correspondence summarizing the preliminary laboratory analytical results for groundwater samples collected at the Sandoval County Landfill (SCLF) on June 10, 2021 from wells MW-2R, MW-3R, MW-5R, MW-6R, and MW-7R.

TABLE 1
Parameters Exhibiting Established AML Exceedances

Well I.D.	Parameter	Analytical Result (mg/L)	Established AML (mg/L)	Regulatory Presumptive AML (mg/L)	Established UTLV (mg/L)
MW-2R	Fluoride	0.84	0.81	0.80	1.045
	Manganese	0.25	0.15	0.15	0.304
	Arsenic	0.0058	0.0057	0.0057	0.0079
MW-3R	Manganese	0.26	0.15	0.15	N/A
MW-5R	Arsenic	0.0084	0.008	0.005	0.012
MW-7R	Nitrate	5.4	5.0	5.0	N/A
	Arsenic	<i>0.007</i>	0.006	0.005	0.007

Notes:

N/A: UTLV not assigned for this parameter

Bold italics indicates that Established UTLV has been met or exceeded

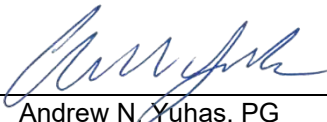
The preliminary results (received by Parkhill on July 6, 2021) summarized in Table 1 indicate a potential exceedance of well/parameter-specific established assessment monitoring levels (AMLs) for fluoride, manganese, and arsenic in well MW-2; manganese in well MW-3R; arsenic in MW-5R; and nitrate and arsenic in well MW-7R. It has been previously demonstrated that the presence of several total metals at this site is likely attributable to natural formation sediment suspended in the sample.

Consistent with the reporting requirements, Parkhill will submit detailed results of the monitoring and analytical data for the 2021 sampling event to SWB on or before September 7, 2021. In accordance with the requirements of 20.9.9.11.C(1) NMAC, a copy of this correspondence is also being provided to SCLF to be placed in the site's Facility Operating Record.

We appreciate the Bureau's review of the enclosed information. Please contact us with your questions or comments.

Sincerely,

PARKHILL

By 

Andrew N. Yuhas, PG
Professional Geologist

ANY/pg

cc: Mr. Mark Hatzenbuhler, Director of Public Works, Sandoval County
Mr. Chris Perea, Landfill Manager, Sandoval County Landfill

**GROUNDWATER MONITORING REPORT
SANDOVAL COUNTY LANDFILL
JUNE 2021 SAMPLING EVENT**

ATTACHMENT 7.2

NMED Approval of Groundwater Monitoring Wells MW-2 and MW-3 Replacement Workplan
(09/18/2019)



Michelle Lujan Grisham
Governor

Howie C. Morales
Lt. Governor

**NEW MEXICO
ENVIRONMENT DEPARTMENT**

Harold Runnels Building
1190 Saint Francis Drive, PO Box 5469
Santa Fe, NM 87502-5469
Telephone (505) 827-2855
www.env.nm.gov



James C. Kenney
Cabinet Secretary

Jennifer J. Pruett
Deputy Secretary

September 18, 2019

Mr. Clay Kilmer, P.G., Hydrologist
Gordon Environmental/PSC
333 Rio Rancho Blvd NE, Ste. 400
Rio Rancho, NM 87124
ckilmer@team-psc.com

Received

SEP 26 2019

Gordon Environmental / PSC

Re: Sandoval County Landfill; Work Plan for Replacement of Ground Water Monitoring Wells MW-2 and MW-3

Dear Mr. Kilmer:

The Solid Waste Bureau (Bureau) has reviewed the Monitoring Well MW-2 and MW-3 Decommissioning and Replacement Work Plan (Plan) for the Sandoval County Landfill (Landfill) submitted by Gordon Environmental/PSC on August 12, 2019. The Plan documents the steady decline of ground water elevations beneath the Landfill. In order to facilitate ground water sampling throughout the post-closure care period, the Plan seeks to extend the screened groundwater interval from the prescriptive 20 feet to 40 feet via replacement wells MW-2R and MW-3R.

The Bureau gives specific approval for the installation of monitoring wells MW-2R and MW-3R with 40-foot screened intervals. Per a phone conversation on September 11, 2019, between myself and Mike Crepeau, the Landfill requested moving the locations of each well approximately 50 feet from the proposed locations in the Plan. The Bureau approves the new locations proposed for monitoring wells MW-2R and MW-3R. Provide an update to the Plan showing the new locations of each replacement well.

The Bureau gives specific approval to discontinue ground water sampling of MW-2 and MW-3 upon construction of MW-2R and MW-3R and to convert MW-2 and MW-3 for use as piezometers. Provide an amendment to the Landfill's Ground Water Monitoring System Plan once the decommissioning of MW-2 and MW-3 and drilling of MW-2R and MW-3R have been completed.

Should you have any questions, please feel free to contact me at (505) 383-2078, or by e-mail at james.dyer@state.nm.us.

Sincerely,

James R. Dyer
Hydrologist-SWB

cc: Mr. Mike Crepeau, P.E., Gordon Environmental/PSC, mcrepeau@team-psc.com
George Schuman, Permit Section Manager, SWB
Paul Martinez, Enforcement Area I, SWB
Sandoval County Landfill Facility File
J. Dyer Reading File

1 - 10/1/14

1 - 10/1/14

1 - 10/1/14

**GROUNDWATER MONITORING REPORT
SANDOVAL COUNTY LANDFILL
JUNE 2021 SAMPLING EVENT**

ATTACHMENT 7.3

NMED Approval of Groundwater Monitoring Wells MW-2R and MW-3R Installation Report
(08/19/20)



Michelle Lujan Grisham
Governor

Howie C. Morales
Lt. Governor

**NEW MEXICO
ENVIRONMENT DEPARTMENT**

Solid Waste Bureau
1190 Saint Francis Drive, Room N-2150
PO Box 5469
Santa Fe, NM 87502-5469
Telephone (505) 827-0197
www.env.nm.gov/solid-waste/



James C. Kenney
Cabinet Secretary

Jennifer J. Pruett
Deputy Secretary

August 19, 2020

Mr. Andy Yuhas, Engineering Technologist
Gordon Environmental/PSC
333 Rio Rancho Blvd NE, Suite 400
Rio Rancho, NM 87124

Received

AUG 28 2020

Gordon Environmental / PSC

Re: Sandoval County Landfill, Ground Water Monitoring Wells MW-2R and MW-3R Installation Report

Dear Mr. Yuhas:

The Solid Waste Bureau (Bureau or SWB) has reviewed the Ground Water Monitoring Wells MW-2R and MW-3R Installation Report (Report) for the Sandoval County Landfill (Landfill), received by email on July 2, 2020. The Report summarizes field activities related to the installation of replacement monitoring wells MW-2R and MW-3R.

In a letter dated September 18, 2019 the Bureau gave specific approval for the installation of monitoring wells MW-2R and MW-3R, including a 40-foot screened interval and location. The installation of monitoring wells MW-2R and MW-3R and the associated Report comply with 20.9.9.9.E, F, and J NMAC.

Should you have any questions, please feel free to contact me by e-mail at james.dyer@state.nm.us.

Sincerely,

James Dyer

Digitally signed by James Dyer
Date: 2020.08.19 14:22:34
-06'00'

James R. Dyer
Hydrologist

cc: Mr., Mark Hatzenbuehler, Public Works Director, Sandoval County Landfill, 2708 Iris Road NE, Rio Rancho, NM 87144
Joan Snider, Chief, SWB
George Schuman, Permit Section Manager, SWB
Paul Martinez, Enforcement Area I, SWB
Sandoval County Landfill Facility File
J. Dyer Reading File

**GROUNDWATER MONITORING REPORT
SANDOVAL COUNTY LANDFILL
JUNE 2021 SAMPLING EVENT**

ATTACHMENT 7.4

NMED Approval of Analytical Limits for MW-2R and MW-3R (10/06/20)



Michelle Lujan Grisham
Governor

Howie C. Morales
Lt. Governor

**NEW MEXICO
ENVIRONMENT DEPARTMENT**

Solid Waste Bureau
1190 Saint Francis Drive, Room N-2150
PO Box 5469
Santa Fe, NM 87502-5469
Telephone (505) 827-0197
www.env.nm.gov/solid-waste/



James C. Kenney
Cabinet Secretary

Jennifer J. Pruett
Deputy Secretary

October 6, 2020

Mr. Mark Hatzenbuehler, Director of Public Works
Sandoval County
2708 Iris Road NE
Rio Rancho, NM 87144

Re: Sandoval County Landfill, 2020 Annual Ground Water Monitoring Report

Dear Mr. Hatzenbuehler:

The Solid Waste Bureau (Bureau) has reviewed the 2020 Annual Groundwater Monitoring Report (Report) for the Sandoval County Landfill (Landfill), dated September 24, 2020. Samples were collected at monitoring wells MW-2R, MW-3R, MW-5R, MW-6R, and MW-7R at the Landfill on June 17, 2020. MW-2R and MW-3R are recent replacements for MW-2 and MW-3. The Report was not received within 90 days of sampling but was submitted prior to an extended submittal deadline approved by the Bureau.

In monitoring well MW-2R, arsenic, manganese, and total phenolics were detected at concentrations above their established Assessment Monitoring Levels (AML). The reported concentration for manganese was also above the established Upper Tolerance Limit Value (UTLV) and above the corresponding Ground Water Protection Standard (GWPS). Arsenic was detected at a higher concentration than the established AML but below the GWPS. Total phenolics were detected at a higher concentration than the established AML and the GWPS.

In monitoring well MW-3R, manganese was detected at a higher concentration than the established AML but below the GWPS. Total phenolics were detected at a higher concentration than the established AML and the GWPS.

Historical data indicates the elevated concentrations of manganese and arsenic are likely results of natural fluctuations in groundwater quality. A June 2016 demonstration showed that the past exceedances at MW-2 and MW-3 are due to naturally occurring concentrations in the water-bearing formation and maybe related to suspended sediments in water samples and not the result of Landfill operations. As MW-2R and MW-3R were recently installed, the Bureau will postpone the determination of assessment monitoring for total phenolics at MW-2R and MW-3R until reviewing results of the 2021 Report.

In replacement monitoring well MW-7R, nitrate was detected at a higher concentration than the established AML, but below the corresponding GWPS. The detected concentration of nitrate is within the range of historical results for this constituent. No further action is required at this time.

Included in the Report is the Landfill's request to adopt the background concentration values (BCVs), assessment monitoring levels (AMLs) and intrawell upper tolerance limit values (UTLVs) and reduced parameter list for replacement wells MW-2R and MW-3R that have already been established for wells MW-2 and MW-3.

The Report provided a comparison of water quality data for wells MW-2 and MW-3 to the analytical data for new wells MW-2R and MW-3R from the 06/17/20 sampling event. After careful review, it appears that the water quality results for wells MW-2R and MW-3R are statistically consistent with the historical water quality data for wells MW-2 and MW-3. As requested by the Landfill, the Bureau approves the BCVs, AMLs, and UTLVs from previous monitoring wells MW-2 and MW-3 be utilized for determination of exceedances for current monitoring wells MW-2R and MW-3R. Please submit the revised Groundwater Monitoring Plan and Groundwater Monitoring System Plan within 90 days of receipt of this letter.

The Report meets the requirements of 20.9.9 NMAC and your Ground Water Monitoring System Plan. Should you have any questions, please feel free to contact me by e-mail at james.dyer@state.nm.us.

Sincerely,

James Dyer

Digitally signed by James Dyer
Date: 2020.10.07 13:10:19 -06'00'

James R. Dyer

Hydrologist, NMED-SWB

cc: Mr. Diego Y. Ramirez, Civil Engineer, Parkhill, dramirez@parkhill.com
Mr. Michael J. Crepeau, P.E., Associate, Parkhill, mcrepeau@parkhill.com
Paul Martinez, Enforcement Area I, NMED-SWB
Sandoval County Landfill Groundwater Monitoring File
J. Dyer Reading File

**GROUNDWATER MONITORING REPORT
SANDOVAL COUNTY LANDFILL
JUNE 2021 SAMPLING EVENT**

ATTACHMENT 8

Qualified Groundwater Scientist Certification

Attachment 8

Qualified Groundwater Scientist Certification

This is to certify that, to the best of my knowledge and belief, the attached Groundwater Monitoring Report for the June 2021 sampling event at the Sandoval County Landfill is accurate and complete. Based on the information provided in the attached Report, the following exceedances of the established assessment monitoring levels (AMLs) are noted:

1. **Fluoride in Well MW-2R-** The concentration of fluoride in well MW-2R exceeds the established AML but remains well below the established UTLV.
2. **Manganese in Well MW-2R.** The concentration of manganese in well MW-2R exceeds the established AML but remains below the established UTLV.
3. **Arsenic in Well MW-2R.** The concentration of arsenic in well MW-2R exceeds the established AML but remains below the established UTLV.
4. **Manganese in Well MW-3R.** The concentration of manganese in well MW-3R exceeds the established AML. A UTLV for this parameter has yet to be established
5. **Arsenic in Well MW-5R.** The concentration of arsenic in well MW-5R exceeds the established AML but remains below the established UTLV.
6. **Nitrate in Well MW-7R.** The concentration of nitrate in well MW-7R exceeds the established AML. A UTLV for this parameter has yet to be established.
7. **Arsenic in Well MW-7R.** The concentration of arsenic in well MW-7R exceeds the established AML and meets the established UTLV.

As noted in the attached Groundwater Monitoring Report, the exceedances noted above are attributable to sources other than the Landfill.



Signature of Qualified Groundwater Scientist

Date: 8/21/21

Andrew N. Yuhas. P.G.
Professional Geologist
ayuhas@parkhill.com
333 Rio Rancho Blvd. N.E., Suite 400
Rio Rancho, NM 87124
(505) 504-7765