

Third Quarter 2021 Monitoring Report

LRI Landfill

Graham, Washington

Pierce County Recycling, Composting
& Disposal, LLC dba LRI
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SCS ENGINEERS

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This document is the Third Quarter 2021 Monitoring Report for the LRI Landfill located in Graham, Washington. Activities this quarter included monitoring the volume and specific conductance of water pumped from the leak detection/collection system, quarterly groundwater monitoring, monthly landfill gas monitoring, and weekly surface water monitoring. This document was prepared by Sam Graber, Dan Venchiarutti and Kevin Lakey of SCS Engineers and submitted to Mr. Keith Johnston of the Tacoma-Pierce County Health Department (TPCHD).



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Attachments: Attachment A: Groundwater Flow Map
Attachment B: Groundwater Data Summary Tables
Attachment C: Field Sampling Documentation
Attachment D: Statistical Calculations
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Attachment G: Groundwater and LDCS Time Trend Plots
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Attachment I: Surface Water Data
Attachment J: Landfill Gas Data

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GROUNDWATER MONITORING

Third quarter 2021 groundwater samples were collected on September 14, 15, and 16, 2021. Nine monitoring well samples (MW-1A, MW-2A, MW-3, MW-4, MW-5A, MW-6, MW-7, MW-9, and MW-10), ten leak detection collection samples (LDCS-1, LDCS-2A, LDCS-2B, LDCS-3A, LDCS-4A, LDCS-4B, LDCS-5, LDCS-6, LDCS-7, and LDCS-8), and one leachate sample (Cell 8) were collected during this monitoring period. Due to VOC detections at select locations, confirmation samples were collected at LDCS-1, LDCS-2A and LDCS-2B for VOCs only on October 21, 2021. Additional background water quality samples were obtained from LDCS-8 on August 19 and October 15, 2021. Water level elevations were measured on September 16, 2021. Field quality control samples consisted of two field blanks and one duplicate sample collected at MW-5A. Sampling procedures followed the LRI Landfill Groundwater Monitoring Plan (GWMP), dated March 10, 2014.

Groundwater samples were collected using low-flow purging and sampling techniques with dedicated pumps at all monitoring wells except MW-4, where a non-dedicated QED Sample Pro pump was deployed. Samples for laboratory analyses were submitted to TestAmerica, Inc. of Denver, Colorado for the parameters listed in Appendix I and II of WAC 173-351-990. Groundwater sampling locations are shown on Figure 1.

A groundwater surface elevation map for the third quarter monitoring event is included as Figure 1 in Attachment A. The average groundwater gradients and flow directions calculated for the quarter remain similar to those previously reported at the facility, with a flow rate of about 45 feet per year towards the northwest for horizontal groundwater movement within the uppermost aquifer (assuming a horizontal hydraulic conductivity of 1×10^{-3} centimeters per second and an effective porosity of 30 percent).

Field measurements and analytical results for groundwater, leak detection/collection system (LDCS), leachate, and quality control samples are summarized on the following tables presented in Attachment B: Groundwater Level Elevations, Field Parameters, Inorganic Parameters, Appendix I Metals, Appendix II Metals, Volatile Organic Compounds, Cation-Anion Balance, and Duplicate Sample Results.

Copies of the Field Sampling Data Sheets are included in Attachment C. Statistical calculations are provided in Attachment D. Trilinear (Piper) plots of groundwater and LDCS sample results are included in Attachment E. Data validation results are summarized in Attachment F.

Groundwater results were reviewed and validated (see attached Data Validation Report). Field measurements and analytical data were uploaded into the Washington State Department of Ecology (Ecology) Environmental Information Management (EIM) System. Laboratory reports were provided to the Tacoma-Pierce County Health Department (TPCHD) and the Washington Department of Ecology (Ecology) under separate cover.

A nonparametric inter-well prediction limit approach was used to evaluate the water quality results for Appendix I parameters listed in WAC 173-351-990 (15 total metals and nitrate). Prediction limits were generated using background data for nitrate and eight rounds of quarterly sampling conducted in 2014 and 2015 for fifteen (15) total metals. Using this procedure, the highest concentration of each parameter in the data set was selected as the prediction limit for that parameter. In addition, the prediction limit data set includes ongoing water quality results from background (upgradient) wells MW-9 and MW-10. Appendix I total metal and nitrate concentrations measured at the downgradient monitoring wells were less than or equal to prediction limit values at all of the

monitoring wells this quarter, except for total arsenic measured at MW-4 (0.012 mg/L versus a prediction limit of 0.011 mg/L).

Groundwater time-trend plots for inorganic parameters and metals are included in Attachment G. The following four plots are provided for each monitoring well:

- Plot 1 — ammonia, nitrate, chloride, TOC
- Plot 2 — alkalinity, sulfate, TDS
- Plot 3 — calcium, magnesium, sodium, potassium
- Plot 4 — iron, manganese, zinc, arsenic

Time trend plots show that concentrations of metals and inorganic parameters remained generally consistent with previously observed values during the third quarter. The highest concentrations of chloride and nitrate in the uppermost aquifer continue to be observed in background well MW-10.

Reported detections of inorganic parameters and metals measured at downgradient monitoring wells during the third quarter were less than or equal to the groundwater quality criteria listed in WAC 173-200-040, with the exceptions shown in Exhibit 1.

Exhibit 1. Groundwater Results Greater Than WAC 173-200-040 Criteria

Parameter	Groundwater Quality Criteria	MW-1A	MW-2A	MW-3	MW-4	MW-5A	MW-6	MW-7
Arsenic, Total	0.00005	**	**	**	0.0120	**	0.0073	0.0057
Iron, Dissolved	0.30	1.5	0.62	*	*	*	*	*
Manganese, Dissolved	0.05	0.24	0.28	0.23	0.21	0.15	0.17	0.22
Notes: Concentrations listed as mg/L = milligrams per liter ** = Not detected above the method reporting limit (MRL), but MRL exceeded WAC 173-200-040 GW Quality Criteria * = Reported value was less than WAC 173-200-040 Groundwater Quality Criteria Bold value exceeds the site specific prediction limit in addition to the WAC 173-200-040 GW Quality Criteria								

Total arsenic was reported at a concentration of 0.012 mg/L at MW-4, which just exceeded the site-specific prediction limit of 0.011 mg/L. However, primary leachate indicator parameters acetone and 2-butanone, were non-detect, and secondary indicator parameters, ammonia and chloride, remained low. Therefore, the slightly elevated total arsenic concentration at MW-4 does not appear to be related to a leachate leak.

The remaining results summarized in Exhibit 1 are typical of previous results (see time-trend plots in Attachment G), are interpreted to be within natural background variation, and in the case of total arsenic, are less than or equal to the background level used to establish the prediction limit (prediction limits are not applicable for dissolved iron or manganese). The method reporting limit (MRL) for arsenic is 0.005 milligrams per liter (mg/L), which is greater than the WAC 173-200-040 criteria of 0.00005 mg/L. Therefore, arsenic results reported as non-detect are considered to be greater than the WAC 173-200-040 criterion.

Low-level detections of ammonia (up to 0.21 mg/L) were reported at downgradient wells MW-1A, MW-2A, MW-3, MW-4, MW-6 and MW-7. Similar low-level ammonia detections have been reported in

the past; including at background well MW-10 during the Second Quarter 2018 monitoring event. Therefore, the low-level ammonia concentrations appear to be due to site-wide aquifer chemistry, which has also affected water quality within the LDCS.

The cation-anion balance evaluates the difference in the sum of cations and anions (in milliequivalents per liter [meq/L]) within a water sample to determine if it is electroneutral (balanced cation and anion charges). Consistent with WAC 173-350-430(5), a threshold of ten percent difference is used if the total cation-anion sum is less than 5.0 meq/L, and a threshold of five percent difference is used if the total cation-anion sum is greater than or equal to 5.0 meq/L. During the third quarter, cation-anion balance evaluations slightly exceeded the appropriate threshold for monitoring wells MW-3, MW-5A and MW-6. All other monitoring well cation-anion balance evaluations were below the appropriate threshold.

Graphical plots of the current monitoring well water quality results are presented on trilinear (piper) diagrams in Attachment E. These plots demonstrate the inherent water quality differences between groundwater from the monitoring wells, shallow groundwater from the LDCS, and leachate (collected annually in December).

No VOCs were reported in samples collected from the monitoring wells during the third quarter.

LEAK DETECTION/COLLECTION SYSTEM (LDCS) MONITORING

A leak detection/collection system (LDCS) is present directly beneath the composite liner of each landfill cell to provide for early leak detection and to collect leachate in the event a leachate leak develops in the composite liner or leachate force main. The system consists of a high permeability gravel blanket that is underlain and overlain by geosynthetic fabrics. The system also dewateres groundwater that is present within the glacial till. Leachate leaks are indicated by the presence acetone and 2-butanone (primary leachate indicator parameters) and increases in concentrations of ammonia and chloride (secondary leachate indicator parameters), as well as specific conductance (conductivity), total dissolved solids, alkalinity, sodium, potassium, and total organic carbon.

LDCS Maintenance. The liquid flow meter, liquid level sensor and conductivity probe were removed from the temporary sump at Cell 8A on June 21, 2021 in order to allow for construction of Cell 8B. The leachate liquid level sensor was redeployed on July 27, 2021 and the other sensors were redeployed on September 30, 2021. No data is available from Cell 8 for the time period when the sensors were removed.

No other significant maintenance activities occurred during the third quarter.

LDCS Daily Monitoring. Daily monitoring of the LDCS sumps for volume of water pumped, liquid level, and specific conductance (conductivity) was performed by using a programmable logic controller (PLC) and through direct measurements by LRI site personnel. Rainfall data were recorded manually using an on-site rain gauge. The combined field and PLC data, as well as time series plots of the data, are included in Attachment H.

The LDCS-2B flow meter did not operate correctly during the third quarter. A replacement meter was purchased and delivered and now needs to be installed by an electrician. LRI is currently scheduling this work. Conductivity readings at LDCS-2B have gradually increased since the probe was last calibrated on January 7, 2021. LRI will recalibrate this conductivity probe.

LDCS-4A conductivity probe readings displayed a wide range of values (<500 $\mu\text{S}/\text{cm}$ to >1,000 $\mu\text{S}/\text{cm}$) during the third quarter. LRI will have an electrician check the probe connections and will recalibrate or replace the probe as needed.

LDCS-5 conductivity probe values were generally greater than 1,000 $\mu\text{S}/\text{cm}$ during the third quarter. Values above 1,000 at this location are outside of the meter range and are shown on the trend graph as blank. LRI will work with the panel programmer (Cascade Water Systems) to see if the range of the recorded probe values can be increased.

Conductivity data from the remaining LDCS sumps trended within typical historical ranges during the third quarter of 2021.

LDCS Quarterly Monitoring. Samples were collected with disposable bailers at LDCS-1, LDCS-2A, and LDCS-2B, and with dedicated QED Sleeper Pumps at LDCS-3A, LDCS-4A, LDCS-4B, LDCS-5, LDCS-6, and LDCS-7.

LDCS-1, LDCS-2A and LDCS-2B sample results included reported detections of VOCs. The sample from LDCS-1 included detections of 1,4-dichlorobenzene (1.1 $\mu\text{g}/\text{L}$) and acetone (10 $\mu\text{g}/\text{L}$). The samples from LDCS-2A and LDCS-2B included detections of acetone at concentrations of 28 $\mu\text{g}/\text{L}$ and 92 $\mu\text{g}/\text{L}$, respectively. In addition, acetone was reported present in the field blank (10 $\mu\text{g}/\text{L}$) and in one of the trip blanks (36 $\mu\text{g}/\text{L}$) during the third quarter monitoring event.

Confirmation samples for VOCs were collected from LDCS-1, LDCS-2A, and LDCS-2B on October 21, 2021. Results from the resample event included detections of 1,4-dichlorobenzene (0.93 $\mu\text{g}/\text{L}$), acetone (140 $\mu\text{g}/\text{L}$), and carbon disulfide (0.82 $\mu\text{g}/\text{L}$) at LDCS-1, and acetone (26 $\mu\text{g}/\text{L}$) and m-xylene & p-xylene (0.54 $\mu\text{g}/\text{L}$) at LDCS-2B.

Secondary indicator parameters ammonia and chloride remained low at LDCS-1, LDCS-2A and LDCS-2B during the third quarter monitoring event (see time trend plots included in Attachment G). Additionally, primary indicator parameter, 2-butanone, was not detected in any LDCS samples collected during the third quarter. Therefore, the reported VOC detections do not appear to be related to leachate.

The LDCS connections at Cell 1, Cell 2A and Cell 2B include lateral piping to concrete vaults with vertical riser pipes. These LDCS connections are more susceptible to lateral inflow of shallow (background) groundwater and to potential contamination from maintenance activities on the perimeter road. During the third quarter monitoring event, particulate matter and bacterial growth were observed in the samples collected at LDCS-1 and LDCS-2B. On at least one previous occasion (in the fall of 2011), the vaults and vertical piping at these sumps were cleaned by power-washing. These previous efforts were successful in reducing or eliminating VOC detections. Therefore, if VOC detections continue at these locations, the vertical risers at LDCS-1, LDCS-2A and LDCS-2B may need to be cleaned by power washing.

LDCS-3A water quality results from the third quarter included elevated concentrations of dissolved iron (1.6 mg/L) and dissolved manganese (3.2 mg/L). Additionally, results from LDCS-3A display a slowly increasing trend of alkalinity and TDS (see the time trend plot in Attachment G). However, primary leachate indicator parameters, acetone and 2-butanone, were non-detect and secondary indicator parameters, ammonia and chloride, remained low during the third quarter. Therefore, the elevated concentrations listed above do not appear to be the result of leachate.

LDCS-5 water quality results have displayed decreasing trends in the concentrations of ammonia, chloride, iron, manganese, sodium, potassium, TDS, and TOC since the stormwater flap along the concrete channel and the geomembrane boot surrounding the three leachate riser pipes were replaced in September of 2020. Groundwater withdrawn from LDCS-5 continues to be directed to the leachate collection system, as it has been since May of 2016, and is not being discharged through the concrete channel.

LDCS-7 water quality results included a reported detection of carbon disulfide at a concentration of 3.4 µg/L. This result is similar to past results, including background water quality testing that found detections of VOC's and elevated concentrations of inorganic parameters and metals. Elevated concentrations continue to be reported for alkalinity, chloride, sulfate, TDS, total organic carbon, dissolved calcium, magnesium, manganese, and sodium. Since carbon disulfide and elevated concentrations of general chemistry parameters were detected at LDCS-7 prior to the placement of refuse in the cell, the reported detections appear to be due to background water quality. Additionally, no detections of primary leachate indicator parameters acetone and 2-butanone were reported in the sample collected during the third quarter.

Water quality samples were obtained from LDCS-8 on August 19, September 15, and October 15, 2021. The first two samples were obtained as grab samples from the construction dewatering hose, and the third sample was collected from the discharge pipe of the permanent dewatering pump. These samples represent a combination of background water quality from the Cell 8B construction area and ongoing monitoring for the active Cell 8A waste disposal cell. The LDCS-8 water quality results included relatively elevated concentrations of alkalinity, chloride, nitrate, sulfate, TDS, total organic carbon, and dissolved calcium and sodium, particularly the sample collected on September 15, 2021 (see Tables 3, 4, and 5 in Attachment B). These results are not indicative of a leachate leak.

Water quality results from the remaining LDCS locations were consistent with historical trends.

LDCS time trend plots for inorganic parameters and dissolved metals are included in Attachment G. The following four plots are provided for each leak detection sump:

- Plot 1 — ammonia, nitrate, chloride, TOC
- Plot 2 — alkalinity, sulfate, TDS
- Plot 3 — calcium, magnesium, sodium, potassium
- Plot 4 — iron, manganese, zinc, arsenic

Graphical plots of the LDCS water quality results are presented on trilinear (piper) diagrams in Attachment D. These plots demonstrate the inherent water quality differences between groundwater from the monitoring wells, shallow groundwater from the LDCS, and leachate (collected annually in December).

SURFACE WATER MONITORING

Surface water monitoring was performed per the requirements of NPDES Construction Stormwater General Permit (CSWGP) WAR 002603C and NPDES Industrial Stormwater General Permit (ISGP) WAR 002557. No discharges of construction or industrial stormwater occurred during the third quarter.

Discharge Monitoring Reports (DMR's) were submitted to Ecology on a monthly (Construction Permit) and quarterly (Industrial Permit) basis. Copies of the third quarter 2021 DMR's are included in Attachment I.

LEACHATE MONITORING

Leachate volumes were monitored using the automated PLC system and through direct measurements by LRI site personnel. A summary of daily volumes pumped and leachate sump level data is provided in Attachment H.

Collected leachate was truck-hauled to the pretreatment facility at the Hidden Valley Landfill where it was discharged to the Pierce County sewer system in accordance with Pierce County Utilities Department Industrial Discharge Permit Number PC03096, and to the City of Tacoma and City of Salem Wastewater Treatment Plants for proper disposal. A summary of year to date leachate volume data based on volumes truck-hauled off site is provided on Exhibit 2.

Exhibit 2. 2021 Leachate Volume Data

Month	Leachate Trucked Offsite for Proper Disposal (gallons)	Monthly Rainfall (inches)
January	4,295,910	7.04
February	2,909,325	4.14
March	3,093,766	1.67
April	2,382,949	0.99
May	2,628,941	1.37
June	2,843,182	3.07
July	2,192,101	0.00
August	2,191,633	0.10
September	2,460,350	2.80
Totals	24,998,157	21.18
Notes: Leachate was trucked off-site for proper disposal. Leachate volumes were determined by trucking records kept on a daily basis.		

LANDFILL GAS MONITORING

Monthly monitoring of the landfill gas performance probes was conducted on July 7, August 12, and September 12 using a Landtec GEM2000 portable gas monitor. Methane measurements were less than the lower explosive limit (LEL) of five percent by volume during the third quarter except at performance probes GP-10, GP-10P and GP-12 (see Exhibit 3). Previous barhole monitoring surveys, including a survey conducted on December 18, 2019 along the base of the perimeter berm adjacent to gas probe GP-2, have demonstrated that similar methane levels at these probes do not result in the migration of landfill gas to the property line.

Exhibit 3. 2021 Landfill Gas Probe Monitoring Summary (Percent Methane)

Monitoring Date	GP-1	GP-2	GP-3	GP-4	GP-9	GP-10	GP-10P	GP-11	GP-12	GP-13	GP-14	GP-15	GP-16
January 16	3.0	3.0	0.0	0.0	0.0	0.0	13.1	0.0	23.5	0.2	0.0	0.0	0.0
February 20	1.2	2.1	0.0	0.0	0.0	0.1	9.3	0.0	27.6	0.0	0.0	0.0	0.0
March 8	1.8	2.0	0.0	0.0	0.0	1.6	14.8	0.0	3.6	0.0	0.0	0.0	0.0
April 10	1.9	1.8	0.0	0.0	0.0	0.3	14.3	0.0	30.7	0.0	0.0	0.0	0.0
May 8	1.9	1.3	0.0	0.0	0.0	0.0	14.3	0.0	24.4	0.0	0.0	0.0	0.0
June 7	3.9	0.3	0.0	0.0	0.0	4.3	13.6	0.0	25.7	0.0	0.0	0.0	0.0
July 7	2.7	0.5	0.0	0.0	0.0	28.3	21.5	0.0	27.9	0.0	0.0	0.0	0.0
August 12	0.1	0.1	0.0	0.0	0.0	0.1	1.7	0.0	4.0	0.0	0.0	0.2	0.0
September 12	0.0	0.5	0.0	0.0	0.0	0.0	0.2	0.0	4.7	0.0	0.0	0.0	0.0
Notes: All values are reported as percent methane by volume. Methane measurements at or above the lower explosive limit of 5.0% by volume are shown in bold .													

Indoor air was tested for the presence of methane on July 20. The office, maintenance building and scale house were tested with a portable flame ionization detector (MicroFID). No detectable levels of methane were recorded. The work shed located next to the stormwater treatment ponds was removed during the construction of Cell-8B.

Field records for gas probe and indoor air monitoring are included in Attachment J.

LANDFILL GAS EXTRACTION WELL CONSTRUCTION

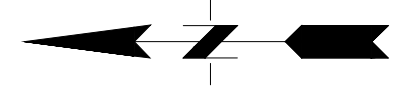
Sixteen (16) new landfill gas extraction wells were installed between June 22 and July 2, 2021. A copy of the Well Installation Report is included in Attachment J.

GROUNDWATER MONITORING WELL CONSTRUCTION AND MAINTENANCE

No well construction or significant well maintenance activities were performed this quarter.

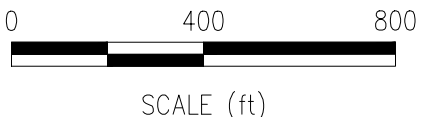
Attachment A

Groundwater Flow Map



NOTES:
VERTICAL DATUM - BASED ON
PIERCE COUNTY BENCH NO. 112-28,
ELEVATION 660.29 NGVD29

- LEGEND:**
- MW-1A MONITORING WELL
 - W87-2A CHARACTERIZATION WELL/ PIEZOMETER
 - (642.61) GROUNDWATER ELEVATION (IN FEET ABOVE MSL)
 - INFERRED GROUNDWATER FLOW DIRECTION
 - (NM) NOT MEASURED



Attachment B

Groundwater Data Summary Tables

**Table 1. Groundwater Level Elevations
September 16, 2021
LRI Landfill, Pierce County, Washington**

Location	Well Casing Elevation (ft)	Depth to Water (ft)	Water Level Elevation (ft, NGVD29)
Wells			
W87-2A ^b	664.01	21.40	642.61
W87-4A ^b	693.29	10.80	682.49
W88-3M	658.11	17.05	641.06
W88-7A	632.51	NM*	--
W88-8M	721.05	41.85	679.20
W90-12A	640.84	38.05	602.79
W95-14A	680.49	4.22	676.27
MW-1A ^a	652.57	20.80	631.77
MW-2A ^a	651.93	20.75	631.18
MW-3 ^a	637.41	10.70	626.71
MW-4 ^b	652.37	25.42	626.95
MW-5A ^a	655.55	29.55	626.00
MW-6 ^a	635.71	13.30	622.41
MW-7 ^a	656.03	27.50	628.53
MW-9 ^b	701.77	12.90	688.87
MW-10 ^b	678.37	29.20	649.17
Piezometers			
P13-14A ^b	665.96	26.80	639.16
P88-2A	663.96	NM*	--
P88-2B	663.48	NM*	--
P88-3A	656.20	20.70	635.50
P88-3B	655.98	23.40	632.58
P95-8A	722.07	25.25	696.82
P90-12A	640.79	12.90	627.89
P90-12B	640.73	11.30	629.43
P90-13A	645.19	NM*	--
P90-13B	643.63	NM*	--
GP-1P ^c	652.00	20.00	632.00
GP-2P ^c	658.61	18.00	640.61
GP-3P ^c	658.51	11.70	646.81
GP-4P ^c	662.01	14.35	647.66
GP-9P ^c	674.03	15.55	658.48
GP-16 ^c	689.51	Dry	--
South Creek			
SWSC-1	632.68	3.40	629.28
SWSC-2	629.98	Dry	--
Leak Detection System			
LDCS-1 ^a	657.26	27.45	629.81
LDCS-2A ^a	659.24	29.68	629.56
LDCS-2B ^a	661.70	28.20	633.50

Notes:

NM= not measured

-- = not applicable

Measurements taken on 9/16/2021 unless otherwise noted

a = measurements taken on 9/14/2021

b = measurement taken on 9/15/2021

c = gas probe measurements taken on 9/12/21

Dry = monitoring location dry, no water present

* = Water level wells W88-7A, P88-2A, P88-2B, P90-13A, and P90-13B cannot be located

**Table 2. Field Parameters
Third Quarter 2021
LRI Landfill, Pierce County, Washington**

Location	Sample Number	Sample Date	Sampling Method	pH	Conductivity	Temperature
Units WAC 173-200 Criteria				(SU) 6.5-8.5	(μS/cm) 700 ^b	(°C) —
Monitoring Wells						
MW-1A	304-091421-05	9/14/2021	DP	7.05	183	14.6
MW-2A	304-091421-01	9/14/2021	DP	7.21	274	13.2
MW-3	304-091421-03	9/14/2021	DP	7.48	336	10.9
MW-4	304-091521-14	9/15/2021	SP	7.38	319	14.6
MW-5A	304-091421-07	9/14/2021	DP	7.64	279	13.5
MW-6	304-091421-11	9/14/2021	DP	7.66	305	11.1
MW-7	304-091421-13	9/14/2021	DP	7.47	351	11.0
MW-9	304-091521-17	9/15/2021	DP	6.92	132	10.8
MW-10	304-091521-15	9/15/2021	DP	6.42	253	12.5
Leak Detection System						
LDCS-1	304-091421-10	9/14/2021	DB	5.84	583	21.6
LDCS-1* (10/21/21)	304-102121-01	10/21/2021	GB	6.35	736	17.8
LDCS-2A	304-091421-08	9/14/2021	DB	6.18	924	25.1
LDCS-2A* (10/21/21)	304-102121-02	10/21/2021	GB	6.61	873	20.0
LDCS-2B	304-091421-06	9/14/2021	DB	6.33	998	25.4
LDCS-2B* (10/21/21)	304-102121-03	10/21/2021	GB	6.38	887	18.4
LDCS-3A	304-091421-04	9/14/2021	DP	6.10	905	20.4
LDCS-4A	304-091421-12	9/14/2021	DP	6.26	839	23.0
LDCS-4B	304-091521-20	9/15/2021	DP	6.65	1,003	24.7
LDCS-5	304-091621-22	9/16/2021	DP	6.56	968	23.4
LDCS-6	304-091521-16	9/15/2021	DP	7.17	823	24.0
LDCS-7	304-091421-02	9/14/2021	DP	5.96	1,013	24.0
LDCS-8^ (8/19/21)	304-081921-01	8/19/2021	GB	7.40	949	NM
LDCS-8^ (9/15/21)	304-091521-19	9/15/2021	GB	6.60	1,247	19.0
LDCS-8^ (10/15/21)	304-101521-01	10/15/2021	GB	6.59	53	16.3
Leachate Collection System						
Leachate, Cell 8A	304-091521-21	9/15/2021	PP	7.41	14,245	24.0

Notes:

Groundwater (monitoring well) concentrations greater than the WAC 173-200 criteria are shown in **bold**

b = Secondary Drinking Water Standard

°C = degrees celcius

DB = disposable bailer

DP = dedicated pump

GB = grab sample

NM = parameter not measured

PP = peristaltic pump

SP = submersible pump

SU = standard units

μS/cm = microsiemens per centimeter

* = Additional samples collected serve as confirmation water quality data

^ = Additional samples collected from LDCS-8 serve as background water quality data

**Table 3. Inorganic Parameters
Third Quarter 2021
LRI Landfill, Pierce County, Washington**

Parameter	Alkalinity, Total	Ammonia	Chloride	Nitrate	Sulfate	Total Dissolved Solids	Total Organic Carbon	Total Suspended Solids
MRL	10	0.10	0.2-1.2	0.50	0.2-1.0	10	1.0	4.0
WAC 173-200 Criteria	—	—	250	10	250	500	—	—
Prediction Limit	—	—	—	6.4	—	—	—	—
Monitoring Wells								
MW-1A	100	0.15	1.9	*	2.9	150	*	*
MW-2A	130	0.18	3.1	*	12	200	*	4.0
MW-3	150	0.13	3.5	*	31	230	*	*
MW-4	160	0.14	2.7	*	7.5	200	*	6.4
MW-5A	150	*	1.9	* H	4.3	200	*	*
MW-6	160	0.13	4.5	* H	6.5	180	*	4.0
MW-7	190	0.21	2.7	* H	4.1	210	*	*
(BG) MW-9	71	*	1.5	*	1.5	120	*	*
(BG) MW-10	110	*	6.8	2.9	6.1	180	*	6.8
Leak Detection System								
LDCS-1	330	0.25	4.1	*	5.9	360	3.6	—
LDCS-2A	500	0.24	5.1	*	25	540	3.4	—
LDCS-2B	480	0.35	6.1	*	71	22	3.7	—
LDCS-3A	440	0.28	3.5	*	59	530	1.8	—
LDCS-4A	390	0.59	15	*	54	16	4.4	—
LDCS-4B	430	0.15	16	*	96	600	2.5	—
LDCS-5	460	0.88	20	*	59	420	4.6	—
LDCS-6	420	*	4.8	*	47	510	1.8	—
LDCS-7	520	0.12	11	*	34	610	7.3	—
LDCS-8^ (8/19/21)	370	*	13	*	42	450	7.3	—
LDCS-8^ (9/15/21)	610	*	24	0.69	93	770	9.1	—
LDCS-8^ (10/15/21)	34	*	2.8	*	19	75	7.4	—
Leachate Collection System								
Leachate, Cell 8A	5,300	710	1,500	2.9	27	5,100	850	—

Notes:

All sample units are milligrams per liter (mg/L)

Groundwater (monitoring well) concentrations greater than prediction limits or WAC 173-200 criteria are shown in **bold**

Analyses performed by Eurofins TestAmerica of Denver, Colorado

Method Reporting Limit (MRL) is typical and may be elevated for some samples

^ = Additional samples collected from LDCS-8 serve as background water quality data

* = Sample result was not reported at or above the MRL

— = Not applicable or not performed

BG = Background

H = analyzed after specified holding time due to Fedex delay

Table 4. WAC 173-351 Appendix I Metals
Third Quarter 2021
LRI Landfill, Pierce County, Washington

Parameter	Antimony-D	Antimony-T	Arsenic-D	Arsenic-T	Barium-D	Barium-T	Beryllium-D	Beryllium-T	Cadmium-D	Cadmium-T	Chromium-D	Chromium-T	Cobalt-D	Cobalt-T	Copper-D	Copper-T	Lead-D	Lead-T	Nickel-D	Nickel-T	Selenium-D	Selenium-T	Silver-D	Silver-T	Thallium-D	Thallium-T	Vanadium-D	Vanadium-T	Zinc-D	Zinc-T
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
MRL	0.05	0.05	0.005	0.005	0.005	0.005	0.001	0.001	0.001	0.001	0.005	0.005	0.001	0.001	0.01	0.01	0.002	0.002	0.02	0.02	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.01	0.01
WAC 173-200 Criteria	—	—	—	0.00005	—	1.0	—	—	—	0.01	—	0.05	—	—	—	1.0	—	0.05	—	—	—	0.01	—	0.05	—	—	—	—	—	5.0
Prediction Limit	—	0.05	—	0.011	—	0.091	—	0.005	—	0.005	—	0.011	—	0.01	—	0.063	—	0.042	—	0.020	—	0.005	—	0.01	—	0.005	—	0.016	—	0.290
Monitoring Wells																														
MW-1A	—	*	—	*	—	0.019	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*
MW-2A	—	*	—	*	—	0.019	—	*	—	*	—	*	—	*	—	*	—	0.0031	—	*	—	*	—	*	—	*	—	*	—	*
MW-3	—	*	—	*	—	0.010	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*
MW-4	—	*	—	0.0120	—	0.017	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	0.021
MW-5A	—	*	—	*	—	0.011	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*
MW-6	—	*	—	0.0073	—	0.019	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*
MW-7	—	*	—	0.0057	—	0.016	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*
(BG) MW-9	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	0.015	—	*
(BG) MW-10	—	*	—	*	—	0.014	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	0.011
Leak Detection System																														
LDCS-1	*	—	0.0140	—	0.030	—	—	—	—	—	*	—	*	—	*	—	*	—	*	—	—	—	—	—	—	—	*	—	*	—
LDCS-2A	*	—	0.0160	—	0.045	—	—	—	—	—	*	—	0.0027	—	*	—	*	—	*	—	—	—	—	—	—	—	*	—	*	—
LDCS-2B	*	—	0.0430	—	0.054	—	—	—	—	—	*	—	0.0078	—	*	—	*	—	*	—	—	—	—	—	—	—	*	—	*	—
LDCS-3A	*	—	0.0140	—	0.024	—	—	—	—	—	*	—	0.0026	—	*	—	0.0045	—	*	—	—	—	—	—	—	—	*	—	*	—
LDCS-4A	*	—	0.0160	—	0.033	—	—	—	—	—	*	—	0.0019	—	*	—	*	—	*	—	—	—	—	—	—	—	*	—	*	—
LDCS-4B	*	—	0.0150	—	0.034	—	—	—	—	—	*	—	*	—	*	—	*	—	*	—	—	—	—	—	—	—	*	—	*	—
LDCS-5	*	—	*	—	0.050	—	*	—	*	—	*	—	*	—	*	—	0.0020	—	*	—	*	—	*	—	*	—	*	—	*	—
LDCS-6	*	—	*	—	0.012	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—
LDCS-7	*	—	0.0082	—	0.043	—	*	—	*	—	*	—	0.0062	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—
LDCS-8^ (8/19/21)	*	—	*	—	0.027	—	*	—	*	—	*	—	0.0015	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	0.048	—
LDCS-8^ (9/15/21)	*	—	*	—	0.045	—	*	—	*	—	*	—	0.0040	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—
LDCS-8^ (10/15/21)	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—
Leachate Collection System																														
Leachate, Cell 8A	—	*	—	0.100	—	0.410	—	*	—	*	—	0.250	—	0.040	—	0.046	—	0.026	—	0.310	—	*	—	*	—	*	—	0.099	—	0.370

Notes:

All sample units are milligrams per liter (mg/L)

WAC 173-200-040 Table 1 Groundwater Quality Criteria are for total metals

Groundwater (monitoring well) concentrations greater than prediction limits or WAC 173-200 criteria are shown **ibold**

Parameter concentrations for monitoring wells are total (T) metals

Parameter concentrations for LDCS sumps are dissolved (D) metals

Parameter concentrations for leachate samples are total (T) metals

Analyses performed by Eurofins TestAmerica of Denver, Colorado

Method Reporting Limit (MRL) is typical and may be elevated for some samples

^ = Additional samples collected from LDCS-8 serve as background water quality data

* = sample result was not reported at or above the MRL

— = not applicable or not performed

BG = Background

**Table 5. WAC 173-351 Appendix II Metals (Dissolved)
Third Quarter 2021
LRI Landfill, Pierce County, Washington**

Parameter	Calcium	Iron	Magnesium	Manganese	Potassium	Sodium
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
MRL	0.20	0.10	0.10	0.005	2.0	1.0
WAC 173-200 Criteria	—	0.30	—	0.050	—	—
Monitoring Wells						
MW-1A	14	1.5	8.9	0.24	3.4	12
MW-2A	22	0.62	12	0.28	3.2	16
MW-3	32	*	14	0.23	3.4	12
MW-4	27	*	14	0.21	5.0	12
MW-5A	25	*	10	0.15	3.4	15
MW-6	29	*	13	0.17	4.2	9.6
MW-7	27	0.18	19	0.22	4.9	13
(BG) MW-9	9.6	*	6.4	*	*	7.1
(BG) MW-10	23	*	10	*	*	12
Leak Detection System						
LDCS-1	63	2.9	28	2.2	6.0	20
LDCS-2A	100	3.2	40	5.3	9.3	29
LDCS-2B	100	8.6	41	5.8	8.1	21
LDCS-3A	96	1.6	43	3.2	6.5	23
LDCS-4A	74	4.2	49	2.2	6.4	22
LDCS-4B	100	2.0	51	1.0	7.0	23
LDCS-5	86	*	58	1.2	8.4	27
LDCS-6	100	*	54	0.07	4.8	21
LDCS-7	120	0.78	41	3.8	3.9	32
LDCS-8^ (8/19/21)	69	1.5	40	1.2	4.2	30
LDCS-8^ (9/15/21)	130	0.11	59	1.8	4.9	54
LDCS-8^ (10/15/21)	10	*	3.1	0.12	*	4.7
Leachate Collection System**						
Leachate, Cell 8A	140	4.5	210	1.2	420	1,600

Notes:

All sample units are milligrams per liter (mg/L)

WAC 173-200-040 Table 1 Groundwater Quality Criteria are for total metals

Groundwater (monitoring well) concentrations greater than WAC 173-200 criteria are shown in **bold**

Analyses performed by Eurofins TestAmerica of Denver, Colorado

Method Reporting Limit (MRL) is typical and may be elevated for some samples

^ = Additional samples collected from LDCS-8 serve as background water quality data

* = sample result was not reported at or above the MRL

** = Reported concentrations for leachate are total metals

— = not applicable or not performed

BG = Background

Table 6. Volatile Organic Compounds (µg/L)
Third Quarter 2021
LRI Landfill, Pierce County, Washington

Parameter	1,4-Dichlorobenzene	2-Butanone (MEK)	4-Methyl-2-pentanone (MIBK)	Acetone	Benzene	Carbon disulfide	Chloromethane	cis-1,2-Dichloroethene	Ethylbenzene	m-Xylene & p-Xylene	o-Xylene	Toluene	Vinyl Chloride
Units	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
MRL	0.50	6.00	5.00	10	0.5	0.5-0.84	3.0	0.50	1.00	0.50	0.50	0.50	0.50
WAC 173-200 Criteria	4.0	—	—	—	1.0	—	—	—	—	—	—	—	0.02
Monitoring Wells													
MW-1A	*	*	*	*	*	*	*	*	*	*	*	*	*
MW-2A	*	*	*	*	*	*	*	*	*	*	*	*	*
MW-3	*	*	*	*	*	*	*	*	*	*	*	*	*
MW-4	*	*	*	*	*	*	*	*	*	*	*	*	*
MW-5A	*	*	*	*	*	*	*	*	*	*	*	*	*
MW-6	*	*	*	*	*	*	*	*	*	*	*	*	*
MW-7	*	*	*	*	*	*	*	*	*	*	*	*	*
(BG) MW-9	*	*	*	*	*	*	*	*	*	*	*	*	*
(BG) MW-10	*	*	*	*	*	*	*	*	*	*	*	*	*
Leak Detection System													
LDCS-1	1.1	*	*	10	*	*	*	*	*	*	*	*	*
LDCS-1** (10/21/21)	0.93	*	*	140	*	0.82	*	*	*	*	*	*	*
LDCS-2A	*	*	*	28	*	*	*	*	*	*	*	*	*
LDCS-2A** (10/21/21)	*	*	*	*	*	*	*	*	*	*	*	*	*
LDCS-2B	*	*	*	92	*	*	*	*	*	*	*	*	*
LDCS-2B** (10/21/21)	*	*	*	26	*	*	*	*	*	0.54	*	*	*
LDCS-3A	*	*	*	*	*	*	*	*	*	*	*	*	*
LDCS-4A	*	*	*	*	*	*	*	*	*	*	*	*	*
LDCS-4B	*	*	*	*	*	*	*	*	*	*	*	*	*
LDCS-5	*	*	*	*	*	*	*	*	*	*	*	*	*
LDCS-6	*	*	*	*	*	*	*	*	*	*	*	*	*
LDCS-7	*	*	*	*	*	3.4	*	*	*	*	*	*	*
LDCS-8^ (8/19/21)	*	*	*	*	*	*	*	*	*	*	*	*	*
LDCS-8^ (9/15/21)	*	*	*	*	*	*	*	*	*	*	*	*	*
LDCS-8^ (10/15/21)	*	*	*	*	*	*	*	*	*	*	*	*	*
Leachate Collection System													
Leachate, Cell 8A	*	69	130	*	3.9	*	4.5	1.6	7.3	16	9.1	44	60
Quality Control Samples													
Trip Blank (280-153032-5)	*	*	*	36	*	*	*	*	*	*	*	*	*
Field Blank	*	*	*	10	*	*	*	*	*	*	*	*	*
Field Blank (10/21/21)	*	*	*	*	*	*	*	*	*	*	*	*	*

Notes:
All sample units are milligrams per liter (µg/L)
Analyses performed by Eurofins TestAmerica of Denver, Colorado
Groundwater (monitoring well) concentrations greater than WAC 173-200 criteria are shown in **bold**
Method Reporting Limit (MRL) is typical and may be elevated for some samples
^ = Additional samples collected from LDCS-8 serve as background water quality data
** = Additional samples collected serve as confirmation water quality data
* = sample result was not reported at or above the MRL
— = not applicable or not performed
BG = Background

**Table 7. Cation-Anion Balance
Third Quarter 2021
LRI Landfill, Pierce County, Washington**

Cations	mg/L					meq/L					% of Total		
	Ca	Mg	K	Na	Total	Ca	Mg	K	Na	Total	Na+K	Ca	Mg
MW-1A	14	8.9	3.4	12	38.3	0.70	0.73	0.08	0.52	2.03	29	34	36
MW-2A	22	12	3.2	16	53.2	1.10	0.99	0.07	0.70	2.85	27	38	35
MW-3	32	14	3.4	12	61.4	1.60	1.15	0.08	0.52	3.35	18	48	34
MW-4	27	14	5.0	12	58	1.35	1.15	0.11	0.52	3.13	20	43	37
MW-5A	25	10	3.4	15	53.4	1.25	0.82	0.08	0.65	2.80	26	45	29
MW-6	29	13	4.2	9.6	55.8	1.45	1.07	0.09	0.42	3.03	17	48	35
MW-7	27	19	4.9	13	63.9	1.35	1.56	0.11	0.57	3.59	19	38	44
MW-9	9.6	6.4	2.0	7.1	25.1	0.48	0.53	0.05	0.31	1.36	26	35	39
MW-10	23	10	2.0	12	47.0	1.15	0.82	0.05	0.52	2.54	22	45	32
LDCS-1	63	28	6.0	20	117	3.14	2.30	0.14	0.87	6.45	16	49	36
LDCS-2A	100	40	9.3	29	178.3	4.99	3.29	0.21	1.26	9.75	15	51	34
LDCS-2B	100	41	8.1	21	170.1	4.99	3.37	0.18	0.91	9.46	12	53	36
LDCS-3A	96	43	6.5	23	168.5	4.79	3.54	0.15	1.00	9.48	12	51	37
LDCS-4A	74	49	6.4	22	151.4	3.69	4.03	0.14	0.96	8.83	12	42	46
LDCS-4B	100	51	7.0	23	181	4.99	4.20	0.16	1.00	10.35	11	48	41
LDCS-5	86	58	8.4	27	179.4	4.29	4.77	0.19	1.17	10.43	13	41	46
LDCS-6	100	54	4.8	21	179.8	4.99	4.44	0.11	0.91	10.46	10	48	43
LDCS-7	120	41	3.9	32	196.9	5.99	3.37	0.09	1.39	10.84	14	55	31
LDCS-8^ (8/19/21)	69	40	4.2	30	143.2	3.44	3.29	0.09	1.31	8.13	17	42	40
LDCS-8^ (9/15/21)	130	59	4.9	54	247.9	6.49	4.86	0.11	2.35	13.80	18	47	35
LDCS-8^ (10/15/21)	10	3.1	2.0	4.7	19.8	0.50	0.26	0.05	0.20	1.00	25	50	25
Leachate, Cell 8A	140	210	420	1,600	2,370	6.99	17.28	9.48	69.60	103.35	77	7	17

Anions	mg/L					meq/L					% of Total			Total Ions (meq/L)	Cation - Anion Balance	Applicable Ratio (%)	Ratio Exceedance
	Alk	Cl	NO ₃	SO ₄	Total	Alk	Cl	NO ₃	SO ₄	Total	Cl	Alk	SO ₄				
MW-1A	120	1.9	0.5	2.9	125.3	1.97	0.05	0.008	0.06	2.09	3	94	3	4.12	1.5	10	O
MW-2A	156	3.1	0.5	12	171.6	2.56	0.09	0.008	0.25	2.90	3	88	9	5.76	0.9	5	O
MW-3	180	3.5	0.5	31	215	2.95	0.10	0.008	0.64	3.70	3	80	17	7.05	5.05	5	Exceeds
MW-4	192	2.7	0.5	7.5	202.7	3.15	0.08	0.008	0.16	3.39	2	93	5	6.52	3.9	5	O
MW-5A	180	1.9	0.5	4.3	186.7	2.95	0.05	0.008	0.09	3.10	2	95	3	5.90	5.1	5	Exceeds
MW-6	192	4.5	0.5	6.5	203.5	3.15	0.13	0.008	0.14	3.42	4	92	4	6.45	6.0	5	Exceeds
MW-7	228	2.7	0.5	4.1	235.3	3.74	0.08	0.008	0.09	3.91	2	96	2	7.50	4.3	5	O
MW-9	85.2	1.5	0.5	1.5	88.7	1.40	0.04	0.008	0.03	1.48	3	94	2	2.84	4.2	10	O
MW-10	132	6.8	2.9	6.1	147.8	2.16	0.19	0.047	0.13	2.53	8	86	5	5.07	0.2	5	O
LDCS-1	396	4.1	0.5	5.9	406.5	6.49	0.12	0.008	0.12	6.74	2	96	2	13.19	2.2	5	O
LDCS-2A	600	5.1	0.5	25	630.6	9.84	0.14	0.008	0.52	10.51	1	94	5	20.27	3.7	5	O
LDCS-2B	576	6.1	0.5	71	653.6	9.45	0.17	0.008	1.48	11.10	2	85	13	20.56	8.0	5	Exceeds
LDCS-3A	528	3.5	0.5	59	591	8.66	0.10	0.008	1.23	9.99	1	87	12	18.82	6.2	5	Exceeds
LDCS-4A	468	15	0.5	54	538	7.68	0.42	0.008	1.12	9.23	5	83	12	19.58	5.7	5	Exceeds
LDCS-4B	516	16	0.5	96	629	8.46	0.45	0.008	2.00	10.92	4	78	18	21.35	2.3	5	O
LDCS-5	552	20	0.5	59	632	9.05	0.56	0.008	1.23	10.85	5	83	11	21.31	1.9	5	O
LDCS-6	504	4.8	0.5	47	556	8.27	0.14	0.008	0.98	9.39	1	88	10	20.23	7.2	5	Exceeds
LDCS-7	624	11	0.5	34	670	10.23	0.31	0.008	0.71	11.26	3	91	6	19.39	16.1	5	Exceeds
LDCS-8^ (8/19/21)	444	13	0.5	42	500	7.28	0.37	0.008	0.87	8.53	4	85	10	22.33	23.6	5	Exceeds
LDCS-8^ (9/15/21)	732	24	0.69	93	850	12.00	0.68	0.011	1.93	14.63	5	82	13	15.63	87.2	5	Exceeds
LDCS-8^ (10/15/21)	40.8	2.8	0.5	19	63	0.67	0.08	0.008	0.40	1.15	7	58	34	2.16	6.8	10	O
Leachate, Cell 8A	6,360	1,500	2.9	27	7,890	104.30	42.30	0.047	0.56	147.21	29	71	0	250.56	17.5	5	Exceeds

Notes:

mg/L = milligrams per liter

meq/L = milliequivalents per liter

Total alkalinity concentration, reported as calcium carbonate (CaCO₃), is converted to the bicarbonate (HCO₃⁻) ion by multiplying by a factor of 1.2

Cation / anion balance equation is the equivalent percent difference in cations minus anions divided by the sum of cations and anions $[(\text{cations}-\text{anions})/(\text{anions}+\text{cations}) \times 100]$.

^ = Additional samples collected from LDCS-8 serve as background water quality data

The MRL was used for analytes that were non-detect

A 10% difference threshold is used if the total cation-anion sums are < 5.0 meq/liter

A 5% difference threshold is used if the total cation-anion sums are > or = to 5.0 meq/liter

Table 8. Duplicate Sample Results
Third Quarter 2021 Monitoring Report
LRI Landfill, Pierce County, Washington

Parameter	MRL	MW-5A	MW-5A (Duplicate)	RPD (%)
Volatile Organic Compounds (µg/L)				
No Detections	-	-	-	-
Inorganic Parameters (mg/L)				
Alkalinity, Total	10	150	150	0.0
Ammonia	0.1	*	0.13	26.1
Chloride	0.2	1.9	2.0	5.1
Sulfate	0.2	4.3	4.4	2.3
Total Dissolved Solids	10	200	170	16.2
Dissolved Metals (mg/L)				
Calcium	0.2	25	25	0.0
Magnesium	0.1	10	10	0.0
Manganese	0.005	0.15	0.15	0.0
Potassium	2.0	3.4	3.4	0.0
Sodium	1.0	15	15	0.0
Total Metals (mg/L)				
Barium	0.005	0.011	0.011	0.0

Notes:

Analyses performed by Eurofins TestAmerica of Denver, Colorado

Parameters not listed were not present at concentrations exceeding the Method Reporting Limit (MRL)

RPD = relative percent difference

µg/L = micrograms per liter

mg/L = milligrams per liter

* = sample result was not reported at or above the MRL

The MRL was used to calculate the RPD for analytes where one sample was non-detect

Attachment C

Field Sampling Documentation

November 8, 2021
File No. 04221001.02

Subject: **Third Quarter 2021 Groundwater Monitoring Event**
LRI Landfill, Pierce County, Washington

NOTES/SAMPLE DECODING:

Event Dates: September 14-16, 2021

Field Staff: Sam Graber & Andres Lopez

- Dedicated pumps were used for purging and sampling MW-1A, MW-2A, MW-3, MW-5A, MW-6, MW-7, MW-9, MW-10, LDCS-3A, LDCS-4A, LDCS-4B, LDCS-5, LDCS-6, and LDCS-7.
- Disposable bailers were used to sample LDCS-1, LDCS-2A, and LDCS-2B.
- A peristaltic pump was used to collect the leachate sample from Cell 8.
- A non-dedicated Sample Pro pump was used for purging and sampling well MW-4.
- A round of water level measurements was completed on September 16, 2021.
- Multi-parameter field meters were calibrated daily, prior to sampling.
- Source water for the field blank was lab-grade deionized water (VOC-free) provided by TestAmerica in Tacoma, Washington.

Sample Number	Well Number
304-091421-01	MW-2A
304-091421-02	LDCS-7
304-091421-03	MW-3
304-091421-04	LDCS-3A
304-091421-05	MW-1A
304-091421-06	LDCS-2B
304-091421-07	MW-5A
304-091421-08	LDCS-2A
304-091421-09	MW-5A (Duplicate)
304-091421-10	LDCS-1
304-091421-11	MW-6
304-091421-12	LDCS-4A
304-091421-13	MW-7
304-091521-14	MW-4
304-091521-15	MW-10
304-091521-16	LDCS-6
304-091521-17	MW-9
304-091521-18	Field Blank
304-091521-19	LDCS-8^
304-091521-20	LDCS-4B
304-091521-21	Leachate, Cell 8A
304-091621-22	LDCS-5

Additional Samples

Sample Number	Well Number
304-081921-01	LDCS-8^
304-101521-01	LDCS-8^
304-102121-01	LDCS-1*
304-102121-02	LDCS-2A*
304-102121-03	LDCS-2B*
304-102121-04	QC, FB (2)

^ = samples collected from LDCS-8 serve as background water quality data

* = additional samples serve as confirmation water quality data

Bellevue, WA 98005

(425) 746-4600

Groundwater Sampling Data Sheet

Project #:		Site		Well ID:		Sample ID:		Date:		Weather:		Filtered?		Locked?		Water in Protector?		Damage?		Sample Containers:		Notes / Observations (color, odor, anomalies, etc):	
04221001.02		LRI 304th		MW-2A		304-0914 21-01		9/14/21		Sunny		Y N		Y N		Y N		Y N		1000 ml Poly			
																				500 ml Poly			
																				500 ml HNO3 x2			
																				500 ml H2SO4 x2			
																				40 ml VOA x3 x6			
																				1000 ml Amber			
																				125 ml NaOH			

TIME	DTW	Temp.	Sp.Cond.	DO	pH	Eh	Turbidity	Q / Vol.
912	20.75'	15.36	239	5.64 ~~5.44~~ ~~5.56~~	7.33	119.6	2.50	
917		13.40	293	~~3.8~~ 0.27	7.00	-20.9		
920	21.90'	13.32	291	0.15	7.16	-47.4	3.65	
923		13.28	284	0.13	7.20	-58.6		
926	22.10'	13.26	279	0.12	7.21	-65.3	2.68	
929		13.25	277	0.10	7.21	-70.8		
932	22.15'	13.23	274	0.12	7.21	-73.2	2.29	

Stabilization Parameters: pH/DO ± 0.2 , SpC $\pm 10\%$, Temp $\pm 0.5^\circ\text{C}$, Turb. $\pm 10\%$ or ≤ 5

SAMPLER: Andres Lopez
Printed Name

Signature _____

SCS ENGINEERS

2405 140th ave NE #107

Bellevue, WA 98005

(425) 746-4600

Groundwater Sampling Data Sheet

Project #: 04221001.02	Sampling Method: <u>Dedicated</u>	1.75" QED SamplePro	Bail	Peristaltic	Grab	Other
Site: LRI 304th	Meter: <u>YSI</u>	CONTROL SETTINGS:		1 ft water = 0.62L	1L = 0.26 gallons	
Well ID: <u>L6C5-7</u>	MP-20	Refill: <u>12</u>	One Well Volume (liters)	Other: _____		
Sample ID: <u>304-0914 21-02</u>	Intake	Discharge: <u>3</u>	Total Volume Bailed (liters)	Flow Setting: _____		
Date: <u>9/14/21</u>	BOS	Pressure: <u>45</u>				
Weather: <u>Sunny</u>	Total Depth	Flow: <u>150 mL/min</u>				
Filtered? <u>(Y) N</u>	Locked? <u>(Y) N</u>	Water in Protector? <u>(Y) N</u>	Damage? <u>(Y) N</u>			
Sample Containers:	1000 ml Poly	500 ml Poly	250 ml Poly	125 ml Poly		
	500 ml HNO3 x2	500 ml H2SO4 x2	40 ml VOA x3 x6	1000 ml Amber		
	125 ml NaOH					

TIME	DTW	Temp.	Sp.Cond.	DO	pH	Eh	Turbidity	SpC Panel
932		19.7	894	1.99	6.40	192.6	4.40	
937		20.3	901	1.01	6.61	148.1	4.08	
940		21.7	905	0.48	6.73	149.6	4.09	
943		22.7	908	0.52	6.79	135.1	4.54	
946		23.1	913	0.46	6.82	124.3	5.13	
949		23.3	914	0.43	6.81	115.3	5.43	
952		23.5	910	0.40	6.31	61.2	5.01	
<u>955</u>		23.7	902	0.38	6.03	33.1	4.67	
958		23.8	942	0.33	5.98	32.6	3.49	
1001		23.9	974	0.28	5.94	25.1	3.83	
1004		24.0	992	0.27	5.95	23.2	3.61	760
1007		24.0	1013	0.26	5.96	31.8	3.43	

Notes / Observations (color, odor, anomalies, etc):

level at 10.1

water right away

Stabilization Parameters: pH/DO ± 0.2 , SpC $\pm 10\%$, Temp $\pm 0.5^\circ\text{C}$, Turb. $\pm 10\%$ or ≤ 5

SAMPLER:

Printed Name

Sam Gaber

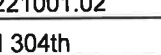
Signature

[Signature]

Bellevue, WA 98005

(425) 746-4600

Groundwater Sampling Data Sheet

Project #: 04221001.02				Sampling Method: Dedicated		1.75" QED SamplePro		Bail	Peristaltic	Grab	Other
Site: LRI 304th				Meter: CONTROL SETTINGS:		1 ft water = 0.62L		1L = 0.26 gallons			
Well ID: MW-3		TOS		Refill 9		One Well Volume (liters)		Other:			
Sample ID: 304-09 14 21- 03		Intake		Discharge 6				Flow Setting:			
Date: 9/14/21		BOS		Pressure 35		Total Volume Bailed (liters)					
Weather: Sunny		Total Depth		Flow 400 mL/min							
Filtered? (Y) N	Locked? (Y) N	Water in Protector? (Y) N	Damage? (Y) N								
Sample Containers:		1000 ml Poly	500 ml Poly	250 ml Poly	125 ml Poly						
		500 ml HNO3 x2	500 ml H2SO4 x2	40 ml VOA x3 x6	1000 ml Amber						
		125 ml NaOH									
Notes / Observations (color, odor, anomalies, etc):											

[illegible]

Stabilization Parameters: pH/DO ± 0.2 , SpC $\pm 10\%$, Temp $\pm 0.5^\circ\text{C}$, Turb. $\pm 10\%$ or ≤ 5

SAMPLER: Andres Lopez
Printed Name

Signature _____

Bellevue, WA 98005

(425) 746-4600

Project #:	04221001.02			Sampling Method :	Dedicated	1.75" QED SamplePro	Bail	Peristaltic	Grab	Other	
Site	LRI 304th			Meter:	CONTROL SETTINGS:		1 ft water = 0.62L	1L = 0.26 gallons			
Well ID:	LDLS-3			MP-20	Refill	12	One Well Volume	Other :			
Sample ID:	304-0914 21-04			YSI	Discharge	3	(liters)	Flow			
Date:	9/14/21				Pressure	35	Total Volume Bailed	Setting :			
Weather:	Sunny				Flow	150 mL/min	(liters)				
Filtered? ☒ N	Locked? ☐ Y ☒ N	Water in Protector? ☐ Y ☒ N	Damage? ☐ Y ☒ N								
Sample Containers:	1000 ml Poly	500 ml Poly	250 ml Poly	125 ml Poly							
	500 ml HNO3 x2	500 ml H2SO4 x2	40 ml VOA x3 x6	1000 ml Amber							
	125 ml NaOH										
					Notes / Observations (color, odor, anomalies, etc):						
					Level 2.10						

[illegible]

Stabilization Parameters: pH/DO ± 0.2 , SpC $\pm 10\%$, Temp $\pm 0.5^\circ\text{C}$, Turb. $\pm 10\%$ or ≤ 5

SAMPLER:

Printed Name

Signature _____

SCS ENGINEERS

2405 140th ave NE #107

Bellevue, WA 98005

(425) 746-4600

Groundwater Sampling Data Sheet

Project #: 04221001.02

Site: LRI 304th

Well ID: MW-2A

Sample ID: 304-09 14 21-05

Date: 9/14/21

Weather: Sunny

Filtered? Y N

Locked? Y N

Water in Protector? Y N

Damage? Y N

Sample Containers:

1000 ml Poly

500 ml Poly

250 ml Poly

125 ml Poly

500 ml HNO3 x2

500 ml H2SO4 x2

40 ml VOA x3 x6

1000 ml Amber

125 ml NaOH

Sampling Method:

Dedicated

1.75" QED SamplePro

Bail

Peristaltic

Grab

Other

Meter:

MP-20

YSI

CONTROL SETTINGS:

Refill

Discharge

Pressure

Flow

1 ft water = 0.62L

1L = 0.26 gallons

One Well Volume (liters)

Total Volume Bailed (liters)

Other:

Flow Setting:

DTW

TOS

Intake

BOS

Total Depth

20.8'



9

6

30

350 ml/min

Notes / Observations (color, odor, anomalies, etc):

TIME	DTW	Temp.	Sp.Cond.	DO	pH	Eh	Turbidity	Q / Vol.
1014	20.80'	20.14	199	7.90	7.60	6.3	2.22	
1119		14.79	185	0.62	6.78	5.7		
1122	23.65'	14.66	165	0.51	6.86	12.6	2.34	
1125		14.70	166	0.53	6.93	~~3.2~~		
1128	24.70'	14.66	173	0.54	6.99	33.1 49.3	1.98	
1131		14.59	175	0.51	7.01	56.5		
1134	25.30'	14.62	183	0.43	7.05	65.6	2.05	

Stabilization Parameters: pH/DO ± 0.2 , SpC $\pm 10\%$, Temp $\pm 0.5^\circ\text{C}$, Turb. $\pm 10\%$ or ≤ 5

SAMPLER:

Printed Name

Andres Lopez

Signature

[Signature]

Bellevue, WA 98005

(425) 746-4600

Project #: 04221001.02		Sampling Method : Dedicated		1.75" QED SamplePro		Bail		Peristaltic		Grab		Other	
Site LRI 304th		DTW		Meter: CONTROL SETTINGS:		1 ft water = 0.62L		1L = 0.26 gallons					
Well ID: LDC5-2B		TOS		MP-20		Refill		One Well Volume		Other :			
Sample ID: 304-09 14 21-06		Intake		YSI		Discharge		(liters)		Flow			
Date: 9/14/21		BOS				Pressure		Total Volume Bailed		Setting :			
Weather: partly cloudy		Total Depth				Flow		(liters)					
Filtered? Y N		Locked? Y N		Water in Protector? Y N		Damage? Y N							
Sample Containers:		1000 ml Poly		500 ml Poly		250 ml Poly		125 ml Poly					
		500 ml HNO3 x2		500 ml H2SO4 x2		40 ml VOA x3 x6		1000 ml Amber					
		125 ml NaOH											
Notes / Observations (color, odor, anomalies, etc):													

[illegible]

Stabilization Parameters: pH/DO ± 0.2 , SpC $\pm 10\%$, Temp $\pm 0.5^\circ\text{C}$, Turb. $\pm 10\%$ or ≤ 5

SAMPLER: Sam Greber
Printed Name

Signature 

Bellevue, WA 98005

(425) 746-4600

Groundwater Sampling Data Sheet

Project #: 04221001.02		Site: LRI 304th		Well ID: MW-5A		Sample ID: 304-0914 21-07		Date: 9/14/21		Weather: Sunny	
Filtered? ☒ Y ☐ N		Locked? ☐ Y ☒ N		Water in Protector? ☐ Y ☒ N		Damage? ☐ Y ☒ N					
Sample Containers:		1000 ml Poly		500 ml Poly		250 ml Poly		125 ml Poly			
		500 ml HNO3 x2		500 ml H2SO4 x2		40 ml VOA x3 x6		1000 ml Amber			
		125 ml NaOH									

TIME	DTW	Temp.	Sp.Cond.	DO	pH	Eh	Turbidity	Q / Vol.
1220	29.55'	17.19	359	7.27	7.28	27.1	6.03	
1225		13.41	285	0.80	6.76	25.8		
1228	~~#~~ 30.75'	13.39	278	0.37	7.32	1.8	14.0	
1231		13.42	279	0.23	7.54	-23.5		
1234	31.2'	13.39	279	0.19	7.59	-35.2	6.87	
1237		13.52	279	0.16	7.63	-48.0	6.04	
1240	31.40'	13.45	279	0.14	7.64	-53.3	6.33	
[REDACTED]								

Notes / Observations (color, odor, anomalies, etc):

DUP taken @ 1300
304-091421-09 ~~1445~~

used sharpie on bottle labels. watchout for volts

Stabilization Parameters: pH/DO ± 0.2 , SpC $\pm 10\%$, Temp $\pm 0.5^\circ\text{C}$, Turb. $\pm 10\%$ or ≤ 5

SAMPLER:

Andres Lopez
Printed Name

Signature

Bellevue, WA 98005

(425) 746-4600

[illegible]

Signature

SCS ENGINEERS

2405 140th ave NE #107

Bellevue, WA 98005

(425) 746-4600

Groundwater Sampling Data Sheet

Project #: 04221001.02

Site: LRI 304th

Well ID: MW-6

Sample ID: 304-09 14 21- 11

Date: 9/14/21

Weather: Cloudy

Filtered? ☒ Y ☐ N

Locked? ☒ Y ☐ N

Water in Protector? ☒ Y ☐ N

Damage? ☒ Y ☐ N

Sample Containers:

1000 ml Poly

500 ml Poly

250 ml Poly

125 ml Poly

500 ml HNO3 x2

500 ml H2SO4 x2

40 ml VOA x3 x6

1000 ml Amber

125 ml NaOH

Sampling Method: ☒ Dedicated

1.75" QED SamplePro

Bail

Peristaltic

Grab

Other

Meter:

CONTROL SETTINGS:

1 ft water = 0.62L

1L = 0.26 gallons

Refill

One Well Volume

Other:

Discharge

(liters)

Flow

Pressure

Total Volume Bailed

Setting:

Flow

(liters)



13.30'

DTW

TOS

Intake

BOS

Total Depth

MP-20

YSI

9

6

25

350 mL/min

Notes / Observations (color, odor, anomalies, etc):

Some liquid spilled out from
VOA bottle marked w/ a "X"
Preservative may have been
some 10st.

TIME	DTW	Temp.	Sp.Cond.	DO	pH	Eh	Turbidity	Q / Vol.
1350	13.30'	15.00	318	10.44	8.02	47.0	2.90	
1355		11.13	306	0.67	6.95	-37.6		
1358	14.00'	11.08	305	0.30	7.38	-44.3	7.15	
1401		11.07	305	0.20	7.59	-47.4		
1404	14.20'	11.06	305	0.19	7.62	-47.8	4.59	
1407		11.06	305	0.16	7.64	-48.3	4.42	
1410	14.30'	11.05	305	0.14	7.66	-48.6	4.11	

Stabilization Parameters: pH/DO $\pm$ 0.2, SpC $\pm$ 10%, Temp $\pm$ 0.5°C, Turb. $\pm$ 10% or $\leq$ 5

SAMPLER:

Printed Name

Andres Lopez

Signature

[Signature]

SCS ENGINEERS

2405 140th ave NE #107

Bellevue, WA 98005

(425) 746-4600

Groundwater Sampling Data Sheet

Project #: 04221001.02

Site: LRI 304th

Well ID: EDCS-4A

Sample ID: 304-0914 21-12

Date: 9/14/21

Weather: Cloudy

Sampling Method: Dedicated

1.75" QED SamplePro

Bail

Peristaltic

Grab

Other



DTW

TOS

Intake

BOS

Total Depth

Meter:

MP-20

YSI

CONTROL SETTINGS:

Refill

Discharge

Pressure

Flow

1 ft water = 0.62L

1L = 0.26 gallons

One Well Volume (liters)

Total Volume Bailed (liters)

Other:

Flow Setting:

Filtered? ☒ N

Locked? ☒ N

Water in Protector? ☒ N

Damage? ☒ N

Sample Containers:

1000 ml Poly

500 ml Poly

250 ml Poly

125 ml Poly

500 ml HNO3 x2

500 ml H2SO4 x2

40 ml VOA x3 x6

1000 ml Amber

125 ml NaOH

Notes / Observations (color, odor, anomalies, etc):

Water right away

level at 23.0

* Not working

TIME	DTW	Temp.	Sp.Cond.	DO	pH	Eh	Turbidity	Q/Vol.
1420		22.4	671	4.75	6.87	22.2	5.74	
1425		22.1	683	0.58	6.18	68.4	5.47	
1428		21.9	684	0.66	6.10	64.2	5.01	
1431		21.8	685	0.76	6.04	86.0	4.57	
1434		22.0	791	0.51	6.10	22.8	4.60	
1437		22.3	830	0.30	6.17	-9.1	4.64	
1440		22.8	839	0.26	6.23	-23.5	5.40	
1443		23.0	839	0.23	6.26	-30.6	5.56	0.0*

Stabilization Parameters: pH/DO ± 0.2 , SpC $\pm 10\%$, Temp $\pm 0.5^\circ\text{C}$, Turb. $\pm 10\%$ or ≤ 5

SAMPLER:

Printed Name

Signature

SCS ENGINEERS

2405 140th ave NE #107

Bellevue, WA 98005

(425) 746-4600

Groundwater Sampling Data Sheet

Project #: 04221001.02

Site: LRI 304th

Well ID: MW-7

Sample ID: 304-0914 21-13

Date: 9/14/21

Weather: Cloudy

Filtered? ☒ Y ☐ N

Locked? ☒ Y ☐ N

Water in Protector? Y ☐ N ☐

Damage? Y ☐ N ☐

Sample Containers:

1000 ml Poly

500 ml Poly

250 ml Poly

125 ml Poly

500 ml HNO3 x2

500 ml H2SO4 x2

40 ml VOA x3 x6

1000 ml Amber

125 ml NaOH

Sampling Method:

☒ Dedicated

1.75" QED SamplePro

Bail

Peristaltic

Grab

Other

Meter:

MP-20

YSI

CONTROL SETTINGS:

Refill

Discharge

Pressure

Flow

1 ft water = 0.62L

1L = 0.26 gallons

One Well Volume (liters)

Total Volume Bailed (liters)

Other:

Flow Setting:

DTW

TOS

Intake

BOS

Total Depth



27.50'

Notes / Observations (color, odor, anomalies, etc):

Try lower pressure next event. Flow is high @ 30psi

TIME	DTW	Temp.	Sp.Cond.	DO	pH	Eh	Turbidity	Q / Vol.
1518	27.50'	11.60	394	8.14	6.71	13.0	9.09	
1523		11.07	352	0.38	7.28	-30.3		
1526	29.85'	11.02	351	0.38	7.49	-60.7	5.85	
1529		11.06	351	0.55	7.45	-60.8		
1532	30.60'	10.99	351	0.57	7.44	-61.1	3.23	
1535		10.97	351	0.52	7.46	-64.3		
1538	31.20'	10.99	351	0.48	7.47	-67.8	3.81	

Stabilization Parameters: pH/DO ± 0.2 , SpC $\pm 10\%$, Temp $\pm 0.5^\circ\text{C}$, Turb. $\pm 10\%$ or ≤ 5

SAMPLER:

Printed Name

Andres Lopez

Signature

SCS ENGINEERS

2405 140th ave NE #107

Bellevue, WA 98005

(425) 746-4600

Groundwater Sampling Data Sheet

Deployable

Project #: 04221001.02

Site LRI 304th

Well ID: MW-4

Sample ID: 304-09 15 21-14

Date: 9/ 15 /21

Weather: Cloudy

Filtered? Y N

Sample Containers:

Locked? Y N

1000 ml Poly

500 ml HNO3 x2

125 ml NaOH

Water in Protector? Y N

500 ml Poly

500 ml H2SO4 x2

250 ml Poly

40 ml VOA x3 x6

Damage? Y N

125 ml Poly

1000 ml Amber

Sampling Method:

Dedicated

1.75" QED SamplePro

Bail

Peristaltic

Grab

Other

DTW

Meter:

CONTROL SETTINGS:

1 ft water = 0.62L

1L = 0.26 gallons

TOS

MP-20

Refill

One Well Volume

Other:

Intake

YSI

Discharge

(liters)

Flow

BOS

Pressure

Total Volume Bailed

Setting:

Total Depth

Flow

(liters)

Notes / Observations (color, odor, anomalies, etc):

25.40' @ 950
25.51' @ 1000
25.42' @ 1005

TIME	DTW	Temp.	Sp.Cond.	DO	pH	Eh	Turbidity	Q / Vol.
1025		15.2	319	1.71	7.03	180.2	18.92	
1032		14.6	319	0.60	7.22	136.7	9.05	
1035		14.5	319	0.55	7.25	110.2	8.22	
1038		14.5	319	0.50	7.29	93.1	7.35	
1041		14.5	318	0.47	7.31	61.8	7.01	
1044		14.5	318	0.44	7.33	46.2	6.70	
1047	25.82	14.7	319	0.43	7.35	21.8	6.20	
1050		14.6	319	0.42	7.38	5.9	6.64	

Stabilization Parameters: pH/DO $\pm$ 0.2, SpC $\pm$ 10%, Temp $\pm$ 0.5°C, Turb. $\pm$ 10% or $\leq$ 5

SAMPLER:

Andres Lopez
Printed Name

Signature

Bellevue, WA 98005

(425) 746-4600

Groundwater Sampling Data Sheet

Project #:	04221001.02	                      	29.20	DTW	Sampling Method:	Dedicated	1.75" QED SamplePro	Bail	Peristaltic	Grab	Other	
Site	LRI 304th			TOS	Meter:	CONTROL SETTINGS:	1 ft water = 0.62L	1L = 0.26 gallons				
Well ID:	MW-10			Intake	MP-20	Refill	9	One Well Volume	Other:			
Sample ID:	304-09 15 21- 15			BOS	YSI	Discharge	6	(liters)	Flow			
Date:	9/ 15 /21			Total Depth		Pressure	40	Total Volume Bailed	Setting:			
Weather:	cloudy				Flow	200 ml/min	(liters)					
Filtered?	Y N	Locked?	Y N	Water in Protector?	Y N	Damage?	Y N	Notes / Observations (color, odor, anomalies, etc):				
Sample Containers:	1000 ml Poly	500 ml Poly	250 ml Poly	125 ml Poly								
	500 ml HNO3 x2	500 ml H2SO4 x2	40 ml VOA x3 x6	1000 ml Amber								
	125 ml NaOH											

TIME	DTW	Temp.	Sp.Cond.	DO	pH	Eh	Turbidity	Q / Vol.
1037	29.20'	14.70	242	3.06	6.35	173.2	6.06	
1042		13.06	250	0.76	6.09	167.3		
1045	30.70'	12.84	255	0.66	6.16	177.5	4.90	
1048		12.86	256	0.59	6.26	177.8		
1051	31.0'	12.76	256	0.55	6.35	176.3	4.42	
1054		12.67	254	0.50	6.40	174.9		
1057	31.4'	12.53	253	0.47	6.42	173.7	4.97	

Stabilization Parameters: pH/DO ± 0.2 , SpC $\pm 10\%$, Temp $\pm 0.5^\circ\text{C}$, Turb. $\pm 10\%$ or ≤ 5

SAMPLER:

Andres Lopez

Signature

SCS ENGINEERS

2405 140th ave NE #107

Bellevue, WA 98005

(425) 746-4600

Groundwater Sampling Data Sheet

Project #: 04221001.02	Sampling Method: <u>Dedicated</u>	1.75" QED SamplePro	Bail	Peristaltic	Grab	Other
Site: LRI 304th	Meter: <u>MP-20</u>	CONTROL SETTINGS:		1 ft water = 0.62L 1L = 0.26 gallons		
Well ID: <u>LDCS-6</u>	<u>YSI</u>	Refill: <u>12</u>	One Well Volume (liters)	Other: _____		
Sample ID: <u>304-09 15 21-16</u>		Discharge: <u>3</u>		Flow Setting: _____		
Date: <u>9/15/21</u>		Pressure: <u>50</u>	Total Volume Bailed (liters)			
Weather: <u>Sunny</u>		Flow: <u>80 mL/min</u>				
Filtered? ☒ N	Locked? ☒ N	Water in Protector? ☒ N	Damage? ☒ N			
Sample Containers:	1000 ml Poly	500 ml Poly	250 ml Poly	125 ml Poly		
	500 ml HNO3 x2	500 ml H2SO4 x2	40 ml VOA x3 x6	1000 ml Amber		
	125 ml NaOH					

TIME	DTW	Temp.	Sp. Cond.	DO	pH	Eh	Turbidity	Q/Vol.
1202		23.5	692	7.06	7.75	88.0	3.72	
1210		22.4	723	6.95	7.31	74.0	3.38	
1223		22.5	720	6.94	7.78	61.9	3.52	
1233		23.3	741	6.85	7.69	59.2	3.39	
1236		23.5	782	6.61	7.51	60.0	3.46	
1239		23.7	802	6.41	7.40	60.4	3.57	
1242		23.8	810	5.99	7.31	62.9	3.50	
<u>1245</u>		23.8	819	5.39	7.22	65.2	3.44	
1248		24.0	823	5.02	7.17	67.9	3.45	921

Notes / Observations (color, odor, anomalies, etc):

level at 10.2

water right away

Stabilization Parameters: pH/DO ± 0.2 , SpC $\pm 10\%$, Temp $\pm 0.5^\circ\text{C}$, Turb. $\pm 10\%$ or ≤ 5

SAMPLER:

Printed Name

Sum Gruber

Signature

Bellevue, WA 98005

(425) 746-4600

Project #: 04221001.02

Site LRI 304th

Well ID: MW-9

Sample ID: 304-09 | 5 21-17

Date: 9/15/21

Weather: Partly Sunny

Filtered? ☒ Y ☐ N

Locked? ☒ Y ☐ N

Water in Protector? Y(N

Damage? Y (N)

Sample Containers:

1000 ml Poly

500 ml Poly

250 ml Poly

125 ml Poly

500 ml HNO₃ x2

500 ml H₂SO₄ x2

40 ml VOA x3 x6

1000 ml Amber

125 ml NaOH

Notes / Observations (color, odor, anomalies, etc):

Entrance missing
on look

Stabilization Parameters: pH/DO ± 0.2 , SpC $\pm 10\%$, Temp $\pm 0.5^\circ\text{C}$, Turb. $\pm 10\%$ or ≤ 5

SAMPLER:

Printed Name _____

Signature _____

(425) 746-4600

Signature _____

Bellevue, WA 98005

(425) 746-4600

Groundwater Sampling Data Sheet

Project #:	04221001.02		Sampling Method:		Dedicated	1.75" QED SamplePro	Bail	Peristaltic	<u>Grab</u>	Other	
Site	LRI 304th		Meter:		CONTROL SETTINGS:		1 ft water = 0.62L	1L = 0.26 gallons			
Well ID:	LDCS-8/Background		MP-20		Refill		One Well Volume	Other:			
Sample ID:	304-09 15 21-19		YSI		Discharge		(liters)	Flow			
Date:	9/15/21				Pressure		Total Volume Bailed	Setting:			
Weather:	SUNNY		Total Depth		Flow		(liters)				
Filtered?	Y	N	Locked?	Y	N	Water in Protector?	Y	N	Damage?	Y	N
Sample Containers:	1000 ml Poly	500 ml Poly	250 ml Poly	125 ml Poly							
	500 ml HNO3 x2	500 ml H2SO4 x2	40 ml VOA x3	x6	1000 ml Amber						
	125 ml NaOH										
Notes / Observations (color, odor, anomalies, etc):											
5 min 15 sec 1.5 min 1.5 min											

[illegible]

Stabilization Parameters: pH/DO ± 0.2 , SpC $\pm 10\%$, Temp $\pm 0.5^\circ\text{C}$, Turb. $\pm 10\%$ or ≤ 5

SAMPLER: Andres Lopez
Printed Name

Signature _____

Notes / Observations (color, odor, anomalies, etc):

5 min
Purged from hose before
grabbing parameters and
sampling

SCS ENGINEERS

2405 140th ave NE #107

Bellevue, WA 98005

(425) 746-4600

Groundwater Sampling Data Sheet

Project #: 04221001.02	Sampling Method: <u>Dedicated</u>	1.75" QED SamplePro	Bail	Peristaltic	Grab	Other
Site LRI 304th	Meter: <u>MP-20</u>	CONTROL SETTINGS:		1 ft water = 0.62L 1L = 0.26 gallons		
Well ID: <u>LD05-4B</u>	<u>YSI</u>	Refill <u>12</u>	One Well Volume (liters)	Other: _____		
Sample ID: <u>304-09 15 21-20</u>	Intake	Discharge <u>3</u>	Total Volume Bailed (liters)	Flow Setting: _____		
Date: <u>9/15/21</u>	BOS	Pressure <u>50</u>				
Weather: <u>Sunny</u>	Total Depth	Flow <u>100 ml/min</u>				
Filtered? <u>(Y)N</u>	Locked? <u>Y(N)</u>	Water in Protector? <u>Y(N)</u>	Damage? <u>Y(N)</u>			
Sample Containers:	1000 ml Poly	500 ml Poly	250 ml Poly	125 ml Poly		
	500 ml HNO3 x2	500 ml H2SO4 x2	40 ml VOA x3 x6	1000 ml Amber		
	125 ml NaOH					

TIME	DTW	Temp.	Sp.Cond.	DO	pH	Eh	Turbidity	Q/Vol.
~~1425~~ 1425		Begin pump						
~~1447~~ 1447		water to surface						
1450		24.8	717	2.00	6.32	139.1	3.95	
1455		24.8	747	0.50	6.48	10.8	3.62	
1458		24.6	748	0.39	6.53	-21.2	3.66	
1501		24.5	798	0.35	6.57	-27.3	3.67	
1504		24.5	871	0.34	6.59	-28.1	3.70	1148
1507		24.7	928	0.32	6.62	-30.2	3.75	
<u>1510</u>		24.9	995	0.31	6.63	-32.0	3.80	
1513		24.7	1003	0.29	6.65	-33.6	3.77	1155

Notes / Observations (color, odor, anomalies, etc):

level at 5.0

22 minutes to get water

Stabilization Parameters: pH/DO ± 0.2, SpC ± 10%, Temp ± 0.5°C, Turb. ± 10% or ≤ 5

SAMPLER:

Printed Name

Sam Gruber

Signature

[Signature]

Bellevue, WA 98005

(425) 746-4600

Groundwater Sampling Data Sheet

Project #: 04221001.02		Sampling Method: Dedicated		1.75" QED SamplePro		Bail		Peristaltic		Grab		Other	
Site LRI 304th		DTW		Meter: CONTROL SETTINGS:		1 ft water = 0.62L		1L = 0.26 gallons					
Well ID: Leachate Cell 18		TOS		MP-20		Refill		One Well Volume (liters)		Other:			
Sample ID: 304-09 15 21- 21		Intake		YSI		Discharge		Total Volume Bailed (liters)		Flow Setting:			
Date: 9/15/21		BOS				Pressure							
Weather: Partly Sunny		Total Depth				Flow							
Filtered? Y (N)		Locked? Y (N)		Water in Protector? Y (N)		Damage? Y (N)							
Sample Containers:		1000 ml Poly		500 ml Poly		250 ml Poly		125 ml Poly					
		500 ml HNO3 x2		500 ml H2SO4 x2		40 ml VOA x3 x6		1000 ml Amber					
		125 ml NaOH											
Notes / Observations (color, odor, anomalies, etc):													

[illegible]

Stabilization Parameters: pH/DO ± 0.2 , SpC $\pm 10\%$, Temp $\pm 0.5^\circ\text{C}$, Turb. $\pm 10\%$ or ≤ 5

SAMPLER: Andres Lopez
Printed Name

Signature _____

Notes / Observations (color, odor, anomalies, etc):

5 min purge before
grabbing parameters &
sampling

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Groundwater Sampling Data Sheet

Project #: 04221001.02	Sampling Method: Dedicated	1.75" QED SamplePro	Bail	Peristaltic	Grab	Other
Site: LRI 304th	Meter: MP-20	CONTROL SETTINGS:		1 ft water = 0.62L 1L = 0.26 gallons		
Well ID: LDCS-5	YSI	Refill: 12	One Well Volume (liters):	Other:		
Sample ID: 304-09 16 21-22		Discharge: 3	Total Volume Bailed (liters):	Flow Setting:		
Date: 9/16/21		Pressure: 40				
Weather: Sunny		Flow: 100ml/min				
Filtered? ☒ Y ☐ N	Locked? ☒ Y ☐ N	Water in Protector? ☒ Y ☐ N	Damage? ☒ Y ☐ N			
Sample Containers:	1000 ml Poly	500 ml Poly	250 ml Poly	125 ml Poly		
	500 ml HNO3 x2	500 ml H2SO4 x2	40 ml VOA x3 x6	1000 ml Amber		
	125 ml NaOH					

TIME	DTW	Temp.	Sp.Cond.	DO	pH	Eh	Turbidity	Q / Vol.
1112		20.21	645	4.64	7.00	155.4	5.43	
1122		21.91	649	2.44	6.48	142.2		
1125		22.31	650	1.92	6.48	137.5	4.05	
1128		22.58	650	1.15	6.48	135.2		
1131		22.64	650	0.71	6.48	132.1	2.99	
1134		22.95	648	0.41	6.48	101.1		
1137		23.23	651	0.49	6.46	13.3	2.70	
1140		23.40	674	0.79	6.46	11.2		
1145		23.34	908	0.52	6.55	24.7	11.0	
1150		23.49	967	0.33	6.56	52.6		
1153		23.47	969	0.33	6.56	54.8	10.9	
1156		23.39	968	0.35	6.56	76.1	11.1	

Notes / Observations (color, odor, anomalies, etc):

Stopped sampling @ 1210 for 15 mins to let it recharge
SPC 1000
LDCS Level 7.9
Panel reading at time 1156
of sampling:

SPC 1000 MS @ 1112
LDCS level 7.9

~~SPC 1000 MS @ 1125~~
~~LDCS level 7.9~~

~~SPC 1000 MS @ 1131~~
~~LDCS level 7.9~~

~~SPC 1000 MS @ 1137~~
~~LDCS level 7.9~~

~~SPC 1000 MS @ 1143~~
~~LDCS level 7.9~~

Stabilization Parameters: pH/DO ± 0.2, SpC ± 10%, Temp ± 0.5°C, Turb. ± 10% or ≤ 5

SAMPLER:

Andres Lopez
Printed Name

Signature

Bellevue, WA 98005

(425) 746-4600

Project #:	04221001.02			Sampling Method :	Dedicated	1.75" QED SamplePro	Bail	Peristaltic	Grab	Other
Site	LRI 304				Meter:	CONTROL SETTINGS:				
Well ID:	LDCS 8B				MP-20	1 ft water = 0.62L		1L = 0.26 gallons		
Sample ID:	304-081921-07				YSI	Refill	One Well Volume		Other :	
Date:	8-19-21					Discharge	(liters)		Flow	
Weather:	Sunny					Pressure	Total Volume Bailed		Setting :	
						Flow	(liters)			
Filtered? Y ☒ N ☐	Locked? Y ☐ N ☒	Water in Protector? Y ☐ N ☒	Damage? Y ☐ N ☒							
Sample Containers:	1000 ml Poly	500 ml Poly	250 ml Poly	125 ml Poly	Notes / Observations (color, odor, anomalies, etc):					
	500 ml HNO3 x2	500 ml H2SO4 x2	40 ml VOA x3 x6	1000 ml Amber						
	125 ml NaOH									

[illegible]

Notes / Observations (color, odor, anomalies, etc):

grab sample from hose that connects to LDES 8B
↳ taken as soon as water came out
Temp + orp not recorded

Stabilization Parameters: pH/DO ± 0.2 , SpC $\pm 10\%$, Temp $\pm 0.5^\circ\text{C}$, Turb. $\pm 10\%$ or ≤ 5

SAMPLER: Ruben Martinez-Barrientes
Printed Name

Signature _____

Bellevue, WA 98005

(425) 746-4600

Project #:		Sampling Method :	Dedicated	1.75" QED SamplePro	Bail	Peristaltic	Grab	Other
Site	LRI 304	DTW	Meter:	<u>CONTROL SETTINGS:</u>				
Well ID:	LDCS-8, 304-101521-01	TOS	MP-20	Refill	1 ft water = 0.62L		1L = 0.26 gallons	
Sample ID:	cell-8-LDCRS -01	Intake	YSI	Discharge	One Well Volume _____		Other : _____	
Date:	10/15/21	BOS		Pressure	(liters)		Flow Setting : _____	
Weather:	cloudy	Total Depth		Flow	Total Vplume Bailed _____			
					(liters)			
Filtered?	Y N	Locked?	Y N	Water in Protector?	Y N	Damage?	Y N	
Sample Containers:	1000 ml Poly	500 ml Poly	250 ml Poly	125 ml Poly				
	500 ml HNO3 x2	500 ml H2SO4 x2	40 ml VOA x3 x6	1000 ml Amber				
	125 ml NaOH							
Notes / Observations (color, odor, anomalies, etc):								

[illegible]Stabilization Parameters: pH/DO ± 0.2 , SpC $\pm 10\%$, Temp $\pm 0.5^\circ\text{C}$, Turb. $\pm 10\%$ or ≤ 5

SAMPLER:

Printed Name

Signature

Bellevue, WA 98005

Groundwater Sampling Data Sheet

Project #:	04221001.02		Sampling Method:	Dedicated	1.75" QED SamplePro	Bail	Peristaltic	Grab	Other
Site	LRI 304th		DTW	Meter:	CONTROL SETTINGS:		1 ft water = 0.62L	1L = 0.26 gallons	
Well ID:	304-102121-01		TOS	MP-20	Refill	One Well Volume	Other:		
Sample ID:	CDCS-1		Intake	YSI	Discharge	(liters)	Flow		
Date:	10/21/2021		BOS		Pressure	Total Volume Bailed	Setting:		
Weather:	cloudy		Total Depth		Flow	(liters)			
Filtered? Y ☒ N ☐	Locked? Y ☒ N ☐	Water in Protector? Y ☒ N ☐	Damage? Y ☒ N ☐						
Sample Containers:	1000 ml Poly	500 ml Poly	250 ml Poly	125 ml Poly	Notes / Observations (color, odor, anomalies, etc): Heavy particulates (fine sand & presumably				
	500 ml HNO3 x2	500 ml H2SO4 x2	40 ml VOA x3 x6	1000 ml Amber					
	125 ml NaOH								

[illegible]

Heavy particulates (fine sand + presumably bacterial growth). Dark brown in color.

Signature

Bellevue, WA 98005

(425) 746-4600

Groundwater Sampling Data Sheet

Project #:	04221001.02	 29.54	Sampling Method:	Dedicated	1.75" QED SamplePro	Bail	Peristaltic	Grab	Other	
Site	LRI 304th		DTW	Meter:	CONTROL SETTINGS:		1 ft water = 0.62L	1L = 0.26 gallons		
Well ID:	LDCS-2A		TOS	MP-20	Refill	One Well Volume	(liters)	Other:		
Sample ID:	304-102121-02		Intake	YSI	Discharge	Total Volume Bailed	(liters)	Flow Setting:		
Date:	10/21/2021		BOS		Pressure					
Weather:	cloudy	Total Depth		Flow						
Filtered? Y ☒ N	Locked? Y ☒ N	Water in Protector? Y ☒ N	Damage? Y ☒ N							
Sample Containers:	1000 ml Poly	500 ml Poly	250 ml Poly	125 ml Poly						
	500 ml HNO3 x2	500 ml H2SO4 x2	40 ml VOA x3 x6	1000 ml Amber						
	125 ml NaOH									
Notes / Observations (color, odor, anomalies, etc):										
Light amount of flyby looking										

[illegible]

Notes / Observations (color, odor, anomalies, etc):

Light amount of fluffy looking
particulates. Clear samples

Stabilization Parameters: pH/DO ± 0.2 , SpC $\pm 10\%$, Temp $\pm 0.5^\circ\text{C}$, Turb. $\pm 10\%$ or ≤ 5

SAMPLER: Jim Fisher
Printed Name

Signature _____

Bellevue, WA 98005

Groundwater Sampling Data Sheet

Notes / Observations (color, odor, anomalies, etc):

Heavy particulates, Made water thick & difficult to get sample w/ no bubbles. had to put water in bottle & let settle, then transfer to you.

white sludge on sample water observed on truck bed.

Moderate to strong odor coming from riser area.

Signature _____

(425) 746-4600

Signature

GROUNDWATER SAMPLING INSTRUMENT CALIBRATION DOCUMENTATION FORM

	Conductivity	pH 4	pH 7	D.O.	Turbidity	Comments/Exceptions
Date	9/14/21					
Time	045					
Weather (sky or precip, temp)	partly cloudy					
Type of Calibration	Standard	Standard	Standard	Standard	Standard	
Standard Value	1413	4.01	7.00	100% or ~8.5	1000, 10, 0.2 800, 100, 20, <0.1	
Pre-Cal Reading	1410	4.13	7.02			
Post Cal Reading	1413	4.01	7.00	8.5		
Discrepancy	No					
Calib. Successful?	yes					
Calibration by	SEB					
Instrument Type, ID	YSI Pro DDS / YSI 556 / Rental			YSI Pro DDS / HACH2000		
Calibration Location	URF 304th					

* If Direct Reading is Unavailable, Assume pressure = 760 mm - 2.5 (altitude in ft/100)

GROUNDWATER SAMPLING INSTRUMENT CALIBRATION DOCUMENTATION FORM

	Conductivity	pH4	pH 7	DO	Turbidity	Comments/Exceptions
Date	9/14/21					
Time	830					
Weather (sky or precip, temp)	Sunny					
Type of Calibration	Standard	Standard	Standard	Standard	Standard	
Standard Value	1413 ~~445~~	4.01	7.00	100% or ~8.5	1000, 10, 0.2 800, 100, 20, <0.1	
Pre-Cal Reading	1385	4.09	7.04	10.05	←	
Post Cal Reading	1413	4.01	7.00	8.5	—	
Discrepancy	No					
Calib. Successful?	Yes					
Calibration by	AEL					
Instrument Type, ID	MP20 YSI 556			MicoTPW / HACH2000		
Calibration Location	LRI 301 @ Flare					

* If Direct Reading is Unavailable, Assume pressure = 760 mm - 2.5 (altitude in ft/100)

★ Decon'd w/ spring water

GROUNDWATER SAMPLING INSTRUMENT CALIBRATION DOCUMENTATION FORM

	Conductivity	pH 4	pH 7	D.O.	Turbidity	Comments/Exceptions
Date	9/15/21					
Time	900					
Weather (sky or precip, temp)	sunny					
Type of Calibration	Standard	Standard	Standard	Standard	Standard	
Standard Value	1413	4.01	7.00	100% or ~8.5	1000, 10, 0.2 800, 100, 20, <0.1	
Pre-Cal Reading	1420	4.40	7.40			
Post Cal Reading	1413	4.60		8.5		
Discrepancy	pH calibration failed. Checked measured values against historic data and it was O.K.					
Calib. Successful?	see above					
Calibration by	SEB					
Instrument Type, ID	YSI Pro DDS / YSI 556 / Rental			YSI Pro DDS / HACH2000		
Calibration Location	304th					

* If Direct Reading is Unavailable, Assume pressure = 760 mm - 2.5 (altitude in ft/100)

GROUNDWATER SAMPLING INSTRUMENT CALIBRATION DOCUMENTATION FORM

	Conductivity	pH4	pH 7	DO	Turbidity	Comments/Exceptions
Date	9/15/21					
Time	900					
Weather (sky or precip, temp)	Cloudy					
Type of Calibration	Standard	Standard	Standard	Standard	Standard	
Standard Value	1413 ~~445~~	4.01	7.00	100% or ~8.5	1000, 10, 0.2 800, 100, 20, <0.1	
Pre-Cal Reading	1428	3.99	7.03	6.96	—	
Post Cal Reading	1413	4.01	7.00	8.5	—	
Discrepancy	No					
Calib. Successful?	Yes					
Calibration by	AEL					
Instrument Type, ID	MP20 / YSI 556			MicoTPW / HACH2000		
Calibration Location	LRI @ Flare					

* If Direct Reading is Unavailable, Assume pressure = 760 mm - 2.5 (altitude in ft/100)

GROUNDWATER SAMPLING INSTRUMENT CALIBRATION DOCUMENTATION FORM

	Conductivity	pH4	pH 7	DO	Turbidity	Comments/Exceptions
Date	9/16/21					
Time	1045					
Weather (sky or precip, temp)	Sunny					
Type of Calibration	Standard	Standard	Standard	Standard	Standard	
Standard Value	1413 ~~445~~	4.01	7.00	100% or ~8.5	1000, 10, 0.2 800, 100, 20, <0.1	
Pre-Cal Reading	1406	4.07	6.98	10.04	—	
Post Cal Reading	1413	4.01	7.00	8.5	—	
Discrepancy	No					
Calib. Successful?	Yes					
Calibration by	AEL					
Instrument Type, ID	MP20 / YSI 556			MicoTPW / HACH2060		
Calibration Location	@ Cell 5					

* If Direct Reading is Unavailable, Assume pressure = 760 mm - 2.5 (altitude in ft/100)

GROUNDWATER SAMPLING INSTRUMENT CALIBRATION DOCUMENTATION FORM

	Conductivity	pH4	pH 7	DO	Turbidity	Comments/Exceptions
Date	8/19/21					
Time	09:40					
Weather (sky or precip, temp)	Sunny					
Type of Calibration	Standard	Standard	Standard	Standard	Standard	
Standard Value	1413	4.01	7.00	100% or ~8.5	1000, 10, 0.2 800, 100, 20, <0.1	
Pre-Cal Reading	1438	3.98	6.97			
Post Cal Reading	1413	4.01	7.00	8.5		
Discrepancy	no					
Calib. Successful?	yes					
Calibration by	RMB					
Instrument Type, ID	MP20 / YSI 556 DDS				MicoTPW / HACH2000	
Calibration Location	LRI 304					

* If Direct Reading is Unavailable, Assume pressure = 760 mm - 2.5 (altitude in ft/100)

GROUNDWATER SAMPLING INSTRUMENT CALIBRATION DOCUMENTATION FORM

	Conductivity	pH 4	pH 7	D.O.	Turbidity	Comments/Exceptions
Date	10/15/21					LRI 304 cell & background
Time	11:00					
Weather (sky or precip, temp)	Cloudy					
Type of Calibration	Standard	Standard	Standard	Standard	Standard	
Standard Value	1413	4.01	7.00	100% or ~8.5	1000, 10, 0.2 100, 20, <0.1	
Pre-Cal Reading	1480	4.08	7.13	8.43	—	
Post Cal Reading	1413	4.01	7.00	8.5	—	
Discrepancy	no					
Calib. Successful?	yes					
Calibration by	RMB					
Instrument Type, ID	YSI Pro DDS / YSI 556 / Rental				YSI Pro DDS / HACH2000	
Calibration Location	Parking lot of site					

* If Direct Reading is Unavailable, Assume pressure = 760 mm - 2.5 (altitude in ft/100)

GROUNDWATER SAMPLING INSTRUMENT CALIBRATION DOCUMENTATION FORM

	Conductivity	pH 4	pH 7	D.O.	Turbidity	Comments/Exceptions
Date	10/21/21					
Time	945					
Weather (sky or precip, temp)	cloudy					
Type of Calibration	Standard	Standard	Standard	Standard	Standard	
Standard Value	1413	167.1 4.01	0.1 7.00	100% or ~8.5	1000, 10, 0.2 100, 20, <0.1	
Pre-Cal Reading	1351	4.05	7.15	8.56		
Post Cal Reading	1413	4.00	7.00	8.50		
Discrepancy	100					
Calib. Successful?	yes					
Calibration by	SEB					
Instrument Type, ID	YSI Pro DDS / YSI 556 / Rental				YSI Pro DDS / HACH2000	
Calibration Location	LRI 304th					

* If Direct Reading is Unavailable, Assume pressure = 760 mm - 2.5 (altitude in ft/100)

LRI Landfill
Water Level Data

Date: 9/14 - 9/16/21
 Measured by: AEL

	Ground Elevation	PVC Elevation	Total Depth	Depth to Water	Water Level Elevation	Time	Comments
Wells							
W87-2A	662.5	664.01		21.40'	664.01	1440 9/15/21	DTB: 102.05'
W88-3M	654.8	656.48		17.05'	656.48	905 9/16/21	↓ 2.00'
W87-4a	691.9	693.29		10.80'	693.29	1435 9/15/21	25.50'
W88-7A	631.3	632.51		lost	632.51		
W88-8M	719.7	721.05		41.85'	721.05	1300 9/16/21	81.50'
W90-12A	638.6	640.84		38.05'	640.84	1345 9/16/21	78.50'
W95-14A	678.6	680.49	52.46	4.22	680.49		
MW-1A	653.2	652.57	75.7	20.80'	652.57	1114 9/14/21	
MW-2A	652.2	651.93	67.2	20.75'	651.93	912 9/14/21	
MW-3	635.7	637.41	70.4	10.70'	637.41	1015 9/14/21	
MW-4		652.37		25.42	652.37	9/15/21	
MW-5		654.40		abandoned	654.40		
MW-5A		655.55		29.55'	655.55	1220 9/14/21	
MW-6	633.4	635.71	52.4	13.30'	635.71	1350 9/14/21	
MW-7	654.7	656.03	58.0	27.50'	656.03	1518 9/14/21	
MW-9	699.1	701.77	76.8	12.90	701.77	9/15/21	
MW-10	671.5	674.17		29.20	674.17	9/15/21	
Piezometers							
P88-2a	633.0	663.96		lost			
P88-2b	633.0	663.48		lost			
P88-3a	655.1	656.20	27.4	20.70'	656.20	855 9/16/21	27.30'
P88-3b	655.1	655.98	39.8	23.40'	655.98	857 9/16/21	39.70'
P95-8a	721.2	722.07		25.25'	722.07	1308 9/16/21	28.60'
P90-12a	638.6	640.79		12.90'		1353 9/16/21	26.35'
P90-12b	638.6	640.73		11.30'		1350 9/16/21	16.80'
P90-13a	643.5	645.19		lost			
P90-13b	643.5	643.63		lost			
P13-14A				26.80'		1200 9/15/21	45.60'
GP-1P		652.00			652.00		
GP-2P		656.61			656.61		
GP-3P		658.51			658.51		
GP-4P		662.01			662.01		
GP-9P		674.03			674.03		
GP-10P		649.86			649.86		
GP-11P	P21-1			9.90'		942 9/16/21	41.85'
GP-12P	P21-2			23.60'		1005 9/16/21	50.40'
GP-13P	P21-3			8.85'		457 9/16/21	49.25'
South Creek							
		Head Wall					
SWSC-1		632.79		3.40		1320 9/16/21	From Top of concrete
SWSC-2		629.95		Dry	629.95	1420 9/16/21	8.45'
Leak Detection System							
LDCS-1		657.26		27.45	657.26	9/14/21	
LDCS-2A		659.24		29.68	659.24		
LDCS-2B		661.70		28.20	661.70		



Attachment D

Statistical Calculations

Groundwater Prediction Limits (mg/L)
Appendix I Parameters, Third Quarter 2021
LRI Landfill, Pierce County, Washington

	MRL (typical)	Prediction Limit	MW-1/ MW-1A	MW-2/ MW-2A	MW-3	MW-4	MW-5/ MW-5A	MW-6	MW-7	MW-9	MW-10
Antimony	0.050	0.050 L	0.050 L	0.050 L	0.050 L	0.050 L	0.050 L	0.050 L	0.050 L	0.050 L	0.050 L
Arsenic	0.005	0.011	0.005 L	0.005 L	0.005 L	0.011	0.008	0.008	0.006	0.005 L	0.005 L
Barium	0.005	0.091	0.030	0.018	0.015	0.091	0.036	0.014	0.016	0.0057	0.016
Beryllium	0.005	0.005 L	0.005 L	0.005 L	0.005 L	0.005 L	0.005 L	0.001 L	0.005 L	0.001 L	0.005 L
Cadmium	0.005	0.005 L	0.005 L	0.005 L	0.005 L	0.005 L	0.005 L	0.005 L	0.005 L	0.005 L	0.005 L
Chromium	0.005	0.011	0.005 L	0.005 L	0.005 L	0.011	0.005	0.005 L	0.005 L	0.005 L	0.005 L
Cobalt	0.010	0.010 L	0.010 L	0.010 L	0.010 L	0.004	0.010 L	0.010 L	0.010 L	0.010 L	0.010 L
Copper	0.010	0.063	0.010 L	0.010 L	0.010 L	0.063	0.010 L	0.010 L	0.010 L	0.010 L	0.010 L
Lead	0.002	0.042	0.002 L	0.002 L	0.002 L	0.042	0.002 L	0.002 L	0.002 L	0.002 L	0.002 L
Nickel	0.020	0.020 L	0.020 L	0.020 L	0.020 L	0.020 L	0.020 L	0.020 L	0.020 L	0.020 L	0.020 L
Selenium	0.005	0.005 L	0.005 L	0.005 L	0.005 L	0.005 L	0.005 L	0.005 L	0.005 L	0.005 L	0.005 L
Silver	0.010	0.010 L	0.010 L	0.010 L	0.010 L	0.010 L	0.010 L	0.010 L	0.010 L	0.010 L	0.010 L
Thallium	0.005	0.005 L	0.005 L	0.005 L	0.005 L	0.005 L	0.005 L	0.005 L	0.005 L	0.005 L	0.005 L
Vanadium	0.010	0.016	0.010 L	0.010 L	0.010 L	0.014	0.010 L	0.010 L	0.010 L	0.016	0.010 L
Zinc	0.01	0.290	0.032	0.010 L	0.010 L	0.290	0.010	0.010 L	0.010 L	0.043	0.034
Nitrate as Nitrogen	0.50	6.40	0.500 L	0.500 L	0.500 L	0.500 L	0.500 L	0.500 L	0.500 L	0.500 L	6.40

Notes:

Prediction Limits are shown in bold.

Prediction Limits for metals are for total metals.

L = not reported at or above the MRL (Method Reporting Limit).

mg/L = milligrams per liter.

Statistical Summary of Total Metals and Nitrate Groundwater Data
Appendix I Parameters, Third Quarter 2021
LRI Landfill, Pierce County, Washington

Location ID	Antimony (Sb)		Arsenic (As)		Barium (Ba)		Beryllium (Be)		Cadmium (Cd)		Chromium (Cr)		Cobalt (Co)		Copper (Cu)		Lead (Pb)		Nickel (Ni)		Selenium (Se)		Silver (Ag)		Thallium (Tl)		Vanadium (V)		Zinc (Zn)		Nitrate (NO ₃)	
Monitoring Date	Result	Conc.	Result	Conc.	Result	Conc.	Result	Conc.	Result	Conc.	Result	Conc.	Result	Conc.	Result	Conc.	Result	Conc.	Result	Conc.	Result	Conc.	Result	Conc.	Result	Conc.	Result	Conc.	Result	Conc.	Result	Conc.
MW-1																																
3/24/2014	0.002	L 0.001	0.005	L 0.0025	0.022	0.022	0.001	L 0.0005	0.005	L 0.0025	0.002	L 0.001	0.01	L 0.005	0.002	L 0.001	0.001	L 0.0005	0.002	L 0.001	0.005	L 0.0025	0.01	L 0.005	0.001	L 0.0005	0.01	L 0.005	0.01	L 0.005	0.5	L 0.25
6/24/2014	0.002	L 0.001	0.005	L 0.0025	0.02	0.02	0.001	L 0.0005	0.005	L 0.0025	0.002	L 0.001	0.01	L 0.005	0.002	L 0.001	0.001	L 0.0005	0.002	L 0.001	0.005	L 0.0025	0.01	L 0.005	0.001	L 0.0005	0.01	L 0.005	0.01	L 0.005	0.5	L 0.25
9/17/2014	0.05	L 0.025	0.005	L 0.0025	0.024	0.024	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.01	L 0.005	0.01	L 0.005	0.002	L 0.001	0.02	L 0.01	0.005	L 0.0025	0.01	L 0.005	0.005	L 0.0025	0.01	L 0.005	0.02	0.02	0.5	L 0.25
12/16/2014	0.05	L 0.025	0.005	L 0.0025	0.03	0.03	0.001	L 0.0005	0.001	L 0.0005	0.005	L 0.0025	0.001	L 0.0005	0.01	L 0.005	0.002	L 0.001	0.02	L 0.01	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.032	0.032	0.5	L 0.25
3/23/2015	0.05	L 0.025	0.005	L 0.0025	0.02	0.02	0.001	L 0.0005	0.001	L 0.0005	0.005	L 0.0025	0.001	L 0.0005	0.01	L 0.005	0.002	L 0.001	0.02	L 0.01	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.01	L 0.005	0.5	L 0.25
6/8/2015	0.05	L 0.025	0.005	L 0.0025	0.022	0.022	0.001	L 0.0005	0.001	L 0.0005	0.005	L 0.0025	0.001	L 0.0005	0.01	L 0.005	0.002	L 0.001	0.02	L 0.01	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.01	L 0.005	0.5	L 0.25
9/16/2015	0.05	L 0.025	0.005	L 0.0025	0.021	0.021	0.001	L 0.0005	0.001	L 0.0005	0.005	L 0.0025	0.001	L 0.0005	0.01	L 0.005	0.002	L 0.001	0.02	L 0.01	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.01	L 0.005	0.5	L 0.25
12/14/2015	0.05	L 0.025	0.005	L 0.0025	0.024	0.024	0.001	L 0.0005	0.001	L 0.0005	0.005	L 0.0025	0.001	L 0.0005	0.01	L 0.005	0.002	L 0.001	0.02	L 0.01	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.01	L 0.005	0.5	L 0.25
Number Analyzed	8		8		8		8		8		8		8		8		8		8		8		8		8		8		8		8	
Number Detected	0		0		8		0		0		0		0		0		0		0		0		0		0		0		2		0	
Minimum Concentration		0.001		0.0025		0.02		0.0005		0.0005		0.001		0.0005		0.001		0.0005		0.001		0.0025		0.0025		0.0005		0.0025		0.005		0.25
Maximum Concentration		0.025		0.0025		0.03		0.0025		0.0025		0.0025		0.005		0.005		0.001		0.01		0.0025		0.0025		0.005		0.0025		0.032		0.25
Average Concentration		NC		NC		0.02288		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC
Variance		NC		NC		1.1E-05		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC
Standard Deviation		NC		NC		0.0033		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC
Coefficient of Variation (%)		NC		NC		14.2974		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC
Standard Error		NC		NC		0.00116		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC
MW-2																																
3/24/2014	0.002	L 0.001	0.005	L 0.0025	0.014	0.014	0.001	L 0.0005	0.005	L 0.0025	0.002	L 0.001	0.01	L 0.005	0.002	L 0.001	0.001	L 0.0005	0.002	L 0.001	0.005	L 0.0025	0.01	L 0.005	0.001	L 0.0005	0.01	L 0.005	0.01	L 0.005	0.5	L 0.25
6/26/2014	0.002	L 0.001	0.005	L 0.0025	0.015	0.015	0.001	L 0.0005	0.005	L 0.0025	0.002	L 0.001	0.01	L 0.005	0.002	L 0.001	0.001	L 0.0005	0.002	L 0.001	0.005	L 0.0025	0.01	L 0.005	0.001	L 0.0005	0.01	L 0.005	0.01	L 0.005	0.5	L 0.25
9/16/2014	0.05	L 0.025	0.005	L 0.0025	0.018	0.018	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.01	L 0.005	0.01	L 0.005	0.002	L 0.001	0.02	L 0.01	0.005	L 0.0025	0.01	L 0.005	0.005	L 0.0025	0.01	L 0.005	0.01	L 0.005	0.5	L 0.25
12/16/2014	0.05	L 0.025	0.005	L 0.0025	0.014	0.014	0.001	L 0.0005	0.001	L 0.0005	0.005	L 0.0025	0.001	L 0.0005	0.01	L 0.005	0.002	L 0.001	0.02	L 0.01	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.01	L 0.005	0.5	L 0.25
3/23/2015	0.05	L 0.025	0.005	L 0.0025	0.012	0.012	0.001	L 0.0005	0.001	L 0.0005	0.005	L 0.0025	0.001	L 0.0005	0.01	L 0.005	0.002	L 0.001	0.02	L 0.01	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.01	L 0.005	0.5	L 0.25
6/8/2015	0.05	L 0.025	0.005	L 0.0025	0.013	0.013	0.001	L 0.0005	0.001	L 0.0005	0.005	L 0.0025	0.001	L 0.0005	0.01	L 0.005	0.002	L 0.001	0.02	L 0.01	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.01	L 0.005	0.5	L 0.25
9/16/2015	0.05	L 0.025	0.005	L 0.0025	0.013	0.013	0.001	L 0.0005	0.001	L 0.0005	0.005	L 0.0025	0.001	L 0.0005	0.01	L 0.005	0.002	L 0.001	0.02	L 0.01	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.01	L 0.005	0.5	L 0.25
12/14/2015	0.05	L 0.025	0.005	L 0.0025	0.014	0.014	0.001	L 0.0005	0.001	L 0.0005	0.005	L 0.0025	0.001	L 0.0005	0.01	L 0.005	0.002	L 0.001	0.02	L 0.01	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.01	L 0.005	0.5	L 0.25
Number Analyzed	8		8		8		8		8		8		8		8		8		8		8		8		8		8		8		8	
Number Detected	0		0		8		0		0		0		0		0		0		0		0		0		0		0		0		0	
Minimum Concentration		0.001		0.0025		0.012		0.0005		0.0005		0.001		0.0005		0.001		0.0005		0.001		0.0025		0.0025		0.0005		0.0025		0.005		0.25
Maximum Concentration		0.025		0.0025		0.018		0.0025		0.0025		0.0025		0.005		0.005		0.001		0.01		0.0025		0.005		0.0025		0.005		0.005		0.25
Average Concentration		NC		NC		0.01413		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC
Variance		NC		NC		3.3E-06		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC
Standard Deviation		NC		NC		0.00181		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC
Coefficient of Variation (%)		NC		NC		12.798		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC
Standard Error		NC		NC		0.00064		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC
MW-3																																
3/26/2014	0.002	L 0.001	0.005	L 0.0025																												

Statistical Summary of Total Metals and Nitrate Groundwater Data
Appendix I Parameters, Third Quarter 2021
LRI Landfill, Pierce County, Washington

Location ID	Antimony (Sb)		Arsenic (As)		Barium (Ba)		Beryllium (Be)		Cadmium (Cd)		Chromium (Cr)		Cobalt (Co)		Copper (Cu)		Lead (Pb)		Nickel (Ni)		Selenium (Se)		Silver (Ag)		Thallium (Tl)		Vanadium (V)		Zinc (Zn)		Nitrate (NO ₃)	
Monitoring Date	Result	Conc.	Result	Conc.	Result	Conc.	Result	Conc.	Result	Conc.	Result	Conc.	Result	Conc.	Result	Conc.	Result	Conc.	Result	Conc.	Result	Conc.	Result	Conc.	Result	Conc.	Result	Conc.	Result	Conc.	Result	Conc.
MW-4																																
3/24/2014	0.002	L 0.001	0.0074	0.0074	0.012	0.012	0.001	L 0.0005	0.005	L 0.0025	0.002	L 0.001	0.01	L 0.005	0.002	L 0.001	0.001	L 0.0005	0.002	L 0.001	0.005	L 0.0025	0.01	L 0.005	0.001	L 0.0005	0.01	L 0.005	0.01	L 0.005	0.5	L 0.25
6/25/2014	0.002	L 0.001	0.0086	0.0086	0.012	0.012	0.001	L 0.0005	0.005	L 0.0025	0.002	L 0.001	0.01	L 0.005	0.002	L 0.001	0.001	L 0.0005	0.002	L 0.001	0.005	L 0.0025	0.01	L 0.005	0.001	L 0.0005	0.01	L 0.005	0.01	L 0.005	0.5	L 0.25
9/17/2014	0.05	L 0.025	0.0099	0.0099	0.013	0.013	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.01	L 0.005	0.01	L 0.005	0.002	L 0.001	0.02	L 0.01	0.005	L 0.0025	0.01	L 0.005	0.005	L 0.0025	0.01	L 0.005	0.01	L 0.005	0.5	L 0.25
12/16/2014	0.05	L 0.025	0.0076	0.0076	0.011	0.011	0.001	L 0.0005	0.001	L 0.0005	0.005	L 0.0025	0.001	L 0.0005	0.01	L 0.005	0.002	L 0.001	0.02	L 0.01	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.01	L 0.005	0.5	L 0.25
3/24/2015	0.05	L 0.025	0.0079	0.0079	0.013	0.013	0.001	L 0.0005	0.001	L 0.0005	0.005	L 0.0025	0.001	L 0.0005	0.01	L 0.005	0.002	L 0.001	0.02	L 0.01	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.01	L 0.005	0.5	L 0.25
6/9/2015	0.05	L 0.025	0.0094	0.0094	0.013	0.013	0.001	L 0.0005	0.001	L 0.0005	0.005	L 0.0025	0.001	L 0.0005	0.01	L 0.005	0.002	L 0.001	0.02	L 0.01	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.01	L 0.005	0.5	L 0.25
9/18/2015	0.05	L 0.025	0.0094	0.0094	0.017	0.017	0.001	L 0.0005	0.001	L 0.0005	0.005	L 0.0025	0.001	L 0.0005	0.01	L 0.005	0.002	L 0.001	0.02	L 0.01	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.014	0.014	0.5	L 0.25
12/15/2015	0.05	L 0.025	0.011	0.011	0.091	0.091	0.001	L 0.0005	0.001	L 0.0005	0.011	0.011	0.0039	0.0039	0.063	0.063	0.042	0.042	0.02	L 0.01	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.014	0.014	0.29	0.29	0.5	L 0.25
Number Analyzed	8		8		8		8		8		8		8		8		8		8		8		8		8		8		8		8	
Number Detected	0		8		8		0		0		1		1		1		1		0		0		0		0		0		2		0	
Minimum Concentration		0.001		0.0074		0.011		0.0005		0.0005		0.001		0.0005		0.001		0.0005		0.001		0.0025		0.0025		0.0005		0.0025		0.005		0.25
Maximum Concentration		0.025		0.011		0.091		0.0025		0.0025		0.011		0.005		0.063		0.042		0.001		0.0025		0.005		0.0025		0.014		0.29		0.25
Average Concentration		NC		0.0089		0.02275		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC
Variance		NC		1.6E-06		0.00076		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC
Standard Deviation		NC		0.00125		0.02763		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC
Coefficient of Variation (%)		NC		14.0465		121.469		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC
Standard Error		NC		0.00044		0.00977		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC
MW-5																																
3/24/2014	0.002	L 0.001	0.0072	0.0072	0.032	0.032	0.001	L 0.0005	0.005	L 0.0025	0.002	L 0.001	0.01	L 0.005	0.002	L 0.001	0.001	L 0.0005	0.002	L 0.001	0.005	L 0.0025	0.01	L 0.005	0.001	L 0.0005	0.01	L 0.005	0.01	L 0.005	0.5	L 0.25
6/25/2014	0.002	L 0.001	0.0067	0.0067	0.033	0.033	0.001	L 0.0005	0.005	L 0.0025	0.0036	0.0036	0.01	L 0.005	0.0061	0.0061	0.001	L 0.0005	0.0043	0.0043	0.005	L 0.0025	0.01	L 0.005	0.001	L 0.0005	0.01	L 0.005	0.01	L 0.005	0.5	L 0.25
9/16/2014	0.05	L 0.025	0.0059	0.0059	0.036	0.036	0.005	L 0.0025	0.005	L 0.0025	0.0051	0.0051	0.01	L 0.005	0.01	L 0.005	0.002	L 0.001	0.02	L 0.01	0.005	L 0.0025	0.01	L 0.005	0.005	L 0.0025	0.01	L 0.005	0.01	L 0.005	0.5	L 0.25
12/16/2014	0.05	L 0.025	0.0055	0.0055	0.022	0.022	0.001	L 0.0005	0.001	L 0.0005	0.005	L 0.0025	0.001	L 0.0005	0.01	L 0.005	0.002	L 0.001	0.02	L 0.01	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.01	L 0.005	0.5	L 0.25
3/23/2015	0.05	L 0.025	0.008	0.008	0.03	0.03	0.001	L 0.0005	0.001	L 0.0005	0.005	L 0.0025	0.001	L 0.0005	0.01	L 0.005	0.002	L 0.001	0.02	L 0.01	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.01	L 0.005	0.5	L 0.25
6/8/2015	0.05	L 0.025	0.0075	0.0075	0.02	0.02	0.001	L 0.0005	0.001	L 0.0005	0.005	L 0.0025	0.001	L 0.0005	0.01	L 0.005	0.002	L 0.001	0.02	L 0.01	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.01	L 0.005	0.5	L 0.25
9/18/2015	0.05	L 0.025	0.005	L 0.0025	0.014	0.014	0.001	L 0.0005	0.001	L 0.0005	0.005	L 0.0025	0.001	L 0.0005	0.01	L 0.005	0.002	L 0.001	0.02	L 0.01	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.01	L 0.005	0.5	L 0.25
12/14/2015	0.05	L 0.025	0.0072	0.0072	0.021	0.021	0.001	L 0.0005	0.001	L 0.0005	0.005	L 0.0025	0.001	L 0.0005	0.01	L 0.005	0.002	L 0.001	0.02	L 0.01	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.01	L 0.005	0.5	L 0.25
Number Analyzed	8		8		8		8		8		8		8		8		8		8		8		8		8		8		8		8	
Number Detected	0		7		8		0		0		2		0		1		0		1		0		0		0		0		1		0	
Minimum Concentration		0.001		0.0025		0.014		0.0005		0.0005		0.001		0.0005		0.001		0.0005		0.001		0.0025		0.0025		0.0005		0.0025		0.005		0.25
Maximum Concentration		0.025		0.008		0.036		0.0025		0.0025		0.0051		0.005		0.0061		0.001		0.01		0.0025		0.005		0.0025		0.005		0.01		0.25
Average Concentration		NC		0.00631		0.026		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC
Variance		NC		3E-06		6E-05		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC
Standard Deviation		NC		0.00175		0.00776		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC
Coefficient of Variation (%)		NC		27.6.																												

**Statistical Summary of Total Metals and Nitrate Groundwater Data
Appendix I Parameters, Third Quarter 2021
LRI Landfill, Pierce County, Washington**

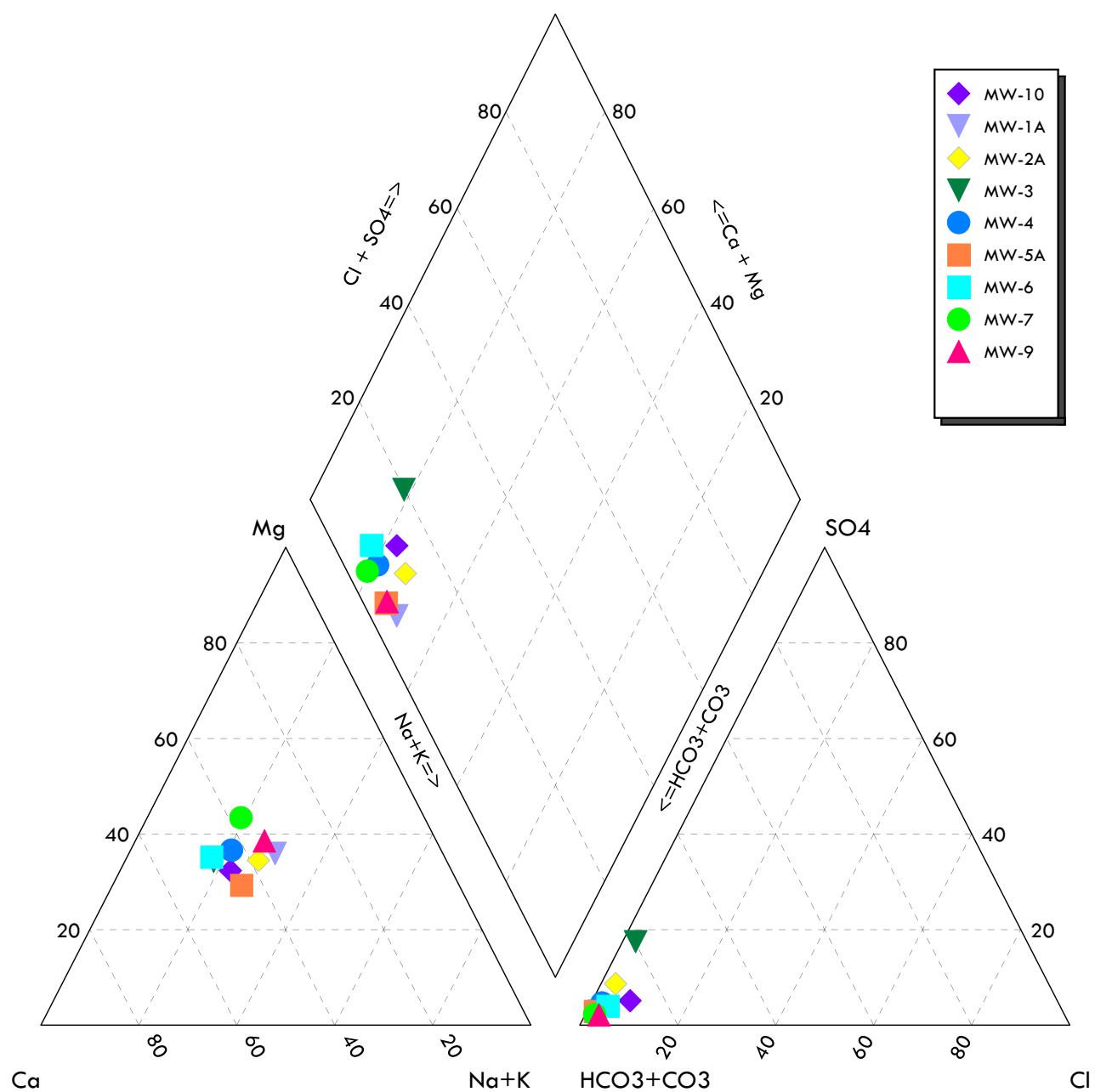
Location ID	Antimony (Sb)		Arsenic (As)		Barium (Ba)		Beryllium (Be)		Cadmium (Cd)		Chromium (Cr)		Cobalt (Co)		Copper (Cu)		Lead (Pb)		Nickel (Ni)		Selenium (Se)		Silver (Ag)		Thallium (Tl)		Vanadium (V)		Zinc (Zn)		Nitrate (NO ₃)		
Monitoring Date	Result	Conc.	Result	Conc.	Result	Conc.	Result	Conc.	Result	Conc.	Result	Conc.	Result	Conc.	Result	Conc.	Result	Conc.	Result	Conc.	Result	Conc.	Result	Conc.	Result	Conc.	Result	Conc.	Result	Conc.	Result	Conc.	
MW-9	3/25/2014	0.002	L 0.001	0.005	L 0.0025	0.0047	0.0047	0.001	L 0.0005	0.005	L 0.0025	0.002	L 0.001	0.01	L 0.005	0.002	L 0.001	0.001	L 0.0005	0.002	L 0.001	0.005	L 0.0025	0.01	L 0.005	0.001	L 0.0005	0.016	0.016	0.01	0.01	0.5	L 0.25
	6/24/2014	0.002	L 0.001	0.005	L 0.0025	0.0045	0.0045	0.001	L 0.0005	0.005	L 0.0025	0.002	L 0.001	0.01	L 0.005	0.002	L 0.001	0.001	L 0.0005	0.002	L 0.001	0.005	L 0.0025	0.01	L 0.005	0.001	L 0.0005	0.016	0.016	0.01	L 0.005	0.5	L 0.25
	9/18/2014	0.002	L 0.001	0.005	L 0.0025	0.0057	0.0057	0.001	L 0.0005	0.005	L 0.0025	0.002	L 0.001	0.01	L 0.005	0.002	L 0.001	0.001	L 0.0005	0.002	L 0.001	0.005	L 0.0025	0.01	L 0.005	0.001	L 0.0005	0.014	0.014	0.014	0.014	0.5	L 0.25
	12/17/2014	0.05	L 0.025	0.005	L 0.0025	0.005	L 0.0025	0.001	L 0.0005	0.001	L 0.0005	0.005	L 0.0025	0.001	L 0.0005	0.01	L 0.005	0.002	L 0.001	0.02	L 0.01	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.014	0.014	0.01	L 0.005	0.5	L 0.25
	3/24/2015	0.05	L 0.025	0.005	L 0.0025	0.005	L 0.0025	0.001	L 0.0005	0.001	L 0.0005	0.005	L 0.0025	0.001	L 0.0005	0.01	L 0.005	0.002	L 0.001	0.02	L 0.01	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.013	0.013	0.01	L 0.005	0.5	L 0.25
	6/9/2015	0.05	L 0.025	0.005	L 0.0025	0.005	L 0.0025	0.001	L 0.0005	0.001	L 0.0005	0.005	L 0.0025	0.001	L 0.0005	0.01	L 0.005	0.002	L 0.001	0.02	L 0.01	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.014	0.014	0.01	L 0.005	0.5	L 0.25
	9/18/2015	0.05	L 0.025	0.005	L 0.0025	0.005	0.005	0.001	L 0.0005	0.001	L 0.0005	0.005	L 0.0025	0.001	L 0.0005	0.01	L 0.005	0.002	L 0.001	0.02	L 0.01	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.014	0.014	0.01	L 0.005	0.5	L 0.25
	12/16/2015	0.05	L 0.025	0.005	L 0.0025	0.005	L 0.0025	0.001	L 0.0005	0.001	L 0.0005	0.005	L 0.0025	0.001	L 0.0005	0.01	L 0.005	0.002	L 0.001	0.02	L 0.01	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.014	0.014	0.042	0.042	0.5	L 0.25
	3/22/2016	0.05	L 0.025	0.005	L 0.0025	0.005	L 0.0025	0.001	L 0.0005	0.001	L 0.0005	0.005	L 0.0025	0.001	L 0.0005	0.01	L 0.005	0.002	L 0.001	0.02	L 0.01	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.014	0.014	0.028	0.028	0.5	L 0.25
	6/8/2016	0.05	L 0.025	0.005	L 0.0025	0.005	0.005	0.001	L 0.0005	0.001	L 0.0005	0.005	L 0.0025	0.001	L 0.0005	0.01	L 0.005	0.002	L 0.001	0.02	L 0.01	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.014	0.014	0.023	0.023	0.5	L 0.25
	9/16/2016	0.05	L 0.025	0.005	L 0.0025	0.005	L 0.002																										

Notes: Metals results are for total metals.
mg/L = milligrams per liter.
L = not reported at or above the MRL (Method Reporting Limit).
One-half the MRL value used for statistical calculations when concentrations not reported at or above the MRL.
NC = not calculated due to insufficient number of reported detections.

Attachment E

Trilinear Diagrams

Third Quarter 2021, Groundwater Monitoring Wells



DESCRIPTION: Piper Diagram - 3Q21 Groundwater

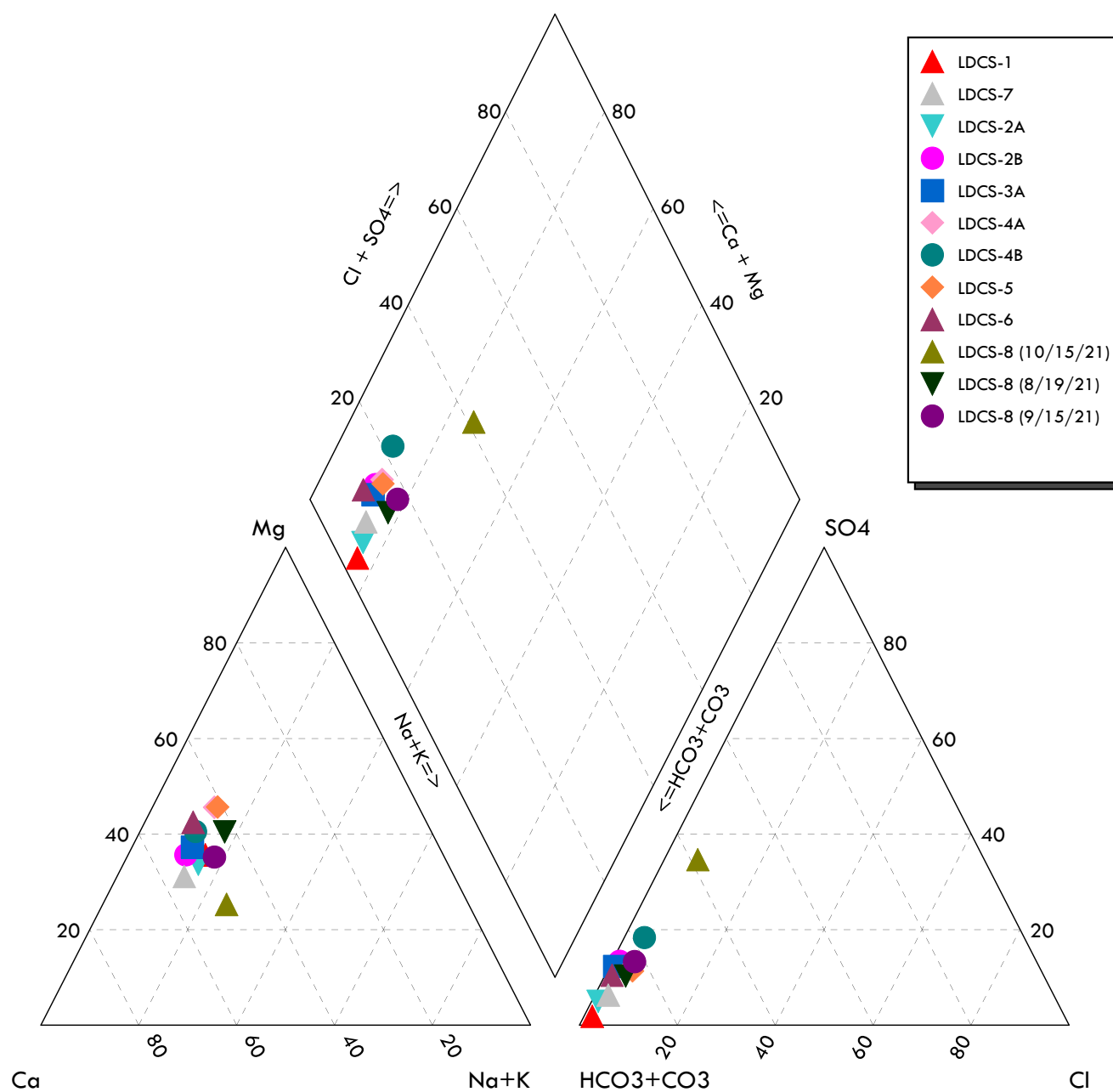
PROJECT: LRI Landfill

PROJECT NO: 04221001.02

CLIENT: LRI, Inc.

DATE: December 2021

Third Quarter 2021, Leak Detection Collection Recovery System



DESCRIPTION: Piper Diagram - 3Q21 LDCRS

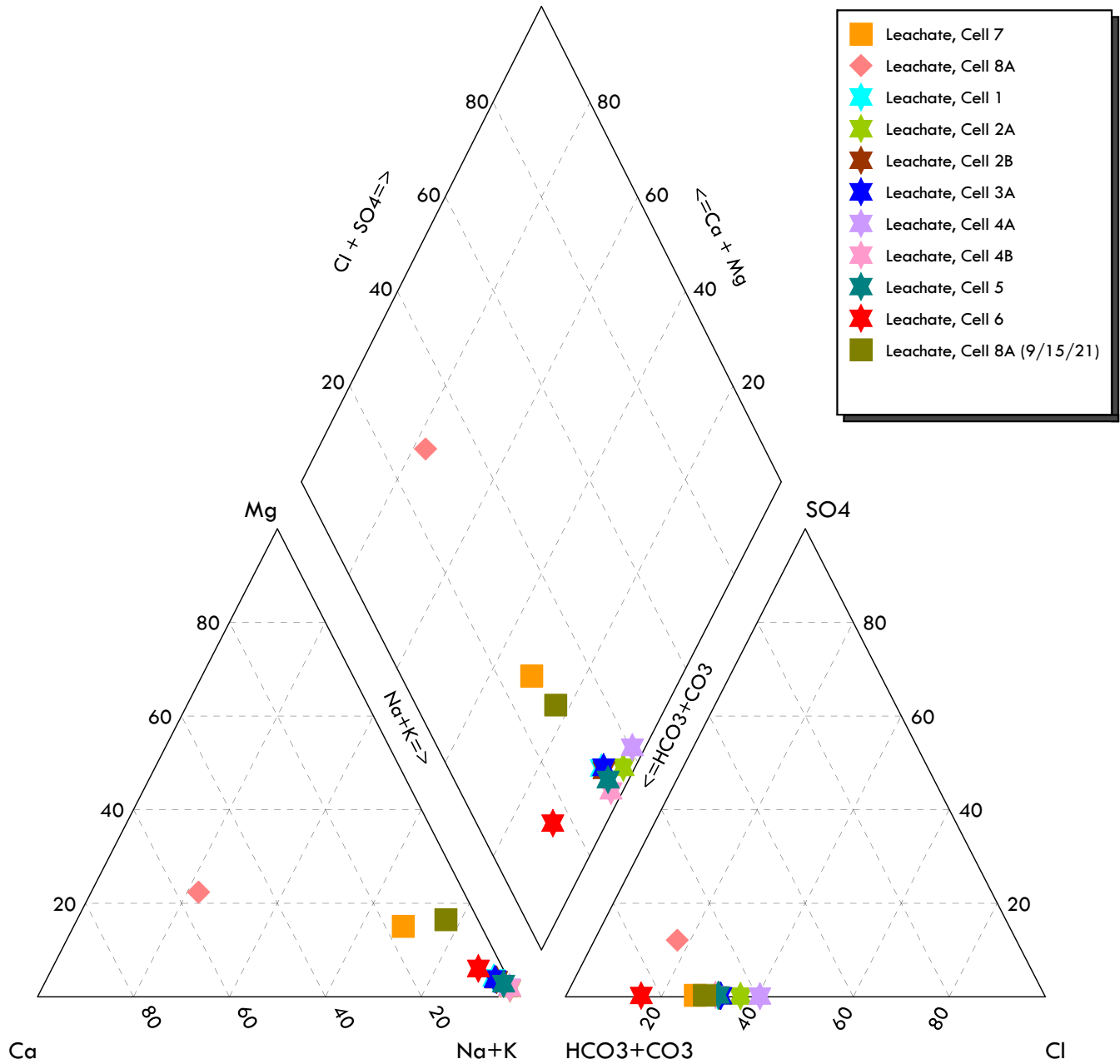
PROJECT: LRI Landfill

PROJECT NO: 04221001.02

CLIENT: LRI, Inc.

DATE: December 2021

Fourth Quarter 2020, Leachate



DESCRIPTION: Piper Diagram - 4Q20 Leachate

PROJECT: LRI Landfill

PROJECT NO: 04221001.02

CLIENT: LRI, Inc.

DATE: December 2021

Attachment F

Analytical Data Validation Report

THIRD QTR. 2021 DATA VALIDATION REPORT – LRI LANDFILL

Project Details

Project No.	04221001.02	Site Name	LRI 304 th Street LF
Data Validator	Sam Graber	Data Level	Level 2
Date	11/4/21	DV Tier	Tier 1
QA Document	LRI Landfill Groundwater Monitoring Plan, March 10, 2014		

Sample Login Summary

Sample Group	Sample Login Comments	Analytical Lab (Primary)
280-152069-1	No comments.	TestAmerica, Denver, CO
280-152962-1	No comments.	TestAmerica, Denver, CO
280-152964-1	Due to a Fedex shipping delay, samples "-07", "-09", "-11", and "-13" were analyzed beyond the holding time for nitrate.	TestAmerica, Denver, CO
280-153023-1	No comments.	TestAmerica, Denver, CO
280-153031-1	No comments.	TestAmerica, Denver, CO
280-153032-1	No comments.	TestAmerica, Denver, CO
280-153089-1	One of the three vials broke in transit for sample "-22". However, sufficient volume remained to proceed with analysis.	TestAmerica, Denver, CO
280-154294-1	No comments.	TestAmerica, Denver, CO
280-154575-1	No comments.	TestAmerica, Denver, CO

Analytical Summary

Sample Group	Analyses					
	TDS/Alk/NO3	Metals	NH3/TOC	VOCs	Anions	TSS
280-152069-1	X	X ¹	X	X	X	--
280-152962-1	X	X ¹	X	X	X	--
280-152964-1	X	X ²	X	X	X	X
280-153023-1	X	X ³	X	X	X	--
280-153031-1	X	X ¹	X	X	X	--
280-153032-1	X	X ²	X	X	X	X
280-153089-1	X	X ¹	X	X	X	--
280-154294-1	X	X ¹	X	X	X	--
280-154575-1	--	--	--	X	--	--

Notes:

1. Dissolved metals analysis performed (field filtered)



2. Dissolved and Total metals analysis performed
3. Total Metals analysis performed

Laboratory Quality Assurance Samples

Lab QA Samples	Results	Comments
Method Blank	Acceptable.	See case narratives.
LCS/LCSD	Acceptable.	See case narratives.
MS/MSD	Acceptable.	See case narratives.
Metals	Acceptable.	See case narratives.
Duplicates	Acceptable.	See case narratives.
Organics	Acceptable.	Reporting limits elevated due to sample matrix (280-153023-1).
General Chemistry	Acceptable.	See case narratives.
General Comments	Acceptable.	See case narratives.

Field Quality Assurance Samples

Field QA Samples	Sample Group	Analytes	Notes
QC-FB	280-153032-1	Acetone (10 ug/L).	
QC-TB	280-152962-1	Chlorobenzene (0.99 ug/L).	
QC-TB	280-152964-1	None.	
QC-TB	280-153031-1	Chlorobenzene (0.59 ug/L).	
QC-TB	280-153032-1	Acetone (36 ug/L).	
QC-TB	280-153089-1	None.	
QC-TB	280-154575-1	None.	

Lab Quality Flags

Flag	Sample Groups	Comments
4	280-152069-1, 280-152962-1, 280-152964-1, 280-153023-1, 280-153031-1, 280-153032-1, 280-153089-1, 280-154294-1	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
E	280-152069-1, 280-153023-1, 280-153031-1, 280-153032-1, 280-153089-1, 280-154294-1	Result exceeded calibration range.
F1	280-152962-1, 280-152964-1, 280-153023-1, 280-153031-1, 280-153032-1, 280-153089-1	MS and/or MSD recovery exceeds the control limits.
H	280-152964-1	Nitrate analysis performed beyond specified holding time.

J	280-152069-1, 280-152962-1, 280-152964-1, 280-153023-1, 280-153031-1, 280-153032-1, 280-153089-1, 280-154294-1	Result is less than RL but greater than or equal to the MDL and concentration is an approximate value.
*+	280-153089-1, 280-154294-1, 280-154575-1	LCS and/or LCSD is outside acceptance limits, high biased.

Duplicate Evaluation

Analyte	Units	MW-5A (304-091421-07)	MW-5A DUP (304-091421-09)	RPD (%)
Alkalinity, Total	mg/L	150	150	0.0
Ammonia	mg/L	0.1 U	0.13	26.1
Barium, Total	mg/L	0.011	0.011	0.0
Calcium, Dissolved	mg/L	25	25	0.0
Chloride	mg/L	1.9	2	5.1
Magnesium, Dissolved	mg/L	10	10	0.0
Manganese, Dissolved	mg/L	0.15	0.15	0.0
Potassium, Dissolved	mg/L	3.4	3.4	0.0
Sodium, Dissolved	mg/L	15	15	0.0
Sulfate	mg/L	4.3	4.4	2.3
Total Dissolved Solids	mg/L	200	170	16.2

U = Non-detection. Reporting limit (RL) used for calculation of RPD when necessary.

Additional Data Flags

Flag	Description
U	Not detected above the method reporting limit.

Qualified Data and Usability

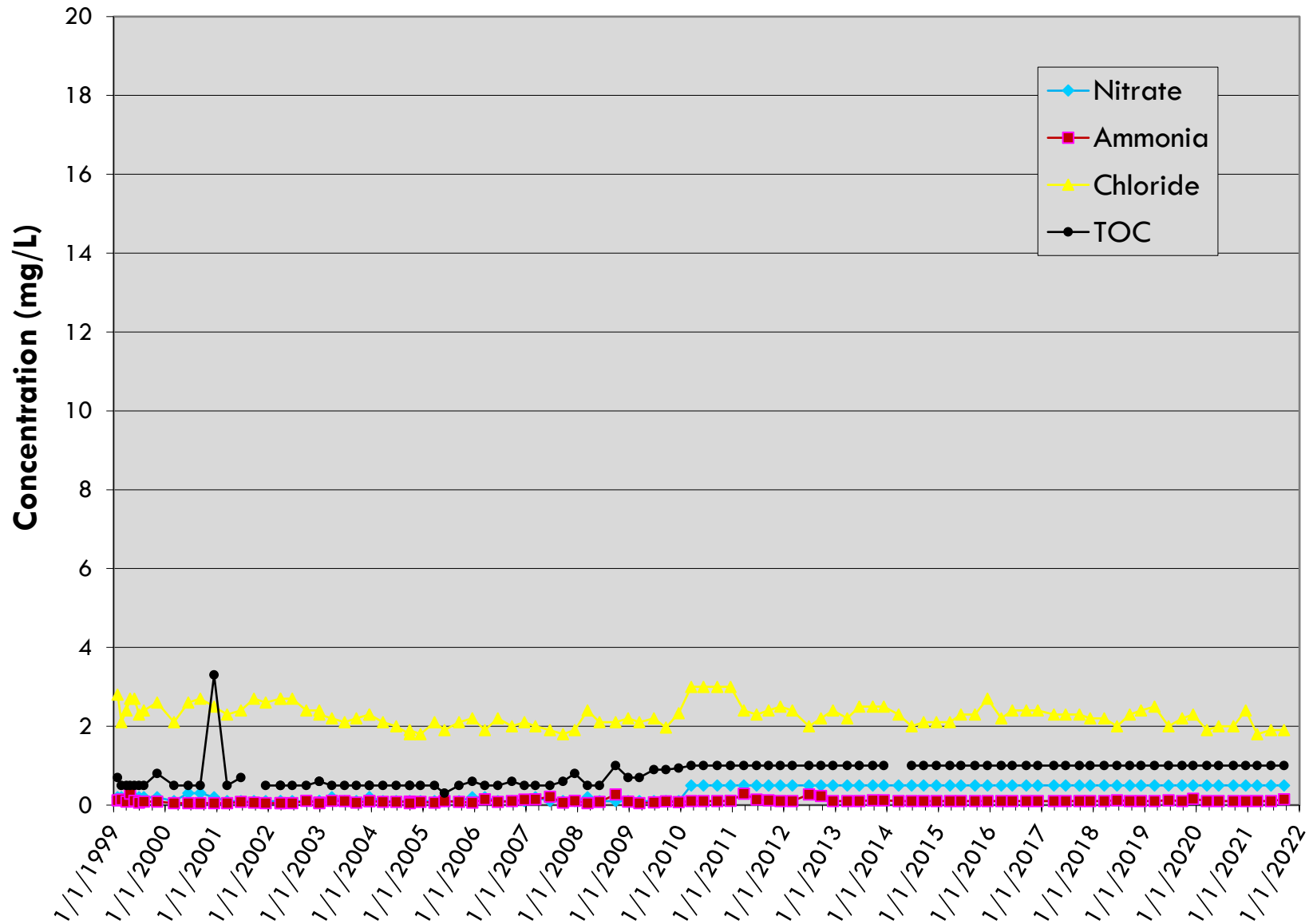
Lab qualifiers are noted. All data, as qualified, are acceptable for use.

Attachment G

Groundwater and LDCS Time Trend Plots

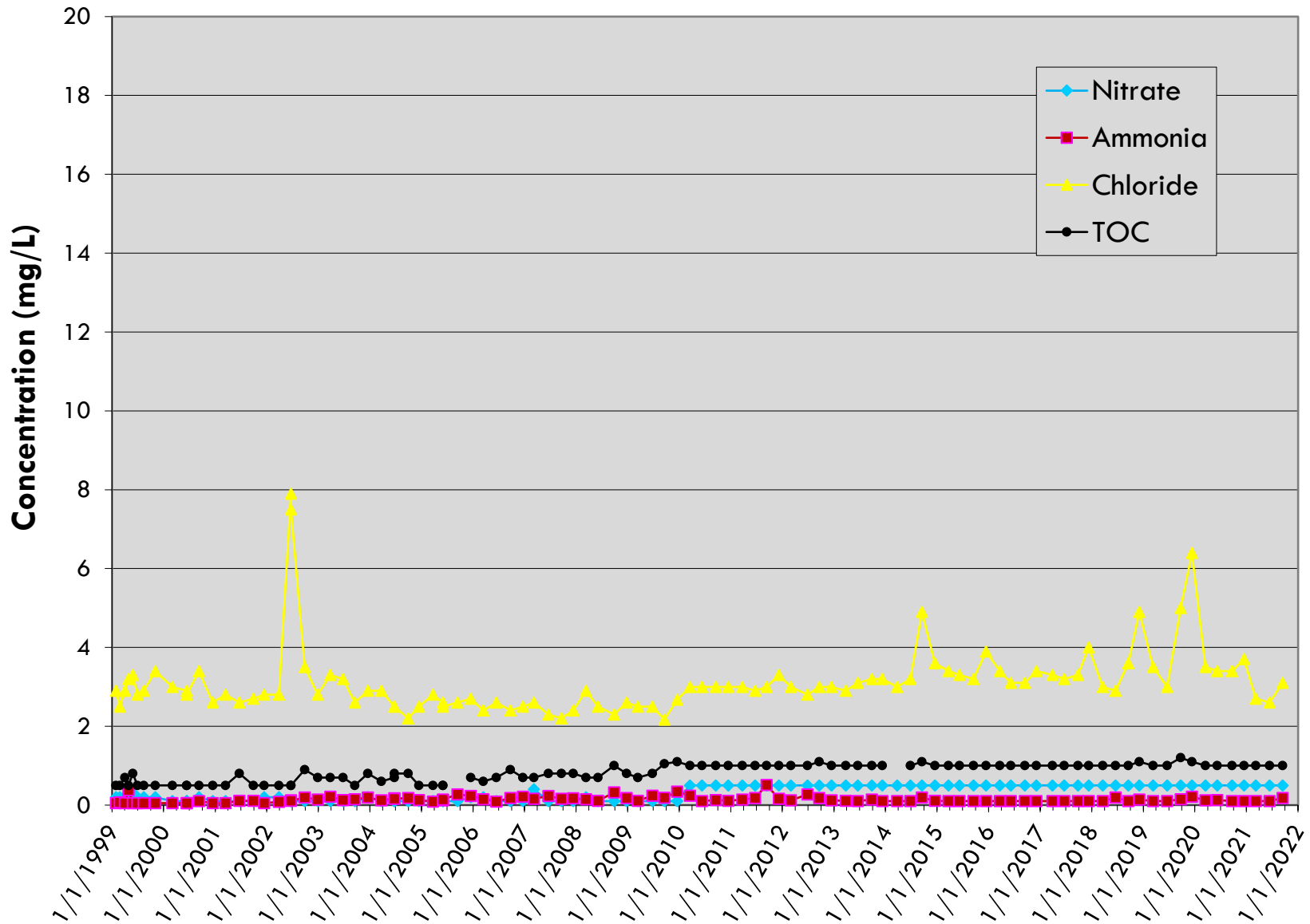
MW-1A

LRI Landfill, Pierce County, Washington



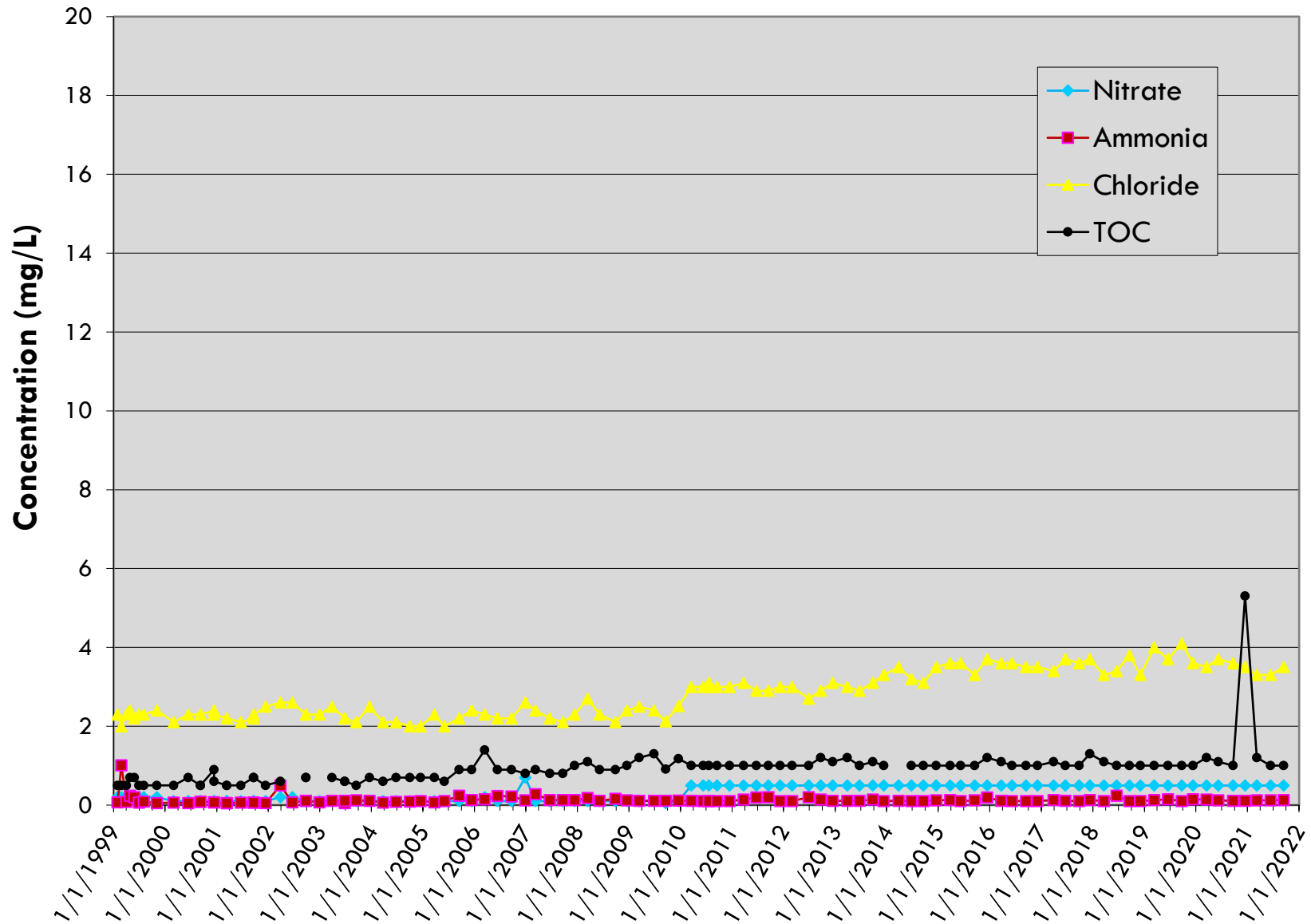
MW-2A

LRI Landfill, Pierce County, Washington



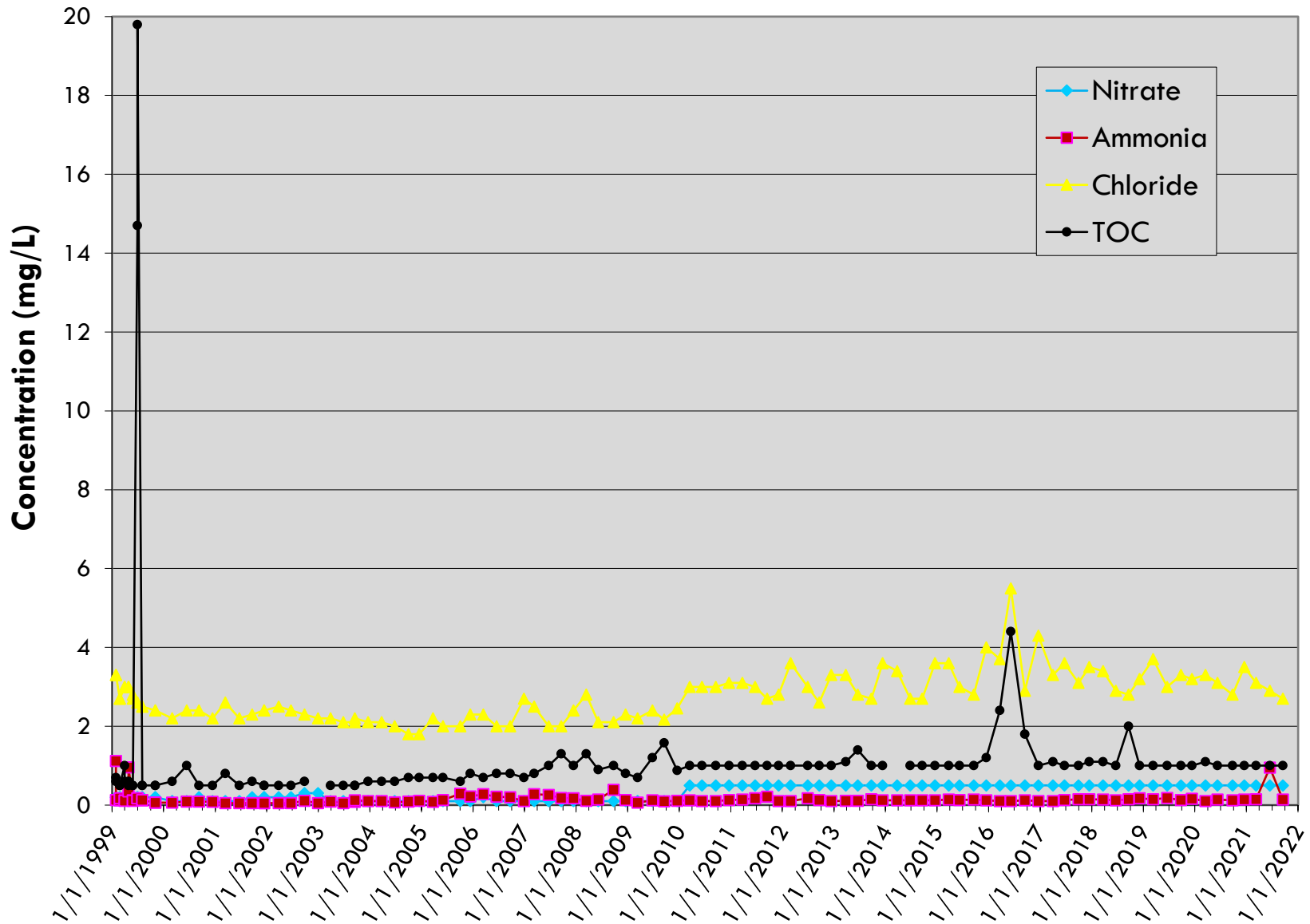
MW-3

LRI Landfill, Pierce County, Washington



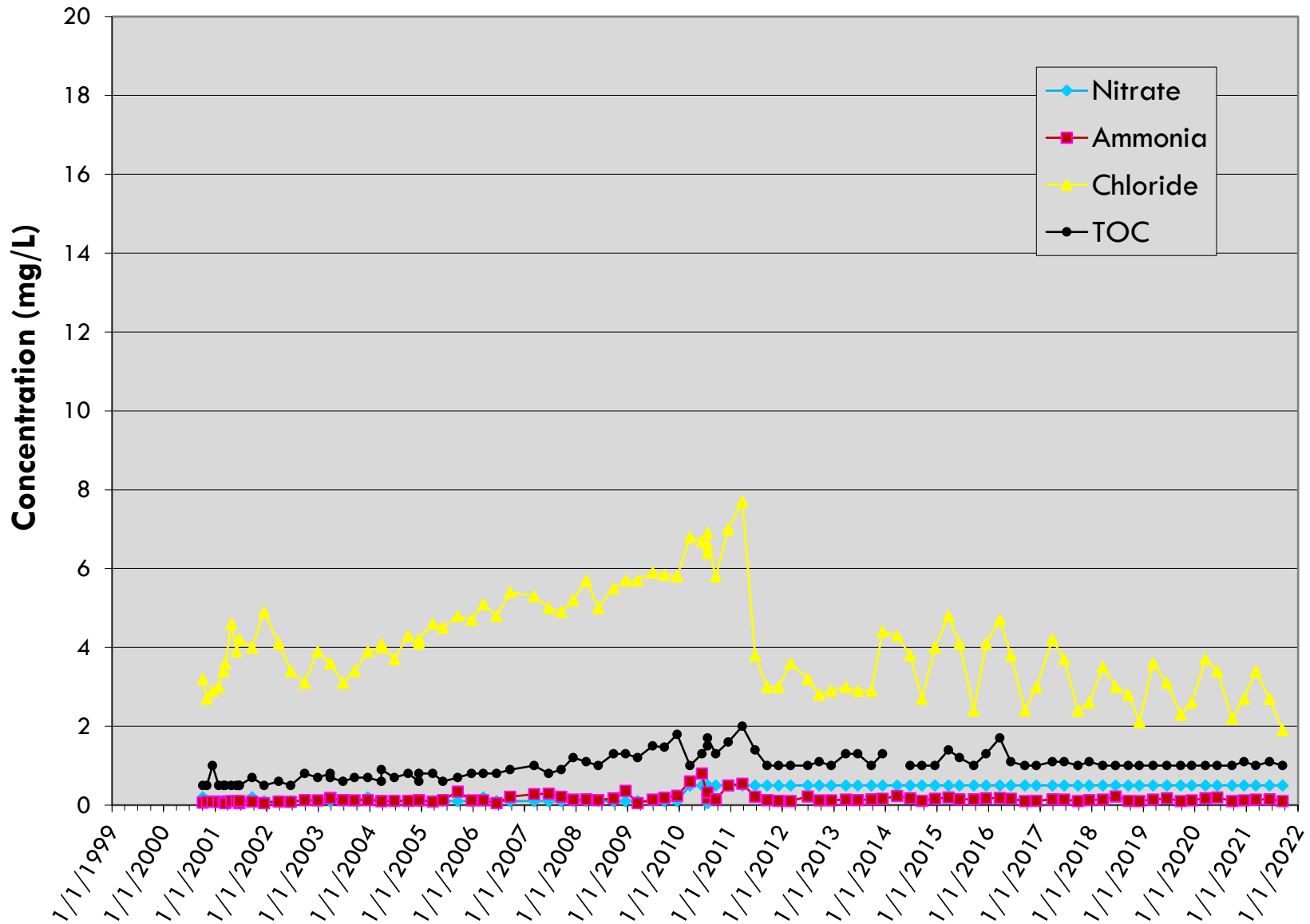
MW-4

LRI Landfill, Pierce County, Washington



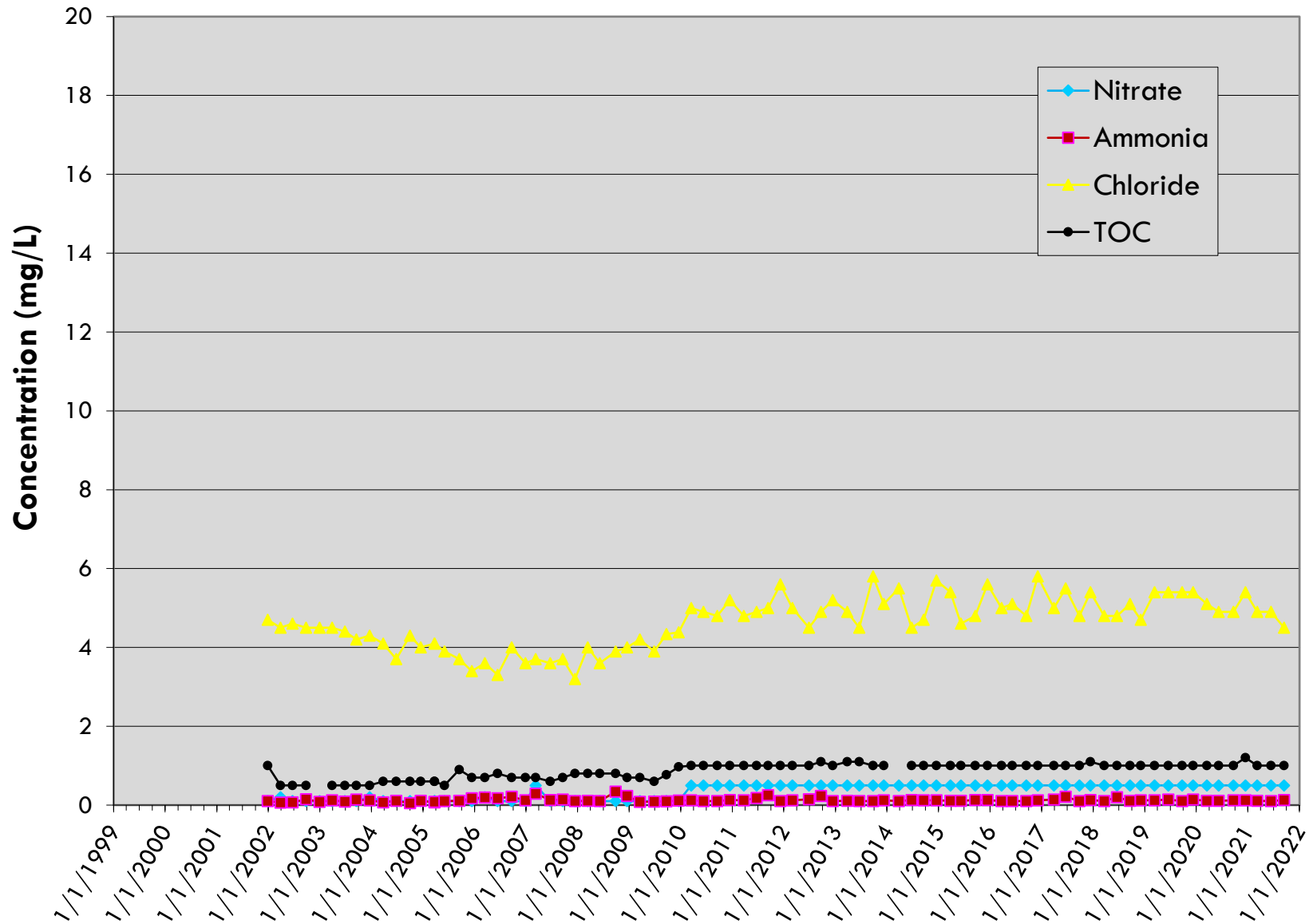
MW-5A

LRI Landfill, Pierce County, Washington



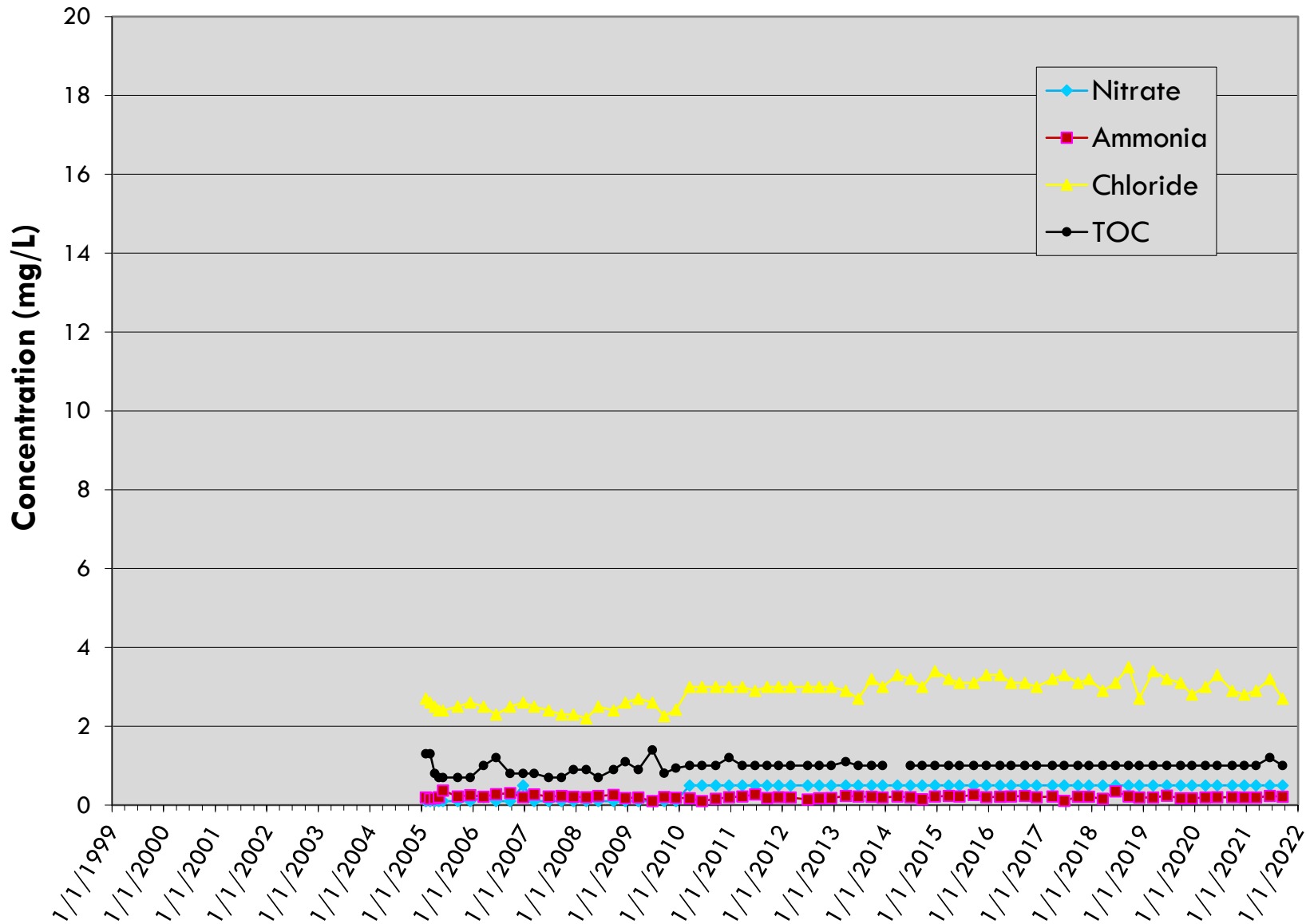
MW-6

LRI Landfill, Pierce County, Washington

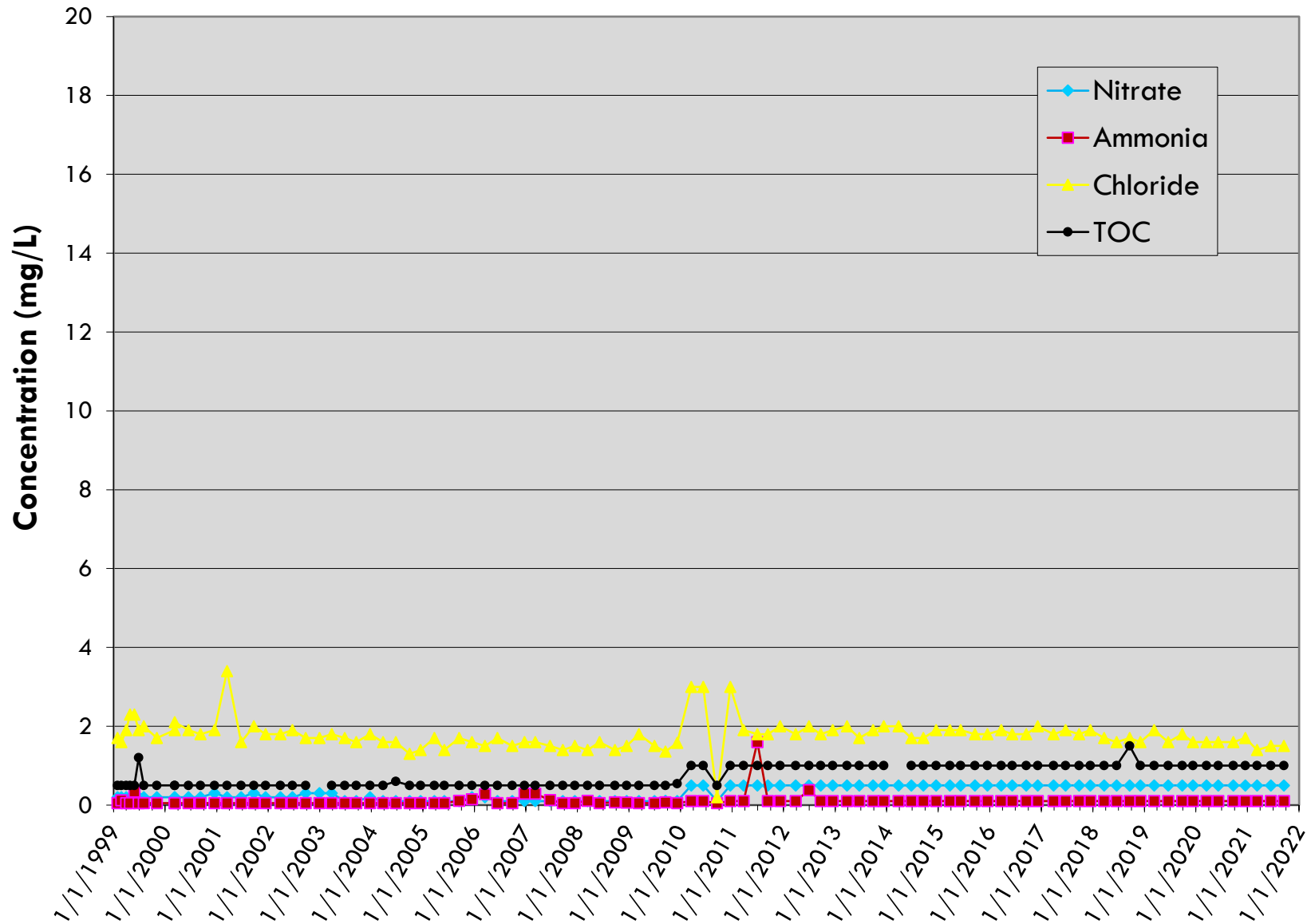


MW-7

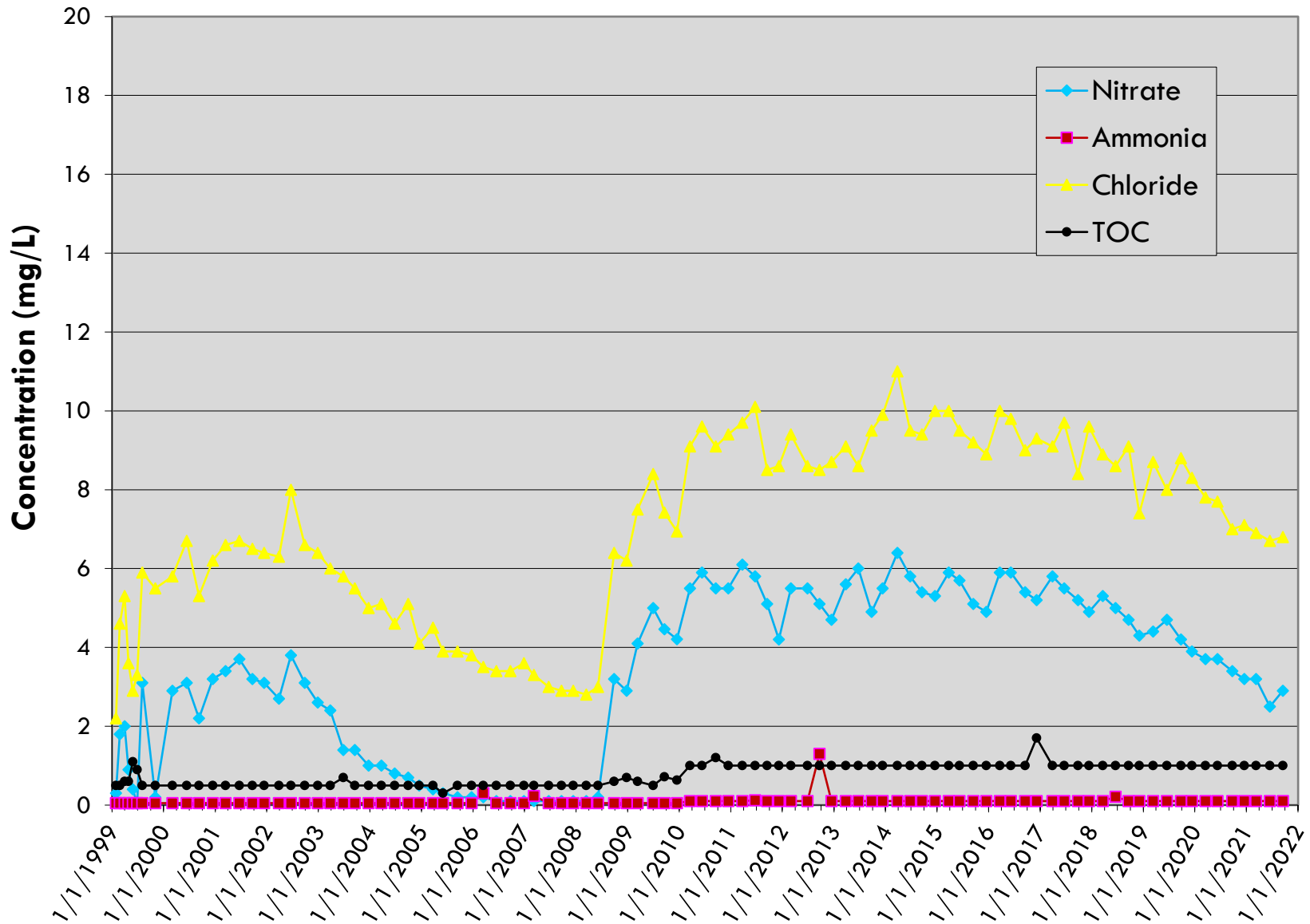
LRI Landfill, Pierce County, Washington



MW-9 (Background) LRI Landfill, Pierce County, Washington

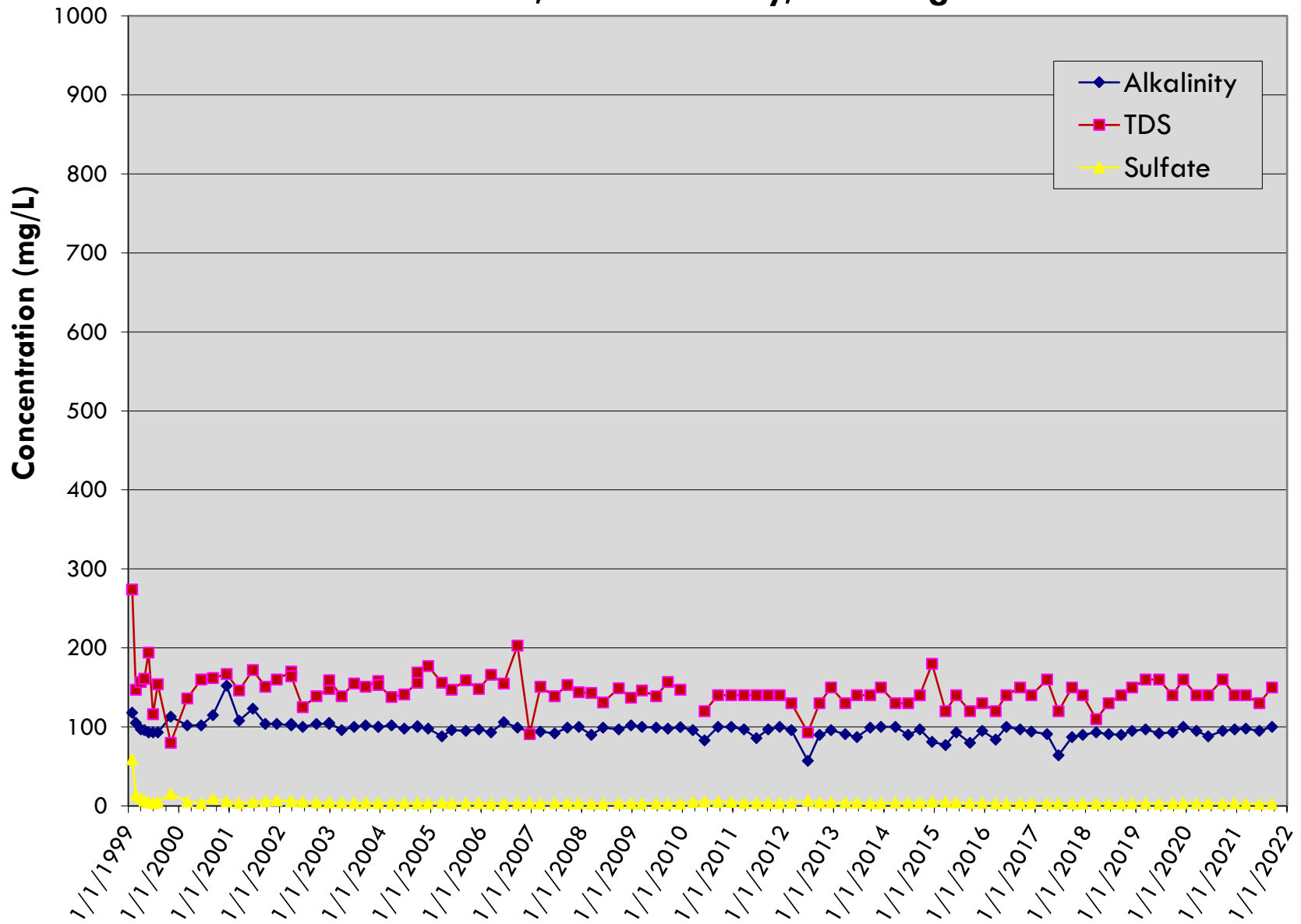


MW-10 (Background) LRI Landfill, Pierce County, Washington

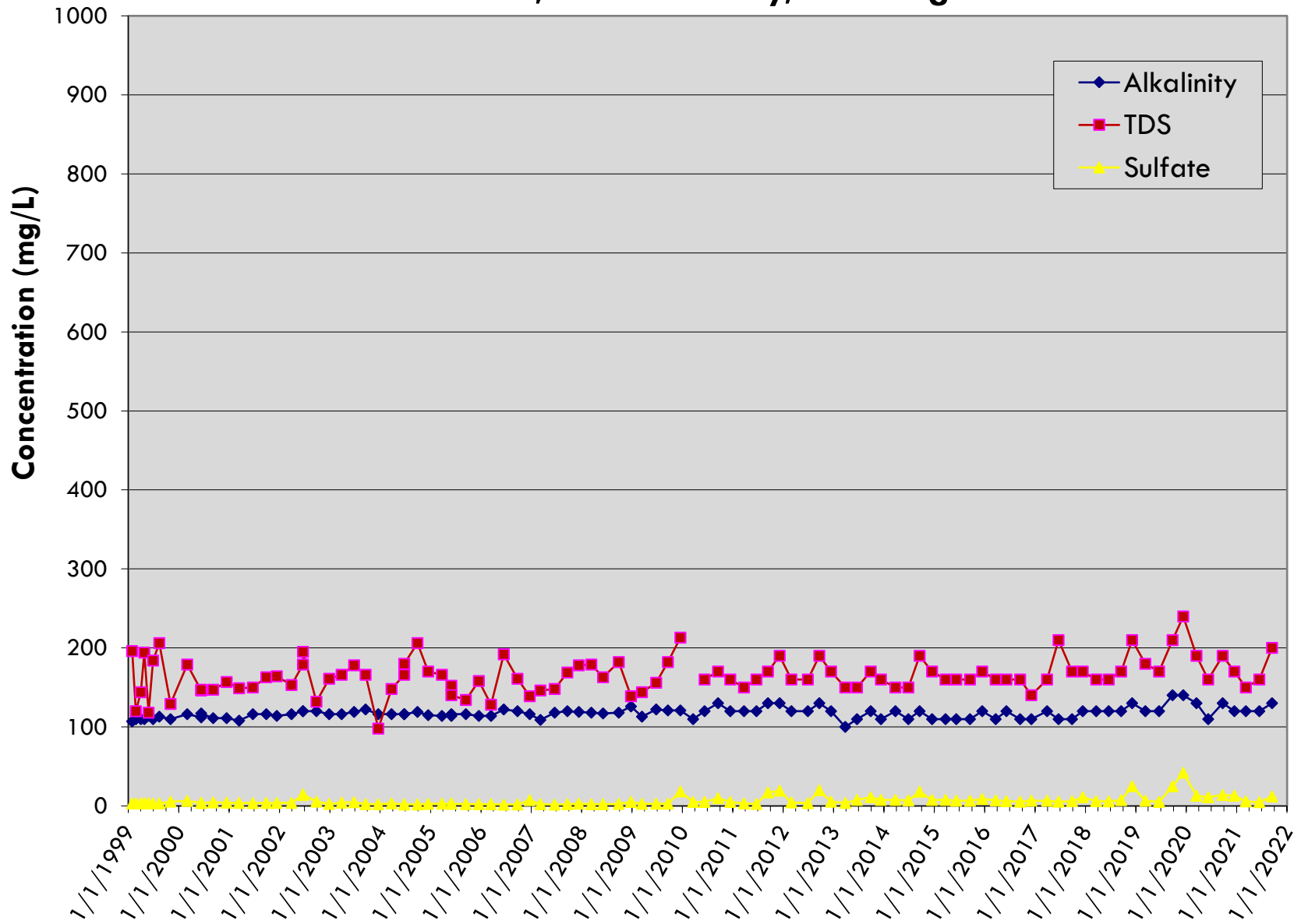


MW-1A

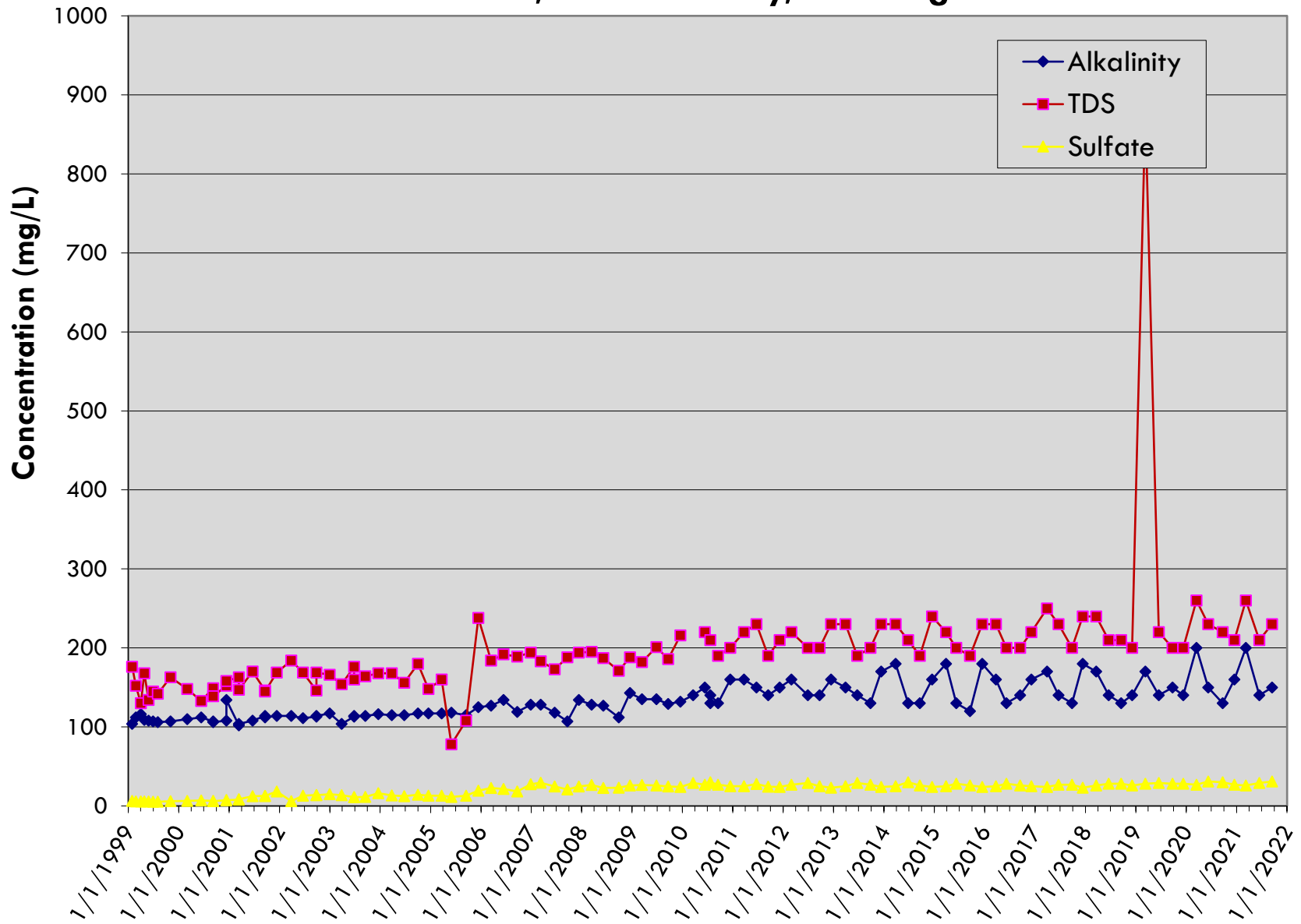
LRI Landfill, Pierce County, Washington



MW-2A
LRI Landfill, Pierce County, Washington

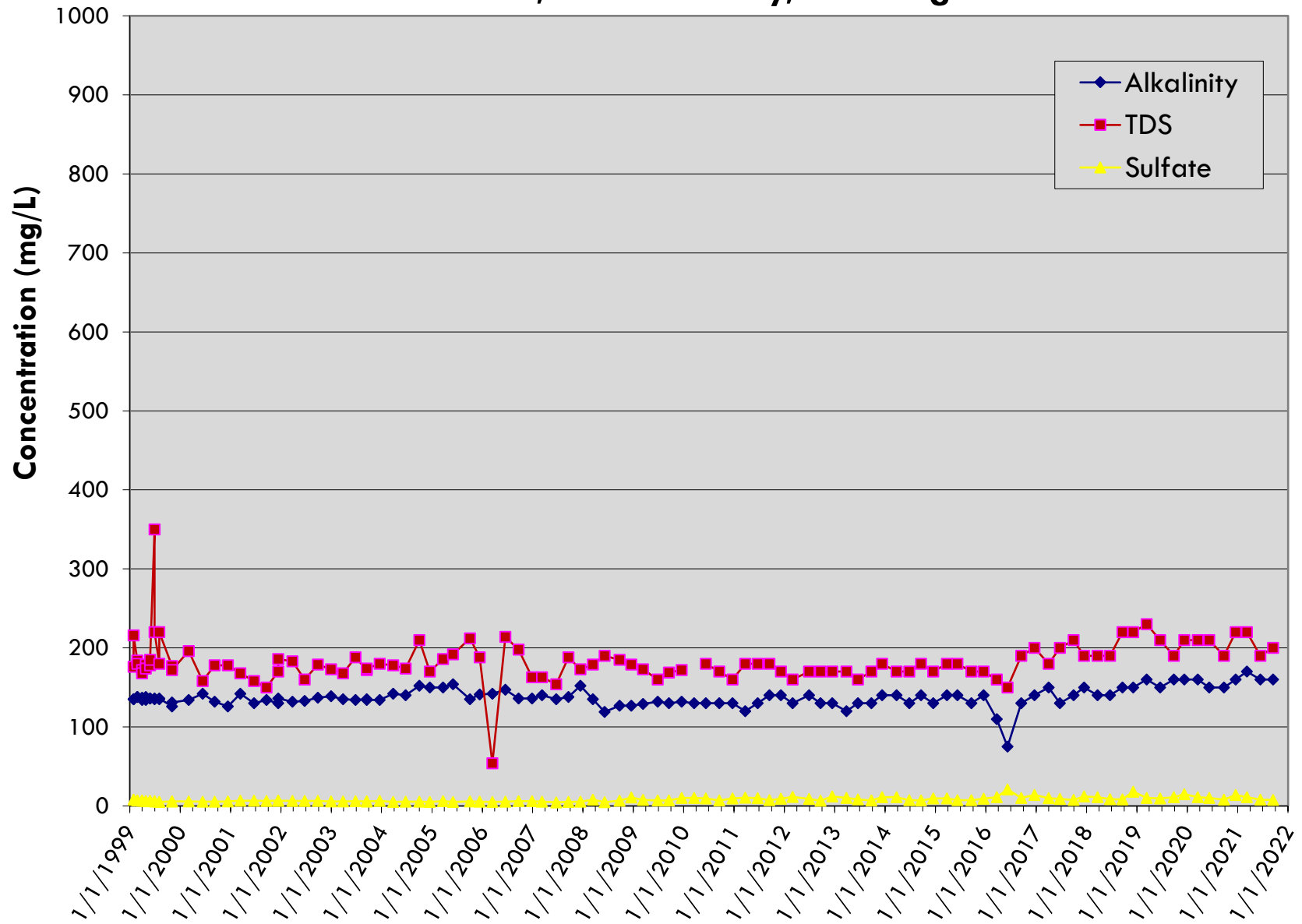


MW-3
LRI Landfill, Pierce County, Washington

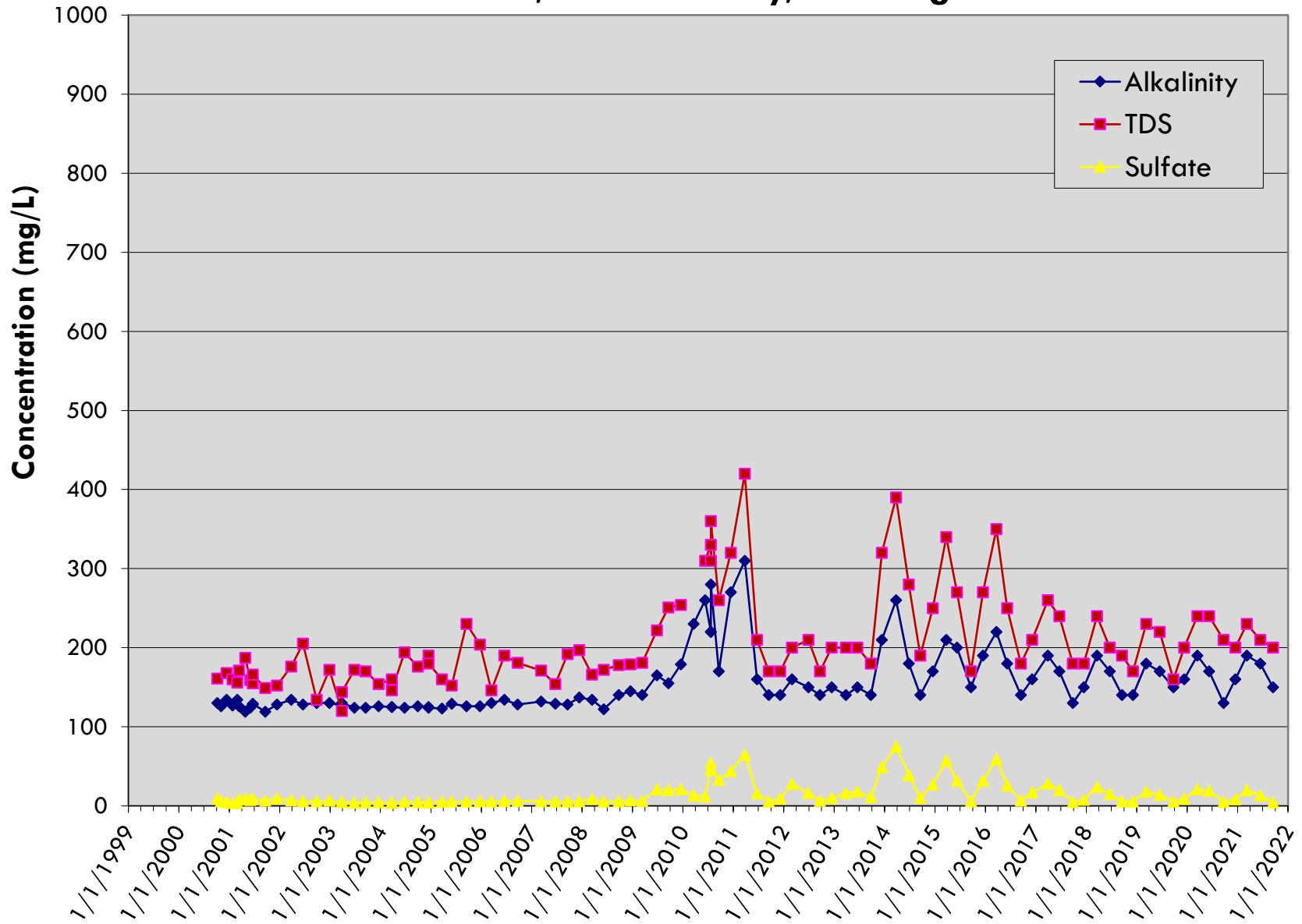


MW-4

LRI Landfill, Pierce County, Washington

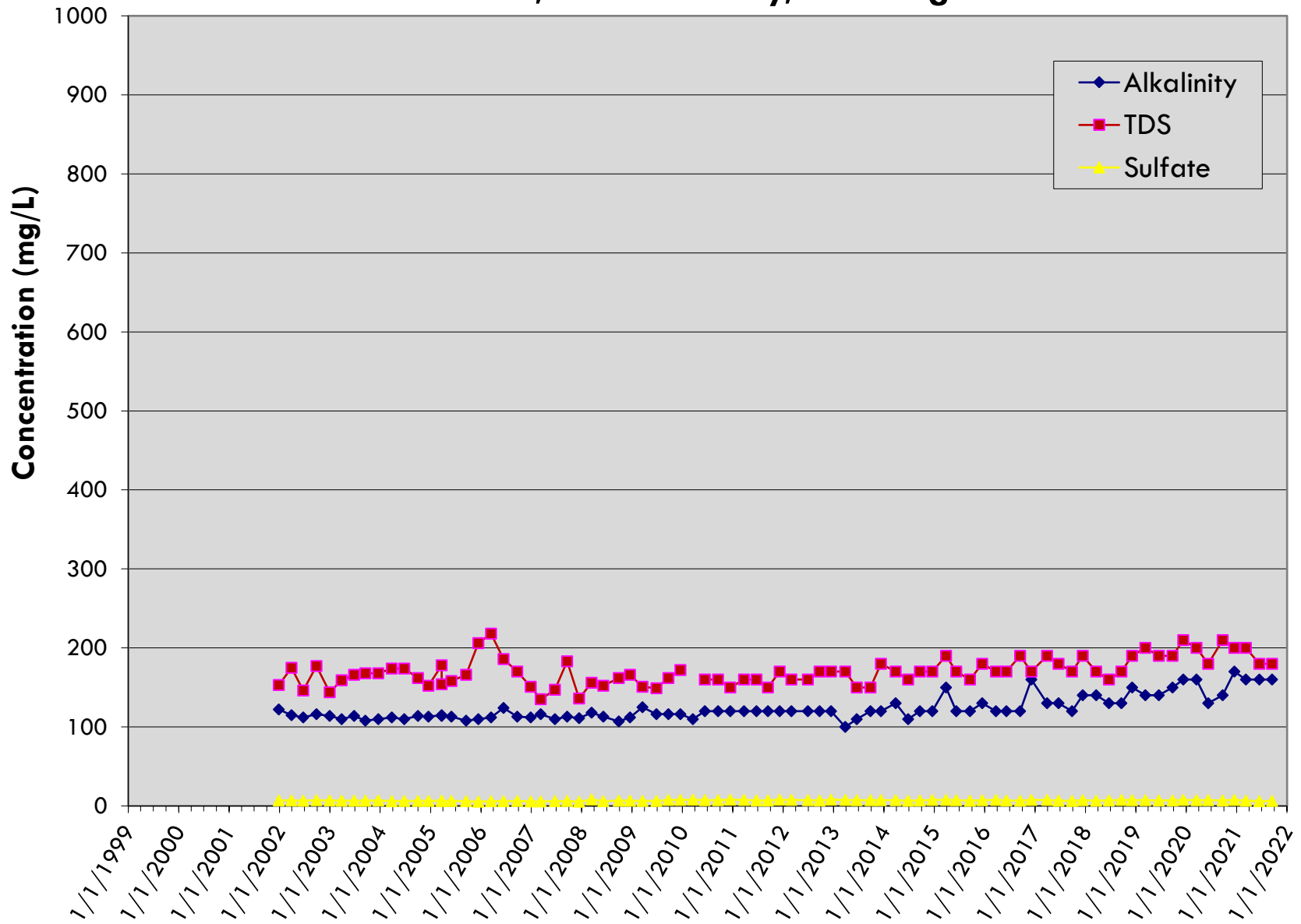


MW-5A
LRI Landfill, Pierce County, Washington

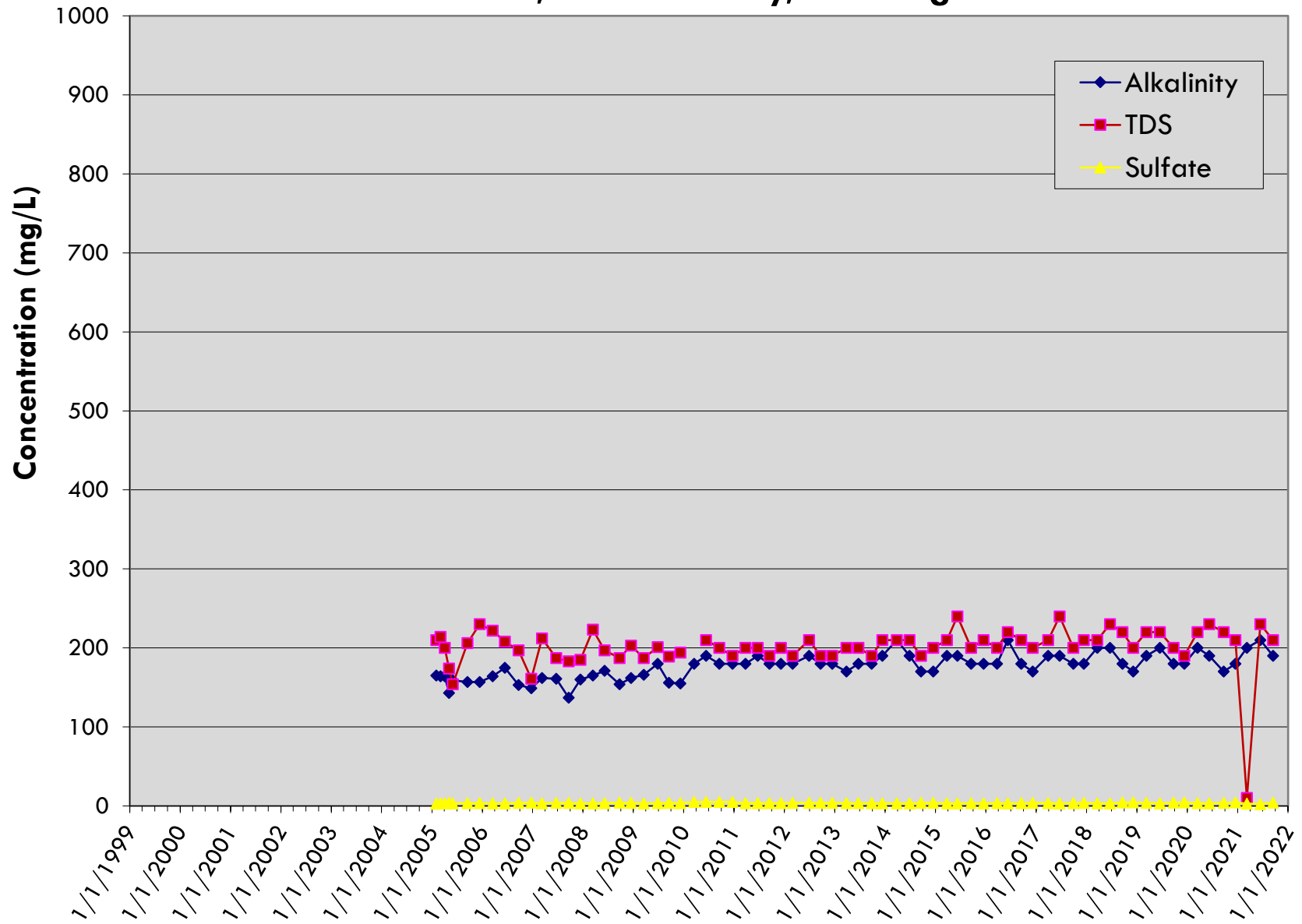


MW-6

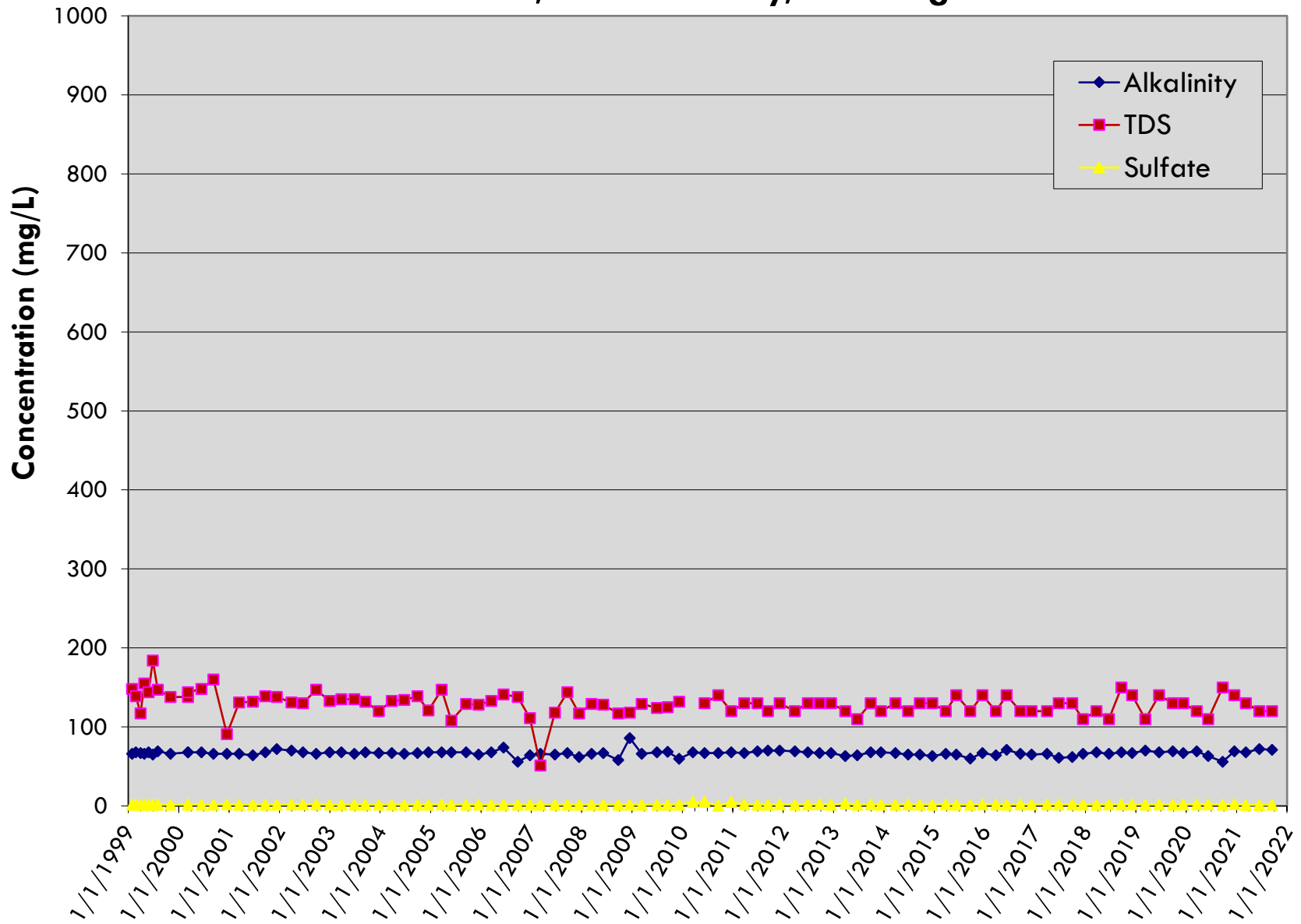
LRI Landfill, Pierce County, Washington



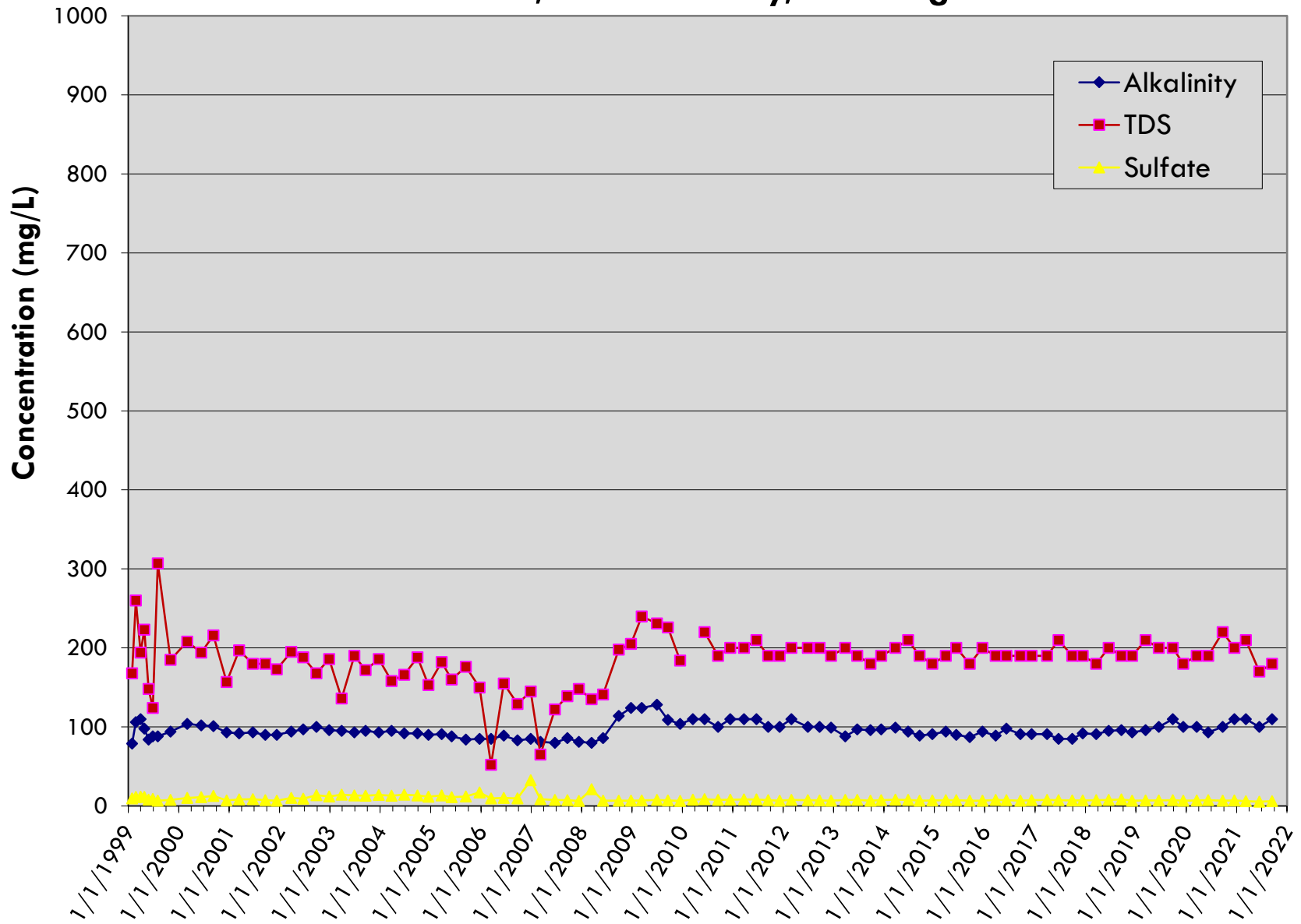
MW-7
LRI Landfill, Pierce County, Washington



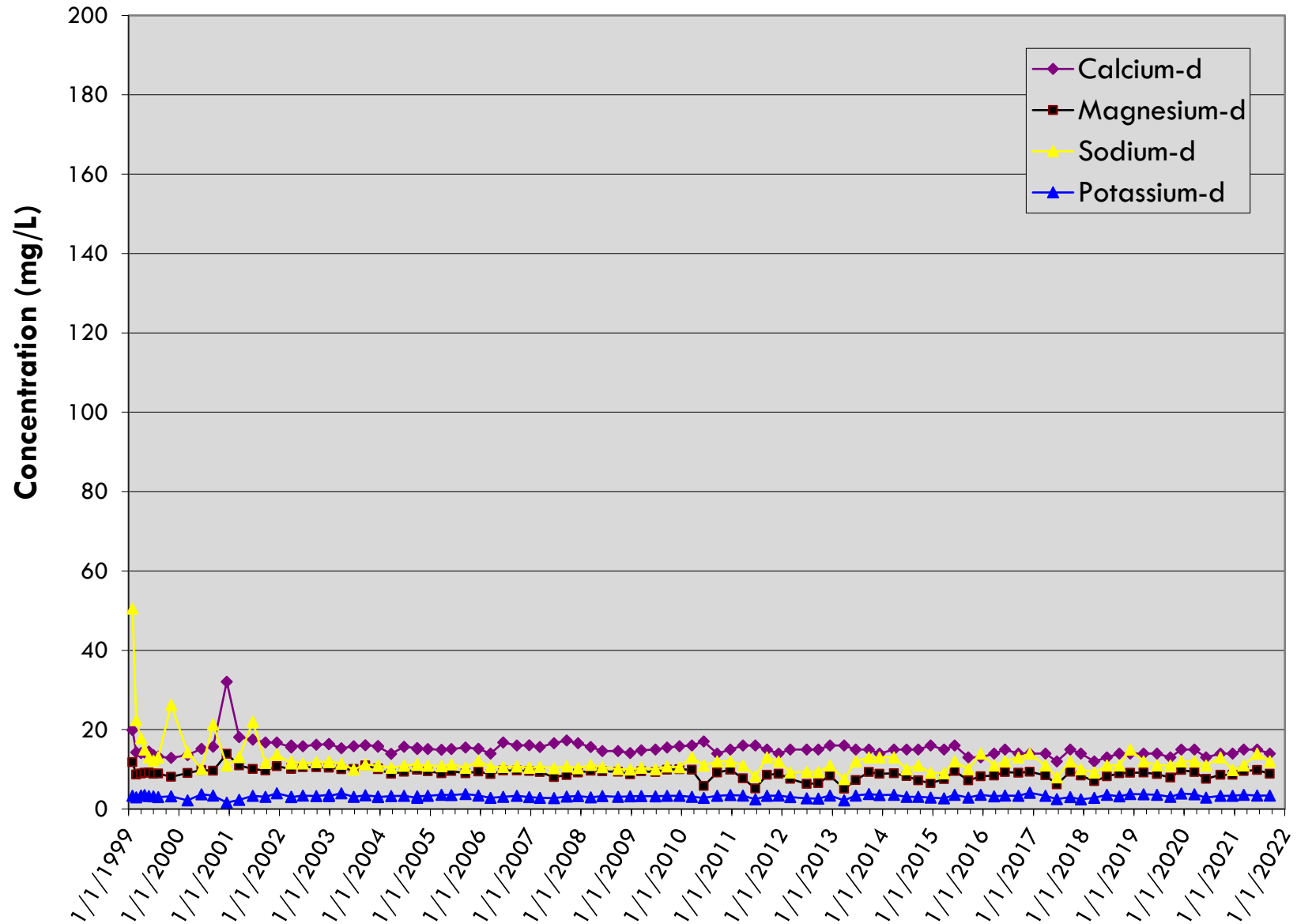
MW-9 (Background)
LRI Landfill, Pierce County, Washington



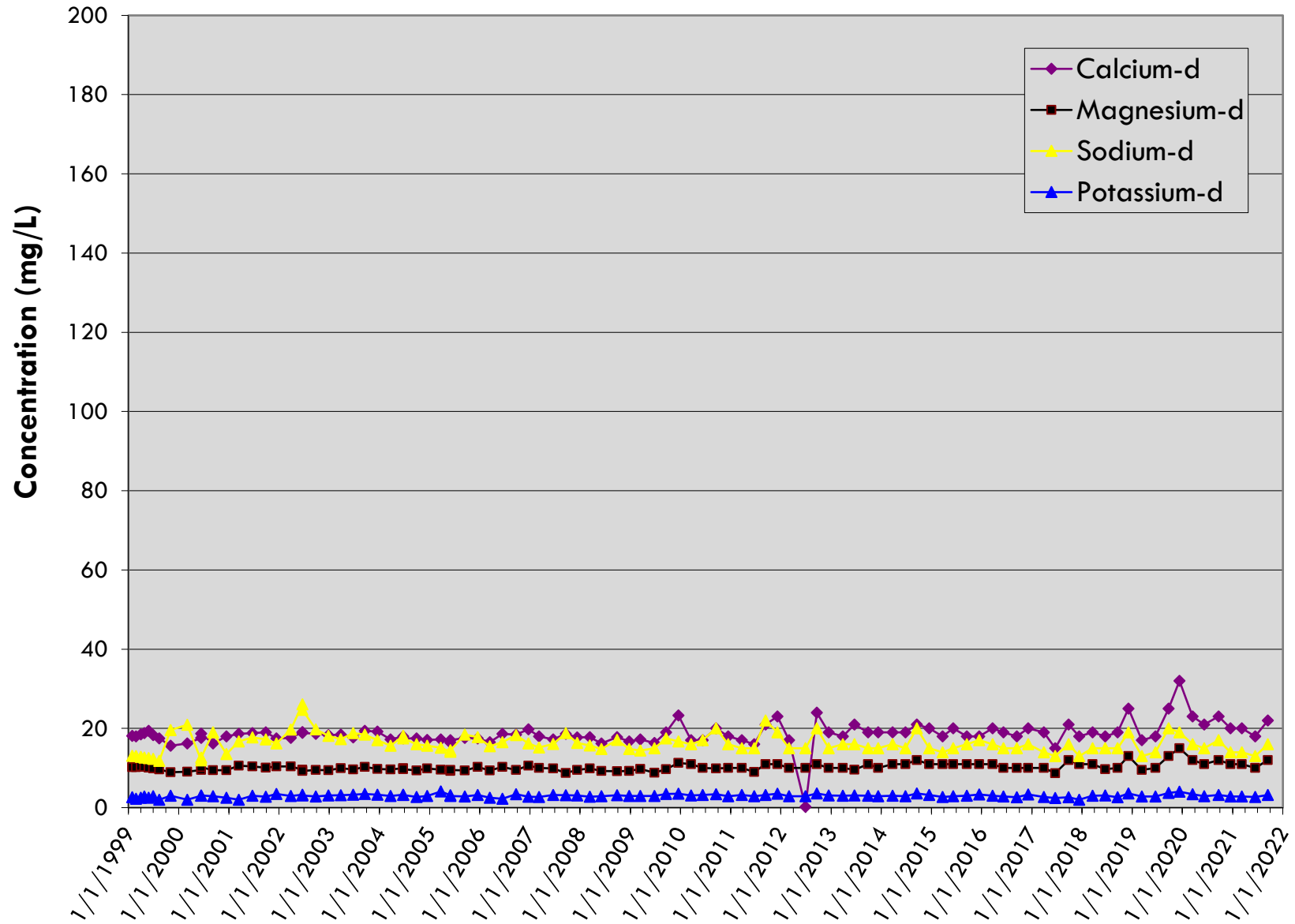
MW-10 (Background)
LRI Landfill, Pierce County, Washington



MW-1A
LRI Landfill, Pierce County, Washington

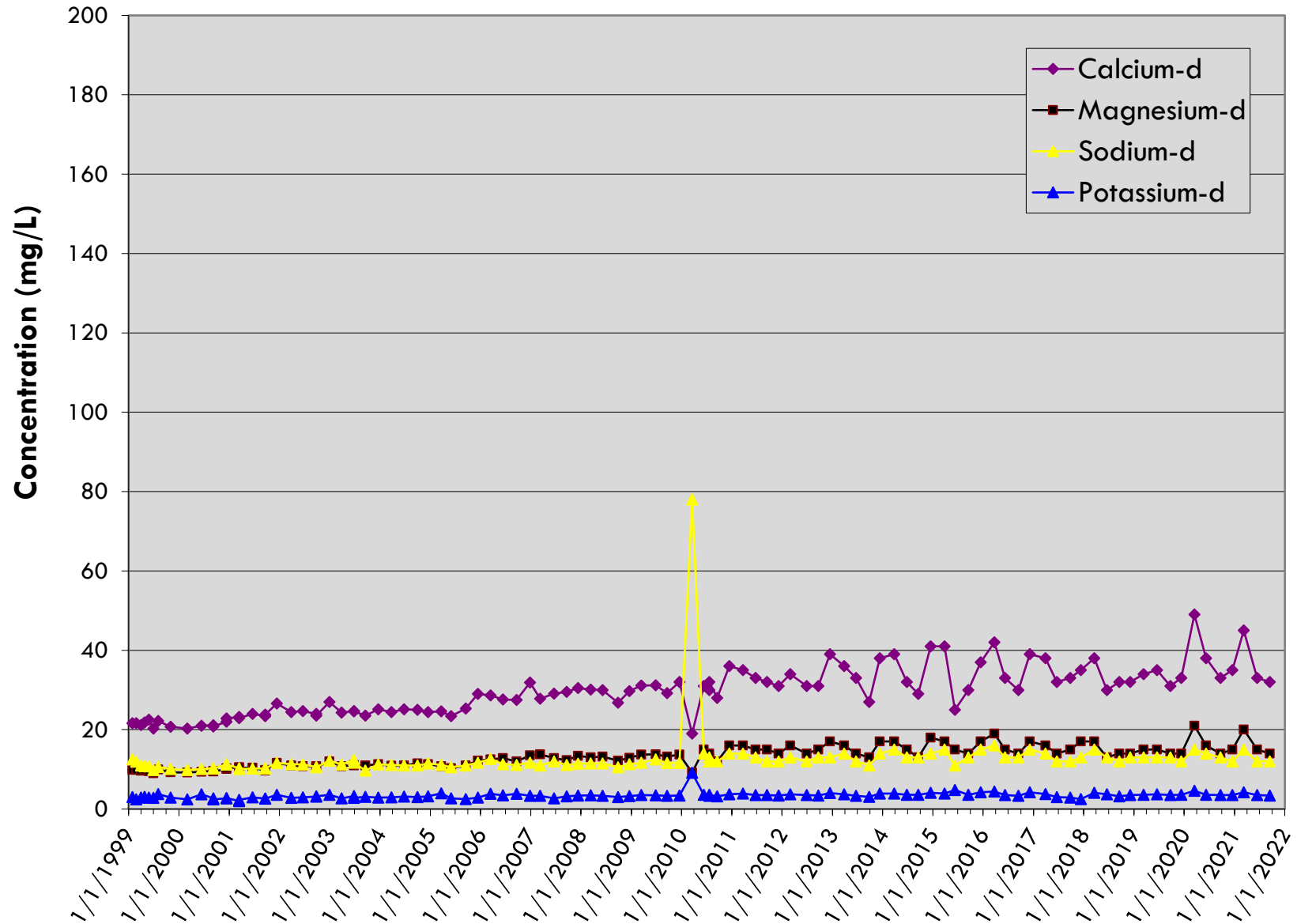


MW-2A
LRI Landfill, Pierce County, Washington

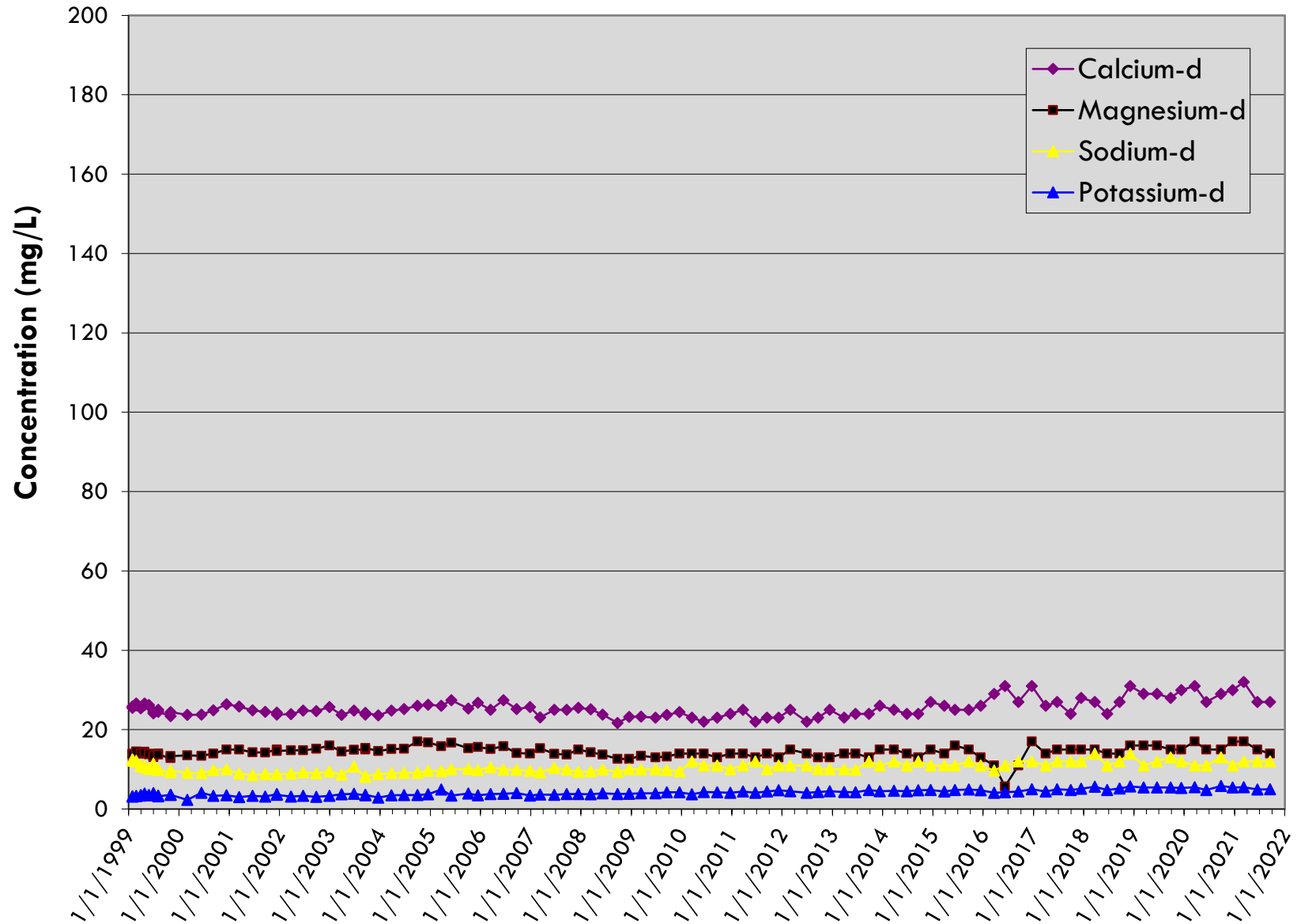


MW-3

LRI Landfill, Pierce County, Washington

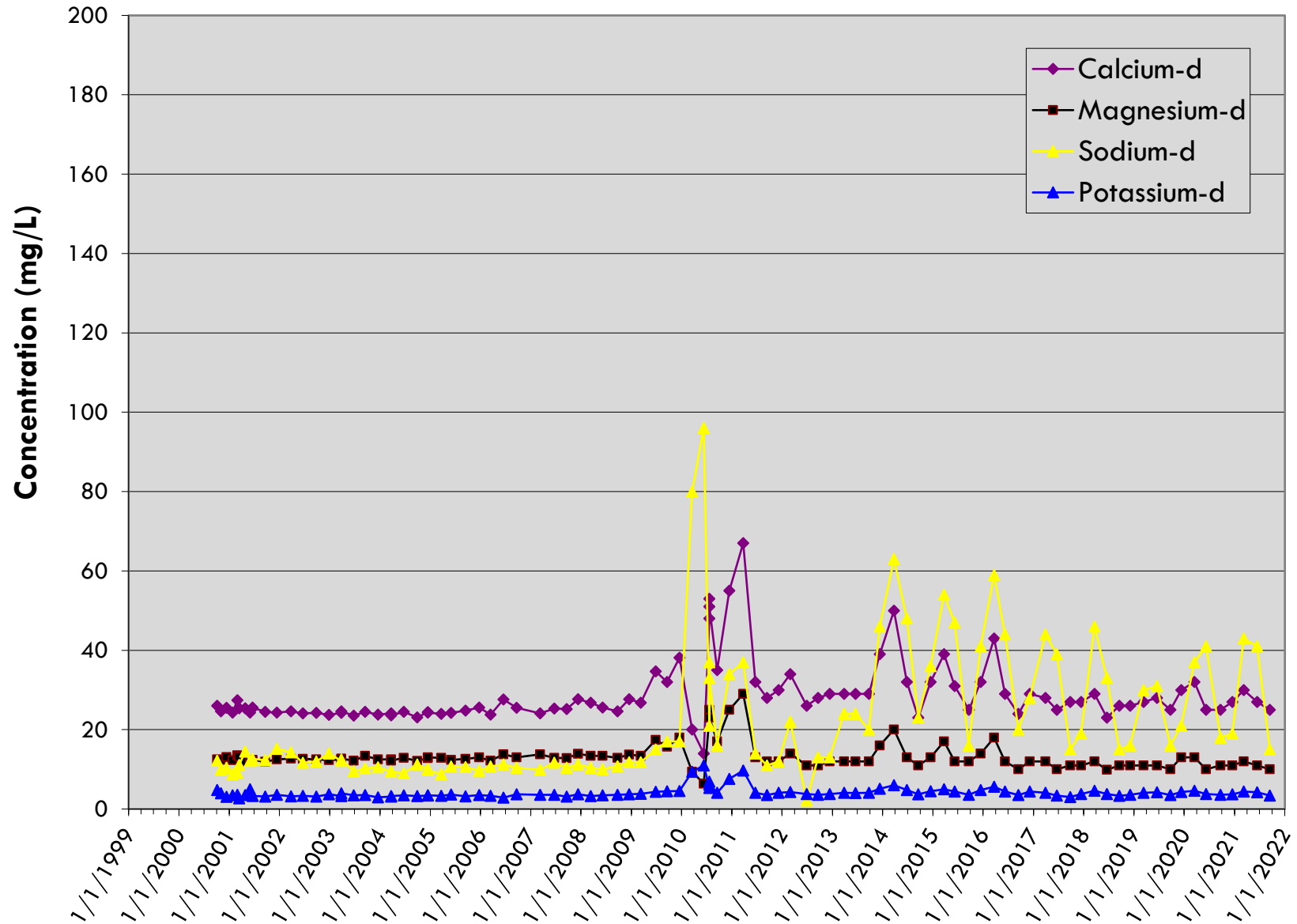


MW-4
LRI Landfill, Pierce County, Washington



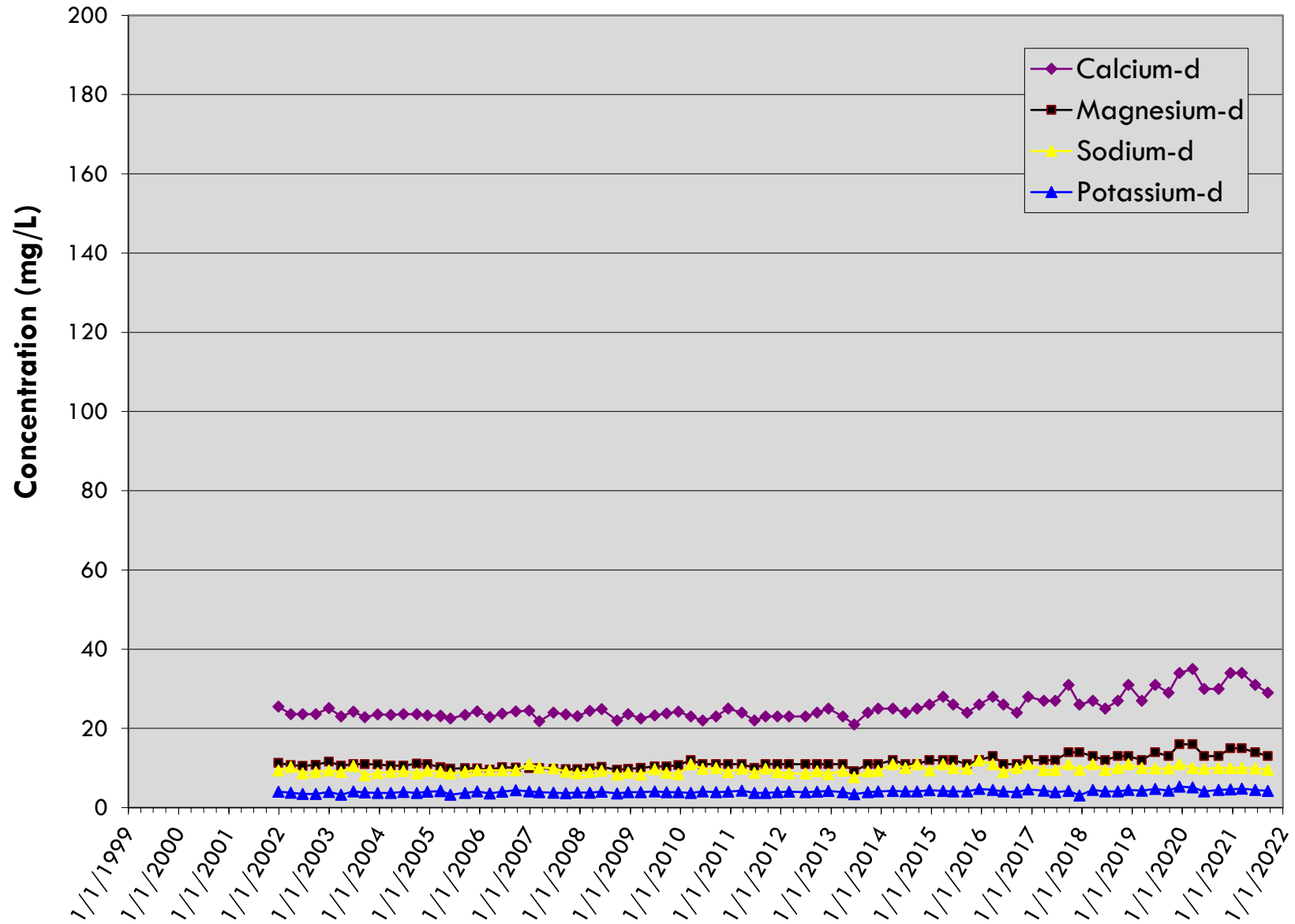
MW-5A

LRI Landfill, Pierce County, Washington

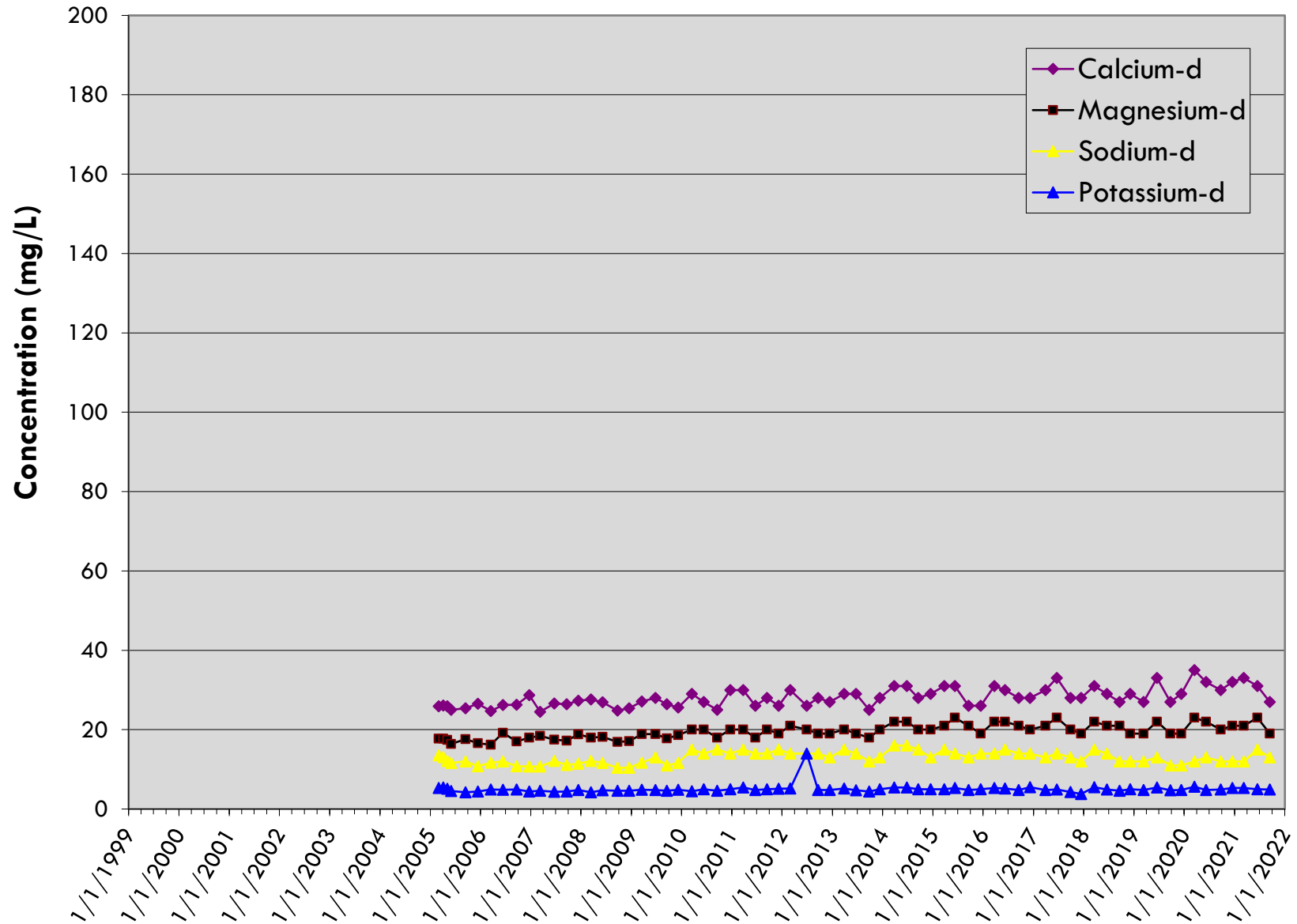


MW-6

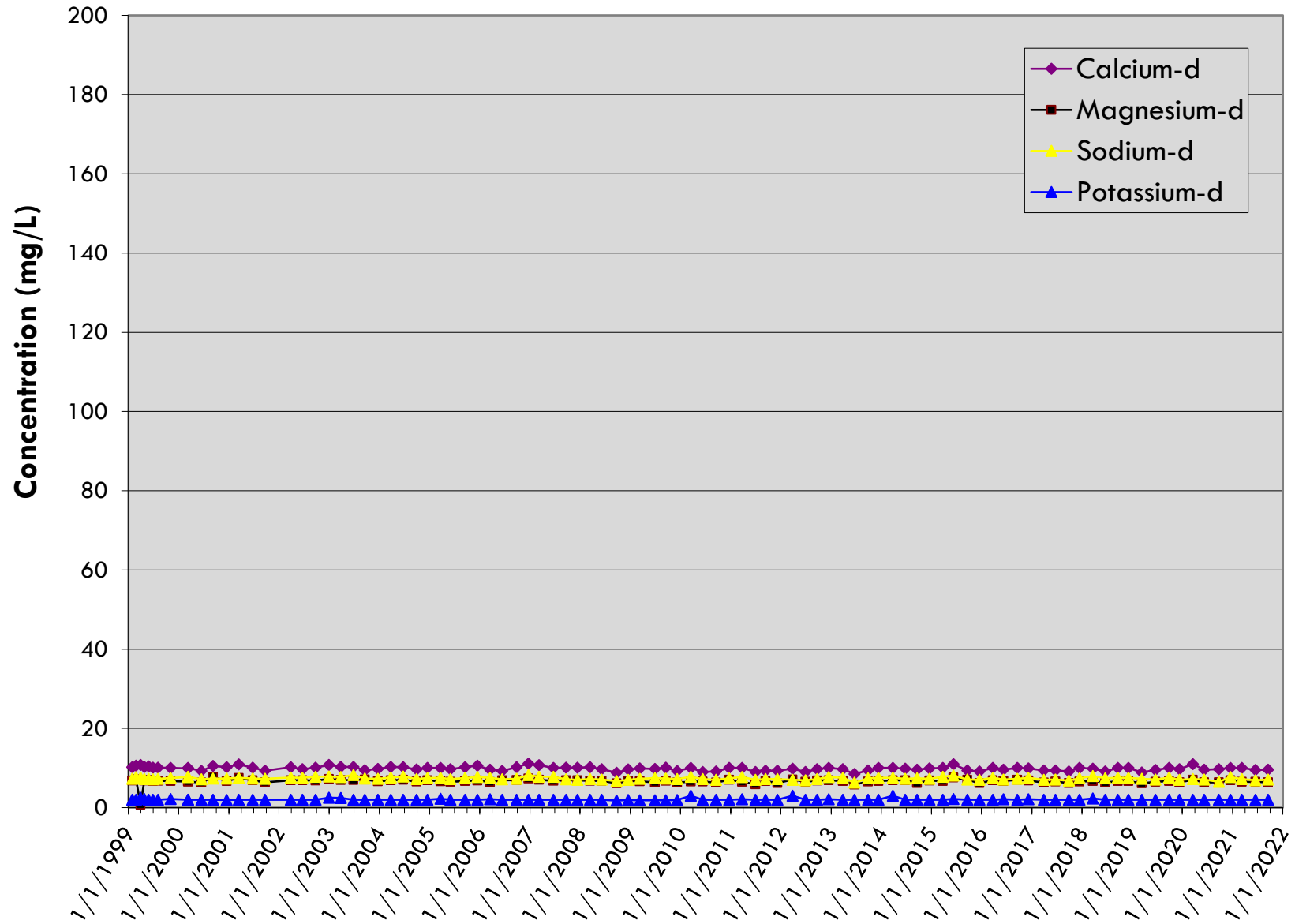
LRI Landfill, Pierce County, Washington



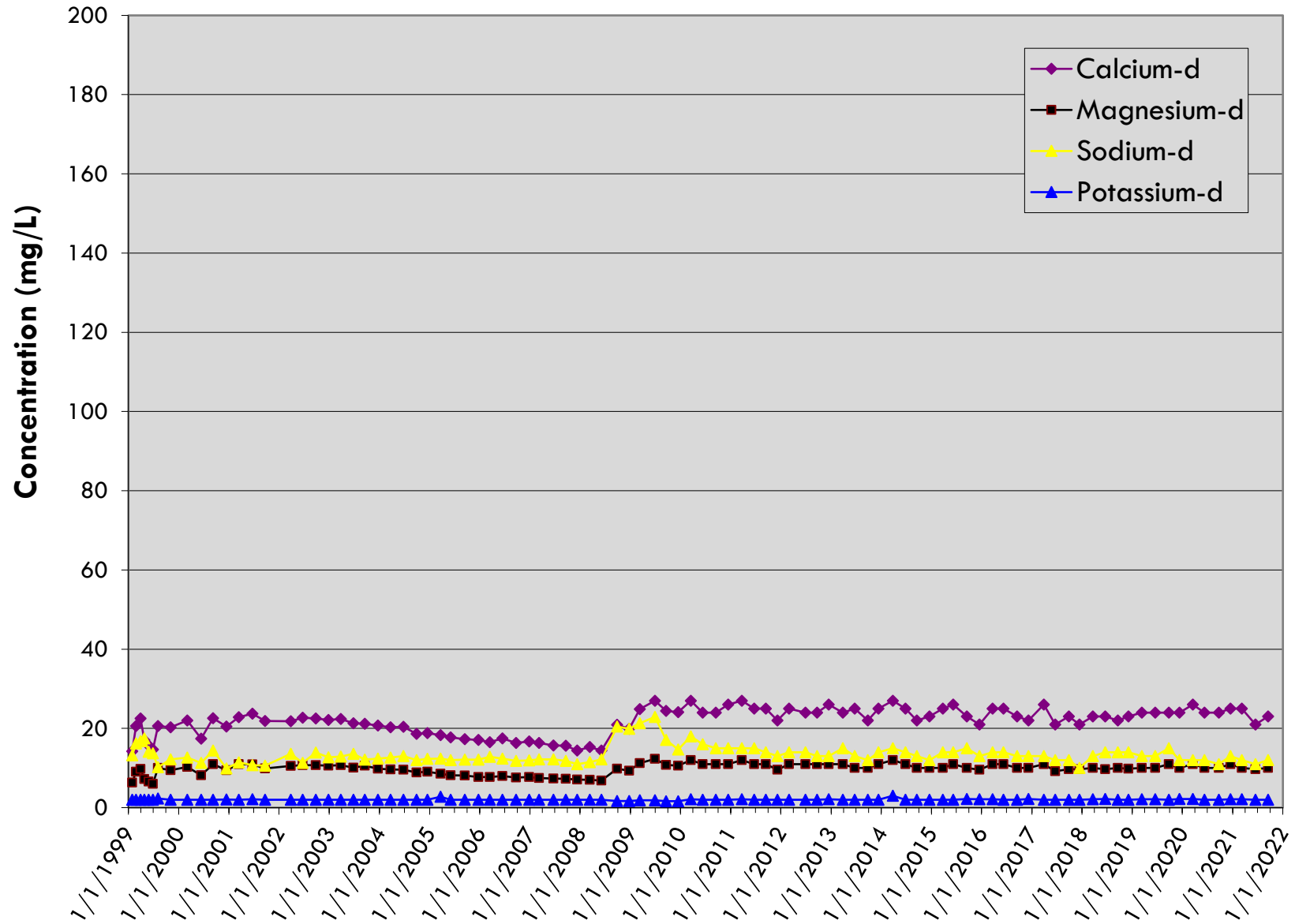
MW-7
LRI Landfill, Pierce County, Washington



MW-9 (Background)
LRI Landfill, Pierce County, Washington

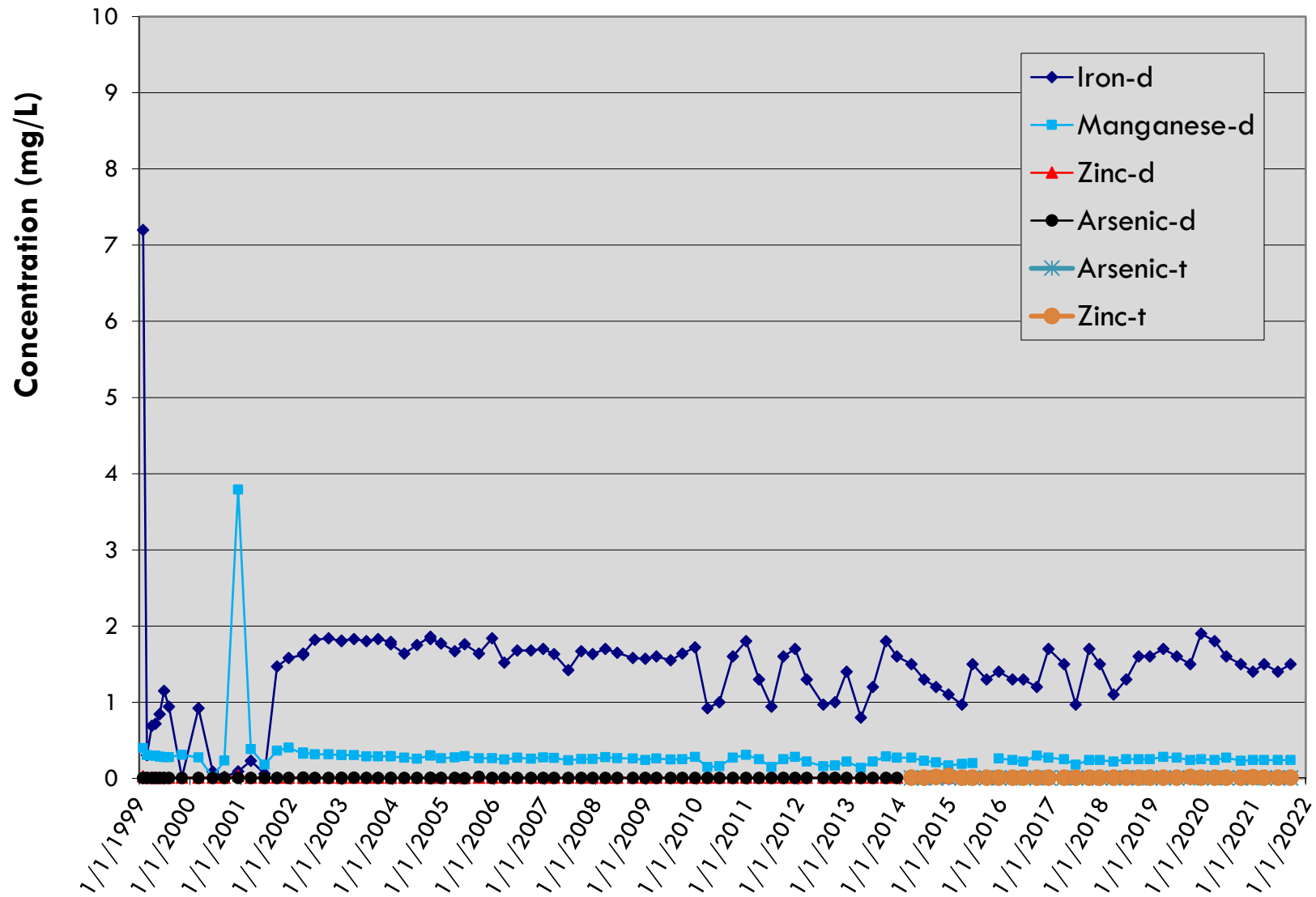


MW-10 (Background) LRI Landfill, Pierce County, Washington



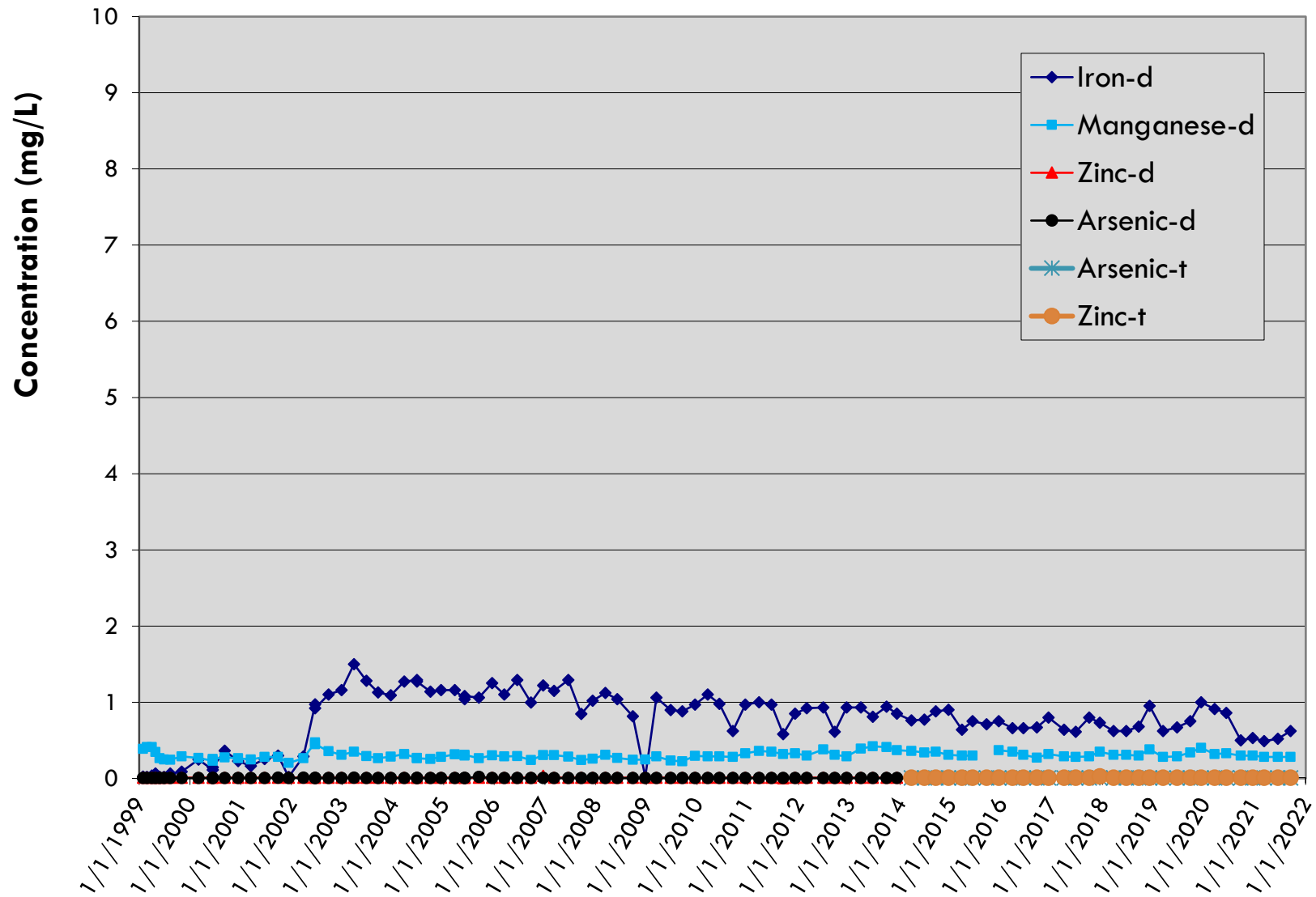
MW-1A

LRI Landfill, Pierce County, Washington

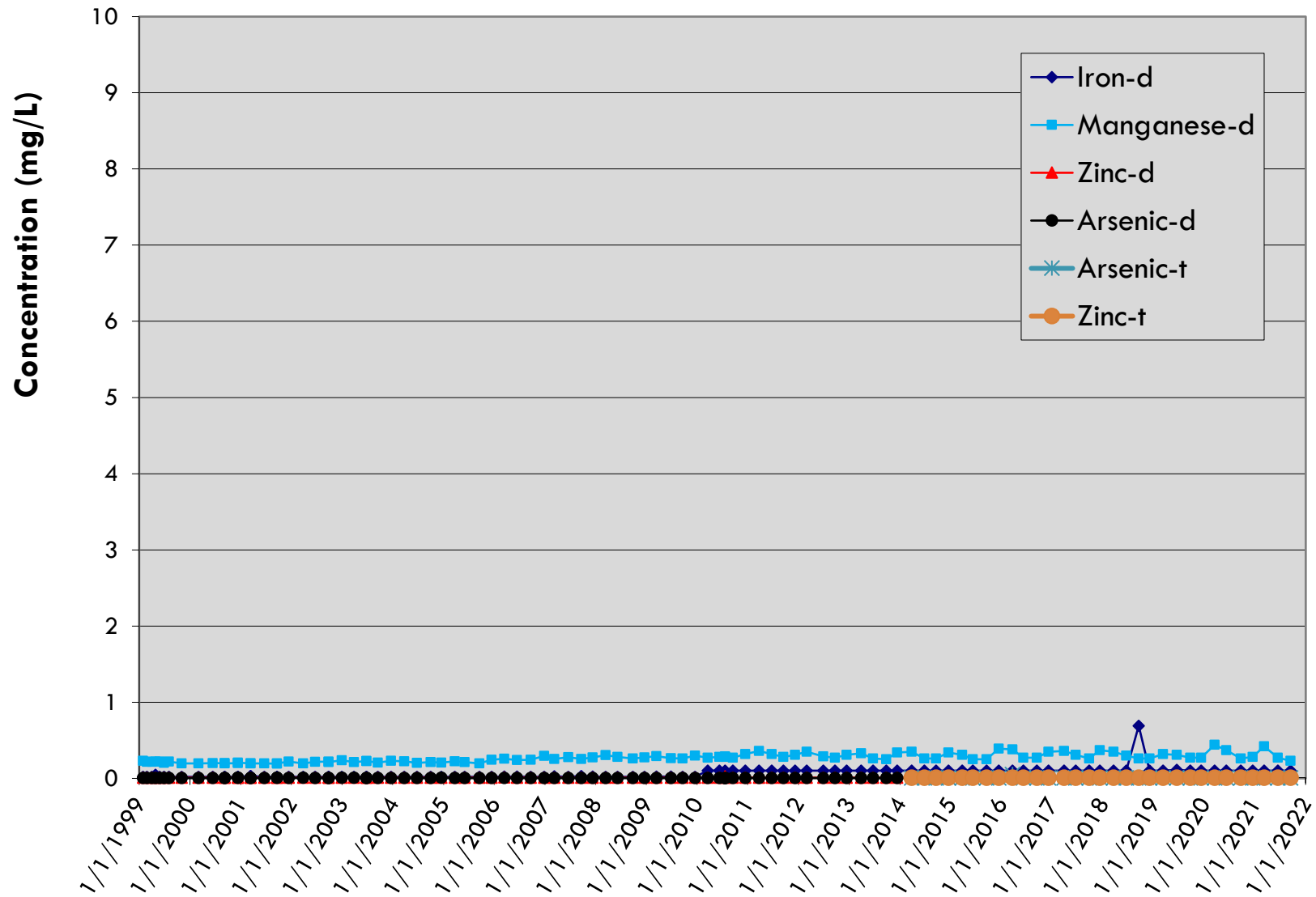


MW-2A

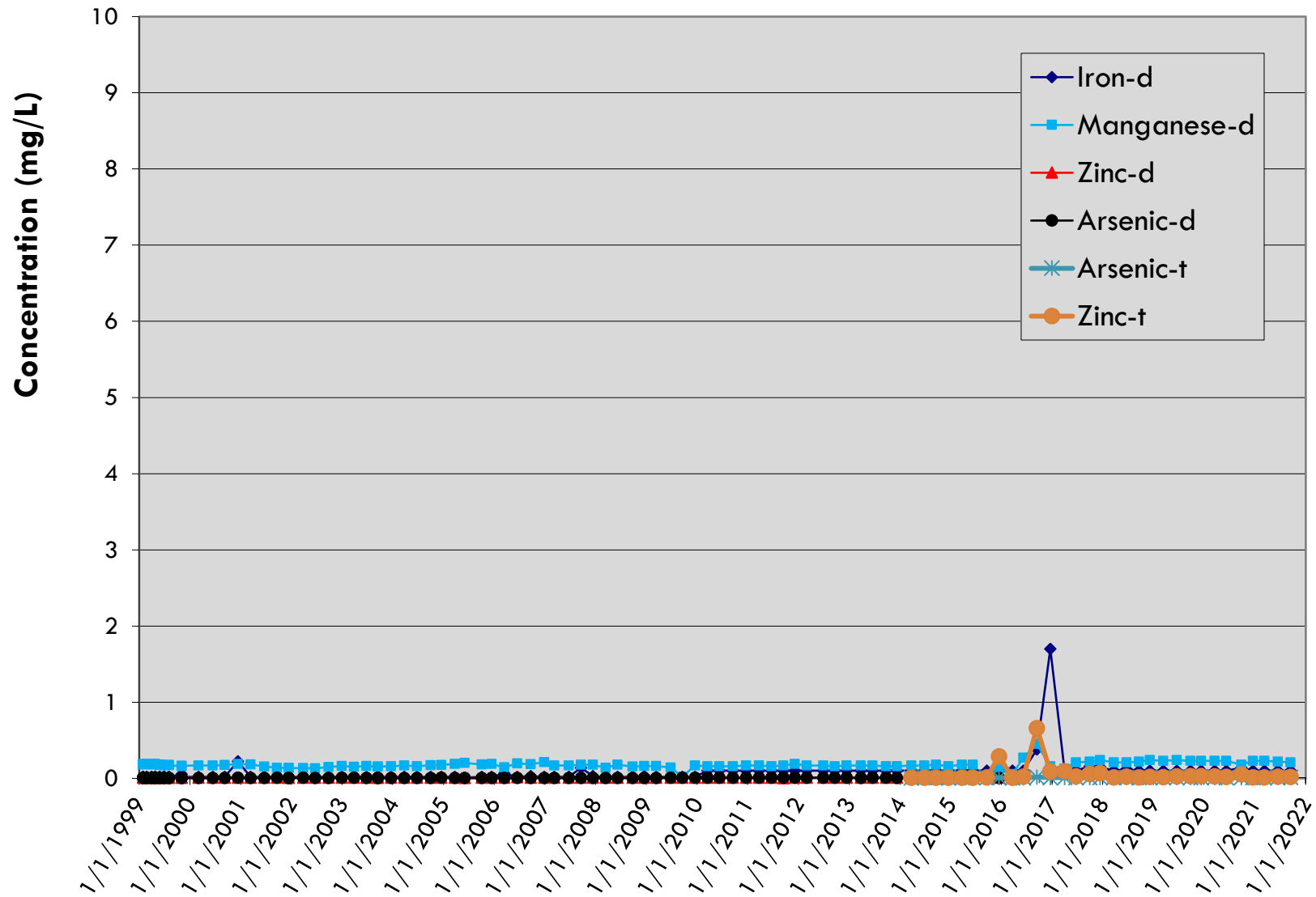
LRI Landfill, Pierce County, Washington



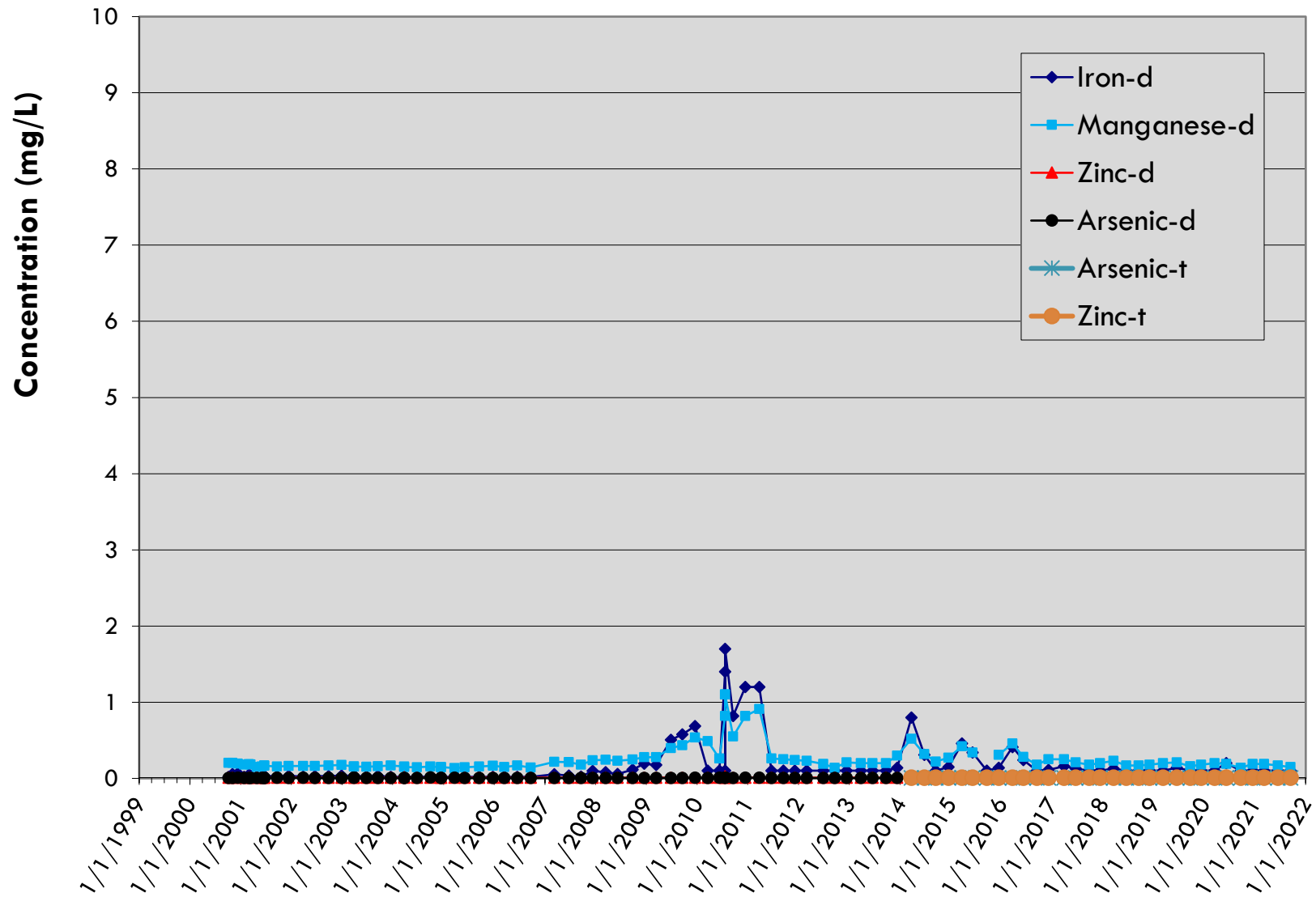
MW-3
LRI Landfill, Pierce County, Washington



MW-4
LRI Landfill, Pierce County, Washington

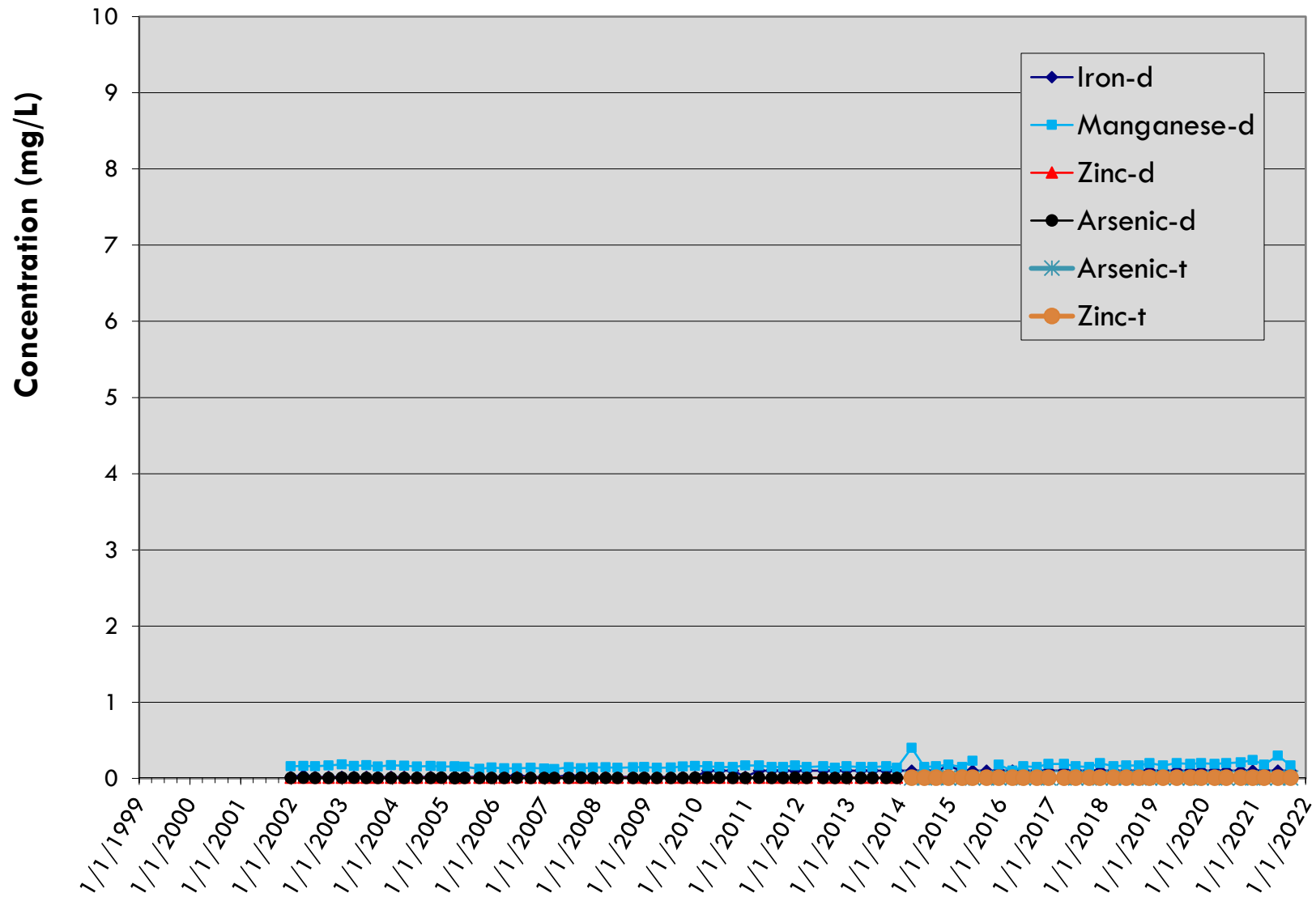


MW-5A
LRI Landfill, Pierce County, Washington

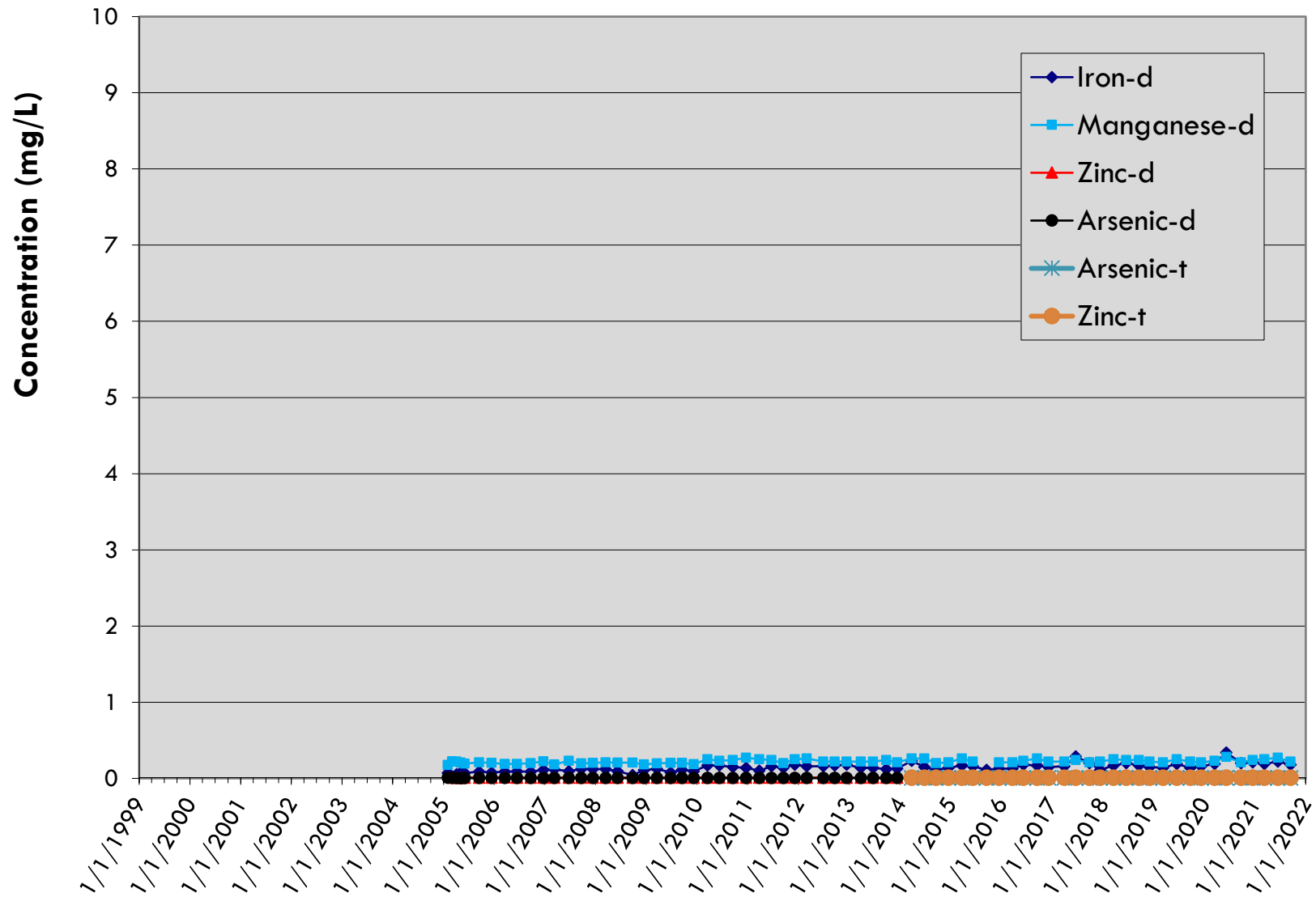


MW-6

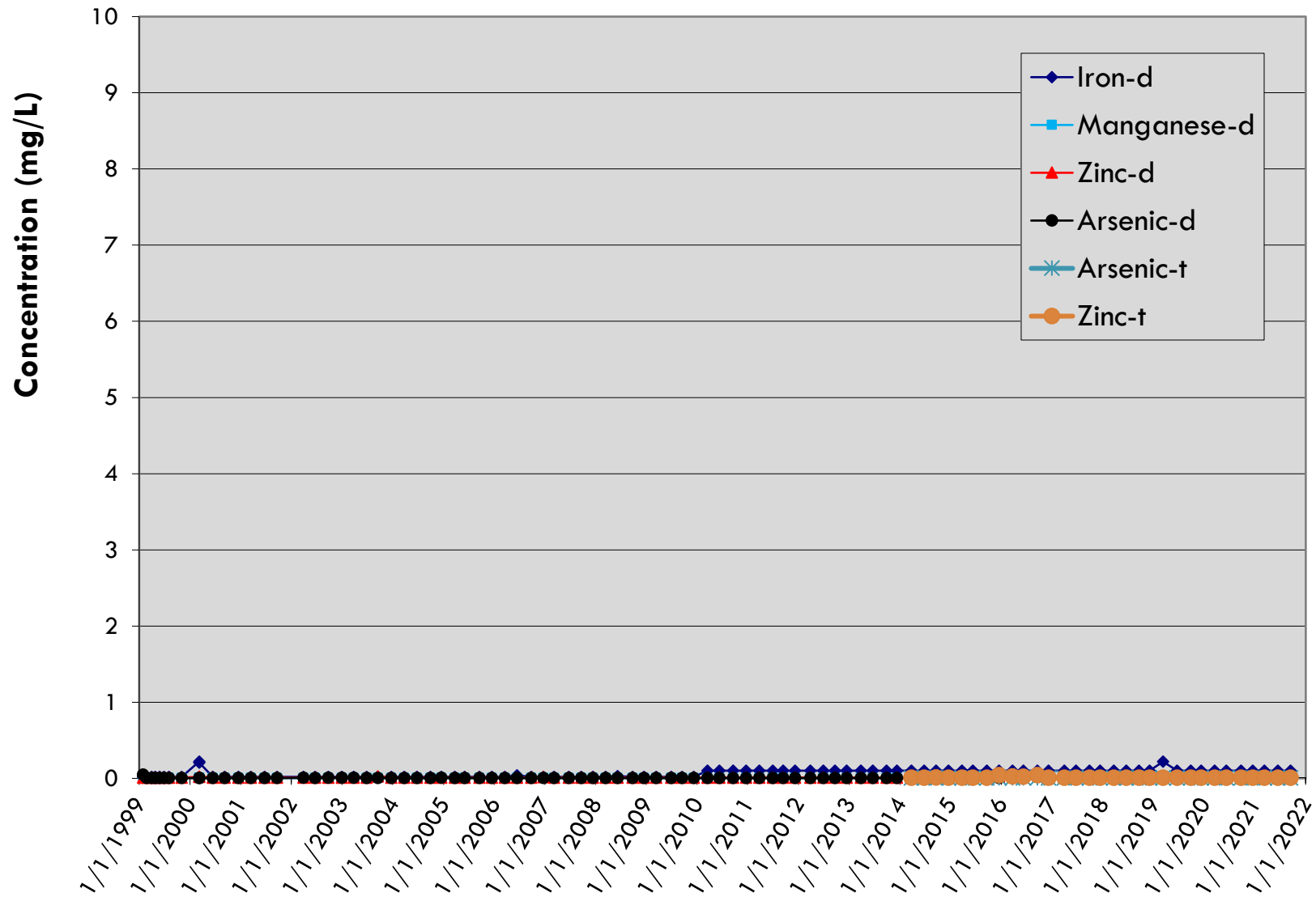
LRI Landfill, Pierce County, Washington



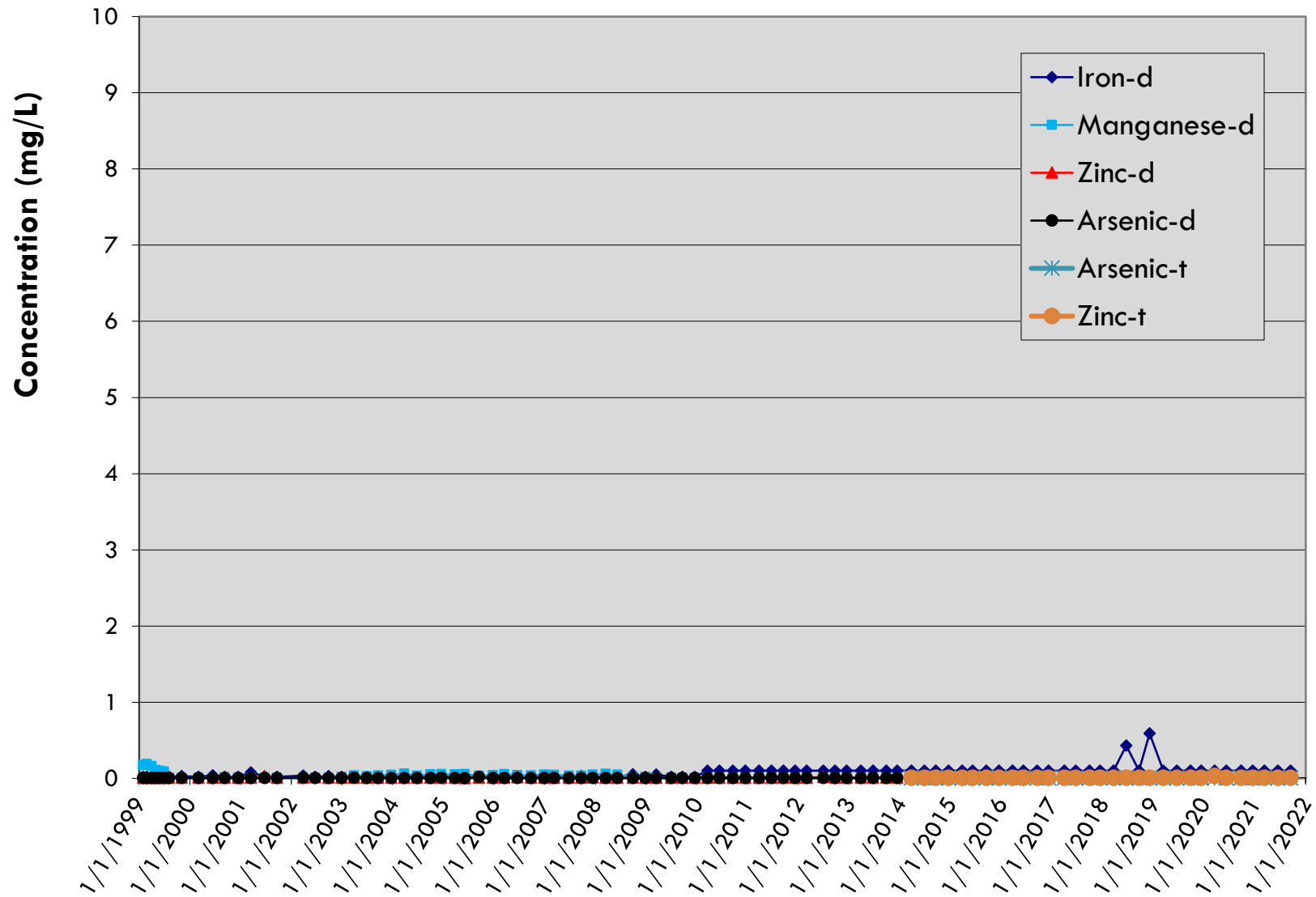
MW-7
LRI Landfill, Pierce County, Washington



MW-9 (Background)
LRI Landfill, Pierce County, Washington

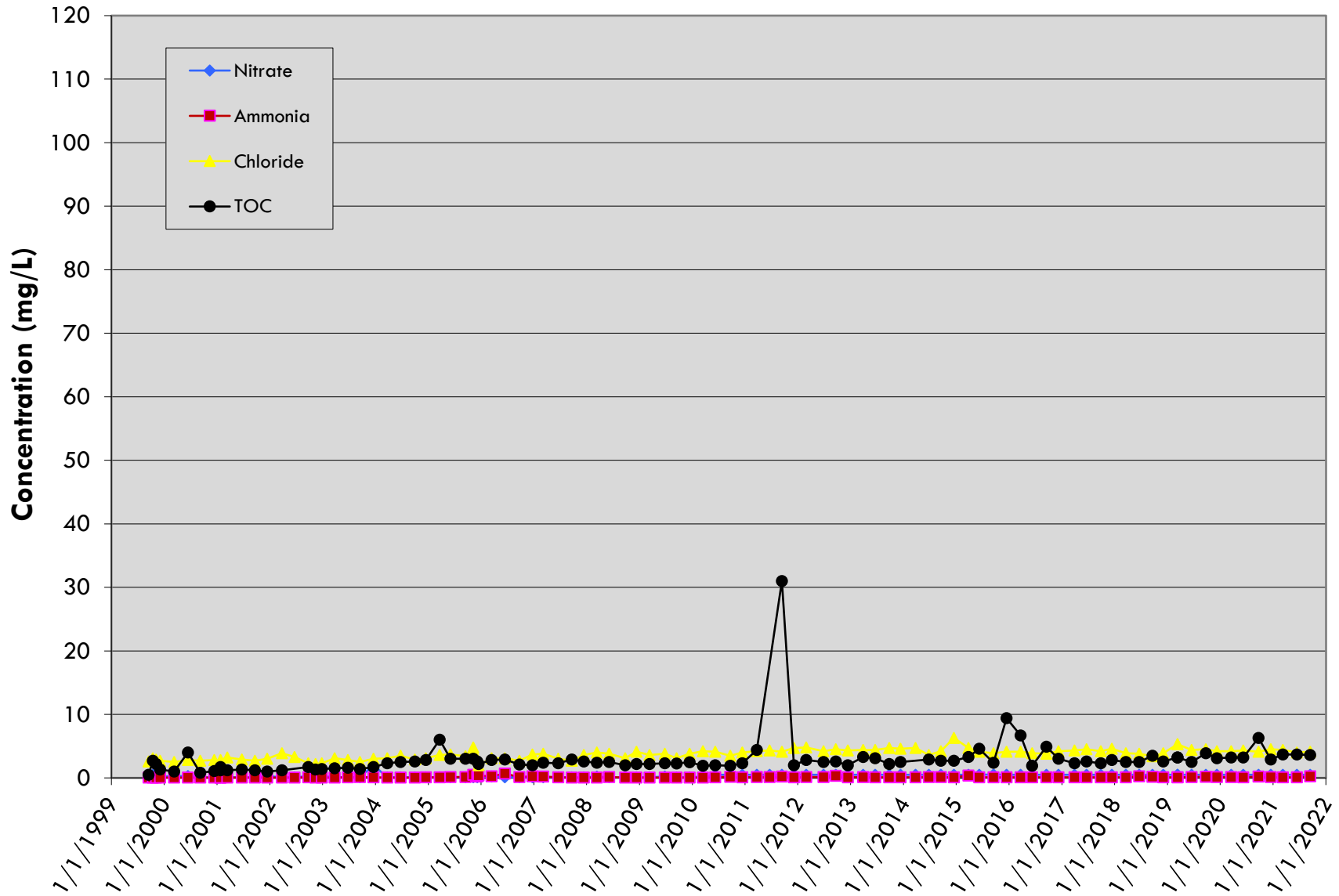


MW-10 (Background) LRI Landfill, Pierce County, Washington



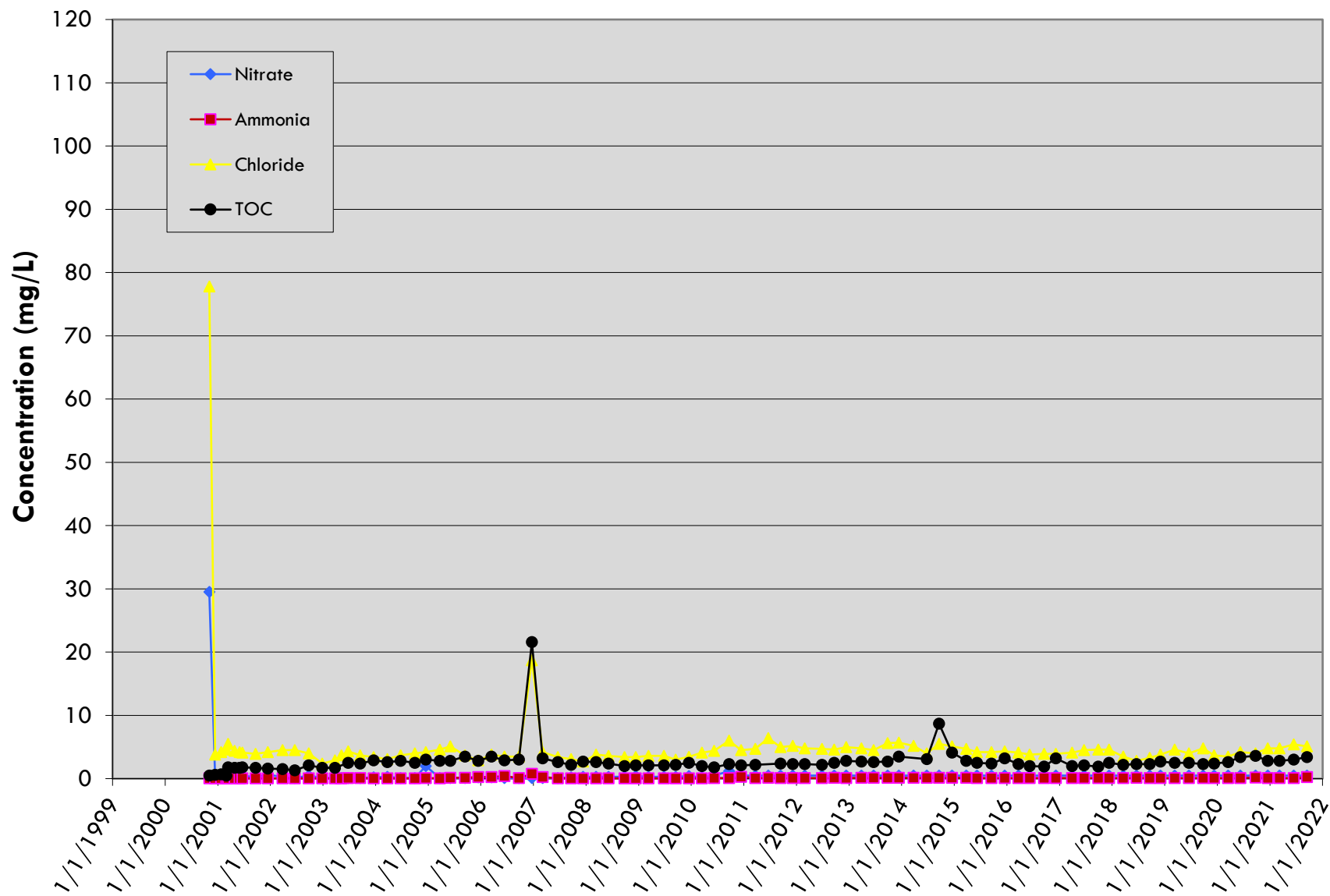
LDCS-1

LRI Landfill, Pierce County, Washington



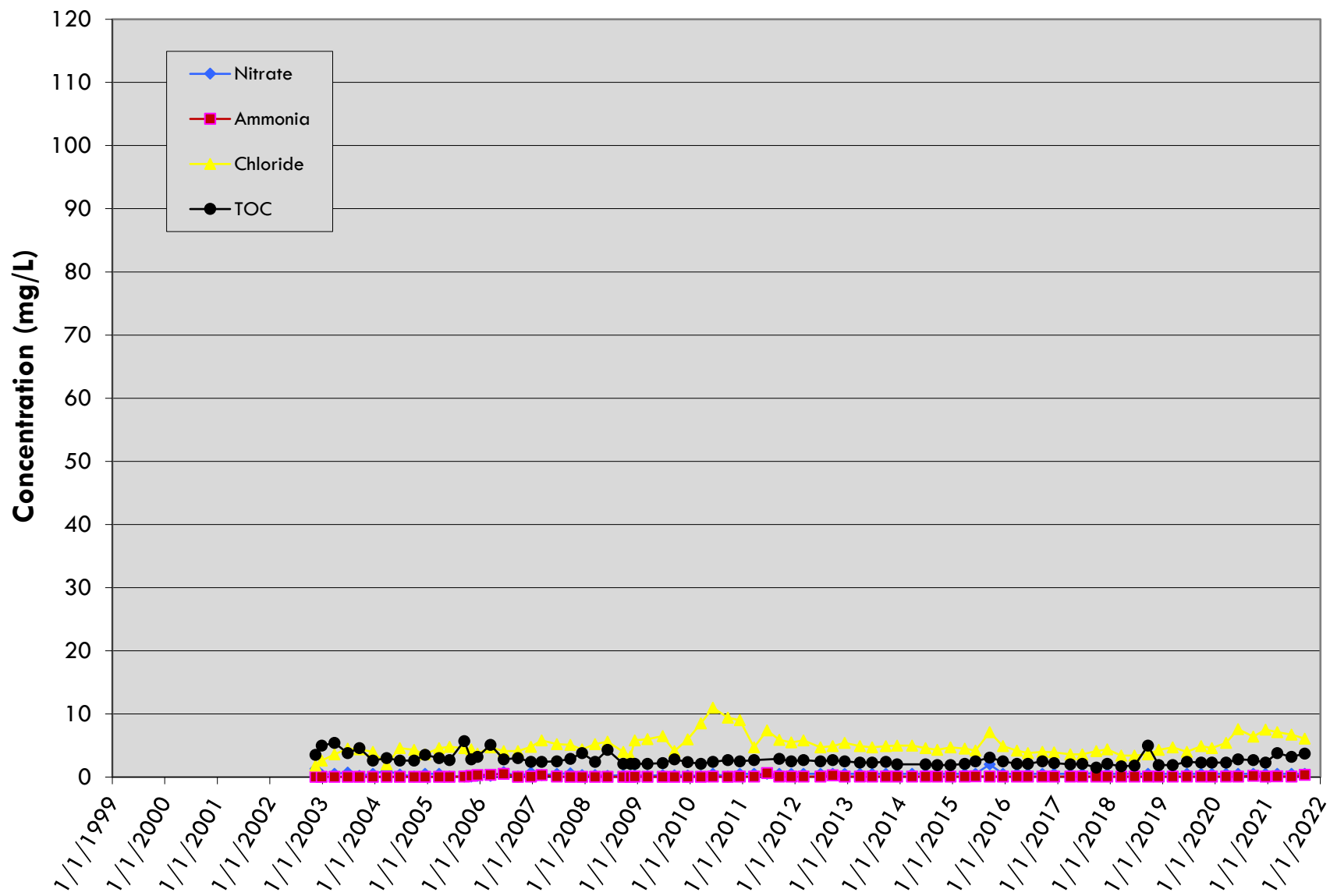
LDCS-2A

LRI Landfill, Pierce County, Washington



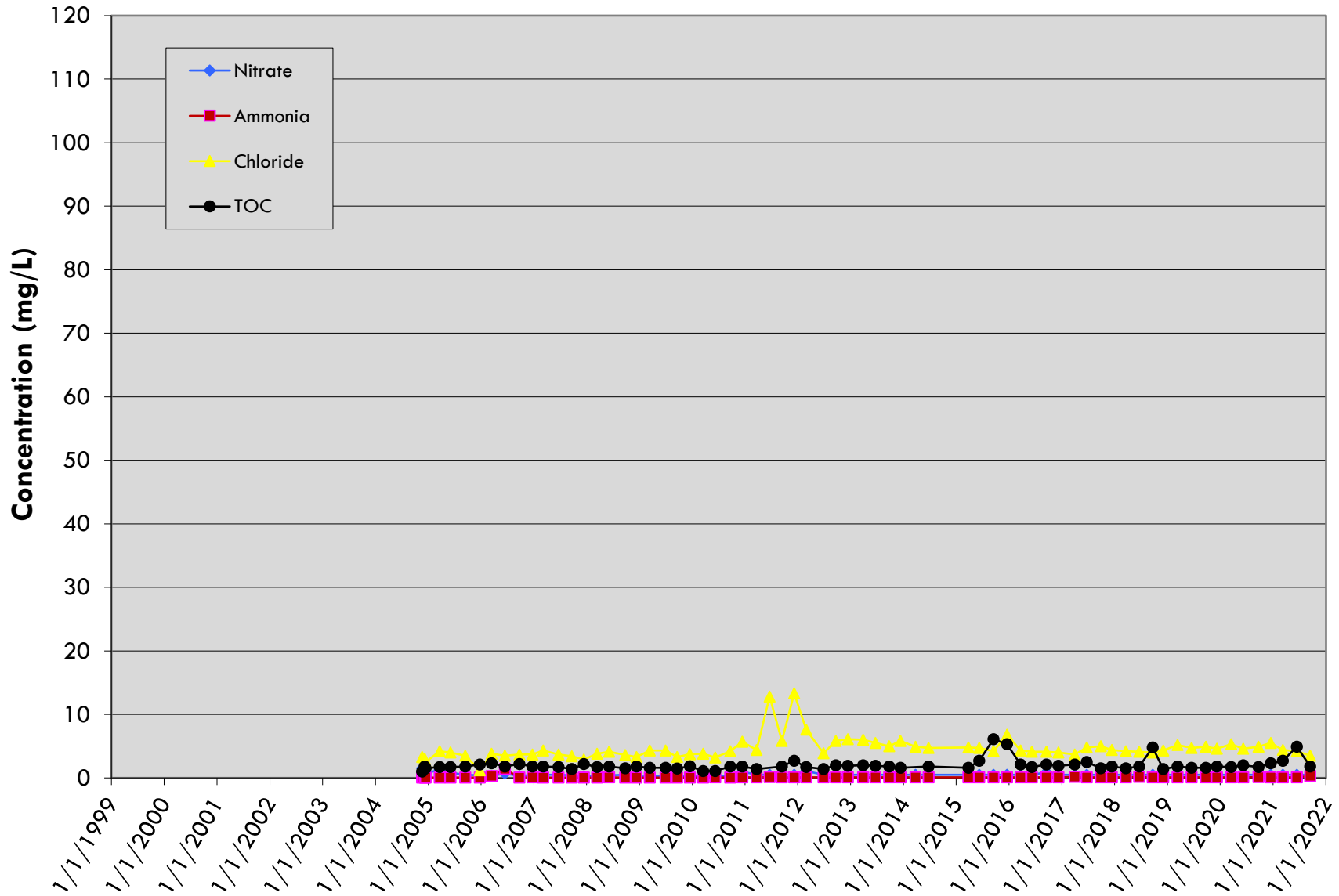
LDCS-2B

LRI Landfill, Pierce County, Washington



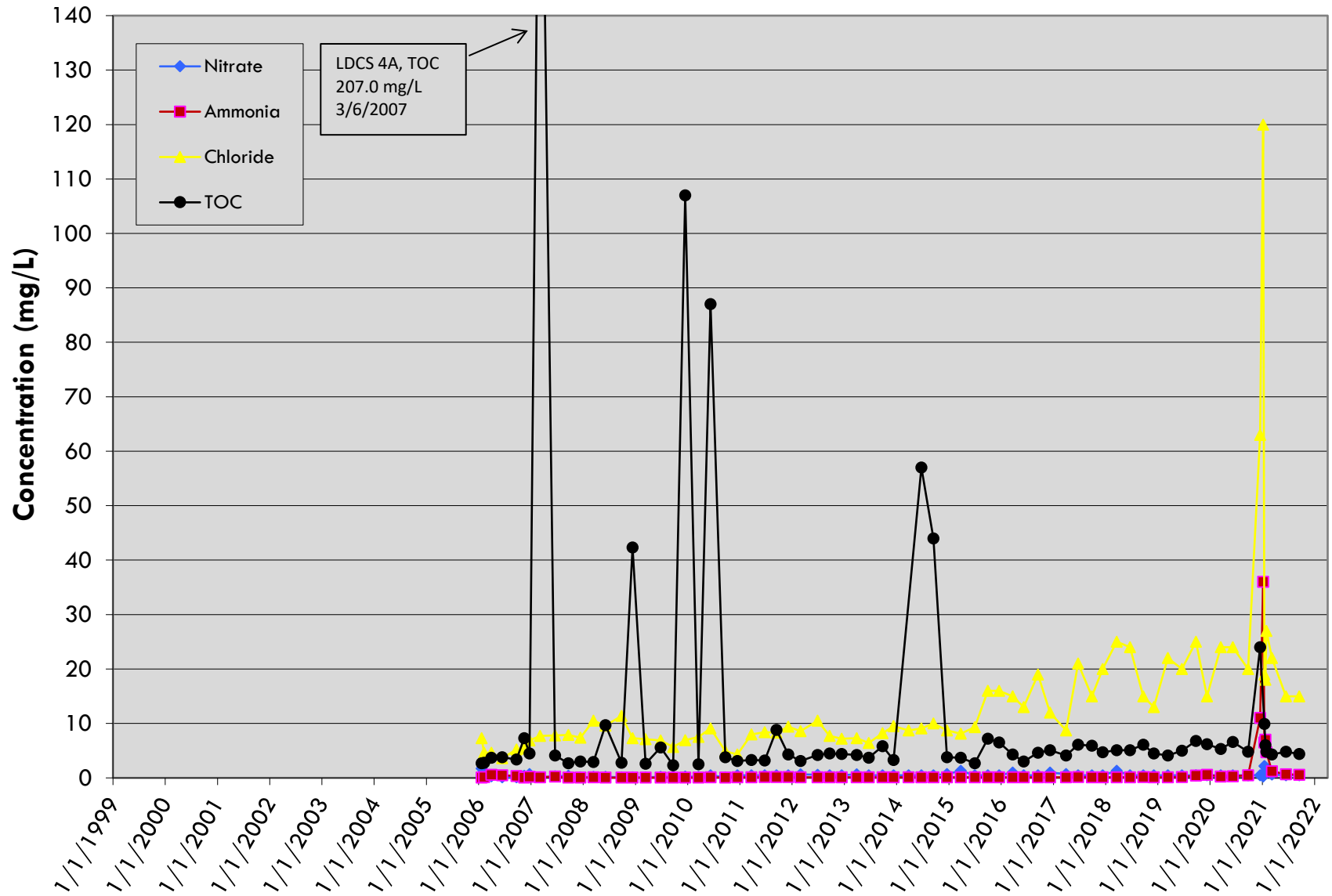
LDCS-3A

LRI Landfill, Pierce County, Washington



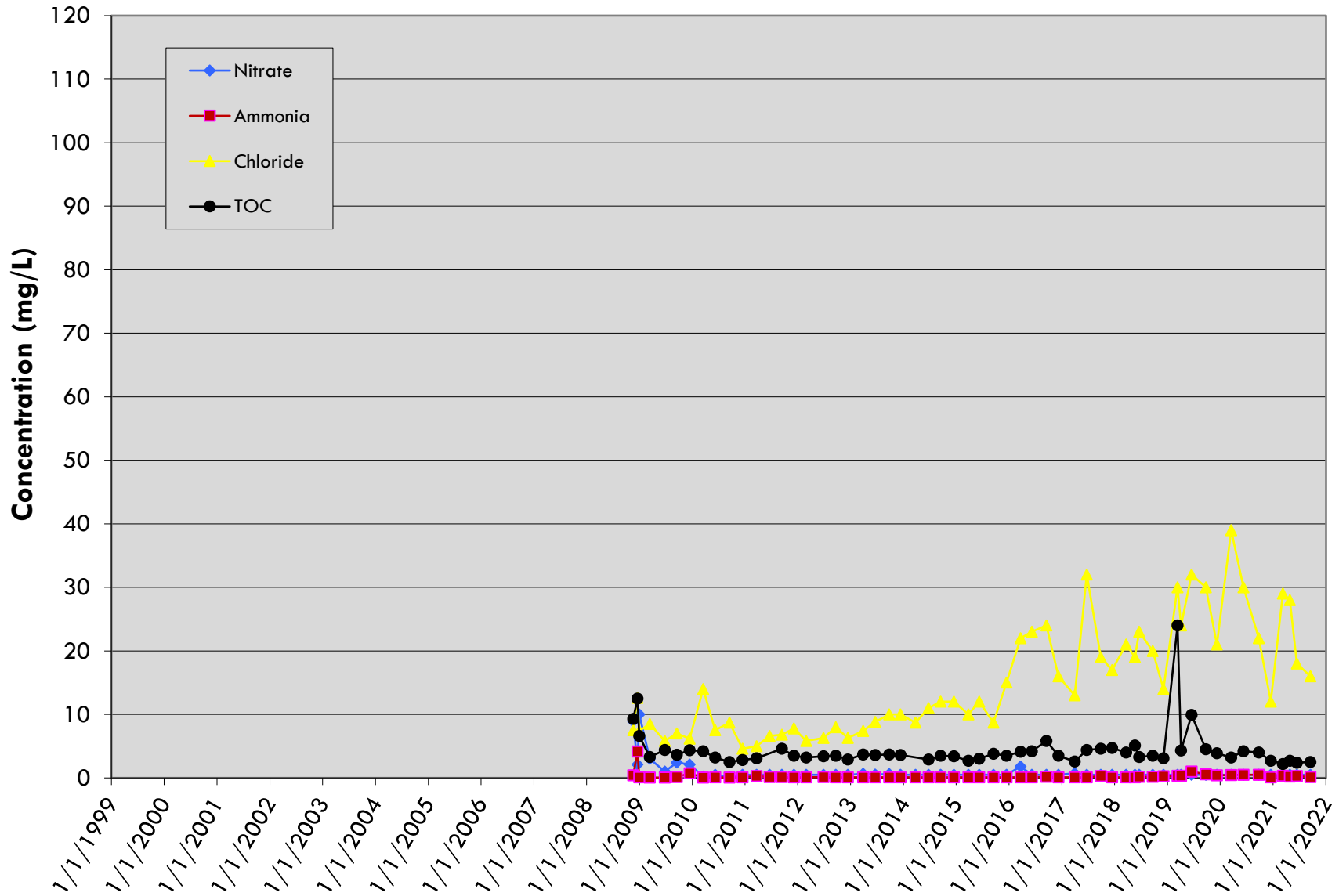
LDCS-4A

LRI Landfill, Pierce County, Washington



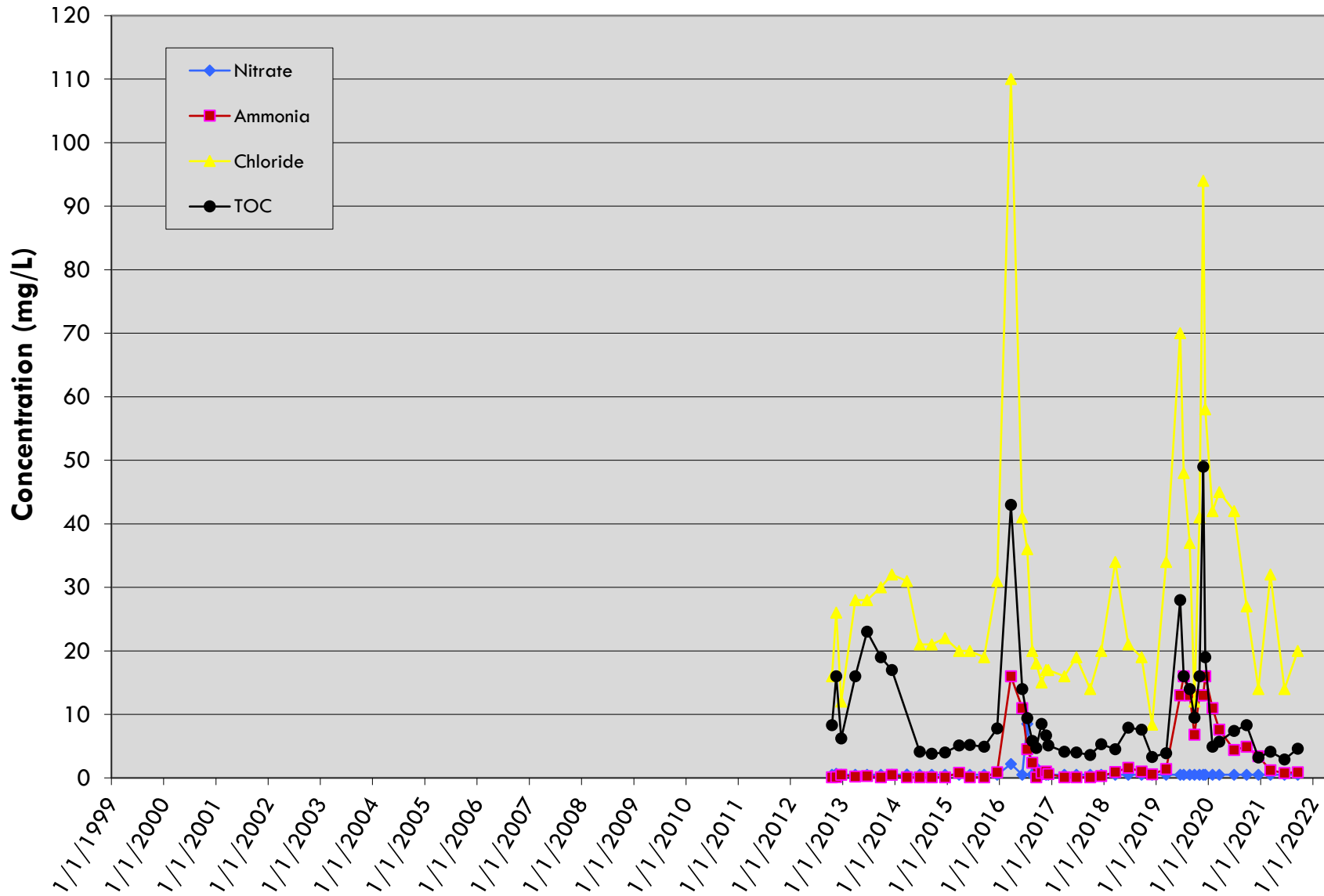
LDCS-4B

LRI Landfill, Pierce County, Washington



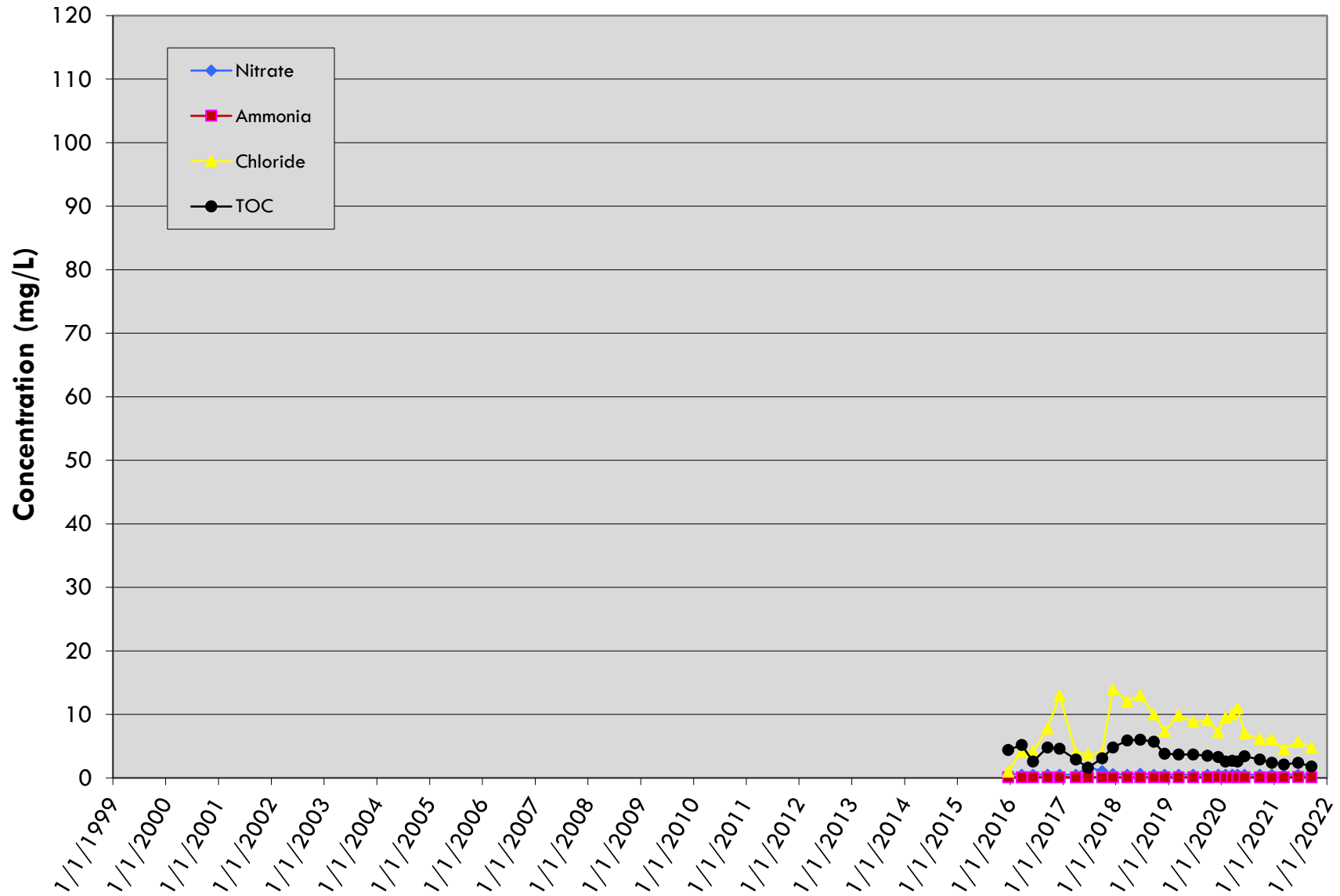
LDCS-5

LRI Landfill, Pierce County, Washington



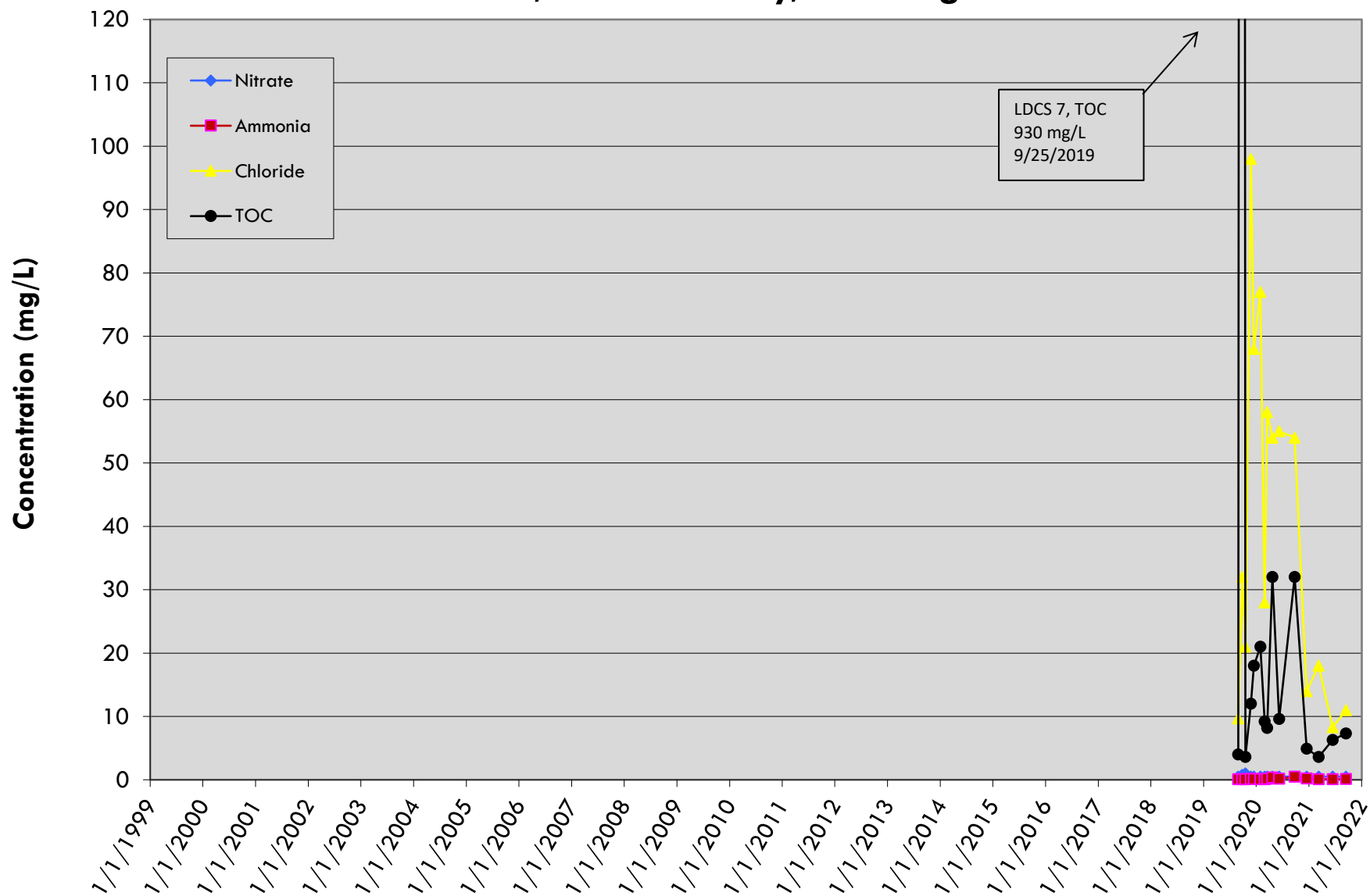
LDCS-6A

LRI Landfill, Pierce County, Washington



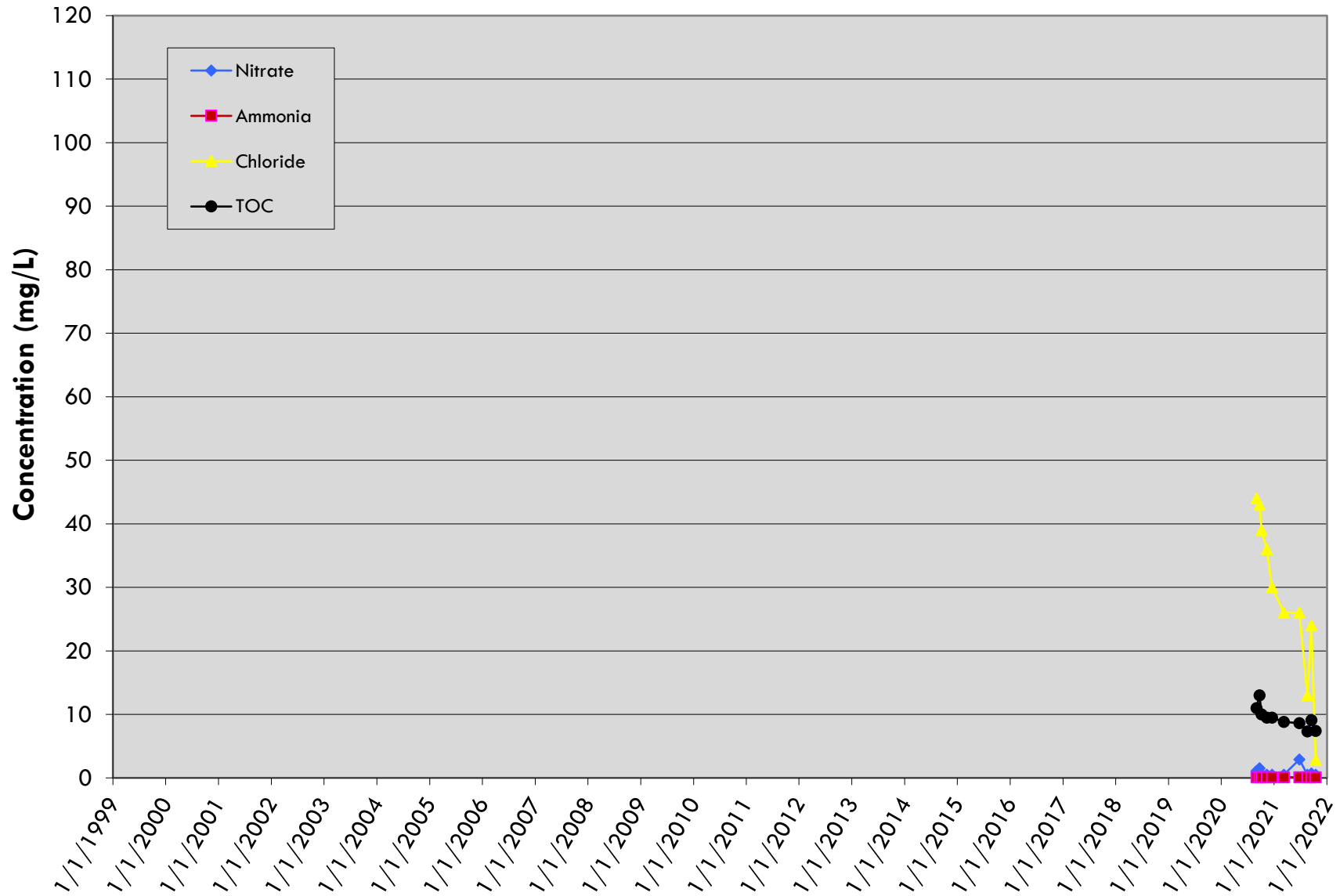
LDCS-7

LRI Landfill, Pierce County, Washington



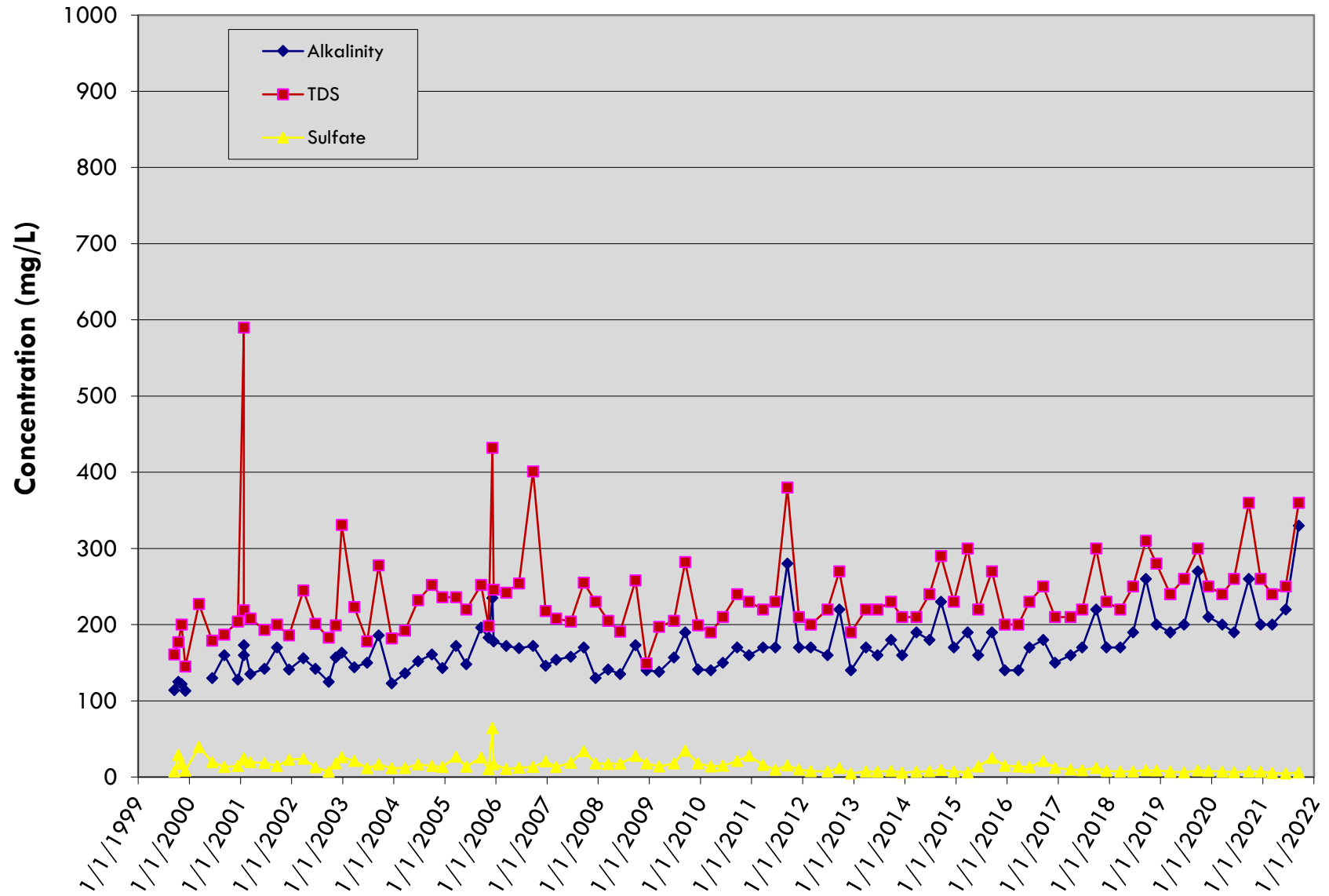
LDCS-8A

LRI Landfill, Pierce County, Washington



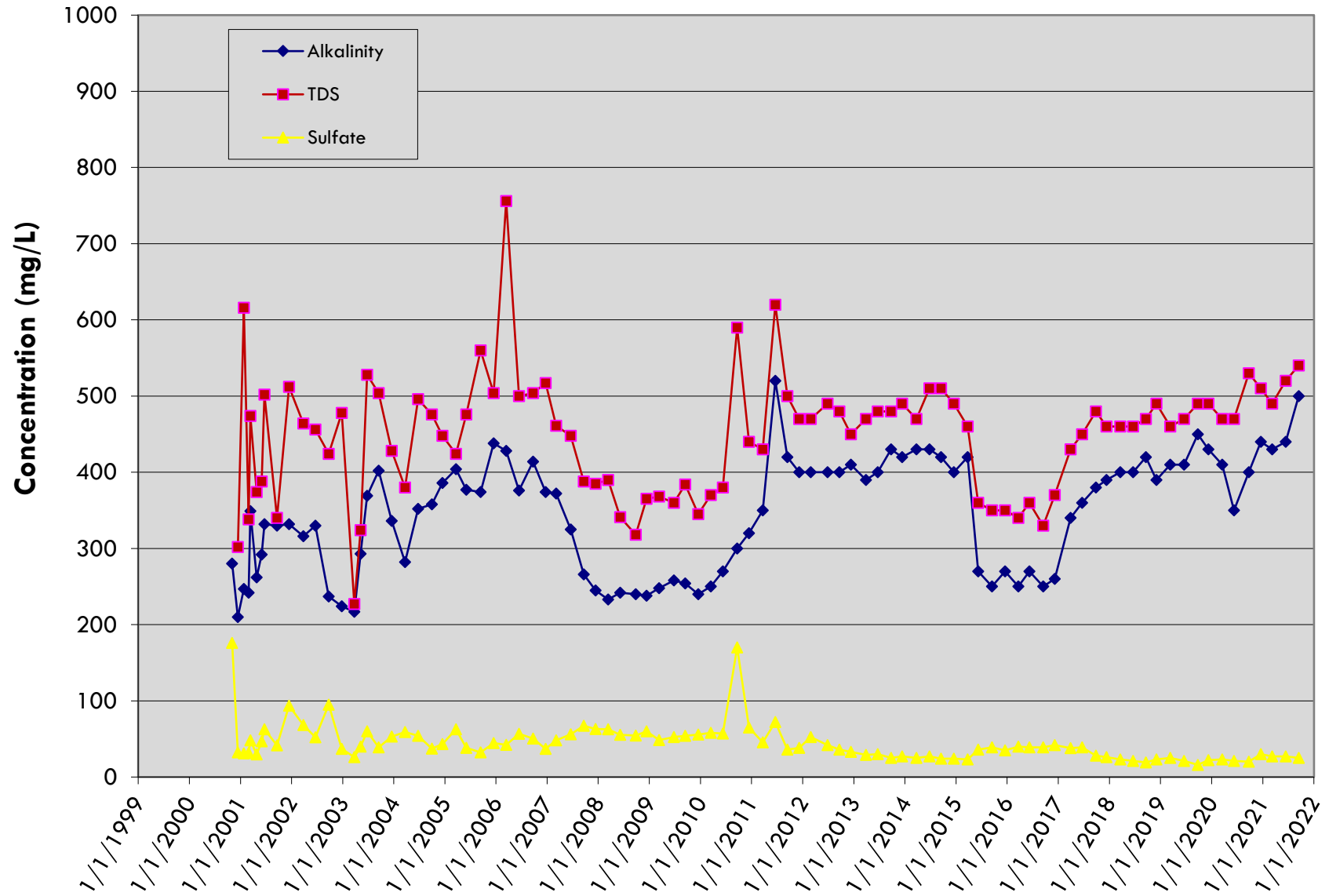
LDCS-1

LRI Landfill, Pierce County, Washington



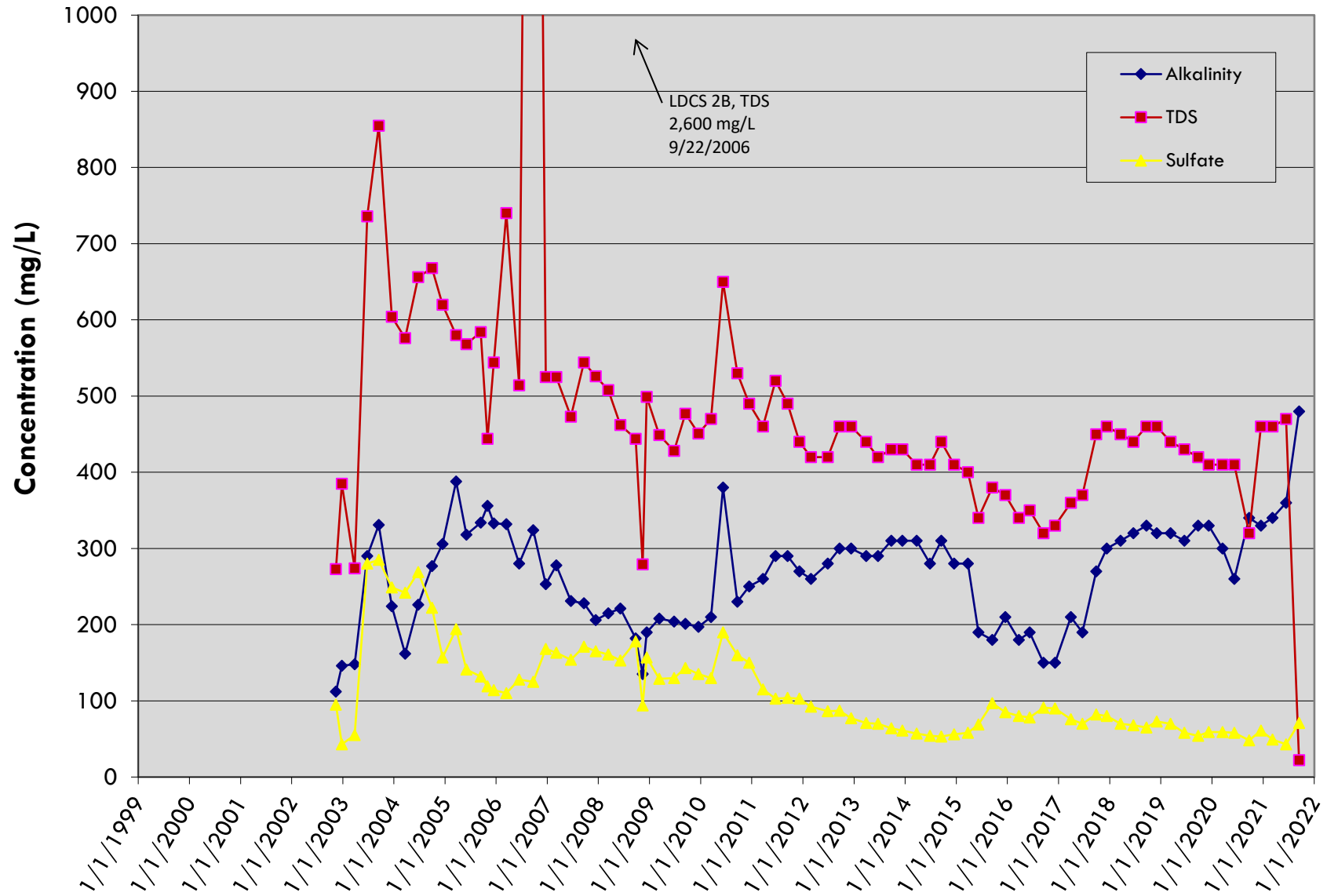
LDCS-2A

LRI Landfill, Pierce County, Washington



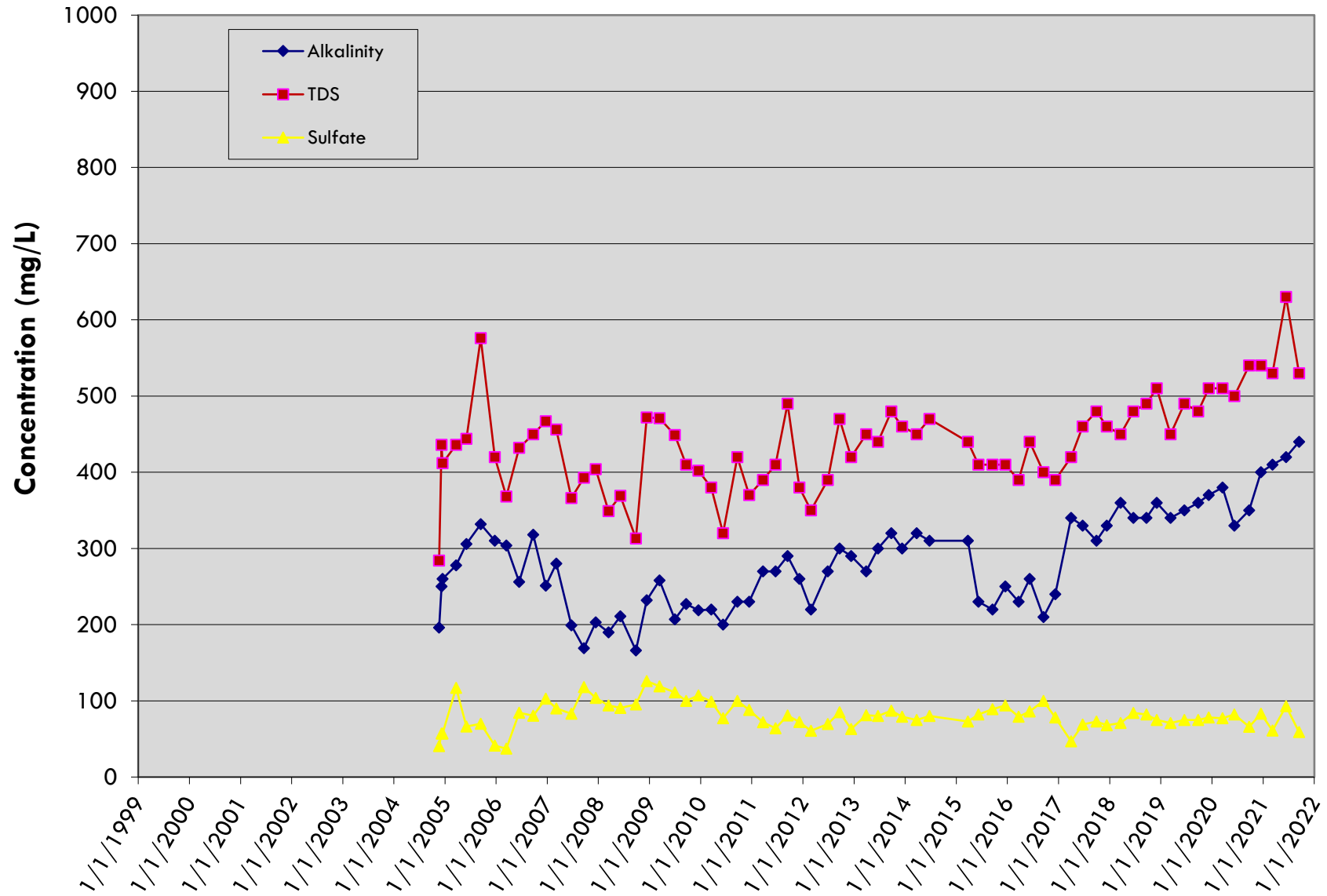
LDCS-2B

LRI Landfill, Pierce County, Washington



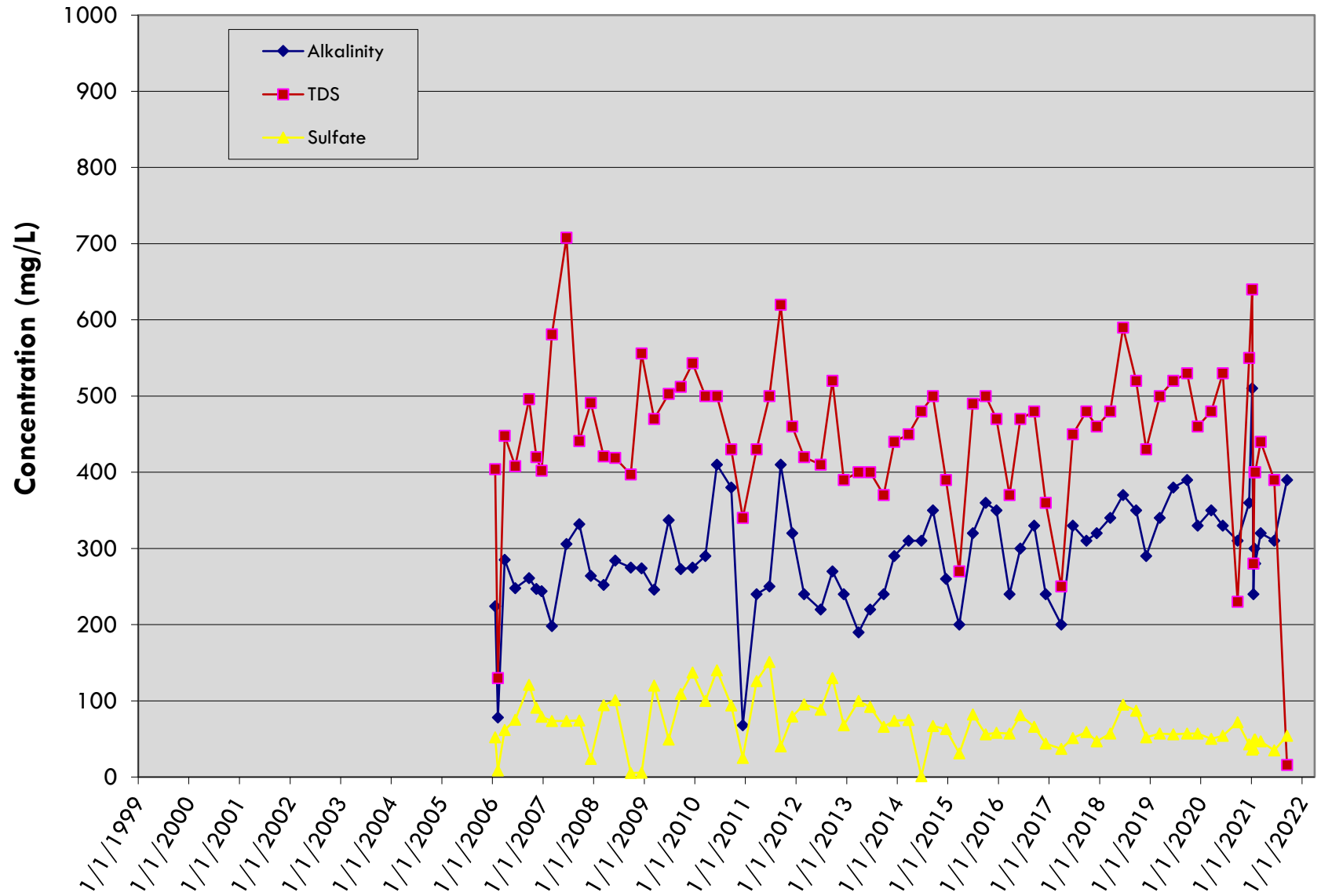
LDCS-3A

LRI Landfill, Pierce County, Washington



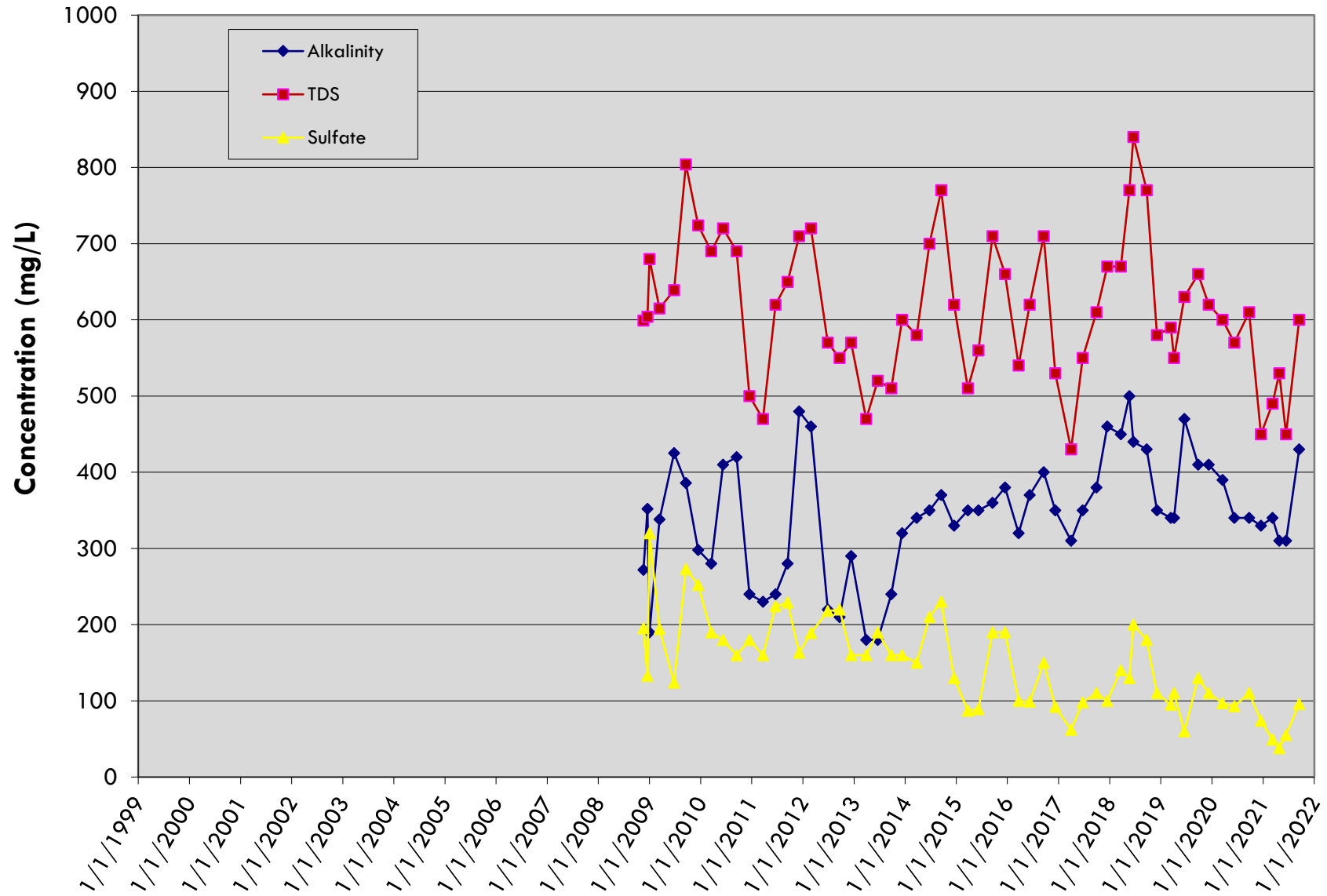
LDCS-4A

LRI Landfill, Pierce County, Washington



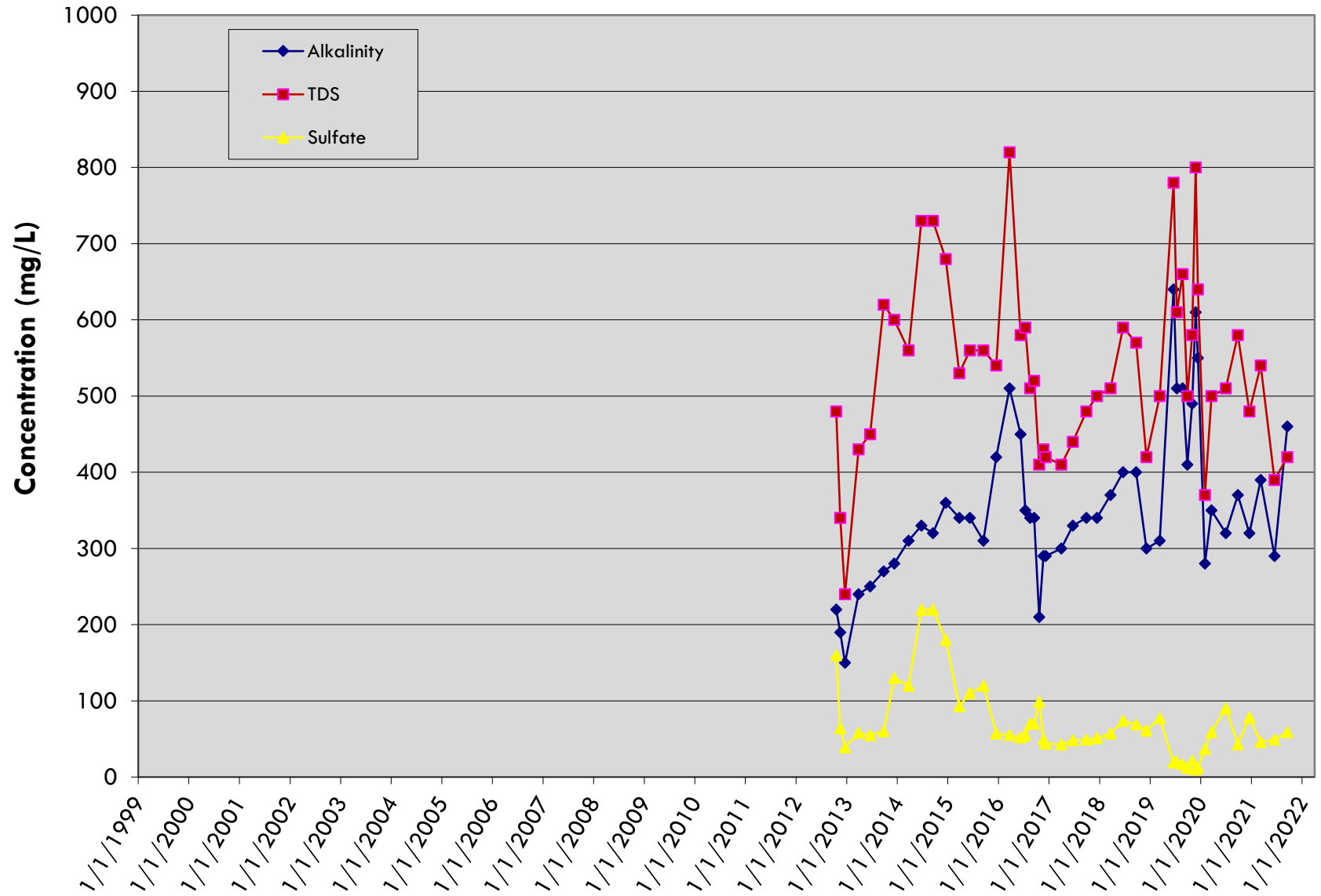
LDCS-4B

LRI Landfill, Pierce County, Washington



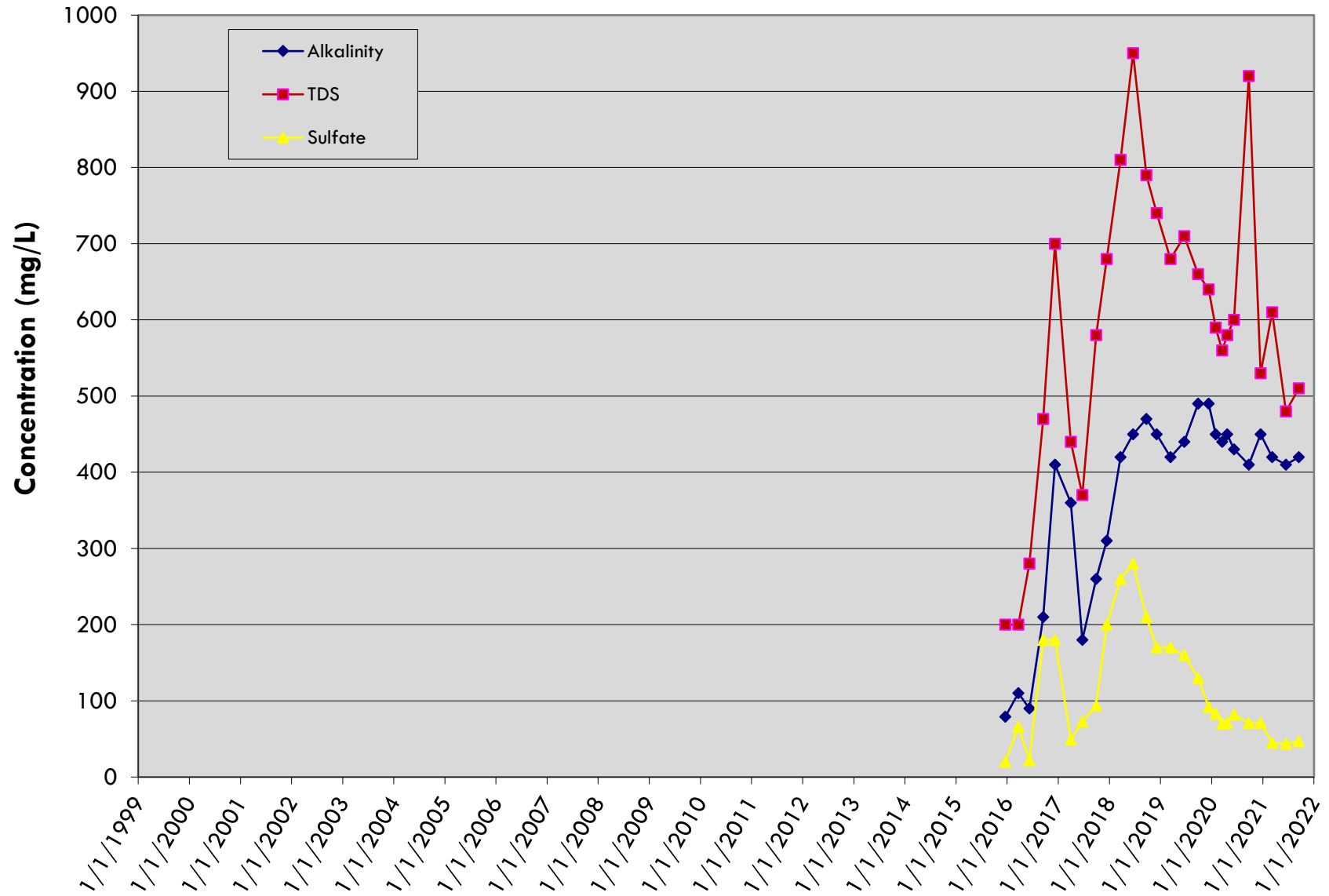
LDCS-5

LRI Landfill, Pierce County, Washington



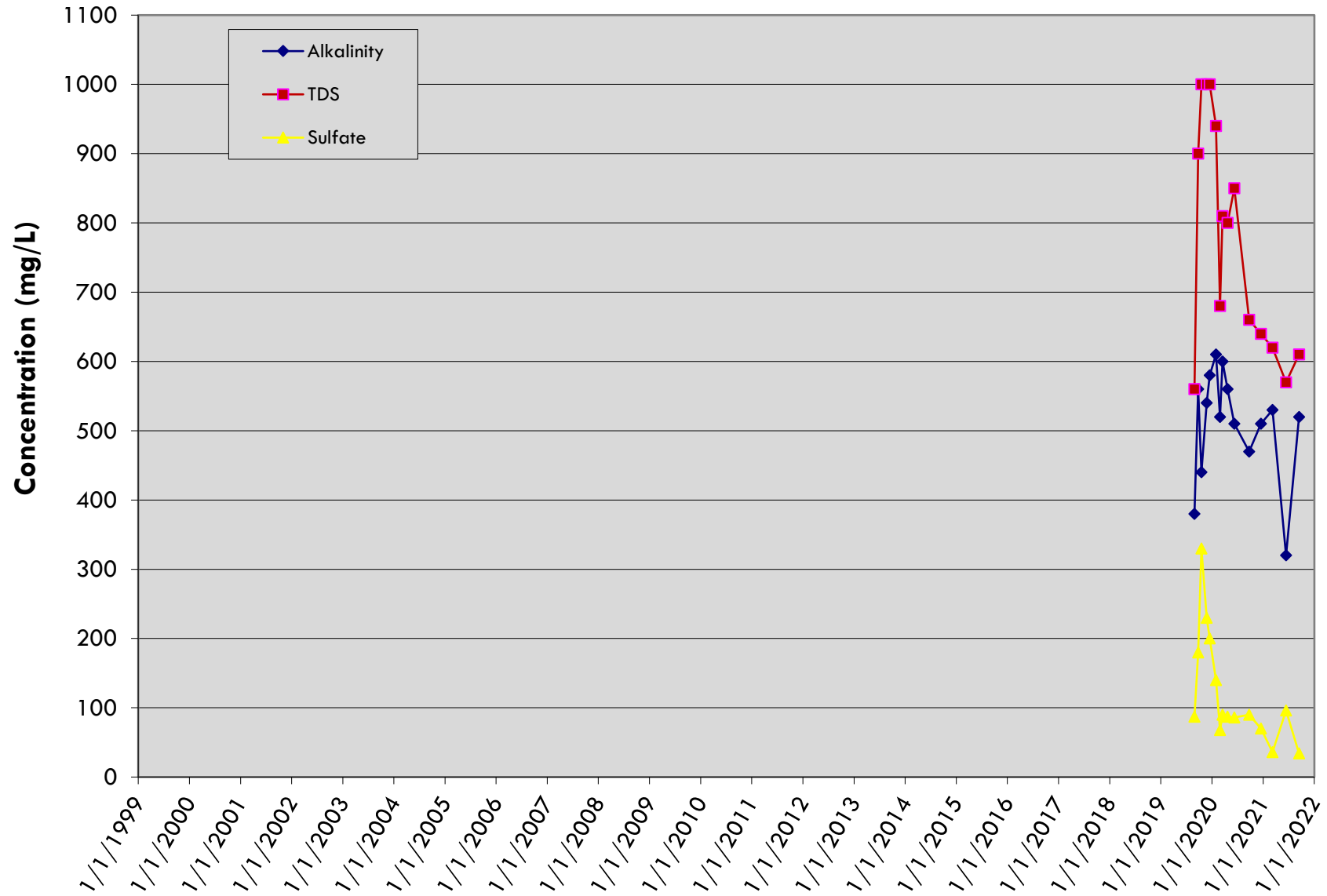
LDCS-6A

LRI Landfill, Pierce County, Washington

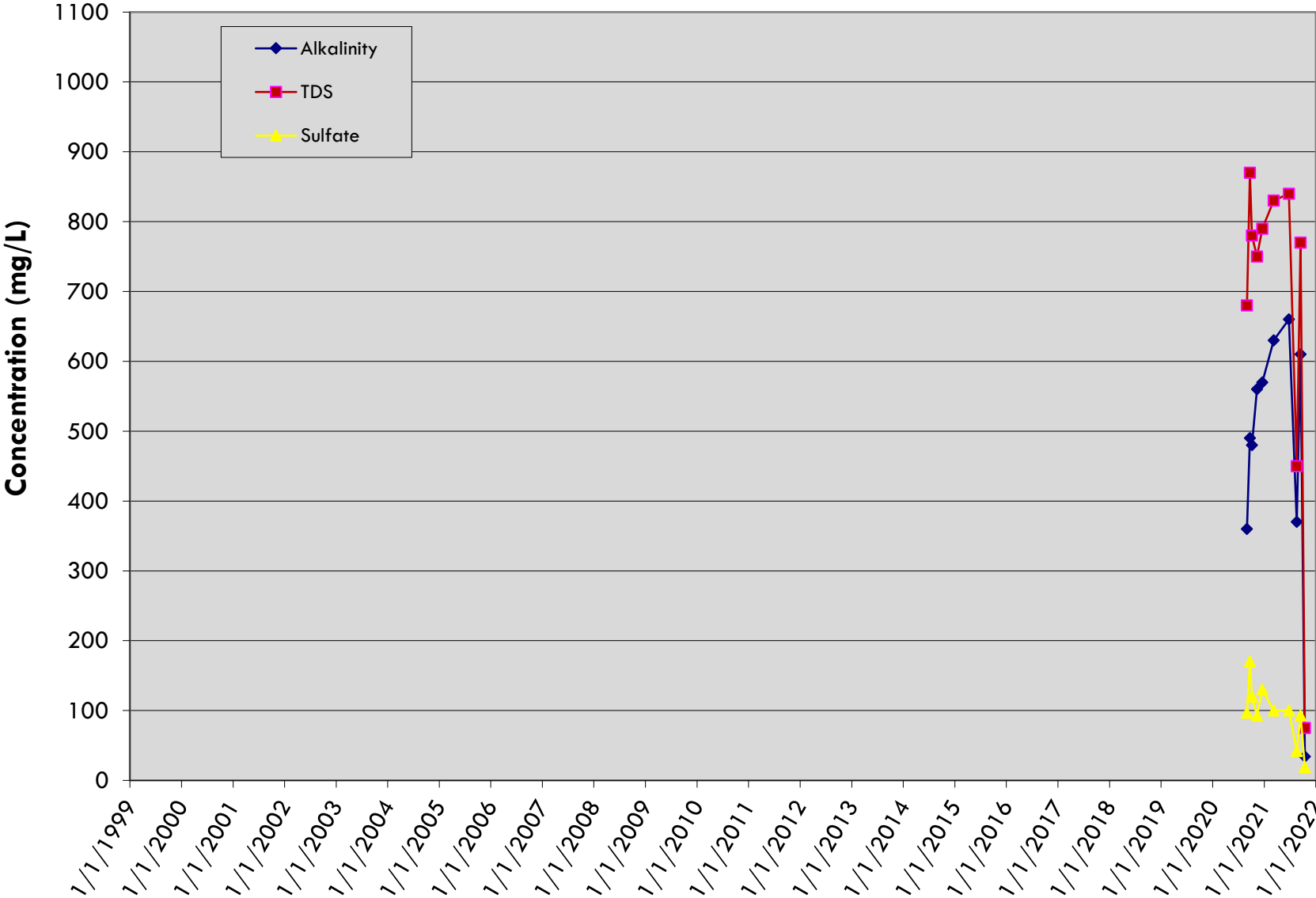


LDCS-7

LRI Landfill, Pierce County, Washington

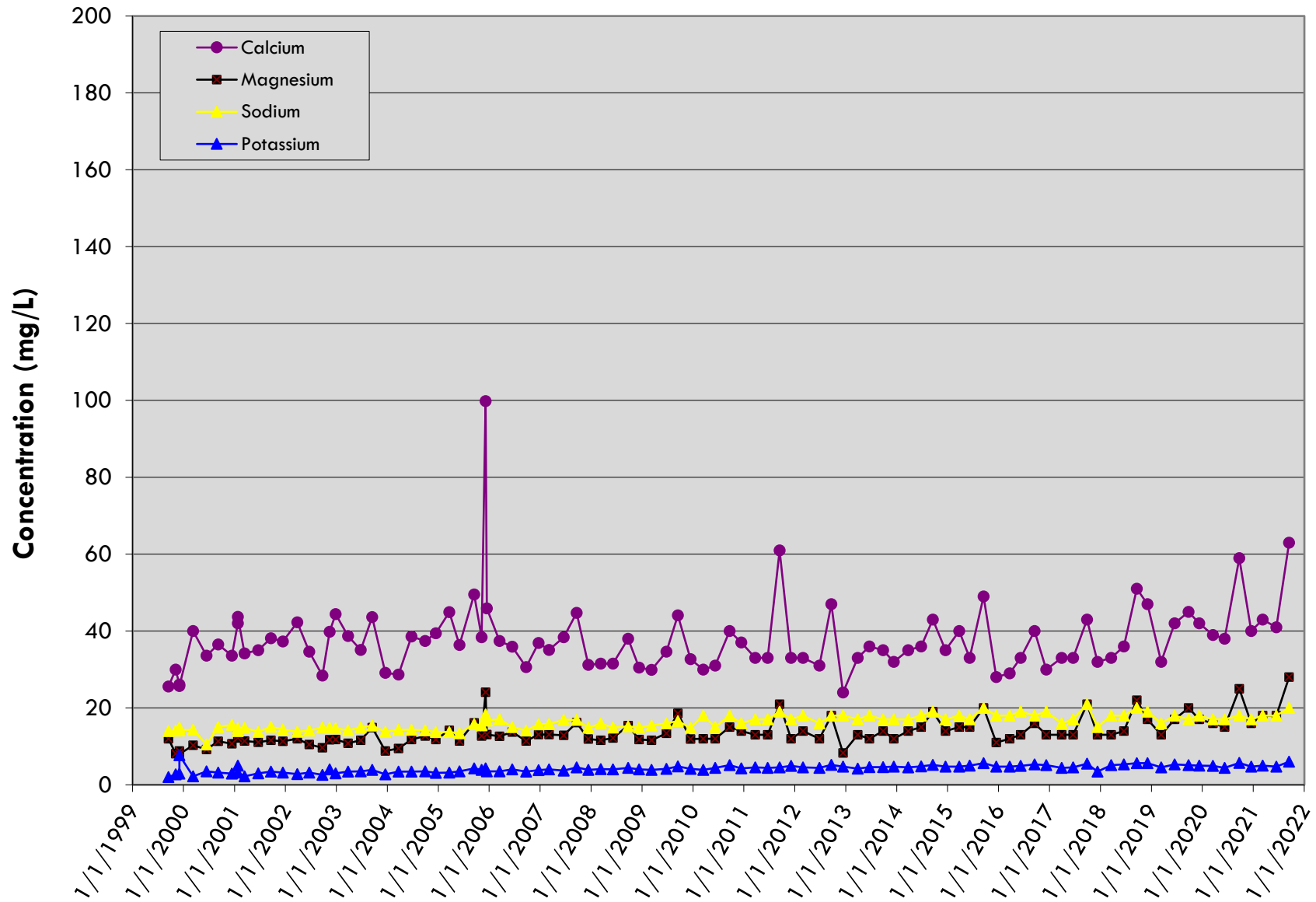


LDCS-8A
LRI Landfill, Pierce County, Washington



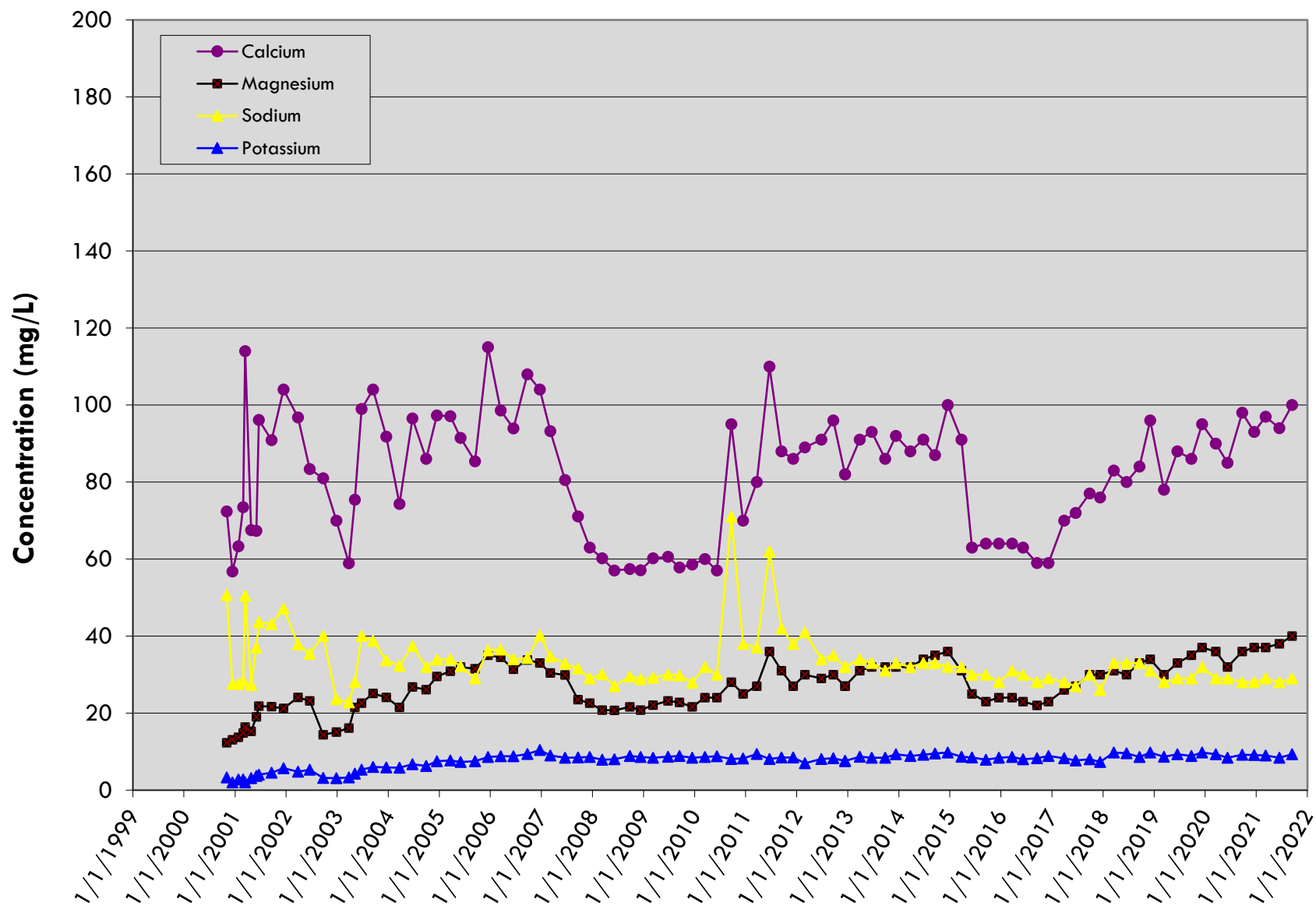
LDCS-1

LRI Landfill, Pierce County, Washington



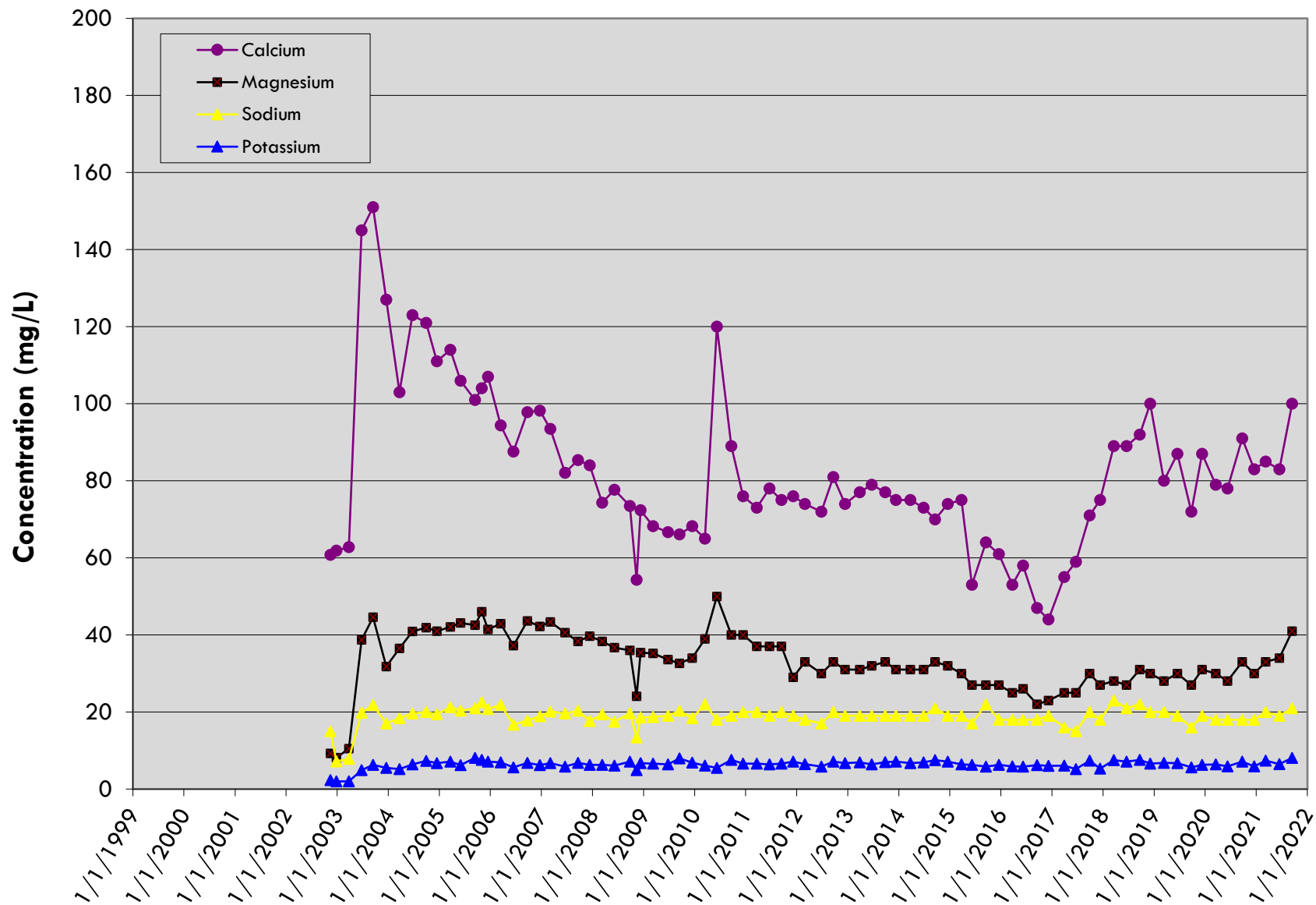
LDCS-2A

LRI Landfill, Pierce County, Washington



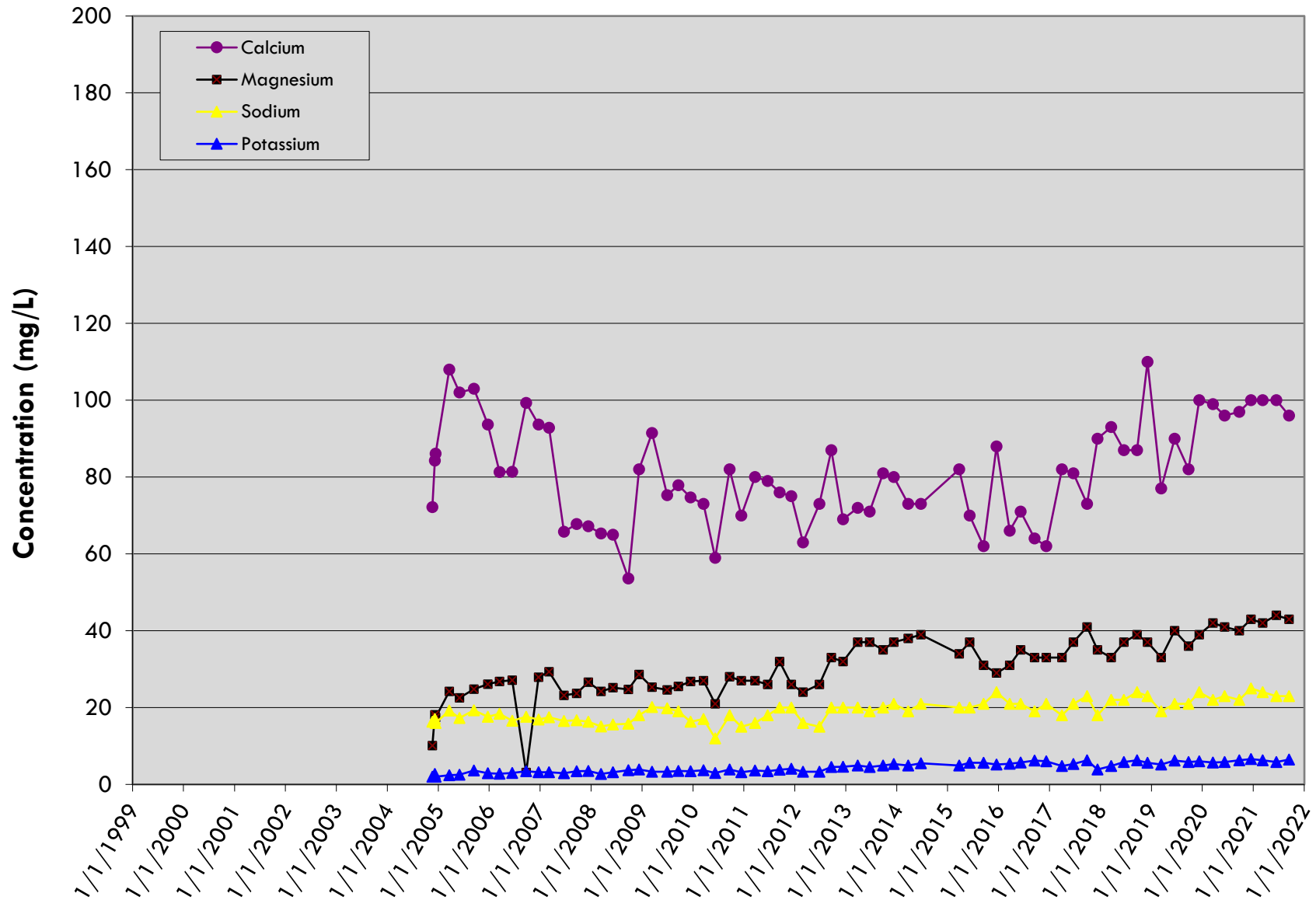
LDCS-2B

LRI Landfill, Pierce County, Washington



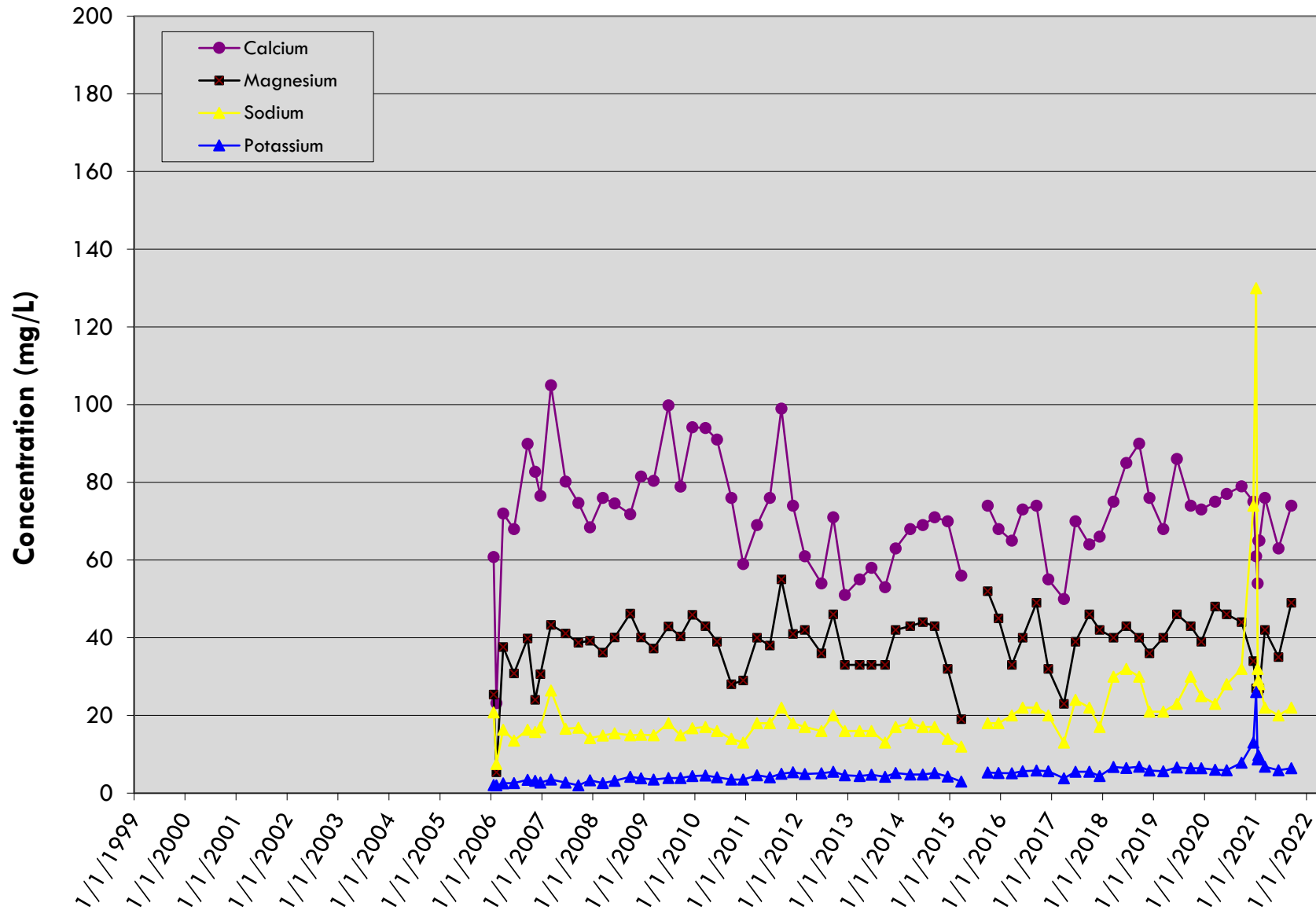
LDCS-3A

LRI Landfill, Pierce County, Washington



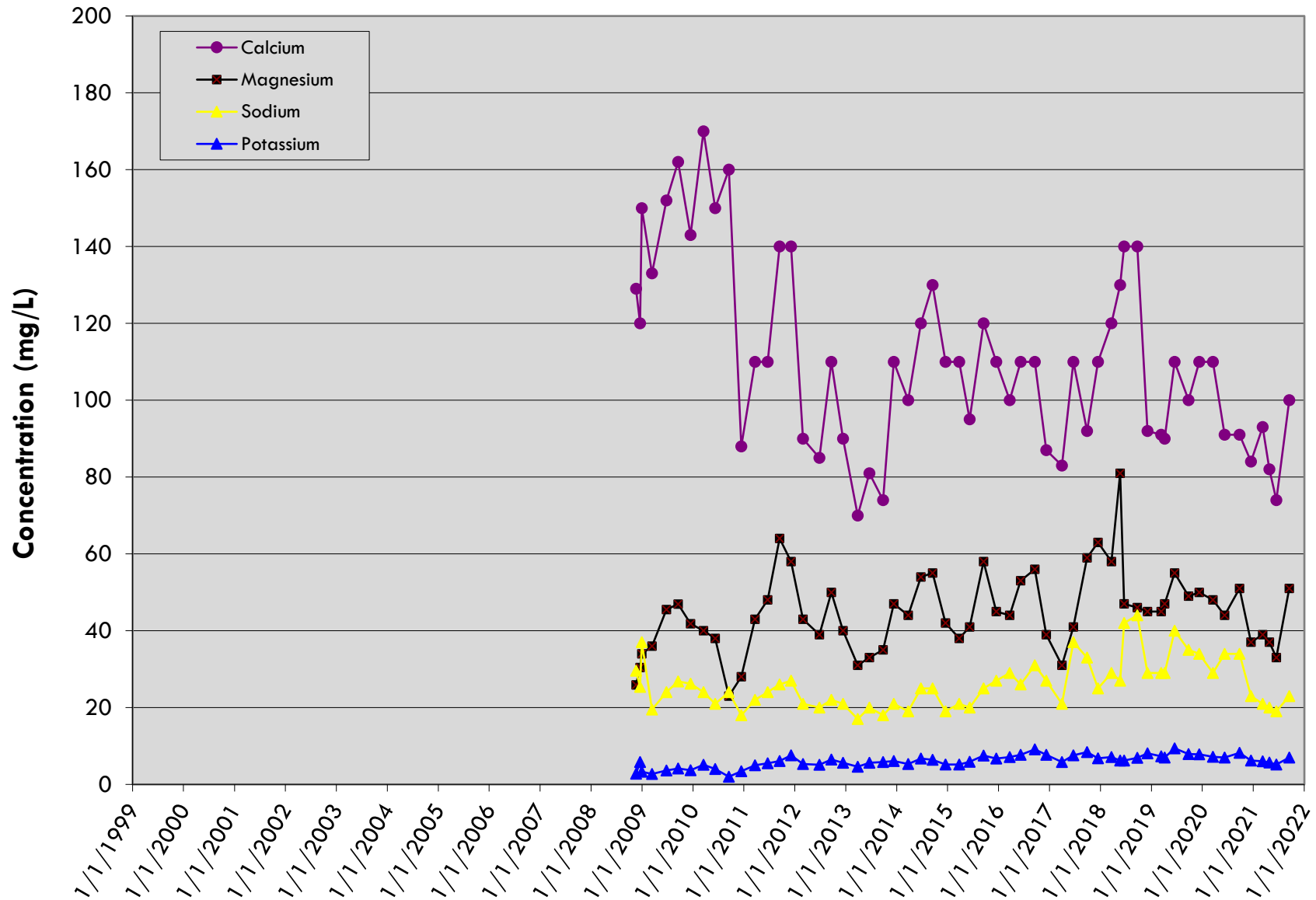
LDCS-4A

LRI Landfill, Pierce County, Washington



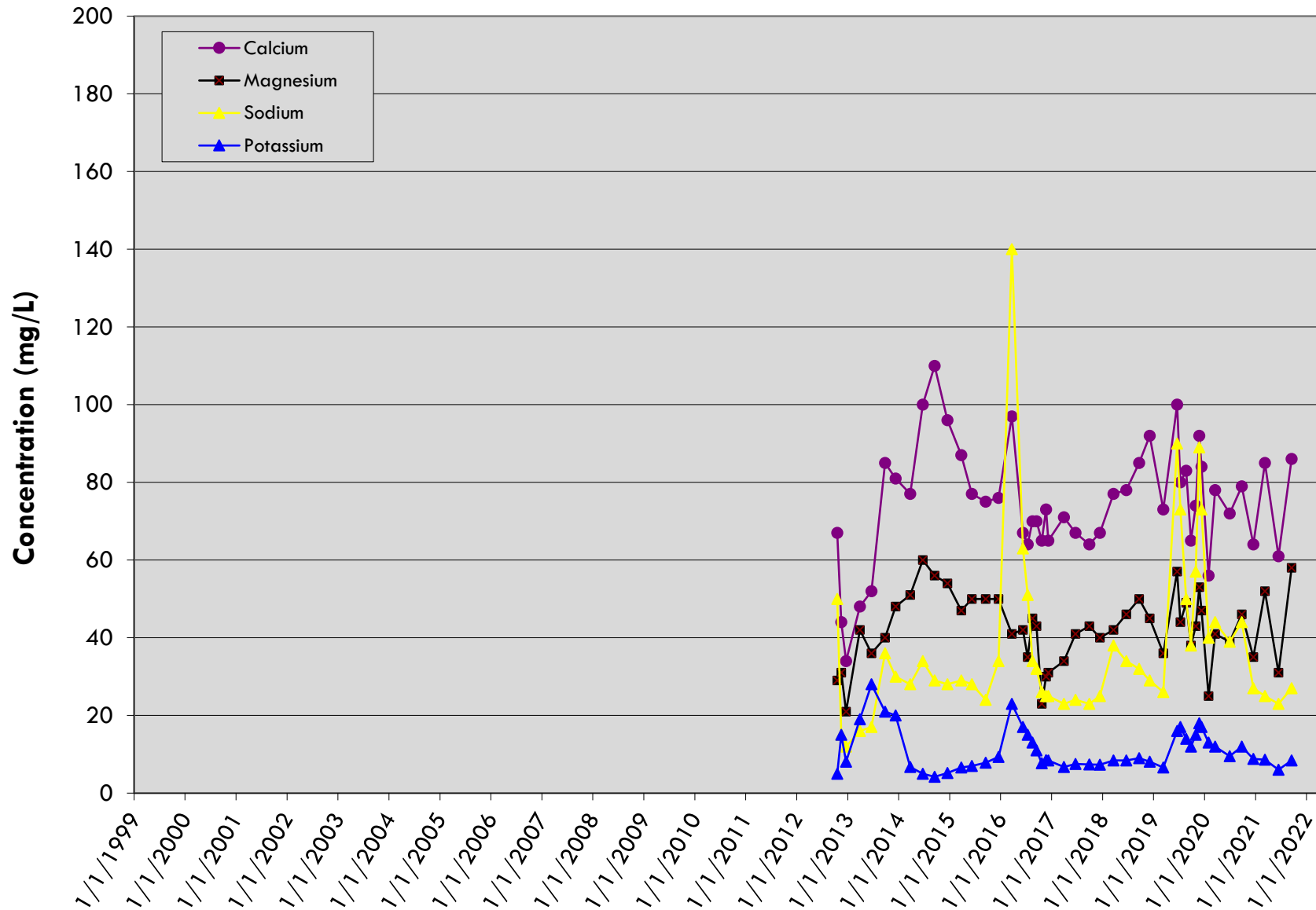
LDCS-4B

LRI Landfill, Pierce County, Washington



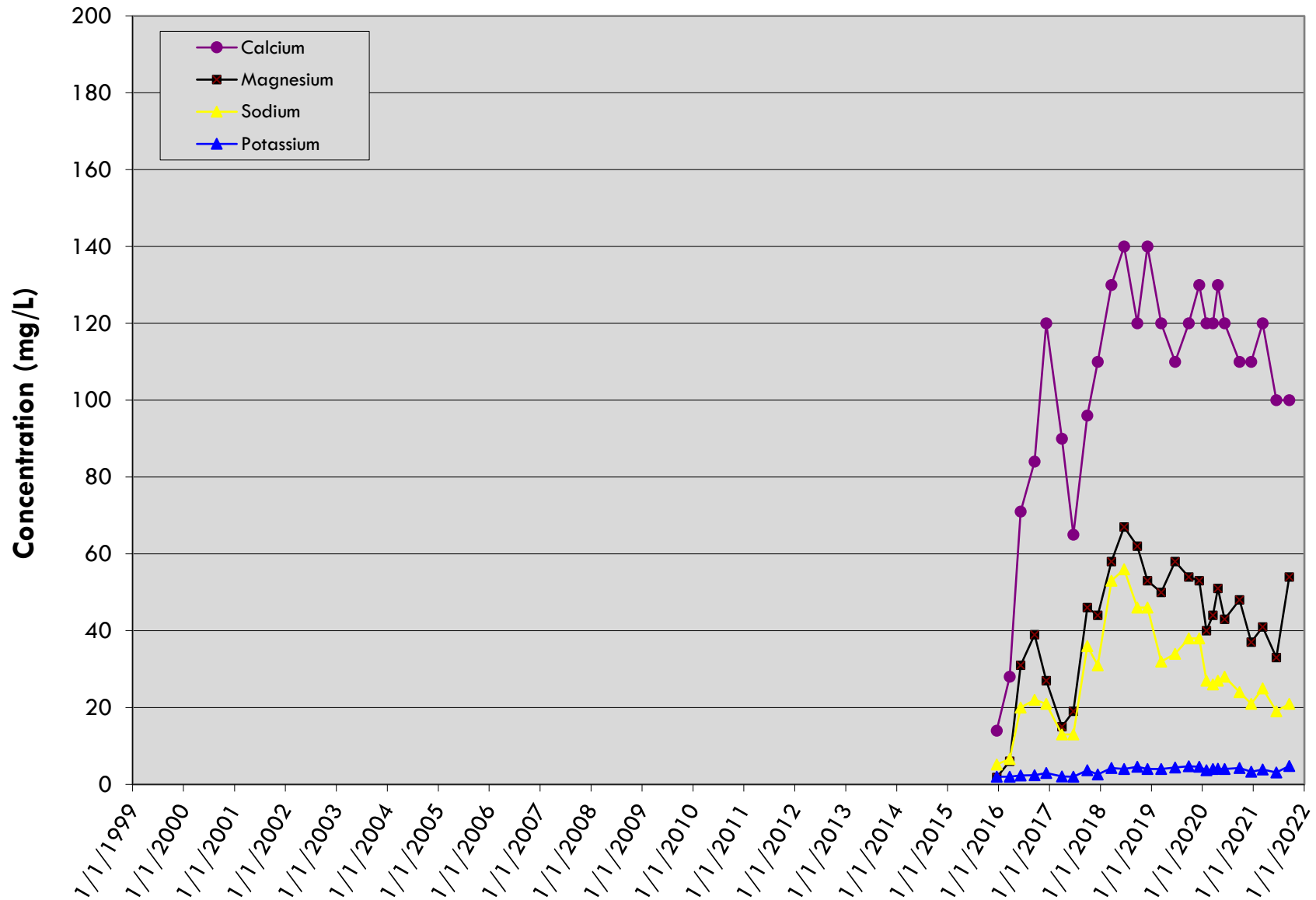
LDCS-5

LRI Landfill, Pierce County, Washington



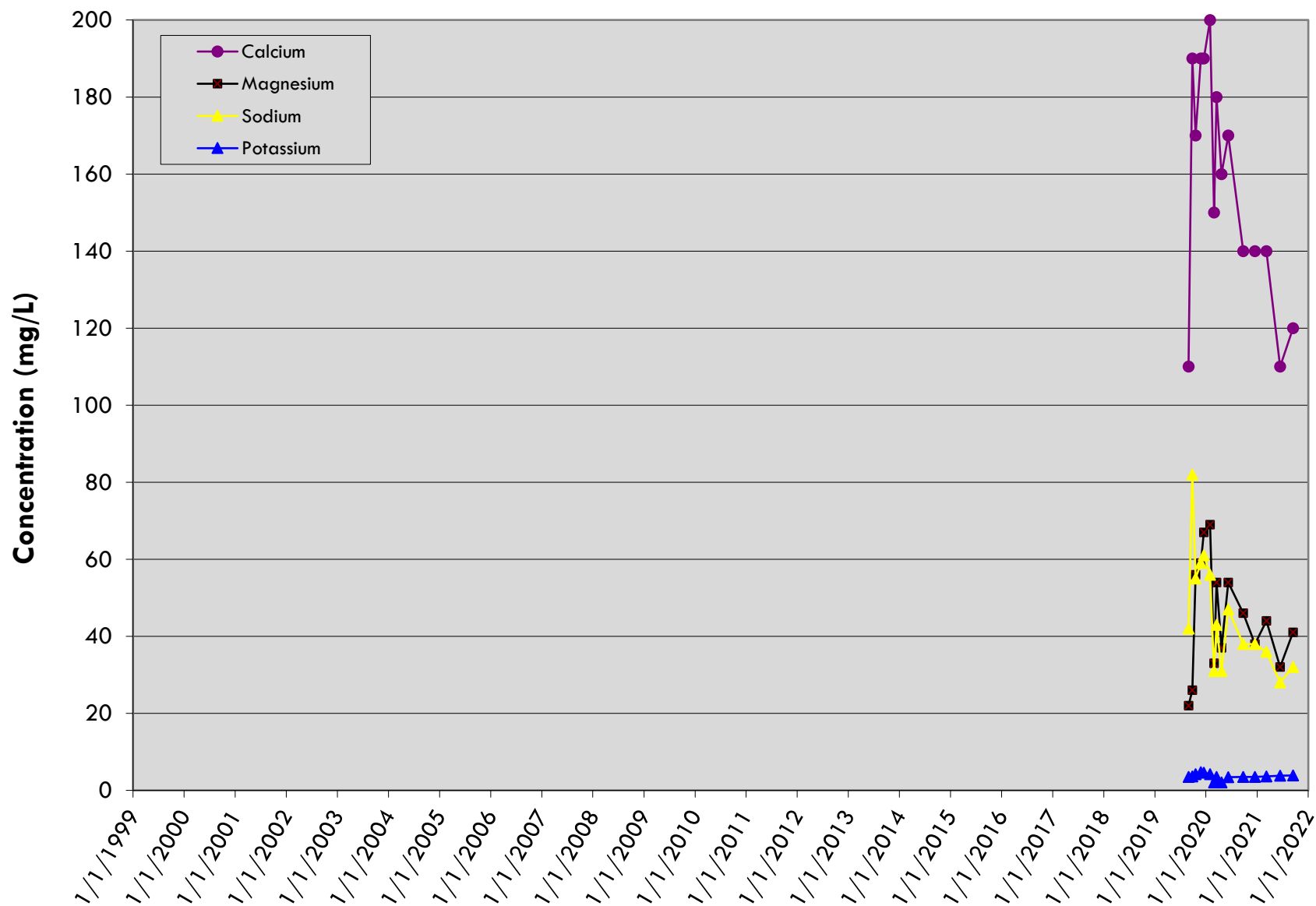
LDCS-6A

LRI Landfill, Pierce County, Washington



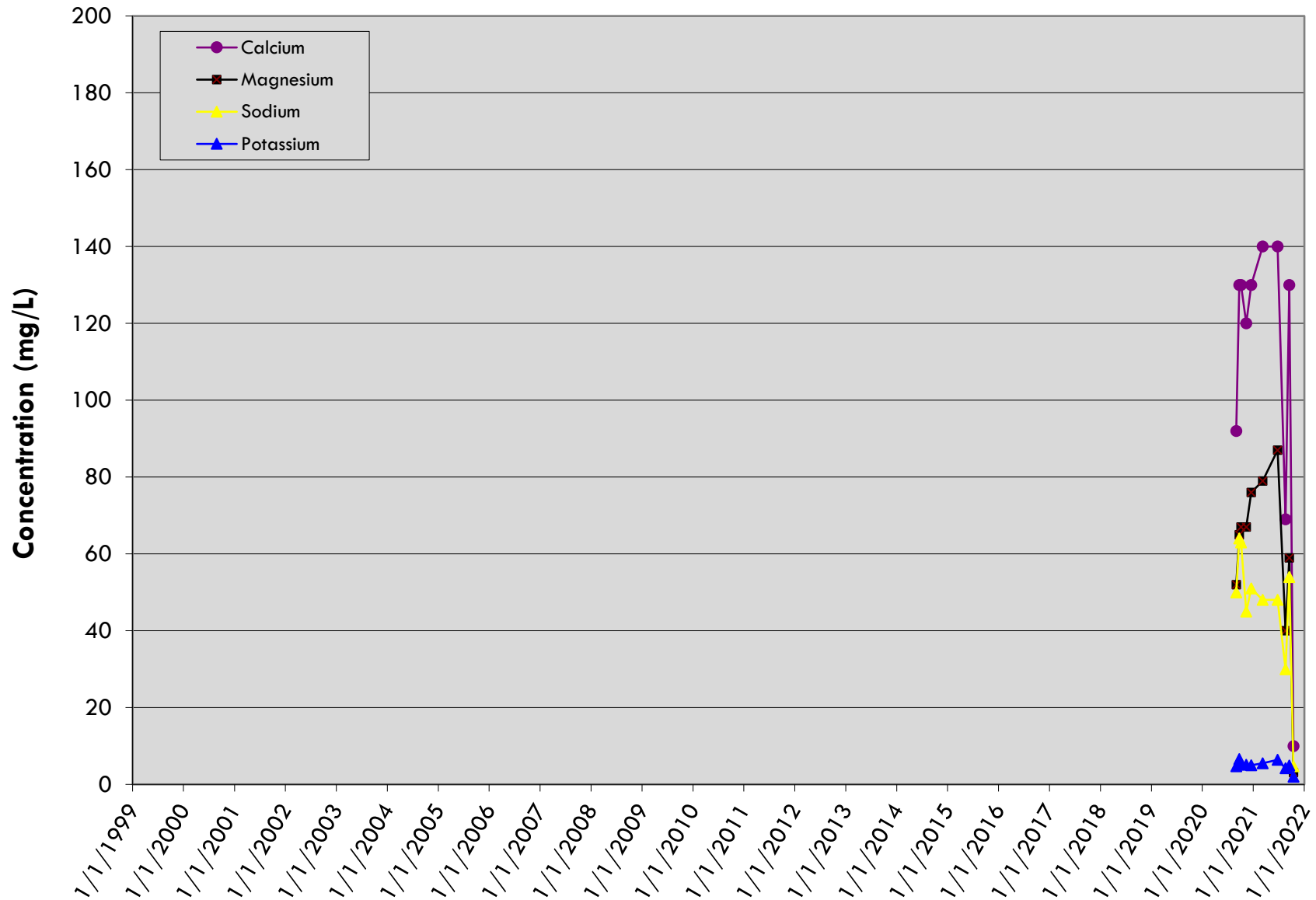
LDCS-7

LRI Landfill, Pierce County, Washington



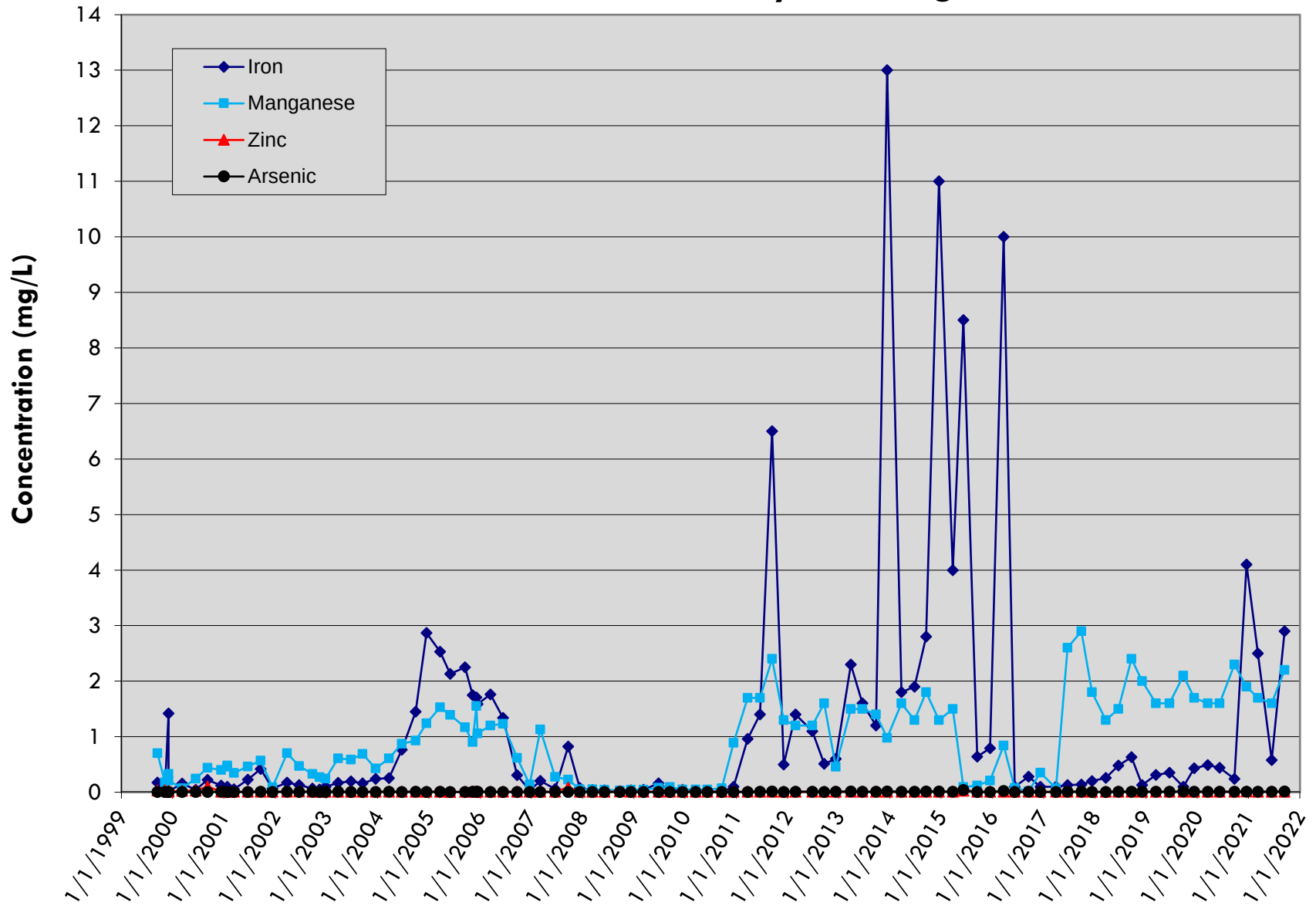
LDCS-8A

LRI Landfill, Pierce County, Washington



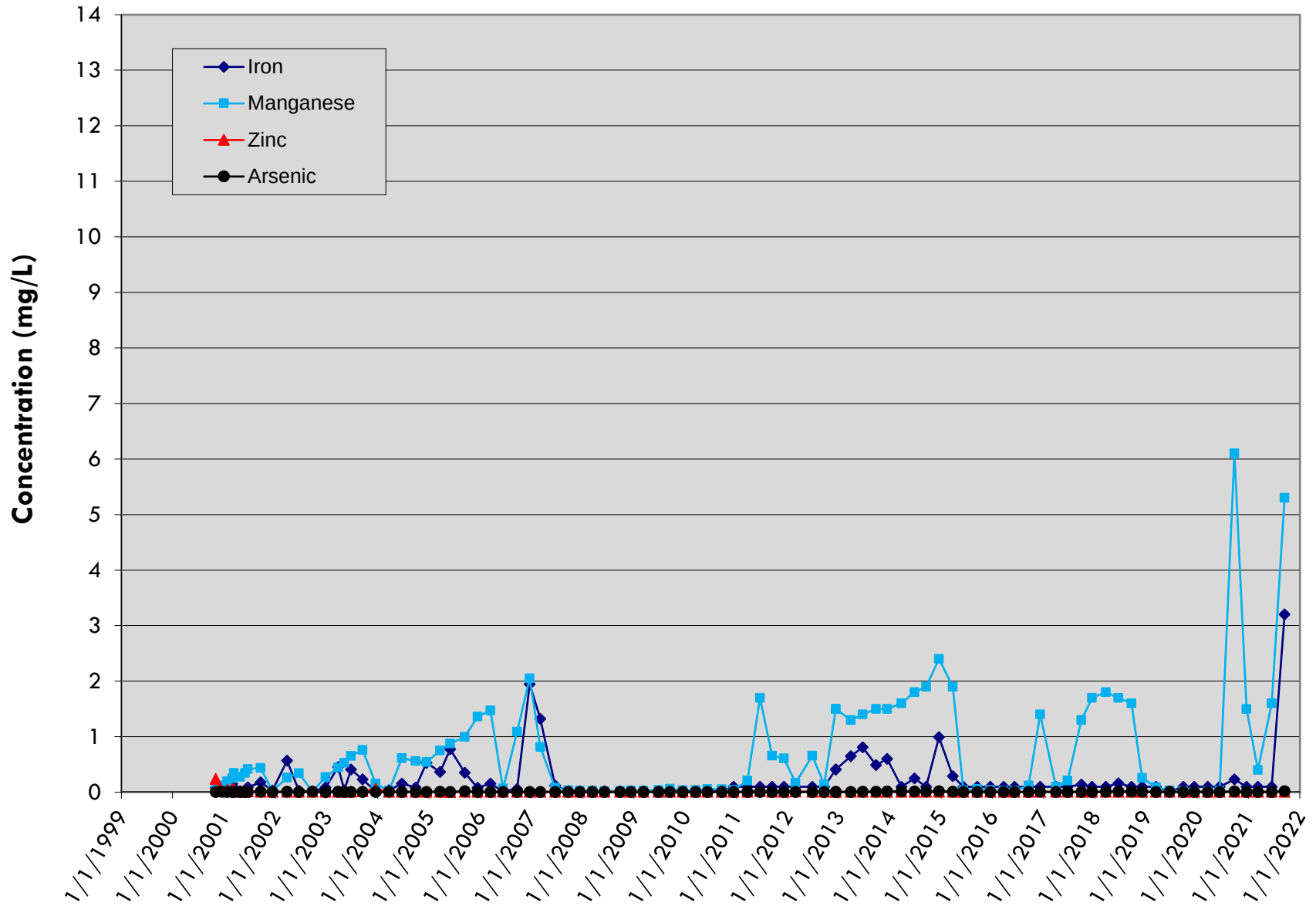
LDCS-1

LRI Landfill, Pierce County, Washington



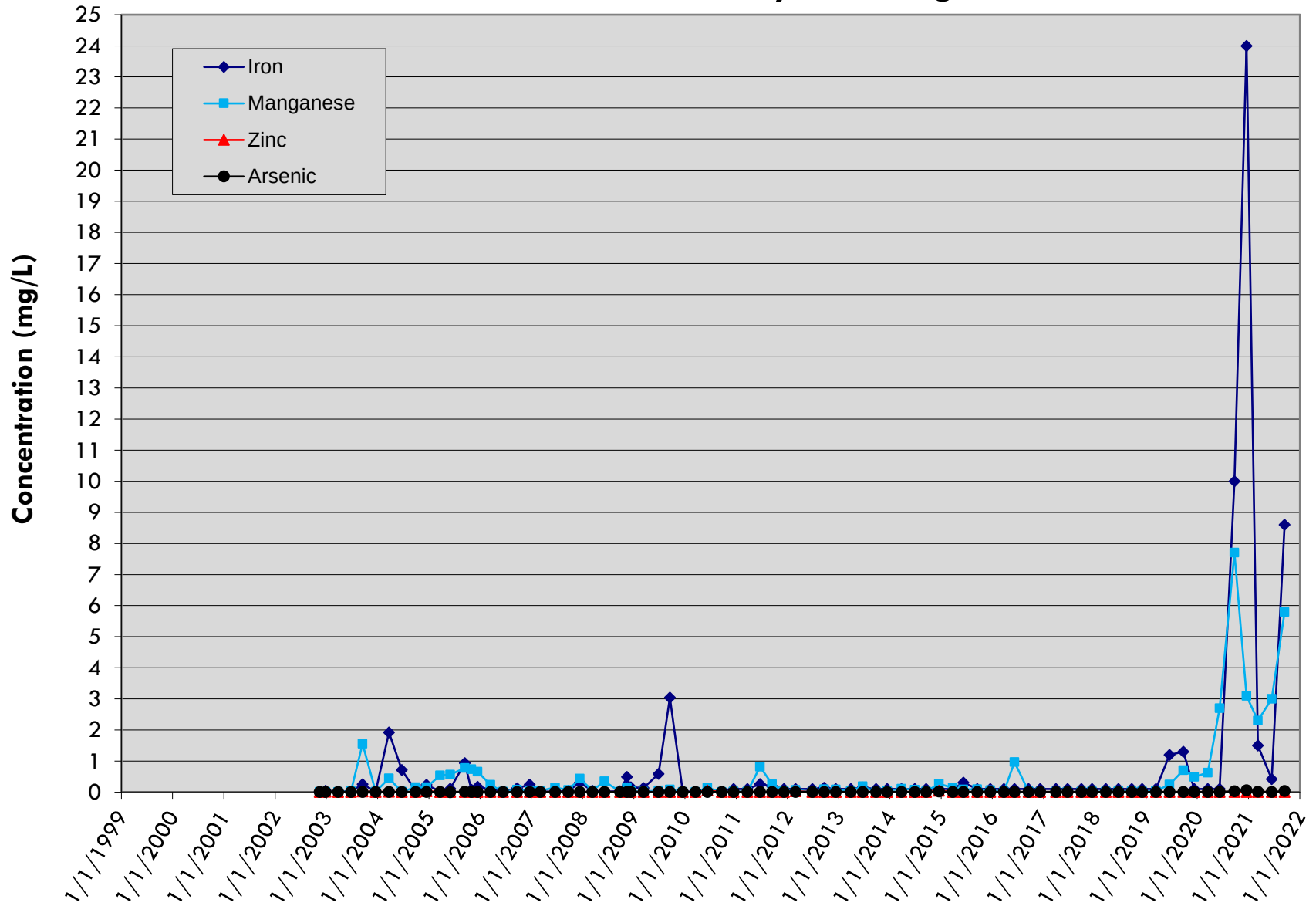
LDCS-2A

LRI Landfill, Pierce County, Washington



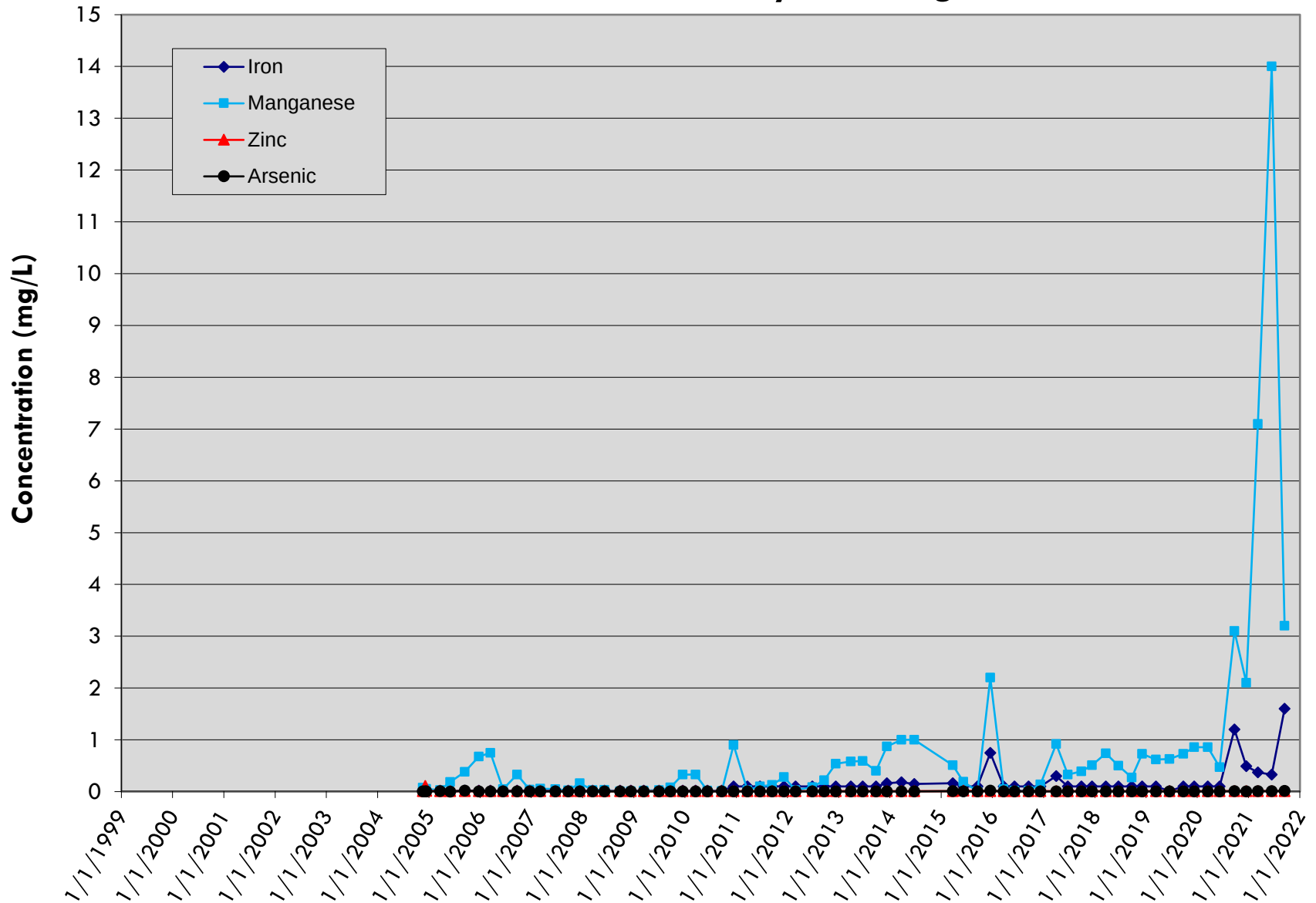
LDCS-2B

LRI Landfill, Pierce County, Washington



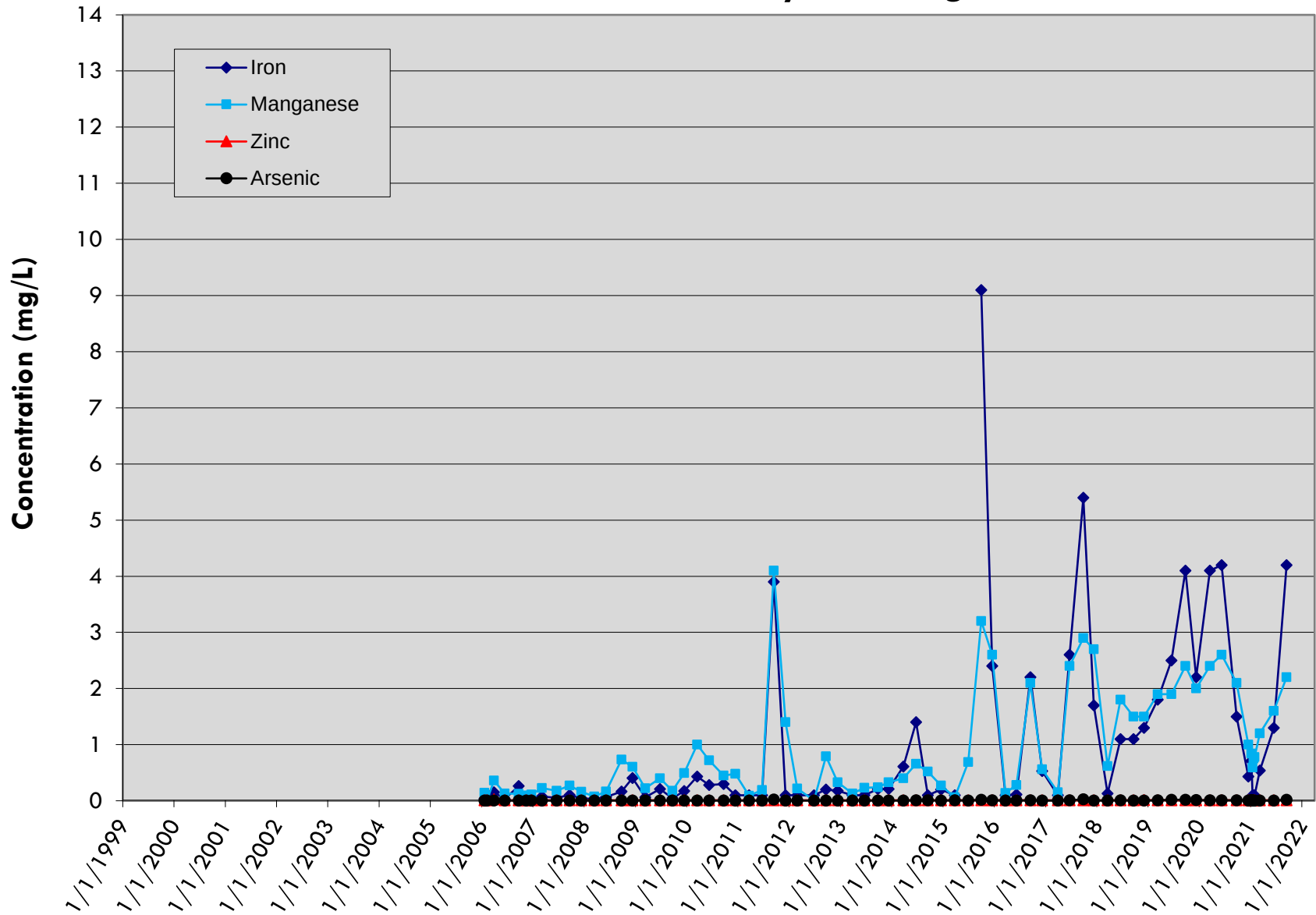
LDCS-3A

LRI Landfill, Pierce County, Washington



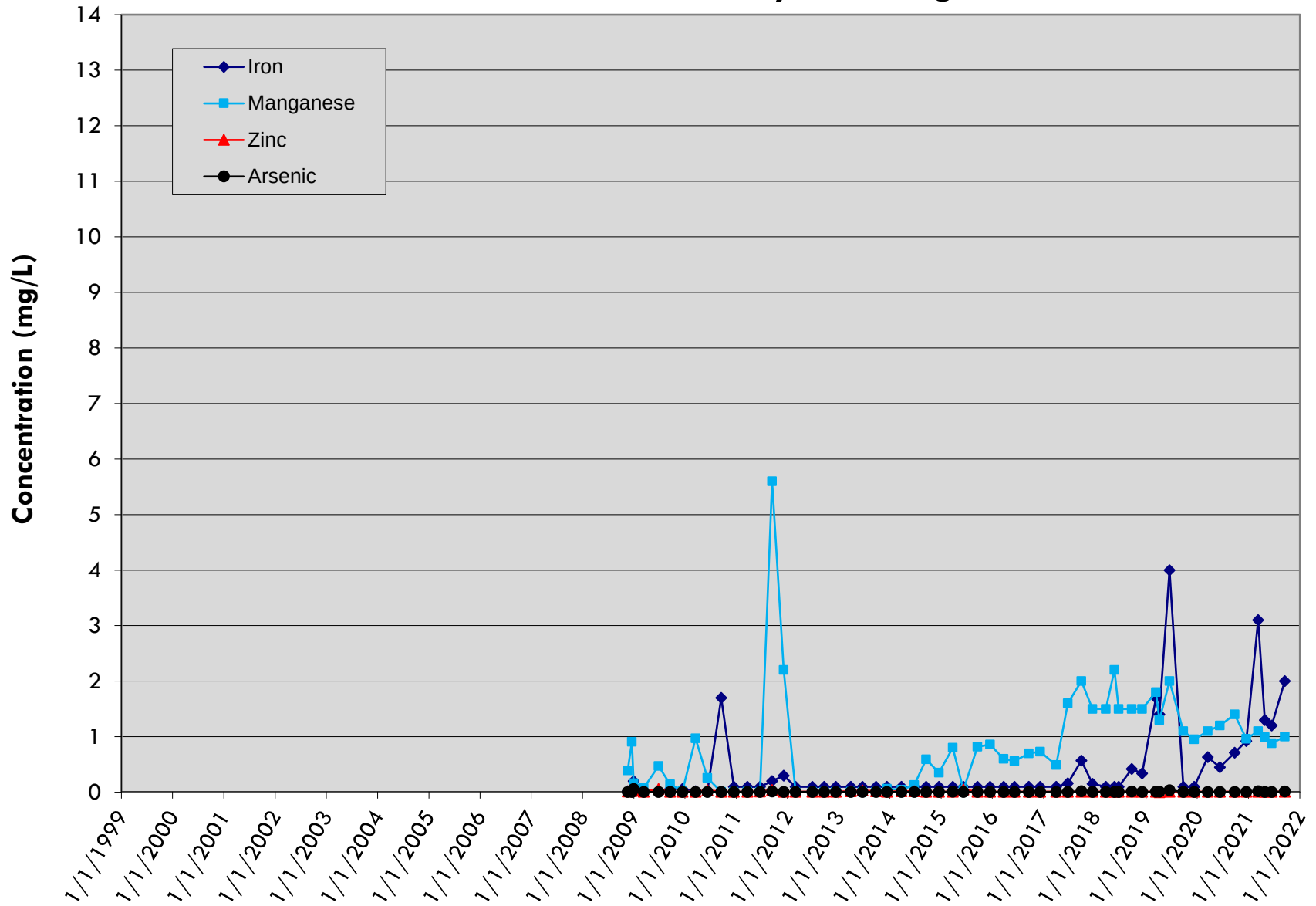
LDCS-4A

LRI Landfill, Pierce County, Washington



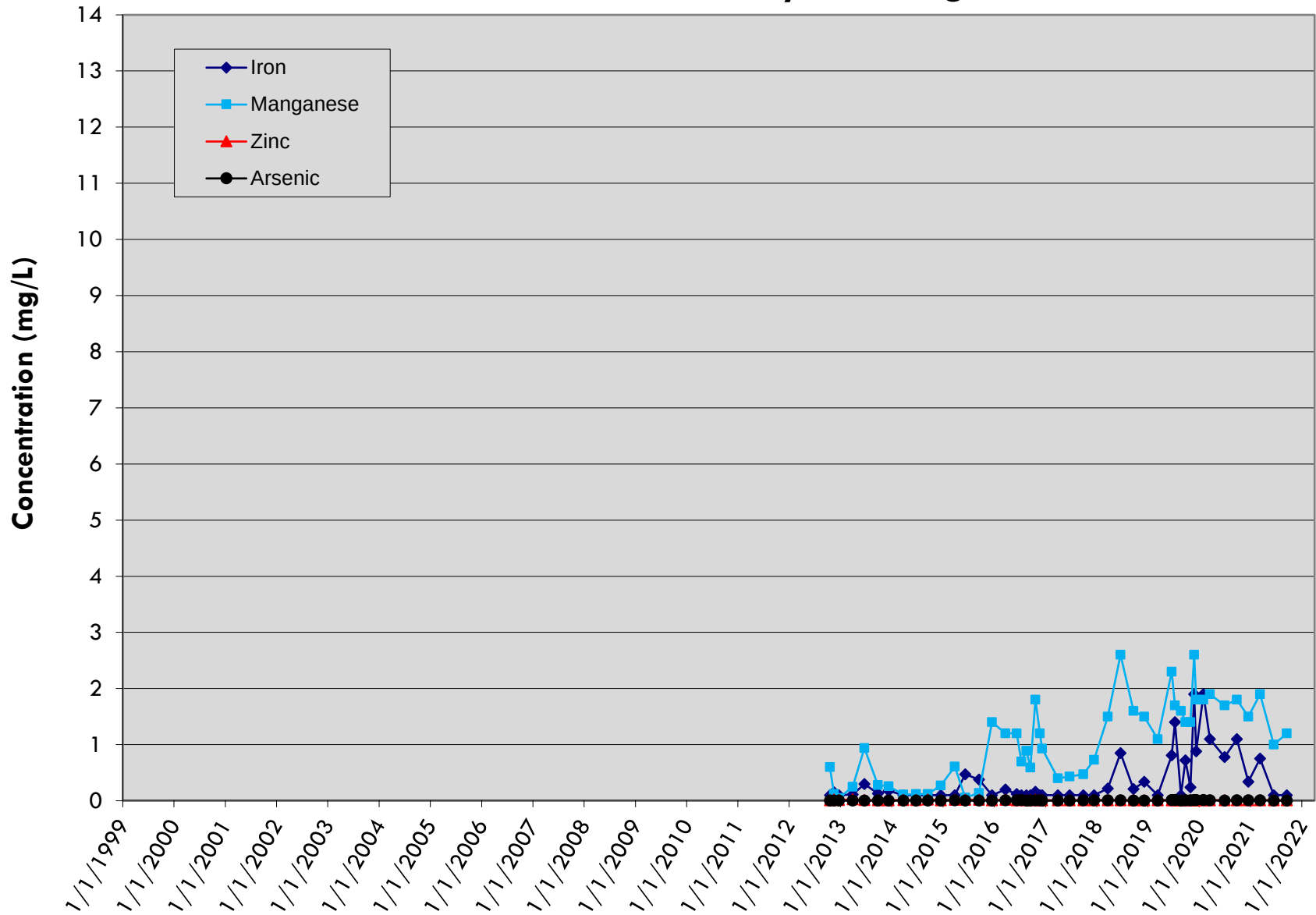
LDCS-4B

LRI Landfill, Pierce County, Washington



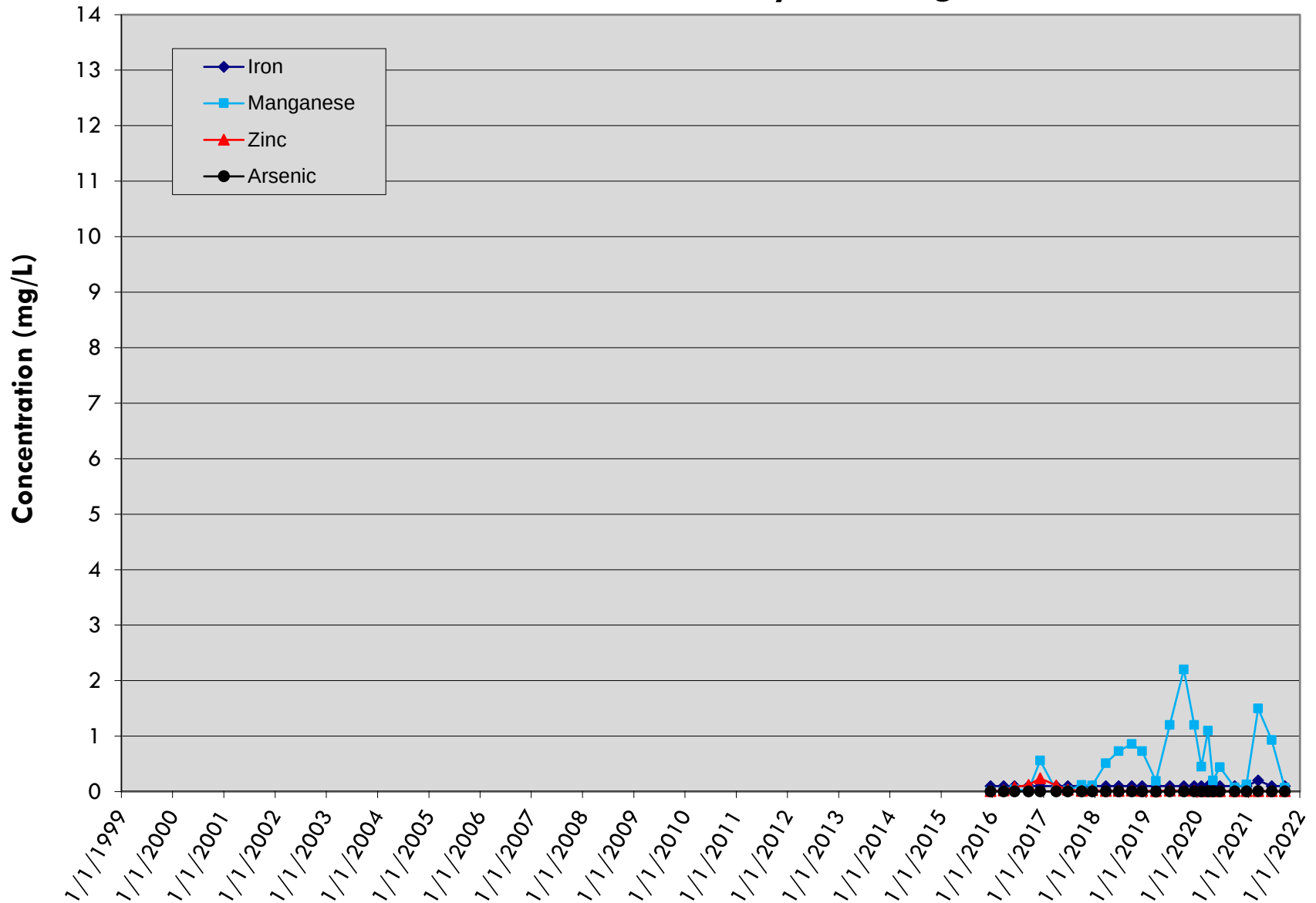
LDCS-5

LRI Landfill, Pierce County, Washington



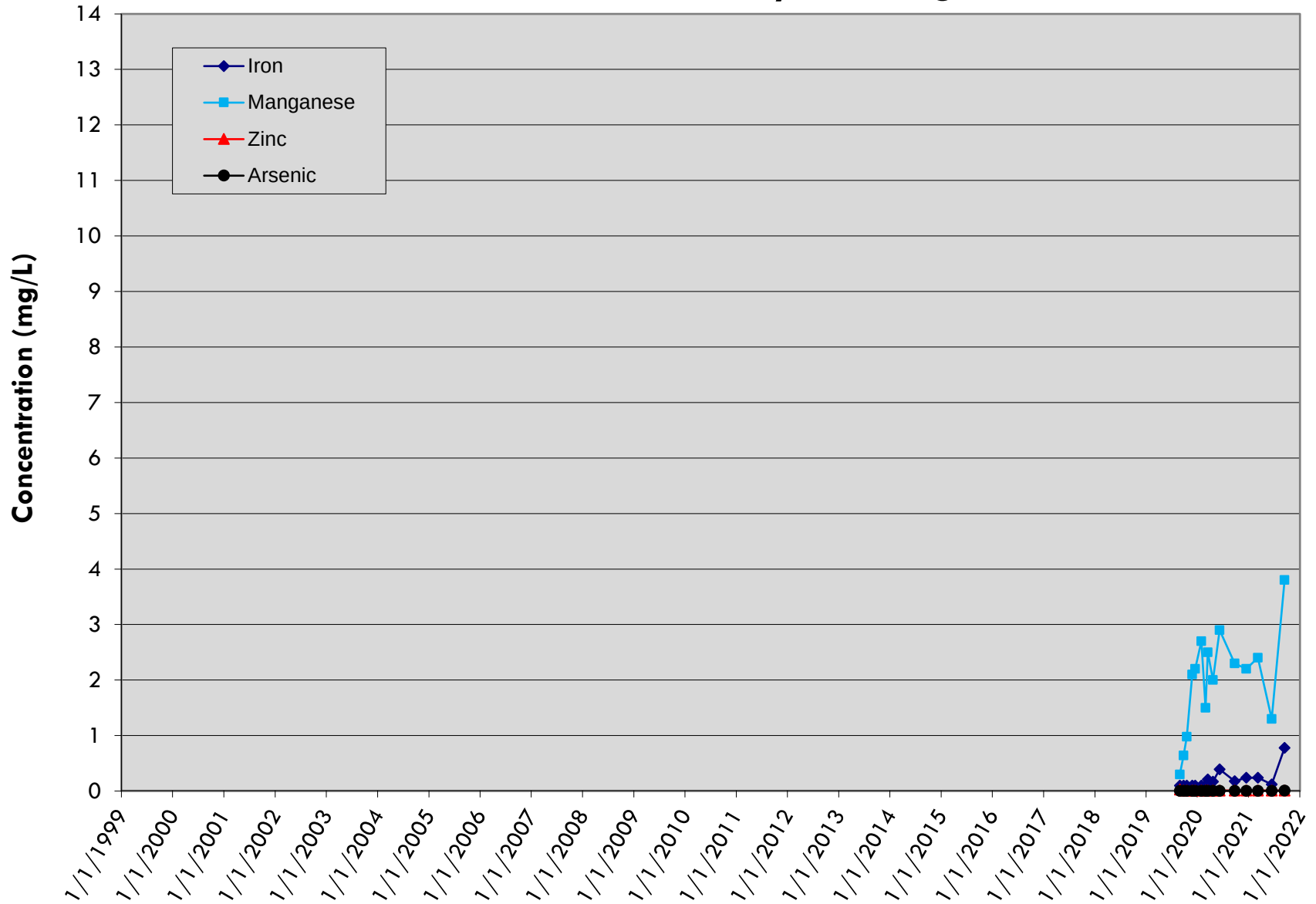
LDCS-6A

LRI Landfill, Pierce County, Washington



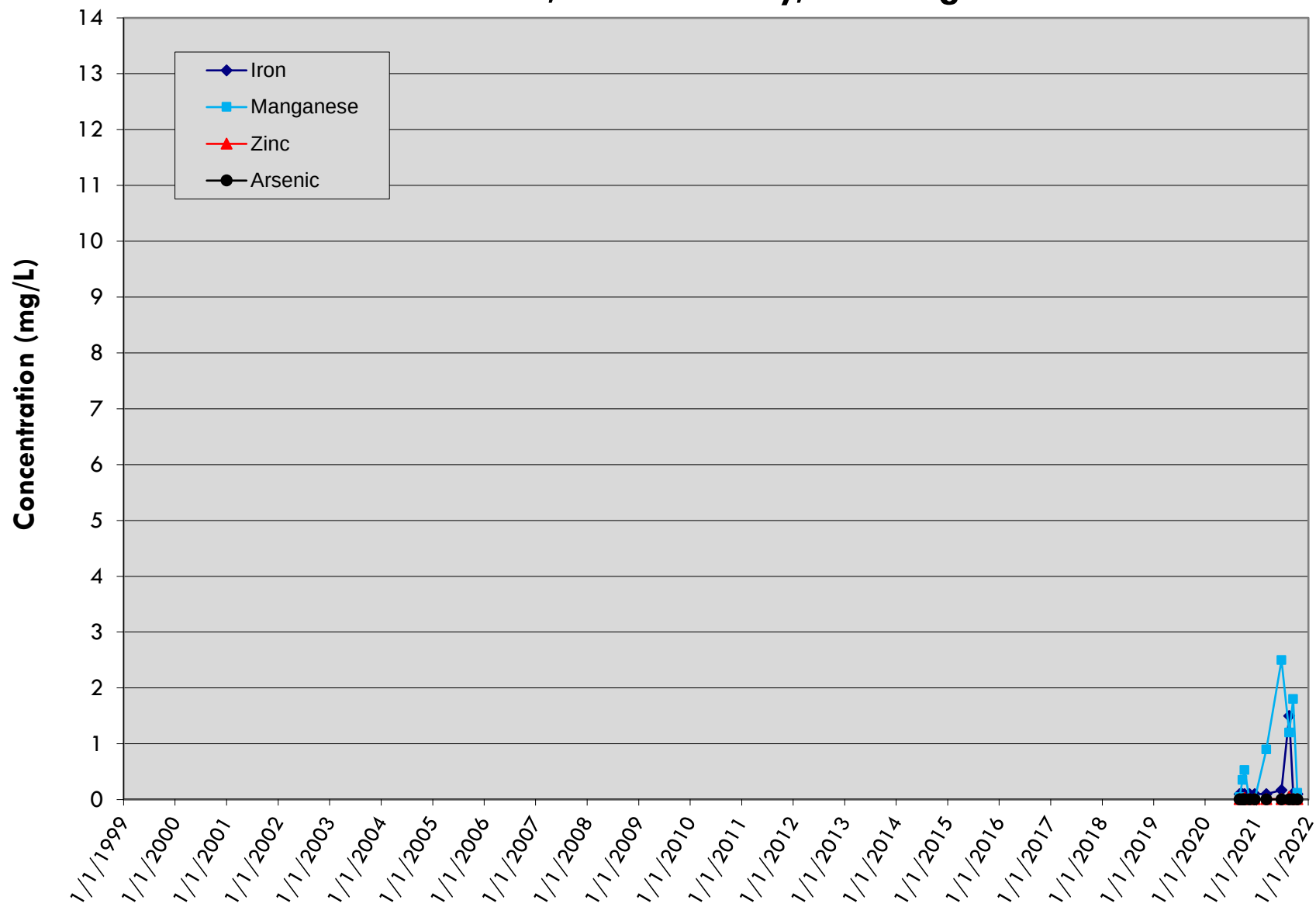
LDCS-7

LRI Landfill, Pierce County, Washington



LDCS-8A

LRI Landfill, Pierce County, Washington





Attachment H

LDCS & Leachate Pumping Records and Conductivity Measurements

Summary of LDCS Volumes Pumped and Conductivity Data
Third Quarter 2021
LRI Landfill, Pierce County, Washington

Date	Rainfall	LDCS-1 Vol. (Gal.)	LDCS-1 Cond. (µS/cm)	LDCS-2A Vol. (Gal)	LDCS-2A Cond. (µS/cm)	LDCS-2B Vol. (Gal)*	LDCS-2B Cond. (µS/cm)	LDCS-3A Vol. (Gal)	LDCS-3A Cond. (µS/cm)	LDCS-4A Vol. (Gal)	LDCS-4A Cond. (µS/cm)*	LDCS-4B Vol. (Gal)	LDCS-4B Cond. (µS/cm)	LDCS-5 Vol. (Gal)	LDCS-5 Cond. (µS/cm)*	LDCS-6 Vol. (Gal)	LDCS-6 Cond. (µS/cm)	LDCS-7 Vol. (Gal)	LDCS-7 Cond. (µS/cm)	LDCS-8 Vol. (Gal)**	LDCS-8 Cond. (µS/cm)**
7/1/2021	0.00	5,420	345	560	671	--	717	399	688	1,420	929	5,618	869	339	973	530	693	0	779	--	--
7/2/2021	0.00	4,900	363	590	718	--	744	534	724	1,330	974	5,676	884	340	984	0	794	0	815	--	--
7/3/2021	0.00	5,610	371	620	747	--	750	533	741	1,410	990	5,182	893	333	989	0	846	6,131	779	--	--
7/4/2021	0.00	4,920	375	540	758	--	765	403	749	1,350	997	4,778	902	281	993	0	879	0	768	--	--
7/5/2021	0.00	5,250	378	610	755	--	774	401	752	1,440	999	4,630	910	281	991	0	899	41	801	--	--
7/6/2021	0.00	4,640	380	540	756	--	778	540	752	1,870	--	4,442	920	280	995	0	913	5,455	765	--	--
7/7/2021	0.00	5,140	382	540	761	--	782	404	754	2,090	--	4,528	928	280	994	832	923	2,017	765	--	--
7/8/2021	0.00	4,608	--	530	756	--	--	459	--	2,020	--	5,001	931	280	--	832	928	2,017	793	--	--
7/9/2021	0.00	4,608	--	530	--	--	--	459	--	2,020	--	5,001	--	280	--	832	--	2,017	795	--	--
7/10/2021	0.00	4,608	--	530	--	--	--	459	--	2,020	--	5,001	--	280	--	832	--	2,017	--	--	--
7/11/2021	0.00	4,608	--	530	--	--	--	459	--	2,020	--	5,001	--	280	--	832	--	2,017	--	--	--
7/12/2021	0.00	4,608	--	530	--	--	--	459	--	2,020	--	5,001	--	280	--	832	--	2,017	--	--	--
7/13/2021	0.00	4,608	--	530	--	--	--	459	--	2,020	--	5,001	--	280	--	832	--	2,017	--	--	--
7/14/2021	0.00	4,608	--	530	--	--	--	459	--	2,020	--	5,001	--	280	--	832	--	2,017	--	--	--
7/15/2021	0.00	4,608	--	530	--	--	--	459	--	2,020	--	5,001	--	280	--	832	--	2,017	--	--	--
7/16/2021	0.00	4,608	--	530	--	--	--	459	--	2,020	--	5,001	--	280	--	832	--	2,017	--	--	--
7/17/2021	0.00	4,608	--	530	--	--	--	459	--	2,020	--	5,001	--	280	--	832	--	2,017	--	--	--
7/18/2021	0.00	4,608	--	530	--	--	--	459	--	2,020	--	5,001	--	280	--	832	--	2,017	--	--	--
7/19/2021	0.00	4,608	--	530	--	--	--	459	--	2,020	--	5,001	--	280	--	832	--	2,017	--	--	--
7/20/2021	0.00	4,608	--	530	--	--	--	459	--	2,020	--	5,001	--	280	--	832	--	2,017	--	--	--
7/21/2021	0.00	4,608	402	530	776	--	--	459	769	2,020	--	5,001	937	280	--	832	898	2,017	779	--	--
7/22/2021	0.00	3,338	404	420	772	--	798	408	756	2,070	--	4,790	901	224	--	807	894	5,976	640	--	--
7/23/2021	0.00	3,318	406	420	753	--	799	412	742	2,280	--	4,450	912	223	--	761	895	0	803	--	--
7/24/2021	0.00	3,158	406	440	753	--	799	382	742	2,220	--	3,911	913	236	--	482	895	0	803	--	--
7/25/2021	0.00	3,158	406	440	753	--	799	382	742	2,220	--	3,911	913	236	--	482	895	0	803	--	--
7/26/2021	0.00	3,158	411	440	753	--	791	382	751	2,220	--	3,911	937	236	--	482	893	5,957	800	--	--
7/27/2021	0.00	3,380	399	450	753	--	785	400	764	2,140	--	3,824	936	211	--	531	891	0	793	--	--
7/28/2021	0.00	3,360	413	420	753	--	758	217	776	2,020	--	3,420	945	270	--	515	889	5,861	763	--	--
7/29/2021	0.00	2,530	373	430	778	--	811	405	700	2,000	898	3,318	954	195	--	208	889	0	749	--	--
7/30/2021	0.00	3,380	181	360	788	--	818	446	773	540	434	3,312	952	234	--	423	888	0	809	--	--
7/31/2021	0.00	2,840	332	420	625	--	644	0	619	1,140	791	3,174	960	236	--	0	--	5,851	795	--	--
8/1/2021	0.00	2,970	388	500	725	--	674	267	720	1,140	923	3,064	953	236	--	0	--	0	735	--	--
8/2/2021	0.00	3,120	410	380	761	--	763	398	760	1,140	972	2,730	952	236	--	445	849	0	773	--	--
8/3/2021	0.00	2,630	419	400	776	--	801	274	776	4,910	481	2,656	952	178	--	426	867	0	780	--	--
8/4/2021	0.00	2,470	424	380	788	--	820	241	782	2,430	693	2,610	954	235	--	406	882	5,498	733	--	--
8/5/2021	0.00	3,290	427	360	795	--	828	270	783	1,830	887	2,642	954	236	--	407	887	1	732	--	--
8/6/2021	0.00	2,460	429	360	790	--	825	405	781	1,770	959	2,576	953	177	--	388	891	0	768	--	--
8/7/2021	0.00	2,450	431	420	792	--	753	268	784	1,810	985	2,608	952	236	--	382	893	5,873	775	--	--
8/8/2021	0.00	2,450	433	220	791	--	709	422	783	1,080	994	1,550	949	130	--	0	897	0	722	--	--
8/9/2021	0.00	2,450	435	220	740	--	836	263	779	1,080	--	1,550	944	130	--	0	899	0	756	--	--
8/10/2021	0.00	2,430	437	220	785	--	836	278	785	1,730	--	2,430	960	177	--	942	899	0	779	--	--
8/11/2021	0.00	2,450	439	370	799	--	836	273	789	1,750	--	2,326	954	235	--	0	899	5,782	757	--	--
8/12/2021	0.00	2,440	441	360	799	--	836	402	788	1,960	--	1,973	954	176	--	0	899	0	725	--	--
8/13/2021	0.00	2,420	443	370	794	--	855	266	789	1,960	--	1,973	955	176	--	0	899	1	760	--	--
8/14/2021	0.00	1,600	446	370	799	--	856	276	788	1,960	--	2,907	957	265	--	0	899	2,026	774	--	--
8/15/2021	0.00	2,410	448	520	799	--	856	269	791	1,960	--	2,907	957	267	--	0	899	3,102	727	--	--
8/16/2021	0.00	2,390	452	510	799	--	856	278	791	1,470	--	2,046	957	177	--	23	899	0	732	--	--
8/17/2021	0.00	1,600	455	380	793	--	860	277	790	1,480	--	2,152	979	171	--	343	893	0	759	--	--
8/18/2021	0.00	2,390	458	320	749	--	863	278	788	1,410	--	2,200	952	111	--	335	884	5,681	762	--	--
8/19/2021	0.00	1,590	462	370	772	--	860	268	793	1,470	--	1,938	973	164	--	344	895	0	711	--	--
8/20/2021	0.00	2,380	466	300	791	--	969	403	794	1,470	--	1,983	966	23	--	337	897	0	742	--	--
8/21/2021	0.00	2,390	469	330	791	--	969	269	793	1,470	--	1,983	966	138	--	330	897	0	764	--	--
8/22/2021	0.00	1,580	471	330	791	--	969	279	787	1,470	--	1,983	966	138	--	328	897	5,752	747	--	--
8/23/2021	0.00	2,370	474	320	783	--	872	270	786	1,420	--	1,940	947	138	--	315	901	0	718	--	--
8/24/2021	0.00	1,580	478	330	779	--	868	273	788	1,830	--	1,824	934	138	--	308	901	0	761	--	--
8/25/2021	0.00	1,580	482	370	766	--	877	271	792	1,820	--	1,824	954	138	--	310	901	0	780	--	--
8/26/2021	0.10	2,310	437	370	800	--	871	284	714	1,220	896	1,598	948	166	--	313	898	5,718	749	--	--
8/27/2021	0.00	1,550	127	310	800	--	871	283	792	1,360	258	1,740	982	110	--	301	898	0	702	--	--
8/28/2021	0.00	1,570	295	300	800	--	871	133	792	1,300	594	1,876	990	166	--	302	898	0	768	--	--
8/29/2021	0.00	2,350	424	300	800	--	750	275	792	1,360	851	1,788	975	110	--	312	898	0	775	--	--
8/30/2021	0.00	1,580	472	300	764	--	809	268	756	1,350	945	1,872	969	109	--	299	907	5,714	749	--	--
8/31/2021	0.00	1,560	493	310	792	--	811	277	781	1,330	980	1,800	964	110	--	305	907	0	719	--	--

Summary of LDCS Volumes Pumped and Conductivity Data
Third Quarter 2021
LRI Landfill, Pierce County, Washington

Date	Rainfall	LDCS-1 Vol. (Gal.)	LDCS-1 Cond. (µS/cm)	LDCS-2A Vol. (Gal)	LDCS-2A Cond. (µS/cm)	LDCS-2B Vol. (Gal)*	LDCS-2B Cond. (µS/cm)	LDCS-3A Vol. (Gal)	LDCS-3A Cond. (µS/cm)	LDCS-4A Vol. (Gal)	LDCS-4A Cond. (µS/cm)*	LDCS-4B Vol. (Gal)	LDCS-4B Cond. (µS/cm)	LDCS-5 Vol. (Gal)	LDCS-5 Cond. (µS/cm)*	LDCS-6 Vol. (Gal)	LDCS-6 Cond. (µS/cm)	LDCS-7 Vol. (Gal)	LDCS-7 Cond. (µS/cm)	LDCS-8 Vol. (Gal)**	LDCS-8 Cond. (µS/cm)**
9/1/2021	0.00	1,860	502	300	801	--	856	273	792	1,240	993	1,818	962	110	--	308	896	0	758	--	--
9/2/2021	0.00	2,030	507	260	802	--	878	275	797	1,240	997	1,762	963	109	--	291	903	0	778	--	--
9/3/2021	0.00	1,550	513	330	800	--	879	271	800	1,230	999	1,750	965	110	--	288	906	5,656	756	--	--
9/4/2021	0.00	1,560	518	350	807	--	887	134	804	1,220	1000	1,756	965	109	--	283	909	0	717	--	--
9/5/2021	0.00	1,560	524	240	810	--	876	266	806	1,210	1000	1,700	967	110	--	283	910	0	751	--	--
9/6/2021	0.00	1,570	527	320	803	--	849	270	803	1,180	1000	1,662	968	55	--	273	911	0	767	--	--
9/7/2021	0.00	1,560	530	360	795	--	838	275	799	1,180	658	1,674	972	109	--	276	911	5,668	753	--	--
9/8/2021	0.00	1,570	533	250	798	--	790	147	804	1,200	585	1,606	975	109	--	277	911	0	712	--	--
9/9/2021	0.00	1,570	535	320	799	--	750	268	804	1,170	847	1,624	972	110	--	277	913	0	745	--	--
9/10/2021	0.00	1,560	538	270	801	--	706	278	806	1,120	944	1,654	969	54	--	254	914	0	764	--	--
9/11/2021	0.00	1,560	541	260	784	--	699	277	799	1,100	979	1,530	967	110	--	260	915	5,619	756	--	--
9/12/2021	0.00	1,560	546	300	784	--	695	134	799	1,180	992	1,570	968	109	--	277	917	0	707	--	--
9/13/2021	0.02	1,540	549	250	795	--	693	278	804	1,100	997	1,576	969	55	--	269	917	0	739	--	--
9/14/2021	0.00	1,570	553	250	804	--	808	138	804	1,150	999	1,568	981	109	--	272	919	4,870	752	--	--
9/15/2021	0.08	1,550	555	300	812	--	869	270	806	1,080	1000	1,596	1,010	75	--	256	920	126	740	--	--
9/16/2021	0.05	1,550	556	280	803	--	864	275	804	1,090	0	1,466	1,015	109	--	261	920	0	696	--	--
9/17/2021	0.00	1,540	557	260	799	--	881	268	805	1,380	0	1,594	1,011	54	--	270	919	0	725	--	--
9/18/2021	0.81	1,560	559	300	802	--	897	283	795	1,820	0	7,454	980	3,845	928	239	916	5,686	756	--	--
9/19/2021	0.58	1,560	561	250	792	--	904	287	784	1,990	0	7,512	916	4,081	773	238	913	0	759	--	--
9/20/2021	0.00	780	562	130	766	--	905	265	784	1,190	0	4,314	930	820	700	146	903	0	785	--	--
9/21/2021	0.00	1,560	564	260	764	--	896	267	798	1,190	0	7,712	941	820	712	536	902	0	888	--	--
9/22/2021	0.00	1,550	565	320	788	--	823	287	815	4,540	0	5,126	926	513	744	512	809	5,627	931	--	--
9/23/2021	0.01	1,550	564	250	777	--	733	275	804	2,690	0	5,138	919	280	777	487	789	0	923	--	--
9/24/2021	0.00	1,560	563	240	784	--	812	142	801	2,950	0	4,622	909	279	839	487	789	0	787	--	--
9/25/2021	0.00	1,540	562	240	802	--	802	216	802	2,720	0	4,616	913	223	909	497	789	0	761	--	--
9/26/2021	0.00	1,540	561	320	809	--	756	268	809	2,400	0	3,270	920	222	944	474	789	3,702	764	--	--
9/27/2021	0.58	1,550	341	240	810	--	896	400	767	2,420	608	4,456	958	581	825	499	794	0	727	--	--
9/28/2021	0.29	1,560	348	260	795	--	896	305	782	2,070	617	6,730	928	1,121	832	645	777	5,770	788	--	--
9/29/2021	0.00	780	485	240	0	--	896	2904	683	1,690	859	7,166	891	835	852	795	0	0	844	--	--
9/30/2021	0.38	1,560	537	250	796	--	896	2381	770	1,480	948	5,652	892	0	874	818	725	0	827	21,524	--

-- = No data available

* = Due to a meter malfunction, limited data is available.

** = Sensors were removed from Cell 8 during the third quarter.

Summary of Leachate Volume and Depth Data
Third Quarter 2021
LRI Landfill, Pierce County, Washington

Date	Cell 1 Leachate Volume (GPD)	Cell 1 Leachate Level (in.)	Cell 2A Leachate Volume (GPD)	Cell 2A Leachate Level (in.)	Cell 2B Leachate Volume (GPD)	Cell 2B Leachate Level (in.)	Cell 3A Leachate Volume (GPD)	Cell 3A Leachate Level (in.)	Cell 4A Leachate Volume (GPD)	Cell 4A Leachate Level (in.)	Cell 4B Leachate Volume (GPD)	Cell 4B Leachate Level (in.)	Cell 5 Leachate Volume (GPD)	Cell 5 Leachate Level (in.)	Cell 6 Leachate Volume (GPD)	Cell 6 Leachate Level (in.)	Cell 7 Leachate Volume (GPD)	Cell 7 Leachate Level (in.)	Cell 8A Leachate Volume (GPD) *	Cell 8A Leachate Level (in.)
7/1/2021	820	10.0	0	19.1	2,652	8.8	6,897	9.3	0	8.8	12.5	12.5	12,345	15.4	19,834	9.0	5,984	10.5	6,208	--
7/2/2021	3,917	10.4	0	20.0	4,077	8.4	6,860	9.3	0	7.2	17,924	12.8	12,345	15.4	19,834	8.9	6,186	10.5	6,208	--
7/3/2021	772	10.1	0	21.4	2,437	8.4	3,511	9.3	48	3.7	3,750	10.2	12,345	14.4	19,834	8.9	6,075	10.5	6,208	--
7/4/2021	0	11.0	0	22.5	2,694	8.7	6,968	9.1	183	0.8	50	12.7	12,345	11.5	19,834	9.0	6,074	10.6	6,208	--
7/5/2021	5,675	10.2	9,513	20.3	4,025	8.6	7,078	9.1	36	1.7	16,341	13.0	12,345	8.9	19,834	9.0	6,092	10.2	6,208	--
7/6/2021	0	10.4	7,258	15.4	2,660	8.4	7,121	9.2	129	2.0	4,030	10.1	12,345	7.0	19,834	8.9	6,070	10.4	6,208	--
7/7/2021	5,104	10.0	5,864	12.7	2,677	8.9	7,091	9.2	291	0.1	101	12.5	12,345	7.0	19,834	8.9	6,010	10.5	6,208	--
7/8/2021	2,296	9.9	0	11.7	3,385	9.4	7,271	10.5	0	--	8,338	--	12,345	--	19,834	9.2	3,762	10.0	6,208	--
7/9/2021	2,296	--	2,718	--	3,385	--	7,271	--	0	--	8,338	--	12,345	--	19,834	--	7,036	--	6,208	--
7/10/2021	2,296	--	2,718	--	3,385	--	7,271	--	0	--	8,338	--	12,345	--	19,834	--	7,036	--	6,208	--
7/11/2021	2,296	--	2,718	--	3,385	--	7,271	--	0	--	8,338	--	12,345	--	19,834	--	7,036	--	6,208	--
7/12/2021	2,296	--	2,718	--	3,385	--	7,271	--	0	--	8,338	--	12,345	--	19,834	--	7,036	--	6,208	--
7/13/2021	2,296	--	2,718	--	3,385	--	7,271	--	0	--	8,338	--	12,345	--	19,834	--	7,036	--	6,208	--
7/14/2021	2,296	--	2,718	--	3,385	--	7,271	--	0	--	8,338	--	12,345	--	19,834	--	7,036	--	6,208	--
7/15/2021	2,296	--	2,718	--	3,385	--	7,271	--	0	--	8,338	--	12,345	--	19,834	--	7,036	--	6,208	--
7/16/2021	2,296	--	2,718	--	3,385	--	7,271	--	0	--	8,338	--	12,345	--	19,834	--	7,036	--	6,208	--
7/17/2021	2,296	--	2,718	--	3,385	--	7,271	--	0	--	8,338	--	12,345	--	19,834	--	7,036	--	6,208	--
7/18/2021	2,296	--	2,718	--	3,385	--	7,271	--	0	--	8,338	--	12,345	--	19,834	--	7,036	--	6,208	--
7/19/2021	2,296	--	2,718	--	3,385	--	7,271	--	0	--	8,338	--	12,345	--	19,834	--	7,036	--	6,208	--
7/20/2021	2,296	--	2,718	--	3,385	--	7,271	--	0	--	8,338	--	12,345	--	19,834	--	7,036	--	6,208	--
7/21/2021	5,228	11.3	8,602	12.3	0	10.9	6,878	8.8	2,604	0.5	187	11.0	13,448	16.9	16,159	6.9	6,168	8.3	2,548	18.9
7/22/2021	4	10.2	2	7.1	2,981	8.7	4,092	7.0	0	9.5	19,170	14.0	13,512	16.6	22,268	7.0	6,372	8.3	2,548	18.9
7/23/2021	2,363	11.1	1,990	8.7	2,666	7.3	7,005	10.1	0	12.6	7,129	9.0	13,261	16.1	18,746	10.0	6,106	9.1	2,548	18.9
7/24/2021	2,363	11.1	1,990	8.7	2,666	7.3	7,005	10.1	0	12.6	7,129	9.0	13,261	16.1	18,746	10.0	6,106	9.1	2,548	18.9
7/25/2021	2,363	11.1	1,990	8.7	2,666	7.3	7,005	10.1	148	12.6	7,129	9.0	13,261	16.1	18,746	10.0	6,106	9.1	2,548	18.9
7/26/2021	6,254	11.3	3,720	9.0	3,972	11.8	7,030	9.3	128	3.7	115	9.0	13,261	16.1	19,253	7.4	6,014	9.7	2,548	18.9
7/27/2021	0	10.4	1	9.8	2,641	9.3	6,990	10.1	284	8.6	7	13.9	12,912	11.5	21,506	9.1	6,013	10.0	2,548	11.7
7/28/2021	5	11.0	0	9.4	2,731	8.8	7,000	9.1	41	17.0	21,489	12.2	13,084	15.1	18,713	7.3	5,989	10.5	--	11.6
7/29/2021	6,442	9.5	998	10.9	3,859	8.5	7,011	9.2	0	13.2	0	10.6	13,084	15.3	18,713	2.9	6,084	10.3	--	11.7
7/30/2021	0	10.5	6,825	8.6	2,620	8.4	7,053	9.2	21	18.0	9,406	12.9	12,699	15.2	18,713	8.9	6,107	10.3	--	11.7
7/31/2021	0	11.0	0	8.4	2,631	8.4	7,104	9.2	25	25.8	20,400	10.6	12,699	15.5	18,713	0.0	5,921	10.5	--	11.8
8/1/2021	0	11.4	5,654	9.6	2,611	8.5	7,164	9.1	80	27.8	31,939	13.8	38,096	15.1	93,567	0.0	5,884	10.5	--	11.8
8/2/2021	0	11.6	0	11.4	2,640	8.6	7,071	9.2	0	24.4	29,190	13.8	10,548	15.5	18,334	8.8	5,992	10.5	--	11.7
8/3/2021	7,016	10.1	8,195	9.1	2,704	8.6	7,036	9.2	0	19.2	24,960	11.0	18,342	15.2	17,702	8.8	6,002	10.2	--	11.7
8/4/2021	0	10.6	0	7.6	3,902	8.6	7,136	9.3	0	13.3	0	11.4	18,342	15.3	35,932	8.7	6,032	10.5	--	11.8
8/5/2021	0	11.2	0	9.3	2,609	8.4	7,229	9.2	0	13.4	13,563	13.1	9,398	15.3	9,544	8.8	5,900	10.5	--	11.7
8/6/2021	0	11.6	0	10.6	2,643	8.4	7,106	9.2	0	12.2	7,586	10.2	9,398	15.4	9,544	8.8	5,971	10.5	--	11.7
8/7/2021	7,973	9.7	0	12.3	2,675	8.5	7,164	9.3	0	9.2	0	12.7	9,398	15.4	9,544	8.9	6,000	10.3	--	11.7
8/8/2021	0	10.5	0	10.5	2,625	8.4	7,172	9.2	0	18.7	10,126	9.0	9,398	12.2	9,544	9.3	5,900	10.4	--	11.7
8/9/2021	0	11.1	6,710	14.5	2,625	8.7	7,065	9.2	0	15.0	2	10.0	9,398	7.3	0	9.9	6,028	10.3	--	11.7
8/10/2021	0	11.6	0	11.0	2,625	10.1	7,052	9.2	160	6.9	2,281	11.6	10,488	12.0	0	9.9	5,833	10.5	--	11.8
8/11/2021	7,603	10.0	0	12.5	2,625	11.8	7,105	9.3	0	1.0	9,442	14.0	11,500	14.0	0	9.9	5,925	10.4	--	11.8
8/12/2021	0	10.6	0	14.9	2,625	6.8	7,193	9.3	0	1.0	9,442	13.0	11,500	17.5	0	9.9	5,884	10.5	--	11.8
8/13/2021	0	11.2	0	14.9	2,625	6.8	7,221	9.2	0	1.0	6,984	13.0	10,979	17.5	0	9.9	5,924	10.3	--	11.8
8/14/2021	0	11.6	0	14.9	2,625	6.8	7,174	9.2	0	1.0	6,984	13.0	10,979	17.5	0	9.9	5,918	10.7	--	11.8
8/15/2021	9,184	9.6	5,856	14.9	2,625	6.8	7,546	9.3	700	1.0	6,984	13.0	10,979	17.5	39	9.9	5,948	10.4	--	11.7
8/16/2021	9	10.5	8,110	14.7	2,625	9.8	10,193	9.2	4	1.0	4,756	13.0	12,224	17.6	74,881	20.1	6,008	10.4	--	11.7
8/17/2021	0	11.0	5,439	10.3	2,625	11.8	3,648	10.0	480	1.0	7,994	13.0	11,272	16.9	25,704	18.7	1,196	11.2	--	11.9
8/18/2021	0	11.5	4	7.4	2,625	15.9	6,840	13.2	240	3.4	4,778	13.0	10,092	15.8	37,039	16.8	8,349	10.6	--	12.0
8/19/2021	8,577	9.9	5,588	10.1	2,625	15.2	10,416	12.5	144	14.5	13,742	14.0	10,912	17.1	48,437	12.5	6,136	10.5	--	11.7
8/20/2021	5,172	8.9	0	8.6	2,625	10.9	8,164	9.1	0	16.3	6,930	12.0	11,617	16.9	20,576	9.7	6,004	10.6	--	11.8
8/21/2021	0	10.5	0	8.6	2,625	10.9	7,164	9.2	0	18.5	6,930	12.0	11,617	16.9	20,576	9.1	4,841	10.6	--	11.8
8/22/2021	0	11.0	4,644	8.6	2,625	10.9	7,154	9.3	0	18.5	6,930	12.0	11,617	16.9	20,576	9.1	1,439	10.6	--	11.8
8/23/2021	0	11.1	1	9.5	2,625	9.8	7,688	9.3	0	18.5	1	12.0	9,980	16.2	18,747	9.2	1,051	10.4	--	11.7
8/24/2021	0	11.5	0	11.0	2,625	11.4	10,229	9.1	0	8.2	10,519	14.0	7,937	17.4	9,536	9.0	4,835	10.4	--	11.7
8/25/2021	0	12.0	7,479	11.0	2,625	11.4	7,153	9.1	0	6.0	10,519	14.0	7,937	17.4	9,536	7.5	4,022	10.4	--	11.7
8/26/2021	7,479	9.8	1	12.7	2,625	6.5	7,176	9.2	0	6.0	6	12.2	7,937	7.5	7,233	8.0	5,995	10.5	--	11.7
8/27/2021	0	10.6	0	10.5	3,499	8.6	7,053	9.2	0	12.8	20,188	12.3	14,437	14.5	20,610	8.9	5,992	10.4	--	11.7
8/28/2021	0	11.5	0	10.8	3,021	8.4	7,214	9.2	0	8.8	424	10.6	14,437	13.4	20,610	8.7	5,999	10.4	--	11.7
8/29/2021	9,073	9.6	2,431	11.4	2,578	8.5	7,378	9.4	0	4.4	34	13.1	14,437	8.2	20,610	8.9	5,907	10.5	--	11.7
8/30/2021	0	10.4	0	12.8	2,741	8.7	7,735	9.4	0	8.8	19,921	12.6	0	10.6	0	8.9	6,336	10.5	--	11.7
8/31/2021	0	11.0	0	13.9	2,894	9.0	10,105	9.2	0	11.3	2,136	10.3	0	11.6	0	8.7	5,983	10.4	--	11.6

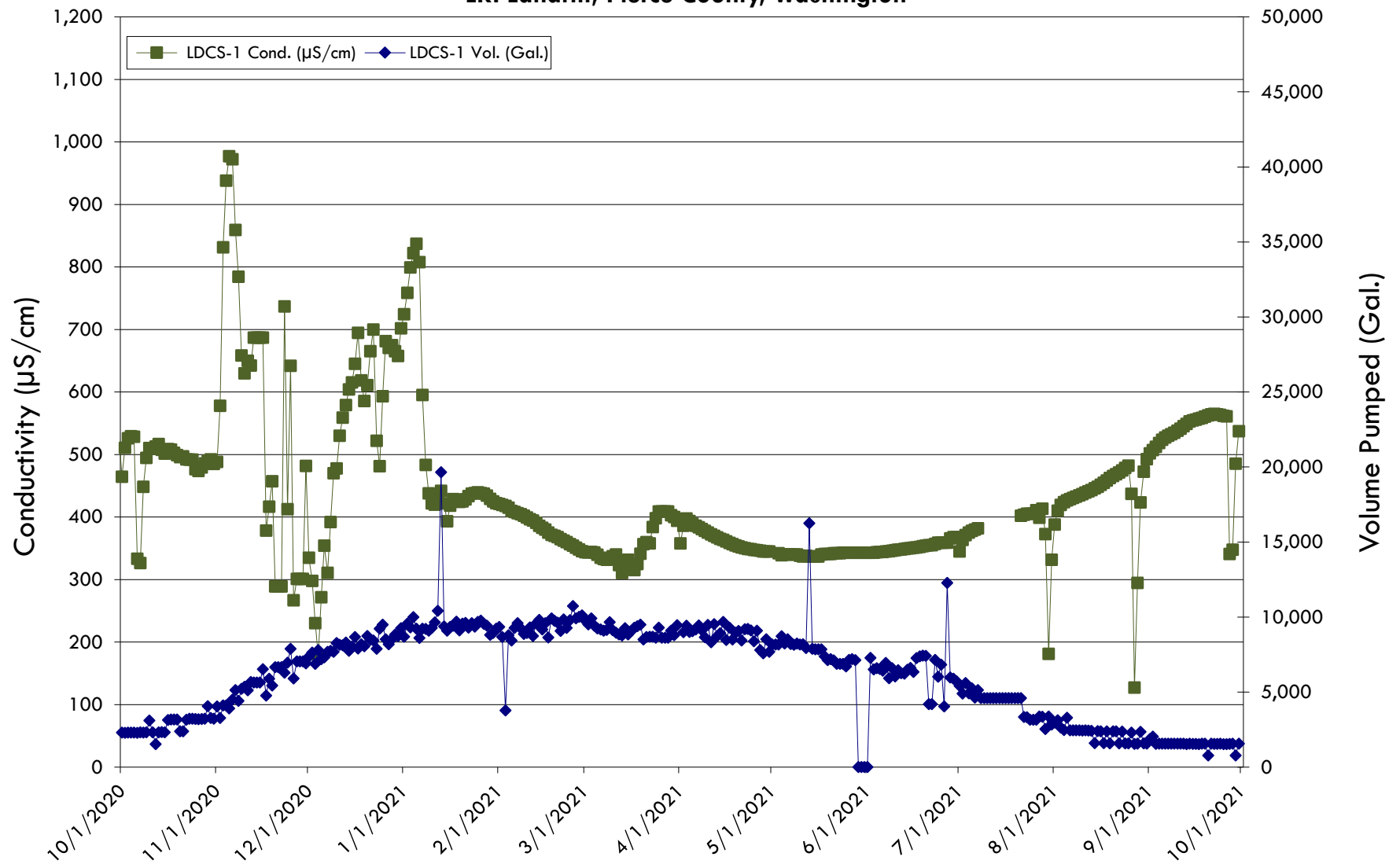
Summary of Leachate Volume and Depth Data
Third Quarter 2021
LRI Landfill, Pierce County, Washington

Date	Cell 1 Leachate Volume (GPD)	Cell 1 Leachate Level (in.)	Cell 2A Leachate Volume (GPD)	Cell 2A Leachate Level (in.)	Cell 2B Leachate Volume (GPD)	Cell 2B Leachate Level (in.)	Cell 3A Leachate Volume (GPD)	Cell 3A Leachate Level (in.)	Cell 4A Leachate Volume (GPD)	Cell 4A Leachate Level (in.)	Cell 4B Leachate Volume (GPD)	Cell 4B Leachate Level (in.)	Cell 5 Leachate Volume (GPD)	Cell 5 Leachate Level (in.)	Cell 6 Leachate Volume (GPD)	Cell 6 Leachate Level (in.)	Cell 7 Leachate Volume (GPD)	Cell 7 Leachate Level (in.)	Cell 8A Leachate Volume (GPD) *	Cell 8A Leachate Level (in.)
9/1/2021	6,911	9.6	1	14.6	2,593	8.7	7,070	9.3	0	5.6	0	13.1	0	8.8	0	8.9	5,923	10.6	--	11.7
9/2/2021	0	10.4	7,649	12.7	3,807	8.7	7,207	9.2	0	9.1	21,238	12.4	33,776	10.1	53,880	8.7	6,006	10.4	--	11.8
9/3/2021	0	11.1	7,642	8.3	2,715	8.4	7,064	9.4	0	7.3	297	10.6	22,484	8.1	13,460	9.0	6,084	10.4	--	11.8
9/4/2021	6,251	9.9	1	7.5	2,561	8.6	10,733	9.3	0	3.4	0	13.1	11,800	10.1	17,940	8.9	6,074	10.5	--	11.7
9/5/2021	0	10.5	1	8.8	2,568	8.8	7,103	9.2	0	8.7	21,328	11.2	11,800	7.0	17,940	8.8	5,982	10.6	--	11.8
9/6/2021	0	11.2	1	10.6	1,301	11.6	3,593	11.4	0	8.7	9	11.0	11,800	7.8	17,940	9.6	22	10.8	--	12.1
9/7/2021	7,050	9.5	2,692	10.7	3,513	12.1	10,199	14.2	6	12.7	11	13.2	1,908	11.4	2,627	9.7	8,114	10.6	--	12.1
9/8/2021	11	10.6	6,511	8.0	3,772	8.9	9,657	9.1	0	14.3	21,741	11.2	20,408	7.0	31,561	8.7	5,951	10.3	--	11.8
9/9/2021	6,136	9.6	93	7.7	2,496	8.5	7,072	9.4	0	8.0	38	11.0	12,412	7.7	14,569	8.9	6,045	10.6	--	11.8
9/10/2021	0	10.4	6	8.9	2,573	8.8	7,370	9.3	0	5.1	948	13.4	12,268	7.5	18,099	8.8	5,851	10.5	--	11.7
9/11/2021	0	11.0	0	10.4	3,857	8.9	7,171	9.3	0	10.9	20,454	10.7	12,268	7.2	18,099	8.8	5,920	10.6	--	11.7
9/12/2021	5,422	9.9	8,435	10.3	2,609	8.4	10,573	9.2	0	5.7	0	11.0	12,268	7.0	18,099	9.0	6,045	10.5	--	11.7
9/13/2021	0	10.5	1,814	6.4	2,617	8.7	7,287	9.3	0	3.4	0	13.3	12,268	7.7	18,099	8.7	6,477	10.6	--	11.7
9/14/2021	7,291	9.5	2	7.6	2,779	8.9	7,226	9.3	0	8.3	21,436	11.6	12,128	8.0	14,956	8.8	6,162	10.3	--	11.7
9/15/2021	4	10.1	4	8.8	3,657	8.5	7,224	9.2	0	5.8	0	10.8	12,612	7.9	14,731	9.1	5,990	10.5	--	11.6
9/16/2021	0	11.0	1	10.5	2,560	8.7	7,235	9.4	0	3.1	0	13.2	3,572	9.4	21,446	8.8	5,297	10.7	--	11.7
9/17/2021	4,780	10.6	9,287	9.6	3,476	9.0	7,622	9.7	0	8.9	21,627	11.2	19,553	11.1	20,447	8.7	6,526	10.1	--	11.8
9/18/2021	4,541	9.0	0	6.5	1,598	9.0	7,627	10.5	0	10.2	11	11.1	19,553	8.4	20,447	8.6	51,944	13.9	--	11.8
9/19/2021	0	10.3	0	7.9	2,430	11.2	7,647	15.5	0	15.6	1,122	13.7	19,553	8.2	20,447	9.4	27,140	14.5	--	13.4
9/20/2021	0	11.0	1	9.8	2,597	9.4	7,611	14.3	0	18.7	6,809	14.4	19,553	7.6	20,447	8.5	17,512	11.5	--	12.5
9/21/2021	0	11.3	5,537	10.1	3,204	9.0	8,755	10.4	0	16.9	24	13.3	13,784	7.9	22,147	8.6	6,507	10.3	--	11.9
9/22/2021	0	11.0	4,074	7.6	2,590	8.8	7,454	9.6	0	16.7	20,060	12.4	13,660	7.5	28,094	8.9	5,986	10.6	--	11.7
9/23/2021	6,216	10.1	2	8.1	3,925	8.8	7,632	9.6	0	14.4	1,662	10.5	7,700	11.6	21,333	8.8	12,945	10.1	--	11.7
9/24/2021	0	10.6	0	9.6	2,460	8.5	10,662	9.6	0	11.3	3	13.1	12,207	11.6	23,438	8.8	5,881	10.5	--	11.8
9/25/2021	6,588	9.6	0	11.0	3,767	8.9	7,392	9.6	0	16.2	21,856	11.8	12,207	9.7	23,438	8.7	5,940	10.6	--	11.8
9/26/2021	0	10.5	8,116	8.2	2,501	8.5	7,549	9.8	0	13.3	0	10.9	12,207	11.2	23,438	8.6	15,480	10.4	--	11.7
9/27/2021	0	11.0	0	7.9	3,541	9.0	11,154	9.5	0	14.1	6,190	13.5	12,207	9.8	23,438	8.1	36,633	10.1	--	11.5
9/28/2021	0	11.0	3	8.5	2,759	8.4	7,391	9.5	0	18.2	15,955	10.3	8,192	13.4	34,257	8.4	26,647	10.1	--	11.5
9/29/2021	0	11.8	0	10.2	2,902	9.0	7,319	9.6	0	12.4	0	12.0	11,544	13.3	29,103	8.8	5,791	10.7	--	11.7
9/30/2021	0	12.0	1,480	11.2	3,375	8.5	7,450	9.5	0	14.4	12,188	13.3	11,544	13.4	29,103	8.1	34,763	10.2	10	8.2

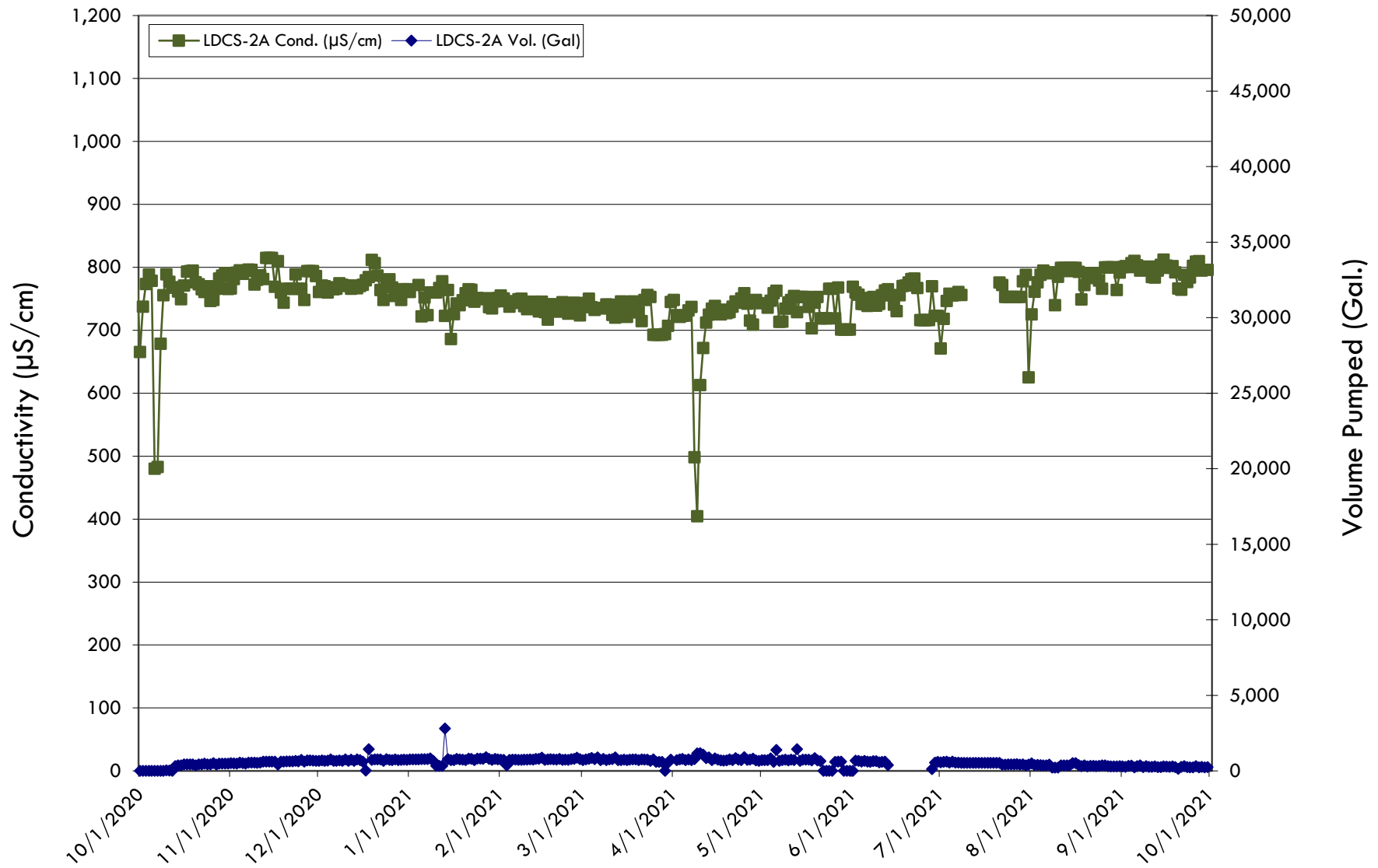
-- = No data available

* Volume meter was removed from Cell 8 during third quarter.

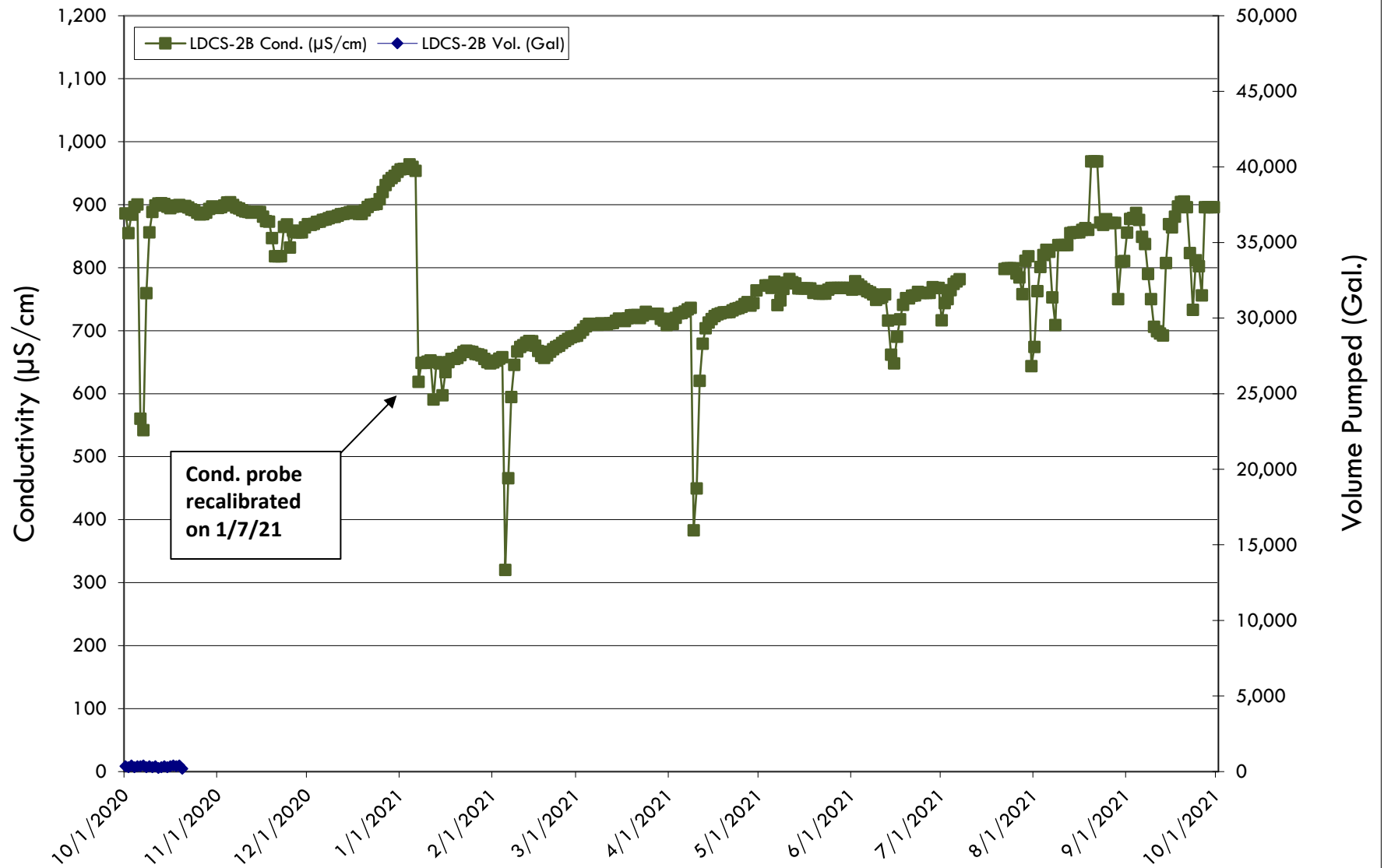
LDCS-1 (DailyTotals)
Conductivity vs Volume Pumped
Third Quarter 2021
LRI Landfill, Pierce County, Washington



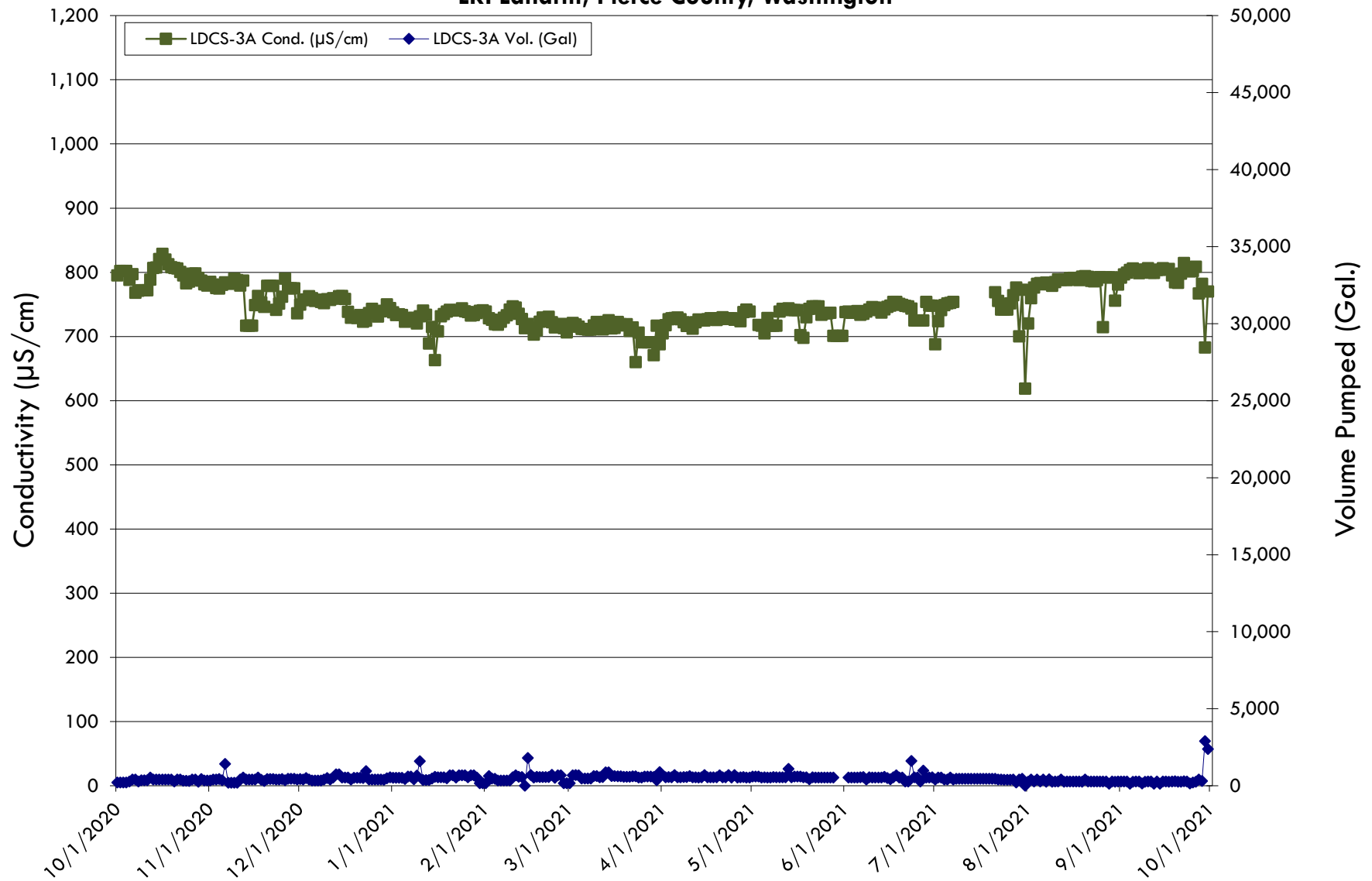
LDCS-2A (Daily Totals)
Conductivity vs Volume Pumped
Third Quarter 2021
LRI Landfill, Pierce County, Washington



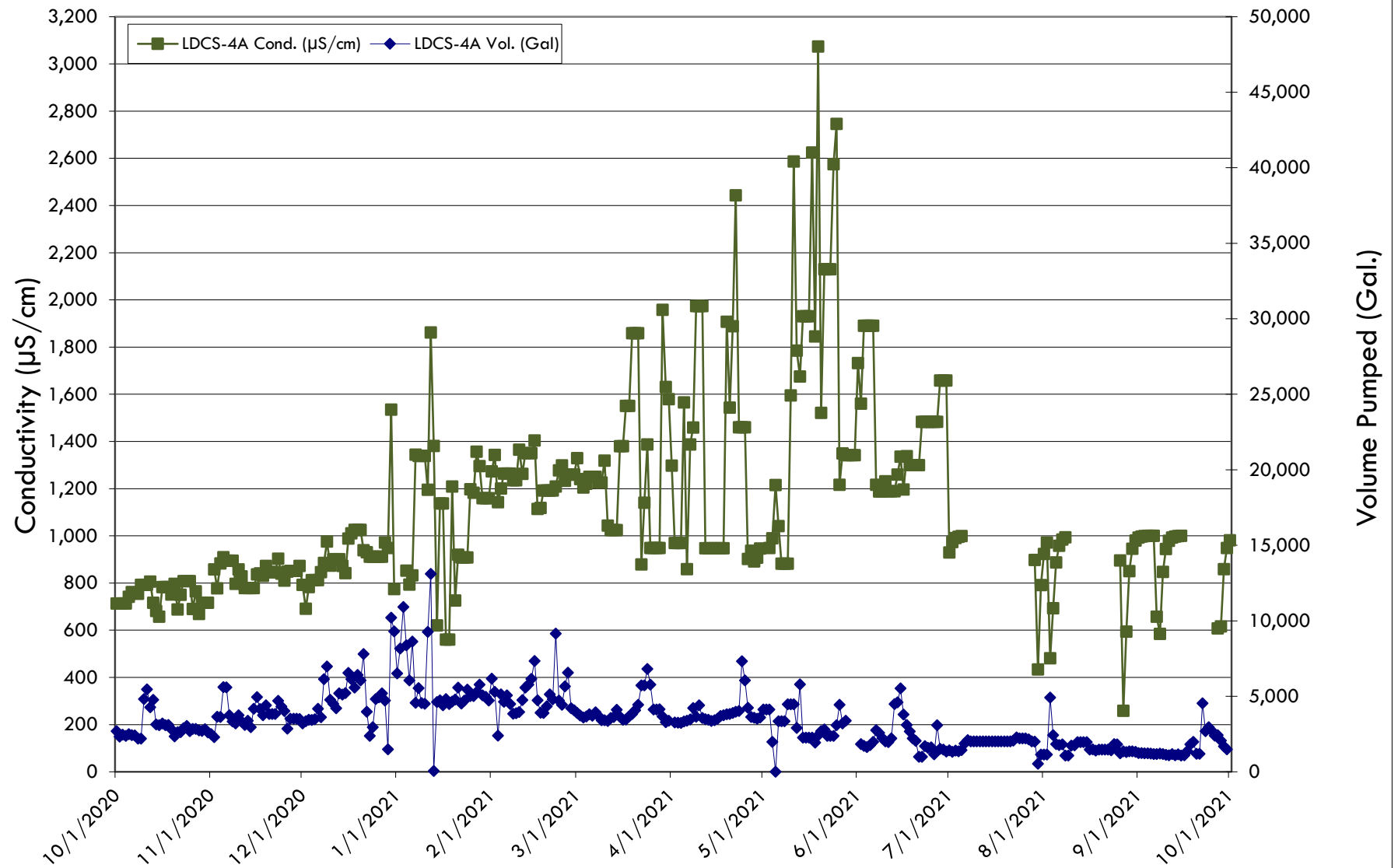
LDCS-2B (Daily Totals)
Conductivity vs Volume Pumped
Third Quarter 2021
LRI Landfill, Pierce County, Washington



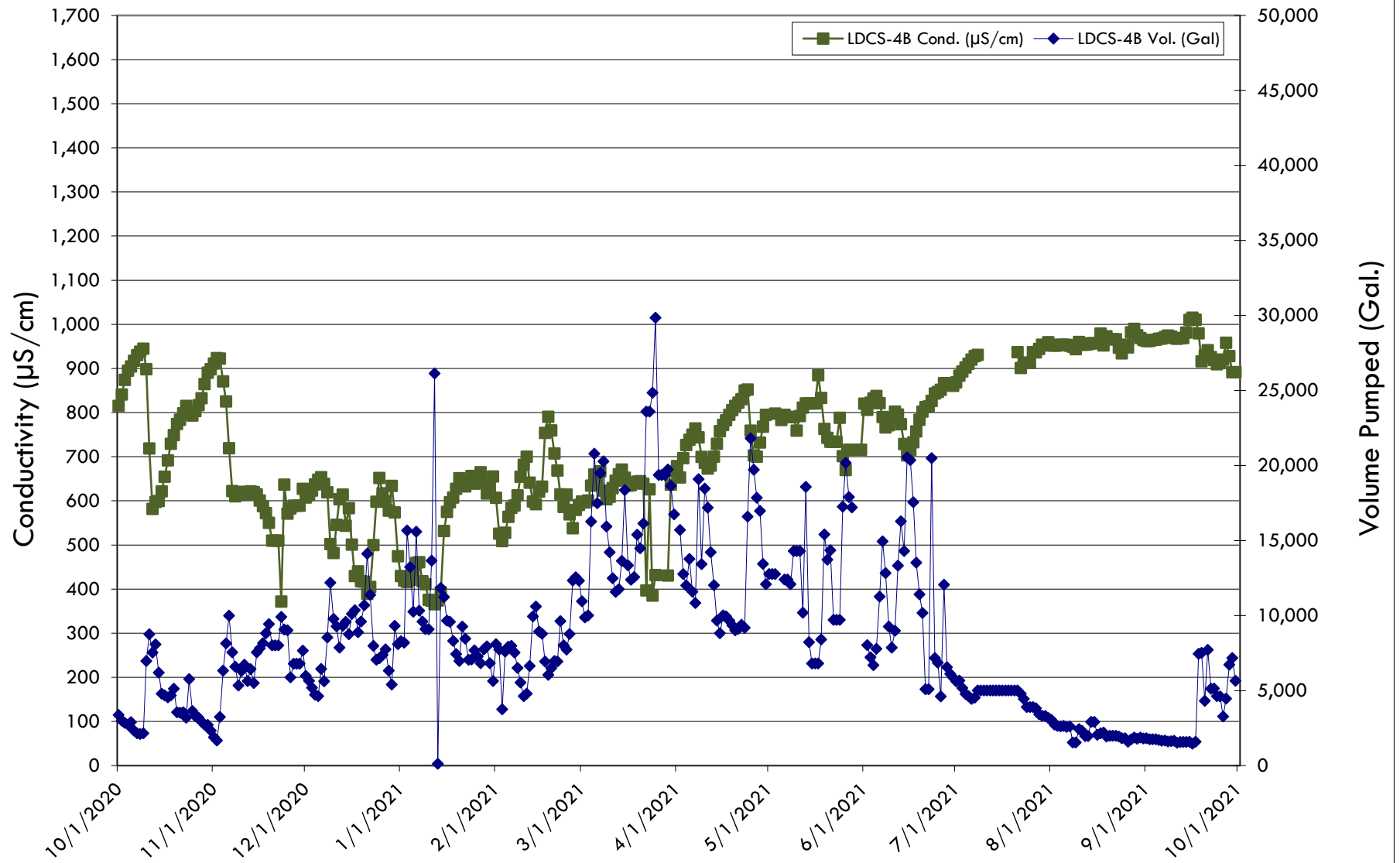
LDCS-3A (Daily Totals)
Conductivity vs Volume Pumped
Third Quarter 2021
LRI Landfill, Pierce County, Washington



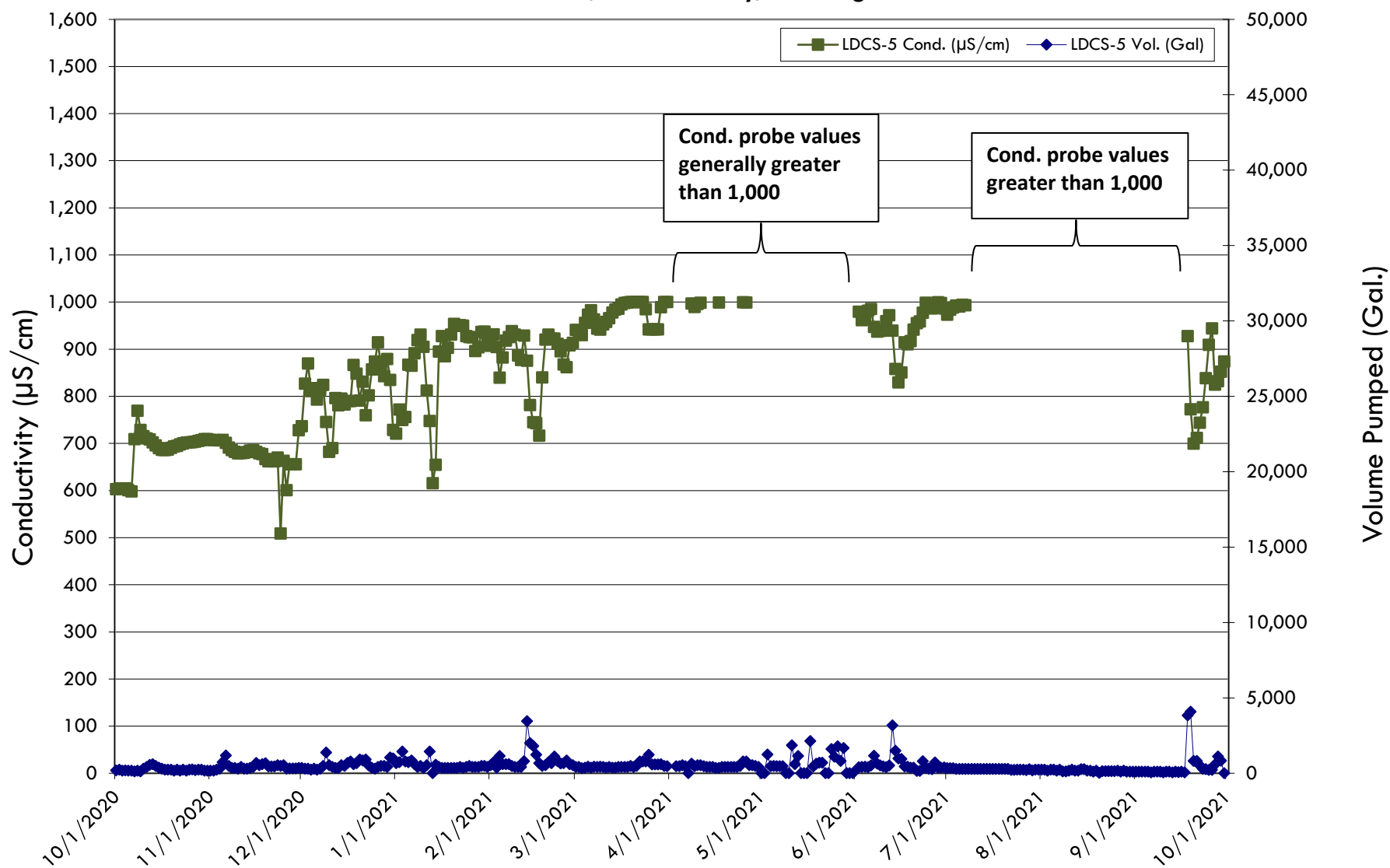
LDCS-4A (Daily Totals)
Conductivity vs Volume Pumped
Third Quarter 2021
LRI Landfill, Pierce County, Washington



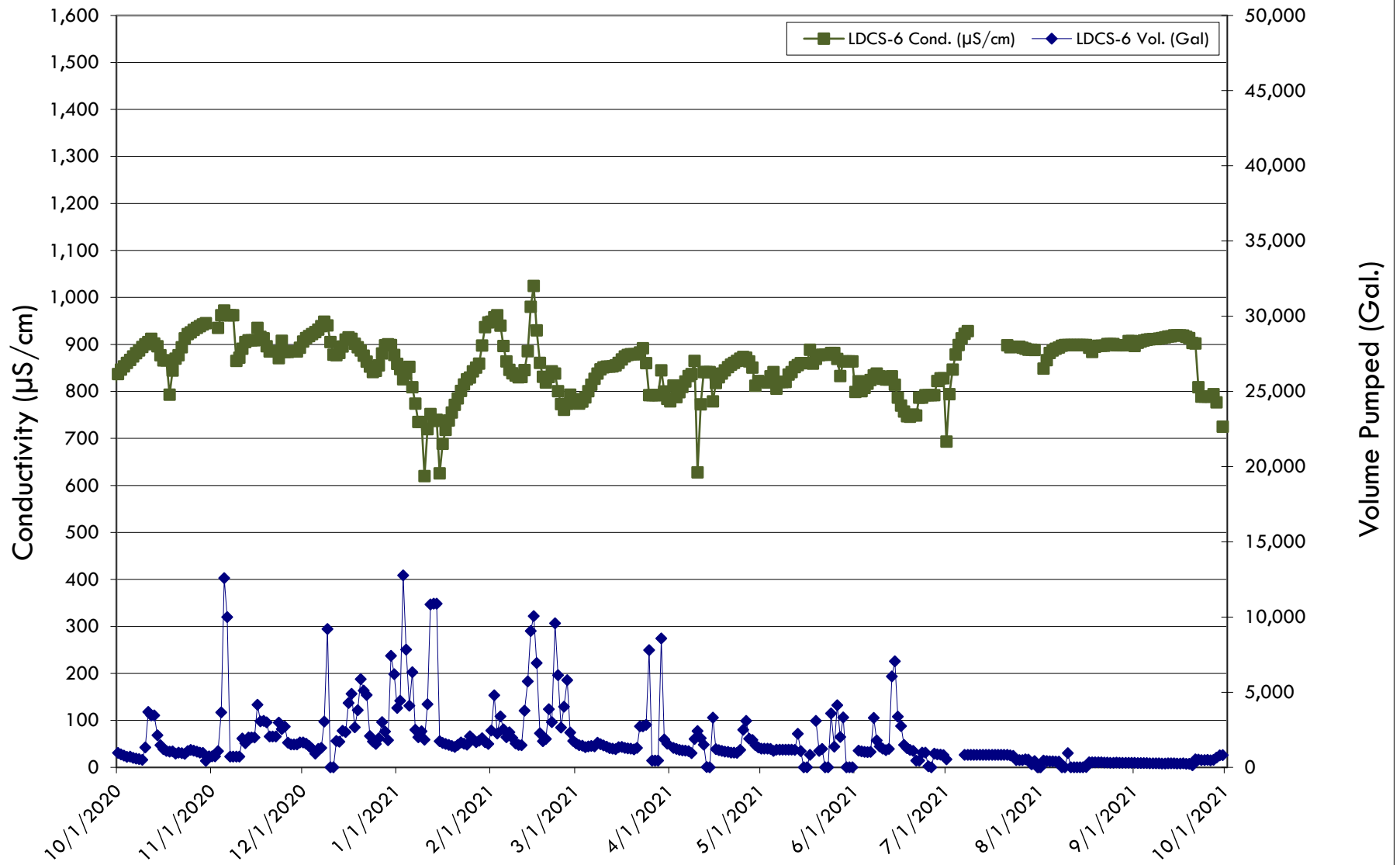
LDCS-4B (Daily Totals)
Conductivity vs Volume Pumped
Third Quarter 2021
LRI Landfill, Pierce County, Washington



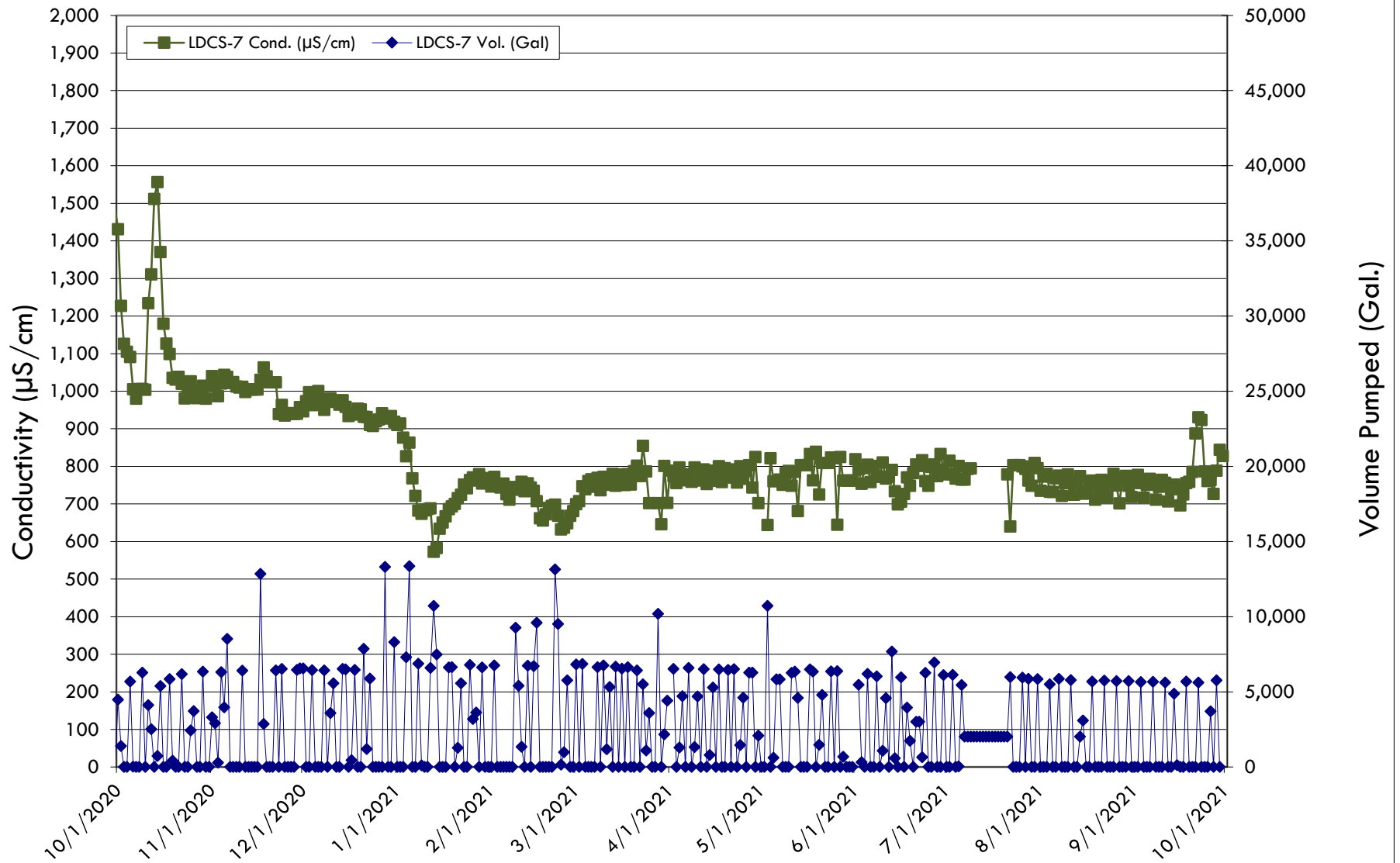
LDCS-5 (Daily Totals)
Conductivity vs Volume Pumped
Third Quarter 2021
LRI Landfill, Pierce County, Washington



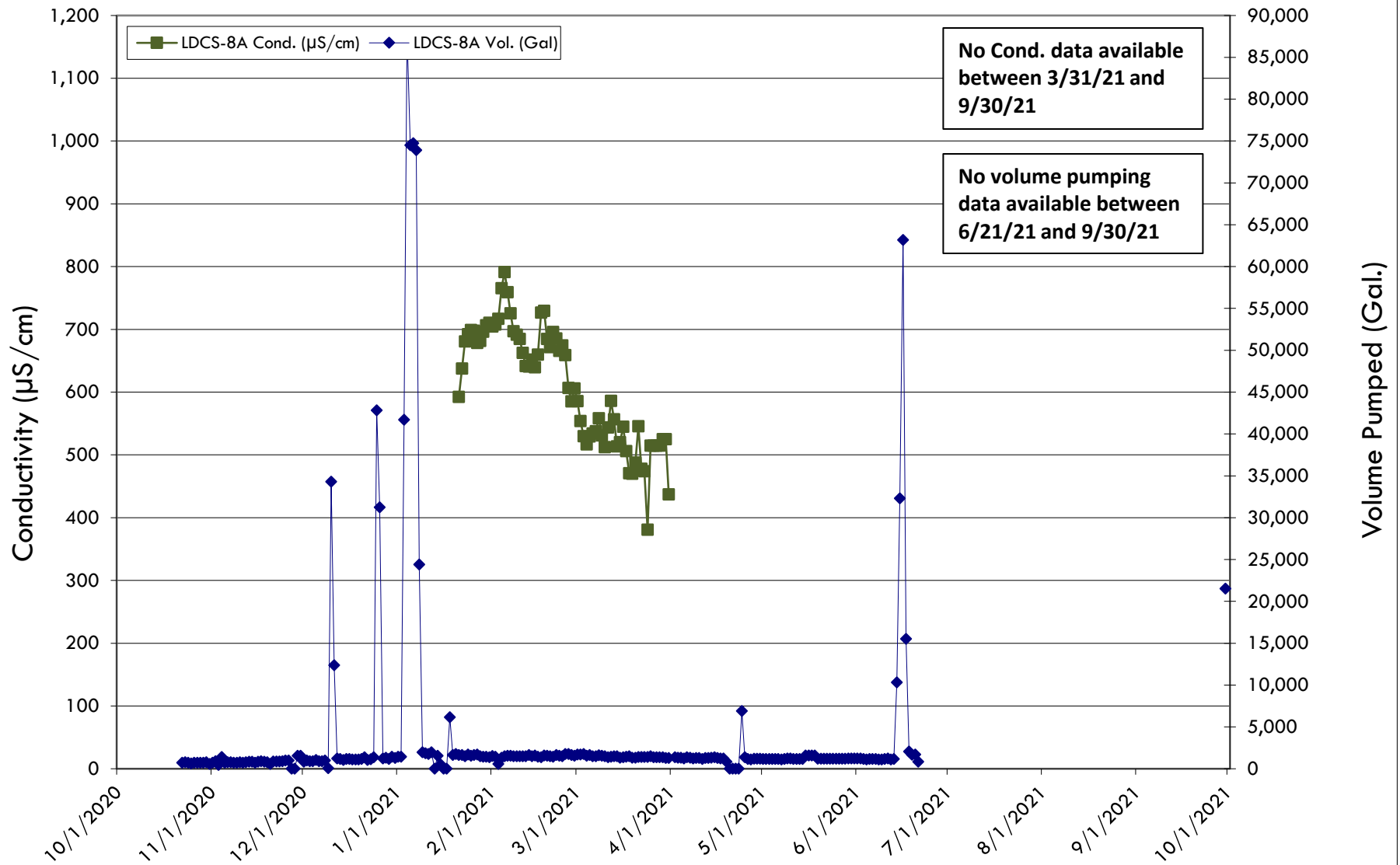
LDCS-6 (Daily Totals)
Conductivity vs Volume Pumped
Third Quarter 2021
LRI Landfill, Pierce County, Washington



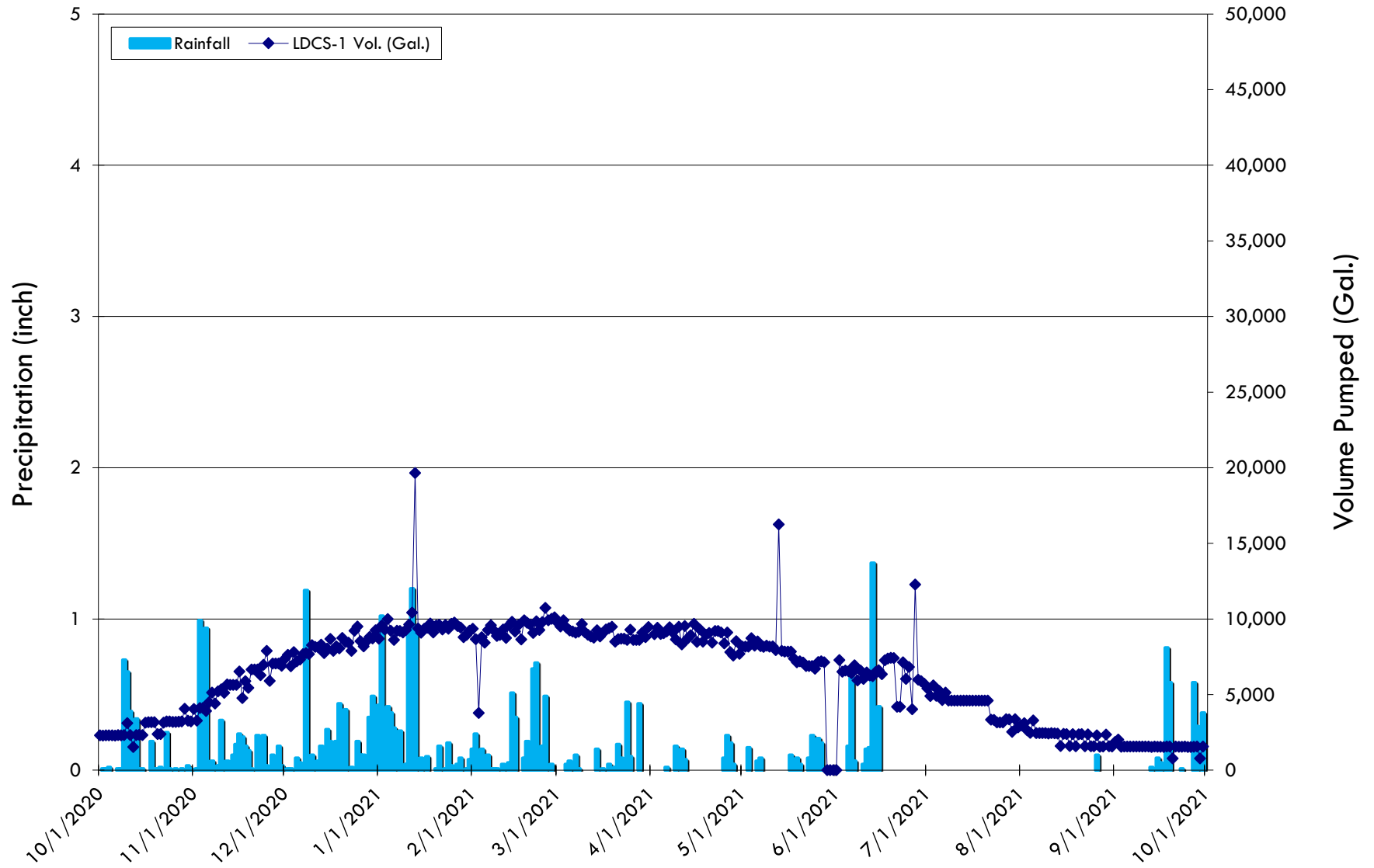
LDCS-7 (Daily Totals)
Conductivity vs Volume Pumped
Third Quarter 2021
LRI Landfill, Pierce County, Washington



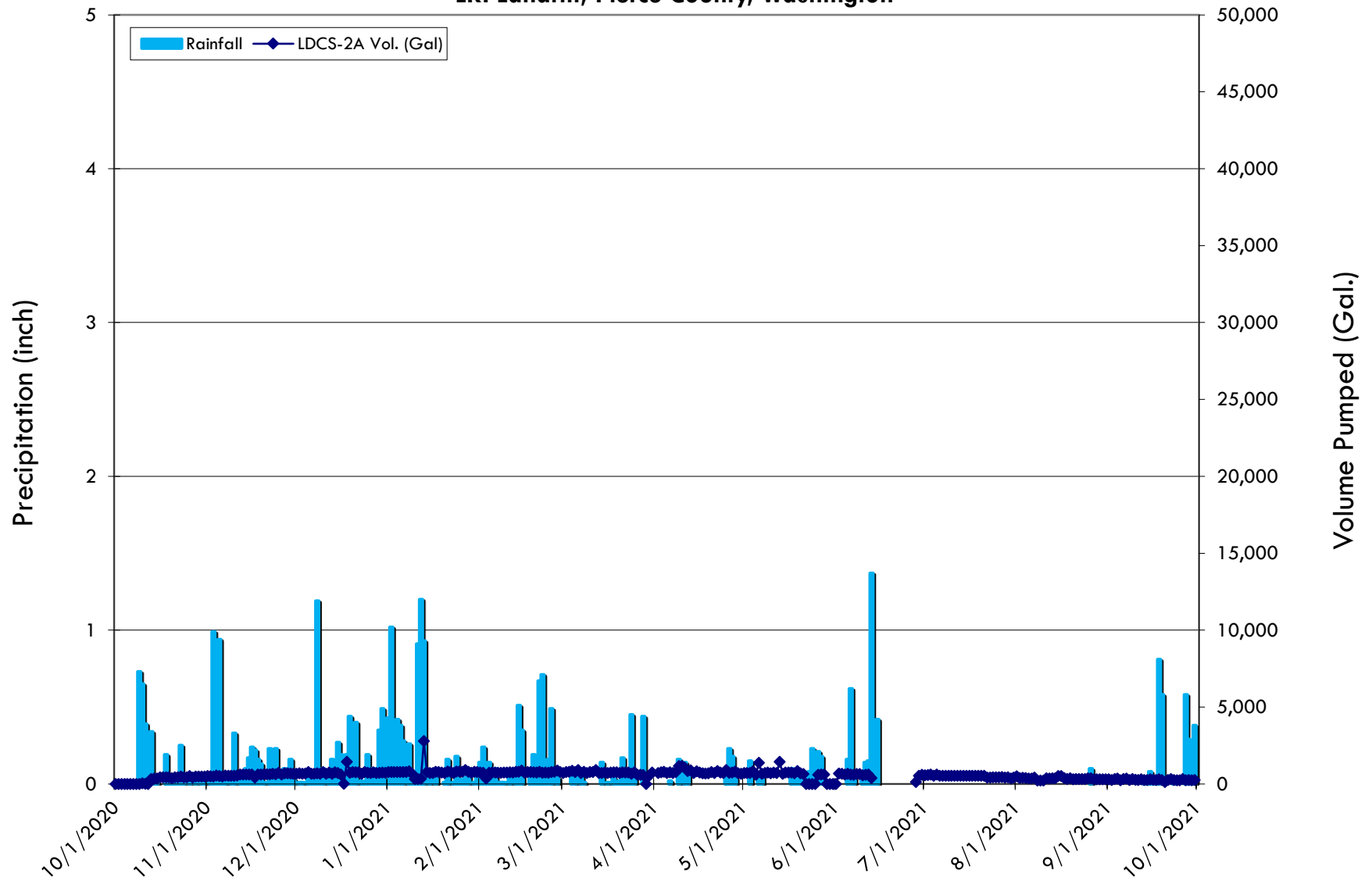
LDCS-8A (Daily Totals)
Conductivity vs Volume Pumped
Third Quarter 2021
LRI Landfill, Pierce County, Washington



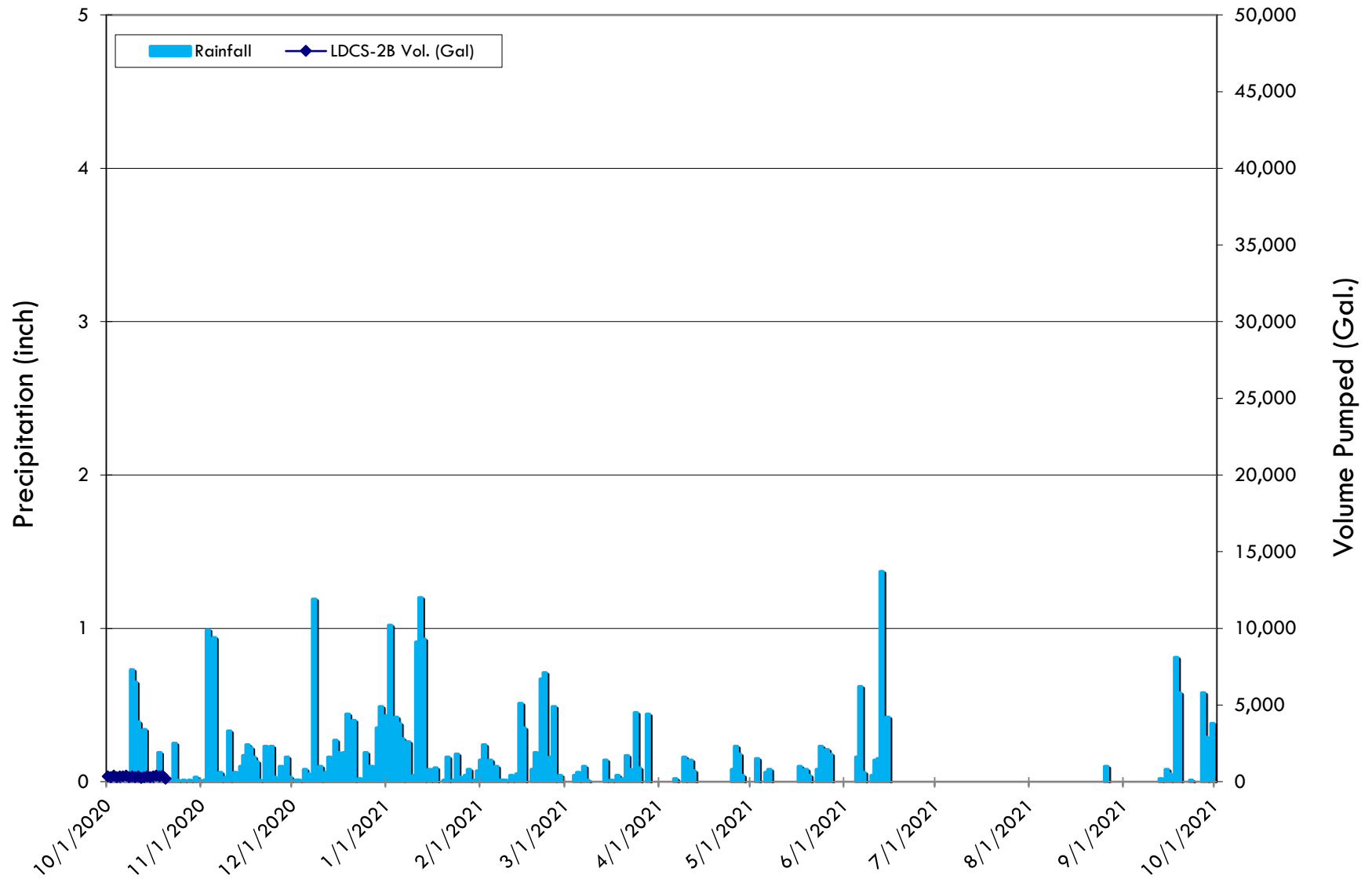
LDCS-1 (Daily Totals)
Volume Pumped vs Precipitation
Third Quarter 2021
LRI Landfill, Pierce County, Washington



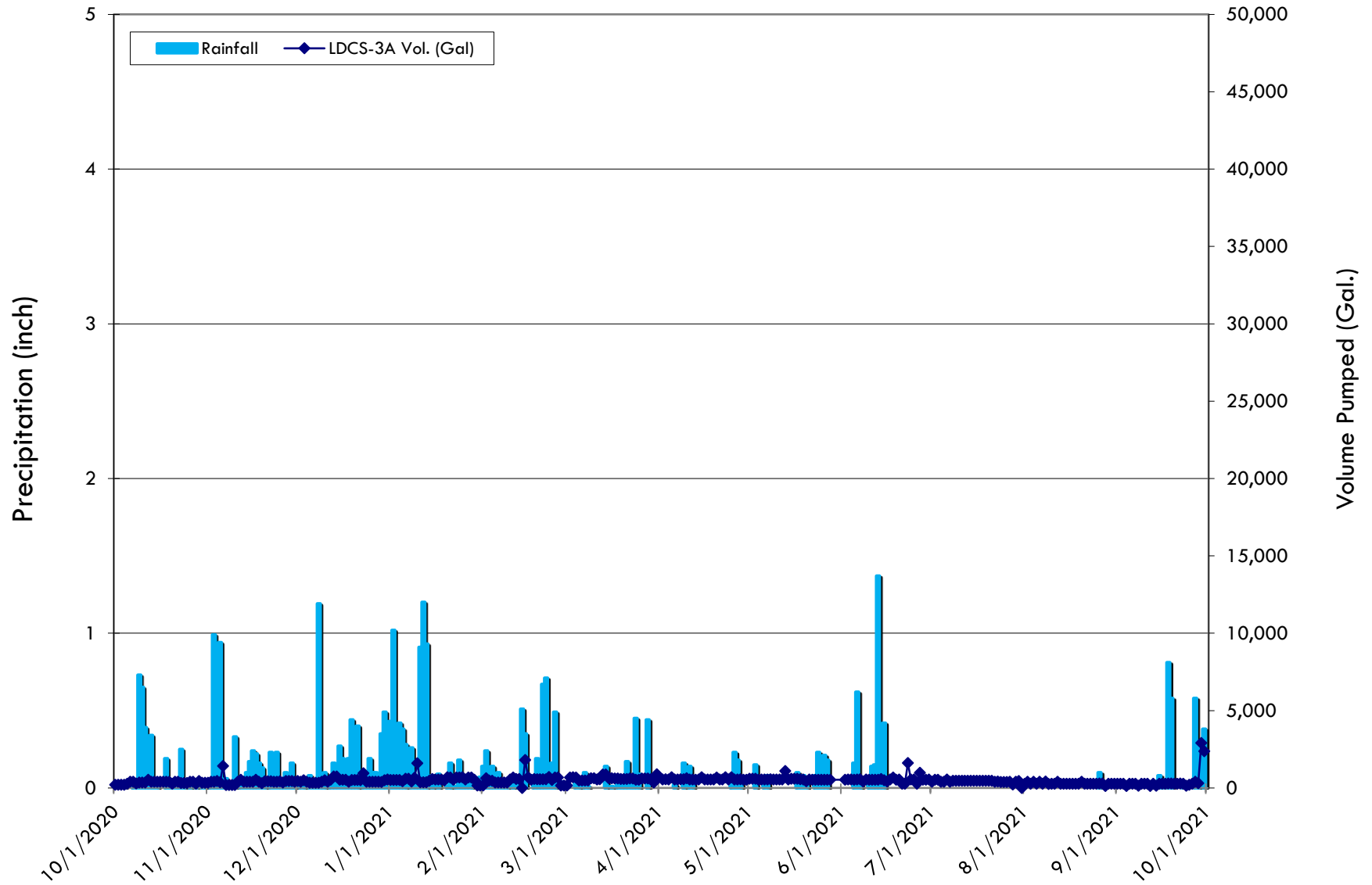
LDCS-2A (Daily Totals)
Volume Pumped vs Precipitation
Third Quarter 2021
LRI Landfill, Pierce County, Washington



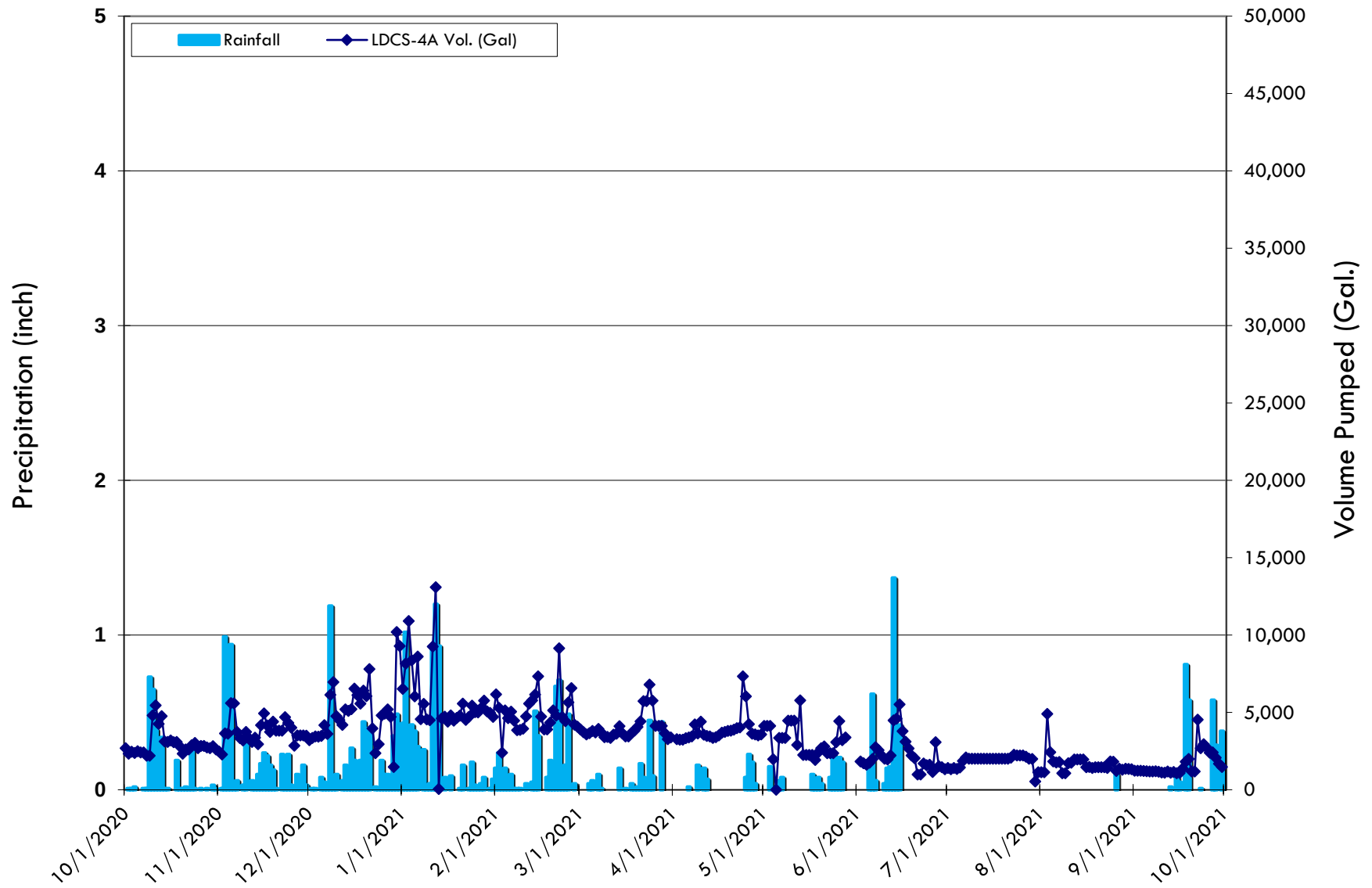
LDCS-2B (Daily Totals)
Volume Pumped vs Precipitation
Third Quarter 2021
LRI Landfill, Pierce County, Washington



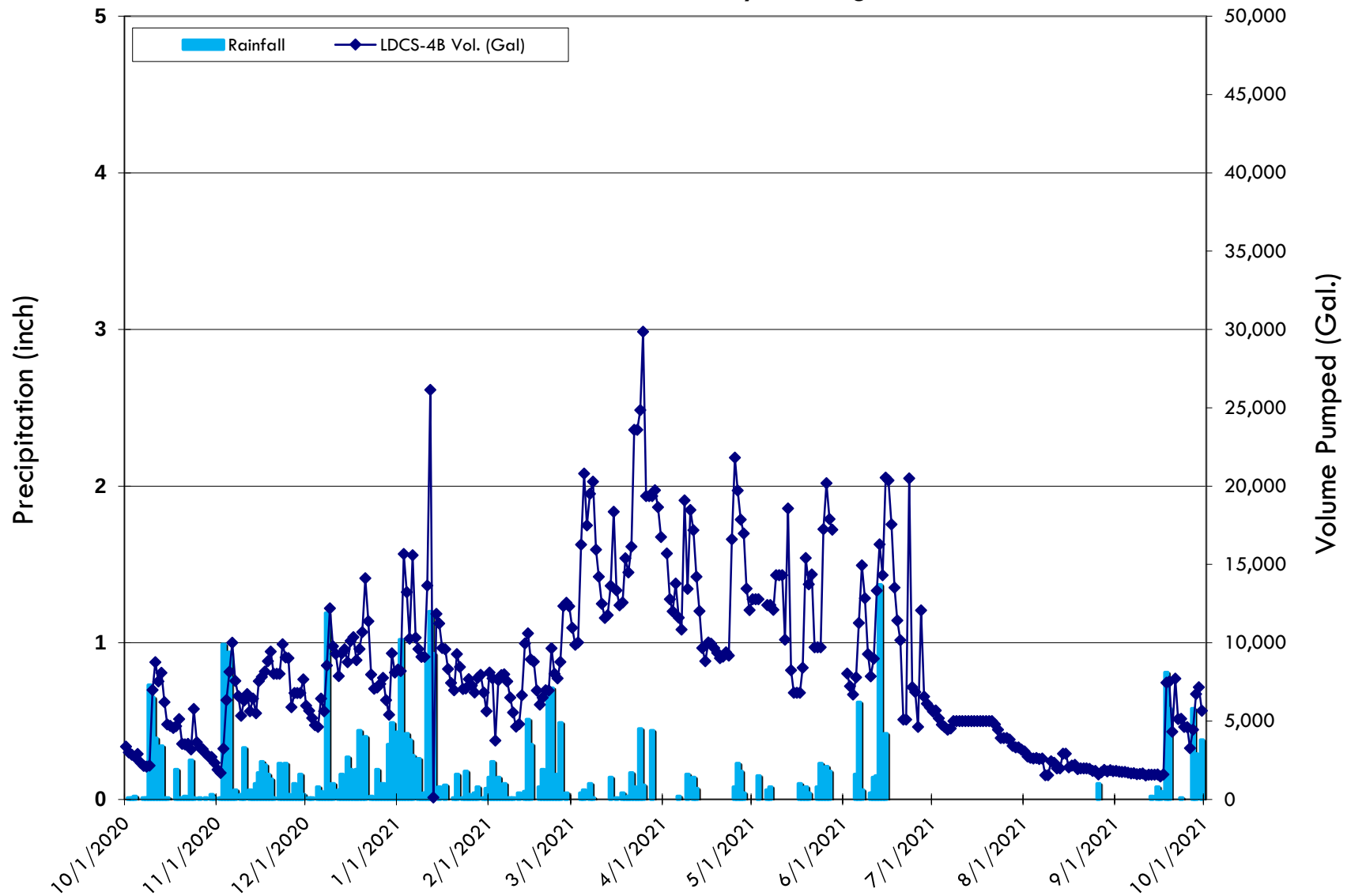
LDCS-3A (Daily Totals)
Volume Pumped vs Precipitation
Third Quarter 2021
LRI Landfill, Pierce County, Washington



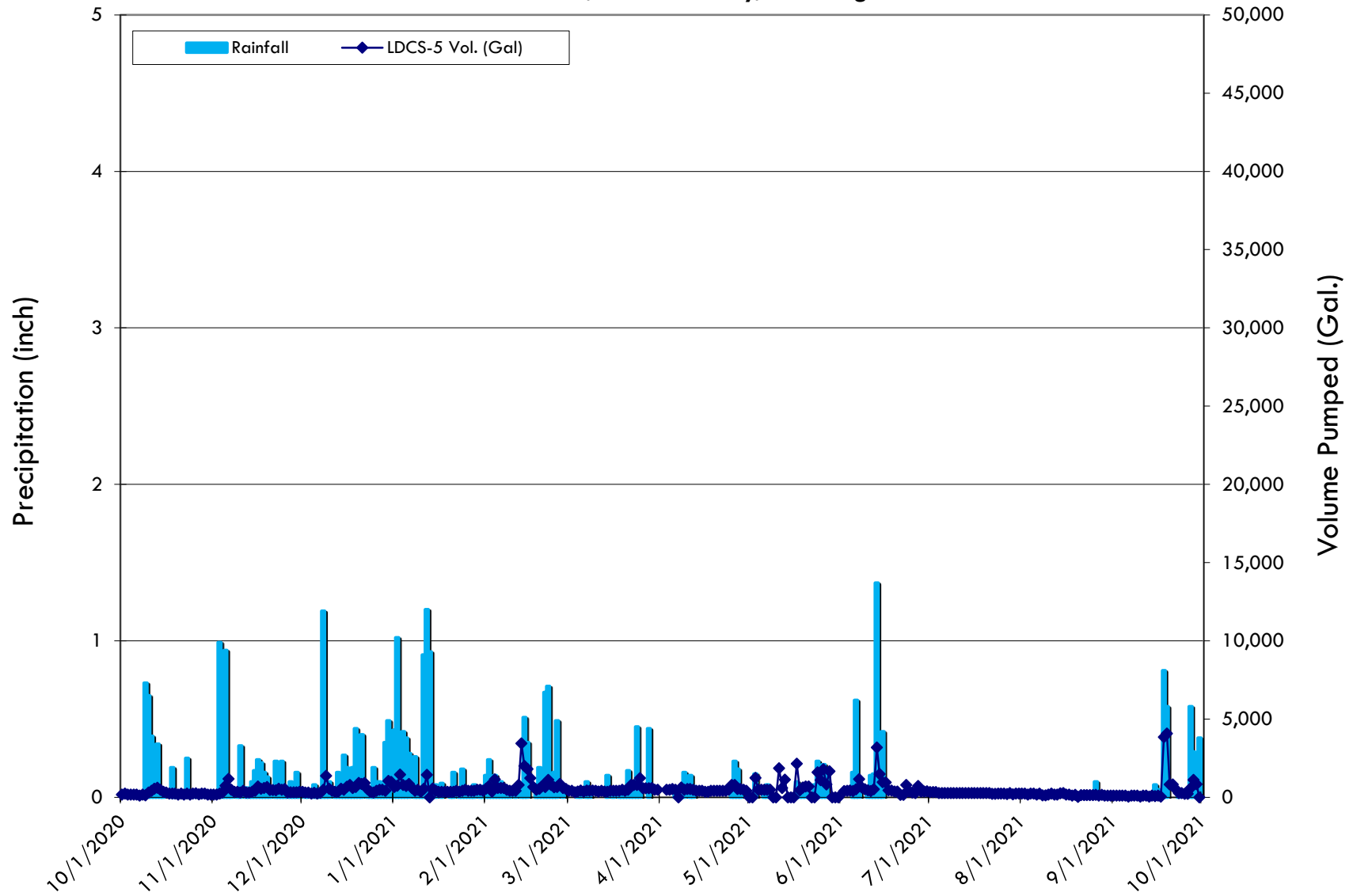
LDCS-4A (Daily Totals)
Volume Pumped vs Precipitation
Third Quarter 2021
LRI Landfill, Pierce County, Washington



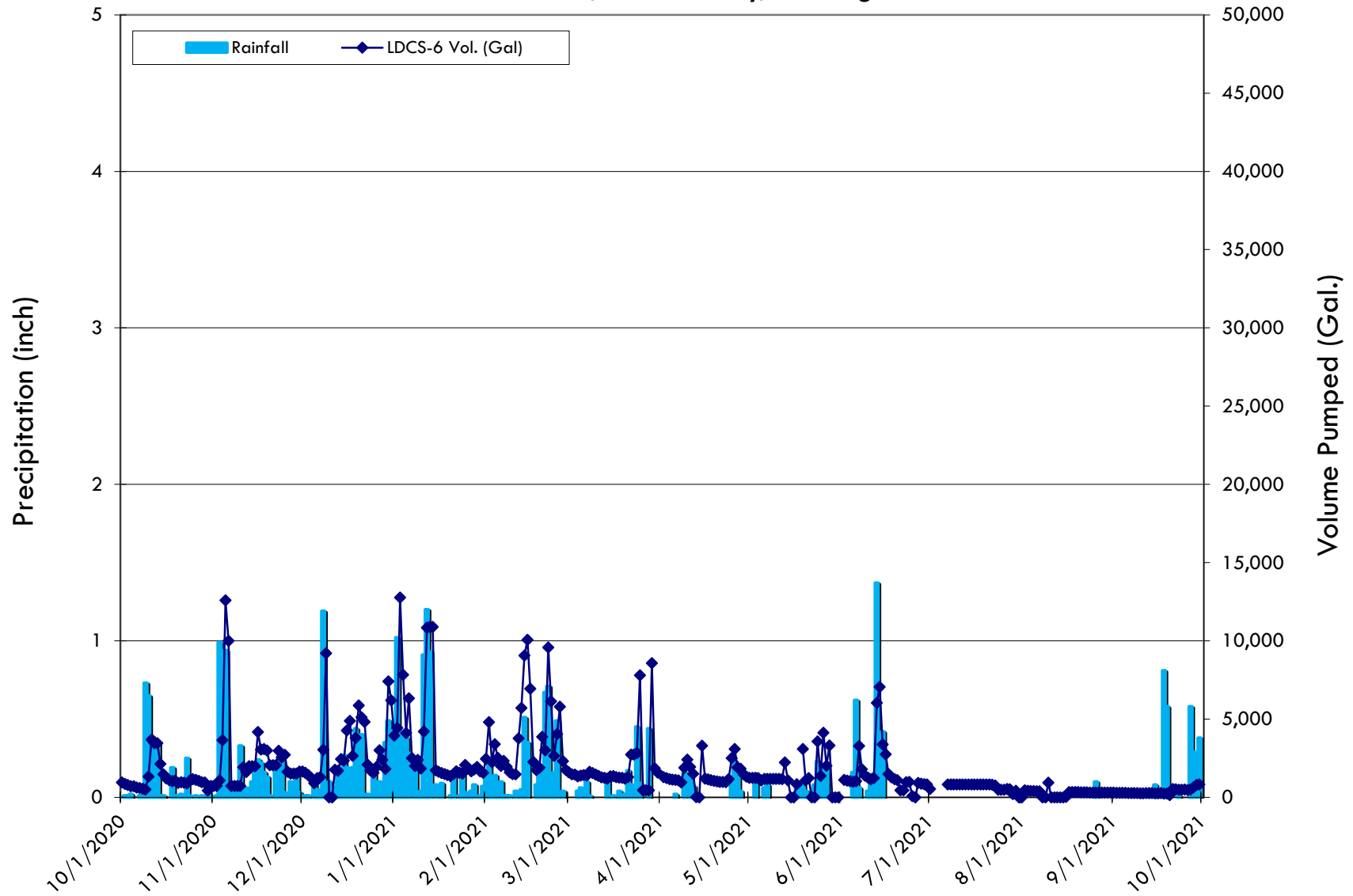
LDCS-4B (Daily Totals)
Volume Pumped vs Precipitation
Third Quarter 2021
LRI Landfill, Pierce County, Washington



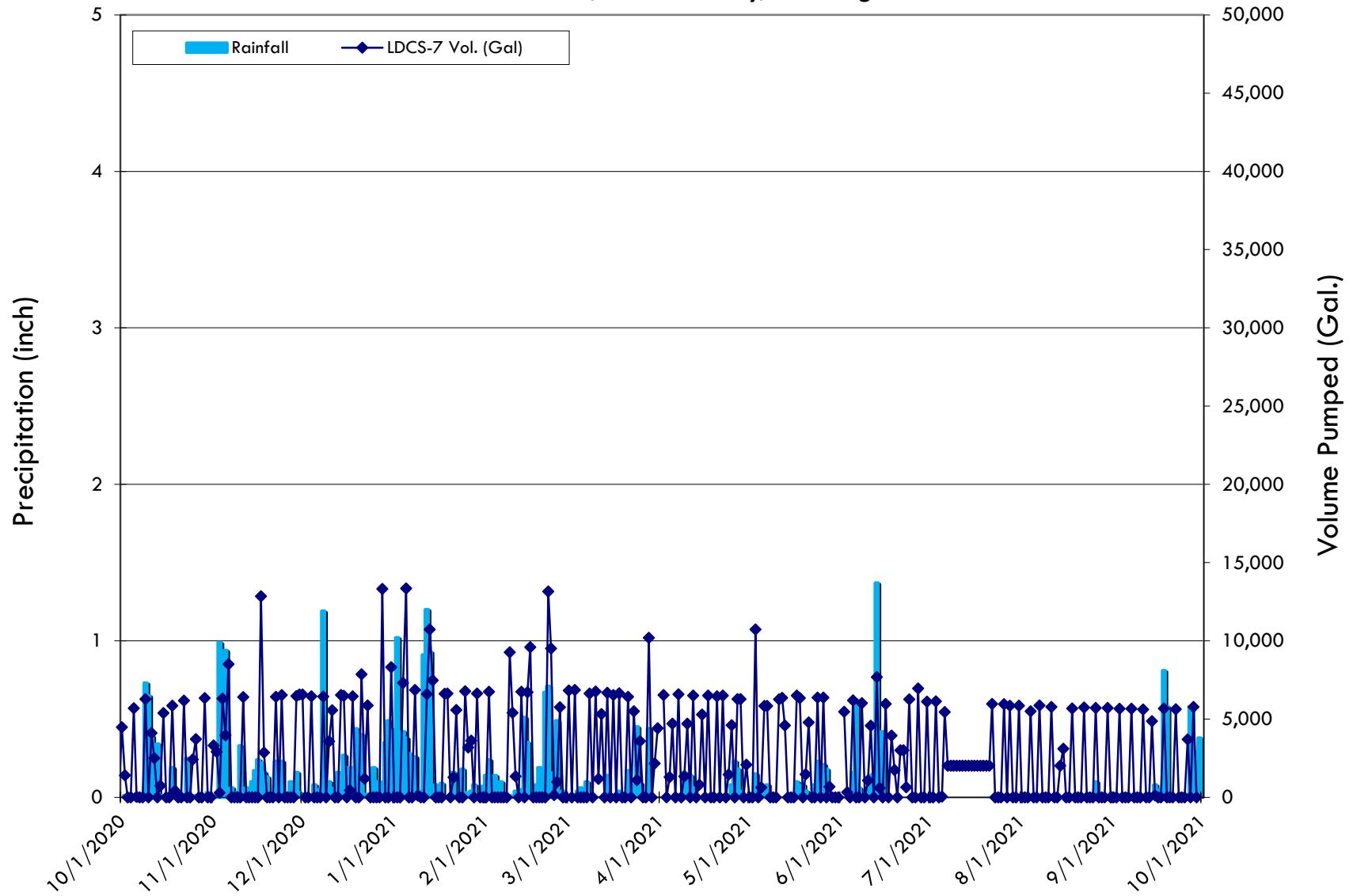
LDCS-5 (Daily Totals)
Volume Pumped vs Precipitation
Third Quarter 2021
LRI Landfill, Pierce County, Washington



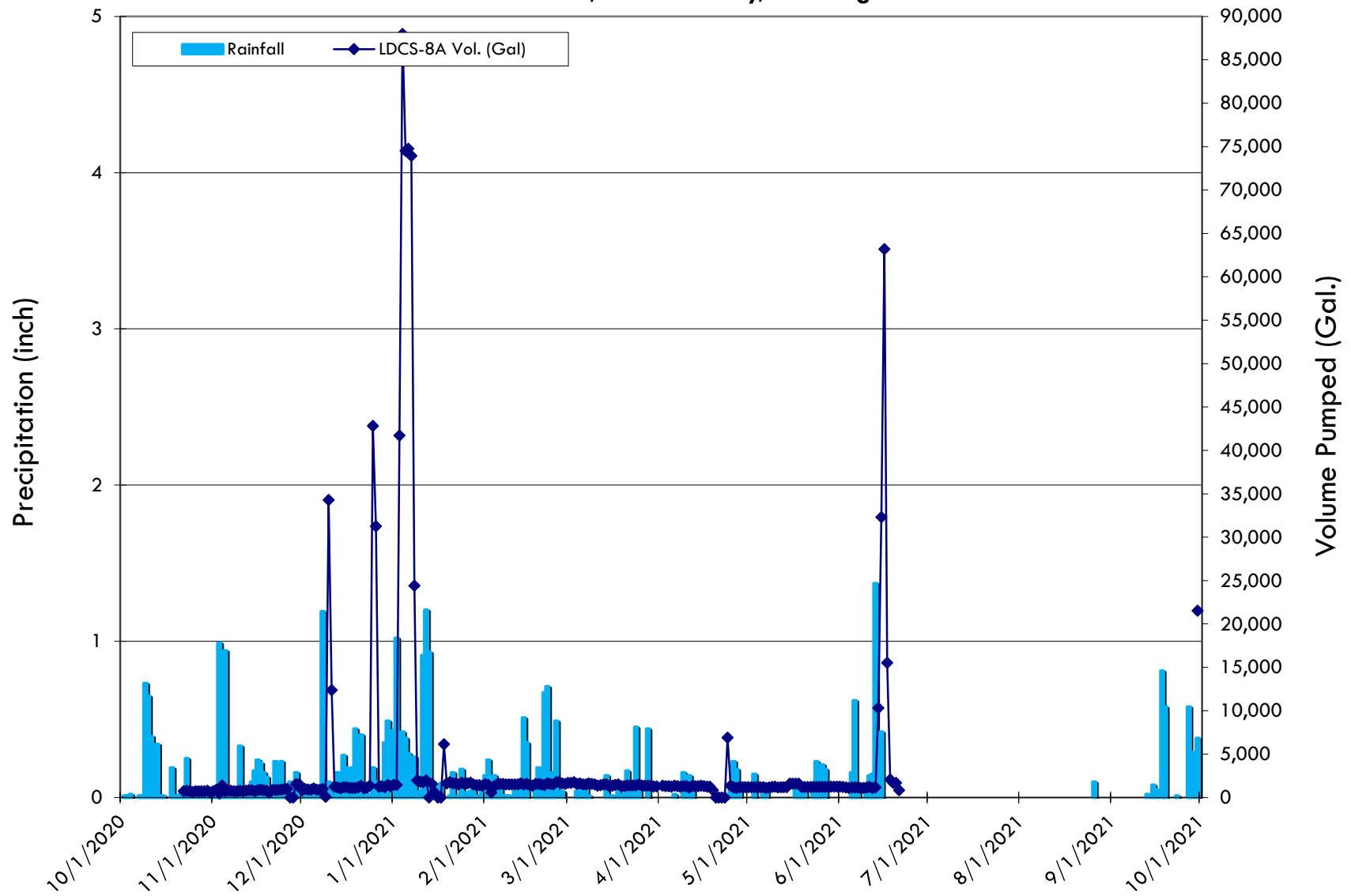
LDCS-6 (Daily Totals)
Volume Pumped vs Precipitation
Third Quarter 2021
LRI Landfill, Pierce County, Washington



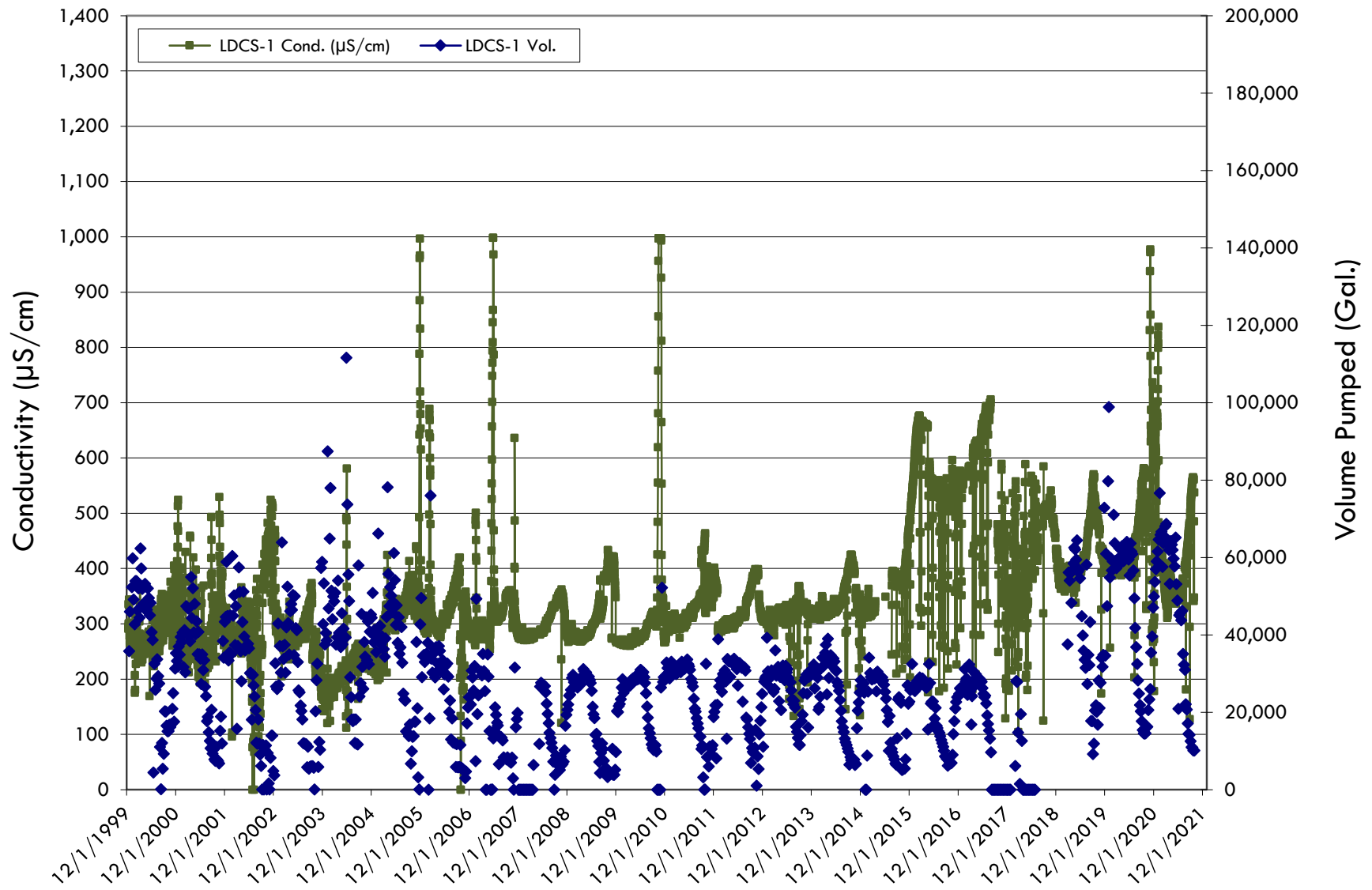
LDCS-7 (Daily Totals)
Volume Pumped vs Precipitation
Third Quarter 2021
LRI Landfill, Pierce County, Washington



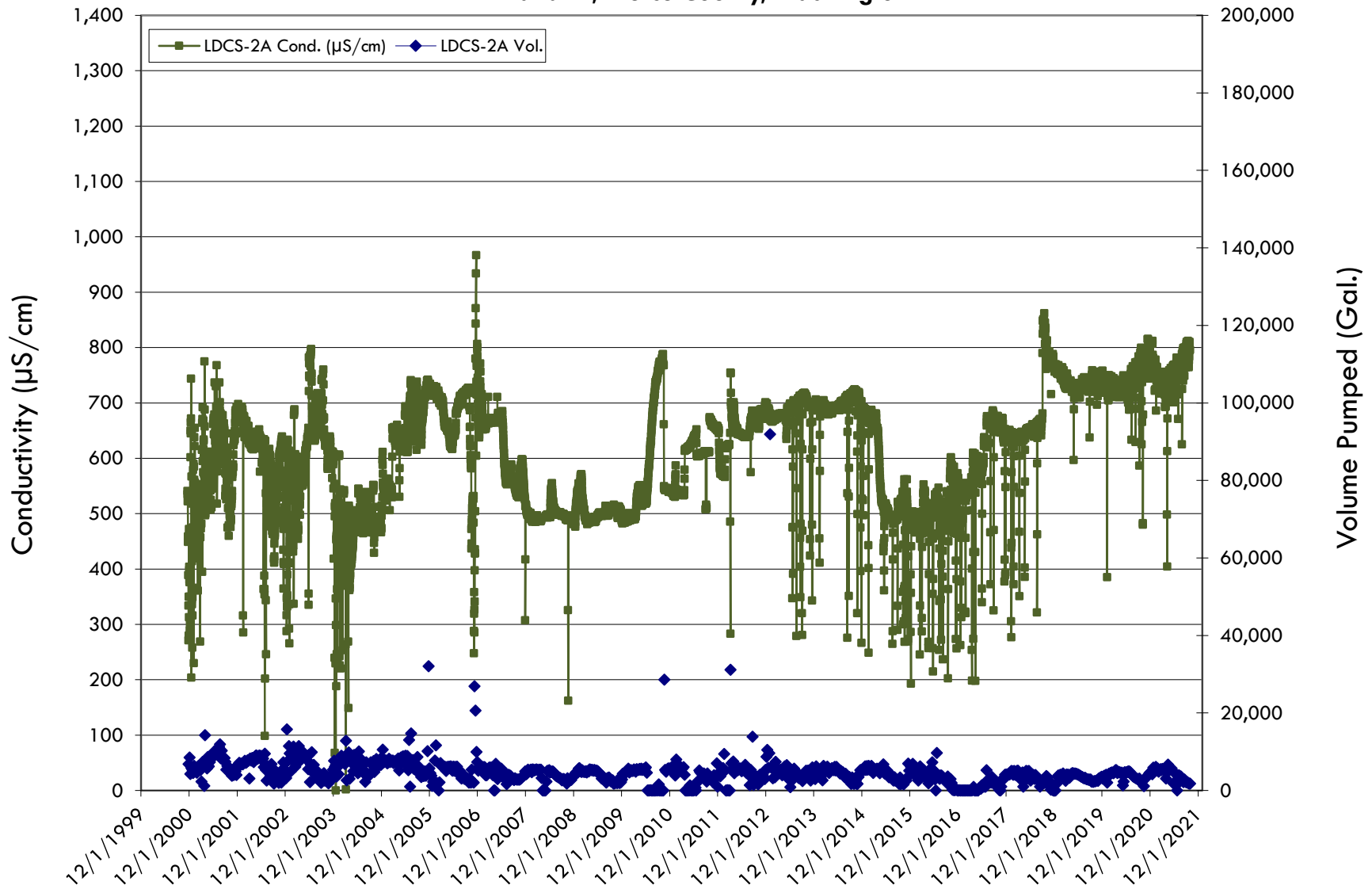
LDCS-8A (Daily Totals)
Volume Pumped vs Precipitation
Third Quarter 2021
LRI Landfill, Pierce County, Washington



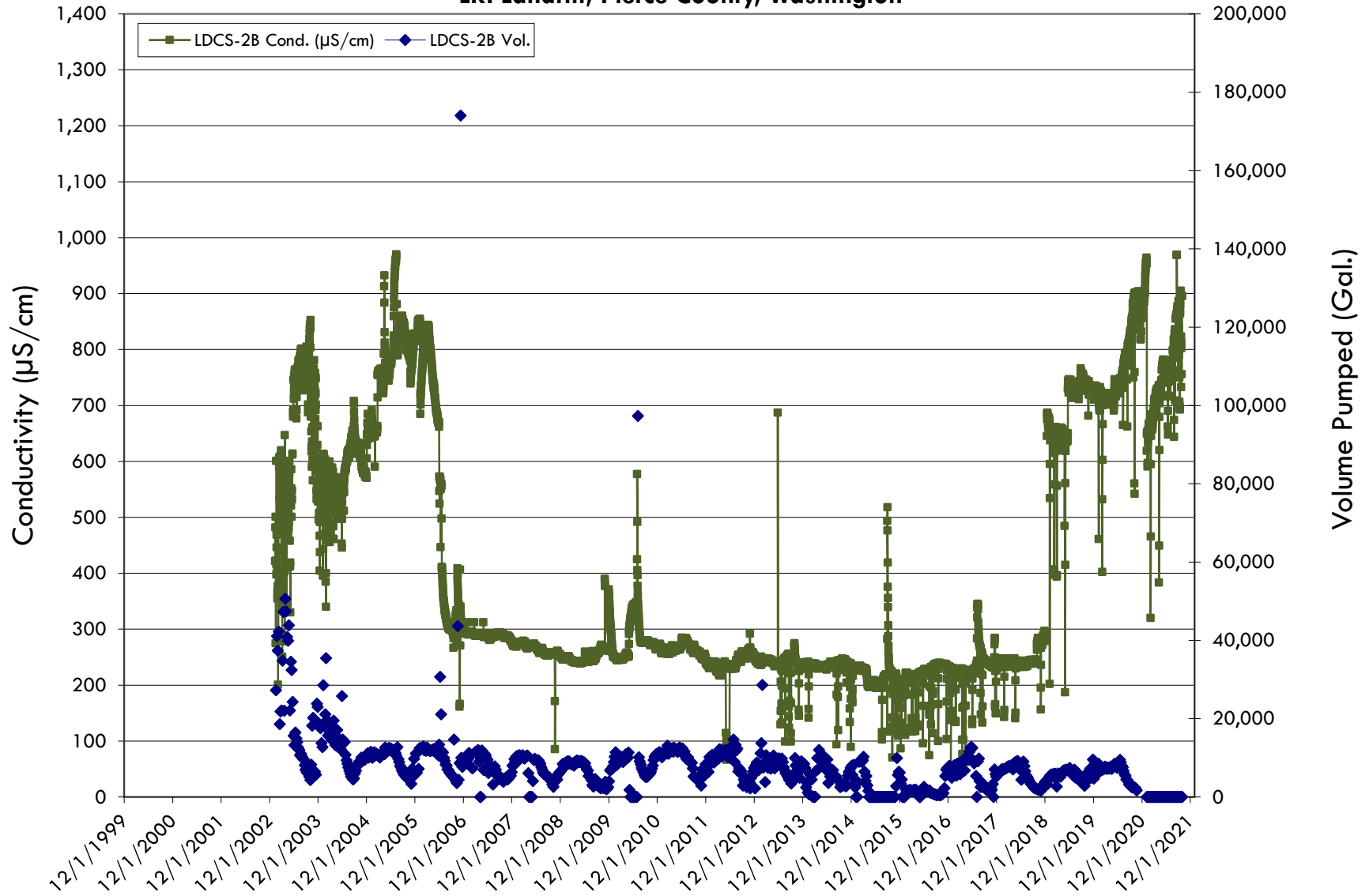
LDCS-1
Daily Conductivity vs Weekly Volume Pumped
Third Quarter 2021
LRI Landfill, Pierce County, Washington



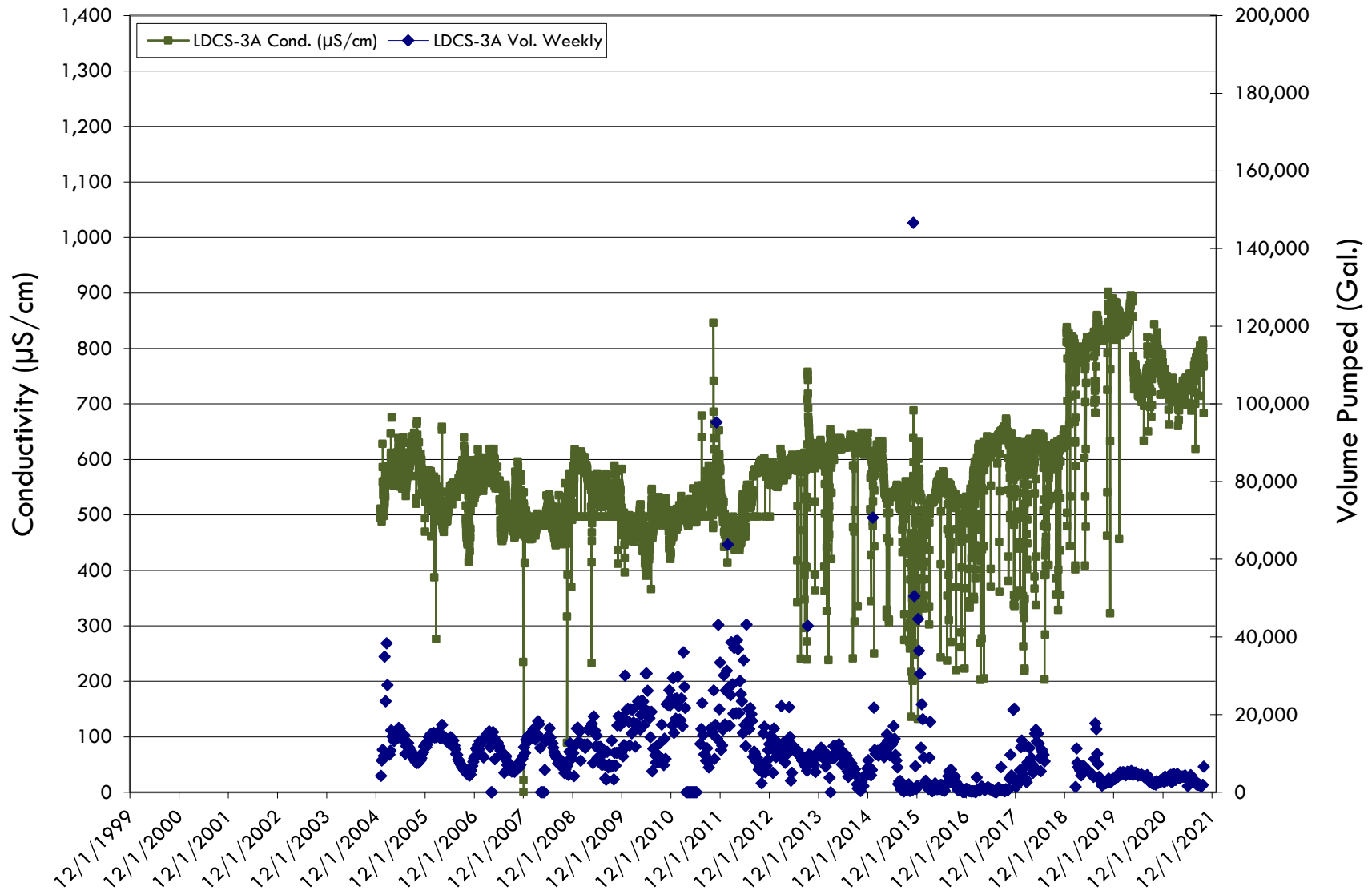
LDCS-2A
Daily Conductivity vs Weekly Volume Pumped
Third Quarter 2021
LRI Landfill, Pierce County, Washington



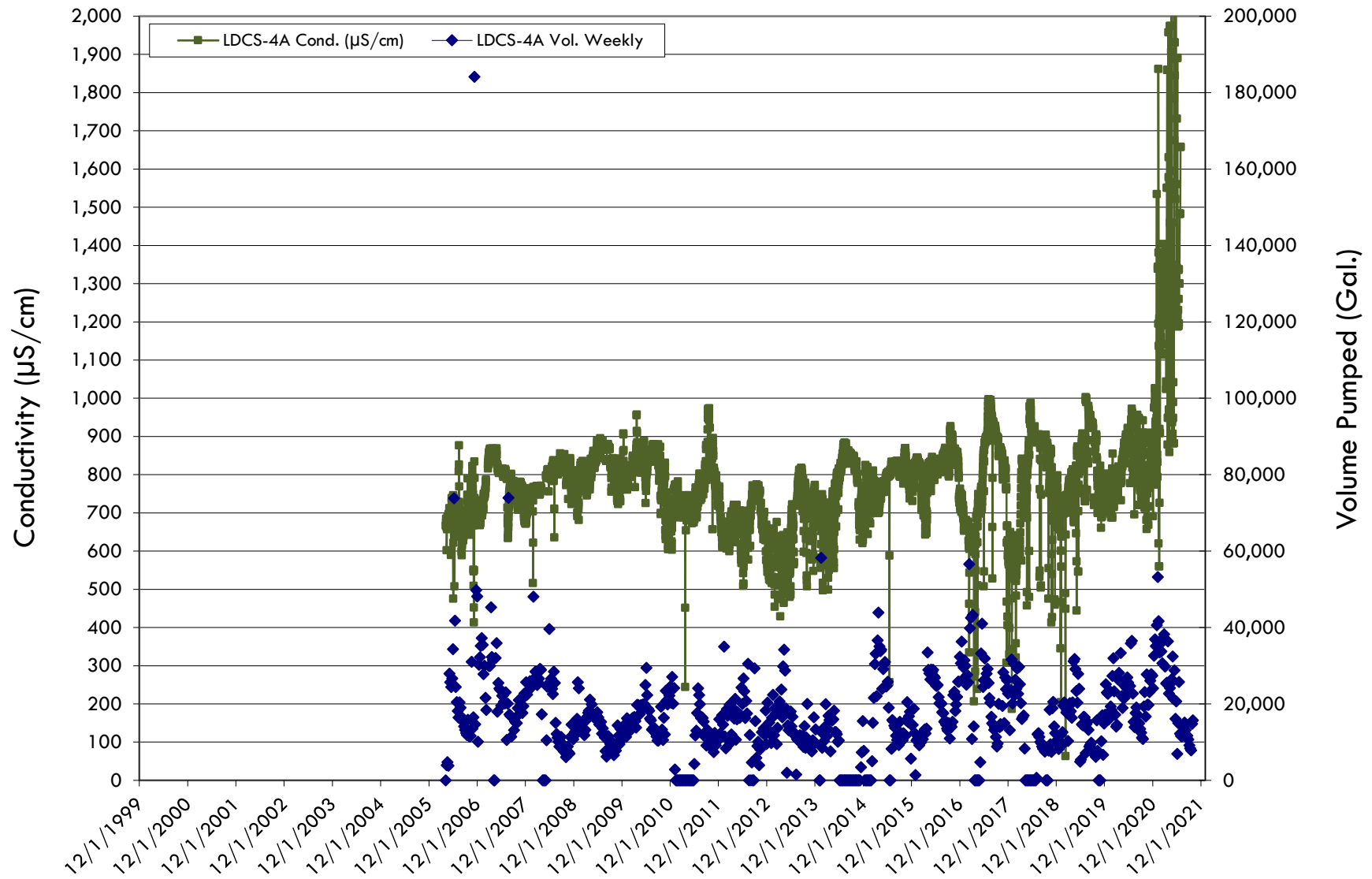
LDCS-2B
Daily Conductivity vs Weekly Volume Pumped
Third Quarter 2021
LRI Landfill, Pierce County, Washington



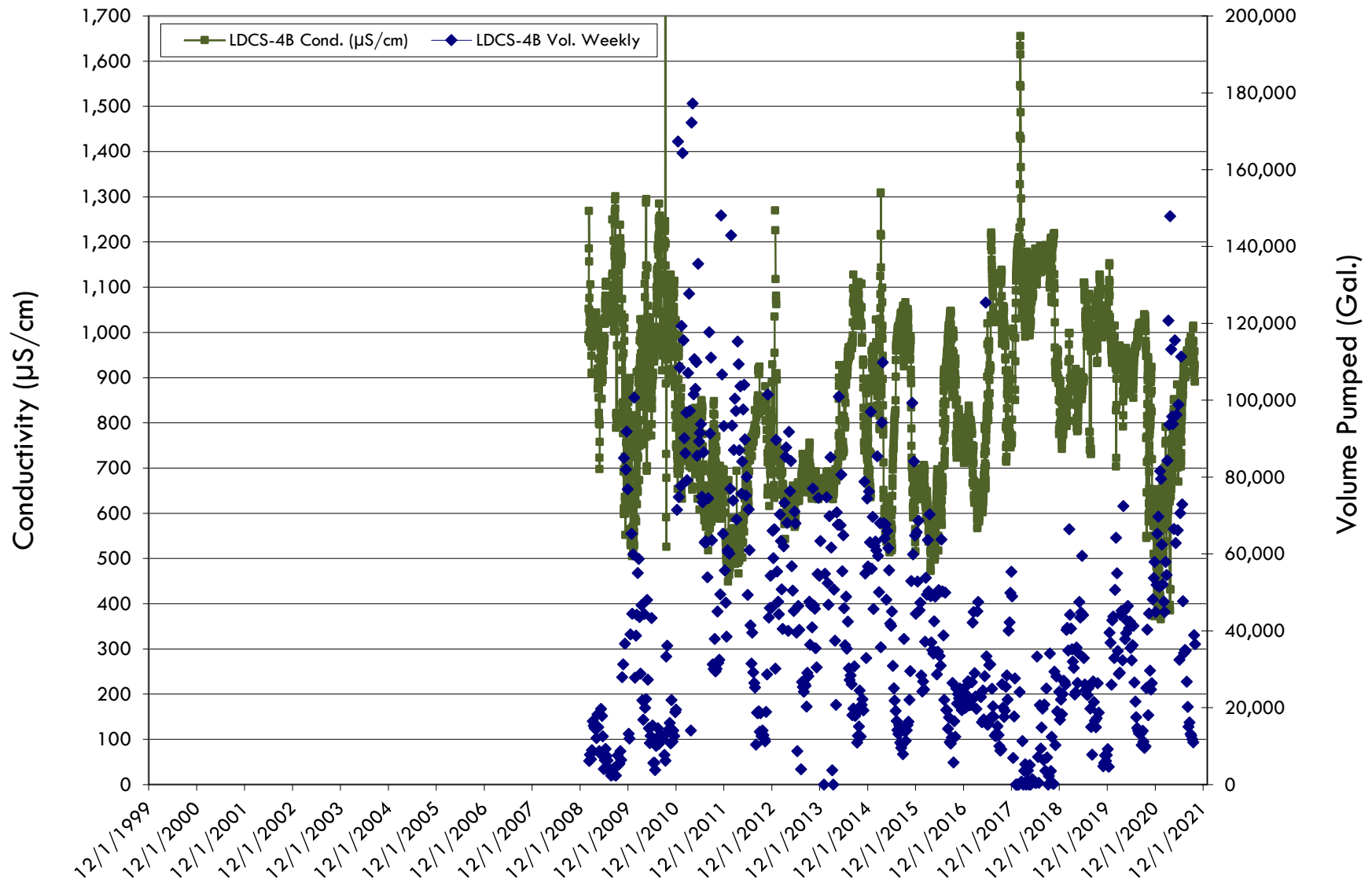
LDCS-3A
Daily Conductivity vs Weekly Volume Pumped
Third Quarter 2021
LRI Landfill, Pierce County, Washington



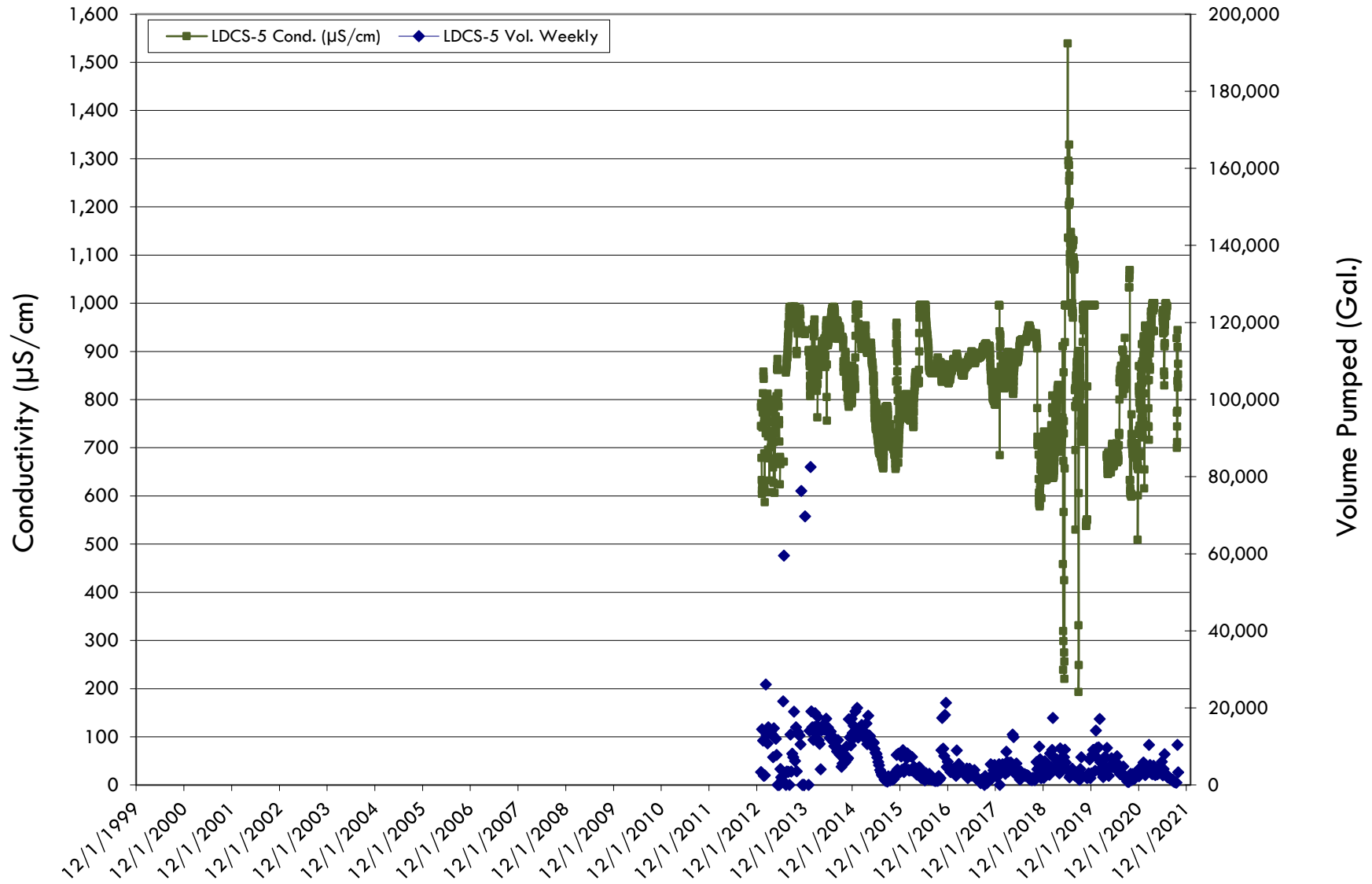
LDCS-4A
Daily Conductivity vs Weekly Volume Pumped
Third Quarter 2021
LRI Landfill, Pierce County, Washington



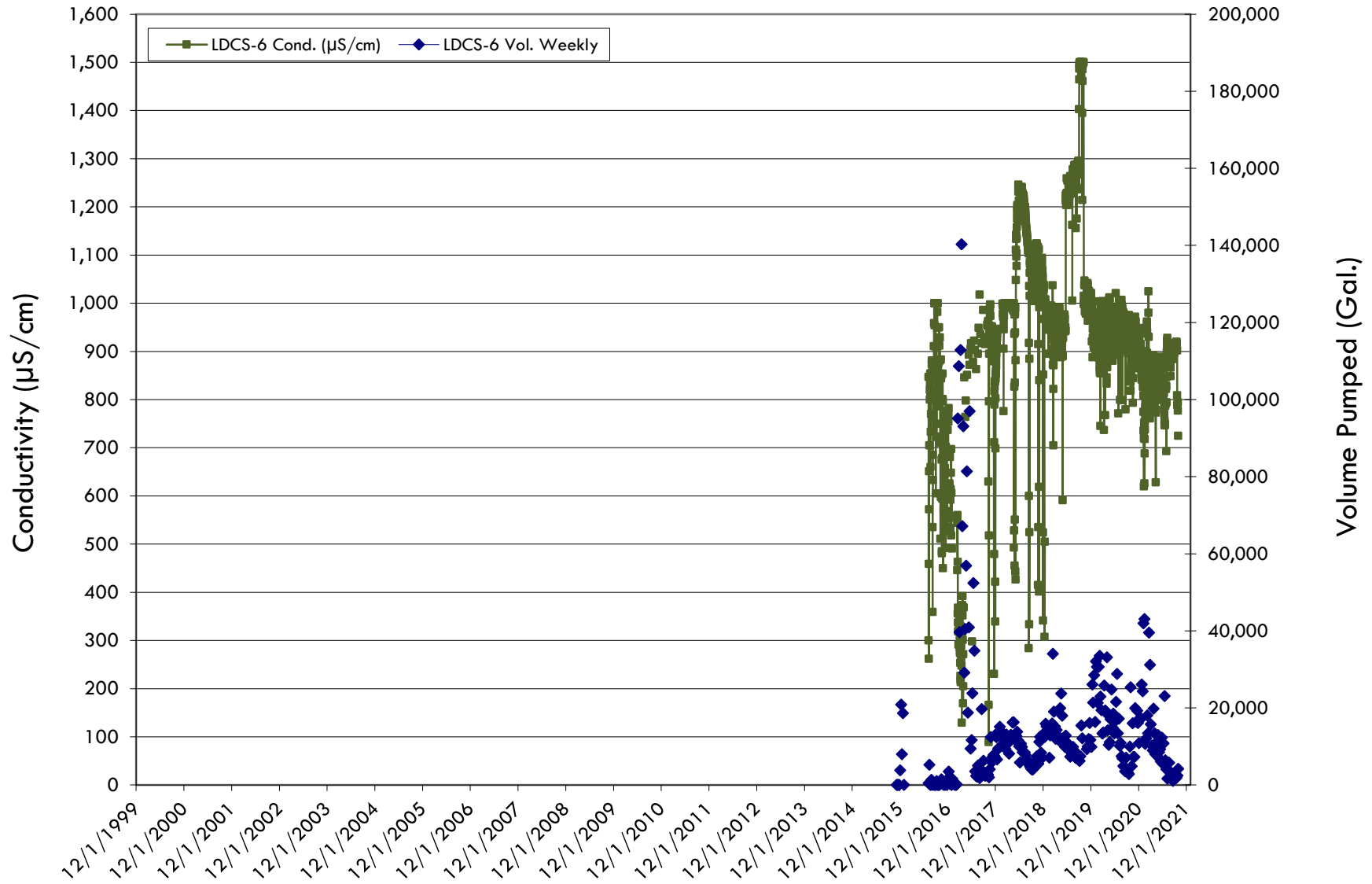
LDCS-4B
Daily Conductivity vs Weekly Volume Pumped
Third Quarter 2021
LRI Landfill, Pierce County, Washington



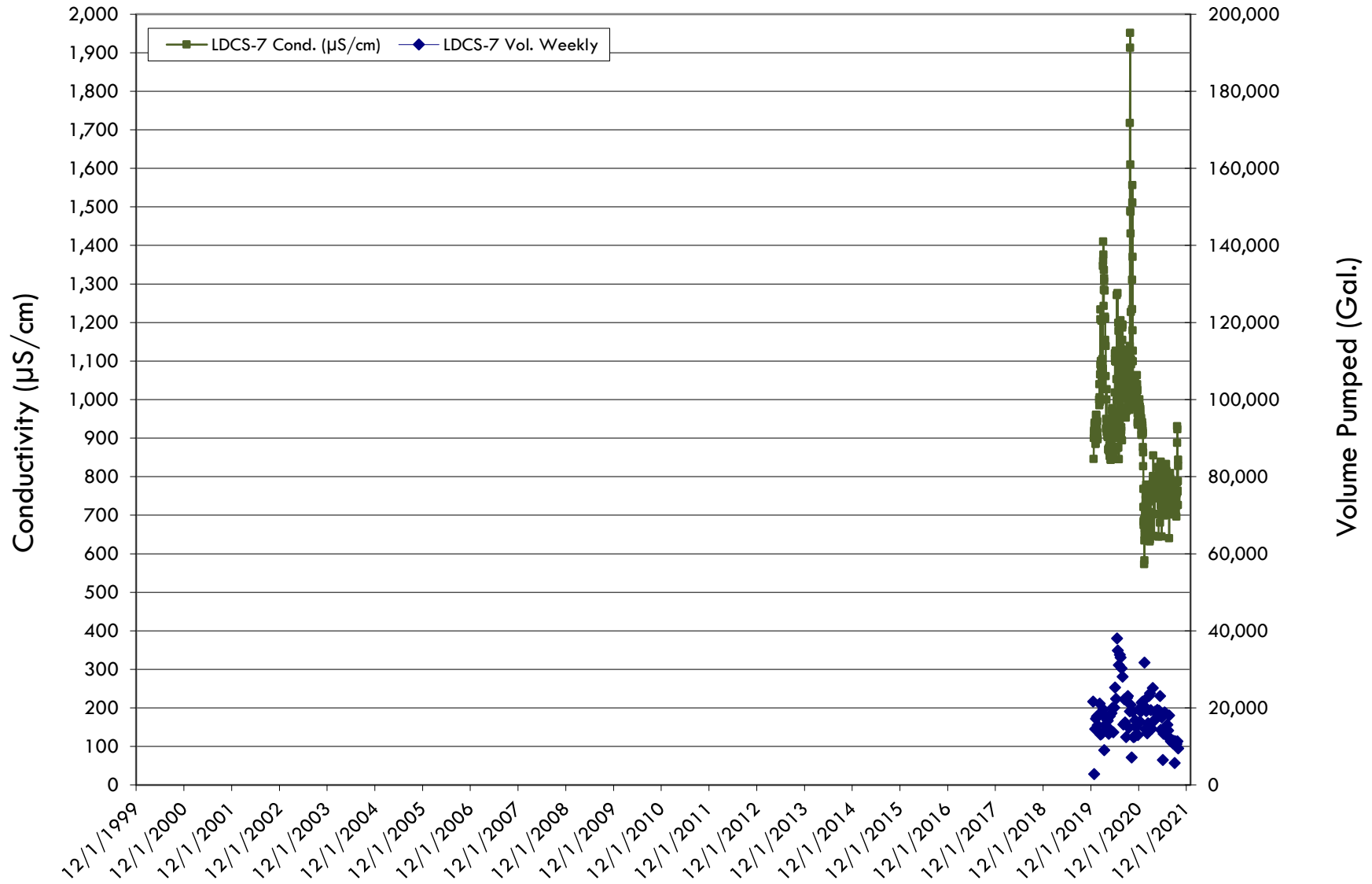
LDCS-5
Daily Conductivity vs Weekly Volume Pumped
Third Quarter 2020
LRI Landfill, Pierce County, Washington



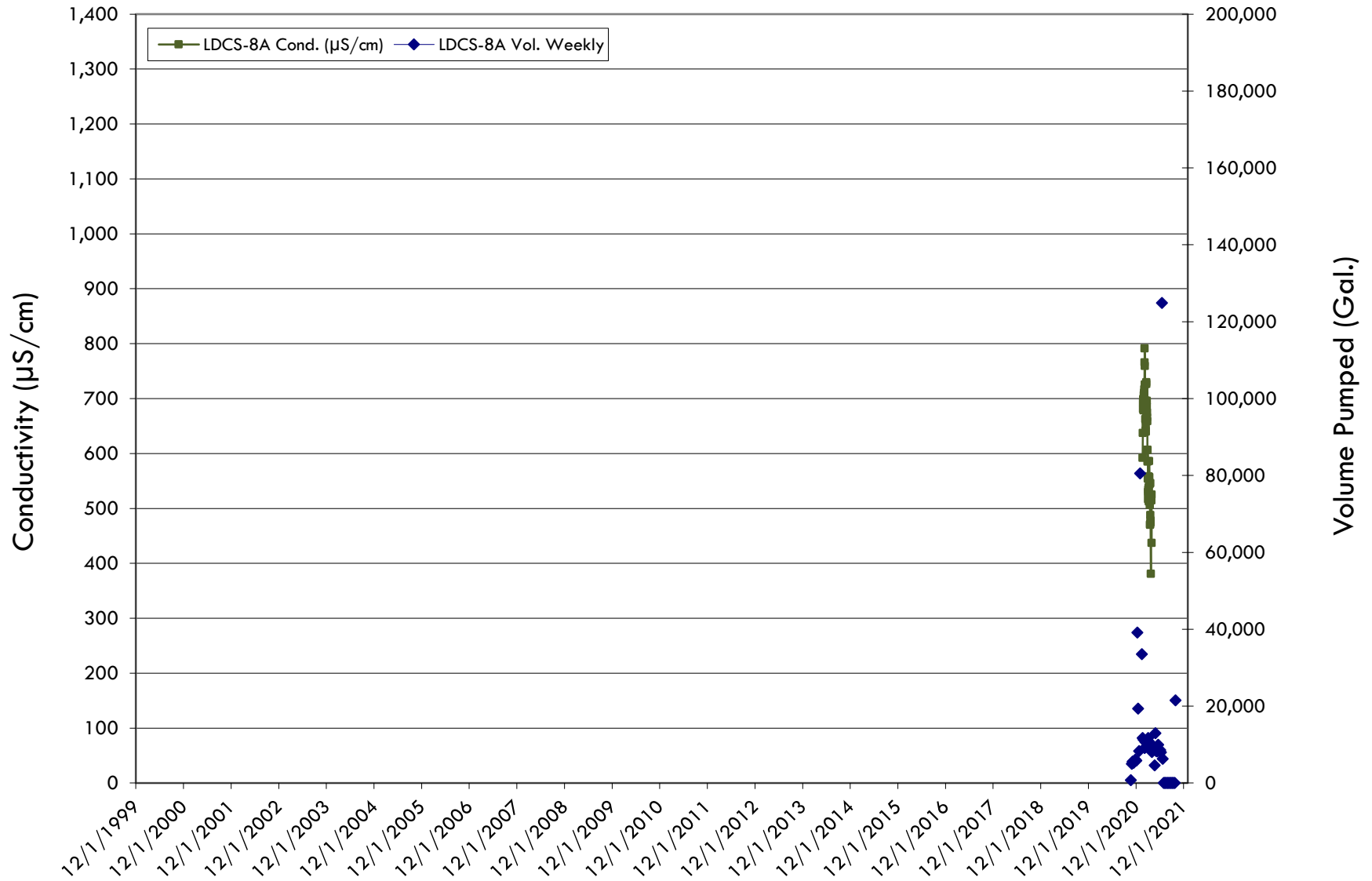
LDCS-6
Daily Conductivity vs Weekly Volume Pumped
Third Quarter 2021
LRI Landfill, Pierce County, Washington



LDCS-7
Daily Conductivity vs Weekly Volume Pumped
Third Quarter 2021
LRI Landfill, Pierce County, Washington



LDCS-8A
Daily Conductivity vs Weekly Volume Pumped
Third Quarter 2021
LRI Landfill, Pierce County, Washington



Attachment I

Surface Water Monitoring Data



Permit Number: WAR002603

Permittee: LRI 304th Street Landfill

Facility County: Pierce

Receiving Waterbody: NEWB 2

Monitoring Period: 07/01/2021 - 07/31/2021

Outfall: 001 - South Creek

Version: 1

Week	Monitoring Point	Turbidity (NTU) Measured NTU Weekly Grab	pH Standard Units Weekly Grab	Turbidity (NTU) Measured NTU Weekly Grab	pH Standard Units Weekly Grab	Turbidity (NTU) Measured NTU Weekly Grab	pH Standard Units Weekly Grab
		C7-1	C7-1	C8-1	C8-1	C8-2	C8-2
Minimum			BM: >= 6.5 (RO)		BM: >= 6.5 (RO)		BM: >= 6.5 (RO)
Maximum		BM: <= 25 (RO)	BM: <= 8.5 (RO)	BM: <= 25 (RO)	BM: <= 8.5 (RO)	BM: <= 25 (RO)	BM: <= 8.5 (RO)

Reporting Codes Used: C - No Discharge

Overall DMR Notes/Comment

Reporting Code: C - No Discharge

No construction stormwater discharges occurred during the month of July.

Outfall: 001 - South Creek

Monitoring Point	Parameter	Sample Date/ Statistical Base	Value	Notes/Comment
C7-1	All Parameters		C	
C8-1	All Parameters		C	
C8-2	All Parameters		C	

BMPs

Monitoring Point	Week	BMP
C7-1		Check Dams
C7-1		Other
C7-1		Sediment Trap
C7-1		Silt Fence
C8-1		Check Dams
C8-1		Other
C8-1		Sediment Trap
C8-1		Silt Fence
C8-2		Check Dams
C8-2		Other
C8-2		Silt Fence

I certify under penalty of law, that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

George Duvendack

8/10/2021 8:16:10 AM

Signature

Date



Permit Number: WAR002603

Permittee: LRI 304th Street Landfill

Facility County: Pierce

Receiving Waterbody: NEWB 2

Monitoring Period: 08/01/2021 - 08/31/2021

Outfall: 001 - South Creek

Version: 1

Week	Monitoring Point	Turbidity (NTU) Measured NTU Weekly Grab	pH Standard Units Weekly Grab	Turbidity (NTU) Measured NTU Weekly Grab	pH Standard Units Weekly Grab	Turbidity (NTU) Measured NTU Weekly Grab	pH Standard Units Weekly Grab
		C7-1	C7-1	C8-1	C8-1	C8-2	C8-2
Minimum			BM: >= 6.5 (RO)		BM: >= 6.5 (RO)		BM: >= 6.5 (RO)
Maximum		BM: <= 25 (RO)	BM: <= 8.5 (RO)	BM: <= 25 (RO)	BM: <= 8.5 (RO)	BM: <= 25 (RO)	BM: <= 8.5 (RO)

Reporting Codes Used: C - No Discharge

Overall DMR Notes/Comment

Reporting Code: C - No Discharge

No construction stormwater discharges occurred during the month of August.

Outfall: 001 - South Creek

Monitoring Point	Parameter	Sample Date/ Statistical Base	Value	Notes/Comment
C7-1	All Parameters		C	
C8-1	All Parameters		C	
C8-2	All Parameters		C	

BMPs

Monitoring Point	Week	BMP
C7-1		Check Dams
C7-1		Other
C7-1		Sediment Trap
C7-1		Silt Fence
C8-1		Check Dams
C8-1		Other
C8-1		Sediment Trap
C8-1		Silt Fence
C8-2		Check Dams
C8-2		Other
C8-2		Silt Fence

I certify under penalty of law, that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

George Duvendack

9/8/2021 6:38:34 PM

Signature

Date



Permit Number: WAR002603

Permittee: LRI 304th Street Landfill

Facility County: Pierce

Receiving Waterbody: NEWB 2

Monitoring Period: 09/01/2021 - 09/30/2021

Outfall: 001 - South Creek

Version: 1

Week	Monitoring Point	Turbidity (NTU) Measured NTU Weekly Grab	pH Standard Units Weekly Grab	Turbidity (NTU) Measured NTU Weekly Grab	pH Standard Units Weekly Grab	Turbidity (NTU) Measured NTU Weekly Grab	pH Standard Units Weekly Grab
		C7-1	C7-1	C8-1	C8-1	C8-2	C8-2
Minimum			C		C		C
			BM: >= 6.5 (RO)		BM: >= 6.5 (RO)		BM: >= 6.5 (RO)
Maximum		C	C	C	C	C	C
		BM: <= 25 (RO)	BM: <= 8.5 (RO)	BM: <= 25 (RO)	BM: <= 8.5 (RO)	BM: <= 25 (RO)	BM: <= 8.5 (RO)

Reporting Codes Used: C - No Discharge

Overall DMR Notes/Comment

Reporting Code: C - No Discharge

No construction stormwater discharges occurred during the month of September.

Outfall: 001 - South Creek

Monitoring Point	Parameter	Sample Date/ Statistical Base	Value	Notes/Comment
C7-1	All Parameters		C	
C8-1	All Parameters		C	
C8-2	All Parameters		C	

BMPs

Monitoring Point	Week	BMP
C7-1		Check Dams
C7-1		Other
C7-1		Sediment Trap
C7-1		Silt Fence
C7-1		Straw Wattles
C8-1		Check Dams
C8-1		Other
C8-1		Sediment Trap
C8-1		Silt Fence
C8-2		Check Dams
C8-2		Other
C8-2		Silt Fence

I certify under penalty of law, that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

George Duvendack

10/14/2021 5:48:38 PM

Signature

Date



Permit Number: WAR002557

Permittee: Pierce County Recycling - 304th Street L

Facility County: Pierce

Receiving Waterbody:

Monitoring Period: 07/01/2021 - 09/30/2021

Outfall: SWPO - Discharge from SW pond

Version: 1

Week	Monitoring Point	Turbidity (NTU) Measured NTU Quarterly Grab	pH Standard Units Quarterly Grab	Oil & Grease Yes/No Quarterly Visual Observation	Copper Total Micrograms/L (ug/L) Quarterly Grab	Zinc Total Micrograms/L (ug/L) Quarterly Grab	Total BOD5 Total Milligrams/L (mg/L) Quarterly Grab	Solids (Residue) Total suspended (TSS) Milligrams/L (mg/L) Quarterly Grab	Ammonia Total Milligrams/L (mg/L) Quarterly Grab	Alpha-terpineol (3-Cyclohexene-1-methanol, alpha, alpha, trimethyl-) Micrograms/L (ug/L) Quarterly Grab	Benzoic Acid Micrograms/L (ug/L) Quarterly Grab	p-Cresol (4-methylphenol) Micrograms/L (ug/L) Quarterly Grab
		SWPO	SWPO	SWPO	SWPO	SWPO	SWPO	SWPO	SWPO	SWPO	SWPO	SWPO
Limit Set		ISGP Western WA - 2020 Permit	ISGP Western WA - 2020 Permit	ISGP Western WA - 2020 Permit	ISGP Western WA - 2020 Permit	ISGP Western WA - 2020 Permit	ISGP Non-Haz Waste Landfill (40CFR part 445 subpart B)- 2020 permit	ISGP Non-Haz Waste Landfill (40CFR part 445 subpart B)- 2020 permit	ISGP Non-Haz Waste Landfill (40CFR part 445 subpart B)- 2020 permit	ISGP Non-Haz Waste Landfill (40CFR part 445 subpart B)- 2020 permit	ISGP Non-Haz Waste Landfill (40CFR part 445 subpart B)- 2020 permit	ISGP Non-Haz Waste Landfill (40CFR part 445 subpart B)- 2020 permit
Minimum			BM: >= 5.0 (RO)									
Average		BM: <= 25			BM: <= 14	BM: <= 117						
Maximum			BM: <= 9.0 (RO)									
Month 1 Average							<= 37	<= 27	<= 4.9	<= 16	<= 71	<= 14
Month 2 Average							<= 37	<= 27	<= 4.9	<= 16	<= 71	<= 14
Month 3 Average							<= 37	<= 27	<= 4.9	<= 16	<= 71	<= 14

Reporting Codes Used: C - No Discharge

Overall DMR Notes/Comment

Reporting Code: C - No Discharge

I certify under penalty of law, that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

George Duvendack

11/15/2021 1:27:52 PM

Signature

Date



Week	Monitoring Point	Phenol Micrograms/L (ug/L) Quarterly Grab	Zinc Total Micrograms/L (ug/L) Quarterly Grab	pH Standard Units Quarterly Grab
		SWPO	SWPO	SWPO
	Limit Set	ISGP Non-Haz Waste Landfill (40CFR part 445 subpart B)- 2020 permit	ISGP Non-Haz Waste Landfill (40CFR part 445 subpart B)- 2020 permit	ISGP Non-Haz Waste Landfill (40CFR part 445 subpart B)- 2020 permit
	Minimum			>= 6.0 (RO)
	Average			
	Maximum			<= 9.0 (RO)
	Month 1 Average	<= 15	<= 110	
	Month 2 Average	<= 15	<= 110	
	Month 3 Average	<= 15	<= 110	

Attachment J

Landfill Gas Monitoring Data

SCS Engineers

04221001.04

July-21

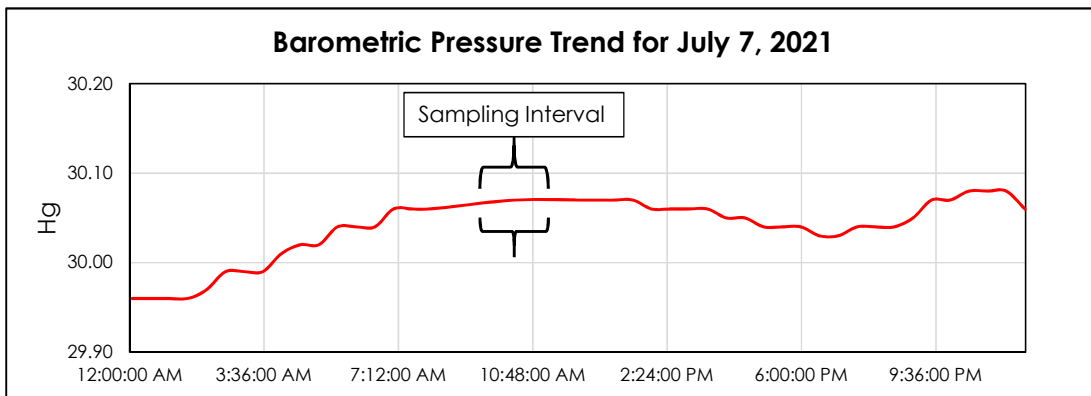
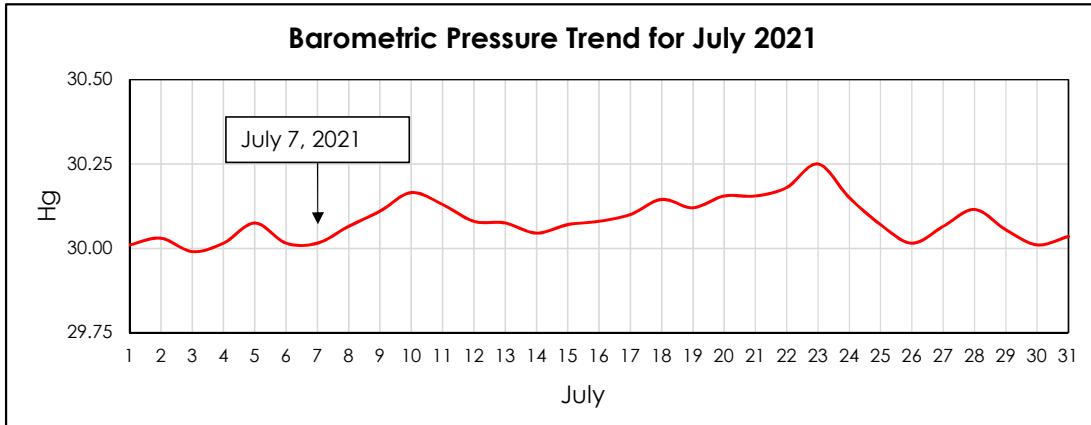
Perimeter Gas Probes												
GP-1	7/7/2021	10:39	-4.7	3.6	2.7	2.6	16.1	78.6	18.2	11.2	100.0	
GP-2	7/7/2021	10:45	-0.3	--	0.5	12.4	5.9	81.2	14.2	7.2	100.0	
GP-3	7/7/2021	10:49	-1.6	--	0.0	6.1	12.2	81.7	9.7	5.7	100.0	
GP-4	7/7/2021	10:54	-0.1	--	0.0	10.2	6.8	83.0	12.3	8.3	100.0	
GP-9	7/7/2021	9:34	-0.1	--	0.0	12.3	4.2	83.5	12.7	0.0	0.0	
GP-10	7/7/2021	10:30	-0.1	28.3	28.3	31.8	2.7	37.2				
GP-10P	7/7/2021	10:27	-0.1	21.9	21.5	23.1	8.7	46.7				Note 5
GP-11	7/7/2021	10:22	-0.1	--	0.0	22.2	3.0	74.8				
GP-12	7/7/2021	10:18	0.0	28.0	27.9	63.6	1.3	7.2				
GP-13	7/7/2021	10:12	-0.1	--	0.0	25.3	1.6	73.1				
GP-14	7/7/2021	10:05	-7.5	--	0.0	0.0	20.9	79.1	14.3	0.0	0.0	
GP-15	7/7/2021	9:41	-0.1	--	0.0	0.2	20.8	79.0	13.6	0.0	0.0	
GP-16	7/7/2021	9:57	-0.1	--	0.0	0.0	21.0	79.0	13.4	6.4	42.7	

	Beginning	Ending	Average	Starting Date:	7/7/2021
Weather:	Sunny	Sunny	Sunny	Starting Time:	9:34
Temperature, T (deg F):	61.2	62	61.6	Finishing Date:	7/7/2021
Wind Speed (mph):	7.2	7	7.1	Finishing Time:	10:54
Wind Direction:	225	225	225	Monitored by:	R. Martinez
Barometric Pressure, P (in Hg):	30.06	30.07	30.07	Instruments:	GEM 2000
24hr Baro.Trend (rising / falling / steady / unsteady)	Rising			Calibration Date:	7/7/2021

Headings:		Notes:	
P _(well)	Relative Pressure	1.	Measurement for spike concentrations of CH ₄ and CO ₂ are recorded as a comment if observed during sampling.
CH ₄	Methane		
CO ₂	Carbon Dioxide	2.	Water level measurements made where gas probe monitoring port allows for measurement, or where there is an adjacent measurement piezometer.
O ₂	Oxygen		
H ₂ O	Water Vapor	3.	Exposed Perforation = perforated pipe section not submerged by liquid.
N ₂	Nitrogen	4.	GP-10P added in January 2018. Monitoring performed at water level piezometer installed in the same boring
TOC	Top of Casing		as GP-10.
		5	GP-10P connection repaired on October 23rd, 2020.

Barometric Pressure Trend - July 2021

LRI 304th Landfill, Washington



Monthly Data Source: Wunderground.com (Puyallup)

Lat: 47.10 Long: 122.29 Elev: 535 ft-AMSL

Data Source: <https://www.wunderground.com/dashboard/pws/KWAPUYAL102/table/2021-07-07/2021-07-07/monthly>

Daily Data Source: Wunderground.com (Puyallup)

Lat: 47.10 Long: 122.29 Elev: 535 ft-AMSL

Data Source: <https://www.wunderground.com/dashboard/pws/KWAPUYAL102/table/2021-07-07/2021-07-07/daily>

SCS Engineers

04221001.04

August-21

August-21

Normal Operating Range:											
(min)			-		0.3	0.3	-				20.0
(max)			5.00		5.0	5.0	20.3				90.0

GP-1	8/12/2021	8:02	0.0	0.1	0.1	0.5	20.4	79.0	19.1	12.1	100.0	
GP-2	8/12/2021	8:10	-0.1	0.1	0.1	0.8	16.9	82.2	17.1	10.1	100.0	
GP-3	8/12/2021	8:15	-0.1	--	0.0	1.5	18.5	80.0	11.9	7.9	100.0	
GP-4	8/12/2021	8:20	-0.1	--	0.0	1.4	19.3	79.3	13.6	9.6	100.0	
GP-9	8/12/2021	8:24	-0.1	--	0.0	1.0	19.3	79.7	13.9	0.0	0.0	
GP-10	8/12/2021	7:47	-0.1	0.1	0.1	0.8	18.6	80.5				
GP-10P	8/12/2021	7:40	0.0	1.7	1.7	2.3	19.1	76.9				Note 5
GP-11	8/12/2021	7:33	0.0	--	0.0	1.1	20.1	78.8				
GP-12	8/12/2021	7:23	-0.1	5.0	4.0	8.0	18.1	69.9				
GP-13	8/12/2021	7:14	-0.1	--	0.0	0.7	20.0	79.3				
GP-14	8/12/2021	10:18	0.0	--	0.0	0.5	20.1	79.4	16.3	0.3	6.0	
GP-15	8/12/2021	10:30	-0.1	0.2	0.2	0.4	19.3	80.1	16.2	0.2	4.0	
GP-16	8/12/2021	8:29	-0.1	--	0.0	0.7	20.3	79.0	21.9	14.9	99.3	

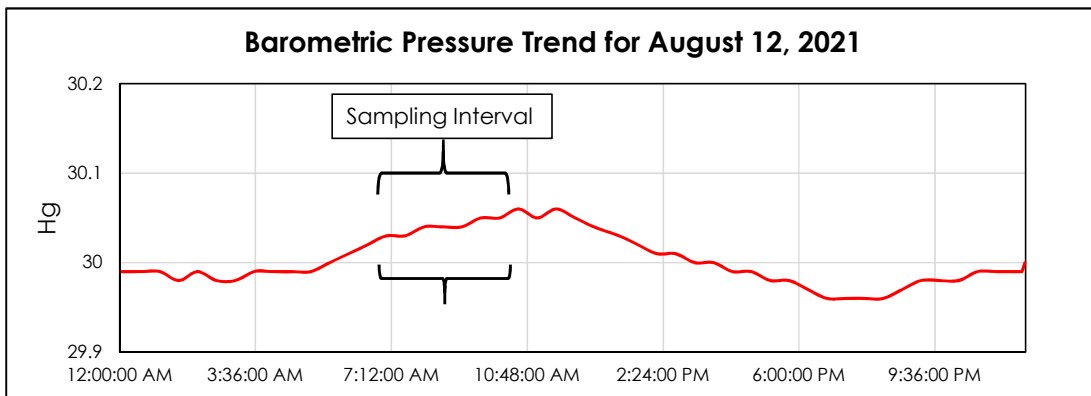
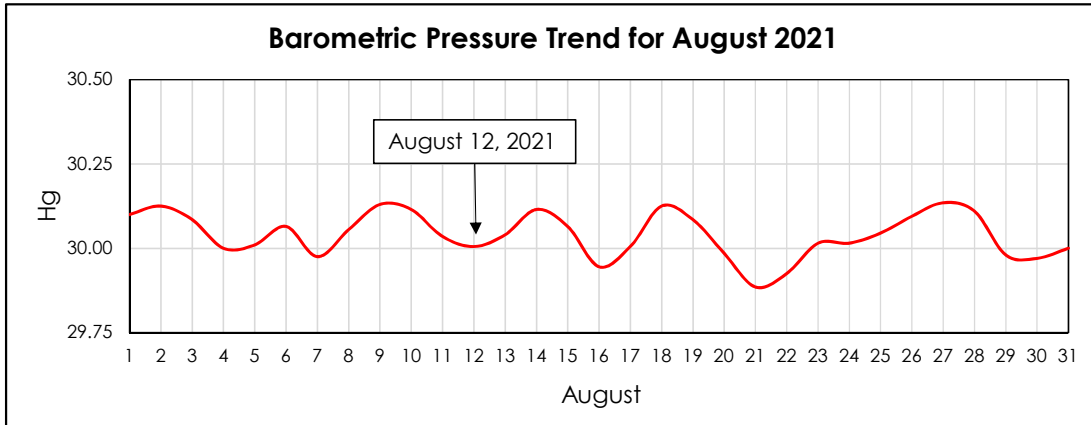
	Beginning	Ending	Average	Starting Date:	8/12/2021
Weather:	Sunny	Sunny	Sunny	Starting Time:	7:14
Temperature, T (deg F):	70	79	74.5	Finishing Date:	8/12/2021
Wind Speed (mph):	9	10	9.5	Finishing Time:	10:30
Wind Direction:	45	0	22.5	Monitored by:	A. Lopez
Barometric Pressure, P (in Hg):	29.52	29.56	29.54	Instruments:	GEM 2000
24hr Baro.Trend (rising / falling / steady / unsteady)	Rising			Calibration Date:	8/12/2021

Notes:

P _(well)	Relative Pressure	1.	Measurement for spike concentrations of CH ₄ and CO ₂ are recorded as a comment if observed during sampling.
CH ₄	Methane		
CO ₂	Carbon Dioxide	2.	Water level measurements made where gas probe monitoring port allows for measurement, or where there is an adjacent measurement piezometer.
O ₂	Oxygen		
H ₂ O	Water Vapor	3.	Exposed Perforation = perforated pipe section not submerged by liquid.
N ₂	Nitrogen	4.	GP-10P added in January 2018. Monitoring performed at water level piezometer installed in the same boring as GP-10.
TOC	Top of Casing	5	GP-10P connection repaired on October 23rd, 2020.

Barometric Pressure Trend - August 2021

LRI 304th Landfill, Washington



Monthly Data Source: Wunderground.com (Puyallup)

Lat: 47.10 Long: 122.29 Elev: 535 ft-AMSL

Data Source: <https://www.wunderground.com/dashboard/pws/KWAPUYAL102/table/2021-08-12/2021-08-12/monthly>

Daily Data Source: Wunderground.com (Puyallup)

Lat: 47.10 Long: 122.29 Elev: 535 ft-AMSL

Data Source: <https://www.wunderground.com/dashboard/pws/KWAPUYAL102/table/2021-08-12/2021-08-12/daily>

Exhibit 3 - Results of Landfill Gas Probe Monitoring

SCS Engineers

Landfill Gas Control System

04221001.04

LRI Landfill

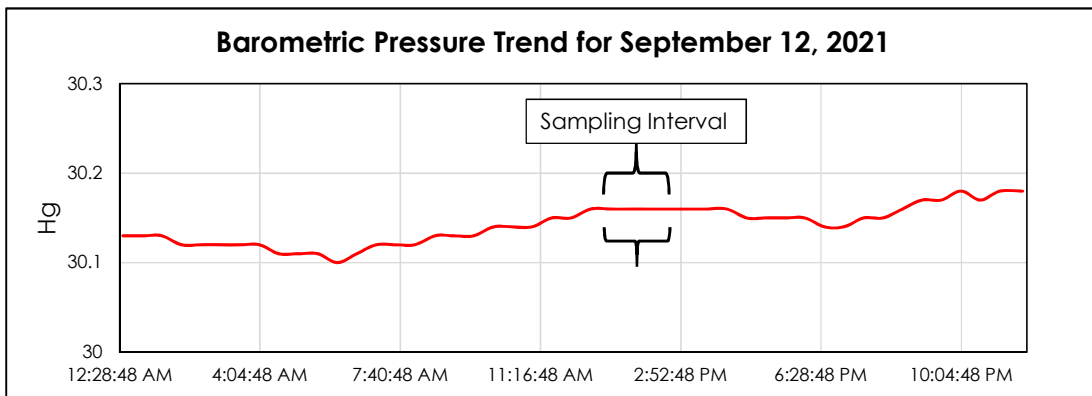
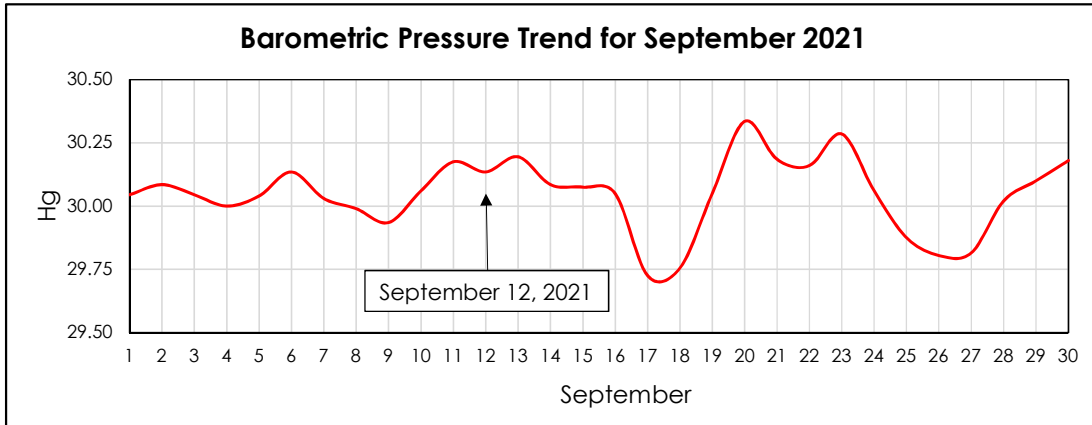
September-21

Location Refer <i>Design.</i>	Date	Time	P (well) (in W.C.)	Gas Composition - <i>Note 1</i>					Depth to Water <i>Note 2</i> (ft-TOC)	Exposed Portion of Perforations - <i>Note 3</i>		Comments																																																																																									
				CH ₄ Spike (% by vol.)	CH ₄ (% by vol.)	CO ₂ (% by vol.)	O ₂ (% by vol.)	Balance (N ₂ & H ₂ O) (% by vol.)		(ft)	(%)																																																																																										
Normal Operating Range:																																																																																																					
(min)			-		0.3	0.3	-				20.0																																																																																										
(max)			5.0		5.0	5.0	21.0				90.0																																																																																										
Perimeter Gas Probes																																																																																																					
GP-1	9/12/2021	13:46	-0.1	0.1	0.0	0.4	20.8	78.8	20.0	0.0	0.0																																																																																										
GP-2	9/12/2021	13:51	-0.1	0.5	0.5	1.7	16.9	80.9	18.0	0.0	0.0																																																																																										
GP-3	9/12/2021	13:56	-0.1	0.1	0.0	1.8	18.8	79.4	11.7	2.0	39.0																																																																																										
GP-4	9/12/2021	14:01	-0.1	--	0.0	1.4	20.1	78.5	14.4	4.8	95.8																																																																																										
GP-9	9/12/2021	14:06	-0.1	--	0.0	0.9	19.8	79.3	15.6	2.5	49.4																																																																																										
GP-10	9/12/2021	13:40	-0.1	--	0.0	1.5	19.6	78.9																																																																																													
GP-10P	9/12/2021	13:37	-0.1	0.2	0.2	2.2	19.7	77.9				<i>Note 5</i>																																																																																									
GP-11	9/12/2021	13:32	-0.1	--	0.0	3.4	18.7	77.9																																																																																													
GP-12	9/12/2021	13:25	0.0	5.9	4.7	10.5	17.7	67.1																																																																																													
GP-13	9/12/2021	13:19	-0.1	--	0.0	0.7	20.6	78.7																																																																																													
GP-14	9/12/2021	14:28	-0.1	--	0.0	0.2	21.1	78.7	17.9	1.9	37.0																																																																																										
GP-15	9/12/2021	14:22	-0.1	--	0.0	0.0	21.2	78.8	15.6	0.2	3.6																																																																																										
GP-16	9/12/2021	14:13	-0.1	--	0.0	0.6	20.9	78.5	22.4	15.2	100.0																																																																																										
<table><tr><td colspan="2">Beginning</td><td colspan="2">Ending</td><td colspan="2">Average</td><td colspan="2">Starting Date:</td><td colspan="3">9/12/2021</td></tr><tr><td colspan="2">Weather:</td><td colspan="2">Cloudy</td><td colspan="2">Cloudy</td><td colspan="2">Cloudy</td><td colspan="2">Starting Time:</td><td colspan="3">13:19</td></tr><tr><td colspan="2">Temperature, T (deg F):</td><td colspan="2">63</td><td colspan="2">66</td><td colspan="2">64.5</td><td colspan="2">Finishing Date:</td><td colspan="3">9/12/2021</td></tr><tr><td colspan="2">Wind Speed (mph):</td><td colspan="2">5</td><td colspan="2">0</td><td colspan="2">2.5</td><td colspan="2">Finishing Time:</td><td colspan="3">14:28</td></tr><tr><td colspan="2">Wind Direction:</td><td colspan="2">VAR</td><td colspan="2">N/A</td><td colspan="2">VAR</td><td colspan="2">Monitored by:</td><td colspan="3">A. Lopez</td></tr><tr><td colspan="2">Barometric Pressure, P (in Hg):</td><td colspan="2">29.57</td><td colspan="2">29.57</td><td colspan="2">29.57</td><td colspan="2">Instruments:</td><td colspan="3">GEM 2000</td></tr><tr><td colspan="2">24hr Baro.Trend (rising / falling / steady / unsteady)</td><td colspan="2"></td><td colspan="2">Steady</td><td colspan="2"></td><td colspan="2">Calibration Date:</td><td colspan="3">9/12/2021</td></tr></table>													Beginning		Ending		Average		Starting Date:		9/12/2021			Weather:		Cloudy		Cloudy		Cloudy		Starting Time:		13:19			Temperature, T (deg F):		63		66		64.5		Finishing Date:		9/12/2021			Wind Speed (mph):		5		0		2.5		Finishing Time:		14:28			Wind Direction:		VAR		N/A		VAR		Monitored by:		A. Lopez			Barometric Pressure, P (in Hg):		29.57		29.57		29.57		Instruments:		GEM 2000			24hr Baro.Trend (rising / falling / steady / unsteady)				Steady				Calibration Date:		9/12/2021		
Beginning		Ending		Average		Starting Date:		9/12/2021																																																																																													
Weather:		Cloudy		Cloudy		Cloudy		Starting Time:		13:19																																																																																											
Temperature, T (deg F):		63		66		64.5		Finishing Date:		9/12/2021																																																																																											
Wind Speed (mph):		5		0		2.5		Finishing Time:		14:28																																																																																											
Wind Direction:		VAR		N/A		VAR		Monitored by:		A. Lopez																																																																																											
Barometric Pressure, P (in Hg):		29.57		29.57		29.57		Instruments:		GEM 2000																																																																																											
24hr Baro.Trend (rising / falling / steady / unsteady)				Steady				Calibration Date:		9/12/2021																																																																																											

Headings:		Notes:	
P _(well)	Relative Pressure	1.	Measurement for spike concentrations of CH ₄ and CO ₂ are recorded as a comment if observed during sampling.
CH ₄	Methane		
CO ₂	Carbon Dioxide	2.	Water level measurements made where gas probe monitoring port allows for measurement, or where there is an adjacent measurement piezometer.
O ₂	Oxygen		
H ₂ O	Water Vapor	3.	Exposed Perforation = perforated pipe section not submerged by liquid.
N ₂	Nitrogen	4.	GP-10P added in January 2018. Monitoring performed at water level piezometer installed in the same boring as GP-10.
TOC	Top of Casing	5.	GP-10P connection repaired on October 23rd, 2020.

Barometric Pressure Trend - September 2021

LRI 304th Landfill, Washington



Monthly Data Source: Wunderground.com (Puyallup)

Lat: 47.10 Long: 122.29 Elev: 535 ft-AMSL

Data Source: <https://www.wunderground.com/dashboard/pws/KWAPUYAL102/table/2021-09-12/2021-09-12/monthly>

Daily Data Source: Wunderground.com (Puyallup)

Lat: 47.10 Long: 122.29 Elev: 535 ft-AMSL

Data Source: <https://www.wunderground.com/dashboard/pws/KWAPUYAL102/table/2021-09-12/2021-09-12/daily>

LRI 304th Street Landfill Landfill Gas Monitoring of On-site Buildings

Date: 7/20/2021

Weather Conditions: Cloudy

Instrument: MicroFID

Measured By: Andres Lopez

The atmosphere inside buildings at the landfill were monitored for possible intrusion of methane gas. Per WAC 173-351, concentrations of methane in on-site structures must not exceed 25% of the lower explosive limit (LEL). If off-site gas migration is suspected, concentrations of methane in off-site structures must not exceed 100 ppm methane.

The areas monitored included:

- The general overall work area
- Floor drains
- Underground conduit protrusions
- Closed areas where landfill gas could collect, such as under cupboards and inside closets

The gas detection instrument must be calibrated using calibration gas containing methane equal to 50 % LEL. Calibration must be performed before and after the survey is completed.

Checked boxes indicate that the survey revealed **no detectable methane**.



Main Office - individual office spaces, storage areas and within open crawl-space area.



Repair Shop – survey atmosphere conditions throughout (lower height levels).



Pay/Scale Booth – interior of building.

* Work Shop was demolished during the construction of Cell 8B.



Signature

November 1, 2021
File No. 04221001.10

Mr. George Duvendack
Site Manager
Pierce County Recycling, Composting and Disposal, LLC dba LRI
17925 Meridian Street East
Puyallup, Washington 98375

Subject: **June 2021 Gas Extraction Well Installation Report**
LRI Landfill, Graham, Washington

Dear George:

This letter report presents a summary of field activities and observations performed by SCS Engineers (SCS) during the installation of 16 new landfill gas (LFG) extraction wells at the LRI Landfill located in Graham, Washington. The LFG extraction wells were installed in general accordance with the 2021 Gas System Expansion design plans, approved well construction variance, and well completion schedule issued by SCS on June 18, 2021. Following completion of the well installation work, each well was given a standard well designation consistent with LRI naming convention as shown in Table 1. Drawings showing the well locations and boring/well completion logs for each completed well are enclosed with this report.

LFG Extraction Well Drilling and Installation

SCS personnel were onsite from June 22, 2021 through July 2, 2021 to observe drilling and installation of 16 new LFG extraction wells performed by DBM Contractors, Inc. (DBM). Observations of the cuttings from well drilling were logged for each boring and are included on the attached boring logs.

The borings for the LFG extraction wells were drilled using an IMT AF240 drill rig with a 10 foot long, 36-inch diameter bucket auger. For each of the extraction wells, the borings were advanced to within 2.0 feet of the design depths. The extraction wells were then constructed using 6 and 8-inch diameter schedule 80 polyvinyl chloride (PVC) pipe and fittings. Backfill was completed with 2-inch minus rounded rock, hydrated bentonite chips, and clean soil as shown on the attached logs. All construction materials were provided by DBM and verified by SCS prior to use, with the exception of clean soil backfill which was obtained from onsite sources. Drilling and installation of each well was completed on the same day. No boreholes were left open overnight.

The wells were completed with approximately 5-7 feet of pipe stickup above the ground surface to allow for grading and connection to the existing LFG collection system. Upon completion, each well was issued a Washington State Department of Ecology (ECY) Well Tag in accordance with state regulations.

The following variations to design were completed in conjunction with the well installations. Borings that were completed to within 2.0 feet of the design depth are not included on the following list.

- **WE-299** (2021-10): The boring was completed to 51.0 feet-bgs, short 6 feet of the design depth, resulting in a clearance of 22.3 feet from the operations layer. Drilling operations were terminated prior to reaching design depth due to wet drilling conditions and boring collapse.
- **WE-302** (2021-05): The boring was completed to 70.5 feet-bgs, short 4.5 feet of the design depth, resulting in a clearance of 19.0 feet from the operations layer. Drilling operations were terminated prior to reaching design depth due to inability to progress past saturated material.
- **WE-307** (2021-01): The boring was completed to 57.0 feet-bgs, short 17 feet of the design depth due, resulting in a clearance of 32.3 feet from the operations layer. Drilling operations were terminated prior to reaching design depth due to wet drilling conditions and boring collapse.

The following table presents a summary of the completed well installation data.

Table 1: Summary of Well Completion

Well ID	Design ID	Surface Elevation (ft-msl) ⁽¹⁾	Well Material	ECY Well Tag ⁽²⁾	Design Depth (ft)	Installed Depth (ft)	Length of Screen (ft)
WE-295	2021-13	822.43	PVC	BKM-909	60.0	60.0	40.0
WE-296	2021-11	798.87	PVC	BKM-905	50.0	51.5	30.0
WE-297	2021-09	824.37	PVC	BKM-903	60.0	60.0	40.0
WE-298	2021-12	777.39	PVC	BKM-904	60.0	59.0	40.0
WE-299	2021-10	726.00	PVC	BKM-902	57.0	51.0	23.0
WE-300	2021-08	726.86	PVC	BKM-901	72.0	73.0	55.0
WE-301	2021-07	750.81	PVC	BLP-033	60.0	61.0	40.0
WE-302	2021-05	726.85	PVC	BLP-030	75.0	70.5	51.0
WE-303	2021-06	775.13	PVC	BLP-032	60.0	59.5	40.0
WE-304	2021-04	798.58	PVC	BLP-627	130.0	130.0	110.5
WE-305	2021-03	750.71	PVC	BLP-629	60.0	60.5	39.0
WE-306	2021-02	772.36	PVC	BLP-628	60.0	60.0	39.0
WE-307	2021-01	724.03	PVC	BLP-031	74.0	57.0	36.0
WE-308	2021-21	763.08	PVC	BLP-907	50.0	50.0	29.0
WE-309	2021-20	759.39	PVC	BLP-906	50.0	51.5	30.5
WE-310	2021-19	757.63	PVC	BLP-908	50.0	52.0	30.0

Notes:

1. Survey data provided by HRK Engineering & Field Services prior to drilling and installation. Elevations are for the original staked locations and do not account for minor relocation at time of installation.
2. ECY Well Tags were provided by DBM upon completion of each well.

Closing

If you have any questions regarding the information presented in this letter or the attached boring logs, please do not hesitate to contact us.

Sincerely,

A handwritten signature in black ink, appearing to be 'A. Lopez'.

Andres Lopez, EIT
Associate Professional
SCS Engineers

A handwritten signature in blue ink, appearing to be 'Ruben Martinez-Barrientos'.

Ruben Martinez-Barrientos, EIT
Staff Engineer
SCS Engineers

A handwritten signature in blue ink, appearing to be 'K. Lakey'.

Kevin Lakey, PE, LHG,
Project Director
SCS Engineers

AEL/RMB

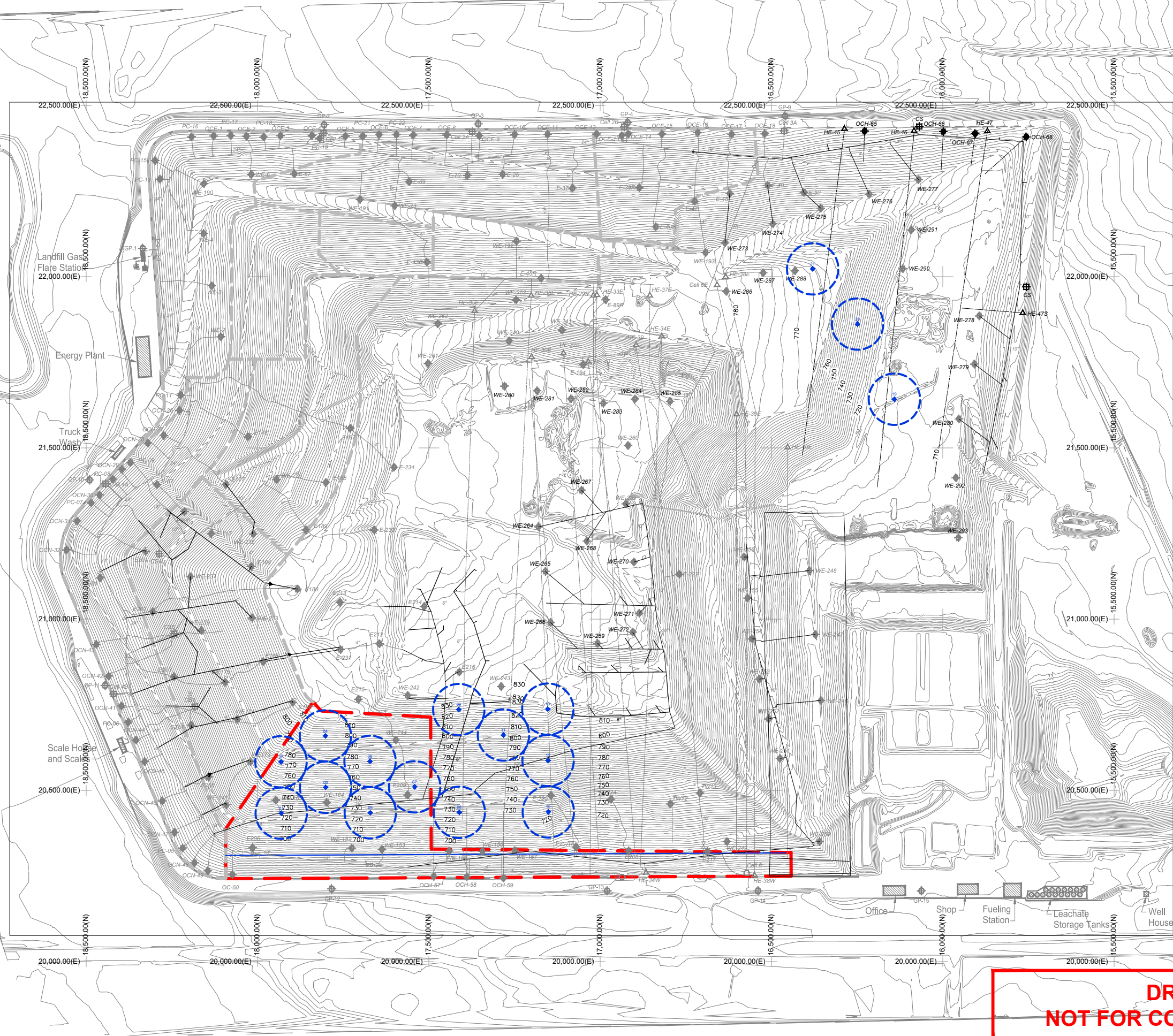
cc: Keith Johnston, TPCDH
Olivier Moi, LRI

Attachments:

LFG Extraction Boring/Well Completion Logs
Site Plan of Well Locations

C:\Users\jld\Documents\Projects\2021\20210101\SCS\Drawings\Phase V Closure\SCS Phase V Closure.dwg (1/15/2021 11:55 AM)
AutoCAD 2021 General Documentation

0 150 300
1 INCH = 150 FEET



- NOTES:
1. EXISTING TOPOGRAPHY BY MILLER CREEK ASSOCIATES, SEATAC, WA, SURVEY DATE JANUARY 14, 2021.
HORIZONTAL DATUM: ASSUMED LOCAL
COORDINATE SYSTEM
VERTICAL DATUM: BASED ON PIERCE COUNTY BENCH No 112-28, ELEVATION 660.29 NGVD 1929
 2. LFG WELL LOCATIONS AND GCCS BASED ON INFORMATION PROVIDED BY LRI. UPDATED FEBRUARY 2021.

DRAFT
NOT FOR CONSTRUCTION

SHEET TITLE
FINAL GCCS PLAN - JAN 2021 TOPO

PROJECT TITLE
PHASE V CLOSURE, STAGE A

LRI LANDFILL
30919 MERIDIAN STREET EAST
GRAHAM, WASHINGTON 98338



SCS ENGINEERS
Environmental Consultants and Contractors
2405 140th Avenue NE, Suite 107
Bellevue, Washington 98005
(425) 746-4600 FAX: (509) 684-6948

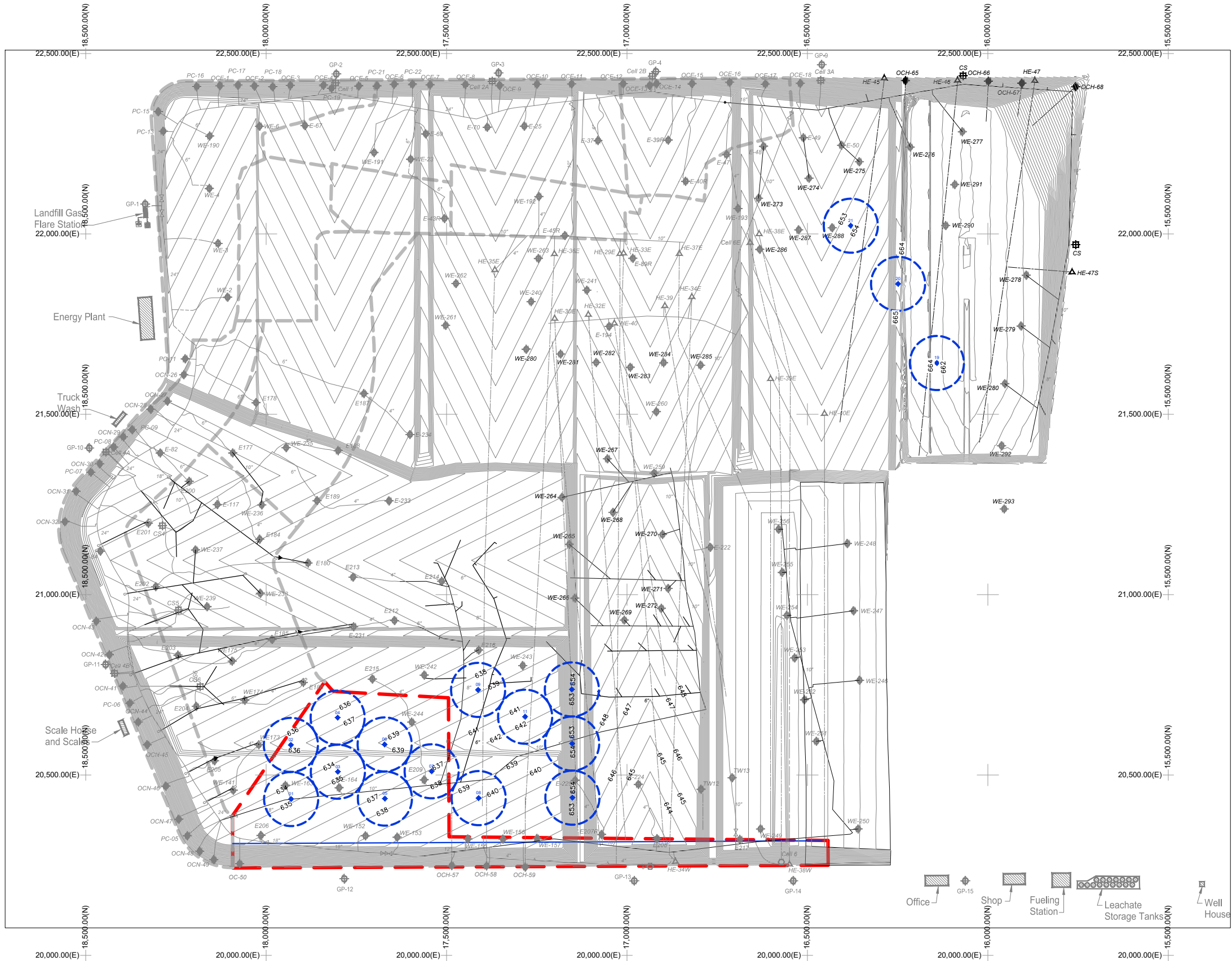
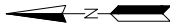
PROJ. NO.: 04221001.13
DWN. BY: GDB
CHK. BY: GDB
APP. BY: KGL

DATE:
JUNE 2021

SCALE:
AS SHOWN

FIGURE NO.

1



- NOTES:
1. EXISTING TOPOGRAPHY BY MILLER CREEK ASSOCIATES, SEATAC, WA. SURVEY DATE JANUARY 14, 2021.
HORIZONTAL DATUM: ASSUMED LOCAL COORDINATE SYSTEM
VERTICAL DATUM: BASED ON PIERCE COUNTY BENCH No 112-28, ELEVATION 660.29 NGVD 1929
 2. LFG WELL LOCATIONS AND GCCS BASED ON INFORMATION PROVIDED BY LRI. UPDATED FEBRUARY, 2021.

0 150 300
1 INCH = 150 FEET

DRAFT
NOT FOR CONSTRUCTION

SHEET TITLE
FINAL GCCS PLAN - TOP OF OPERATIONS LAYER

PROJECT TITLE
PHASE V CLOSURE, STAGE A

LRI LANDFILL
30919 MERIDIAN STREET EAST
GRAHAM, WASHINGTON 98338



SCS ENGINEERS
Environmental Consultants and Contractors
2405 140th Avenue NE, Suite 107
Bellevue, Washington 98005
(425) 746-4600 FAX: (509) 684-6948

PROJ. NO.: 04221001.13
DWN. BY: GDB
APP. BY: KGL

DATE:
JUNE 2021

SCALE:
AS SHOWN

FIGURE NO.

2

NO.	REVISION	DATE
1	ISSUED FOR REVIEW	06/18/2021
2		
3		
4		
5		

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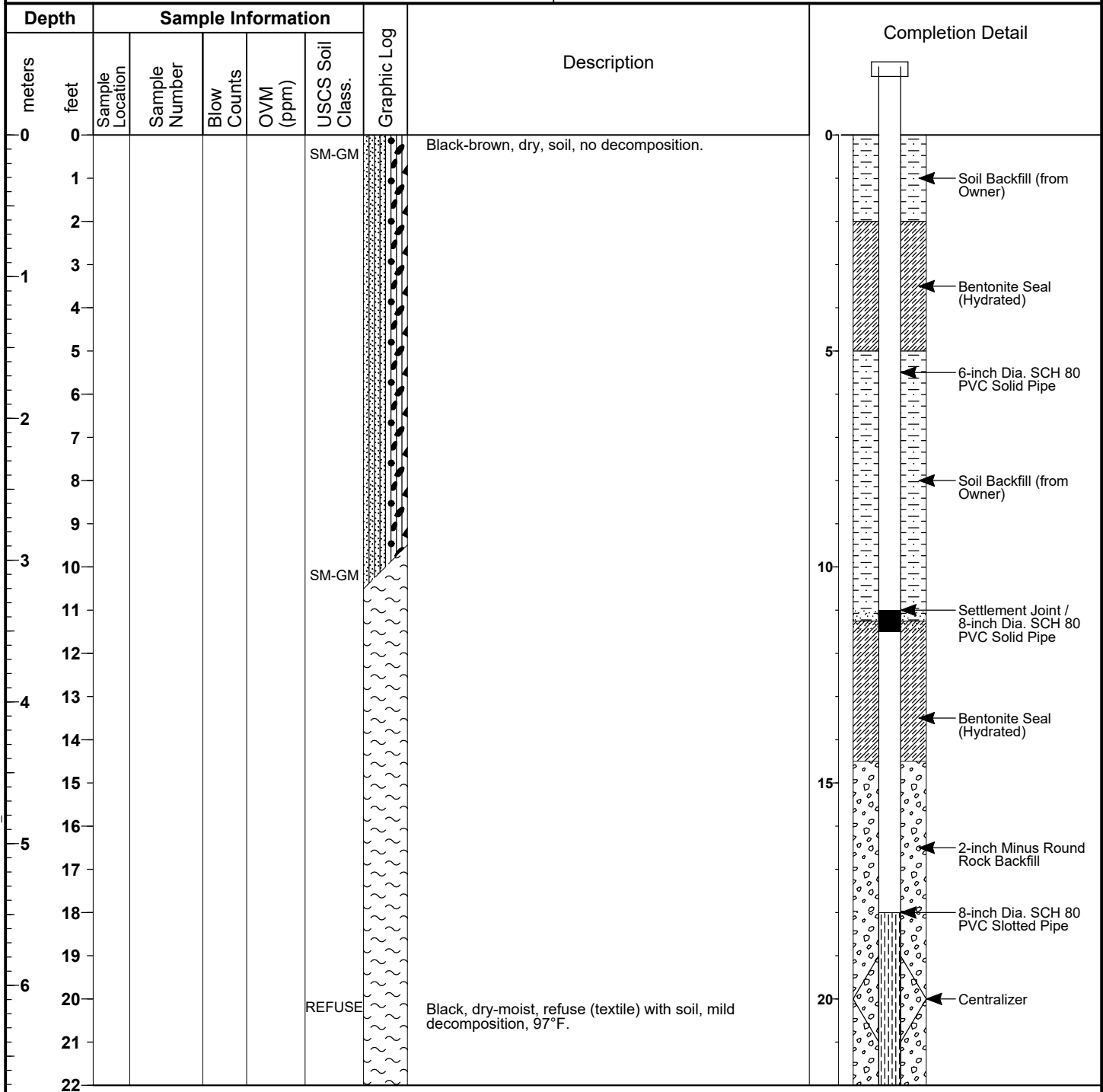
BORING NUMBER: WE-295

Page 1 of 3

LRI Landfill, Gas Wells, June 2021
30919 Meridian East
Graham, Washington

JOB NUMBER: 04221001.10

REMARKS:
Ecology Tag BKM-909. Drawing ID: 2021-13.



Drilling Company: **DBM Contractors, Inc.**

Drilling Method: **IMT AF-240**

Logged By: **A.Lopez**

Date Started: **6/30/21**

Date Ended: **6/30/21**

Boring Diameter: **36-inch**

Well Diameter: **8-inch**

Time Started: **10:34**

Time Ended: **13:55**

Total Depth: **60.0 ft.**

STANDARD_LOG_04221001.10 - LRI 304 GAS WELLS JUN 2021.GPJ STD_LOG.GDT 10/31/21

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Bellevue, Washington 98005-1877

BORING NUMBER: WE-295

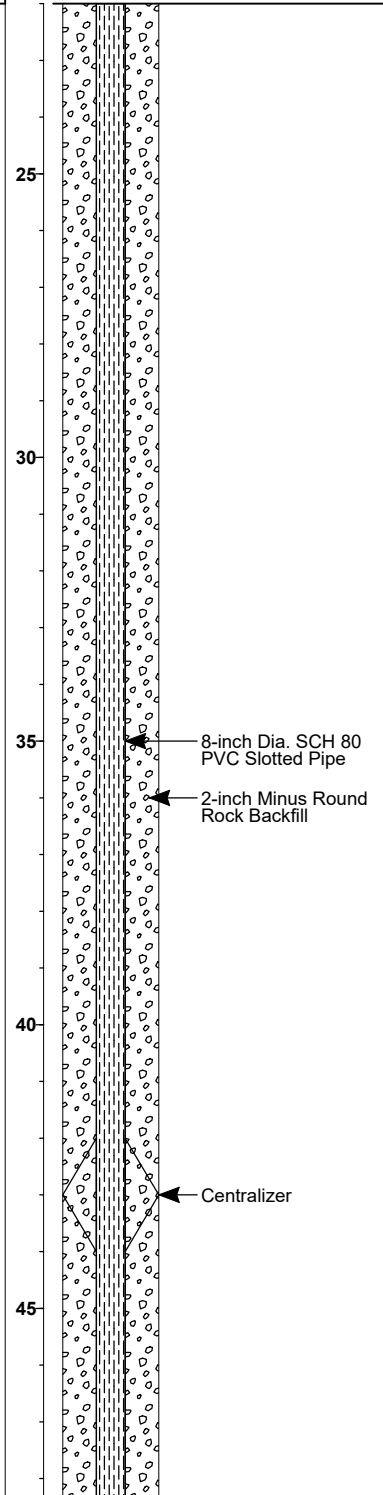
Page 2 of 3

LRI Landfill, Gas Wells, June 2021

JOB NUMBER: 04221001.10

Depth		Sample Information					Graphic Log	Description	Completion Detail
meters	feet	Sample Location	Sample Number	Blow Counts	OVM (ppm)	USCS Soil Class.			
22									
7	23								
	24								
	25								
	26								
8	27					REFUSE		Black-brown, moist, refuse (plastic, paper and textile) with soil, mil decomposition, 116°F.	
	28								
	29								
9	30								
	31								
	32								
10	33								
	34								
	35								
11	36								
	37					REFUSE		Brown-black, moist, refuse (textile) with soil, mild decomposition, 118°F.	
	38								
12	39								
	40								
	41								
	42								
13	43								
	44								
	45								
14	46					REFUSE		Brown-black, moist, refuse (paper) with soil, mild decomposition, 120°F.	
	47								
	48								

STANDARD_LOG 04221001.10 - LRI 304 GAS WELLS JUN 2021.GPJ STD_LOG.GDT 10/31/21



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BORING NUMBER: WE-295

Page 3 of 3

LRI Landfill, Gas Wells, June 2021

JOB NUMBER: 04221001.10

Depth		Sample Information					Graphic Log	Description	Completion Detail
meters	feet	Sample Location	Sample Number	Blow Counts	OVM (ppm)	USCS Soil Class.			
15	49								
	50								
	51								
	52					REFUSE		Brown-grey, moist, refuse with slag cement and soil, mild decomposition, 117°F.	
16	53								
	54								
	55					SM-GM		Black-brown, moist, refuse with wood and soil, mild decomposition, 119°F.	
17	56								
	57								
	58								
18	59								
	60					REFUSE		Black-brown, moist, refuse (plastic) with soil, mild decomposition, 108°F.	
	61								
19	62								
	63								
	64								
	65								
20	66								
	67								
	68								
21	69								
	70								
	71								
22	72								
	73								
	74								

50

55

60

65

70

8-inch Dia. SCH 80
PVC Slotted Pipe

2-inch Minus Round
Rock Backfill

Bottom Cap

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Bellevue, Washington 98005-1877

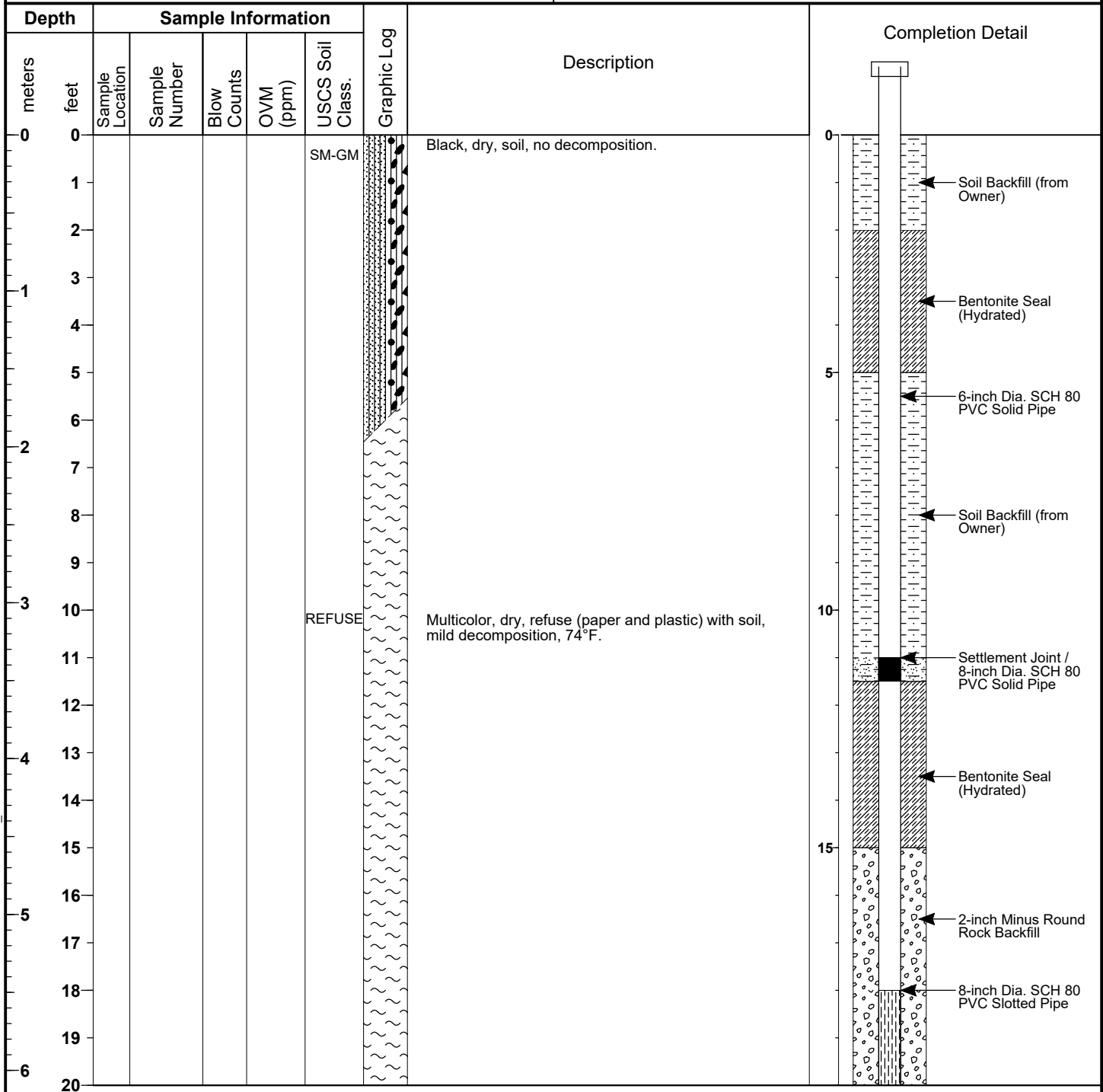
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Page 1 of 3

LRI Landfill, Gas Wells, June 2021
30919 Meridian East
Graham, Washington

JOB NUMBER: 04221001.10

REMARKS:
Ecology Tag BKM-905. Drawing ID: 2021-11.



Drilling Company: **DBM Contractors, Inc.**

Drilling Method: **IMT AF-240**

Logged By: **A.Lopez**

Date Started: **6/30/21**

Date Ended: **6/30/21**

Boring Diameter: **36-inch**

Well Diameter: **8-inch**

Time Started: **07:50**

Time Ended: **10:45**

Total Depth: **51.5 ft.**

STANDARD_LOG_04221001.10 - LRI 304 GAS WELLS JUN 2021.GPJ STD_LOG.GDT 10/31/21

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Bellevue, Washington 98005-1877

BORING NUMBER: WE-296

Page 2 of 3

LRI Landfill, Gas Wells, June 2021

JOB NUMBER: 04221001.10

Depth		Sample Information					Graphic Log	Description	Completion Detail
meters	feet	Sample Location	Sample Number	Blow Counts	OVM (ppm)	USCS Soil Class.			
20						REFUSE		Black-brown, dry-moist, refuse (textile and plastic) with soil, mild decomposition, 90°F.	20
21									
22									
7 23									
24									
25						REFUSE		Brown-black, moist, refuse (plastic) with soil, mild decomposition, 99°F.	25
26									
8 27									
28									
29									
9 30									30 ← Centralizer
31									
32									
10 33									
34									
35									35 ← 8-inch Dia. SCH 80 PVC Slotted Pipe
11 36						REFUSE		Black-brown, moist-wet, refuse (plastic) with soil, mild decomposition, 97°F.	← 2-inch Minus Round Rock Backfill
37									
38									
39									
12 40						REFUSE		Black, moist-wet, refuse (plastic) with soil, mild-well decomposition, 110°F.	40
41									
42									
13 43									
44									

STANDARD_LOG 04221001.10 - LRI 304 GAS WELLS JUN 2021.GPJ STD_LOG.GDT 10/31/21

2405 140th Avenue NE, Suite 107
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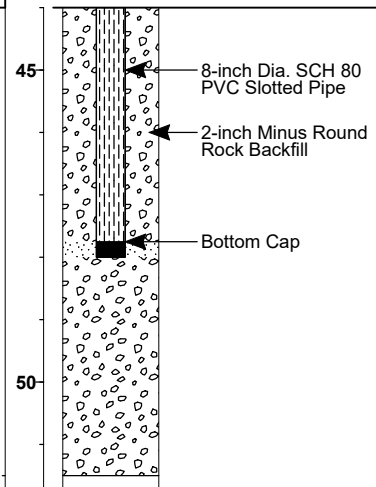
BORING NUMBER: WE-296

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LRI Landfill, Gas Wells, June 2021

JOB NUMBER: 04221001.10

Depth		Sample Information					Graphic Log	Description	Completion Detail
meters	feet	Sample Location	Sample Number	Blow Counts	OVM (ppm)	USCS Soil Class.			
44									
45									
14	46								
47									
48									
15	49								
50									
51									
52						REFUSE		Black, moist-wet, refuse with soil, mild-well decomposition.	
16	53								
54									
55									
17	56								
57									
58									
18	59								
60									
61									
19	62								
63									
64									
65									
20	66								
67									
68									



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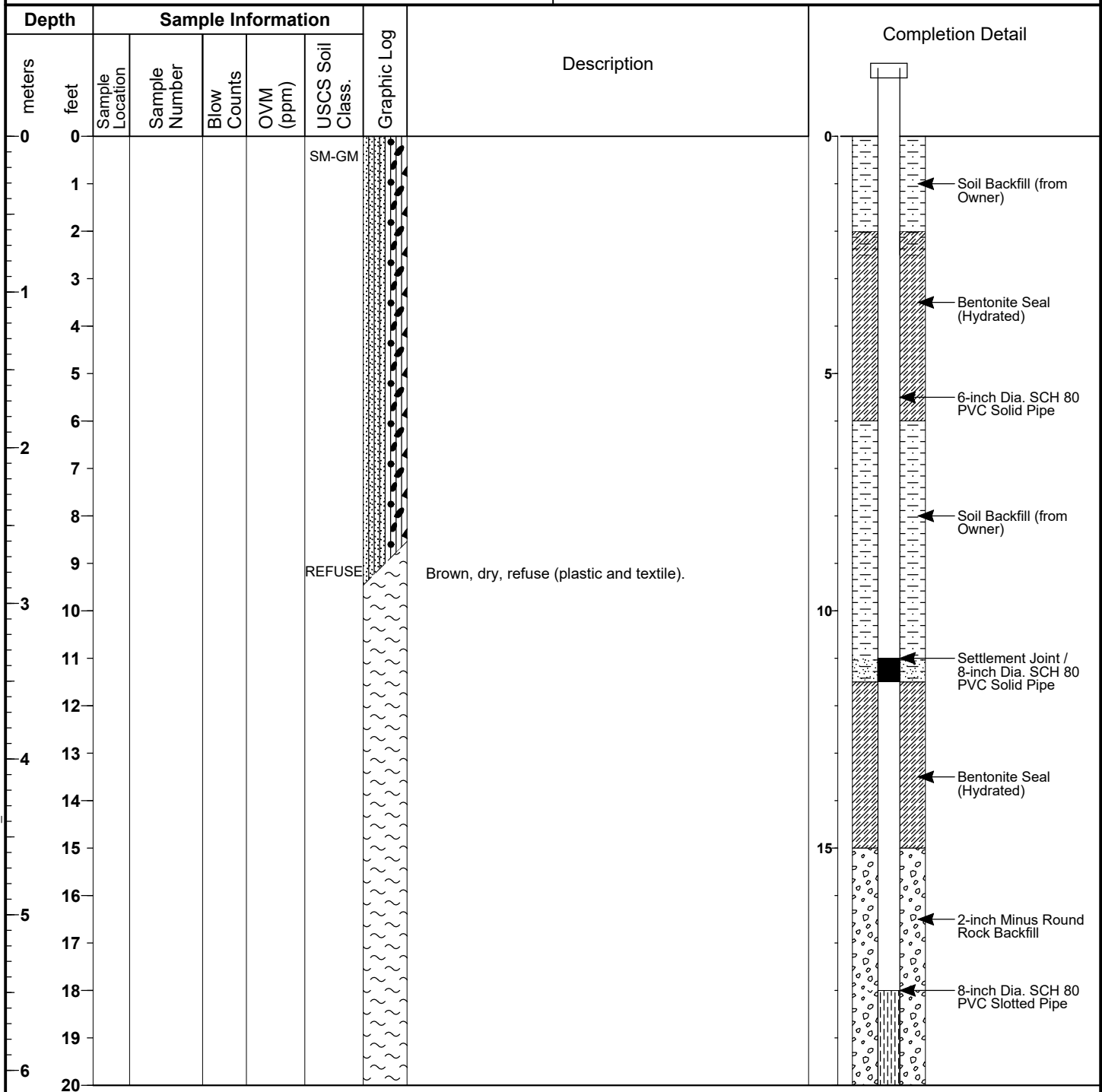
BORING NUMBER: WE-297

Page 1 of 3

LRI Landfill, Gas Wells, June 2021
30919 Meridian East
Graham, Washington

JOB NUMBER: 04221001.10

REMARKS:
Ecology Tag BKM-903. Drawing ID: 2021-09.



Drilling Company: **DBM Contractors, Inc.**

Drilling Method: **IMT AF-240**

Logged By: **R.Martinez**

Date Started: **6/29/21**

Date Ended: **6/29/21**

Boring Diameter: **36-inch**

Well Diameter: **8-inch**

Time Started: **10:45**

Time Ended: **12:15**

Total Depth: **60.0 ft.**

STANDARD_LOG_04221001.10 - LRI 304 GAS WELLS JUN 2021.GPJ STD_LOG.GDT 10/31/21

2405 140th Avenue NE, Suite 107
Bellevue, Washington 98005-1877

BORING NUMBER: WE-297

Page 2 of 3

LRI Landfill, Gas Wells, June 2021

JOB NUMBER: 04221001.10

Depth		Sample Information					Graphic Log	Description	Completion Detail
meters	feet	Sample Location	Sample Number	Blow Counts	OVM (ppm)	USCS Soil Class.			
20						REFUSE		Brown, dry, refuse (plastic), 97°F.	20
21									
22									
7 23									
24									
25									25
26									
8 27									
28									
29									
9 30									30
31						REFUSE		Brown, moist, refuse (plastic), 114°F.	
32									
10 33									
34									
35									35
11 36									8-inch Dia. SCH 80 PVC Slotted Pipe
37									2-inch Minus Round Rock Backfill
38									
39									
12 40									40
41									
42									
13 43									
44									

STANDARD_LOG_04221001.10 - LRI 304 GAS WELLS JUN 2021.GPJ STD_LOG.GDT 10/31/21

2405 140th Avenue NE, Suite 107
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BORING NUMBER: WE-297

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LRI Landfill, Gas Wells, June 2021

JOB NUMBER: 04221001.10

Depth		Sample Information					Graphic Log	Description	Completion Detail
meters	feet	Sample Location	Sample Number	Blow Counts	OVM (ppm)	USCS Soil Class.			
44									
45									
14	46								
47						REFUSE		Brown, dry, refuse (plastic), 103°F.	
48									
15	49								
50									
51									
52						REFUSE		Black, moist, refuse (plastic), 103°F.	
16	53								
54									
55									
17	56								
57						REFUSE		Black, moist, refuse (plastic), 113°F.	
58									
18	59								
60						REFUSE		Black, moist, refuse (plastic), 113°F.	
61									
62									
19	63								
64									
65									
20	66								
67									
68									

45

50

55

60

65

Centralizer

8-inch Dia. SCH 80
PVC Slotted Pipe

2-inch Minus Round
Rock Backfill

Bottom Cap

2405 140th Avenue NE, Suite 107
Bellevue, Washington 98005-1877

BORING NUMBER: WE-298

Page 1 of 3

LRI Landfill, Gas Wells, June 2021
30919 Meridian East
Graham, Washington

JOB NUMBER: 04221001.10

REMARKS:
Ecology Tag BKM-904. Drawing ID: 2021-12.

Depth		Sample Information					Graphic Log	Description	Completion Detail
meters	feet	Sample Location	Sample Number	Blow Counts	OVM (ppm)	USCS Soil Class.			
0	0					SM-GM		Black, moist, refuse (plastic), 105°F.	Soil Backfill (from Owner) Bentonite Seal (Hydrated) 6-inch Dia. SCH 80 PVC Solid Pipe Soil Backfill (from Owner) Settlement Joint / 8-inch Dia. SCH 80 PVC Solid Pipe Bentonite Seal (Hydrated) 2-inch Minus Round Rock Backfill 8-inch Dia. SCH 80 PVC Slotted Pipe
1	1								
2	2								
3	3								
4	4								
5	5								
6	6								
7	7								
8	8								
9	9								
10	10								
11	11								
12	12								
13	13								
14	14								
15	15								
16	16								
17	17								
18	18								
19	19								
20	20								
21	21								
22	22								

Drilling Company: **DBM Contractors, Inc.**

Drilling Method: **IMT AF-240**

Logged By: **R.Martinez**

Date Started: **7/2/21**

Date Ended: **7/2/21**

Boring Diameter: **36-inch**

Well Diameter: **8-inch**

Time Started: **08:42**

Time Ended: **09:52**

Total Depth: **59.0 ft.**

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BORING NUMBER: WE-298

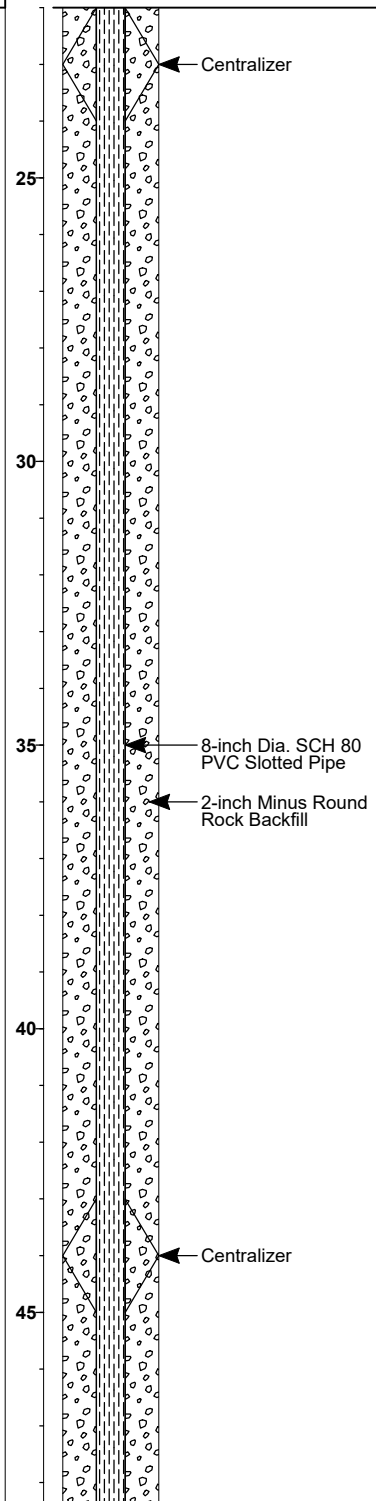
Page 2 of 3

LRI Landfill, Gas Wells, June 2021

JOB NUMBER: 04221001.10

Depth		Sample Information					Graphic Log	Description	Completion Detail
meters	feet	Sample Location	Sample Number	Blow Counts	OVM (ppm)	USCS Soil Class.			
7	22								
	23								
	24								
	25								
8	26								
	27								
	28								
	29								
9	30								
	31								
	32								
10	33								
	34								
	35					REFUSE		Black, moist, refuse (plastic and paper) with soil, 102°F.	
11	36								
	37								
	38								
	39								
12	40								
	41								
	42					REFUSE		Black, wet, refuse (plastic and textile), moderate decomposition, 106°F.	
13	43								
	44								
	45								
14	46								
	47					REFUSE		Black, wet, refuse (plastic and textile), moderate decomposition, 111°F.	
	48								

STANDARD_LOG 04221001.10 - LRI 304 GAS WELLS JUN 2021.GPJ STD_LOG.GDT 10/31/21



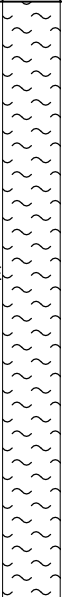
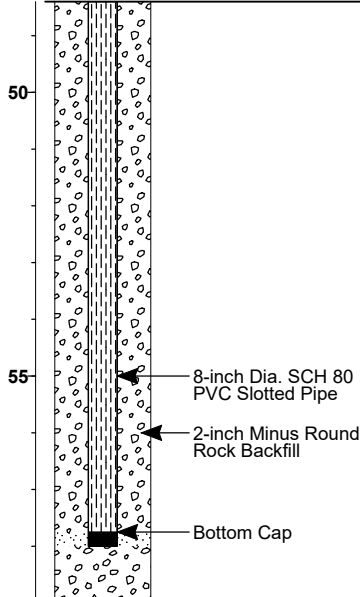
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BORING NUMBER: WE-298

Page 3 of 3

LRI Landfill, Gas Wells, June 2021

JOB NUMBER: 04221001.10

Depth		Sample Information					Graphic Log	Description	Completion Detail
meters	feet	Sample Location	Sample Number	Blow Counts	OVM (ppm)	USCS Soil Class.			
15	49							Black, wet, refuse (plastic and textile), moderate decomposition, 111°F.	 8-inch Dia. SCH 80 PVC Slotted Pipe 2-inch Minus Round Rock Backfill Bottom Cap
	50								
	51								
	52								
16	53								
	54								
	55								
17	56								
	57								
	58								
18	59							Black, wet, refuse (plastic and textile), moderate decomposition.	
	60								
	61								
	62								
19	63								
	64								
	65								
20	66								
	67								
	68								
21	69								
	70								
	71								
22	72								
	73								
	74								

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Bellevue, Washington 98005-1877

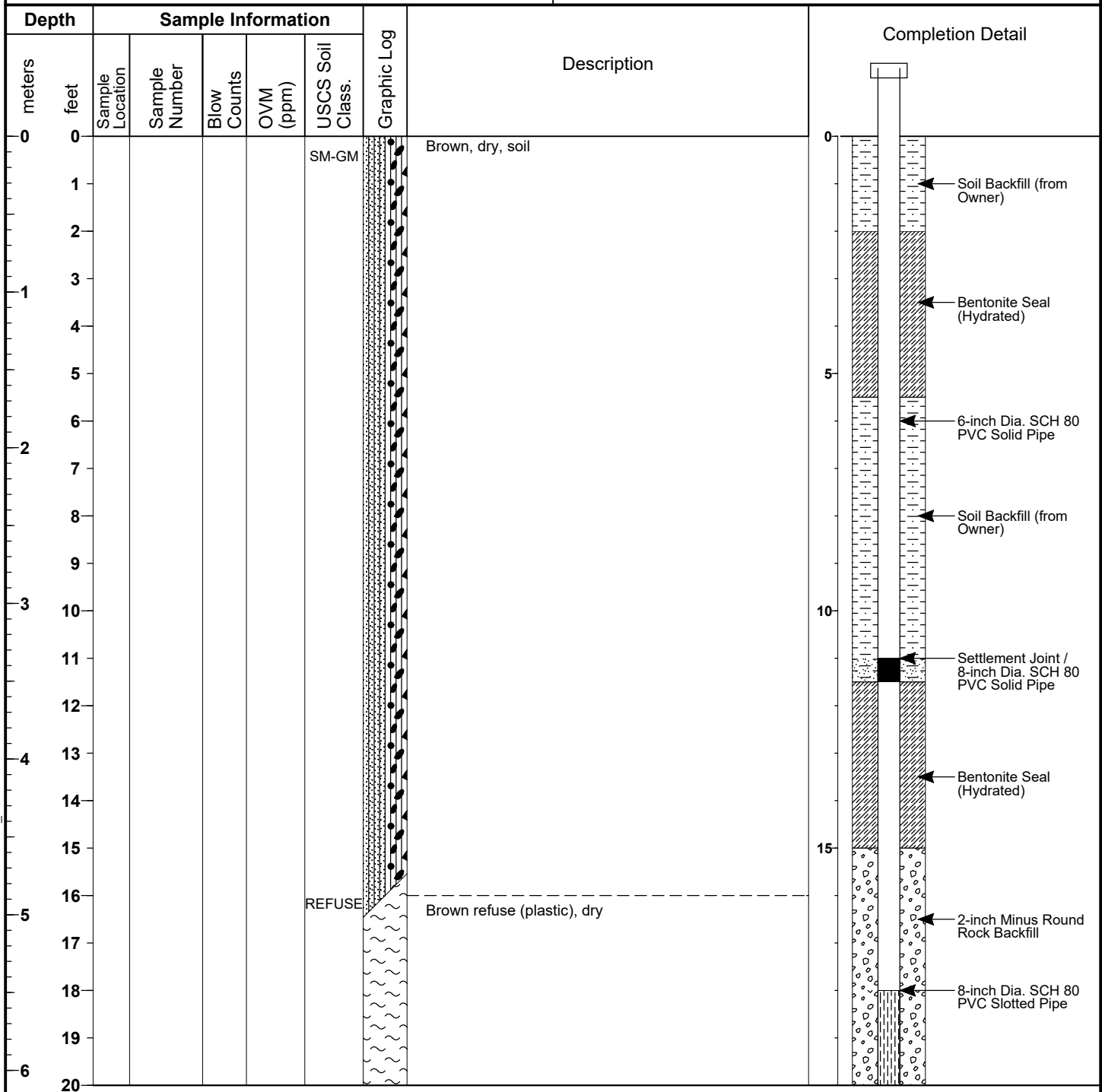
BORING NUMBER: WE-299

Page 1 of 2

LRI Landfill, Gas Wells, June 2021
30919 Meridian East
Graham, Washington

JOB NUMBER: 04221001.10

REMARKS:
Ecology Tag BKM-902. Drawing ID: 2021-10.



Drilling Company: **DBM Contractors, Inc.**

Drilling Method: **IMT AF-240**

Logged By: **R.Martinez**

Date Started: **6/29/21**

Date Ended: **6/29/21**

Boring Diameter: **36-inch**

Well Diameter: **8-inch**

Time Started: **08:07**

Time Ended: **09:55**

Total Depth: **41.0 ft.**

2405 140th Avenue NE, Suite 107
Bellevue, Washington 98005-1877

BORING NUMBER: WE-299

Page 2 of 2

LRI Landfill, Gas Wells, June 2021

JOB NUMBER: 04221001.10

Depth		Sample Information					Graphic Log	Description	Completion Detail
meters	feet	Sample Location	Sample Number	Blow Counts	OVM (ppm)	USCS Soil Class.			
20									20
21									
22									
7 23									
24									
25						REFUSE		Black-brown refuse (plastic and textiles) with soil, moist, 97°F	25
8 26									
27									
28									
29									
9 30									30
31									
32									
10 33						REFUSE		Black refuse (plastic and textiles), moist, 108°F	
34									
35									35
11 36									
37									
38									
12 39						REFUSE		Black refuse (plastic and textiles), moist, 106°F	
40									40
41								Black saturated refuse, boring collapsing	
42									
13 43									
44									

Centralizer

8-inch Dia. SCH 80
PVC Slotted Pipe

2-inch Minus Round
Rock Backfill

Bottom Cap

STANDARD_LOG 04221001.10 - LRI 304 GAS WELLS JUN 2021.GPJ STD_LOG.GDT 10/31/21

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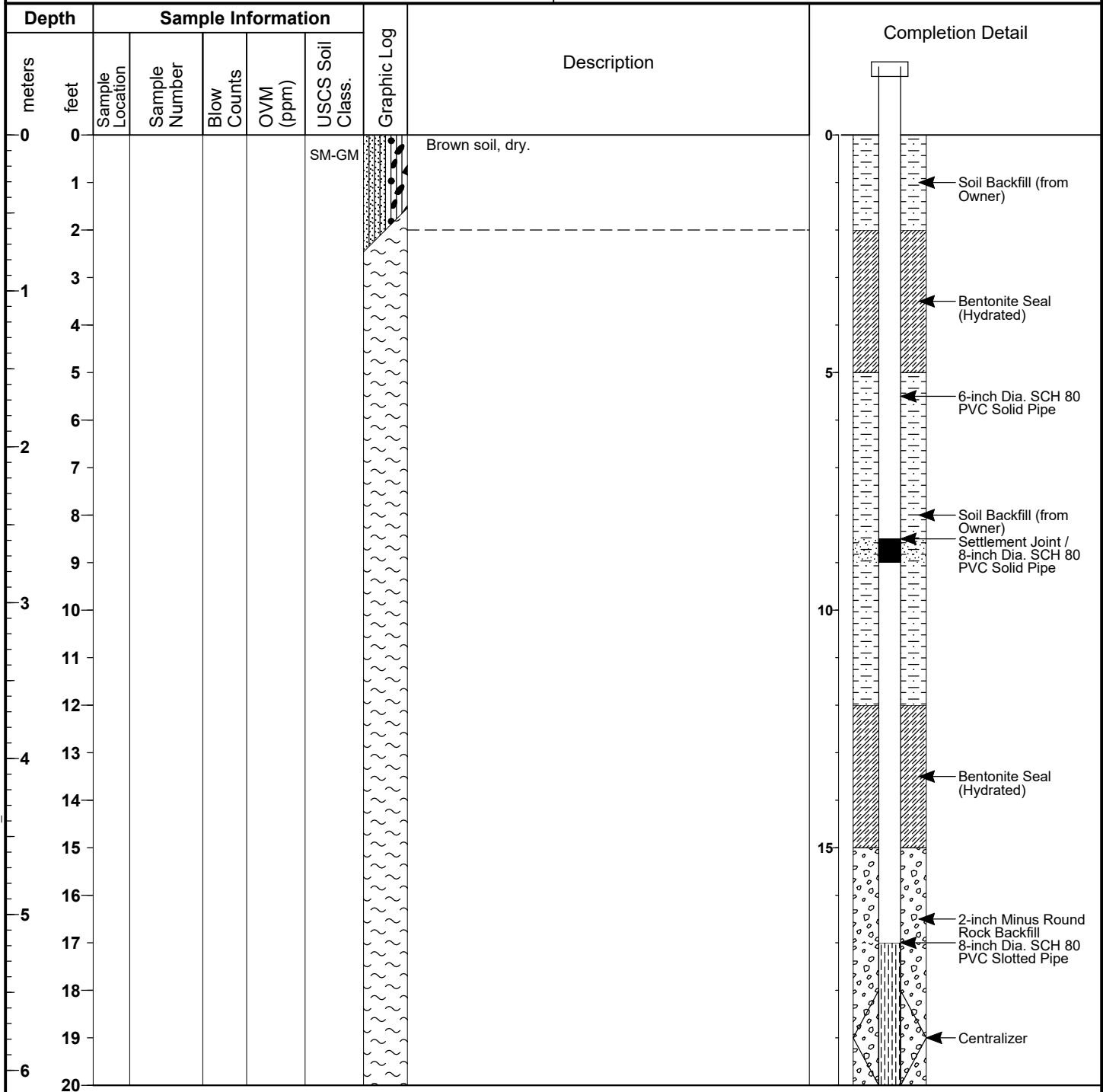
BORING NUMBER: WE-300

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LRI Landfill, Gas Wells, June 2021
30919 Meridian East
Graham, Washington

JOB NUMBER: 04221001.10

REMARKS:
Ecology Tag BKM-901. Drawing ID: 2021-08.



Drilling Company: **DBM Contractors, Inc.**

Drilling Method: **IMT AF-240**

Logged By: **R.Martinez**

Date Started: **6/28/21**

Date Ended: **6/28/21**

Boring Diameter: **36-inch**

Well Diameter: **8-inch**

Time Started: **07:30**

Time Ended: **08:38**

Total Depth: **73.0 ft.**

STANDARD_LOG_04221001.10 - LRI 304 GAS WELLS JUN 2021.GPJ STD_LOG.GDT 10/31/21

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BORING NUMBER: WE-300

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LRI Landfill, Gas Wells, June 2021

JOB NUMBER: 04221001.10

Depth		Sample Information					Graphic Log	Description	Completion Detail
meters	feet	Sample Location	Sample Number	Blow Counts	OVM (ppm)	USCS Soil Class.			
20									20
21									
22									
7 23									
24									
25									25
26									
8 27									
28									
29									
9 30									30
31									
32									
10 33									
34									
35									35
11 36									
37									
38									
39									
12 40									40
41									
42									
13 43									
44									

STANDARD_LOG_04221001.10 - LRI 304 GAS WELLS JUN 2021.GPJ STD_LOG.GDT 10/31/21

8-inch Dia. SCH 80
PVC Slotted Pipe
2-inch Minus Round
Rock Backfill

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Bellevue, Washington 98005-1877

BORING NUMBER: WE-300

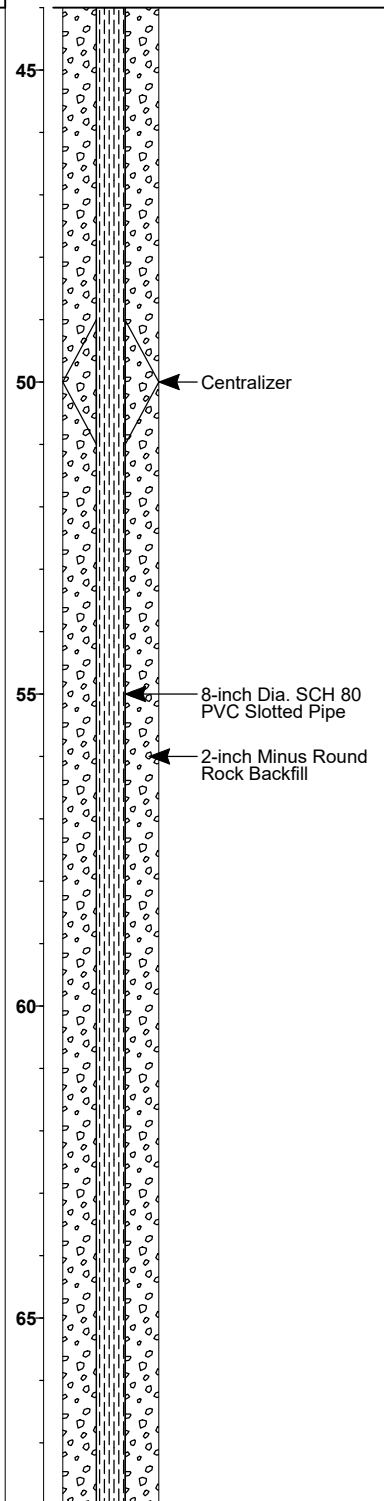
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LRI Landfill, Gas Wells, June 2021

JOB NUMBER: 04221001.10

Depth		Sample Information					Graphic Log	Description	Completion Detail
meters	feet	Sample Location	Sample Number	Blow Counts	OVM (ppm)	USCS Soil Class.			
44									
45									
14	46								
47									
48						REFUSE		Black, moist, refuse, 119°F	
15	49								
50									
51									
52									
16	53								
54									
55						REFUSE		Black, moist, refuse	
17	56								
57									
58									
18	59								
60									
61									
19	62								
63									
64									
65						REFUSE		Black, saturated, refuse, 128°F	
20	66								
67									
68									

STANDARD_LOG 04221001.10 - LRI 304 GAS WELLS JUN 2021.GPJ STD_LOG.GDT 10/31/21



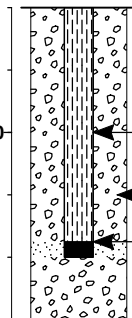
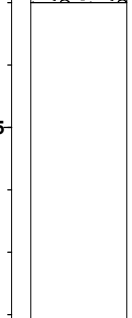
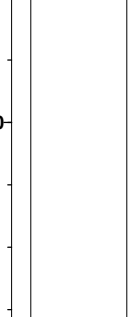
2405 140th Avenue NE, Suite 107
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BORING NUMBER: WE-300

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LRI Landfill, Gas Wells, June 2021

JOB NUMBER: 04221001.10

Depth		Sample Information					Graphic Log	Description	Completion Detail
meters	feet	Sample Location	Sample Number	Blow Counts	OVM (ppm)	USCS Soil Class.			
68									
21	69					REFUSE		Black, moist, refuse, 127°F	 8-inch Dia. SCH 80 PVC Slotted Pipe 2-inch Minus Round Rock Backfill Bottom Cap
	70								
	71								
22	72								
	73					REFUSE		Black, moist, refuse, 116°F	
	74								
	75								
23	76								
	77								
	78								
24	79								
	80								
	81								
25	82								
	83								
	84								
	85								
26	86								
	87								
	88								
27	89								
	90								
	91								
28	92								

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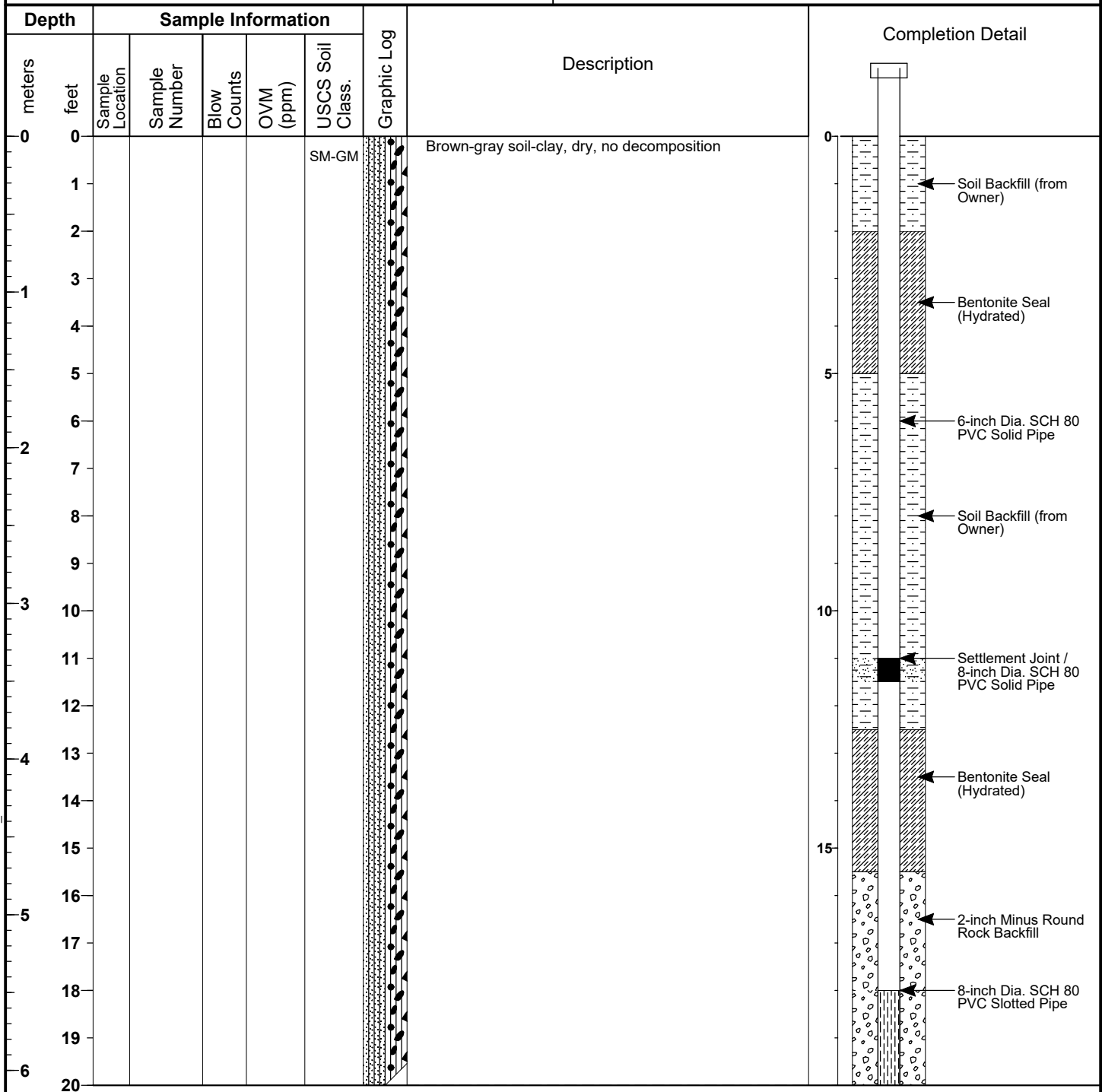
BORING NUMBER: WE-301

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LRI Landfill, Gas Wells, June 2021
30919 Meridian East
Graham, Washington

JOB NUMBER: 04221001.10

REMARKS:
Ecology Tag BLP-033. Drawing ID: 2021-07.



Drilling Company: **DBM Contractors, Inc.**

Drilling Method: **IMT AF-240**

Logged By: **A.Lopez**

Date Started: **6/25/21**

Date Ended: **6/25/21**

Boring Diameter: **36-inch**

Well Diameter: **8-inch**

Time Started: **09:50**

Time Ended: **12:50**

Total Depth: **61.0 ft.**

STANDARD_LOG_04221001.10 - LRI 304 GAS WELLS JUN 2021.GPJ STD_LOG.GDT 10/31/21

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BORING NUMBER: WE-301

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LRI Landfill, Gas Wells, June 2021

JOB NUMBER: 04221001.10

Depth		Sample Information					Graphic Log	Description	Completion Detail
meters	feet	Sample Location	Sample Number	Blow Counts	OVM (ppm)	USCS Soil Class.			
20						SM-GM			20
21									
22									
7 23									
24						REFUSE		Black-brown refuse (plastic and textile) with soil, moist, mild decomposition, 86°F	
25									25
26									
8 27									
28									
29									
9 30									30
31									
32						REFUSE		Black-brown refuse (textile) with soil, moist, mild decomposition, 110°F	
10 33									
34									
35									35
36									8-inch Dia. SCH 80 PVC Slotted Pipe
11 37									2-inch Minus Round Rock Backfill
38									
39									
12 40									Centralizer
41									
42									
13 43									
44									

STANDARD_LOG_04221001.10 - LRI 304 GAS WELLS JUN 2021.GPJ STD_LOG.GDT 10/31/21

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Bellevue, Washington 98005-1877

BORING NUMBER: WE-301

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LRI Landfill, Gas Wells, June 2021

JOB NUMBER: 04221001.10

Depth		Sample Information					Graphic Log	Description	Completion Detail
meters	feet	Sample Location	Sample Number	Blow Counts	OVM (ppm)	USCS Soil Class.			
44									
45									
14	46								
47						REFUSE		Brown-black refuse (paper and textile) with soil, wet, mild decomposition, 104°F	
48									
15	49								
50									
51									
52									
16	53					REFUSE		Black-brown refuse (plastic) with soil, wet, mild-well decomposition, 128°F	
54									
55									
17	56					REFUSE		Black refuse (plastic and textile) with soil, wet-saturated, well decomposition, 118°F	
57									
58									
18	59								
60									
61						REFUSE		Black refuse (plastic) with soil, wet-saturated, well decomposition, 121°F	
19	62								
63									
64									
65									
20	66								
67									
68									

45

50

55

60

65

8-inch Dia. SCH 80
PVC Slotted Pipe
2-inch Minus Round
Rock Backfill

Centralizer

Bottom Cap

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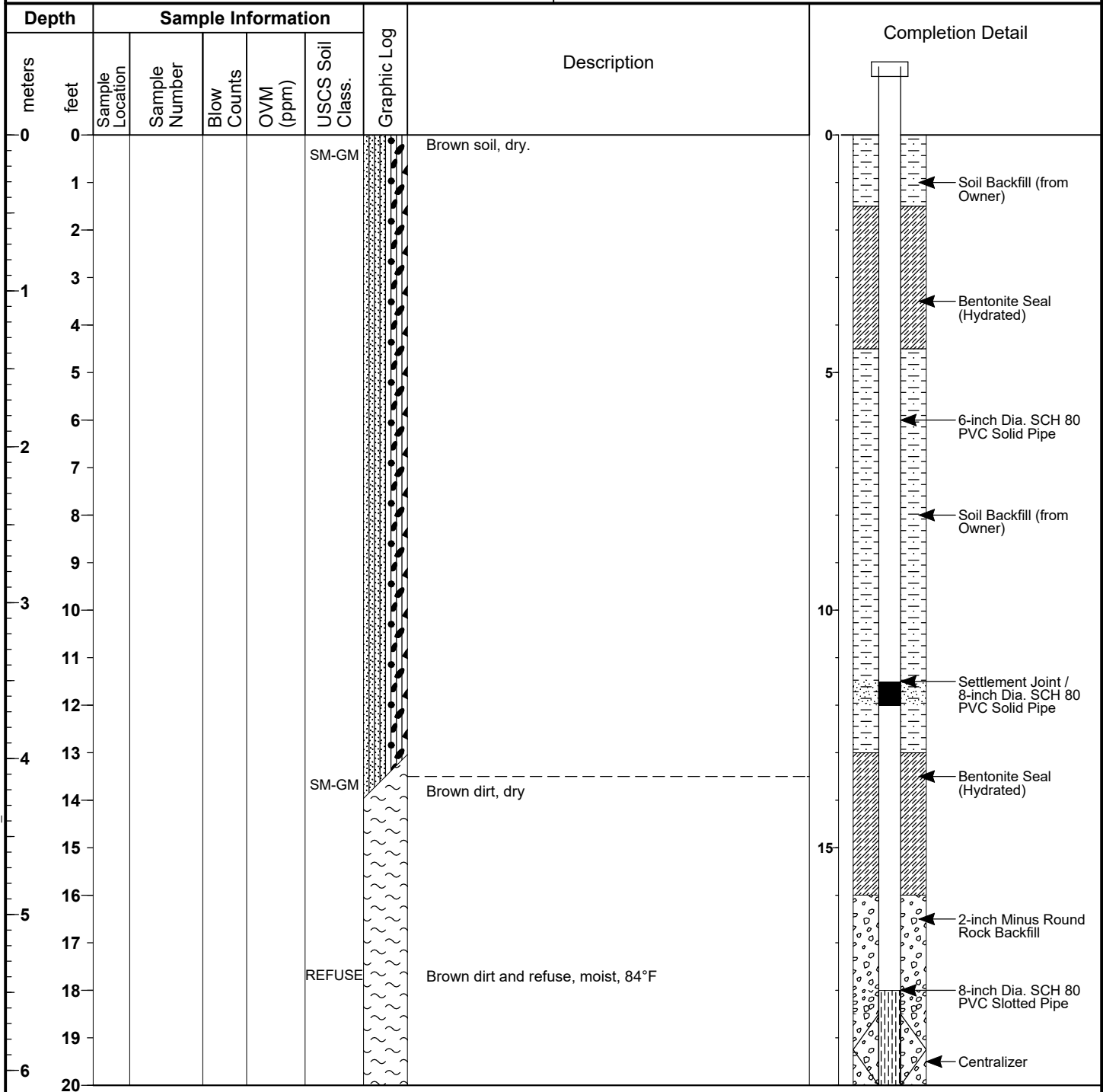
BORING NUMBER: WE-302

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LRI Landfill, Gas Wells, June 2021
30919 Meridian East
Graham, Washington

JOB NUMBER: 04221001.10

REMARKS:
Ecology Tag BLP-030. Drawing ID: 2021-05.



Drilling Company: **DBM Contractors, Inc.**

Drilling Method: **IMT AF-240**

Logged By: **R.Martinez**

Date Started: **6/24/21**

Date Ended: **6/24/21**

Boring Diameter: **36-inch**

Well Diameter: **8-inch**

Time Started: **07:45**

Time Ended: **09:50**

Total Depth: **70.5 ft.**

STANDARD_LOG_04221001.10 - LRI 304 GAS WELLS JUN 2021.GPJ STD_LOG.GDT 10/31/21

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BORING NUMBER: WE-302

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LRI Landfill, Gas Wells, June 2021

JOB NUMBER: 04221001.10

Depth		Sample Information					Graphic Log	Description	Completion Detail
meters	feet	Sample Location	Sample Number	Blow Counts	OVM (ppm)	USCS Soil Class.			
20									20
21									
22						REFUSE		Brown refuse (textiles), moist, 89°F	
23									
24									
25									25
26									
27									
28						REFUSE		Black refuse, moist, 111°F	
29									
30									30
31									
32									
33									
34									
35									35
36									
37									
38						REFUSE		Black refuse (plastics & textiles), moist, 118°F	
39									
40									40
41									
42									
43						REFUSE		Black refuse (plastics), moist, 123°F	
44									

8-inch Dia. SCH 80
PVC Slotted Pipe
2-inch Minus Round
Rock Backfill

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BORING NUMBER: WE-302

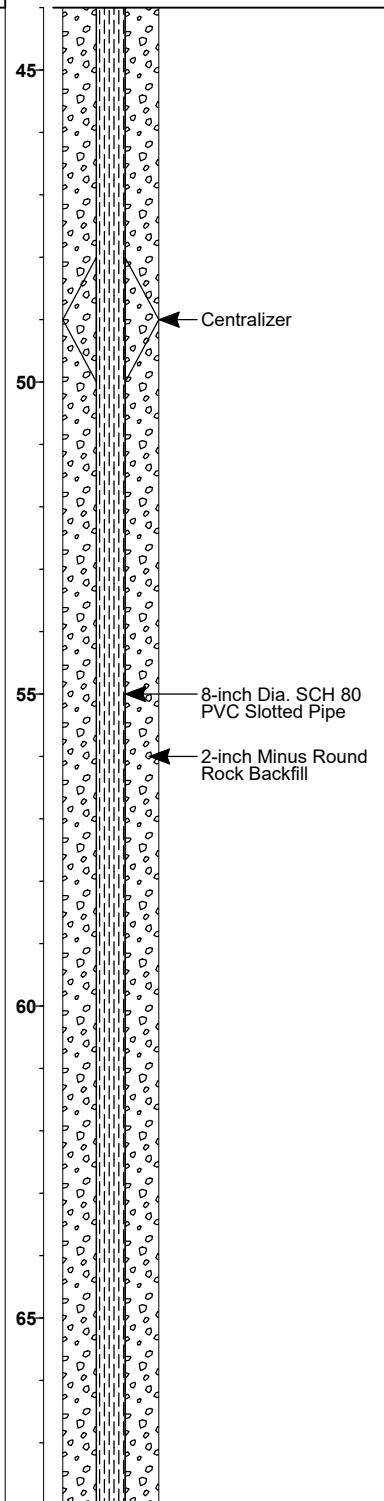
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LRI Landfill, Gas Wells, June 2021

JOB NUMBER: 04221001.10

Depth		Sample Information					Graphic Log	Description	Completion Detail
meters	feet	Sample Location	Sample Number	Blow Counts	QVM (ppm)	USCS Soil Class.			
44									
45									
14	46								
47									
48									
15	49								
50									
51						REFUSE		Black refuse (plastics & textiles), moist, 121°F	
52									
16	53								
54									
55									
17	56								
57									
58									
18	59								
60						REFUSE		Black refuse (plastics), moist, 124°F	
61									
19	62								
63						REFUSE		Black refuse (indistinguishable), moist, 116°F	
64									
65									
20	66								
67						REFUSE		Black refuse (indistinguishable), wet, 117°F	
68									

STANDARD_LOG 04221001.10 - LRI 304 GAS WELLS JUN 2021.GPJ STD_LOG.GDT 10/31/21



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LRI Landfill, Gas Wells, June 2021

JOB NUMBER: 04221001.10

Depth		Sample Information					Graphic Log	Description	Completion Detail
meters	feet	Sample Location	Sample Number	Blow Counts	OVM (ppm)	USCS Soil Class.			
68	21								8-inch Dia. SCH 80 PVC Slotted Pipe Bottom Cap 2-inch Minus Round Rock Backfill
69									
70									
71						REFUSE		Black saturated refuse (indistinguishable), boring collapsing, 121°F	
72									
73									
74									
75									
76									
77									
78									
79									
80									
81									
82									
83									
84									
85									
86									
87									
88									
89									
90									
91									
92									

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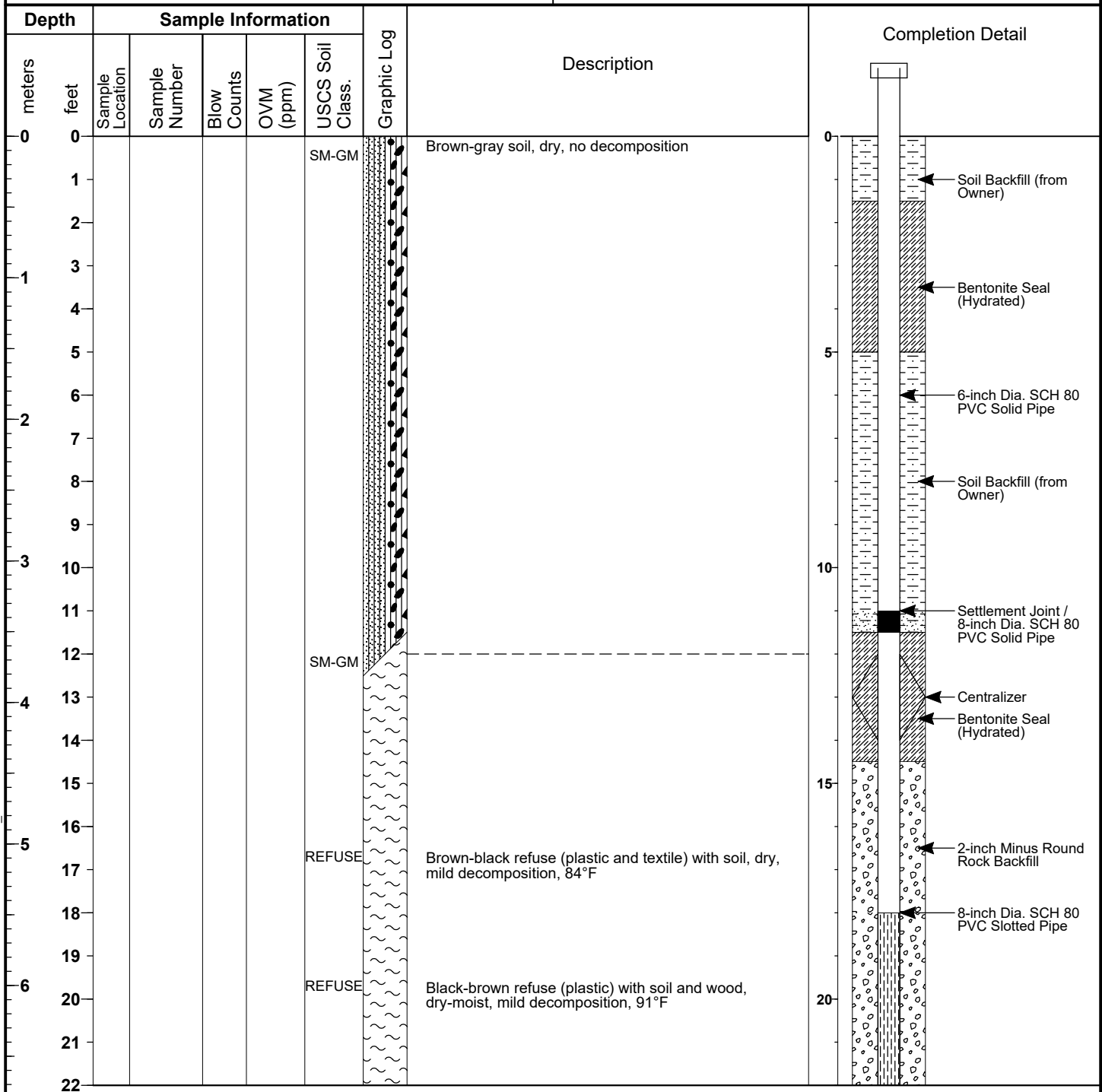
BORING NUMBER: WE-303

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LRI Landfill, Gas Wells, June 2021
30919 Meridian East
Graham, Washington

JOB NUMBER: 04221001.10

REMARKS:
Ecology Tag BLP-032. Drawing ID: 2021-06.



Drilling Company: **DBM Contractors, Inc.**

Drilling Method: **IMT AF-240**

Logged By: **A.Lopez**

Date Started: **6/25/21**

Date Ended: **6/25/21**

Boring Diameter: **36-inch**

Well Diameter: **8-inch**

Time Started: **08:25**

Time Ended: **10:45**

Total Depth: **59.5 ft.**

STANDARD_LOG_04221001.10 - LRI 304 GAS WELLS JUN 2021.GPJ STD_LOG.GDT 10/31/21

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Bellevue, Washington 98005-1877

BORING NUMBER: WE-303

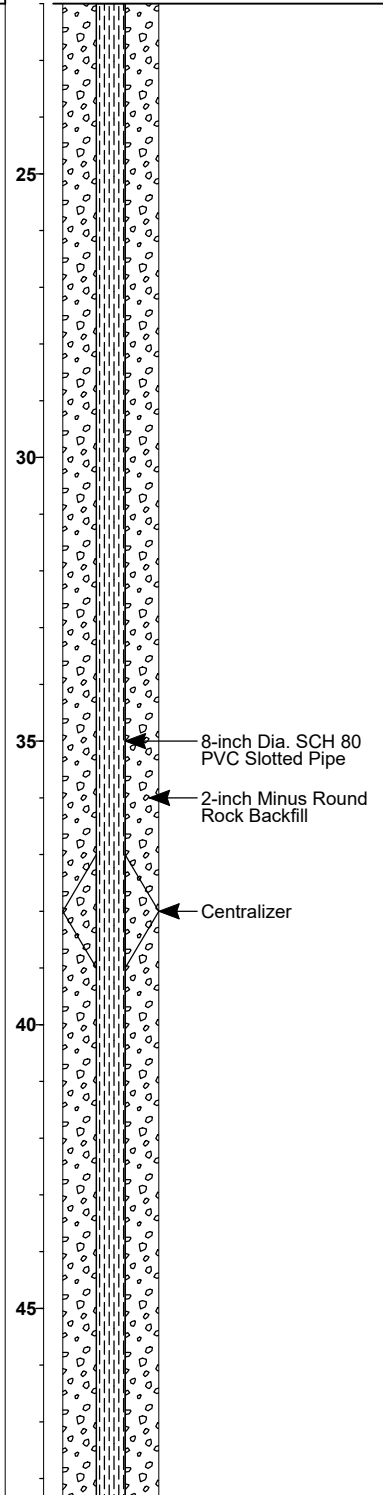
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LRI Landfill, Gas Wells, June 2021

JOB NUMBER: 04221001.10

Depth		Sample Information					Graphic Log	Description	Completion Detail
meters	feet	Sample Location	Sample Number	Blow Counts	OVM (ppm)	USCS Soil Class.			
7	22								
	23								
	24								
	25								
	26								
8	27								
	28								
	29								
9	30								
	31								
	32					REFUSE		Black-brown refuse (plastic) with soil, moist, mild decomposition, 106°F	
10	33								
	34								
	35								
11	36								
	37								
	38					REFUSE		Black-brown refuse (plastic and textile) with soil, moist, mild decomposition, 109°F	
12	39								
	40								
	41								
	42								
13	43								
	44								
	45								
14	46								
	47								
	48								

STANDARD_LOG_04221001.10 - LRI 304 GAS WELLS JUN 2021.GPJ STD_LOG.GDT 10/31/21



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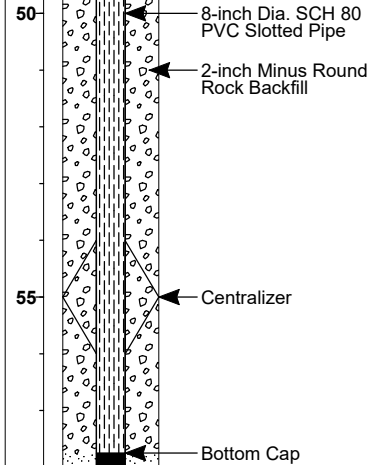
BORING NUMBER: WE-303

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LRI Landfill, Gas Wells, June 2021

JOB NUMBER: 04221001.10

Depth		Sample Information					Graphic Log	Description	Completion Detail
meters	feet	Sample Location	Sample Number	Blow Counts	OVM (ppm)	USCS Soil Class.			
15	49								
	50								
	51								
	52								
16	53					REFUSE		Brown-orange refuse (plastic and textile) with soil and wood, moist, mild decomposition, 120°F	
	54								
	55								
17	56								
	57					REFUSE		Brown-orange refuse (paper, plastic and textile) with soil, moist, mild decomposition, 122°F	
	58								
18	59								
	60					REFUSE		Brown-black refuse (plastic and textile) with soil, moist, mild decomposition, 126°F	
	61								
	62								
19	63								
	64								
	65								
20	66								
	67								
	68								
21	69								
	70								
	71								
22	72								
	73								
	74								



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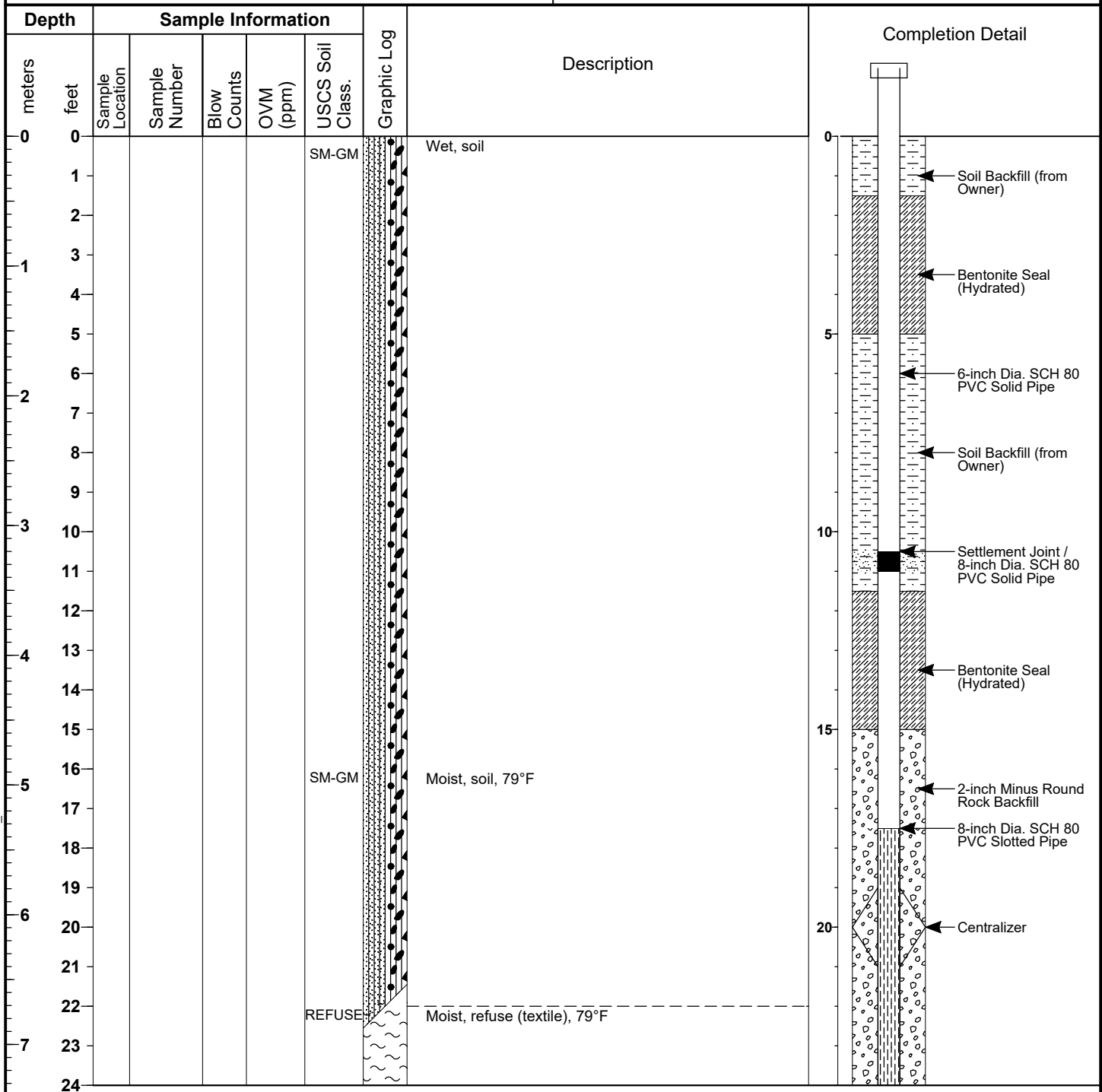
BORING NUMBER: WE-304

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LRI Landfill, Gas Wells, June 2021
30919 Meridian East
Graham, Washington

JOB NUMBER: 04221001.10

REMARKS:
Ecology Tag BLP-627. Drawing ID: 2021-04.



Drilling Company: **DBM Contractors, Inc.**

Drilling Method: **IMT AF-240**

Logged By: **R.Martinez**

Date Started: **6/22/21**

Date Ended: **6/22/21**

Boring Diameter: **36-inch**

Well Diameter: **8-inch**

Time Started: **09:51**

Time Ended: **13:45**

Total Depth: **130.0 ft.**

STANDARD_LOG_04221001.10 - LRI 304 GAS WELLS JUN 2021.GPJ STD_LOG.GDT 10/31/21

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BORING NUMBER: WE-304

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LRI Landfill, Gas Wells, June 2021

JOB NUMBER: 04221001.10

Depth		Sample Information					Graphic Log	Description	Completion Detail
meters	feet	Sample Location	Sample Number	Blow Counts	OM (ppm)	USCS Soil Class.			
24									
25									
26									
27									
28									
29						REFUSE		Wet, refuse (plastic and textile) with soil, 97°F	
30									
31									
32									
33									
34									
35									
36									
37									
38									
39						REFUSE		Refuse (textile), 103°F	
40						REFUSE		Refuse (textile), 96°F	
41									
42									
43									
44									
45									
46									
47									
48									
49									
50									
51						REFUSE		Moist, refuse (textile) with wood and soil, 105°F	
52									

STANDARD_LOG_04221001.10 - LRI 304 GAS WELLS JUN 2021.GPJ STD_LOG.GDT 10/31/21

25

30

35

40

45

50

8-inch Dia. SCH 80
PVC Slotted Pipe
2-inch Minus Round
Rock Backfill

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Bellevue, Washington 98005-1877

BORING NUMBER: WE-304

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LRI Landfill, Gas Wells, June 2021

JOB NUMBER: 04221001.10

Depth		Sample Information					Graphic Log	Description	Completion Detail
meters	feet	Sample Location	Sample Number	Blow Counts	OVM (ppm)	USCS Soil Class.			
53									
54									
55									
17	56								
57									
58									
18	59					REFUSE		Moist, refuse (plastic and textile) with soil, 112°F	
60									
61									
19	62								
63									
64									
65									
20	66								
67									
68									
21	69					REFUSE		Black-brown, moist, refuse (plastic and textile) with soil, 119°F	
70									
71									
22	72								
73									
74									
75									
23	76					REFUSE		Black-brown, moist, refuse (textile) with soil, 128°F	
77									
78									
24	79								
80									
81									

55

Centralizer

60

65

8-inch Dia. SCH 80
PVC Slotted Pipe

2-inch Minus Round
Rock Backfill

70

75

80

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Bellevue, Washington 98005-1877

BORING NUMBER: WE-304

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LRI Landfill, Gas Wells, June 2021

JOB NUMBER: 04221001.10

Depth		Sample Information					Graphic Log	Description	Completion Detail
meters	feet	Sample Location	Sample Number	Blow Counts	OVM (ppm)	USCS Soil Class.			
25	82								
	83					REFUSE		Black-brown, moist, refuse (plastic and textile), 129°F	
	84								
26	85								85
	86								
	87								
	88								
27	89								
	90								90
	91					REFUSE		Black-brown, moist, refuse (textile) with soil, 109°F	Centralizer
28	92								
	93								
	94								
29	95								95
	96								
	97								
	98								
30	99					REFUSE		Black-brown, moist, refuse (textile) with soil, 99°F	
	100								100
	101								8-inch Dia. SCH 80 PVC Slotted Pipe
31	102								2-inch Minus Round Rock Backfill
	103								
	104								
32	105								105
	106								
	107								
33	108					REFUSE		Black, moist, refuse (plastic and textile) with soil, 108°F	
	109								
	110								110

STANDARD_LOG_04221001.10 - LRI 304 GAS WELLS JUN 2021.GPJ STD_LOG.GDT 10/31/21

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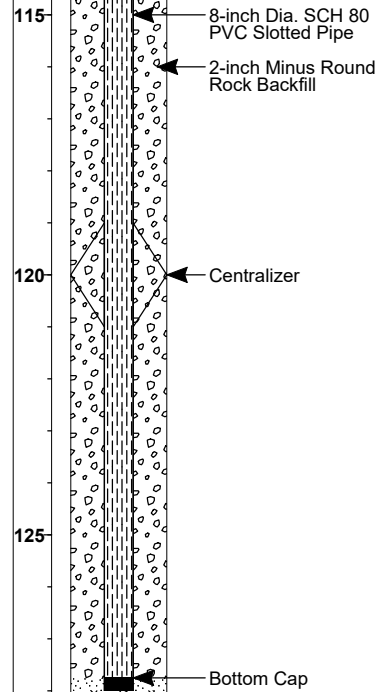
BORING NUMBER: WE-304

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LRI Landfill, Gas Wells, June 2021

JOB NUMBER: 04221001.10

Depth		Sample Information					Graphic Log	Description	Completion Detail
meters	feet	Sample Location	Sample Number	Blow Counts	QVM (ppm)	USCS Soil Class.			
34	111								
	112								
	113								
	114								
35	115								
	116								
	117								
36	118					REFUSE		Black, moist, refuse (textile) with soil, 119°F	
	119								
	120					REFUSE		Black, moist, refuse (textile) with soil, 105°F	
37	121								
	122								
	123								
	124								
38	125								
	126								
	127								
39	128								
	129								
	130					REFUSE		Saturated, refuse, 130°F	
40	131								
	132								
	133								
41	134								
	135								
	136								
	137								
42	138								
	139								



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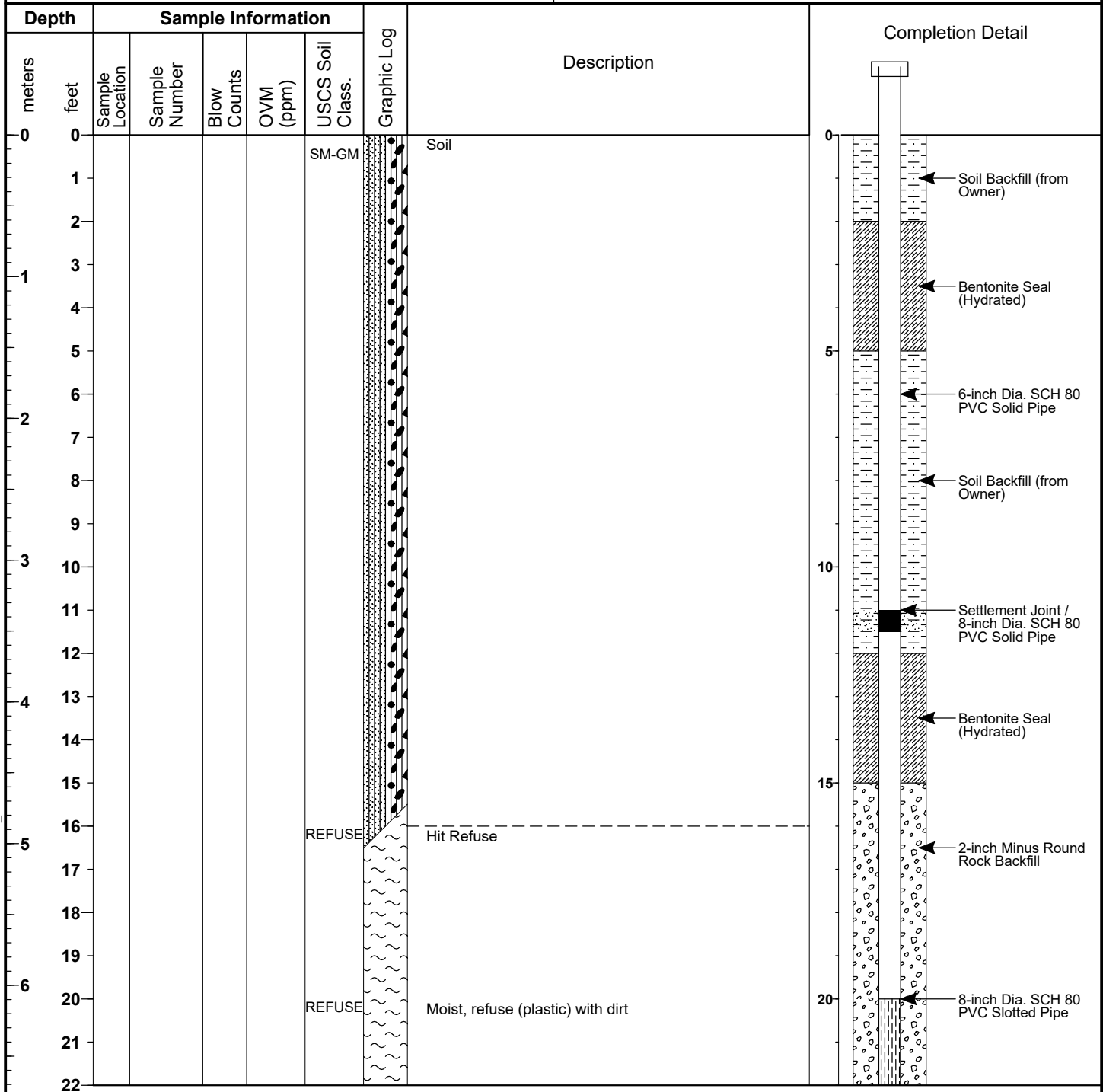
BORING NUMBER: WE-305

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LRI Landfill, Gas Wells, June 2021
30919 Meridian East
Graham, Washington

JOB NUMBER: 04221001.10

REMARKS:
Ecology Tag BLP-629. Drawing ID: 2021-03.



STANDARD_LOG_04221001.10 - LRI 304 GAS WELLS JUN 2021.GPJ STD_LOG.GDT 10/31/21

Drilling Company: **DBM Contractors, Inc.**

Drilling Method: **IMT AF-240**

Logged By: **R.Martinez**

Date Started: **6/23/21**

Date Ended: **6/23/21**

Boring Diameter: **36-inch**

Well Diameter: **8-inch**

Time Started: **11:33**

Time Ended: **12:29**

Total Depth: **60.5 ft.**

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BORING NUMBER: WE-305

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LRI Landfill, Gas Wells, June 2021

JOB NUMBER: 04221001.10

Depth		Sample Information					Graphic Log	Description	Completion Detail
meters	feet	Sample Location	Sample Number	Blow Counts	OVM (ppm)	USCS Soil Class.			
22									
7	23								
	24								
	25								
8	26								
	27					REFUSE		Black, moist, refuse (plastic and textiles), 83°F	
	28								
	29								
9	30								
	31								
	32								
10	33								
	34								
	35					REFUSE		Black, moist, refuse (plastic and textiles), 94°F	
11	36								
	37								
	38								
	39								
12	40								
	41								
	42					REFUSE		Black, moist, refuse (plastic and textiles), 101°F	
13	43								
	44								
	45								
14	46								
	47								
	48								

25

Centralizer

30

35

8-inch Dia. SCH 80 PVC Slotted Pipe

2-inch Minus Round Rock Backfill

40

45

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BORING NUMBER: WE-305

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LRI Landfill, Gas Wells, June 2021

JOB NUMBER: 04221001.10

Depth		Sample Information					Graphic Log	Description	Completion Detail
meters	feet	Sample Location	Sample Number	Blow Counts	OVM (ppm)	USCS Soil Class.			
15	49					REFUSE		Black, moist, refuse (plastic and textiles), 105°F	8-inch Dia. SCH 80 PVC Slotted Pipe 2-inch Minus Round Rock Backfill Centralizer Bottom Cap
	50								
	51								
	52					REFUSE		Black, moist, refuse (plastic and textiles), 101°F	
16	53								
	54								
	55								
17	56								
	57					REFUSE		Black, moist, refuse (plastic and textiles), 109°F	
	58								
18	59								
	60								
	61					REFUSE		Black, moist, refuse (plastic and textiles), 105°F	
19	62								
	63								
	64								
	65								
20	66								
	67								
	68								
21	69								
	70								
	71								
22	72								
	73								
	74								

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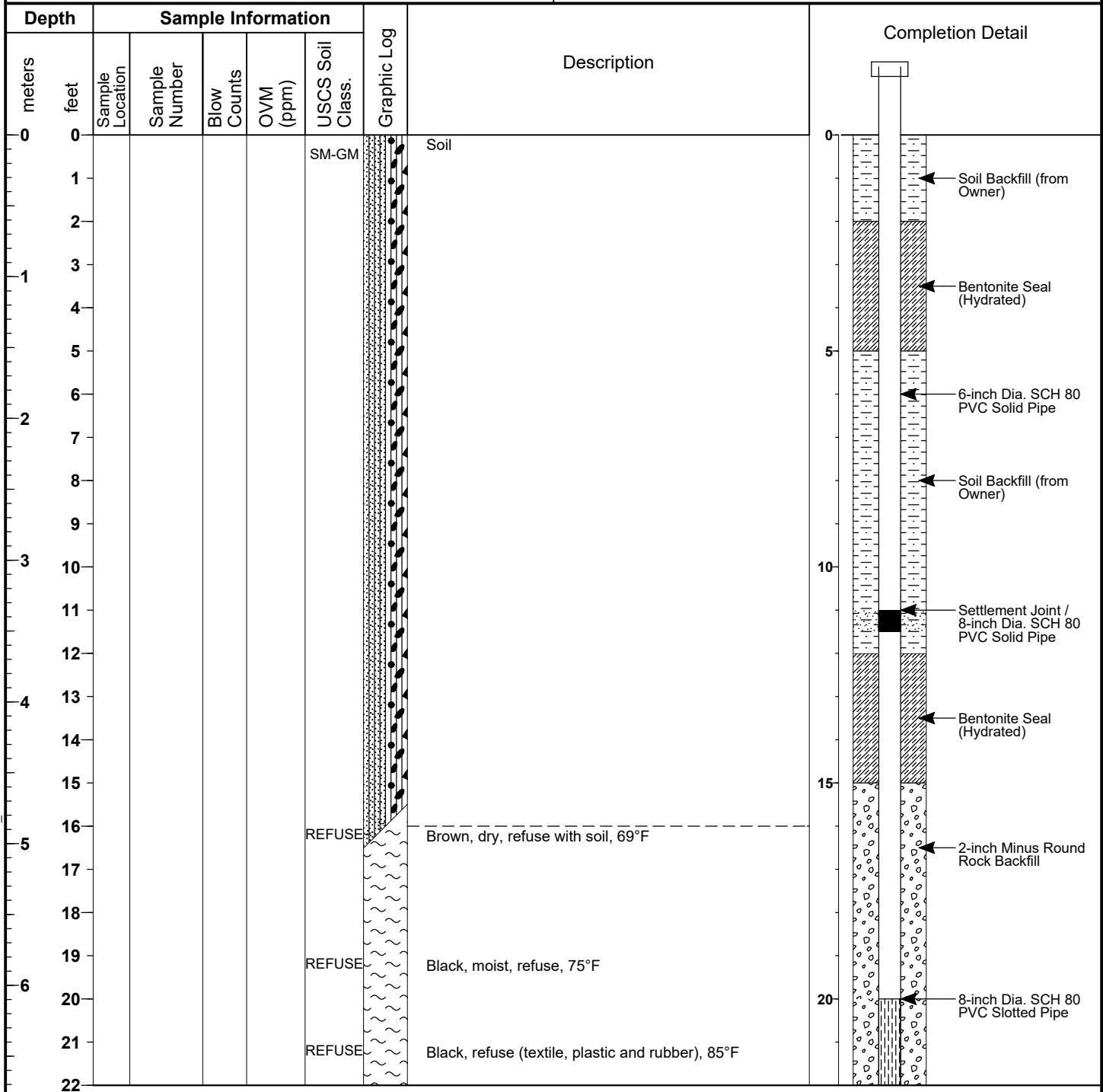
BORING NUMBER: WE-306

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LRI Landfill, Gas Wells, June 2021
30919 Meridian East
Graham, Washington

JOB NUMBER: 04221001.10

REMARKS:
Ecology Tag BLP-628. Drawing ID: 2021-02.



Drilling Company: **DBM Contractors, Inc.**

Drilling Method: **IMT AF-240**

Logged By: **R.Martinez**

Date Started: **6/23/21**

Date Ended: **6/23/21**

Boring Diameter: **36-inch**

Well Diameter: **8-inch**

Time Started: **08:34**

Time Ended: **09:25**

Total Depth: **60.0 ft.**

STANDARD_LOG_04221001.10 - LRI 304 GAS WELLS JUN 2021.GPJ STD_LOG.GDT 10/31/21

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BORING NUMBER: WE-306

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LRI Landfill, Gas Wells, June 2021

JOB NUMBER: 04221001.10

Depth		Sample Information					Graphic Log	Description	Completion Detail
meters	feet	Sample Location	Sample Number	Blow Counts	OVM (ppm)	USCS Soil Class.			
22									
7	23								
	24								
	25								
	26								
8	27								
	28								
	29					REFUSE		Black, moist, refuse (plastic and rubber), 82°F	
	30								
	31								
	32								
10	33								
	34								
	35								
11	36								
	37					REFUSE		Black, moist, refuse (plastic and textile), 109°F	
	38								
	39								
12	40								
	41					REFUSE		Black, moist, refuse (plastic), 96°F	
	42								
13	43								
	44								
	45								
14	46					REFUSE		Black, moist, refuse (plastic and textile), 109°F	
	47								
	48								

Centralizer

8-inch Dia. SCH 80 PVC Slotted Pipe

2-inch Minus Round Rock Backfill

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BORING NUMBER: WE-306

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LRI Landfill, Gas Wells, June 2021

JOB NUMBER: 04221001.10

Depth		Sample Information					Graphic Log	Description	Completion Detail
meters	feet	Sample Location	Sample Number	Blow Counts	OVM (ppm)	USCS Soil Class.			
15	49								
	50					REFUSE		Black, moist, refuse (plastic and textile), 104°F	8-inch Dia. SCH 80 PVC Slotted Pipe 2-inch Minus Round Rock Backfill Centralizer Bottom Cap
	51								
	52					REFUSE		Black, moist, refuse (plastic and textile), 106°F	
16	53								
	54								
	55								
17	56					REFUSE		Black, refuse, 97°F	
	57								
	58								
18	59								
	60					REFUSE		Black, refuse	
	61								
19	62								
	63								
	64								
	65								
20	66								
	67								
	68								
21	69								
	70								
	71								
22	72								
	73								
	74								

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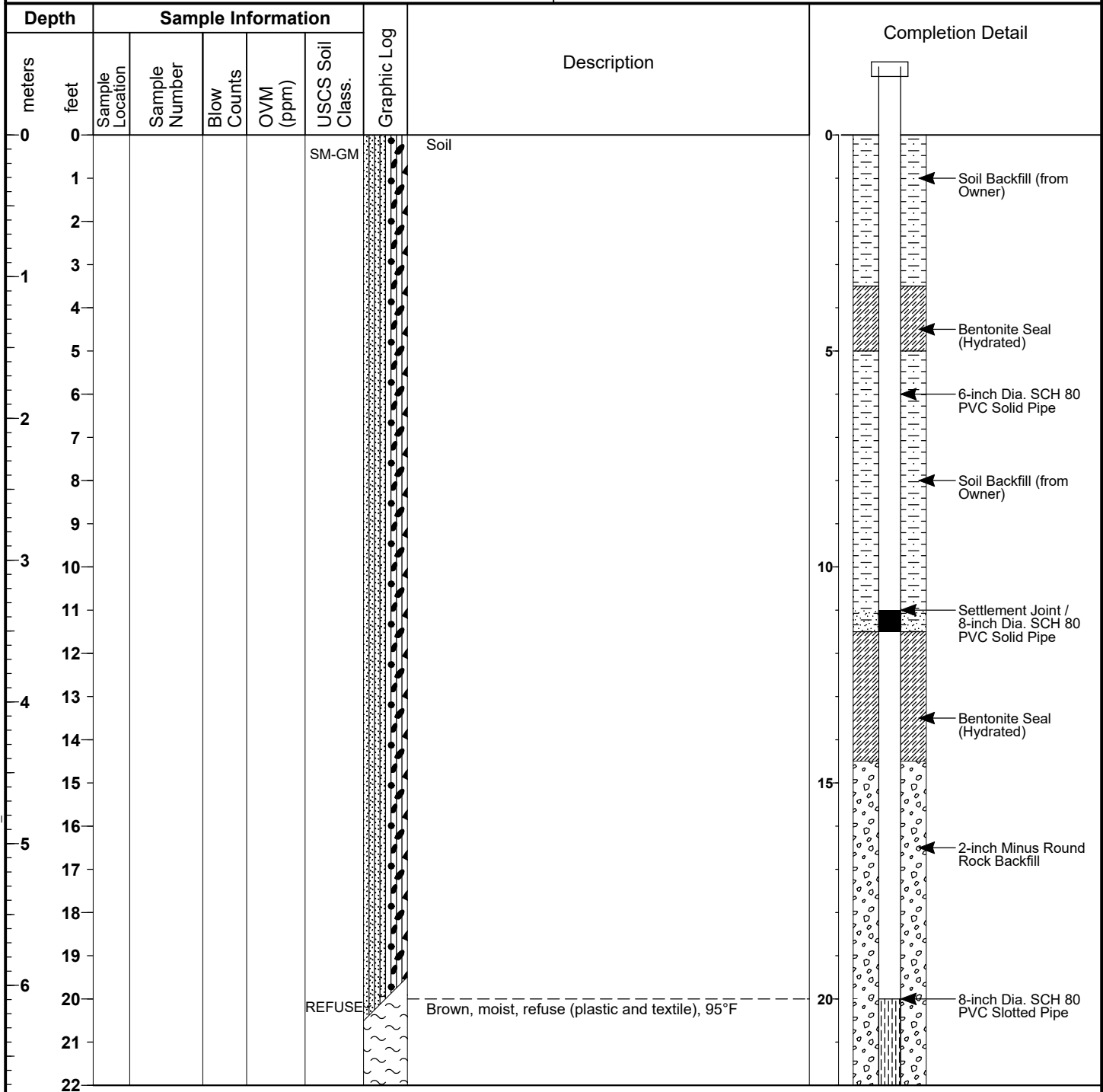
BORING NUMBER: WE-307

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LRI Landfill, Gas Wells, June 2021
30919 Meridian East
Graham, Washington

JOB NUMBER: 04221001.10

REMARKS:
Ecology Tag BLP-031. Drawing ID: 2021-01.



Drilling Company: **DBM Contractors, Inc.**

Drilling Method: **IMT AF-240**

Logged By: **R.Martinez**

Date Started: **6/24/21**

Date Ended: **6/24/21**

Boring Diameter: **36-inch**

Well Diameter: **8-inch**

Time Started: **12:20**

Time Ended: **14:00**

Total Depth: **57.0 ft.**

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BORING NUMBER: WE-307

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LRI Landfill, Gas Wells, June 2021

JOB NUMBER: 04221001.10

STANDARD_LOG_04221001.10 - LRI 304 GAS WELLS JUN 2021.GPJ STD_LOG.GDT 10/31/21

Depth		Sample Information					Graphic Log	Description	Completion Detail
meters	feet	Sample Location	Sample Number	Blow Counts	OVM (ppm)	USCS Soil Class.			
22									
7	23								
	24								
	25								
	26								
8	27								
	28								
	29								
9	30					REFUSE		Black, moist, refuse (plastic and textile), 94°F	
	31								
	32								
10	33								
	34								
	35								
11	36								
	37								
	38					REFUSE		Black, moist, refuse (plastic and textile), 92°F	
12	39								
	40								
	41								
	42								
13	43								
	44								
	45					REFUSE		Black, moist, refuse (plastic), 102°F	
14	46								
	47								
	48								

25

30

35

40

45

8-inch Dia. SCH 80
PVC Slotted Pipe

2-inch Minus Round
Rock Backfill

Centralizer

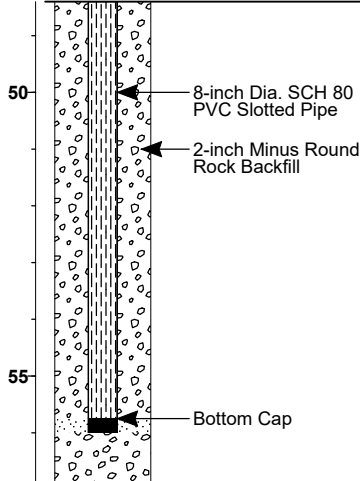
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BORING NUMBER: WE-307

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LRI Landfill, Gas Wells, June 2021

JOB NUMBER: 04221001.10

Depth		Sample Information					Graphic Log	Description	Completion Detail
meters	feet	Sample Location	Sample Number	Blow Counts	QVM (ppm)	USCS Soil Class.			
15	49							Black, moist, refuse (plastic and textile), 106°F	 8-inch Dia. SCH 80 PVC Slotted Pipe 2-inch Minus Round Rock Backfill Bottom Cap
	50								
	51								
	52								
16	53					REFUSE			
	54								
	55								
17	56								
	57					REFUSE			
	58								
18	59							Black, saturated, refuse, boring collapsing, 119°F	
	60								
	61								
	62								
19	63								
	64								
	65								
20	66								
	67								
	68								
21	69								
	70								
	71								
22	72								
	73								
	74								

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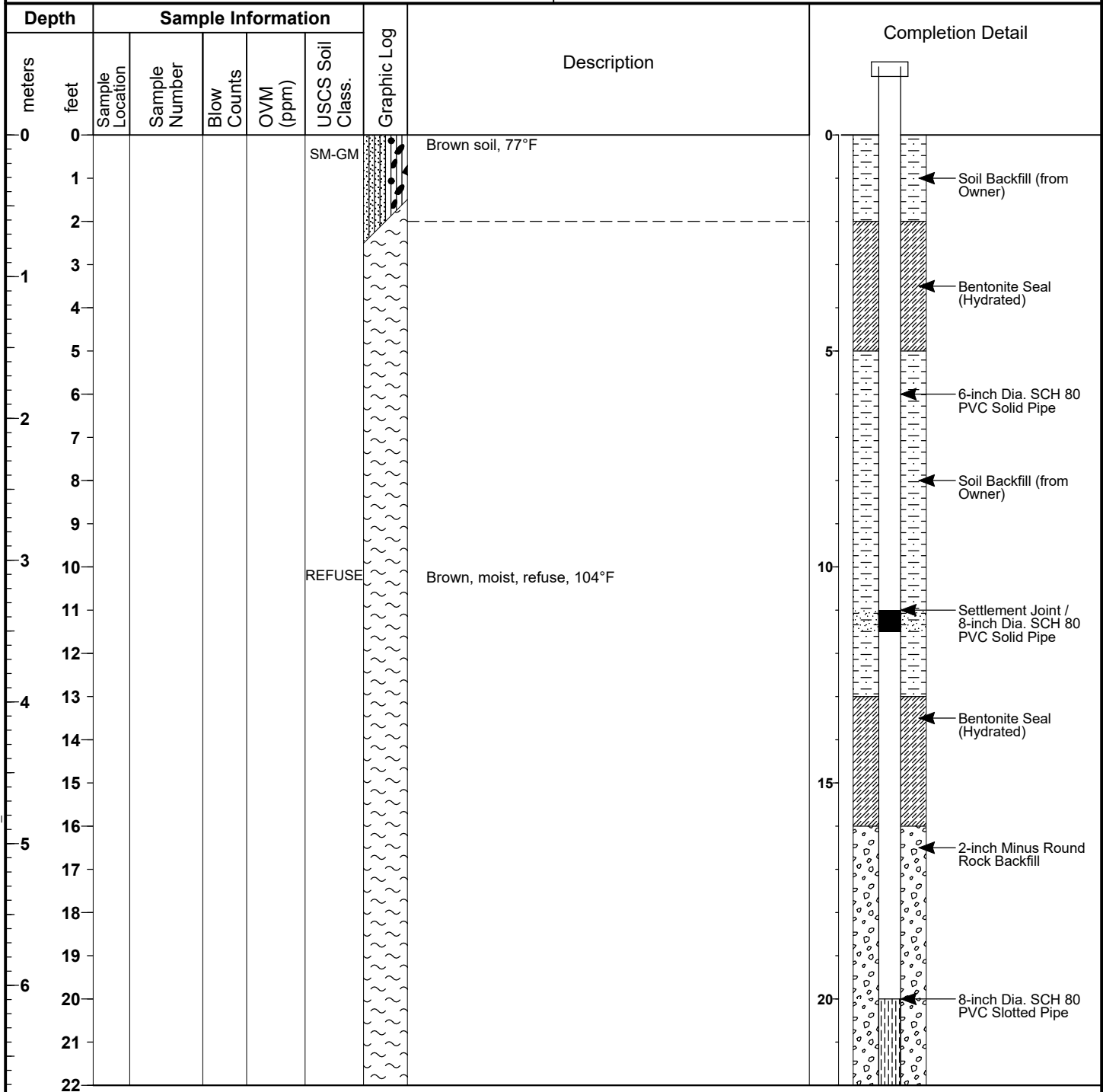
BORING NUMBER: WE-308

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LRI Landfill, Gas Wells, June 2021
30919 Meridian East
Graham, Washington

JOB NUMBER: 04221001.10

REMARKS:
Ecology Tag BKM-907. Drawing ID: 2021-21.



Drilling Company: **DBM Contractors, Inc.**

Drilling Method: **IMT AF-240**

Logged By: **R.Martinez**

Date Started: **7/1/21**

Date Ended: **7/1/21**

Boring Diameter: **36-inch**

Well Diameter: **8-inch**

Time Started: **12:38**

Time Ended: **13:20**

Total Depth: **50.0 ft.**

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BORING NUMBER: WE-308

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LRI Landfill, Gas Wells, June 2021

JOB NUMBER: 04221001.10

Depth		Sample Information					Graphic Log	Description	Completion Detail
meters	feet	Sample Location	Sample Number	Blow Counts	OVM (ppm)	USCS Soil Class.			
22									
7	23								
	24								
	25								
	26								
8	27								
	28								
	29								
9	30								
	31								
	32								
10	33								
	34								
	35								
11	36								
	37								
	38								
	39								
12	40								
	41								
	42					REFUSE		Brown, moist, refuse (plastic and textile), 105°F	
13	43								
	44								
	45								
14	46					REFUSE		Brown, moist, refuse (plastic and textile), 109°F	
	47								
	48								

25

30

35

40

45

Centralizer

8-inch Dia. SCH 80
PVC Slotted Pipe

2-inch Minus Round
Rock Backfill

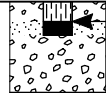
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BORING NUMBER: WE-308

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LRI Landfill, Gas Wells, June 2021

JOB NUMBER: 04221001.10

Depth		Sample Information					Graphic Log	Description	Completion Detail
meters	feet	Sample Location	Sample Number	Blow Counts	OVM (ppm)	USCS Soil Class.			
15	49								 Bottom Cap
	50					REFUSE		Brown, moist, refuse (plastic and textile), 108°F	
	51								
	52								
16	53								
	54								
	55								
17	56								
	57								
	58								
18	59								
	60								
	61								
19	62								
	63								
	64								
	65								
20	66								
	67								
	68								
21	69								
	70								
	71								
22	72								
	73								
	74								

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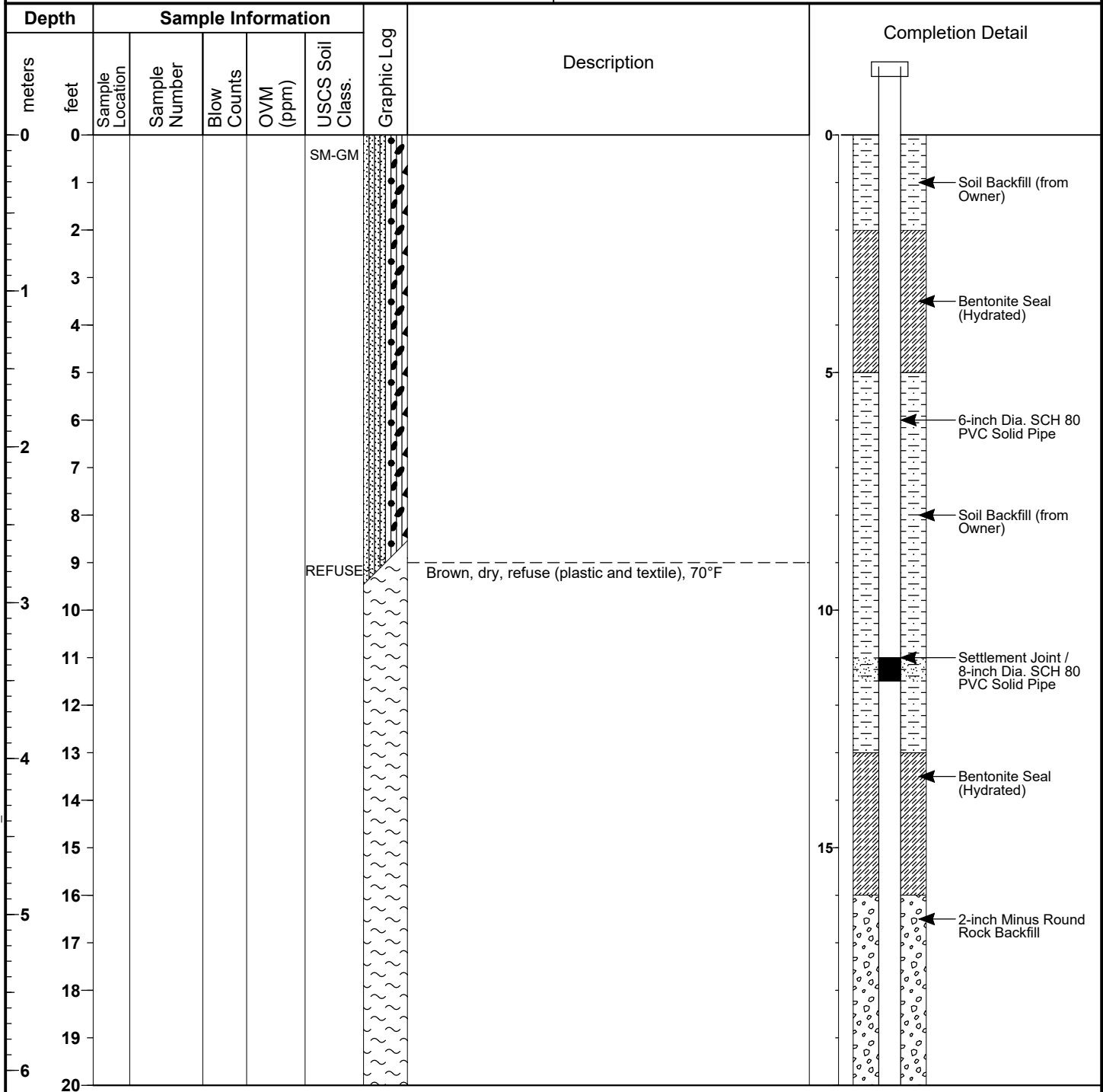
BORING NUMBER: WE-309

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LRI Landfill, Gas Wells, June 2021
30919 Meridian East
Graham, Washington

JOB NUMBER: 04221001.10

REMARKS:
Ecology Tag BKM-906. Drawing ID: 2021-20.



Drilling Company: **DBM Contractors, Inc.**

Drilling Method: **IMT AF-240**

Logged By: **R.Martinez**

Date Started: **7/1/21**

Date Ended: **7/1/21**

Boring Diameter: **36-inch**

Well Diameter: **8-inch**

Time Started: **11:22**

Time Ended: **12:16**

Total Depth: **51.5 ft.**

STANDARD_LOG_04221001.10 - LRI 304 GAS WELLS JUN 2021.GPJ STD_LOG.GDT 10/31/21

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BORING NUMBER: WE-309

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LRI Landfill, Gas Wells, June 2021

JOB NUMBER: 04221001.10

Depth		Sample Information					Graphic Log	Description	Completion Detail
meters	feet	Sample Location	Sample Number	Blow Counts	OVM (ppm)	USCS Soil Class.			
20									20
21						REFUSE		Black, moist, refuse, 103°F	8-inch Dia. SCH 80 PVC Slotted Pipe 2-inch Minus Round Rock Backfill Centralizer
22									
23									
24									
25									
26									
27									
28									
29									
30									
31						REFUSE		Black, moist, refuse, 104°F	
32									
33									
34									
35									
36									
37									
38									
39									
40									
41						REFUSE		Brown, moist, refuse (plastic), 99°F	
42									
43						REFUSE		Brown, moist, refuse (plastic), 109°F	
44									

STANDARD_LOG_04221001.10 - LRI 304 GAS WELLS JUN 2021.GPJ STD_LOG.GDT 10/31/21

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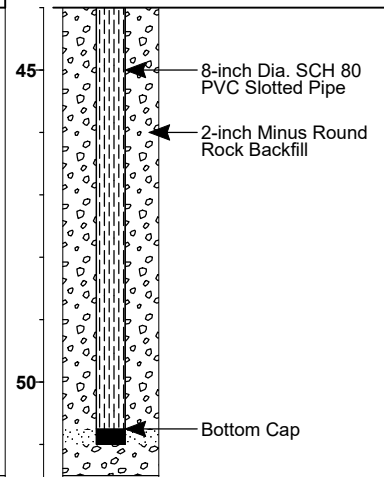
BORING NUMBER: WE-309

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LRI Landfill, Gas Wells, June 2021

JOB NUMBER: 04221001.10

Depth		Sample Information					Graphic Log	Description	Completion Detail
meters	feet	Sample Location	Sample Number	Blow Counts	OVM (ppm)	USCS Soil Class.			
44									
45									
14	46								
47									
48						REFUSE		Brown, moist, refuse (plastic), 115°F	
15	49								
50									
51									
52						REFUSE		Black, moist, refuse (plastic), 103°F	
16	53								
54									
55									
17	56								
57									
58									
18	59								
60									
61									
19	62								
63									
64									
65									
20	66								
67									
68									



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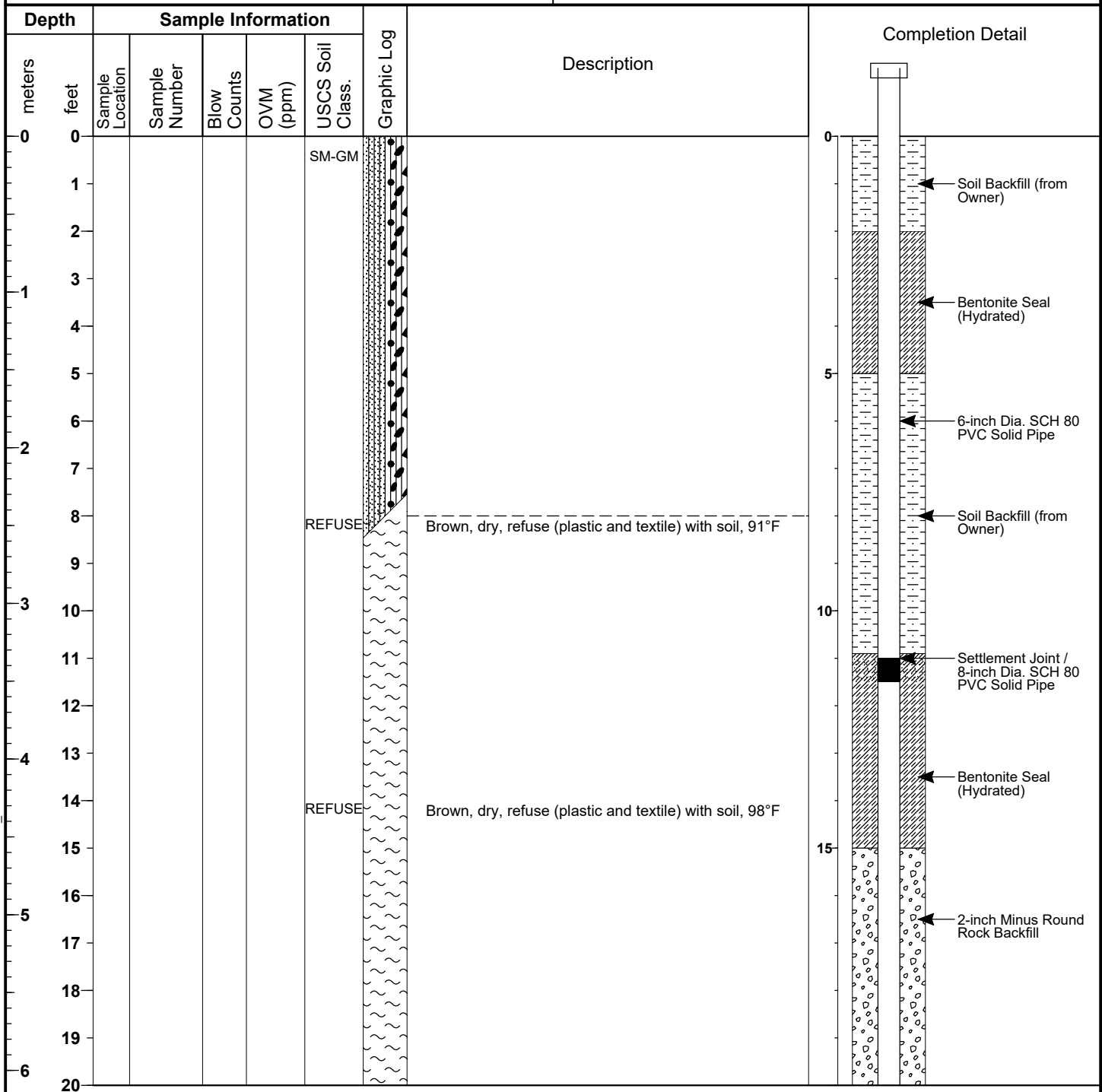
BORING NUMBER: WE-310

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LRI Landfill, Gas Wells, June 2021
30919 Meridian East
Graham, Washington

JOB NUMBER: 04221001.10

REMARKS:
Ecology Tag BKM-908. Drawing ID: 2021-19.



Drilling Company: **DBM Contractors, Inc.**

Drilling Method: **IMT AF-240**

Logged By: **R.Martinez**

Date Started: **7/2/21**

Date Ended: **7/2/21**

Boring Diameter: **36-inch**

Well Diameter: **8-inch**

Time Started: **12:32**

Time Ended: **13:16**

Total Depth: **52.0 ft.**

STANDARD_LOG_04221001.10 - LRI 304 GAS WELLS JUN 2021.GPJ STD_LOG.GDT 10/31/21

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BORING NUMBER: WE-310

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LRI Landfill, Gas Wells, June 2021

JOB NUMBER: 04221001.10

Depth		Sample Information					Graphic Log	Description	Completion Detail
meters	feet	Sample Location	Sample Number	Blow Counts	OVM (ppm)	USCS Soil Class.			
20									20
21									
22									
7 23									
24									
25						REFUSE		Brown, dry, refuse (plastic) with soil, 100°F	25
8 26									
27									
28									
29									
9 30									
31									
32									
10 33									
34									
35									
11 36									
37									
38									
12 39						REFUSE		Black, dry, refuse (plastic and textile) with soil, 103°F	
40									40
41									
42									
13 43									
44									

8-inch Dia. SCH 80
PVC Slotted Pipe
2-inch Minus Round
Rock Backfill

Centralizer

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BORING NUMBER: WE-310

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LRI Landfill, Gas Wells, June 2021

JOB NUMBER: 04221001.10

Depth		Sample Information					Graphic Log	Description	Completion Detail
meters	feet	Sample Location	Sample Number	Blow Counts	OVM (ppm)	USCS Soil Class.			
44									
45									
14	46								
47						REFUSE		Brown, dry, refuse (plastic) with soil, 88°F	
48									
15	49								
50									
51									
52						REFUSE		Brown, dry, refuse (plastic) with soil, 96°F	
16	53								
54									
55									
17	56								
57									
58									
18	59								
60									
61									
19	62								
63									
64									
65									
20	66								
67									
68									

