

Third Quarter 2022 Monitoring Report

LRI Landfill Graham, Washington

Pierce County Recycling, Composting
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SCS ENGINEERS

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This document is the Third Quarter 2022 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 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
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GROUNDWATER MONITORING

Third quarter 2022 groundwater samples were collected on September 13 and 14, 2022. Nine monitoring wells (MW-1A, MW-2A, MW-3, MW-4, MW-5A, MW-6, MW-7, MW-9, and MW-10) and eleven leak detection collection locations (LDCS-1, LDCS-2A, LDCS-2B, LDCS-3A, LDCS-4A, LDCS-4B, LDCS-5, LDCS-6, LDCS-7, LDCS-8, and LDCS-9A) were sampled this quarter. In addition, one leachate sample was collected from Cell 8. Water level elevations were measured on September 13 and 14, 2022. Field quality control samples consisted of one field blank 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 Eurofins Scientific 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. 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.

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, total organic carbon (TOC)
- Plot 2 — alkalinity, sulfate, total dissolved solids (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 unless otherwise noted. 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	**	**	**	0.013	0.0053	0.0077	0.0062
Iron, Dissolved	0.30	1.4	0.66	*	*	*	*	*
Manganese, Dissolved	0.05	0.25	0.31	0.28	0.23	0.14	0.21	0.28
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								

The 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 (ranging between 0.14 and 0.28 mg/L) were reported at downgradient wells MW-2A, MW-3, MW-4, MW-5A (dupl.), and MW-6, and higher concentrations of ammonia were reported at MW-7 (1.2 mg/L) and background well MW-10 (0.73 mg/L). Since ammonia was reported at background well MW-10, the 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, the cation-anion balance evaluation exceeded the appropriate threshold for background monitoring well MW-10. 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 increases in specific conductance (conductivity), total dissolved solids, alkalinity, sodium, potassium, and total organic carbon.

LDCS Maintenance. No significant maintenance activities occurred this 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.

Conductivity data from the LDCS sumps trended within typical historical ranges during the third quarter of 2022.

LDCS Quarterly Monitoring. Samples were collected using 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. The sample from LDCS-8 was collected as a grab sample from the dewatering pump discharge spigot and the two samples from LDCS-9A were collected from the temporary HDPE sump using a peristaltic pump.

LDCS-1 water quality results included a low-level detection of 1-4-dichlorobenzene at 1.0 µg/L. Similar low-level detections of 1-4-dichlorobenzene have been reported at this location in the past. Additionally, an elevated concentration of dissolved iron (40.0 mg/L) was reported, which is likely due to the presence of iron bacteria within the sump. Primary leachate indicator parameters, acetone and 2-butanone, were not detected and secondary leachate indicator parameters, ammonia and chloride, remained low. Therefore, the detections reported above do not appear to be the result of leachate.

LDCS-2A water quality results included a low-level detection of 1-4, dichlorobenzene at 0.56 µg/L. In addition, elevated concentrations of ammonia (19.0 mg/L) and TOC (9.8 mg/L) were reported.

However, concentrations of chloride (7.0 mg/L), sodium (29 mg/L), and potassium (9.5 mg/L) remained low and no detections of acetone or 2-butanone were reported. To further investigate the elevated ammonia and TOC concentrations, LDCS-2A was resampled on October 18, 2022 (along with LDCS-2B as noted below). The October sample results for LDCS-2A included no VOC detections and typical concentrations of dissolved iron (0.87 mg/L) and TOC (3.5 mg/L).

LDCS-2B water quality results included reported detections of acetone (78 µg/L) and carbon disulfide (1.3 µg/L). In addition, elevated concentrations of iron (56 mg/L), ammonia (29 mg/L) and TOC (90 mg/L) and a slightly elevated of chloride (22 mg/L) were reported. Similar to the LDCS-2A results, concentrations of sodium (22 mg/L) and potassium (8.4 mg/L) were typical of previous results. To further investigate the VOC detections and elevated concentrations noted above, LDCS-2B was resampled on October 18, 2022. The October results for LDCS-2B included no VOC detections and typical concentrations of iron (3.9 mg/L), ammonia (0.19 mg/L), chloride (4.7 mg/L), and TOC (4.5 mg/L).

The LDCS sumps at Cells 1, 2A and 2B include large diameter vertical riser pipes that tend to produce somewhat stagnant water that is susceptible to the formation of bacteria. Water quality samples from these three locations are collected with disposable bailers. The sampling process tends to stir-up solids that are present at the bottom of the sumps. The field sampling data sheets for these locations often include notes regarding the presence of suspended solids in the samples. For the LDCS water quality monitoring in October, the LDCS-2A sample was carefully collected from the top of the water column with a disposable bailer and the sample from LDCS-2B was collected at the discharge pipe from the dewatering pump. The attempted sample from LDCS-2B with a disposable bailer included a large portion of suspended solids. However, the sample collected at the discharge pipe from the dewatering pump was visibly clear. Therefore, collecting samples by using the dewatering pumps at LDCS-1, -2A and -2B may provide water quality results that are more representative of the groundwater at these locations.

LDCS-3A water quality results display a general slowly increasing trend of alkalinity and TDS (see the time trend plot in Attachment G). However, the leachate indicator parameters remained low or non-detect, therefore, the water quality trend noted above does not appear to be the result of leachate.

LDCS-4A and LDCS-4B water quality results display a general slowly increasing trend of chloride (see the time trend plots in Attachment G). However, the remaining leachate indicator parameters remained low or non-detect, therefore, the water quality trends noted above do not appear to be the result of leachate.

LDCS-5 water quality results continue to display decreasing trends in 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.

LDCS-6 water quality results display a slightly increasing trend of chloride (see the time trend plots in Attachment G). However, the remaining leachate indicator parameters remained low or non-detect, therefore, the water quality trend noted above does not appear to be the result of leachate.

The LDCS-7 and LDCS-8 water quality results include fluctuating concentrations of alkalinity, chloride, sulfate, TDS, TOC, and dissolved calcium, iron, magnesium, manganese and sodium. Since elevated concentrations of these general chemistry parameters were detected at LDCS-7 and LDCS-8 prior to the placement of refuse in the cells, 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 samples this quarter.

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. During the third quarter, construction stormwater treatment using Chitosan Sand Enhanced Filtration (CESF) was utilized in July and industrial stormwater treatment using CESF was utilized in August.

Discharge Monitoring Reports (DMR's) were submitted to Ecology on a monthly (Construction Permit) and quarterly (Industrial Permit) basis. Copies of the third quarter 2022 DMR's are included in Attachment I. No surface water benchmarks or water quality effluent limits were exceeded this quarter.

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. 2022 Leachate Volume Data

Month	Leachate Trucked Offsite for Proper Disposal (gallons)	Monthly Rainfall (inches)
January	4,742,413	7.69
February	3,328,802	3.06
March	4,768,632	2.86
April	3,957,053	2.12
May	3,450,037	3.93
June	4,022,924	4.80
July	3,336,509	0.17
August	2,995,414	0.01
September	2,855,226	0.0
Totals	33,457,010	24.64
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 28, August 20, and September 27 using a Landtec GEM2000 portable gas monitor. The results of the performance probe monitoring are included in Exhibit 3.

Exhibit 3. 2022 Landfill Gas Probe Monitoring Summary (Percent Methane) Performance Probes

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 13	0.0	5.9	0.0	0.0	0.0	2.7	7.2	0.0	0.0	0.0	0.0	0.0	0.0
February 24	0.0	0.8	0.0	0.0	0.0	0.0	2.3	0.0	0.0	0.0	0.0	0.0	0.0
March 17	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0
April 8	0.0	0.0	0.0	0.0	0.0	1.2	1.4	0.0	0.0	0.0	0.0	0.0	0.0
May 20	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
June 7	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0
July 28	3.7	1.3	0.0	0.0	0.0	15.1	32.1	0.0	0.0	0.0	0.0	2.0	0.0
August 20	0.0	0.0	0.0	0.0	0.0	0.5	0.9	0.0	11.2	0.0	0.0	0.0	0.0
September 27	4.4	1.9	0.0	0.0	0.0	8.0	0.0	0.0	24.8	0.3	0.0	2.1	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 .													

Five new landfill gas monitoring probes were installed closer to the property boundary on the east and west sides of the landfill on September 12 and 13, 2022. The new probes were monitored on September 27 and the methane measurements were less than the lower explosive limit (LEL) of five percent by volume at each probe (see Exhibit 4).

Exhibit 4. 2022 Landfill Gas Probe Monitoring Summary (Percent Methane)
Property Boundary Probes

Monitoring Date	GP-17	GP-18	GP-19	GP-20	GP-21
September 27	0.0	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 August 23. The office, maintenance building and scale house were tested with a portable flame ionization detector (MicroFID). No significant levels of methane were recorded.

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

LANDFILL GAS EXTRACTION WELL CONSTRUCTION

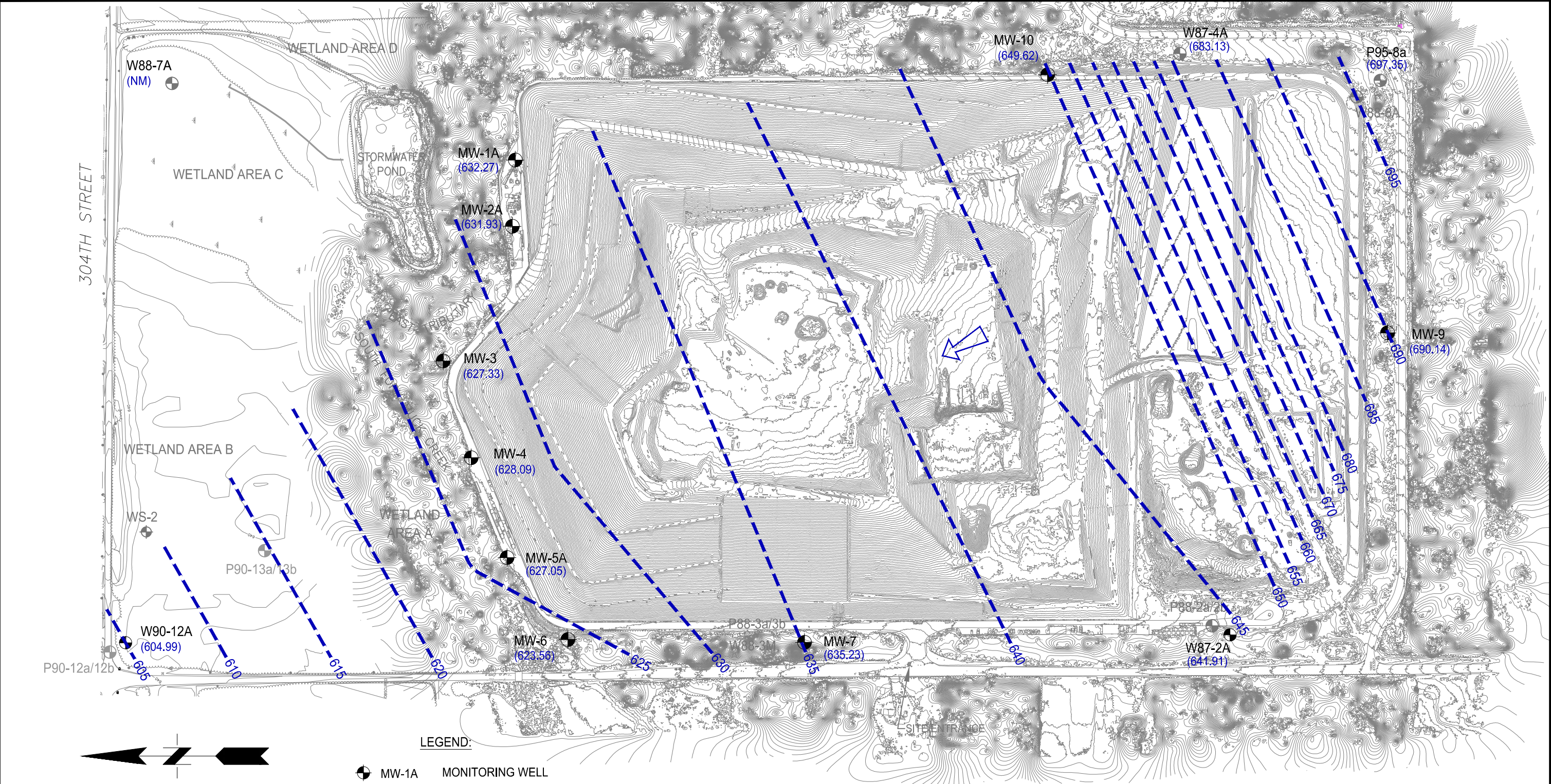
Twenty-one (21) new landfill gas extraction wells were installed at the landfill between from June 16 and July 12, 2022. A copy of the well installation report is included in Attachment J.

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
- (641.91) GROUNDWATER ELEVATION (IN FEET ABOVE MSL)
- INFERRED GROUNDWATER FLOW DIRECTION
- (NM) NOT MEASURED

Attachment B

Groundwater Data Summary Tables

**Table 1. Groundwater Level Elevations
December 2022
LRI Landfill, Pierce County, Washington**

Location	Well Casing Elevation (ft)	Depth to Water (ft)	Water Level Elevation (ft, NGVD29)
Wells			
W87-2A	664.01	22.10	640.40
W88-3M	656.48	15.40	639.40
W87-4A	693.29	10.16	681.74
W88-7A	632.51	NM*	--
W88-8A	721.05	NM*	--
W90-12A	640.84	35.85	602.75
MW-1A	652.57	20.30	632.86
MW-2A	651.93	20.00	632.20
MW-3	637.41	10.08	625.62
MW-4	652.37	24.28	628.09
MW-5A	655.55	28.50	627.05
MW-6	635.71	12.15	621.25
MW-7	656.03	20.80	633.90
MW-9	701.77	11.63	687.47
MW-10	674.17	28.75	642.75
Piezometers			
P13-14A	665.96	24.91	646.03
P88-2A	663.96	NM*	--
P88-2B	663.48	NM*	--
P88-3A	656.20	18.85	645.59
P88-3B	655.98	22.60	641.57
P95-8A	722.07	24.72	696.42
P90-12A	640.79	11.75	636.94
P90-12B	640.73	10.10	638.11
P90-13A	645.19	NM*	--
P90-13B	643.63	NM*	--
GP-1P	652.00	20.11	635.94
GP-2P	658.61	14.20	643.93
GP-3P	658.51	12.09	650.76
GP-4P	662.01	14.24	652.46
GP-9P	674.03	15.62	663.25
GP-14P		16.08	
GP-15P		19.19	
GP-16P	689.51	22.24	667.27
GP-17P		31.32	
P-1		4.15	
P-2		12.98	
P-3		12.98	
P21-2		22.71	
South Creek			
SWSC-1	632.68	3.55	629.13
SWSC-2	629.98	NM*	--
Leak Detection System			
LDCS-1	657.26	27.10	630.16
LDCS-2A	659.24	29.48	629.76
LDCS-2B	661.70	27.96	633.74

Notes:

NM = not measured

-- = not applicable

All measurements taken on September 13 & 14, 2022

* = Water level wells W88-7A, P88-2A, P88-2B, P90-13A, and P90-13B were not located. Water levels for W88-8A and SWSC-2 were not measured as they were dry.

**Table 2. Field Parameters
Third Quarter 2022
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	304-091322-01	9/13/2022	DP	6.48	165	14.4
MW-2A	304-091322-03	9/13/2022	DP	7.02	275	14.4
MW-3	304-091322-05	9/13/2022	DP	7.02	333	11.2
MW-4	304-091422-20	9/14/2022	SP	7.50	347	14.3
MW-5A	304-091322-09	9/13/2022	DP	7.25	290	13.0
MW-6	301-091322-07	9/13/2022	DP	7.50	310	10.8
MW-7	304-091322-13	9/13/2022	DP	7.49	366	11.3
MW-9	304-091422-17	9/14/2022	DP	6.38	127	10.5
MW-10	304-091322-15	9/13/2022	DP	6.27	262	13.3
Leak Detection System						
LDCS-1	304-091322-10	9/13/2022	DB	6.25	570	21.3
LDCS-2A	304-091322-08	9/13/2022	DB	6.40	900	22.2
LDCS-2B	304-091322-06	9/13/2022	DB	6.47	1008	21.2
LDCS-3A	304-091322-04	9/13/2022	DP	6.23	929	21.3
LDCS-4A	304-091322-12	9/13/2022	DP	6.34	887	23.8
LDCS-4B	304-091322-14	9/13/2022	DP	6.42	1,018	25.3
LDCS-5	304-091422-22	9/14/2022	DP	6.48	1,077	25.7
LDCS-6	304-091422-18	9/14/2022	DP	6.51	1,144	25.5
LDCS-7	304-091322-02	9/14/2022	DP	6.02	869	26.0
LDCS-8	304-091422-16	9/14/2022	GB	6.18	1,235	22.4
LDCS-9	304-090922-01	9/9/2022	GB	6.70	500	17.5
LDCS-9	304-092922-01	9/29/2001	GB	6.42	555	18.4
Leachate Collection System						
Leachate, Cell 8	304-091422-19	9/14/2022	GB	7.76	209,993	26.3

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

SP = submersible pump

SU = standard units

μS/cm = microsiemens per centimeter

**Table 3. Inorganic Parameters
Third Quarter 2022
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	0.20	0.50	0.20	10	1.0	4.0
WAC 173-200 Criteria	—	—	250	10	250	500	—	—
Prediction Limit	—	—	—	6.4	—	—	—	—
Monitoring Wells								
MW-1A	93	*	1.8	*	2.8	130	*	*
MW-2A	130	0.15	3.1	*	15.0	180	*	*
MW-3	140	0.15	3.7	*	33	210	1.1	*
MW-4	170	0.28	3.4	*	10	200	*	4.4
MW-5A	150	*	2.3	*	7	180	*	*
MW-6	160	0.14	4.9	*	7.1	180	*	*
MW-7	190	1.20	3.2	*	3.1	210	*	*
(BG) MW-9	70	*	1.8	*	1.8	120	*	*
(BG) MW-10	110	0.73	6.6	3.1	6.3	170	*	*
Leak Detection System								
LDCS-1	270	*	4.5	*	5.8	340	16	*
LDCS-2A	430	19	7.0	*	37	540	9.8	*
LDCS-2B	470	29	22	*	60	540	90	*
LDCS-3A	420	*	4.1	*	59	550	2.4	*
LDCS-4A	350	*	20	*	67	500	6.5	*
LDCS-4B	380	0.57	26	*	96	600	5.2	*
LDCS-5	440	0.68	26	*	72	570	6.9	*
LDCS-6	500	0.20	21	*	76	610	6.7	*
LDCS-7	430	*	6.8	*	20	520	5.0	*
LDCS-8	580	*	20	*	49	680	7.6	*
LDCS-9 (background #1)	230	0.14	3.5	*	28	340	1.0	*
LDCS-9 (background #2)	250	*	3.8	2.8	48	370	*	*
Leachate Collection System								
Leachate, Cell 8	8000	1500	2600	*	64	10000	1400	*

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

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

— = Not applicable or not performed

BG = Background

B = compound was detected in the method blank and the sample

Table 4. WAC 173-351 Appendix I Metals
Third Quarter 2022
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	—	*	—	*	—	0.021	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	0.014
MW-2A	—	*	—	*	—	0.015	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*
MW-3	—	*	—	*	—	0.012	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*
MW-4	—	*	—	0.013	—	0.019	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	0.022
MW-5A	—	*	—	0.005	—	0.011	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*
MW-6	—	*	—	0.007	—	0.014	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*
MW-7	—	*	—	0.0062	—	0.017	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*
(BG) MW-9	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	0.016	—	*
(BG) MW-10	—	*	—	*	—	0.016	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	0.019
Leak Detection System																														
LDCS-1	*	—	0.022	—	0.017	—	—	—	—	—	*	—	*	—	*	—	*	—	*	—	—	—	—	—	—	—	*	—	*	—
LDCS-2A	*	—	0.022	—	0.044	—	—	—	—	—	*	—	0.003	—	*	—	*	—	*	—	—	—	—	—	—	—	*	—	*	—
LDCS-2B	*	—	0.130	—	0.091	—	—	—	—	—	*	—	0.008	—	*	—	*	—	*	—	—	—	—	—	—	—	*	—	*	—
LDCS-3A	*	—	0.020	—	0.027	—	—	—	—	—	*	—	0.002	—	*	—	*	—	*	—	—	—	—	—	—	—	*	—	*	—
LDCS-4A	*	—	0.012	—	0.035	—	—	—	—	—	*	—	0.002	—	*	—	*	—	*	—	—	—	—	—	—	—	*	—	*	—
LDCS-4B	*	—	0.019	—	0.039	—	—	—	—	—	*	—	*	—	*	—	*	—	*	—	—	—	—	—	—	—	*	—	*	—
LDCS-5	*	—	0.008	—	0.063	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—
LDCS-6	*	—	0.008	—	0.030	—	*	—	*	—	*	—	0.001	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—
LDCS-7	*	—	0.016	—	0.040	—	*	—	*	—	*	—	0.004	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—
LDCS-8	*	—	0.006	—	0.045	—	*	—	*	—	*	—	0.003	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—
LDCS-9 (background #1)	*	—	*	—	0.019	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—
LDCS-9 (background #2)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Leachate Collection System																														
Leachate, Cell 8	—	*	—	0.40	—	0.67	—	*	—	*	—	0.68	—	0.022	—	0.092	—	0.041	—	0.34	—	*	—	*	—	*	—	0.15	—	0.53

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 in **bold**

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

* = 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 2022
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	1.4	9.4	0.25	3.6	11
MW-2A	23	0.66	12	0.31	3.4	16
MW-3	34	*	15	0.28	3.6	13
MW-4	29	*	16	0.23	5.4	13.0
MW-5A	24	*	10	0.14	3.7	26
MW-6	33	*	15	0.21	4.8	10
MW-7	32	0.26	23	0.28	5.7	15
(BG) MW-9	9.8	*	6.6	*	*	8
(BG) MW-10	26	*	11	*	2.2	13.0
Leak Detection System						
LDCS-1	51	40	24	1.3	5.8	19
LDCS-2A	100	4.5	41	5.1	9.5	29
LDCS-2B	100	56	42	3.6	8.4	22
LDCS-3A	100	3.5	45	3.6	6.8	23
LDCS-4A	83	2.3	50	1.8	6.7	28
LDCS-4B	100	1.8	54	1.4	7.4	28
LDCS-5	90	1.3	57	1.7	8.4	33
LDCS-6	100	0.2	60	1.2	5.5	32
LDCS-7	97	2.8	34	4.0	3.7	26
LDCS-8	110	1.2	74	2.0	4.9	36
LDCS-9 (background #1)	67	*	15	0.1	3.3	22
LDCS-9 (background #2)	76	*	17	0.3	3.3	25
Leachate Collection System**						
Leachate, Cell 8	92	3.9	120	1.1	690	2,200

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

* = 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 2022
LRI Landfill, Pierce County, Washington**

Parameter	1,4-Dichlorobenzene	2-Butanone (MEK)	4-Methyl-2-pentanone (MIBK)	Acetone	Benzene	Carbon disulfide	Ethylbenzene	m-Xylene & p-Xylene	o-Xylene	Toluene
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
MRL	0.50	6.0	5.0	10.0	0.50	0.63	1.0	0.50	0.50	0.50
WAC 173-200 Criteria	4.0	—	—	—	1.0	—	—	—	—	—
Monitoring Wells										
MW-1	*	*	*	*	*	*	*	*	*	*
MW-2	*	*	*	*	*	*	*	*	*	*
MW-3	*	*	*	*	*	*	*	*	*	*
MW-4	*	*	*	*	*	*	*	*	*	*
MW-5	*	*	*	*	*	*	*	*	*	*
MW-6	*	*	*	*	*	*	*	*	*	*
MW-7	*	*	*	*	*	*	*	*	*	*
(BG) MW-9	*	*	*	*	*	*	*	*	*	*
(BG) MW-10	*	*	*	*	*	*	*	*	*	*
Leak Detection System										
LDCS-1	1.0	*	*	*	*	*	*	*	*	*
LDCS-2A	0.56	*	*	*	*	*	*	*	*	*
LDCS-2B	*	*	*	78	*	1.3	*	*	*	*
LDCS-3A	*	*	*	*	*	*	*	*	*	*
LDCS-4A	*	*	*	*	*	*	*	*	*	*
LDCS-4B	*	*	*	*	*	*	*	*	*	*
LDCS-5	*	*	*	*	*	*	*	*	*	*
LDCS-6	*	*	*	*	*	*	*	*	*	*
LDCS-7	*	*	*	*	*	*	*	*	*	*
LDCS-8	*	*	*	*	*	*	*	*	*	*
LDCS-9 (background #1)	*	*	*	*	*	*	*	*	*	*
LDCS-9 (background #2)	*	*	*	*	*	*	*	*	*	*
Leachate Collection System										
Leachate, Cell 8	1.9	620	61	470	4.6	2.6	21	45	24	62
Quality Control Samples										
Field Blank	*	*	*	*	*	*	*	*	*	*

Notes:

All sample units are micrograms 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

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

— = not applicable or not performed

BG = Background

**Table 7. Cation-Anion Balance
Third Quarter 2022
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	9.4	3.6	11.0	38	0.70	0.77	0.08	0.48	2.03	27.5	34.4	38.1
MW-2A	23	12	3.4	16	54.4	1.15	0.99	0.08	0.70	2.91	26.6	39.5	34.0
MW-3	34	15	3.6	13	65.6	1.70	1.23	0.08	0.57	3.58	18.1	47.4	34.5
MW-4	29	16	5.4	13	63.4	1.45	1.32	0.12	0.57	3.45	19.9	41.9	38.2
MW-5A	24	10	3.7	26	63.7	1.20	0.82	0.08	1.13	3.24	37.5	37.0	25.4
MW-6	33	15	4.8	10.0	62.8	1.65	1.23	0.11	0.44	3.42	15.9	48.1	36.0
MW-7	32	23	5.7	15	75.7	1.60	1.89	0.13	0.65	4.27	18.3	37.4	44.3
MW-9	10	6.6	0.0	7.5	23.9	0.49	0.54	0.00	0.33	1.36	24.0	36.0	40.0
MW-10	26	11	2.2	13	52.2	1.30	0.91	0.05	0.57	2.82	21.8	46.0	32.1
LDCS-1	51	24	5.8	19	99.8	2.54	1.98	0.13	0.83	5.48	17.5	46.5	36.1
LDCS-2A	100	41	9.5	29	179.5	4.99	3.37	0.21	1.26	9.84	15.0	50.7	34.3
LDCS-2B	100	42	8.4	22	172.4	4.99	3.46	0.19	0.96	9.59	12.0	52.0	36.0
LDCS-3A	100	45	6.8	23	174.8	4.99	3.70	0.15	1.00	9.85	11.7	50.7	37.6
LDCS-4A	83	50	6.7	28	167.7	4.14	4.12	0.15	1.22	9.63	14.2	43.0	42.7
LDCS-4B	100	54	7.4	28	189.4	4.99	4.44	0.17	1.22	10.82	12.8	46.1	41.1
LDCS-5	90	57	8.4	33	188.4	4.49	4.69	0.19	1.44	10.81	15.0	41.6	43.4
LDCS-6	100	60	5.5	32	197.5	4.99	4.94	0.12	1.39	11.44	13.2	43.6	43.1
LDCS-7	97	34	3.7	26	160.7	4.84	2.80	0.08	1.13	8.85	13.7	54.7	31.6
LDCS-8	110	74	4.9	36	224.9	5.49	6.09	0.11	1.57	13.26	12.6	41.4	45.9
LDCS-9	67	15	3.3	22	107.3	3.34	1.23	0.07	0.96	5.61	18.4	59.6	22.0
LDCS-9	76	17	3.3	25	121.3	3.79	1.40	0.07	1.09	6.35	18.3	59.7	22.0
Leachate, Cell 8	92	120	690	2,200	3,102	4.59	9.88	15.58	95.70	125.75	88.5	3.7	7.9

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	111.6	1.8	0.0	2.8	116.2	1.83	0.05	0.000	0.06	1.94	2.6	94.4	3.0	3.97	2.3	10	O
MW-2A	156	3.1	0.0	15.0	174.1	2.56	0.09	0.000	0.31	2.96	3.0	86.5	10.5	5.87	0.8	5	O
MW-3	168	3.7	0.0	33	204.7	2.76	0.10	0.000	0.69	3.55	2.9	77.7	19.4	7.12	0.4	5	O
MW-4	204	3.4	0.0	10	217.4	3.35	0.10	0.000	0.21	3.65	2.6	91.7	5.7	7.10	2.8	5	O
MW-5A	180	2.3	0.0	7	189.7	2.95	0.06	0.000	0.15	3.17	2.0	93.1	4.9	6.41	1.0	5	O
MW-6	192	4.9	0.0	7.1	204	3.15	0.14	0.000	0.15	3.43	4.0	91.7	4.3	6.86	0.1	5	O
MW-7	228	3.2	0.0	3.1	234.3	3.74	0.09	0.000	0.06	3.89	2.3	96.0	1.7	8.16	4.6	5	O
MW-9	84.0	1.8	0.0	1.8	87.6	1.38	0.05	0.000	0.04	1.47	3.5	94.0	2.6	2.82	3.8	10	O
MW-10	132	6.6	3.1	6.3	148	2.16	0.19	0.050	0.13	2.53	7.4	85.5	5.2	5.35	5.3	5	Exceeds
LDCS-1	324	4.5	0.0	5.8	334.3	5.31	0.13	0.000	0.12	5.56	2.3	95.5	2.2	11.04	0.8	5	O
LDCS-2A	516	7.0	0.0	37	560	8.46	0.20	0.000	0.77	9.43	2.1	89.7	8.2	19.27	2.1	5	O
LDCS-2B	564	22	0.0	60	646	9.25	0.62	0.000	1.25	11.12	5.6	83.2	11.2	20.71	7.4	5	Exceeds
LDCS-3A	504	4.1	0.0	59	567.1	8.27	0.12	0.000	1.23	9.61	1.2	86.0	12.8	19.46	1.2	5	O
LDCS-4A	420	20	0.0	67	507	6.89	0.56	0.000	1.39	8.85	6.4	77.9	15.8	18.47	4.2	5	O
LDCS-4B	456	26	0.0	96	578	7.48	0.73	0.000	2.00	10.21	7.2	73.3	19.6	21.03	2.9	5	O
LDCS-5	528	26	0.0	72	626	8.66	0.73	0.000	1.50	10.89	6.7	79.5	13.8	21.70	0.4	5	O
LDCS-6	600	21	0.0	76	697	9.84	0.59	0.000	1.58	12.01	4.9	81.9	13.2	23.46	2.4	5	O
LDCS-7	516	6.8	0.0	20	543	8.46	0.19	0.000	0.42	9.07	2.1	93.3	4.6	17.92	1.2	5	O
LDCS-8	696	20	0.0	49	765	11.41	0.56	0.000	1.02	13.00	4.3	87.8	7.8	26.25	1.0	5	O
LDCS-9	276	3.5	0.0	28	308	4.53	0.10	0.000	0.58	5.21	1.9	86.9	11.2	10.82	3.7	5	O
LDCS-9	250	3.8	2.8	48	305	4.10	0.11	0.045	1.00	5.25	2.0	78.1	19.0	11.60	9.5	5	Exceeds
Leachate, Cell 8	9,600	2,600	0.0	64	12,264	157.44	73.32	0.000	1.33	232.09	31.6	67.8	0.6	357.84	29.7	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 [(cations-anions)/(anions+cations)*100].

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 2022 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	140	6.9
Ammonia	0.1	0.1 U	0.24	82.4
Chloride	0.2	2.3	2.3	0.0
Sulfate	0.2	7.4	7.5	1.3
Total Dissolved Solids	10	180	170	5.7
Dissolved Metals (mg/L)				
Calcium	0.2	24	24	0.0
Magnesium	0.1	10	10	0.0
Manganese	0.005	0.14	0.14	0.0
Potassium	2.0	3.7	3.8	2.7
Sodium	1.0	26	25	3.9
Total Metals (mg/L)				
Arsenic	0.005	0.0053	0.0054	1.9
Barium	0.005	0.011	0.012	8.7

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

U= parameter was not detected in sample

* = 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

October 19, 2022
File No. 04222001.02

Subject: **Third Quarter 2022 Groundwater Monitoring Event**
LRI Landfill, Pierce County, Washington

NOTES/SAMPLE DECODING:

Event Dates: September 13 & 14, 2022

Field Staff: Sam Graber, Ruben Martinez, and Jovany Estrada

- This event served as a quarterly monitoring event.
- Dedicated pumps were used for purging and sampling wells MW-1A, MW-2A, MW-3, MW-5A, MW-6, MW-7, MW-9, MW-10, and leak detection/collection system points LDCS-3A, LDCS-4A, LDCS-4B, LDCS-5, LDCS-6, and LDCS-7.
- Disposable bailers were used to sample leak detection/collection system points LDCS-1, LDCS-2A, LDCS-2B. LDCS-2A and LDCS-2B were resampled on October 18, 2022.
- The sample from LDCS-8 was collected as a grab sample from the channel discharge spigot.
- A non-dedicated Sample Pro pump was used for purging and sampling well MW-4.
- A background sample was collected from LDCS-9 on September 9th and 29th, 2022.
- A round of water level measurements was completed on September 13 & 14, 2022.
- Multiparameter 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
304-091322-01	MW-1A
304-091322-02	LDCS-7
304-091322-03	MW-2A
304-091322-04	LDCS-3
304-091322-05	MW-3
304-091322-06	LDCS-2B
304-091322-07	MW-6
304-091322-08	LDCS-2A
304-091322-09	MW-5A
304-091322-10	LDCS-1
304-091322-11	MW-5A (Duplicate)
304-091322-12	LDCS-4A
304-091322-13	MW-7

Sample Number	Well Number
304-091322-14	LDCS-4B
304-091322-15	MW-10
304-091422-16	LDCS-8
304-091422-17	MW-9
304-091422-18	LDCS-6
304-091422-19	Leachate, Cell 8
304-091422-20	MW-4
304-091422-21	Field Blank
304-091422-22	LDCS-5

Additional Samples

304-090922-01	LDCS-9 Background #1
304-092922-01	LDCS-9 Background #2

Bellevue, WA 98005

(425) 746-4600

Groundwater Sampling Data Sheet

Project #:	04222001.02	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-1A	MP-20	Refill	9	One Well Volume	Other:		
Sample ID:	304-09 13 22- 01	YSI	Discharge	6	(liters)	Flow		
Date:	9/ 13 /22		Pressure	30	Total Volume Bailed	Setting:		
Weather:	Partly Cloudy		Flow	300 ml/min	(liters)			
Filtered?	Y N	DTW						
Sample Containers:	1000 ml Poly	TOS						
	500 ml HNO3 x2	Intake						
	125 ml NaOH	BOS						
		Total Depth						
Locked?	Y N							
Water in Protector?	Y N							
	500 ml Poly							
	500 ml H2SO4 x2							
	40 ml VOA x3 x6							
	125 ml Poly							
	1000 ml Amber							
Notes / Observations (color, odor, anomalies, etc):								

TIME	DTW	Temp.	Sp.Cond.	DO	pH	Eh	Turbidity	Q / Vol.
0820		18.22	173	11.38	6.84	216.1		
0825		14.92	180	7.77	6.00	212.9		
0828		14.48	175	3.15	6.08	216.1		
0831		14.42	169	2.27	6.14	207.5		
0834		14.40	167	2.16	6.23	140.1	3.93	
0837		14.38	167	2.34	6.34	65.1		
0840	23.65	14.35	165	2.35	6.48	13.2	3.48	

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

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Groundwater Sampling Data Sheet

Project #: 04222001.02

Site: LRI 304th

Well ID: LDC5-7

Sample ID: 304-09 13 22-02

Date: 9/ 13 /22

Weather: Cloudy

Filtered? ☒ N

Sample Containers:

Locked? ☒ N

1000 ml Poly

500 ml HNO3 x2

125 ml NaOH

Water in Protector? ☒ N

500 ml Poly

500 ml H2SO4 x2

250 ml Poly

40 ml VOA x3 x6

Damage? ☒ N

125 ml Poly

1000 ml Amber

Sampling Method: Dedicated

Meter:

MP-20

YSI

CONTROL SETTINGS:

Refill 12

Discharge 3

Pressure 45

Flow 200 ml/min

1.75" QED SamplePro

Bail

Peristaltic

Grab

Other

1 ft water = 0.62L

1L = 0.26 gallons

One Well Volume (liters)

Other:

Flow Setting:

Total Volume Bailed (liters)

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

LOCKS

level at 6.4 upon sampling.
water right away

TIME	DTW	Temp.	Sp.Cond.	DO	pH	Eh	Turbidity	SpC panel Q/Vol.
855		22.2	1147	0.98	6.84	212.9	5.52	639
900		22.5	1165	0.70	6.82	182.8	5.43	
903		22.6	1169	0.67	6.82	76.1	5.99	
906		24.7	1173	0.64	6.82	-7.5	6.83	642
909		25.2	998	0.59	6.50	-35.8	5.15	
912		25.8	886	0.55	6.04	-57.4	4.51	645
915		25.9	870	0.53	6.02	-44.2	4.82	
918		26.0	869	0.52	6.02	-43.1	4.51	
921		26.0	869	0.52	6.02	-42.1	4.38	643

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 Graber

Signature

[Signature]

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Project #:	04222001.02	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-2A	MP-20	Refill	9	One Well Volume	Other:		
Sample ID:	304-09 13 22- 03	YSI	Discharge	6	(liters)	Flow		
Date:	9/ 13 /22		Pressure	30	Total Volume Bailed	Setting:		
Weather:	Cloudy		Flow	300	(liters)			
Filtered?	Y N							
Sample Containers:	Locked? Y N	Water in Protector? Y N	Damage? Y N					
	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							

[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

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Groundwater Sampling Data Sheet

Project #:	04222001.02	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:	LDC5-3		TOS	MP-20	Refill	11	One Well Volume		Other :	
Sample ID:	304-09 13 22-04		Intake	YSI	Discharge	4	(liters)		Flow	
Date:	9/ 13 /22		BOS		Pressure	35	Total Volume Bailed		Setting :	
Weather:	cloudy		Total Depth		Flow	250 mL/min	(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 Graber
Printed Name

Signature 

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

UDCS level at 7.25 upon sampling.
water to surface right away

* Need to pry open LDCS lid with hammer to open.

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Groundwater Sampling Data Sheet

[illegible]

This image shows a single sheet of white paper with horizontal blue or grey ruling lines. The lines are evenly spaced and run across the width of the page. There is a vertical margin line on the left side, creating a narrow left margin. The paper appears to be from a notebook or a standard ruled document.

SAMPLER: Ch. Martinez
Printed Name

Signature _____

Bellevue, WA 98005

(425) 746-4600

Dedicated	1.75" QED SamplePro	Bail	Peristaltic	Grab	Other
-----------	---------------------	------	-------------	------	-------

Project #: 04222001.02

Site LRI 304th

Well ID: 6065-2B

Sample ID: 304-09 | 3 22-06

Date: 9/13/22

Weather: cloudy

Filtered? ☒ Y ☐ N

Sample Containers:

Locked? Y N

Water in Protector? Y (N)

Damage? Y N

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

500 ml H₂SO₄ x2

40 ml VOA x3 x6

1000 ml Amber

[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 _____

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Project #: 04222001.02		Sampling Method: <u>Dedicated</u>		1.75" QED SamplePro	Bail	Peristaltic	Grab	Other
Site: LRI 304th		12.15 DTW	Meter: <u>CONTROL SETTINGS:</u>	1 ft water = 0.62L		1L = 0.26 gallons		
Well ID: MW-16		TOS	MP-20	Refill <u>9</u>	One Well Volume	Other:		
Sample ID: 304-09 13 22-07		Intake	<u>YSI</u>	Discharge <u>6</u>	(liters)	Flow		
Date: 9/13/22		BOS		Pressure <u>35</u>	Total Volume Bailed	Setting:		
Weather: Cloudy		Total Depth		Flow <u>350</u>	(liters)			
Filtered? <u>Y</u> N	Locked? <u>Y</u> N	Water in Protector? <u>Y</u> N	Damage? <u>Y</u> 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]

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

SAMPLER:

Printed Name _____

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Groundwater Sampling Data Sheet

Project #:	04222001.02	Sampling Method :		Dedicated	1.75" QED SamplePro	Bail	Peristaltic	Grab	Other
Site	LRI 304th	 29.43	DTW	Meter:	CONTROL SETTINGS:		1 ft water = 0.62L	1L = 0.26 gallons	
Well ID:	LDC5-2A		TOS	MP-20	Refill	One Well Volume		Other :	
Sample ID:	304-09 13 22-08		Intake	YSI	Discharge	(liters)		Flow	
Date:	9/13/22		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):				
	500 ml HNO3 x2	500 ml H2SO4 x2	40 ml VOA x3 x6	1000 ml Amber					
	125 ml NaOH								

[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

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Project #: 04222001.02		Sampling Method: <u>Dedicated</u>		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: MW-SA		TOS		MP-20		Refill <u>9</u>		One Well Volume		Other:			
Sample ID: 304-09 13 22- 09		Intake		YSI		Discharge <u>6</u>		(liters)		Flow			
Date: 9/ 13 /22		BOS				Pressure <u>40</u>		Total Volume Bailed		Setting:			
Weather: cloudy		Total Depth				Flow <u>400 ml/min</u>		(liters)					
Filtered? <u>Y</u> N		Locked? <u>Y</u> <u>N</u>		Water in Protector? <u>Y</u> <u>N</u>		Damage? <u>Y</u> <u>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											
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 #: 04222001.02		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: LDC5-1		TOS		MP-20		Refill		One Well Volume		Other:			
Sample ID: 304-09 13 22-10		Intake		YSI		Discharge		(liters)		Flow			
Date: 9/ 13 /22		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					
		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 Gruber
Printed Name

Signature _____

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Groundwater Sampling Data Sheet

Project #: 04222001.02	Sampling Method: <u>Dedicated</u>	1.75" QED SamplePro	Bail	Peristaltic	Grab	Other
Site: LRI 304th	Meter: <u>CONTROL SETTINGS:</u>	1 ft water = 0.62L		1L = 0.26 gallons		
Well ID: <u>LDL5-4A</u>	MP-20	Refill: <u>12</u>	One Well Volume (liters)	Other:		
Sample ID: <u>304-09 13 22-12</u>	<u>YSI</u>	Discharge: <u>3</u>	Total Volume Bailed (liters)	Flow Setting:		
Date: <u>9/13/22</u>	BOS	Pressure: <u>45</u>				
Weather: <u>cloudy</u>	Total Depth	Flow: <u>250 mL/min</u>				

Filtered? <u>Y</u> <u>N</u>	Locked? <u>Y</u> <u>N</u>	Water in Protector? <u>Y</u> <u>N</u>	Damage? <u>Y</u> <u>N</u>
Sample Containers:	1000 ml Poly	500 ml Poly	250 ml Poly
	500 ml HNO3 x2	500 ml H2SO4 x2	40 ml VOA x3 x6
	125 ml NaOH		1000 ml Amber

TIME	DTW	Temp.	Sp.Cond.	DO	pH	Eh	Turbidity	Q/Vol.
1338		21.8	831	1.74	6.61	72.6	22.10	display not working
1343		21.4	823	1.60	6.32	54.6	62.11	
1346		22.7	876	0.61	6.33	4.9	58.26	
1349		23.2	882	0.55	6.34	-7.2	49.50	
1352		23.7	886	0.50	6.34	-16.7	39.16	
1355		23.8	886	0.49	6.34	-19.9	34.9	
<u>1358</u>		23.9	886	0.48	6.34	-23.1	33.17	
1403		23.9	887	0.47	6.35	-29.3	30.07	

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

LDL5 level at 41.27

water to surface right away

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

SAMPLER: S4m Gmb
Printed Name

Signature [Signature]

Bellevue, WA 98005

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Project #:	04222001.02	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:	11W-7		TOS	MP-20	Refill	9	One Well Volume		Other :	
Sample ID:	304-09 13 22- 13		Intake	(YS)	Discharge	6	(liters)		Flow	
Date:	9/ 13 /22		BOS		Pressure	30	Total Volume Bailed		Setting :	
Weather:	cloudy		Total Depth		Flow	400 ml/min	(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):										

TIME	DTW	Temp.	Sp.Cond.	DO	pH	Eh	Turbidity	Q / Vol.
1400		11.05	366	1.52	7.36	-53.7		
1405		11.28	365	1.18	7.42	-66.8		
1408		11.83	363	1.08	7.44	-76.5		
1411		12.23	365	1.19	7.47	-87.2		
1414		12.64	369	1.26	7.50	-92.2		
1417		11.42	367	1.15	7.49	-98.0		
1420	24.42	11.33	366	1.05	7.49	-97.4	1.91	

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

(425) 746-4600

Groundwater Sampling Data Sheet

Project #: 04222001.02		Sampling Method : <u>Dedicated</u>		1.75" QED SamplePro	Bail	Peristaltic	Grab	Other
Site LRI 304th			Meter: <u>CONTROL SETTINGS:</u>	1 ft water = 0.62L		1L = 0.26 gallons		
Well ID: <u>LDCS-4B</u>	TOS		MP-20	Refill <u>11.5</u>	One Well Volume	Other :		
Sample ID: <u>304-09 13 22-14</u>	Intake		<u>YSI</u>	Discharge <u>3.5</u>	(liters)	Flow		
Date: <u>9/ 13 /22</u>	BOS			Pressure <u>45</u>	Total Volume Bailed	Setting :		
Weather: <u>cloudy</u>	Total Depth			Flow <u>200 mL/min</u>	(liters)			
Filtered? <u>Y</u> <u>N</u>	Locked? <u>Y</u> <u>N</u>	Water in Protector? <u>Y</u> <u>N</u>	Damage? <u>Y</u> <u>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							
Notes / Observations (color, odor, anomalies, etc):								
<u>LDCS</u>								

TIME	DTW	Temp.	Sp.Cond.	DO	pH	Eh	Turbidity	Q/Vol.
1430		begin pumping						1040
1442		water to surface						
1445		23.9	949	1.10	6.29	-15.0	5.14	
1450		24.0	996	0.61	6.38	-54.4	4.84	
1453		24.6	1005	0.56	6.40	-50.1	4.72	
1456		25.0	1016	0.53	6.42	-46.5	4.62	
1459		25.2	1017	0.52	6.42	-46.0	4.40	
1502		25.3	1018	0.50	6.42	-47.1	4.34	1029
1505		25.3	1018	0.49	6.42	-48.6	4.29	

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

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Bellevue, WA 98005**

Groundwater Sampling Data Sheet

[illegible]

Signature _____

Bellevue, WA 98005

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Project #:	04222001.02			Sampling Method:	Dedicated	1.75" QED SamplePro	Bail	Peristaltic	Grab	Other		
Site	LRI 304th			Meter:	CONTROL SETTINGS:							
Well ID:	LDC5-8			MP-20	Refill	1 ft water = 0.62L		1L = 0.26 gallons				
Sample ID:	304-09 14 22-16			YSI	Discharge	One Well Volume (liters)		Other:				
Date:	9/14/22				Pressure	Total Volume Bailed (liters)		Flow Setting:				
Weather:	cloudy				Flow							
Filtered?	Y	N		Locked?	Y	N		Water in Protector?	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]

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

5th sample from discharge sprayer

* panel maxes out at 1000 spec

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

SAMPLER: Sam Graber
Printed Name

Signature _____

Bellevue, WA 98005

(425) 746-4600

Groundwater Sampling Data Sheet

Project #: 04222001.02		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: MW-9		TOS		MP-20		Refill 9		One Well Volume (liters)		Other:			
Sample ID: 304-09 14 22- 17		Intake		YSI		Discharge 6				Flow Setting:			
Date: 9/ 14 /22		BOS				Pressure 45		Total Volume Bailed (liters)					
Weather: Cloudy		Total Depth				Flow 300 ml/min							
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):													

[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

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

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(425) 746-4600

Groundwater Sampling Data Sheet

Project #: 04222001.02	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>LD05-6</u>	<u>YSI</u>	Refill: <u>12</u>	One Well Volume (liters)	Other:		
Sample ID: <u>304-09 14 22- 18</u>		Discharge: <u>3</u>		Flow Setting:		
Date: <u>9/ 14 /22</u>		Pressure: <u>45</u>	Total Volume Bailed (liters)			
Weather: <u>cloudy</u>		Flow: <u>200 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	SpC Panel
935		22.0	974	7.14	7.81	84.6	8.56	
940		22.8	980	6.07	7.35	98.1		
943		23.6	985	5.31	7.00	102.8	15.72	
946		24.1	991	3.99	6.83	107.7		
949		24.7	999	3.46	6.72	115.2	20.72	
952		24.9	1052	2.33	6.60	61.2		
955		25.1	1118	1.52	6.53	8.4	52.11	
958		25.3	1135	1.30	6.51	19.7		
1001		25.4	1149	1.18	6.50	27.2	22.81	
1005		25.5	1144	1.14	6.51	38.4	21.36	1045
1009								

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

LD05
Level at B.O. upon sampling
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: Sam 625
Printed Name

AA
Signature

Bellevue, WA 98005

Groundwater Sampling Data Sheet

Project #: 04222001.02		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 8		TOS		MP-20		One Well Volume		Other :	
Sample ID: 304-09 14 22- 19		Intake		YSI		(liters)		Flow	
Date: 9/ 14 /22		BOS		Pressure		Total Volume Bailed		Setting :	
Weather: Cloudy		Total Depth		Flow		(liters)			
Filtered? Y ☒	Locked? ☒ N	Water in Protector? Y ☒	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]

SAMPLER:

Signature _____

**2405 140th ave NE #107
Bellevue, WA 98005**

(425) 746-4600

Project #: 04222001.02		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: MW-4		TOS		MP-20		Refill: 10		One Well Volume (liters)	
Sample ID: 304-09 14 22-20		Intake		YSI		Discharge: 5		Other:	
Date: 9/14/22		BOS		Pressure: 55		Total Volume Bailed (liters)		Flow Setting:	
Weather: Cloudy		Total Depth		Flow: 250 mL/min					
Filtered? ☒ Y	Locked? ☒ Y	Water in Protector? ☒ Y	Damage? ☒ Y						
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):									

TIME	DTW	Temp.	Sp.Cond.	DO	pH	Eh	Turbidity	Q / Vol.
1130		14.5	348	0.87	7.52	-56.4	10.33	
1135		14.5	348	0.91	7.51	-50.5	9.79	
1138		14.5	348	0.78	7.50	-60.7		
1141		14.5	348	0.76	7.50	-63.3	10.89	
1144		14.5	348	0.73	7.50	-65.2		
1147		14.5	348	0.71	7.49	-69.0	12.55	
1150		14.3	347	0.71	7.50	-71.5	20.52	12.10

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

(425) 746-4600

Groundwater Sampling Data Sheet

Project #: 04222001.02		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: Field Blank		MP-20		Refill		One Well Volume (liters)		Other:	
Sample ID: 304-09 14 22-21		<u>YSI</u>		Discharge		Total Volume Bailed (liters)		Flow Setting:	
Date: 9/ 14 /22		BOS		Pressure					
Weather: cloudy		Total Depth		Flow					
Filtered? <u>(Y)</u> N	Locked? Y <u>(N)</u>	Water in Protector? Y <u>(N)</u>	Damage? Y <u>(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								
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

SCS ENGINEERS

2405 140th ave NE #107

Bellevue, WA 98005

(425) 746-4600

Groundwater Sampling Data Sheet

Project #: 04222001.02

Site LRI 304th

Well ID: LDCS-5

Sample ID: 304-09 14 22-22

Date: 9/14/22

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

Meter:

MP-20

YSI

CONTROL SETTINGS:

1 ft water = 0.62L

1L = 0.26 gallons

Refill 12

Discharge 3

Pressure 45

Flow 150 mL/min

One Well Volume (liters)

Total Volume Bailed (liters)

Other:

Flow Setting:

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

LDCS level at 9.0, water right away

TIME	DTW	Temp.	Sp.Cond.	DO	pH	Eh	Turbidity	Q/Vol.
1237		21.4	753	4.67	6.67	113.2	6.87	1000
1242		23.3	778	0.97	6.36	136.3	4.81	
1245		23.5	783	0.70	6.36	78.7	4.57	
1248		23.8	788	0.57	6.36	39.1	4.38	
1251		24.5	842	0.54	6.41	10.8	5.77	
1254		25.3	1067	0.51	6.47	-4.5	6.97	
(1257)		25.5	1076	0.50	6.47	-4.4	7.59	
1300		25.7	1077	0.49	6.48	-4.2	7.91	1000

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 Graber

Signature

[Signature]

SCS ENGINEERS

2405 140th ave NE #107
Bellevue, WA 98005

(425) 746-4600

Groundwater Sampling Data Sheet

Project #: 04222001.02
 Site: IRT
 Well ID: Cell - 9 12C5
 Sample ID: 304-090922-01
 Date: 9/9/22
 Weather: Partly Cloudy
 Filtered? ☒ Y ☐ N
 Sample Containers: 1000 ml Poly
500 ml HNO3 x2
125 ml NaOH

Locked? ☒ Y ☐ N
 Water in Protector? ☒ Y ☐ N

Sampling Method: Dedicated 1.75" QED SamplePro Bail Peristaltic Grab Other
 Meter: MP-20 YSI
 DTW 5.85
 TOS 7.73
 Intake
 BOS
 Total Depth

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:

Damage? ☒ Y ☐ N
500 ml Poly
500 ml H2SO4 x2
40 ml VOA x3 x6
125 ml Poly
1000 ml Amber

TIME	DTW	Temp.	Sp.Cond.	DO	pH	Eh	Turbidity	Q / Vol.
0820		17.09	499	3.70	6.63	228.7		
0825		17.26	500	3.44	6.69	191.2	6.81	
0828		17.29	500	3.38	6.69	157.4		
0831		17.38	500		6.67	127.3	3.77	
0834		17.34	500	3.61	6.69	125.3		
0837		17.44	500	3.51	6.70	122.1		
0840		17.46	500	3.50	6.70	119.9	3.13	

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

SAMPLER: Ruben Mantamez
 Printed Name

Signature

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

run tube depth @ 6.5'

Bellevue, WA 98005

(425) 746-4600

Groundwater Sampling Data Sheet

Project #:		Sampling Method:		Dedicated	1.75" QED SamplePro	Bail	Peristaltic	Grab	Other
04222001.02		DTW		Meter:	CONTROL SETTINGS:		1 ft water = 0.62L	1L = 0.26 gallons	
Site: LRI 304th		TOS		MP-20	Refill	One Well Volume (liters)		Other:	
Well ID: LDES cell 9		Intake		YSI	Discharge	Total Volume Bailed (liters)		Flow Setting:	
Sample ID: 304-09 29 22-		BOS			Pressure				
Date: 9/ 29 /22		Total Depth			Flow				
Weather: cloudy									
Filtered? ☒ N	Locked? ☒ Y	Water in Protector? ☒ N	Damage? ☒ 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):

tube depth $\sim 7.5'$

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 _____

GROUNDWATER SAMPLING INSTRUMENT CALIBRATION DOCUMENTATION FORM

	Conductivity	pH 4	pH 7	D.O.	Turbidity	Comments/Exceptions
Date	9/13/22					
Time	815					
Weather (sky or precip, temp)	cloudy					
Type of Calibration	Standard	Standard	Standard	Standard	Standard	
Standard Value	1413	4.00	7.00	100% or ~8.5	1000, 10, 0.2 800, 100, 20, <0.1	
Pre-Cal Reading	1398	4.07	7.02	7.59		
Post Cal Reading	1413	4.00	7.00	8.50		
Discrepancy	No					
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)

GROUNDWATER SAMPLING INSTRUMENT CALIBRATION DOCUMENTATION FORM

	Conductivity	pH 4	pH 7	D.O.	Turbidity	Comments/Exceptions
Date	9/14/22					
Time	815					
Weather (sky or precip, temp)	cloudy					
Type of Calibration	Standard	Standard	Standard	Standard	Standard	
Standard Value	1413	4.00	7.00	100% or ~8.5	1000, 10, 0.2 800, 100, 20, <0.1	
Pre-Cal Reading	1322	3.99	6.99	8.54		
Post Cal Reading	1413	4.00	7.00	8.30		
Discrepancy	No					
Calib. Successful?	Yes					
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	pH 4	pH 7	D.O.	Turbidity	Comments/Exceptions
Date	9/13/22					
Time	0730					
Weather (sky or precip, temp)	Overcast					
Type of Calibration	Standard	Standard	Standard	Standard	Standard	
Standard Value	1413	4.00	7.00	100% or ~8.5	1000, 10, 0.2 800, 100, 20, <0.1	
Pre-Cal Reading	1411	4.07	7.00	8.30		
Post Cal Reading	1413	4.00	7.00	8.50		
Discrepancy	no					
Calib. Successful?	yes					
Calibration by	R. Martinez					
Instrument Type, ID	YSI Pro DDS / YSI 556 / Rental				YSI Pro DDS / HACH2000	
Calibration Location	LRI flare MWIA					

* 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	9/14/22					
Time	0730					
Weather (sky or precip, temp)	cloudy					
Type of Calibration	Standard	Standard	Standard	Standard	Standard	
Standard Value	1413	4.00	7.00	100% or ~8.5	1000, 10, 0.2 100, 20, <0.1	
Pre-Cal Reading	1414	3.97	7.00	8.75		
Post Cal Reading	1413	4.00	7.00	8.5		
Discrepancy	no					
Calib. Successful?	yes					
Calibration by	R. Martinez					
Instrument Type, ID	YSI Pro DDS / YSI 556 / Rental				YSI Pro DDS / HACH2000	
Calibration Location	LRI MW-a					

* 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	9/9/22					
Time	0720					
Weather (sky or precip, temp)	Sunny					
Type of Calibration	Standard	Standard	Standard	Standard	Standard	
Standard Value	1413	4.00	7.00	100% or ~8.5	1000, 10, 0.2 800, 100, 20, <0.1	
Pre-Cal Reading	1412	4.02	6.96	7.87		
Post Cal Reading	1413	4.00	7.00	8.5		
Discrepancy	NO					
Calib. Successful?	yes					
Calibration by	R. Montano					
Instrument Type, ID	YSI Pro DDS / YSI 556 / Rental				YSI Pro DDS / HACH2000	
Calibration Location	LRI Scarsella parking lot					

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

GROUNDWATER SAMPLING INSTRUMENT CALIBRATION DOCUMENTATION FORM

Date	9-29-22					
Time	0900					
Weather (sky or precip, temp)	cloudy					
Parameter	Conductivity	pH 4	pH 7	D.O.	Turbidity	Comments/Exceptions
Type of Calibration	Standard	Standard	Standard	Standard	Standard	
Standard Value	1413	4.00	7.00	100% or ~8.5	1000, 10, 0.2 800, 100, 20, <0.1	
Pre-Cal Reading	1417	4.14	6.93	8.71	-	
Post Cal Reading	1413	4.0	7.0	8.5	-	
Discrepancy	no					
Calib. Successful?	yes					
Calibration by	R. Montmezz					
Instrument Type, ID	YSI Pro DDS / YSI 556 / Rental				YSI Pro DDS / HACH2000	
Calibration Location	LRI					

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

LRI Landfill
Water Level Data

Date: Sept 13 & 14
Measured by: RM & SG

	Ground Elevation	PVC Elevation	Total Depth	Depth to Water	Water Level Elevation	Time	Comments
Wells							
W87-2A	662.5	664.01		22.10	640.40		
W88-3M	654.8	656.48		15.40	639.40		
W87-4a	691.9	693.29		10.16	681.74		
W88-7A	631.3	632.51		Lost			
W88-8A	719.7	721.05		dry			
W90-12A	638.6	640.84		35.85	602.75		
MW-1A	653.2	652.57	75.7	20.30	632.86		
MW-2A	652.2	651.93	67.2	20.00	632.20		
MW-3	635.7	637.41	70.4	10.08	625.62		
MW-4		652.37		24.28			
MW-5A		655.55		28.50			
MW-6	633.4	635.71	52.4	12.15	621.25		
MW-7	654.7	656.03	58.0	20.80	633.90		
MW-9	699.1	701.77	76.8	11.63	687.47		
MW-10	671.5	674.17		28.75	642.75		
Piezometers							
P88-2a	633.0	663.96		Lost			
P88-2b	633.0	663.48		Lost			
P88-3a	655.1	656.20	27.4	18.85	636.25		
P88-3b	655.1	655.98	39.8	22.60	632.50		
P95-8a	721.2	722.07		24.72	696.48		
P90-12a	638.6	640.79		11.75	626.85		
P90-12b	638.6	640.73		10.10	628.50		
P90-13a	643.5	645.19		Lost			
P90-13b	643.5	643.63		Lost			
P13-14A				24.91			
GP-1P		652.00		20.11			
GP-2P		656.61		14.20			
GP-3P		658.51		12.09			
GP-4P		662.01		14.24			
GP-9P		674.03		15.62			
GP-10P		649.86		N/A			
GP-11P				N/A			
GP-12P				N/A			
GP-13P				N/A			
GP-14P				16.08			
GP-15P				19.19			
GP-16P				22.24			
GP-17P				12.60			
P-1				31.32			
P-2				4.15			
P-3				12.98			
P21-2				22.71			
South Creek							
		Head Wall					
SWSC-1		632.79		3.55			
SWSC-2		629.95		Dry			

Leak Detection System		
LDCS-1	657.26	27.1
LDCS-2A	659.24	29.48
LDCS-2B	661.70	27.96



Attachment D

Statistical Calculations

Groundwater Prediction Limits (mg/L)
Appendix I Parameters, Second Quarter 2022
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, Second Quarter 2022
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		0.005		0.0025		0.005		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	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
	6/25/2014	0.002	L 0.001	0.005	L 0.0025	0.011	0.011	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	0.01	0.01	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.			

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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		1		2		0		
Minimum Concentration		0.001		0.0074		0.011			0.0005		0.0005		0.001			0.0005			0.0005		0.001		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		0.01		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		0.0025		0.005		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	0.01	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			0.0005		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		27.6653		29.863			NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC
Standard Error		NC		0.00062		0.00275			NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC
MW-6	3/26/2014	0.002	L 0.001	0.0075	0.0075	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						

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Appendix I Parameters, Second Quarter 2022
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	0.002	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	0.01	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	0.001	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	0.001	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	0.001	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	0.001	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	0.001	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	0.001	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 0.0025	0.001	L 0.0005	0.001	L 0.0005	0.005	L 0.0025	0.001	L 0.0005	0.001	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	0.015	0.015	0.043	0.043	0.5	L 0.25
12/6/2016	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	0.001	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
3/29/2017	0.05	L 0.025	0.005	L 0.0025	0.0056	0.0056	0.001	L 0.0005	0.001	L 0.0005	0.005	L 0.0025	0.001	L 0.0005	0.001	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
6/22/2017	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	0.001	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
9/26/2017	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	0.001	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	0.012	0.012	0.01	L 0.005	0.5	L 0.25
12/13/2017	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	0.001	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
3/21/2018	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	0.001	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	0.016	0.016	0.01	L 0.005	0.5	L 0.25
6/19/2018	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	0.001	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
9/19/2018	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	0.001	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
12/4/2018	0.05	L 0.025	0.005	L 0.0025	0.0051	0.0051	0.001	L 0.0005	0.001	L 0.0005	0.005	L 0.0025	0.001	L 0.0005	0.001	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
3/11/2019	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	0.001	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
6/19/2019	0.05	L 0.025	0.005	L 0.0025	0.0051	0.0051	0.001	L 0.0005	0.001	L 0.0005	0.005	L 0.0025	0.001	L 0.0005	0.001	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
9/26/2019	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	0.001	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
12/11/2019	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	0.001	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	0.016	0.016	0.01	L 0.005	0.5	L 0.25
3/17/2020	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	0.001	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	0.015	0.015	0.01	L 0.005	0.5	L 0.25
6/8/2020	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	0.001	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
9/22/2020	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	0.001	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	0.016	0.016	0.01	L 0.005	0.5	L 0.25
12/16/2020	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	0.001	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
3/9/2021	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	0.001	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	0.015	0.015	0.01	L 0.005	0.5	L 0.25
6/15/2021	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	0.001	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
9/15/2021	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	0.001	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	0.015	0.015	0.01	L 0.005	0.5	L 0.25
12/15/2021	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	0.001	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	0.015	0.015	0.01	L 0.005	0.5	L 0.25
3/30/2022	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	0.001	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	0.015	0.015	0.01	L 0.005	0.5	L 0.25
6/15/2022	0.05	L 0.025	0.005	L 0.0025	0.005	L 0.0025	0.001	L 0.00																								

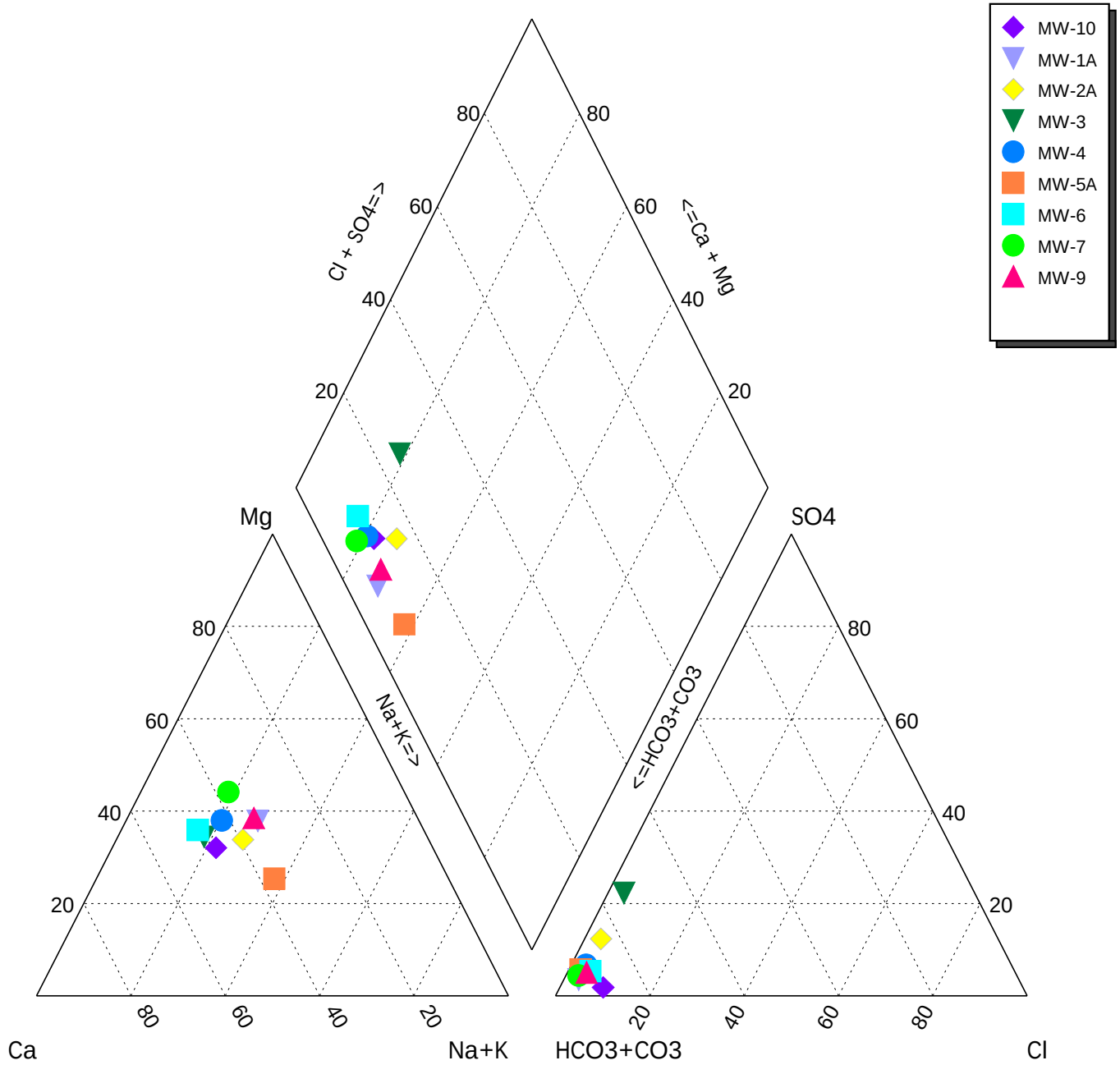
Notes: Metals results are for total metals.
mg/L = milligrams per liter.
L = not reported at or above the MRL (Method Reporting Limit).
One-half the MRL value used for statistical calculations when concentrations not reported at or above the MRL.
NC = not calculated due to insufficient number of reported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



Attachment E

Trilinear Diagrams

Third Quarter 2022, Groundwater Monitoring Wells



DESCRIPTION: Piper Diagram - 3Q22 Groundwater

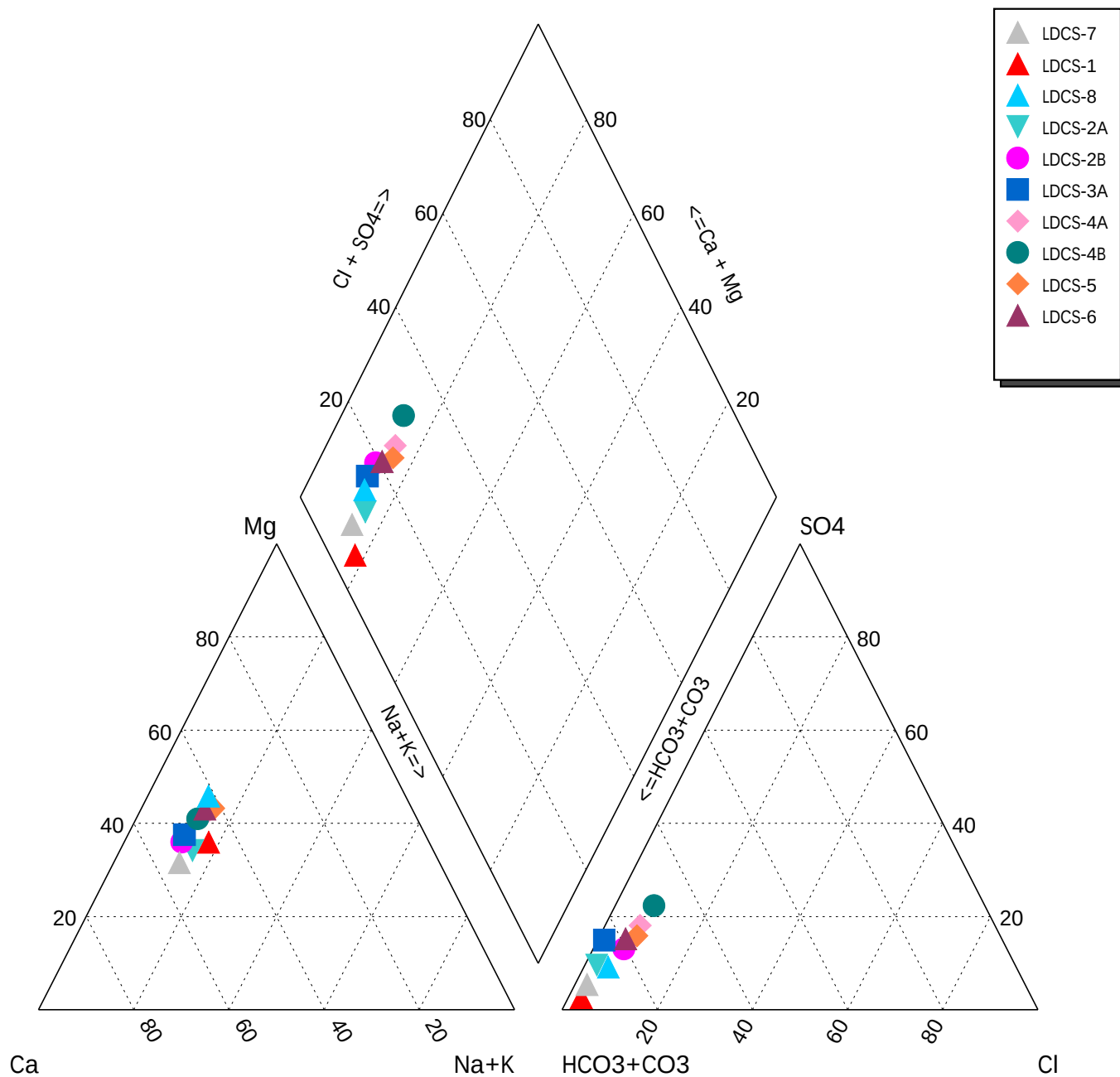
PROJECT: LRI Landfill

PROJECT NO: 04222001.02

CLIENT: LRI, Inc.

DATE: December 2022

Third Quarter 2022, Leak Detection Collection Recovery System



DESCRIPTION: Piper Diagram - 3Q22 LDCRS

PROJECT: LRI Landfill

PROJECT NO: 04222001.02

CLIENT: LRI, Inc.

DATE: December 2022

Attachment F

Analytical Data Validation Report

THIRD QTR. 2022 DATA VALIDATION REPORT – LRI LANDFILL

Project Details

Project No.	04222001.02	Site Name	LRI 304 th Street LF
Data Validator	Jovany Estrada	Data Level	Level 2
Date	10/11/2022	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)
280-166347-1	None.	TestAmerica, Denver, CO
280-166459-1	Batch 280-588027 was at a pH of 6, outside of the required criteria. Sample batch 280-588027 were analyzed outside of the 7-day holding time for unpreserved samples.	TestAmerica, Denver, CO
280-166461-1	The following parameters fell below the laboratory's lowest calibration standard: 1,1-dichloroethene, carbon disulfide and m- and p-xylene at 1.0ug/L. Results reported below the lowest calibration standard are estimated. Total Beryllium failed the recovery criteria low for MS/MSD of sample "-1". Anion analysis for samples "-01, -03, -05, -07, -09, -11, -13, -15" were analyzed outside of the analytical holding time due to mechanical malfunction involving multiple IC instruments.	TestAmerica, Denver, CO
280-166520-1	None	TestAmerica, Denver, CO
280-166589-1	Due to shipping delay, sample 304-091422-19 (280-166589-1) was not analyzed within holding time for Nitrate by IC analysis.	TestAmerica, Denver, CO
280-166592-1	Due to shipping delay, samples 304-091422-20 (280-166592-1, 304-091422-17 (280-166592-2) were not analyzed within holding time for Nitrate by IC analysis.	TestAmerica, Denver, CO

Analytical Summary

Sample Group	Analyses					
	TDS/Alk/NO3	Metals	NH3/TOC	VOCs	Anions	TSS
280-166347-1	X	X	X	X	X	-
280-166459-1	X	X	X	X	X	-
280-166461-1	X	X	X	X	X	X



280-166520-1	X	X	X	X	X	-
280-166589-1	X	X	X	X	X	-
280-166592-1	X	X	X	X	X	X
280-167083-1	X	X	X	X	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	280-166461-1	Beryllium recovery criteria low for MS/MSD.
Metals	Acceptable.	See case narratives.
Duplicates	Acceptable.	See case narratives.
Organics	Acceptable.	See case narratives.
General Chemistry	Acceptable.	See case narratives.
General Comments	Acceptable.	See case narratives.

Field Quality Assurance Samples

Field QA Samples	Sample Group	Analytes	Notes
QC-TB	280-160343-1	None.	
QC-TB	280-160381-1	None.	
QC-TB	280-160386-1	None.	
QC-FB	280-160381-1	None.	
QC-TB	280-160388-1	None.	

Lab Quality Flags

Flag	Sample Groups	Comments
^2	280-166459-1, 280-166461-1, 280-166589-1	Calibration Blank (ICB and/or CCB) is outside acceptance limits.
4	280-166347-1, 280-166459-1, 280-166459-1, 280-166461-1, 280-166520-1, 280-166589-1, 280-166592-1	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
B	280-166589-1	Compound was found in the blank and sample.
F1	280-166459-1, 280-166461-1, 280-166520-1, 280-166589-1	MS and/or MSD recovery exceeds control limits.
F2	280-166459	MS/MSD RPD exceeds control limits

E	280-166347-1, 280-166589-1	Result exceeded calibration range.
H	280-166459-1, 280-166461-1, 280-166589-1, 280-166592-1	Sample was prepped or analyzed beyond the specified holding time
H3	280-166592-1	Sample was received and analyzed past holding time.
J	280-166347-1, 280-166459-1, 280-166461-1, 280-166520-1, 280-166589-1, 280-166592-1	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
*+	280-166459-1, 80-166461-1	LCS and/or LCSD is outside acceptance limits, high biased.

Duplicate Evaluation

Analyte	Units	MW-5A (304-091322-09)	MW-5A DUP (304-091322-11)	RPD (%)
Alkalinity, Total	mg/L	150	140	6.9
Ammonia	mg/L	0.1 U	0.24	82.4
Calcium, Dissolved	mg/L	24	24	0.0
Chloride	mg/L	2.3	2.3	0.0
Magnesium, Dissolved	mg/L	10	10	0.0
Manganese, Dissolved	mg/L	0.14	0.14	0.0
Potassium, Dissolved	mg/L	3.7	3.8	2.7
Sodium, Dissolved	mg/L	26	25	3.9
Sulfate	mg/L	7.4	7.5	1.3
Total Dissolved Solids	mg/L	180	170	5.7

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

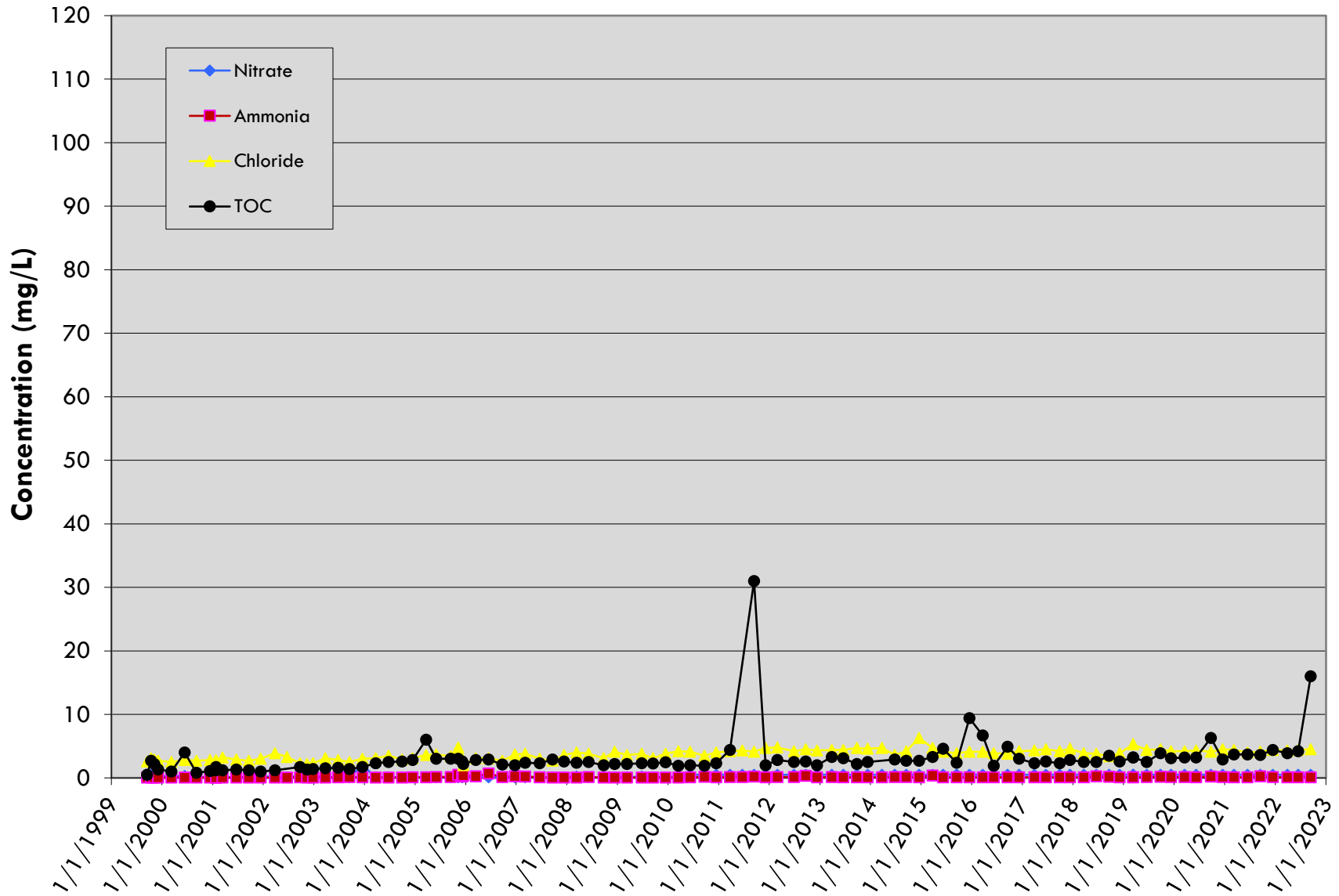
Lab qualifiers are noted. All data, as qualified, are acceptable for use.

Attachment G

Groundwater and LDCS Time Trend Plots

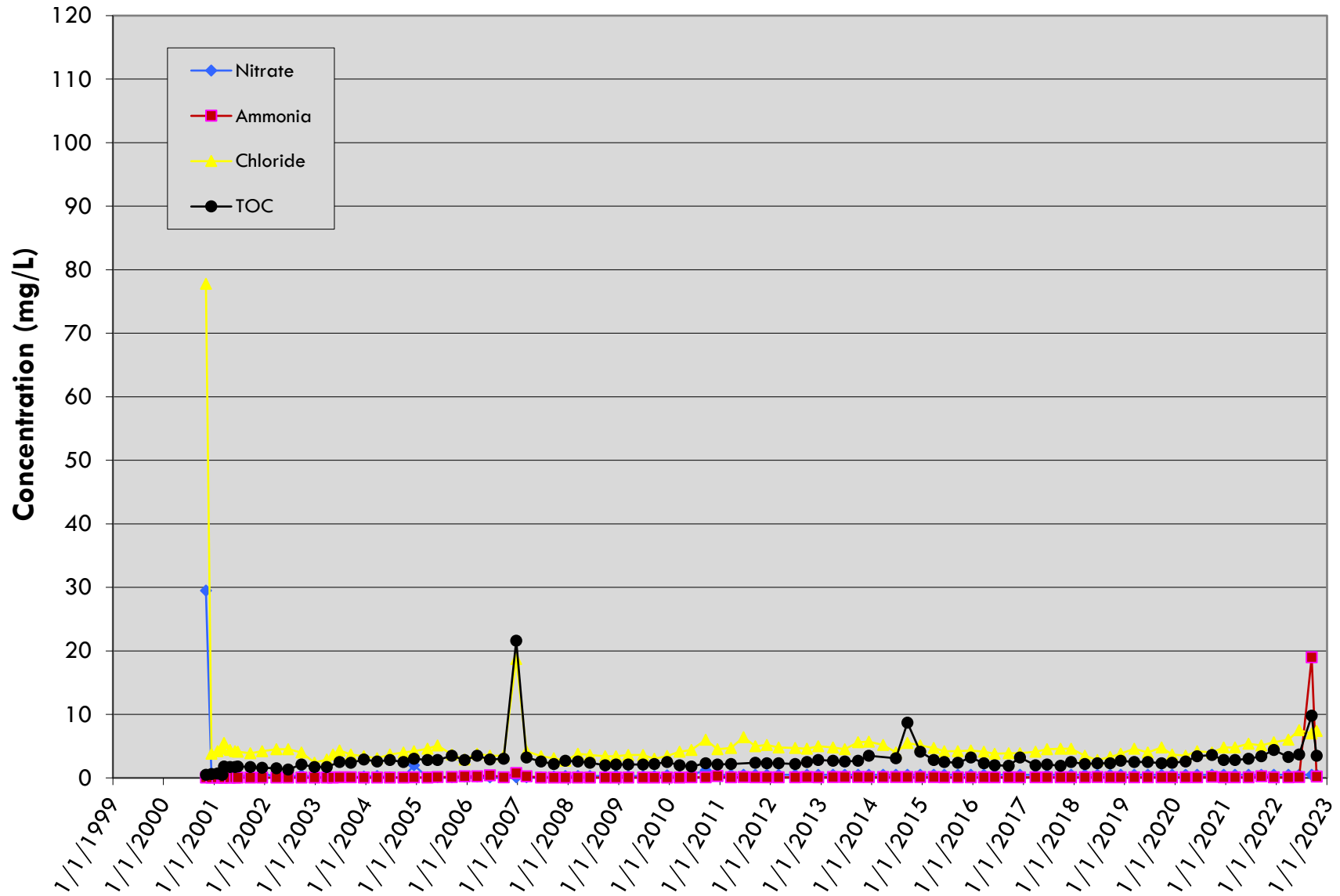
LDCS-1

LRI Landfill, Pierce County, Washington



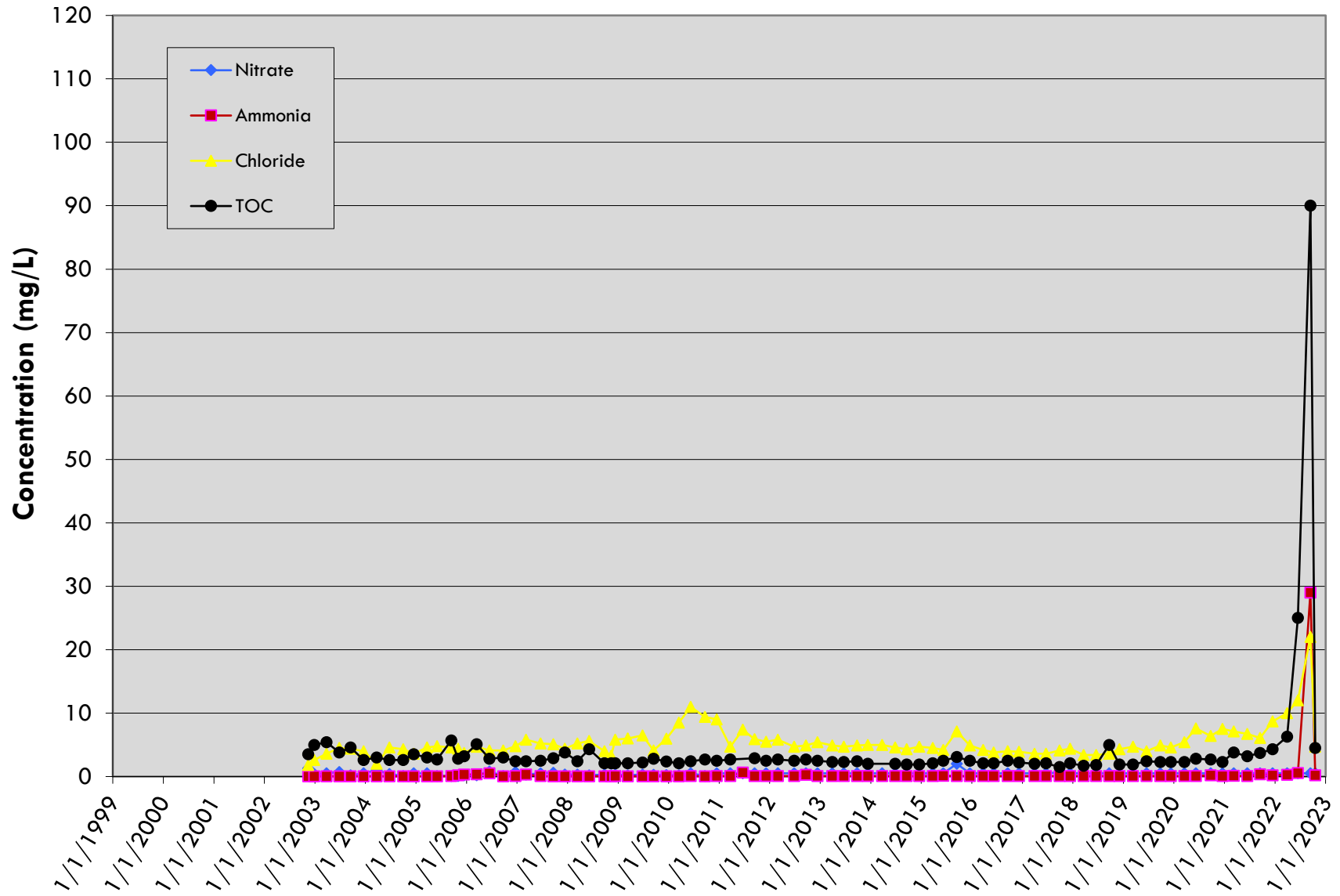
LDCS-2A

LRI Landfill, Pierce County, Washington



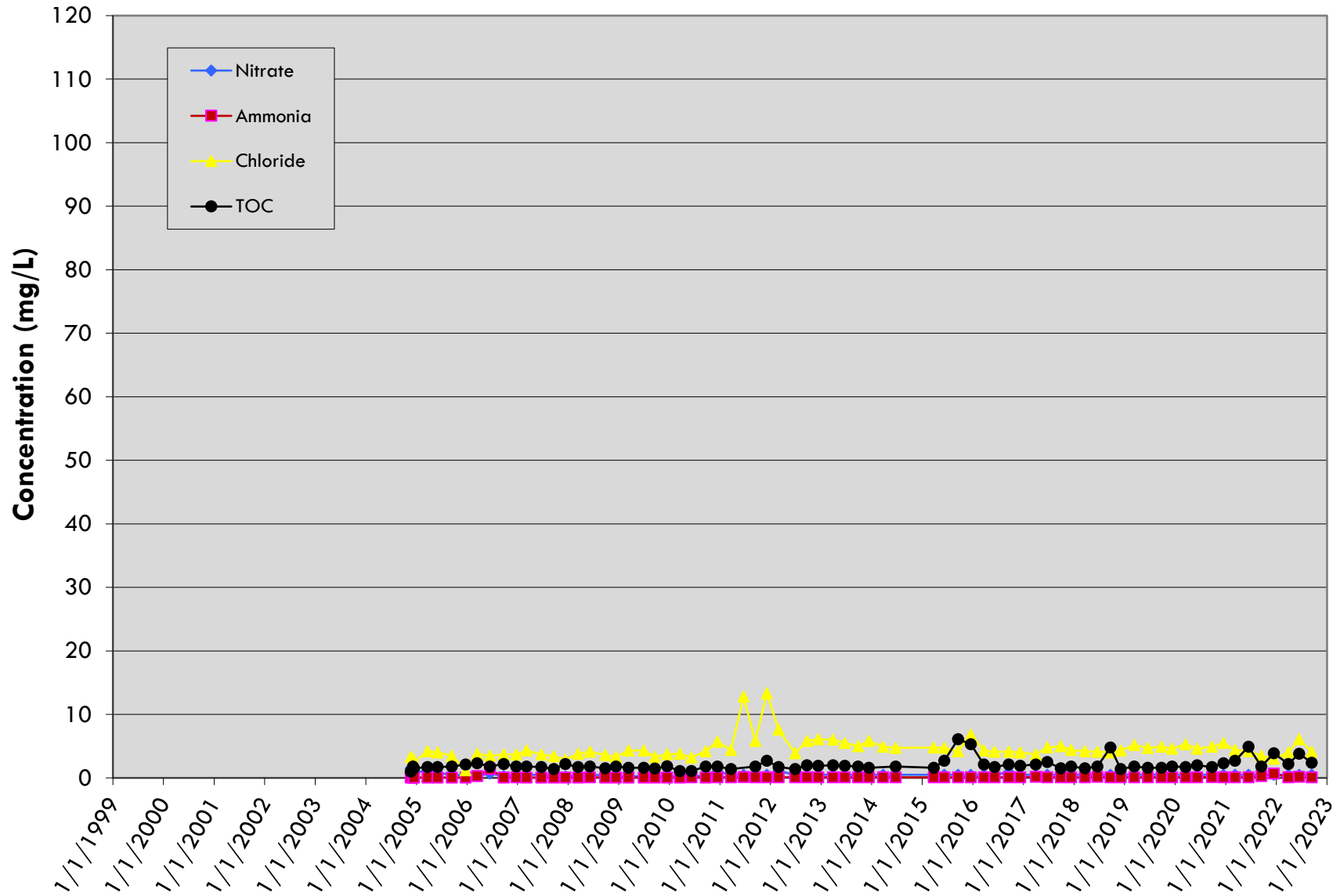
LDCS-2B

LRI Landfill, Pierce County, Washington



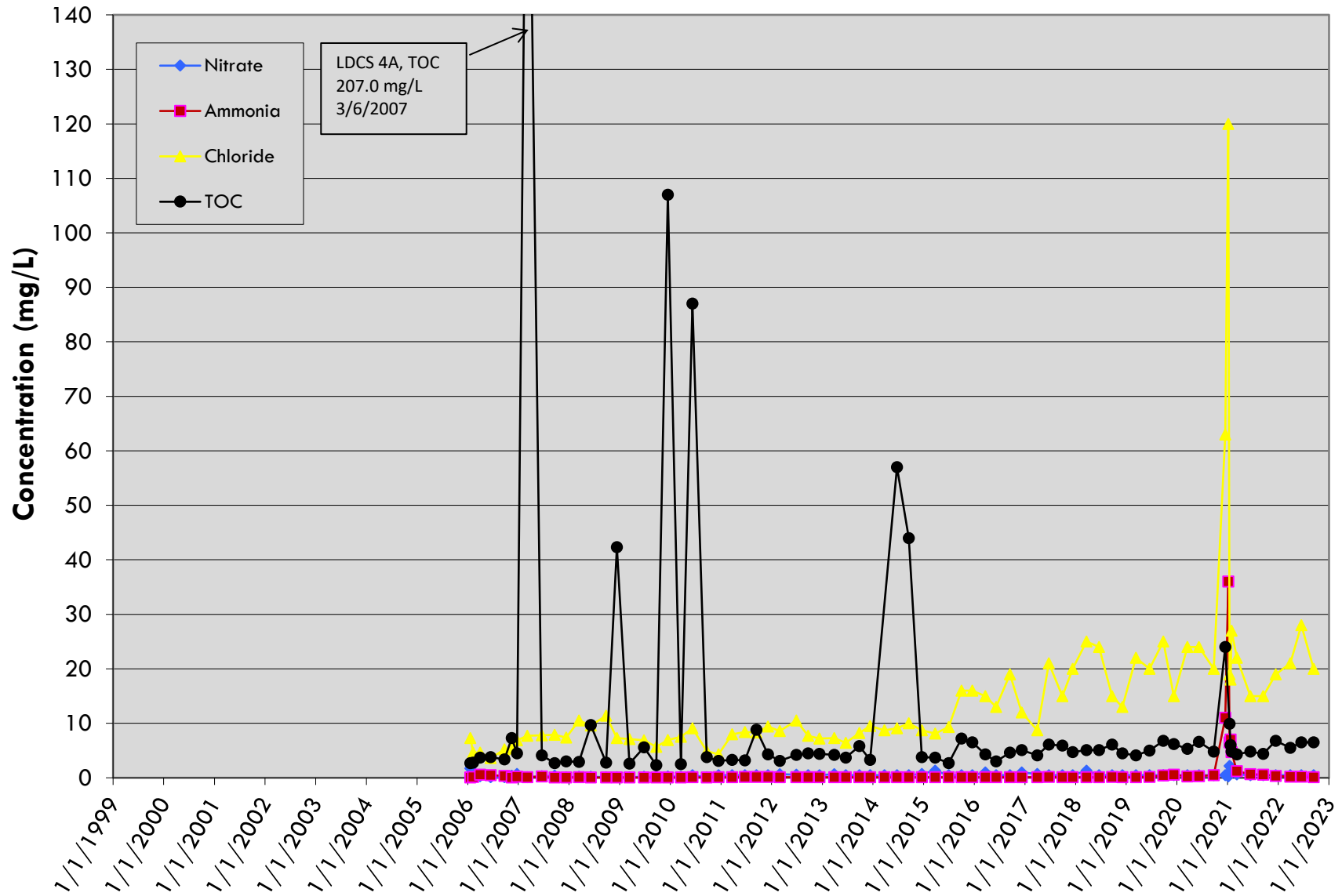
LDCS-3A

LRI Landfill, Pierce County, Washington



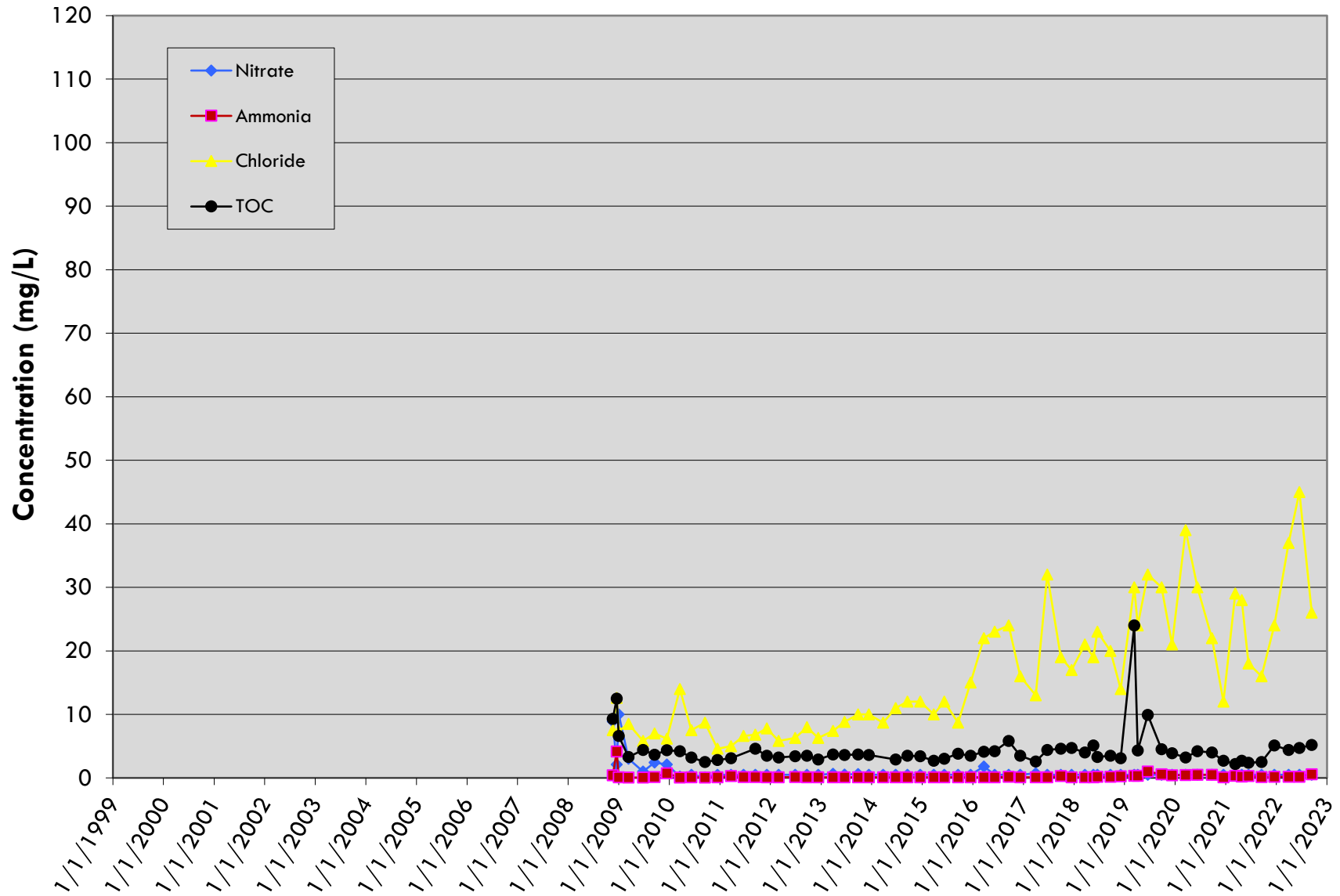
LDCS-4A

LRI Landfill, Pierce County, Washington



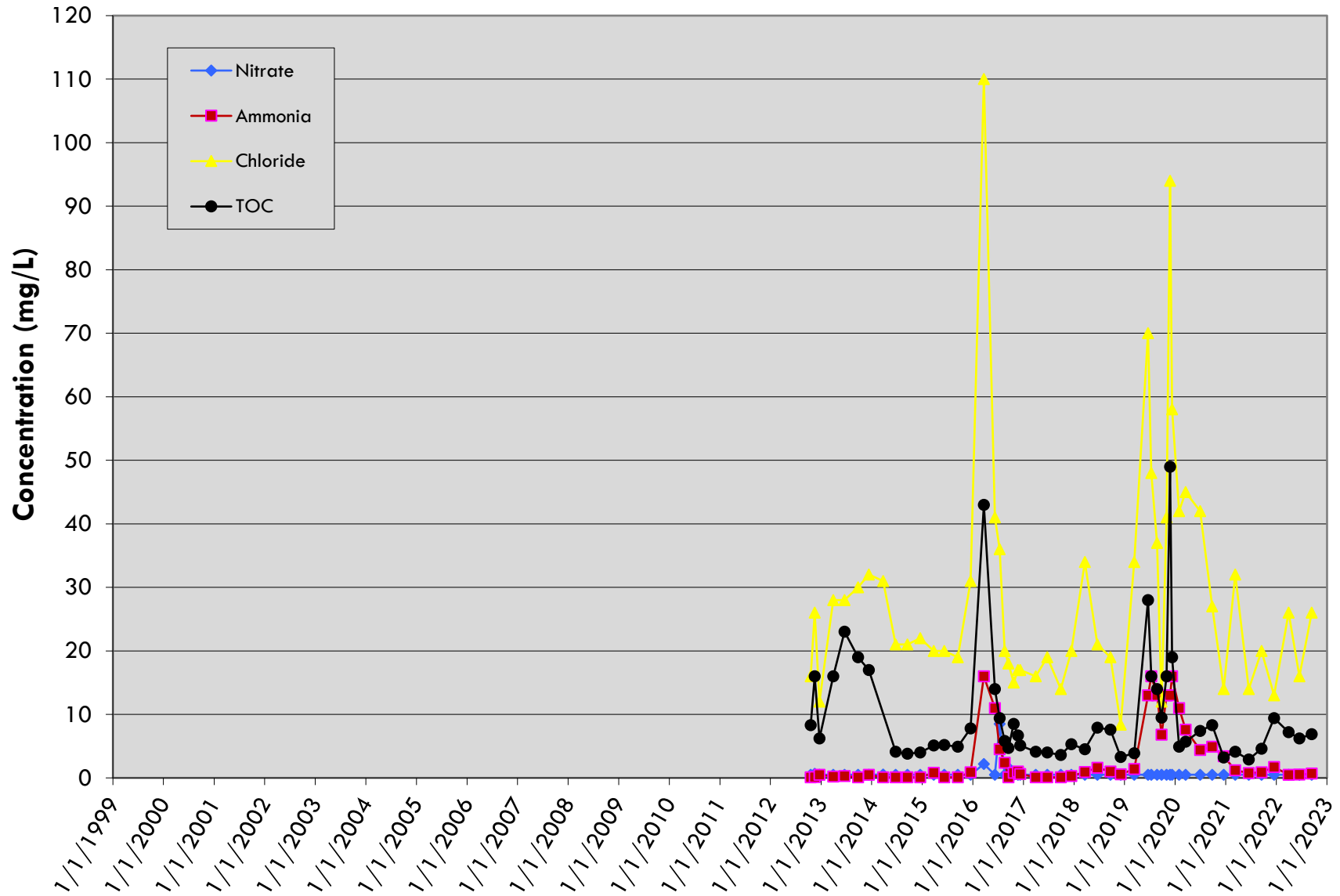
LDCS-4B

LRI Landfill, Pierce County, Washington



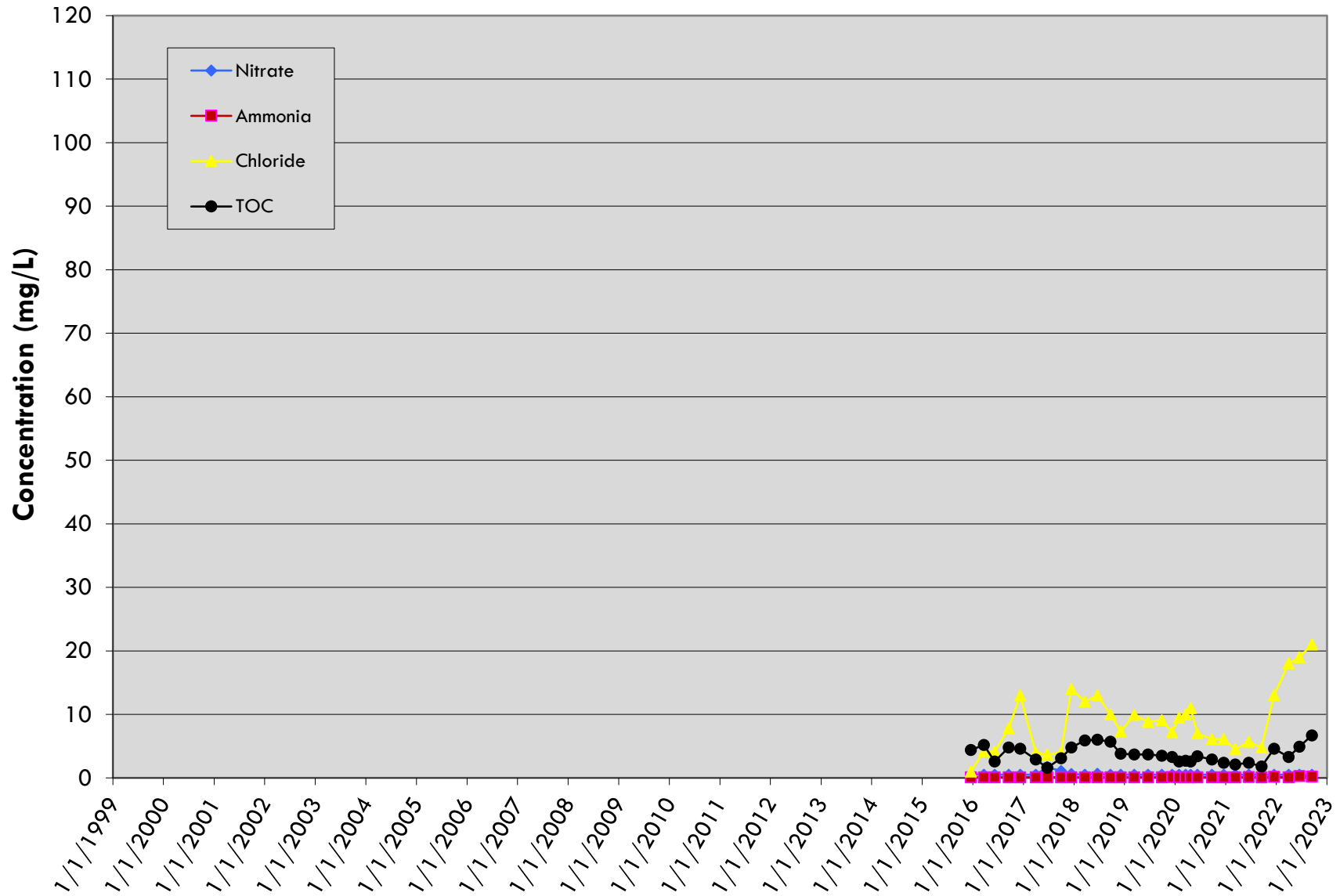
LDCS-5

LRI Landfill, Pierce County, Washington



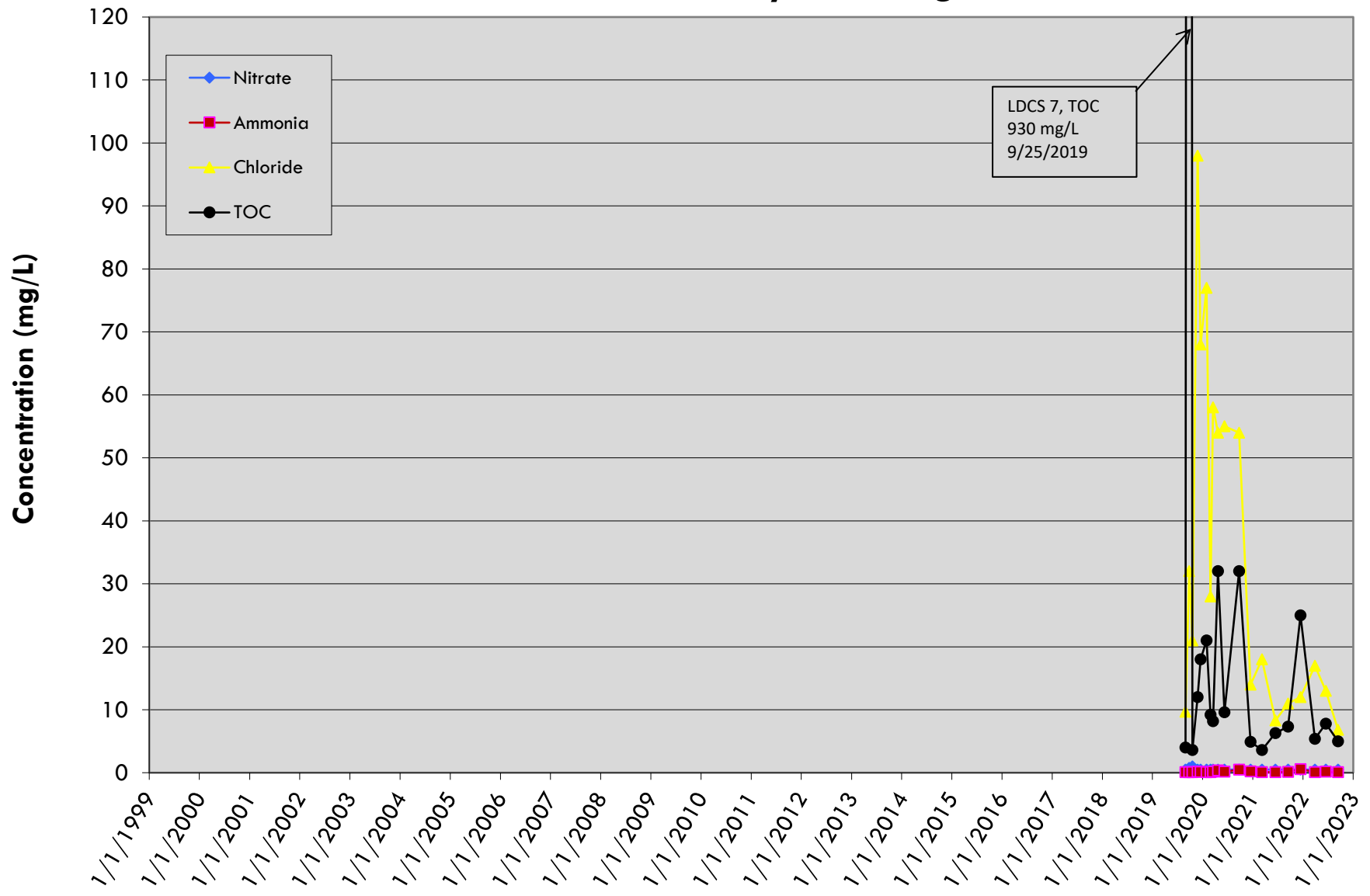
LDCS-6A

LRI Landfill, Pierce County, Washington



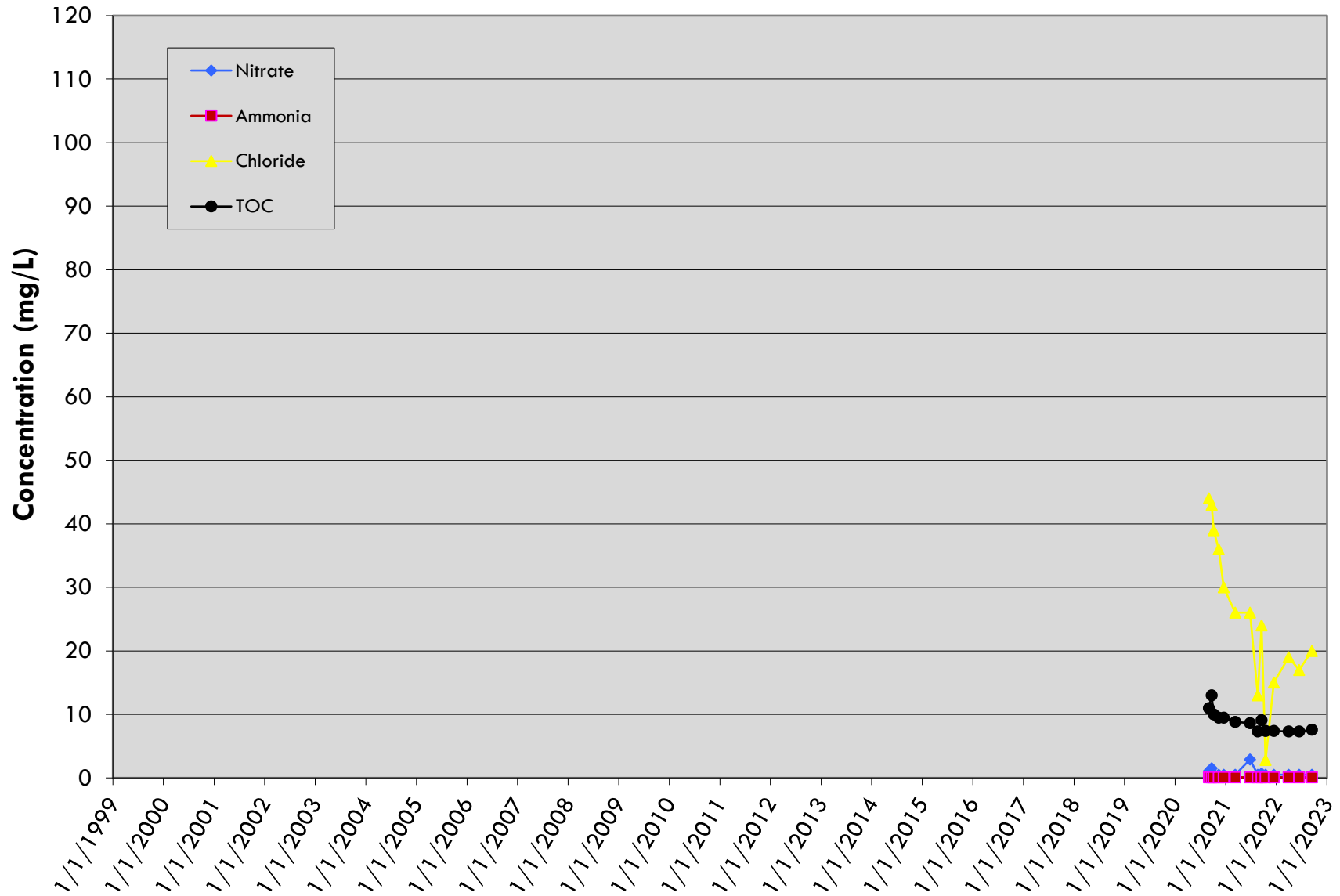
LDCS-7

LRI Landfill, Pierce County, Washington



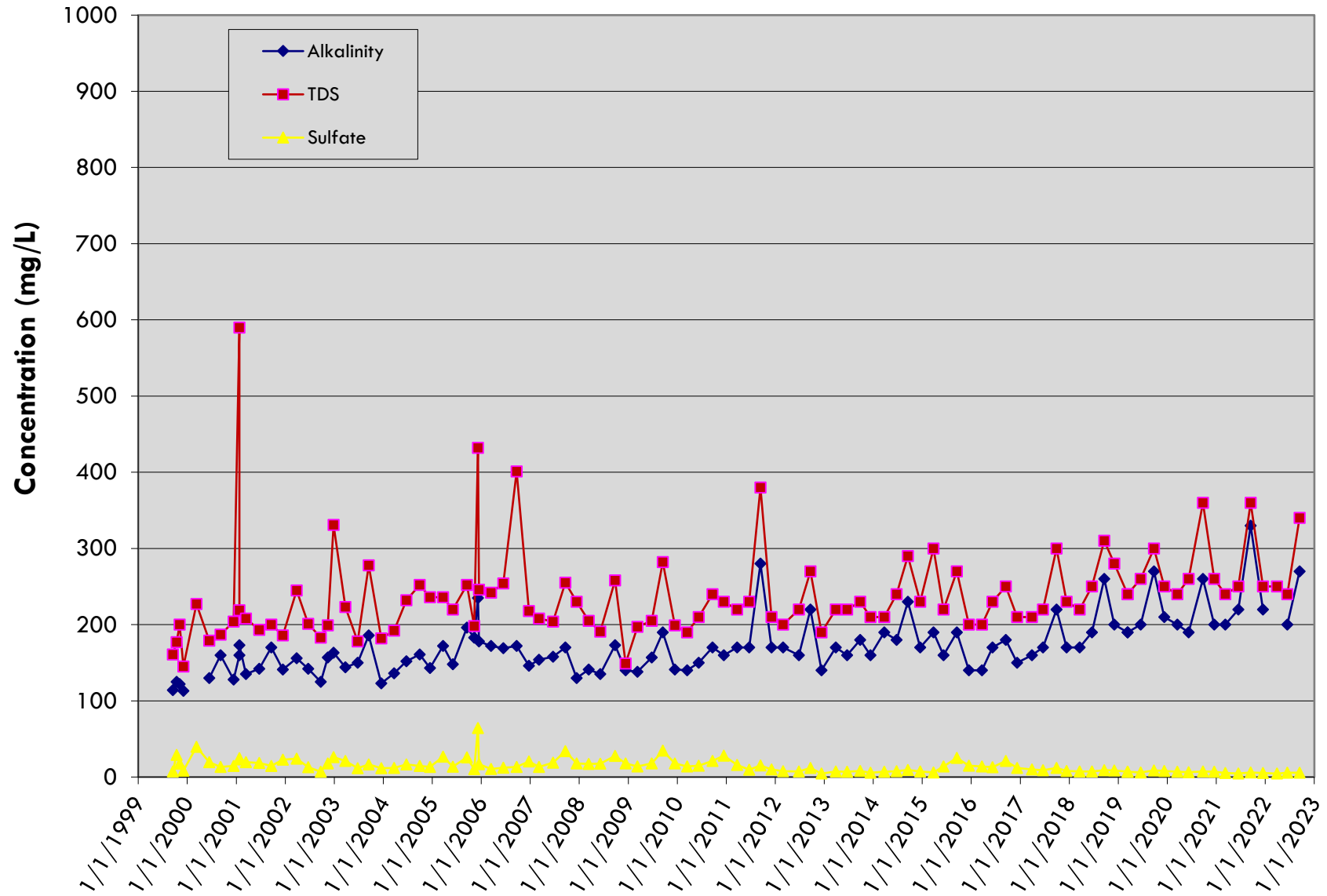
LDCS-8

LRI Landfill, Pierce County, Washington



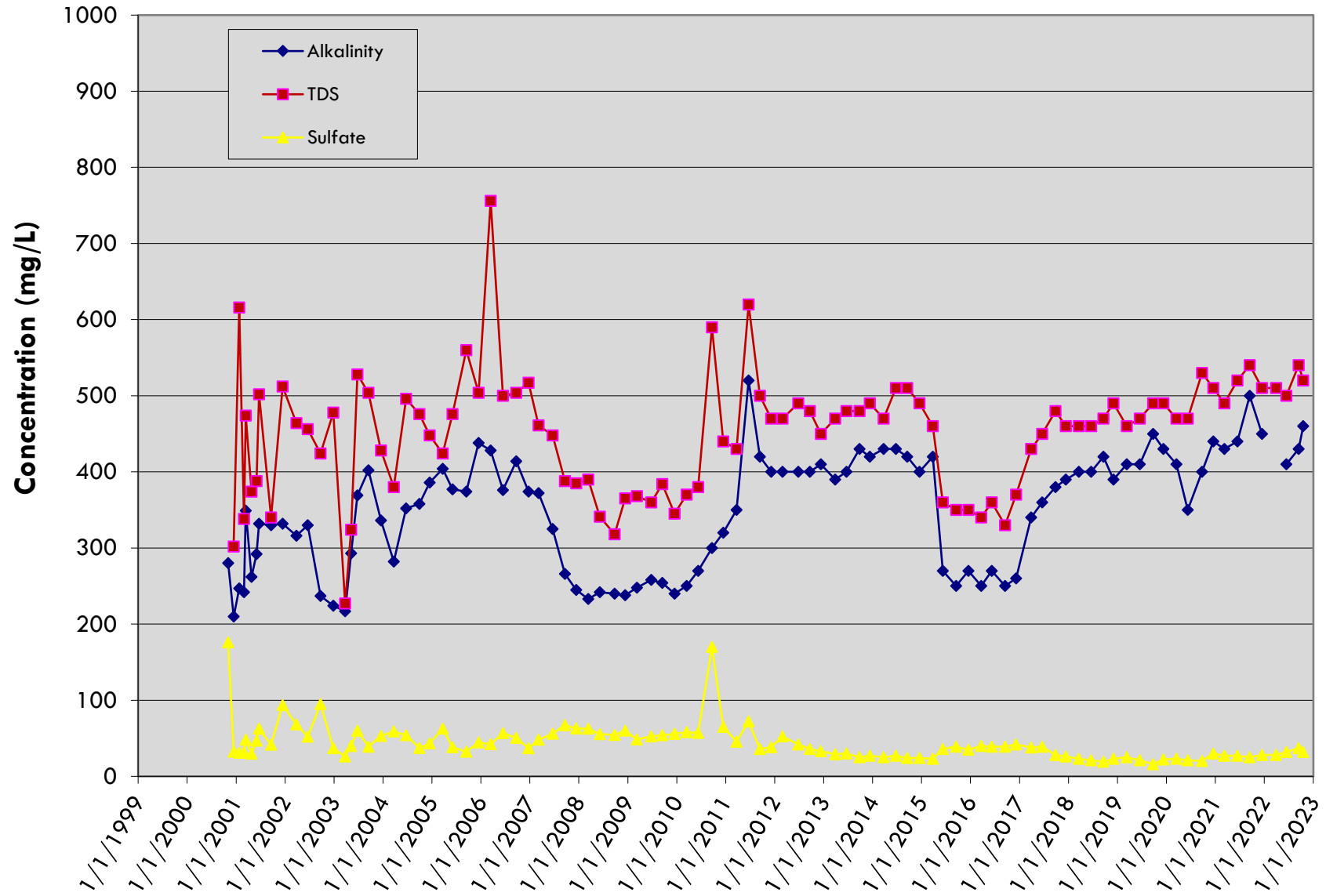
LDCS-1

LRI Landfill, Pierce County, Washington



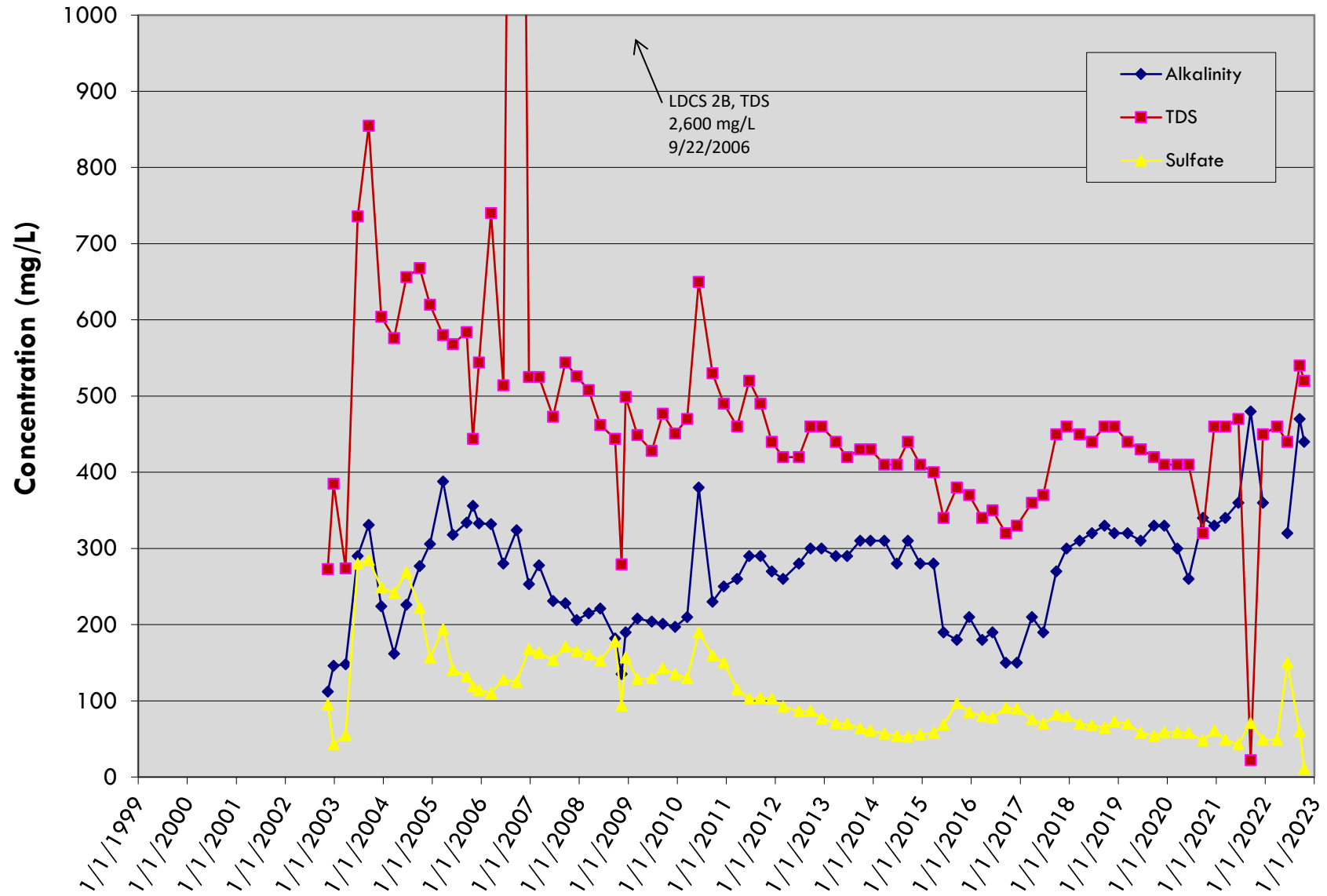
LDCS-2A

LRI Landfill, Pierce County, Washington



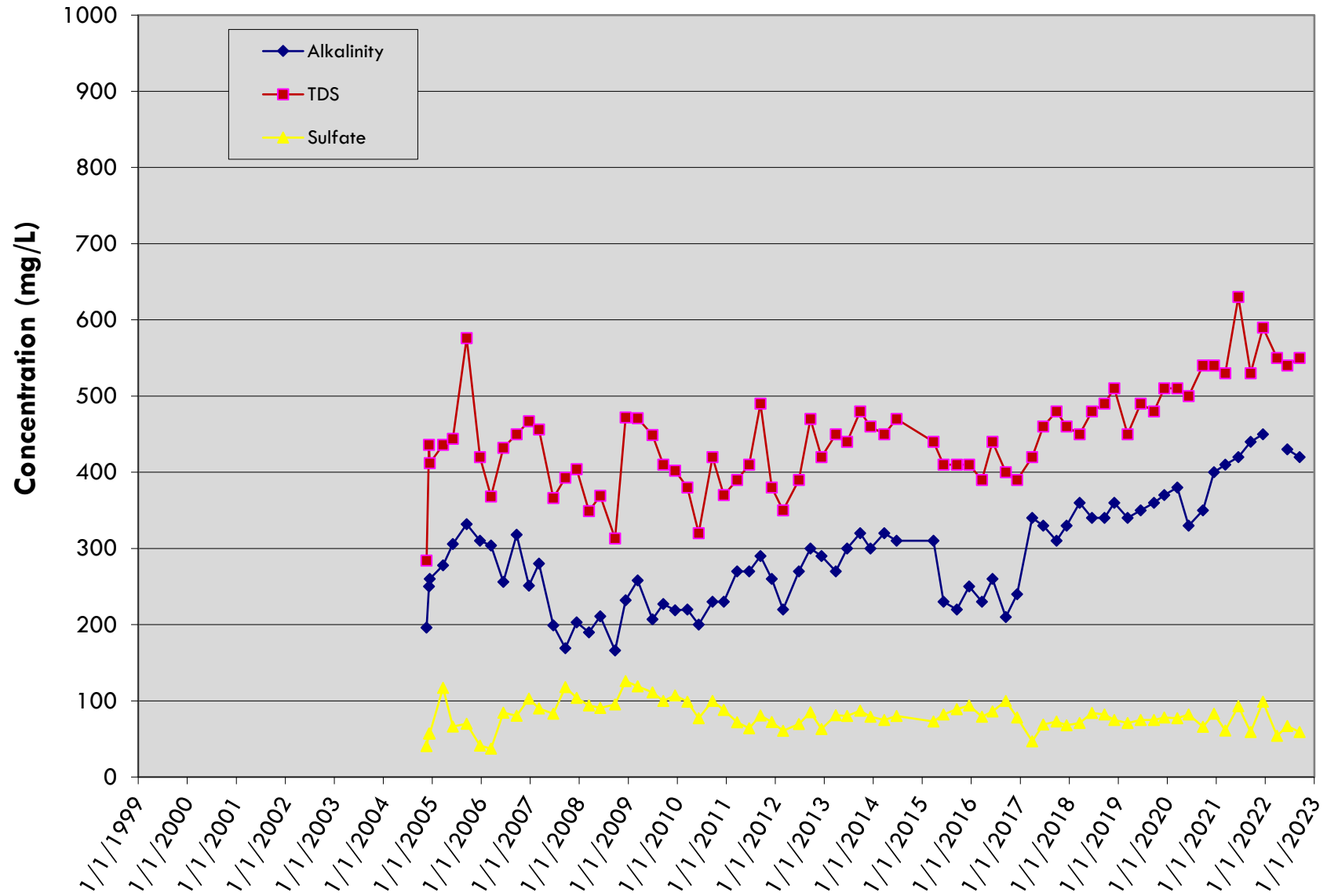
LDCS-2B

LRI Landfill, Pierce County, Washington



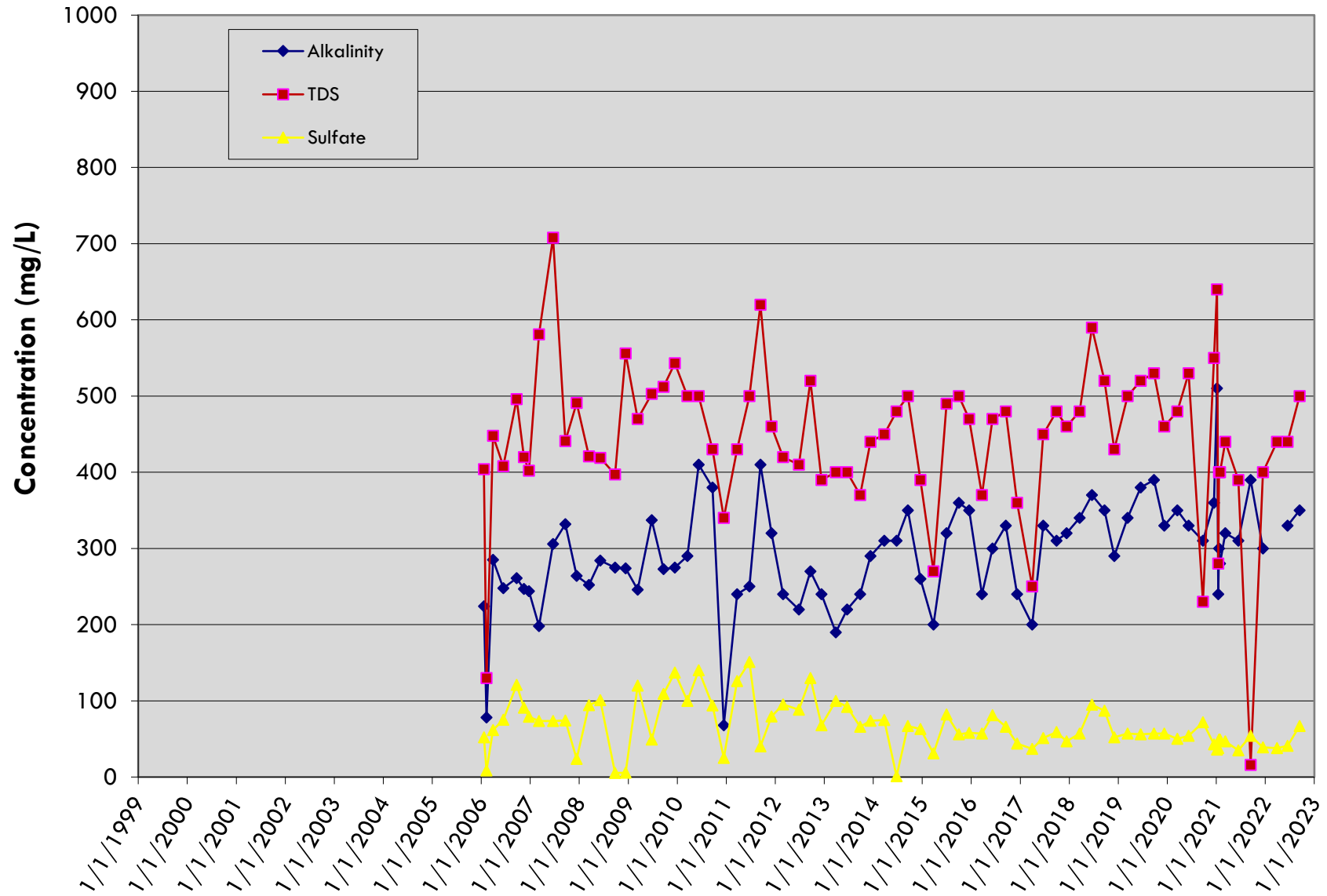
LDCS-3A

LRI Landfill, Pierce County, Washington



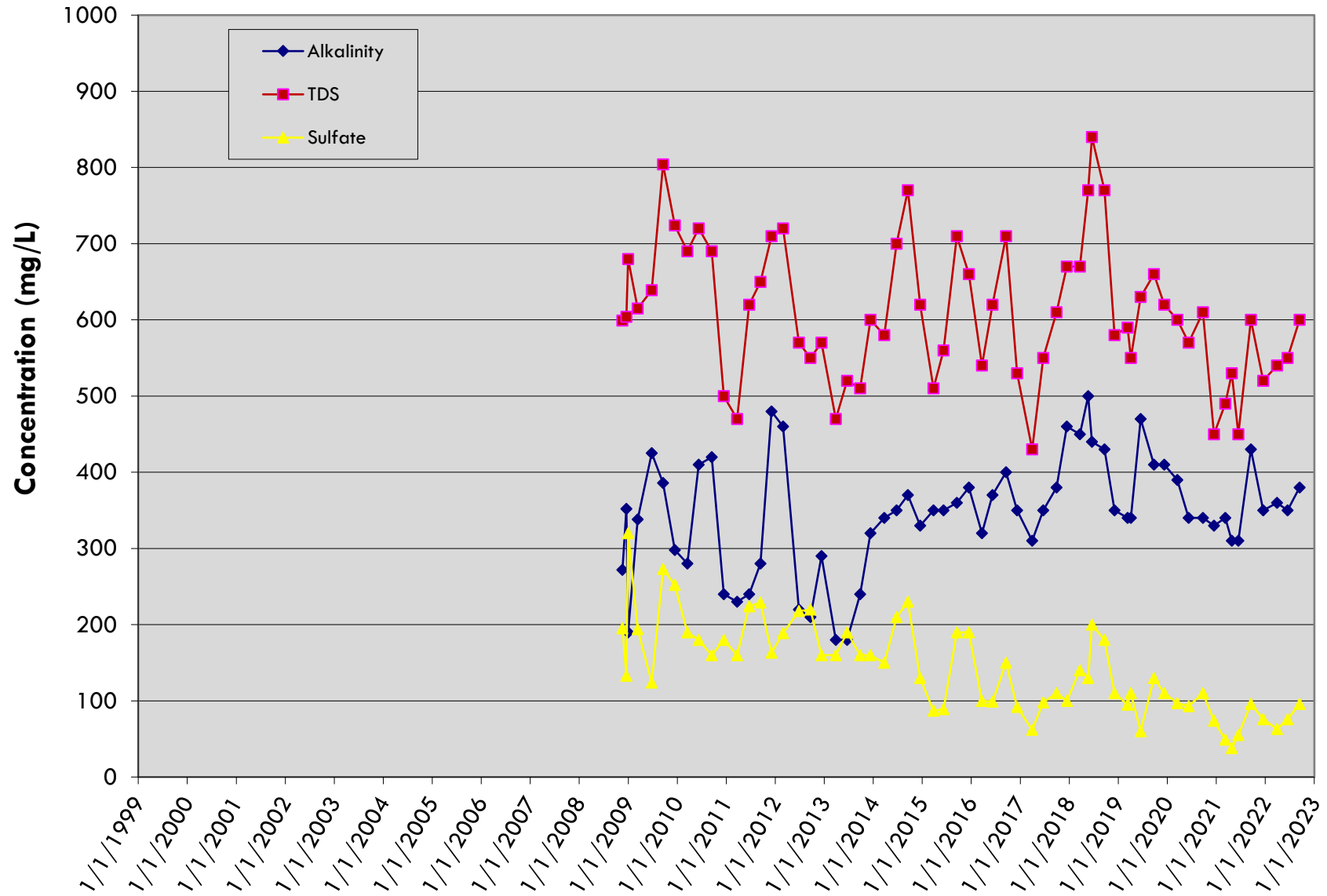
LDCS-4A

LRI Landfill, Pierce County, Washington



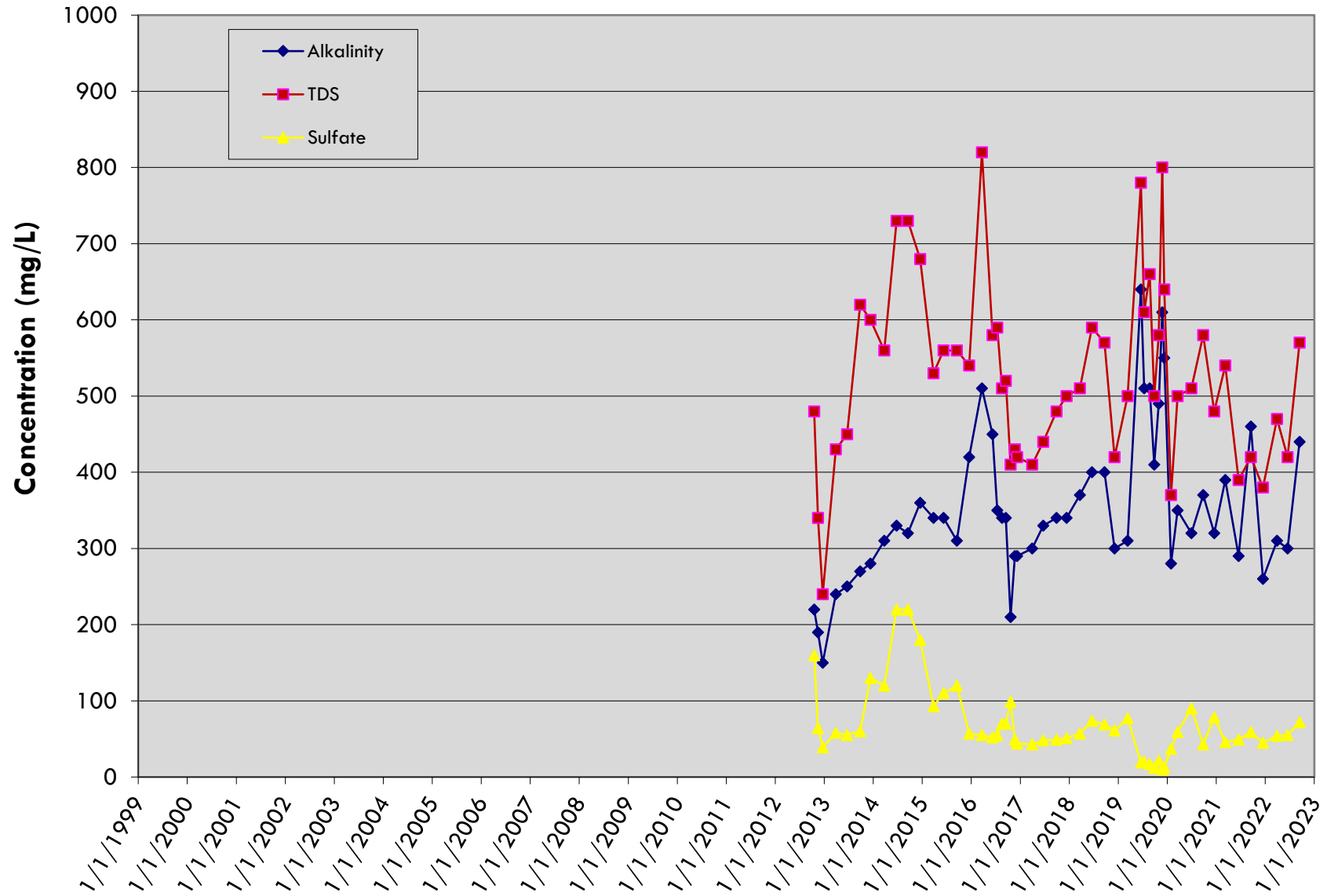
LDCS-4B

LRI Landfill, Pierce County, Washington



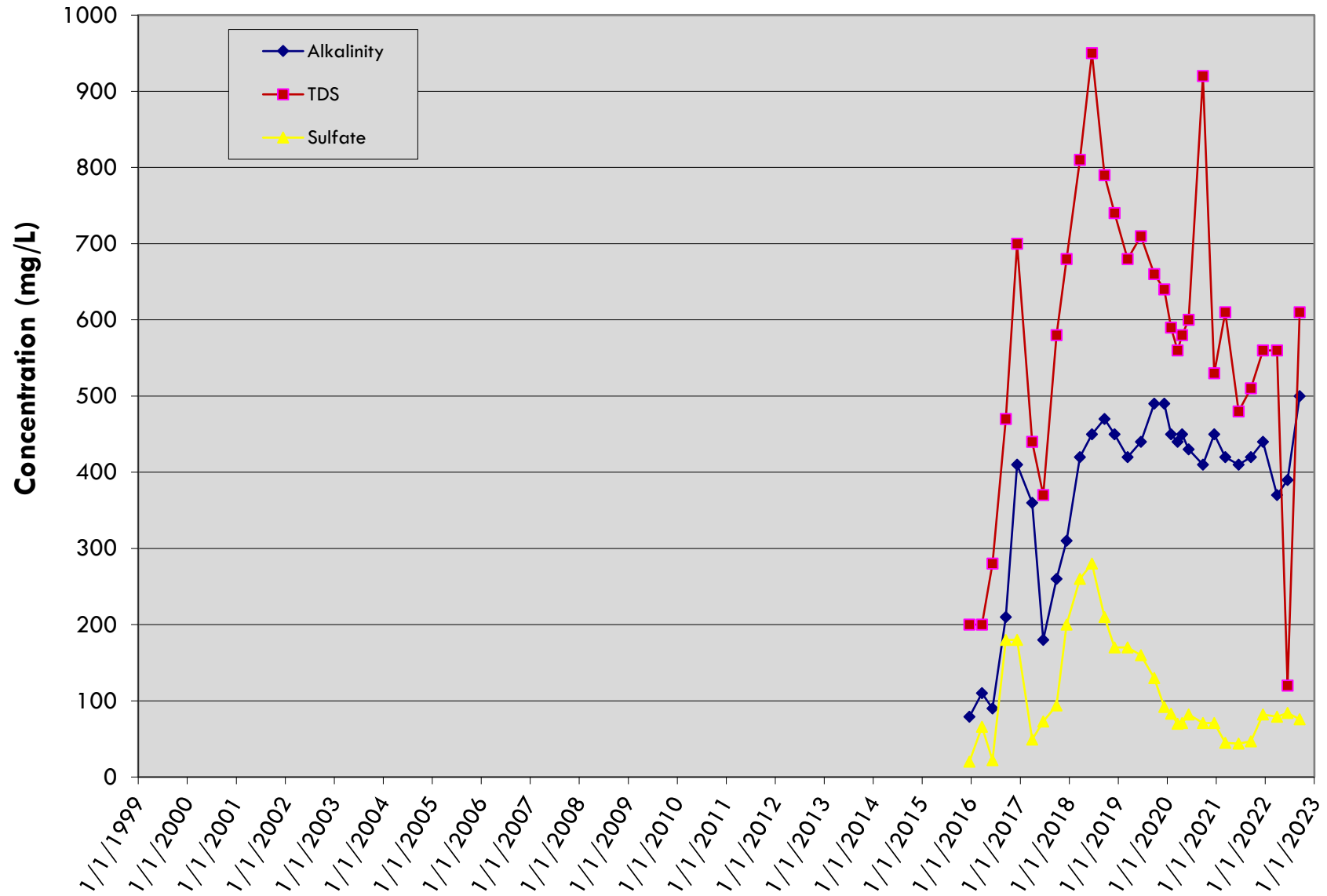
LDCS-5

LRI Landfill, Pierce County, Washington



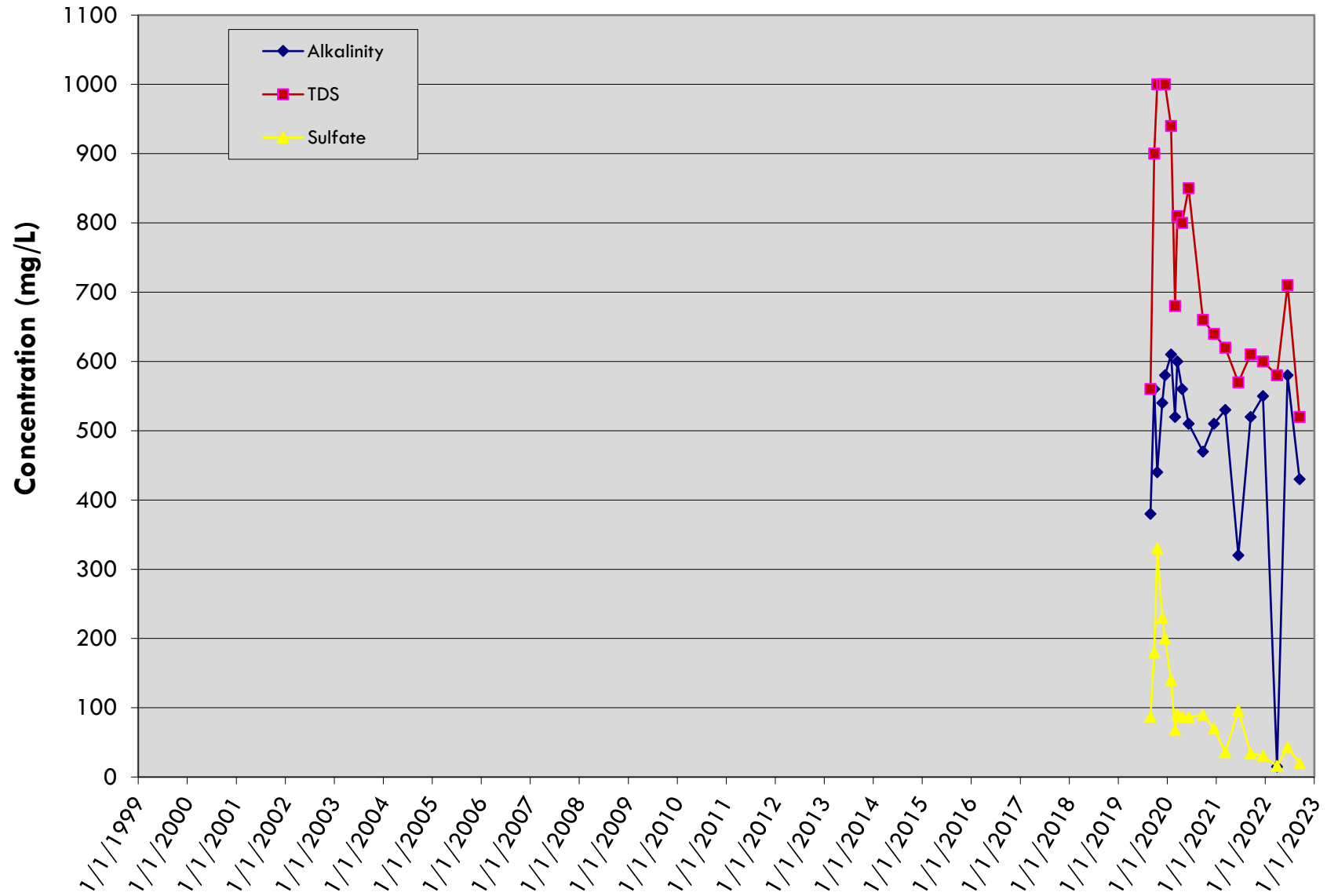
LDCS-6A

LRI Landfill, Pierce County, Washington



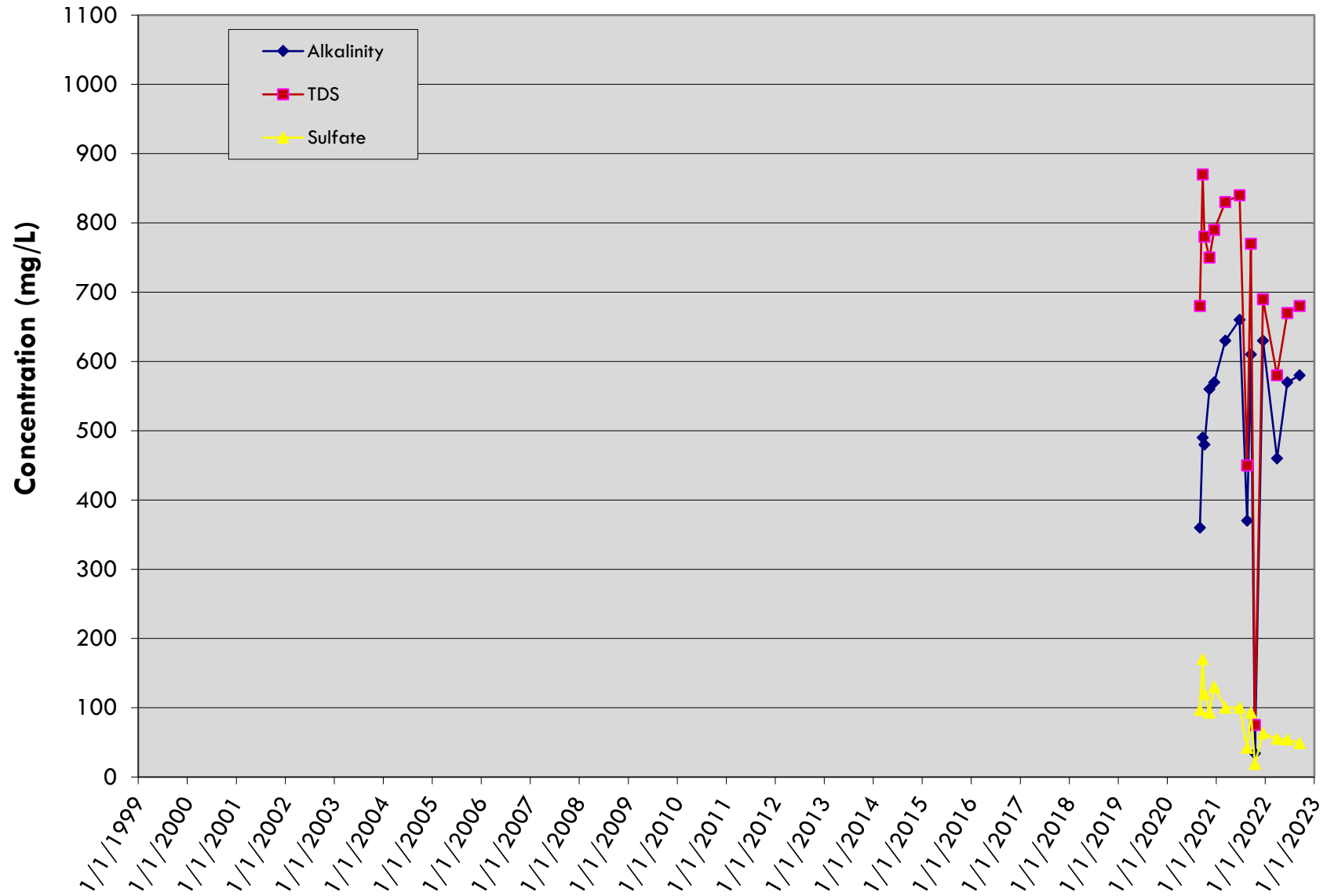
LDCS-7

LRI Landfill, Pierce County, Washington



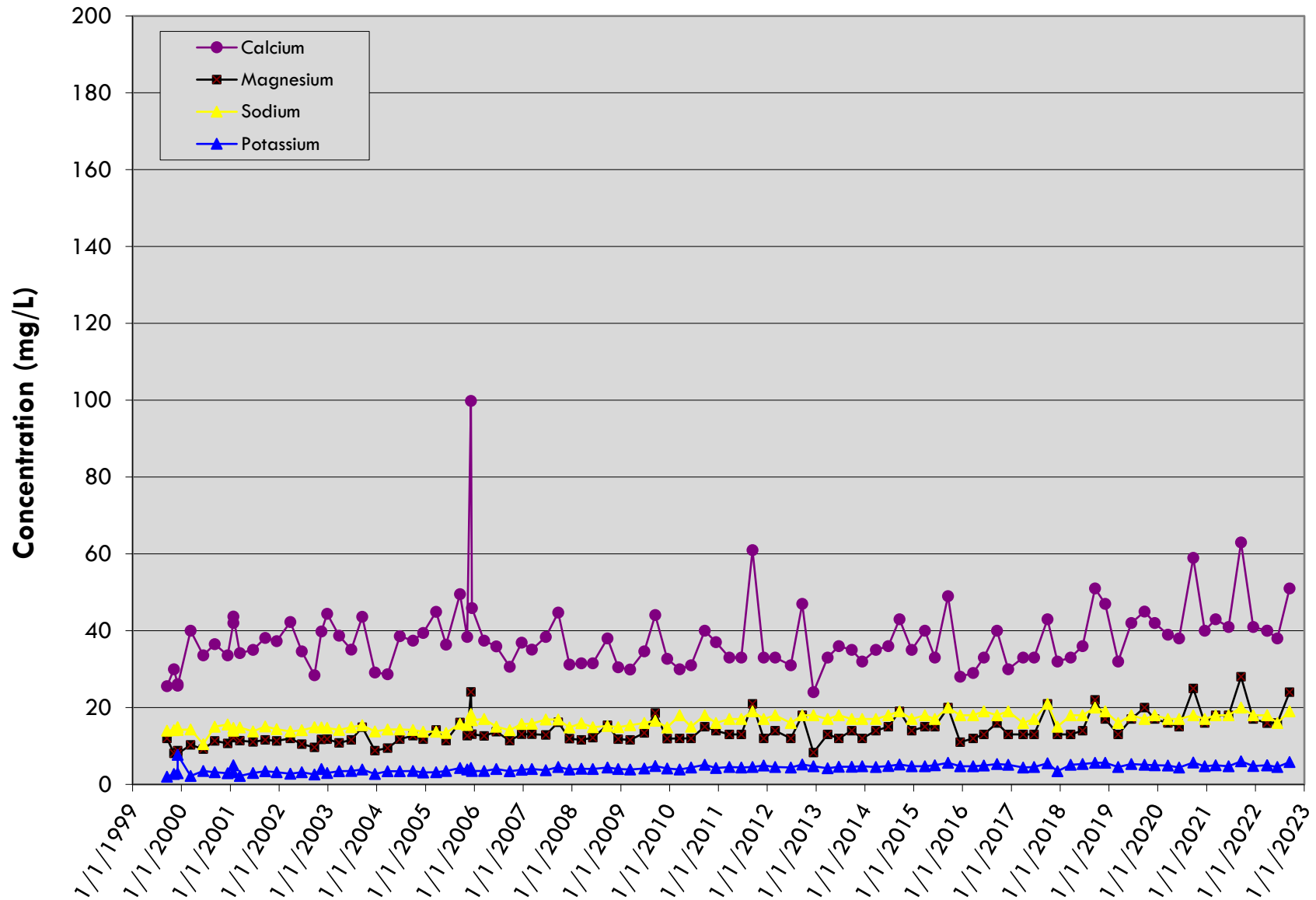
LDCS-8

LRI Landfill, Pierce County, Washington



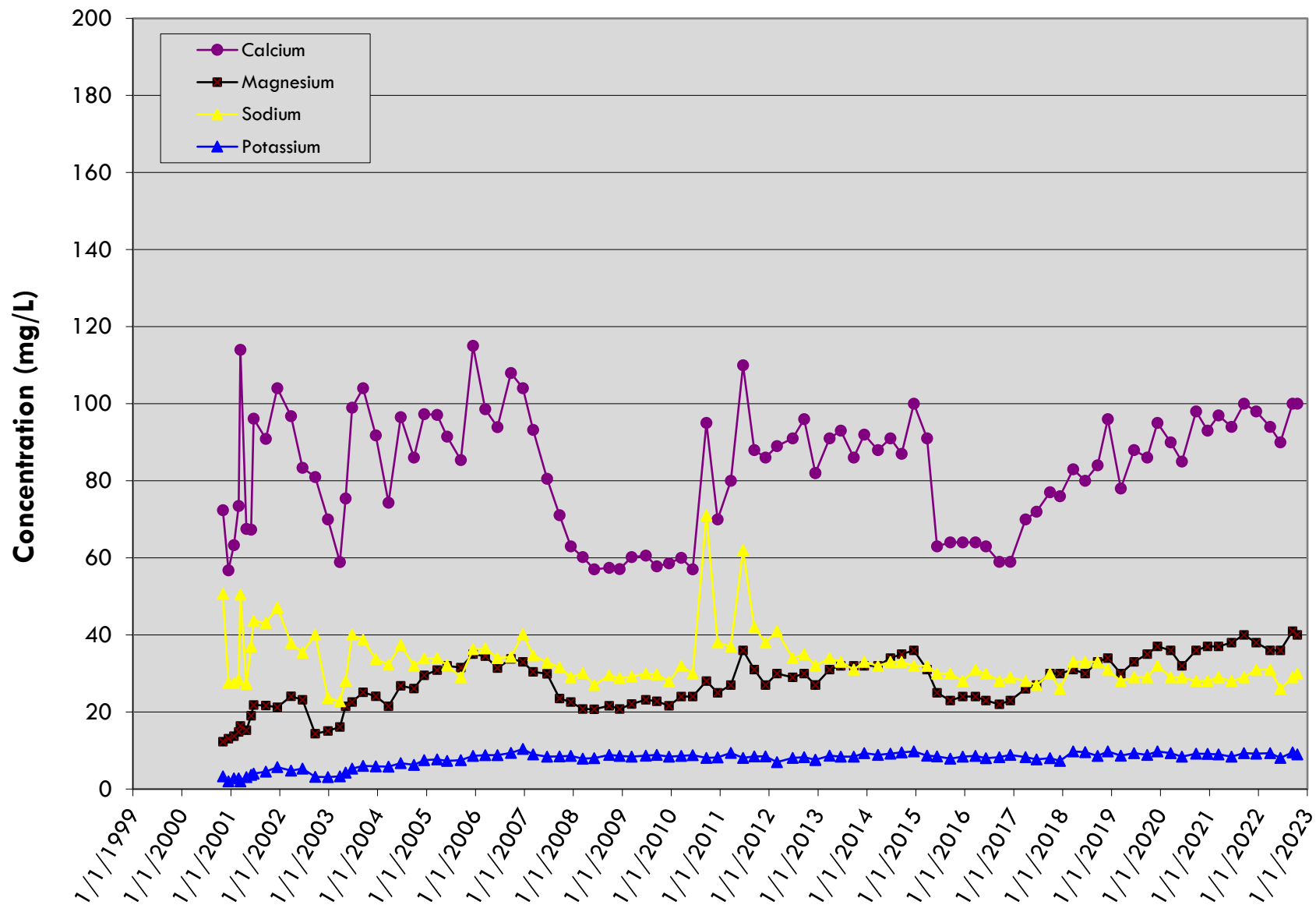
LDCS-1

LRI Landfill, Pierce County, Washington



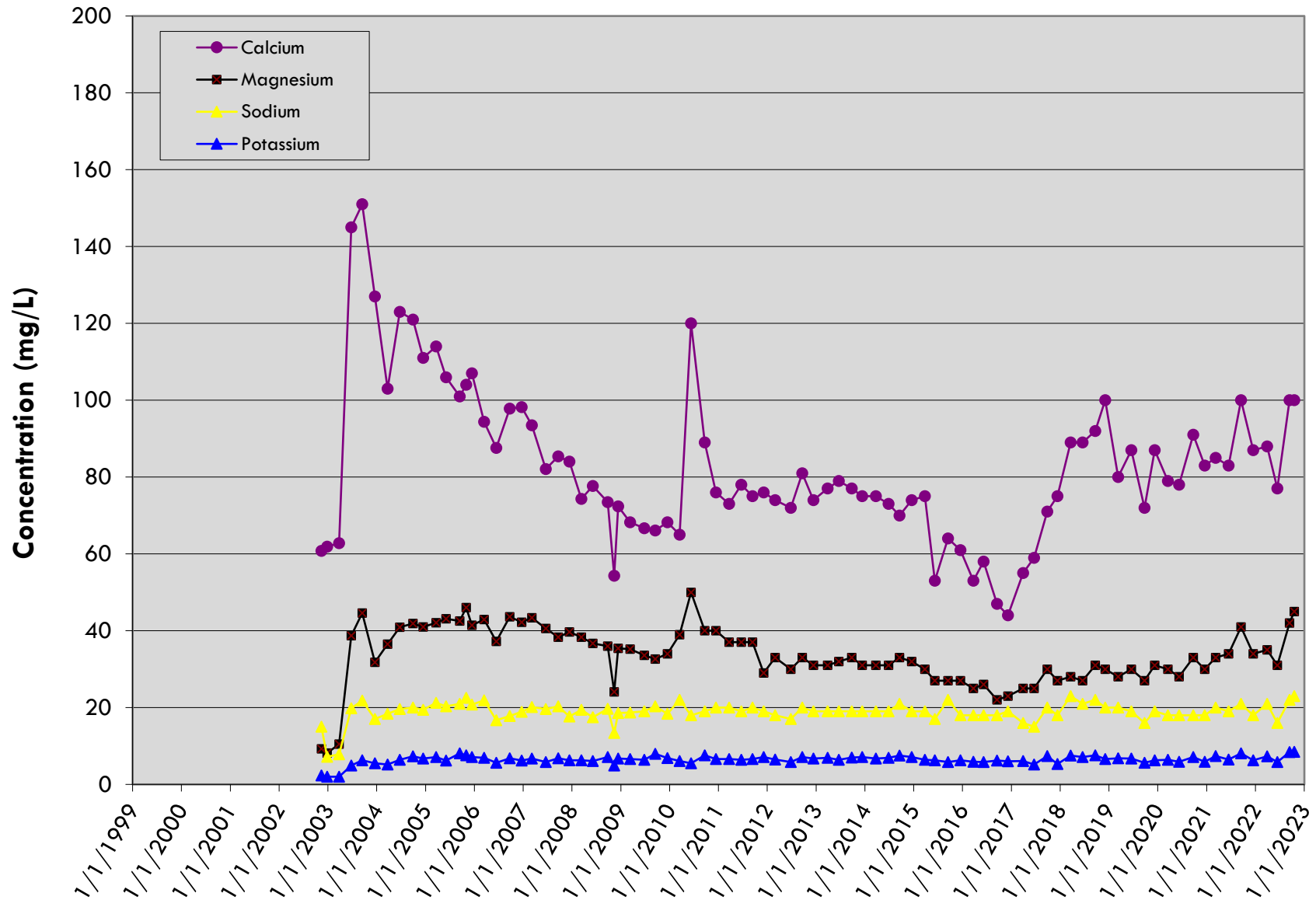
LDCS-2A

LRI Landfill, Pierce County, Washington



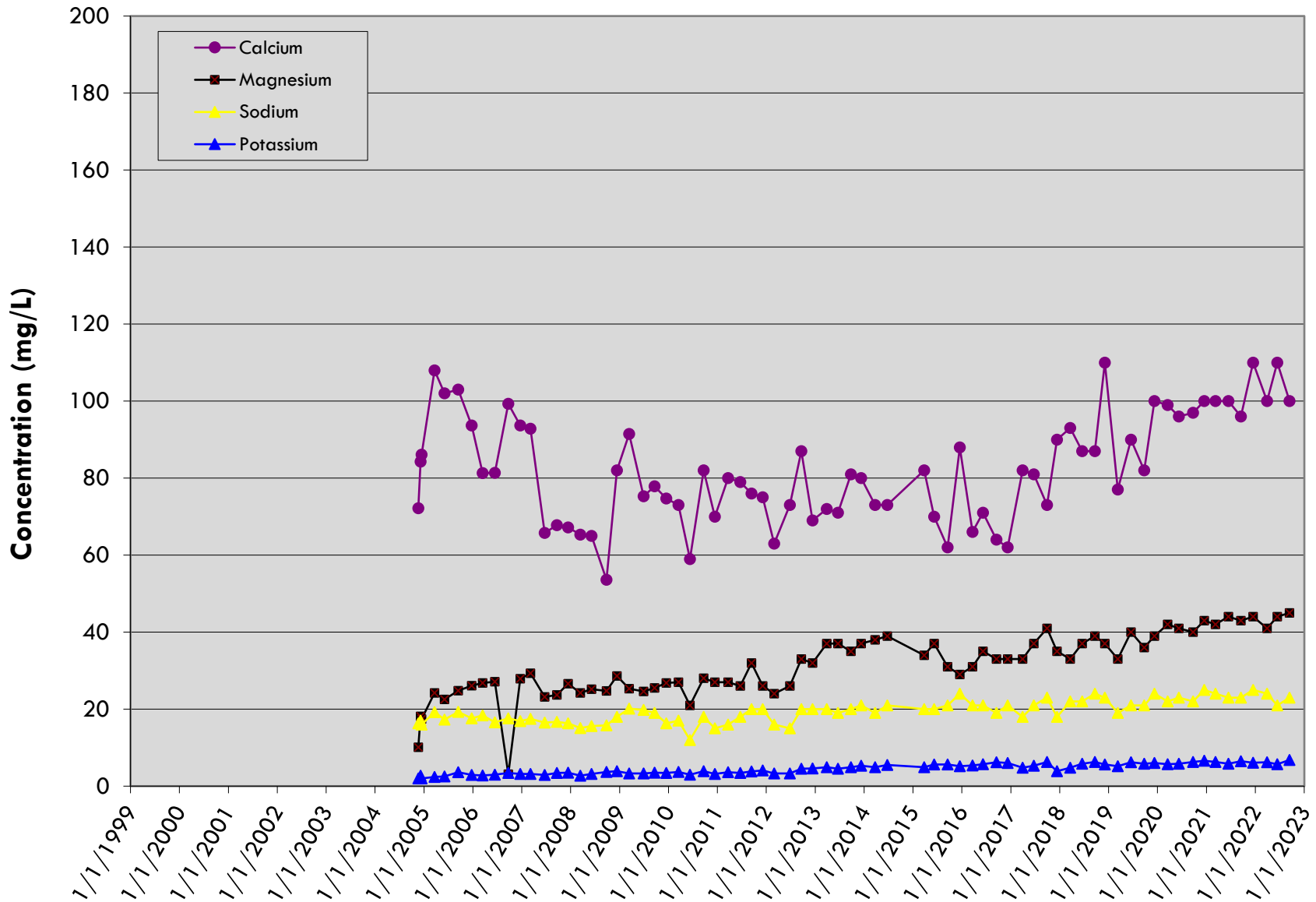
LDCS-2B

LRI Landfill, Pierce County, Washington



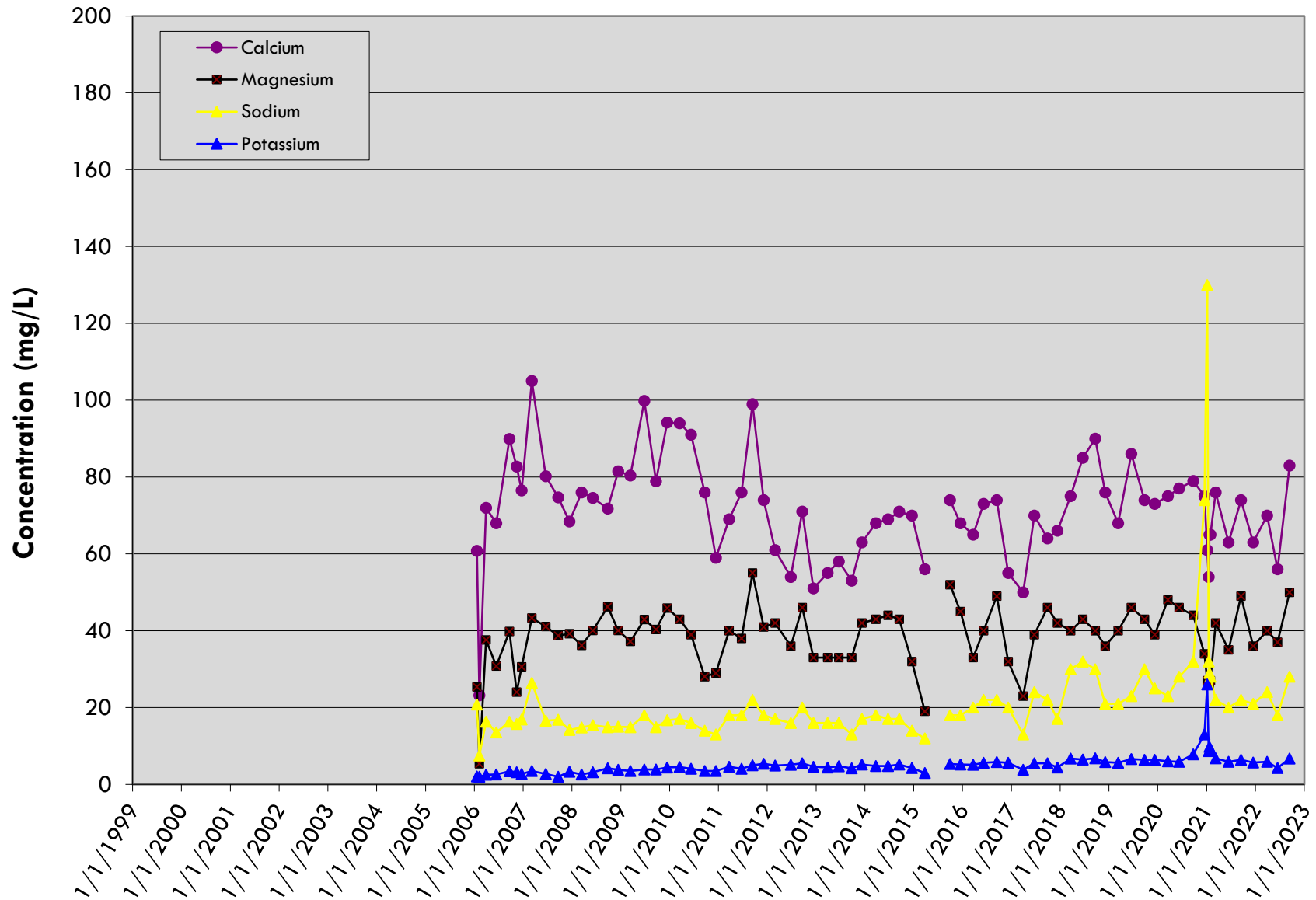
LDCS-3A

LRI Landfill, Pierce County, Washington



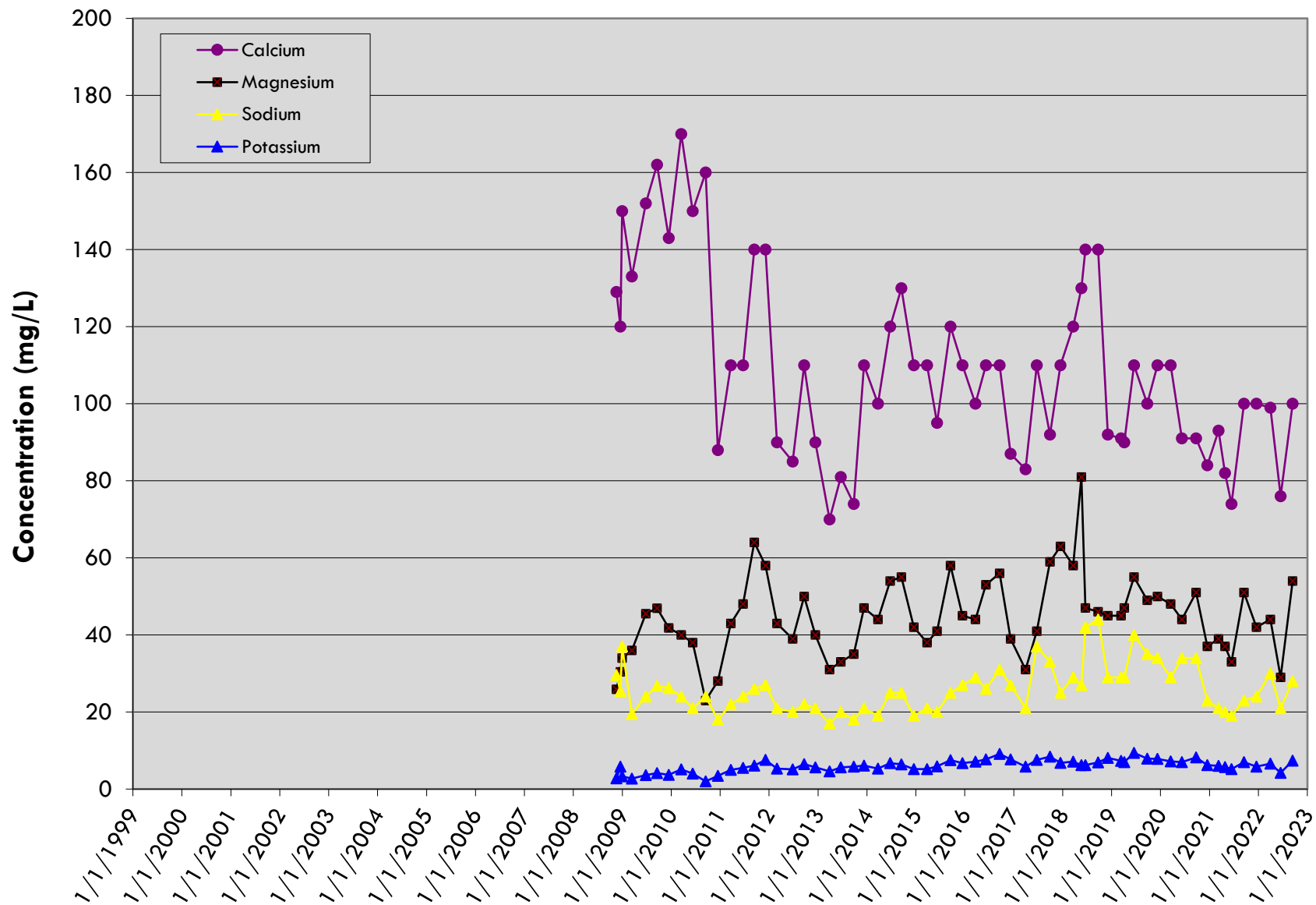
LDCS-4A

LRI Landfill, Pierce County, Washington



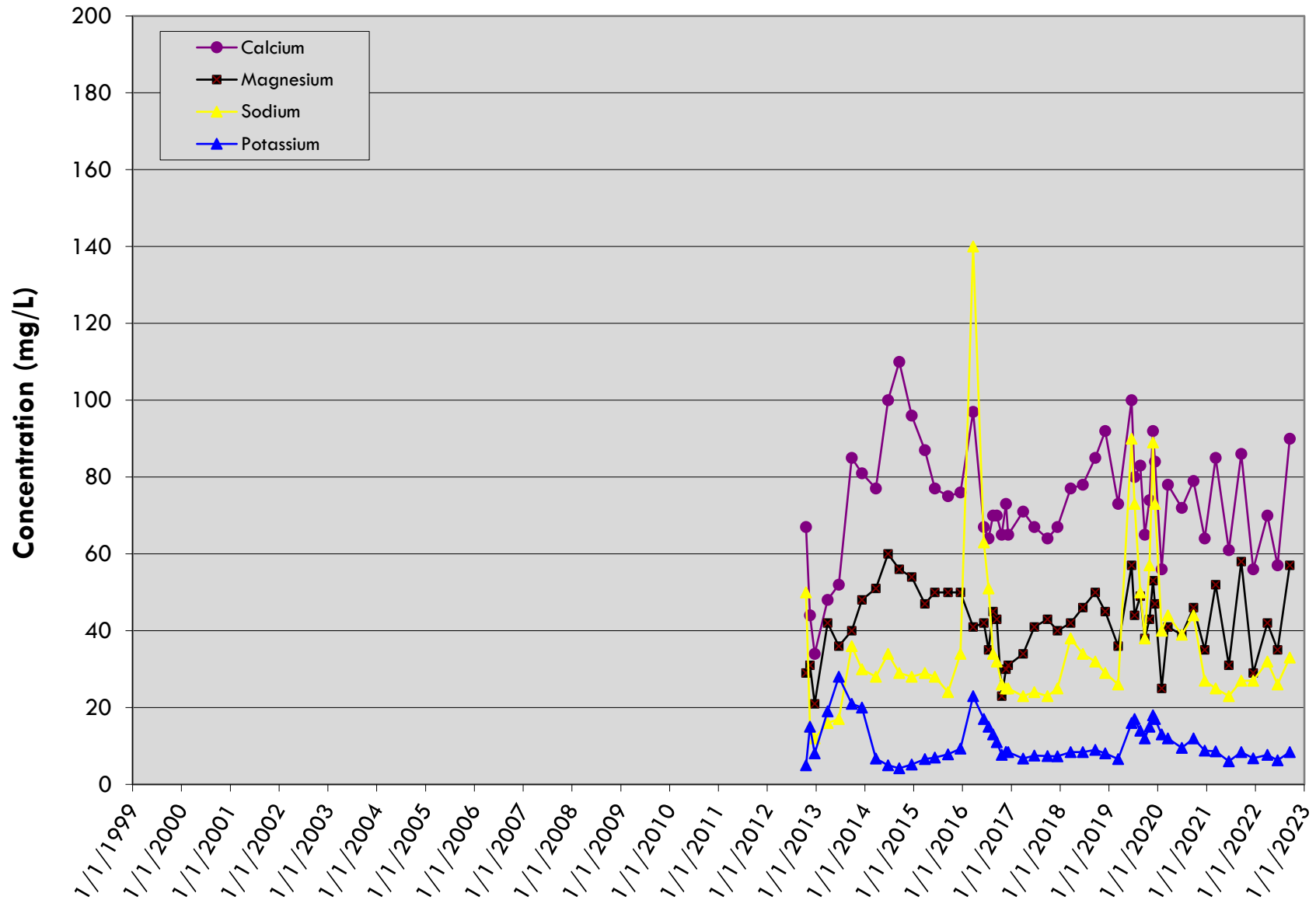
LDCS-4B

LRI Landfill, Pierce County, Washington



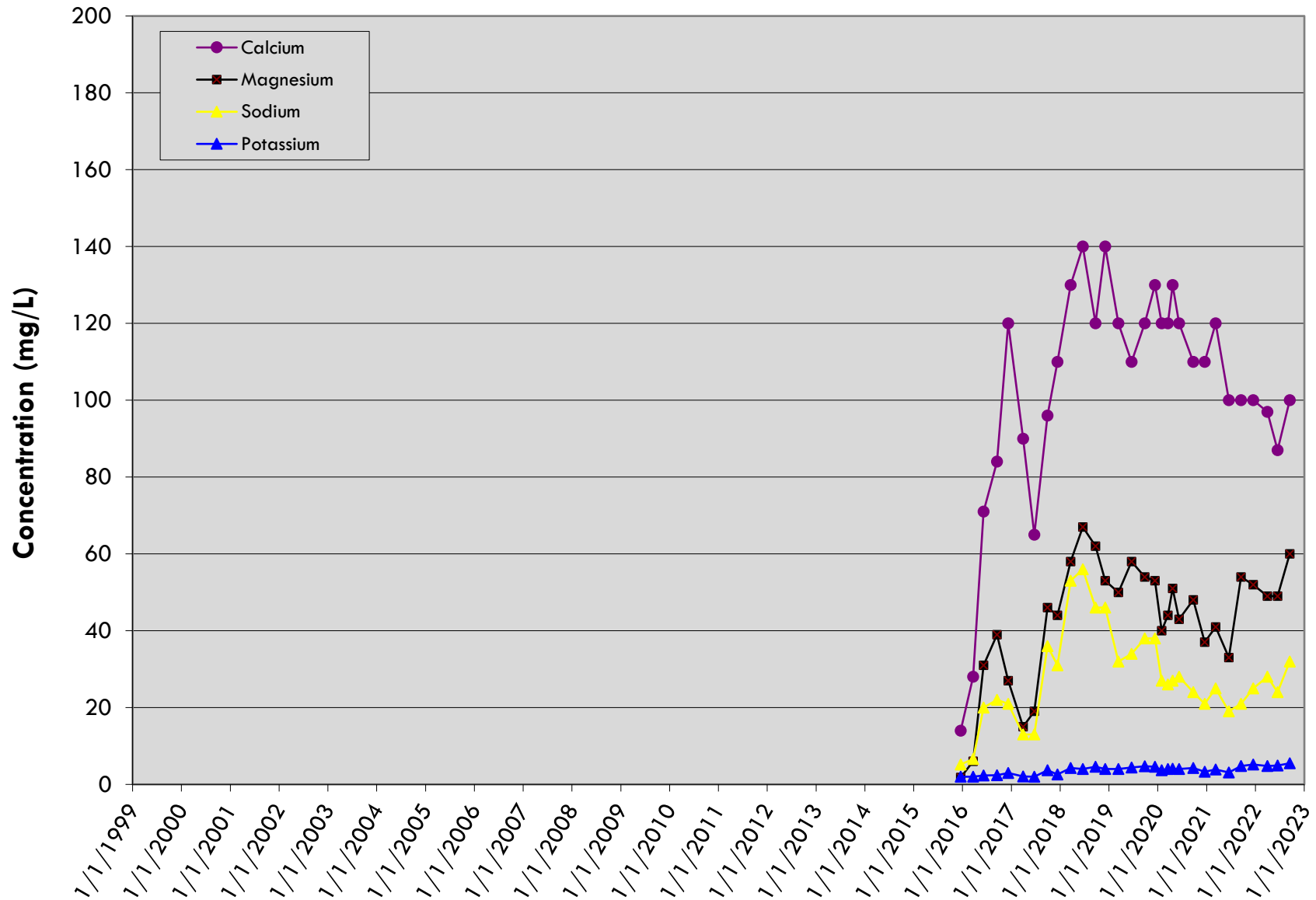
LDCS-5

LRI Landfill, Pierce County, Washington



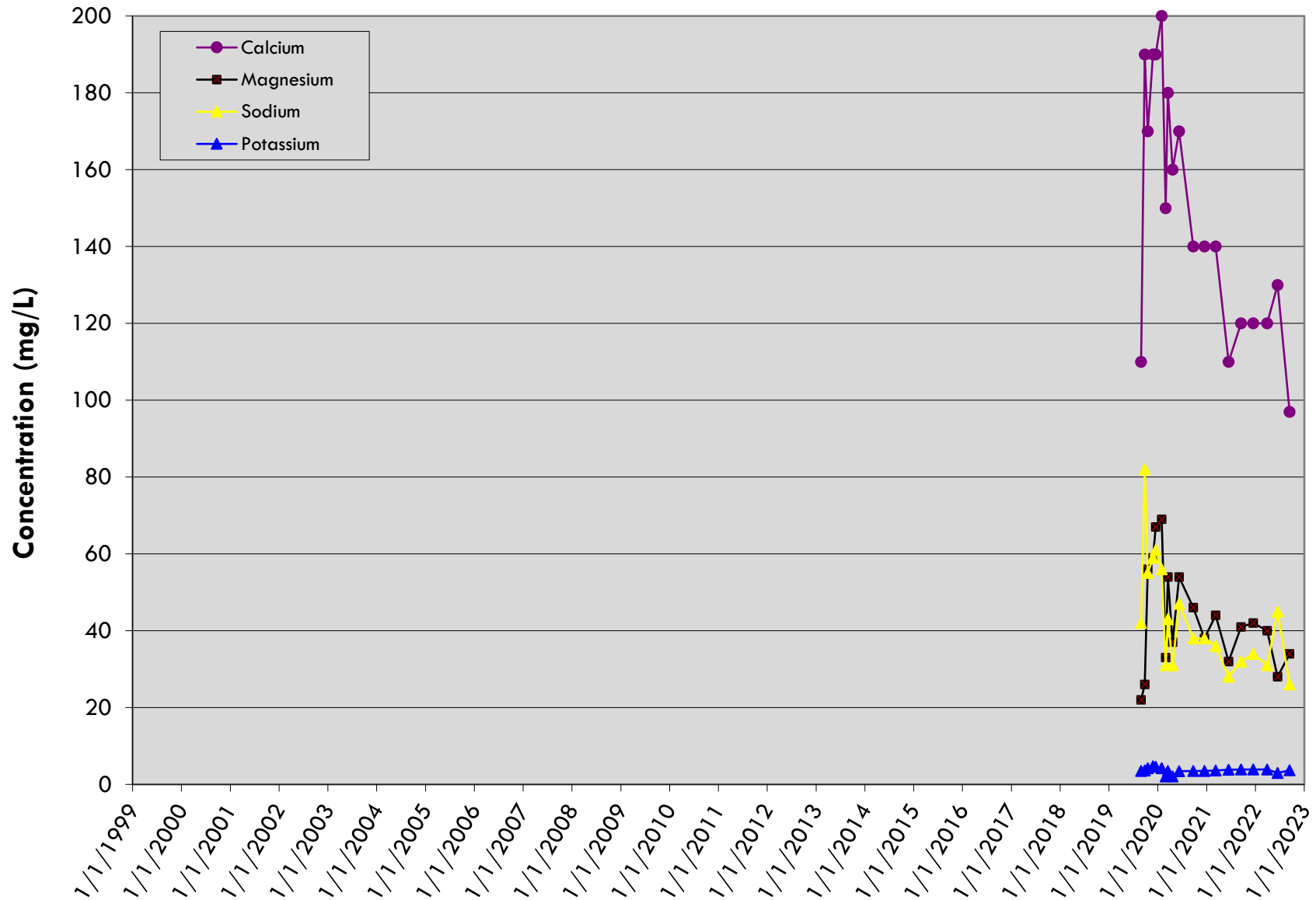
LDCS-6A

LRI Landfill, Pierce County, Washington



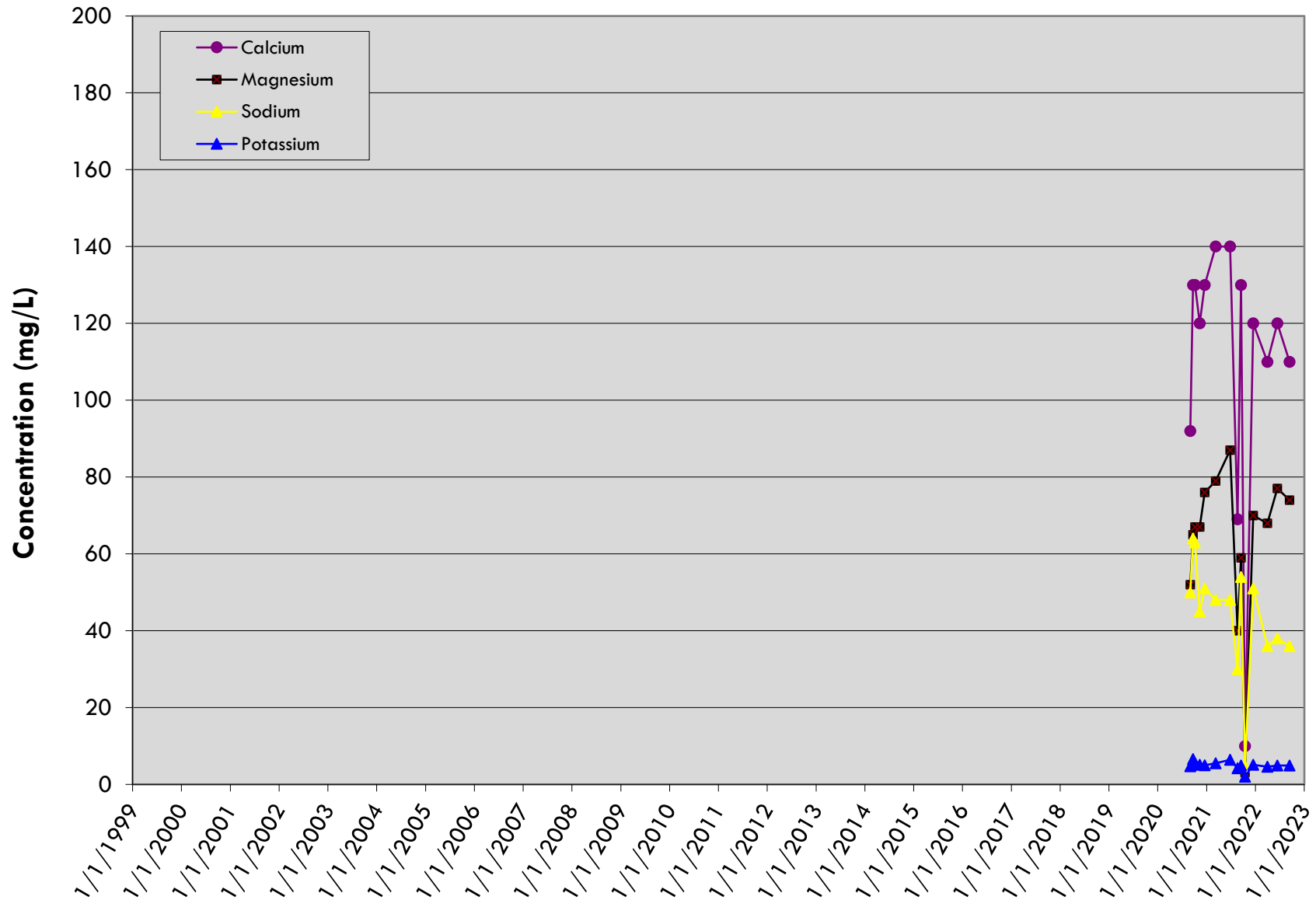
LDCS-7

LRI Landfill, Pierce County, Washington



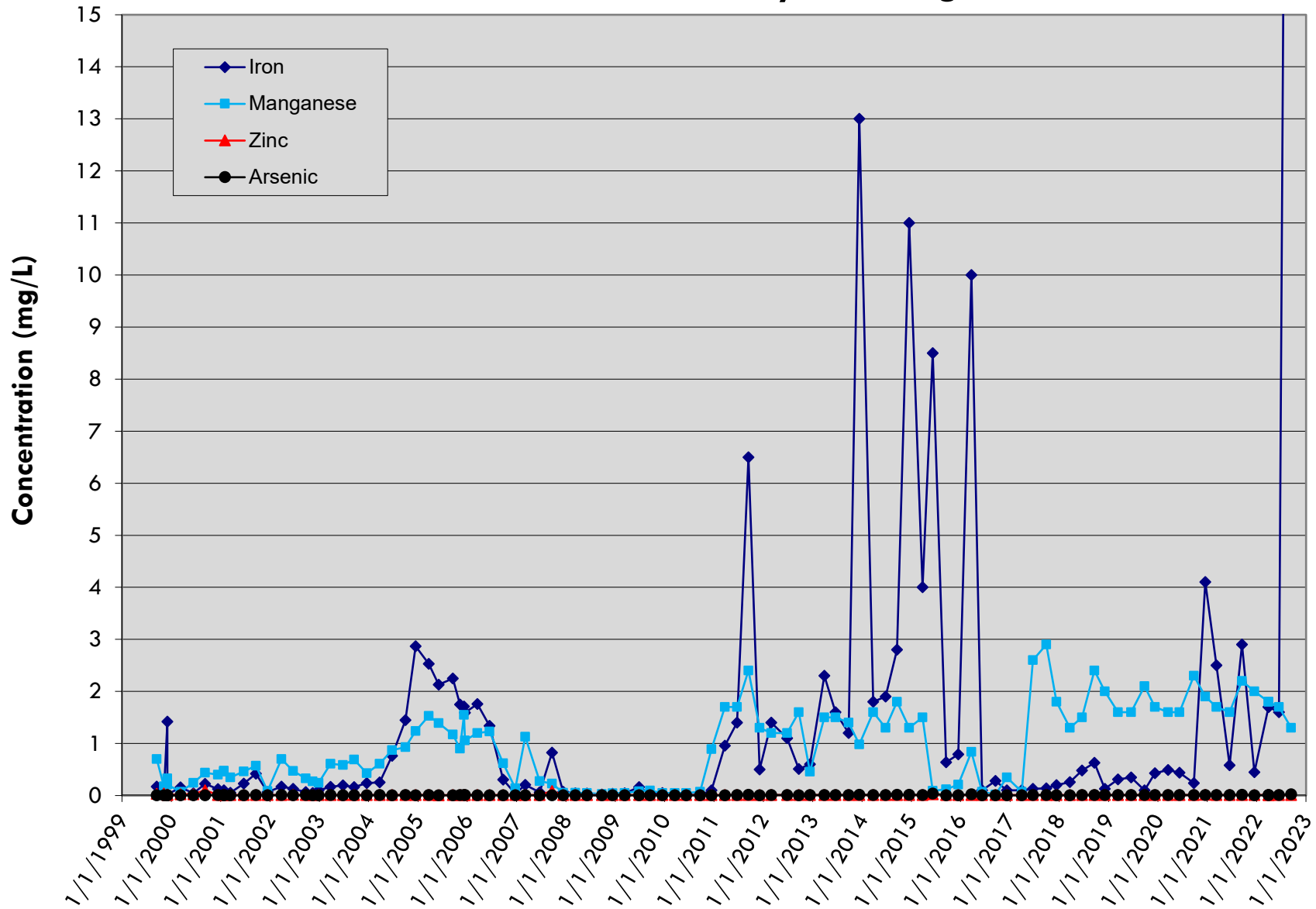
LDCS-8

LRI Landfill, Pierce County, Washington



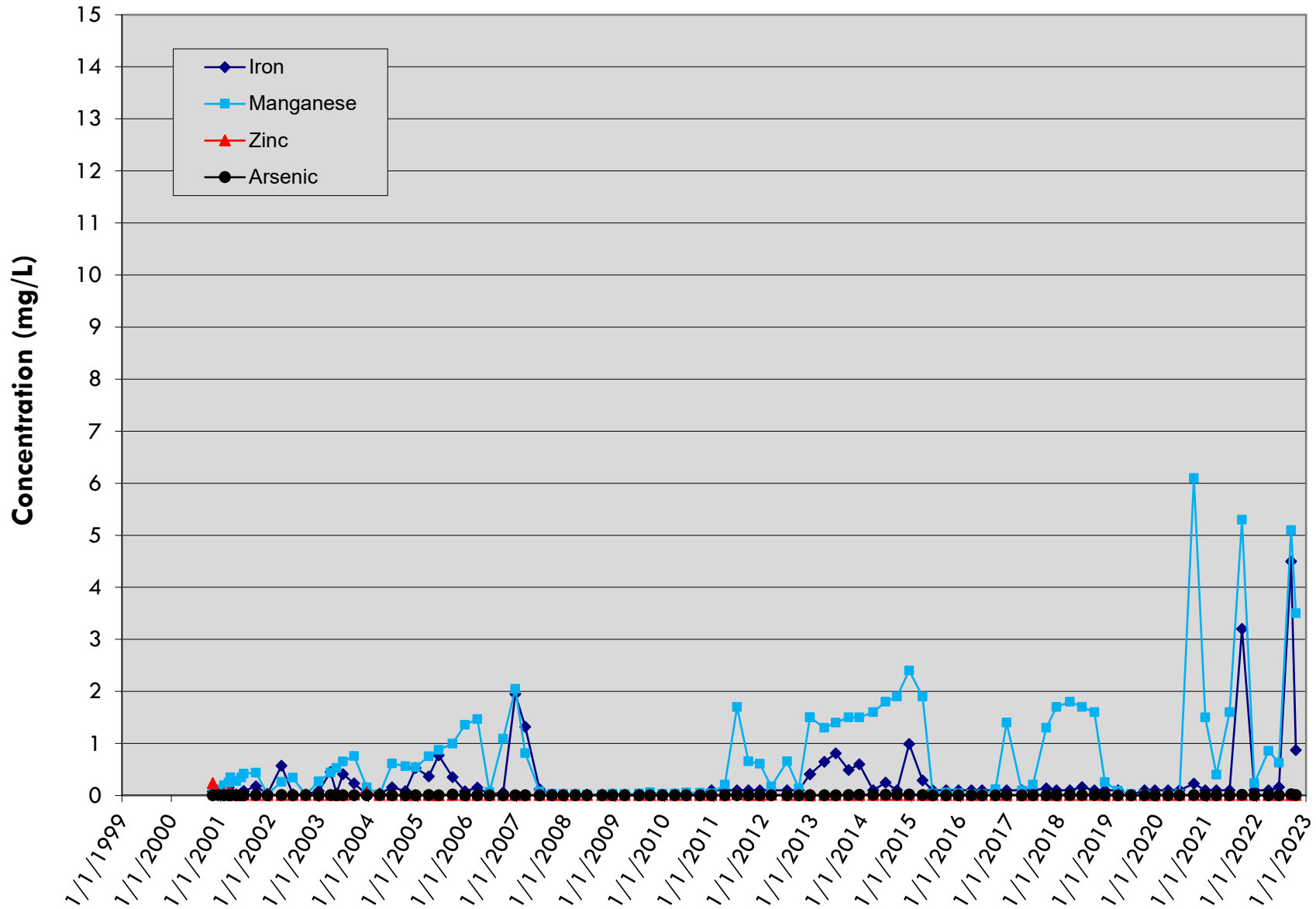
LDCS-1

LRI Landfill, Pierce County, Washington



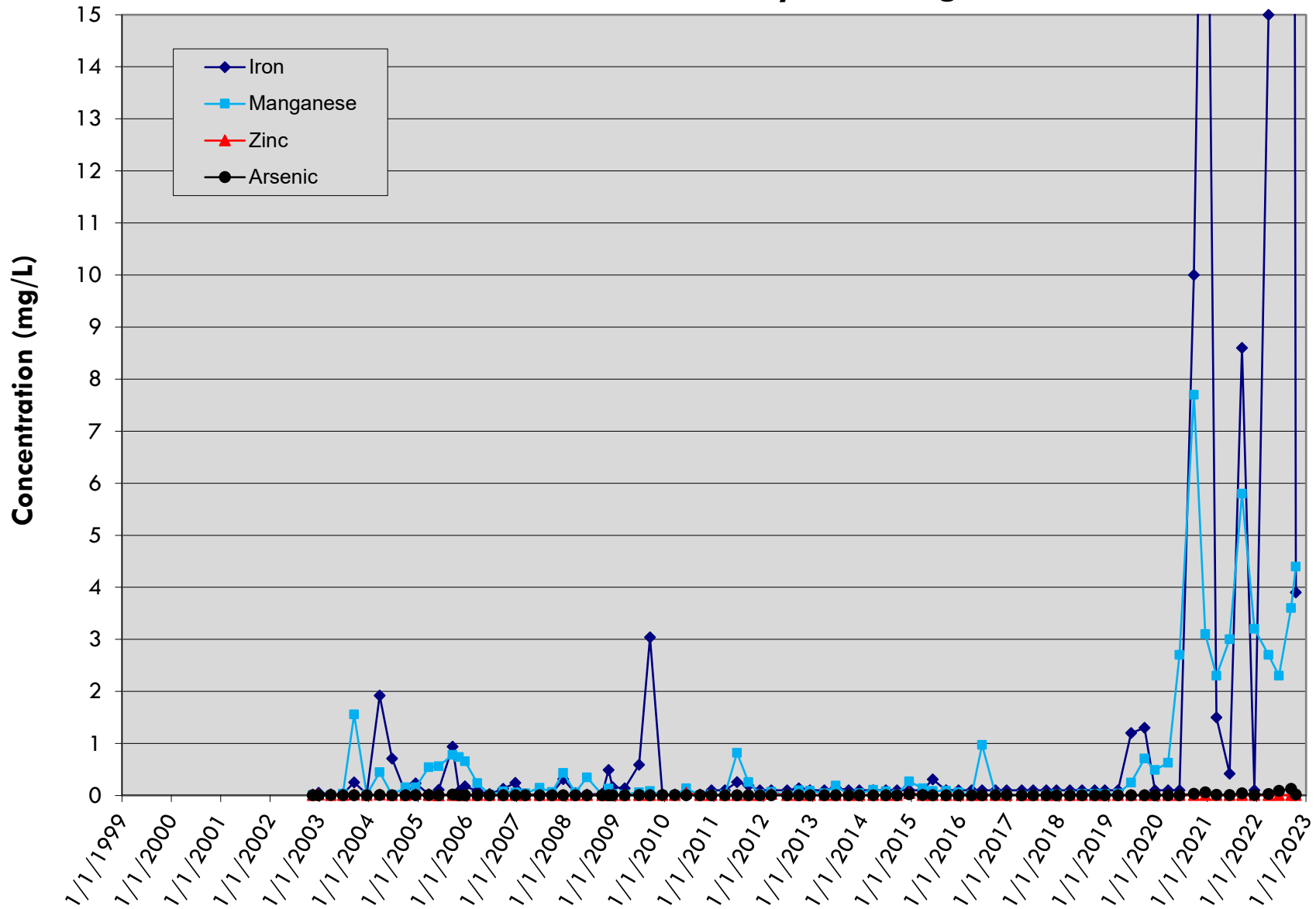
LDCS-2A

LRI Landfill, Pierce County, Washington



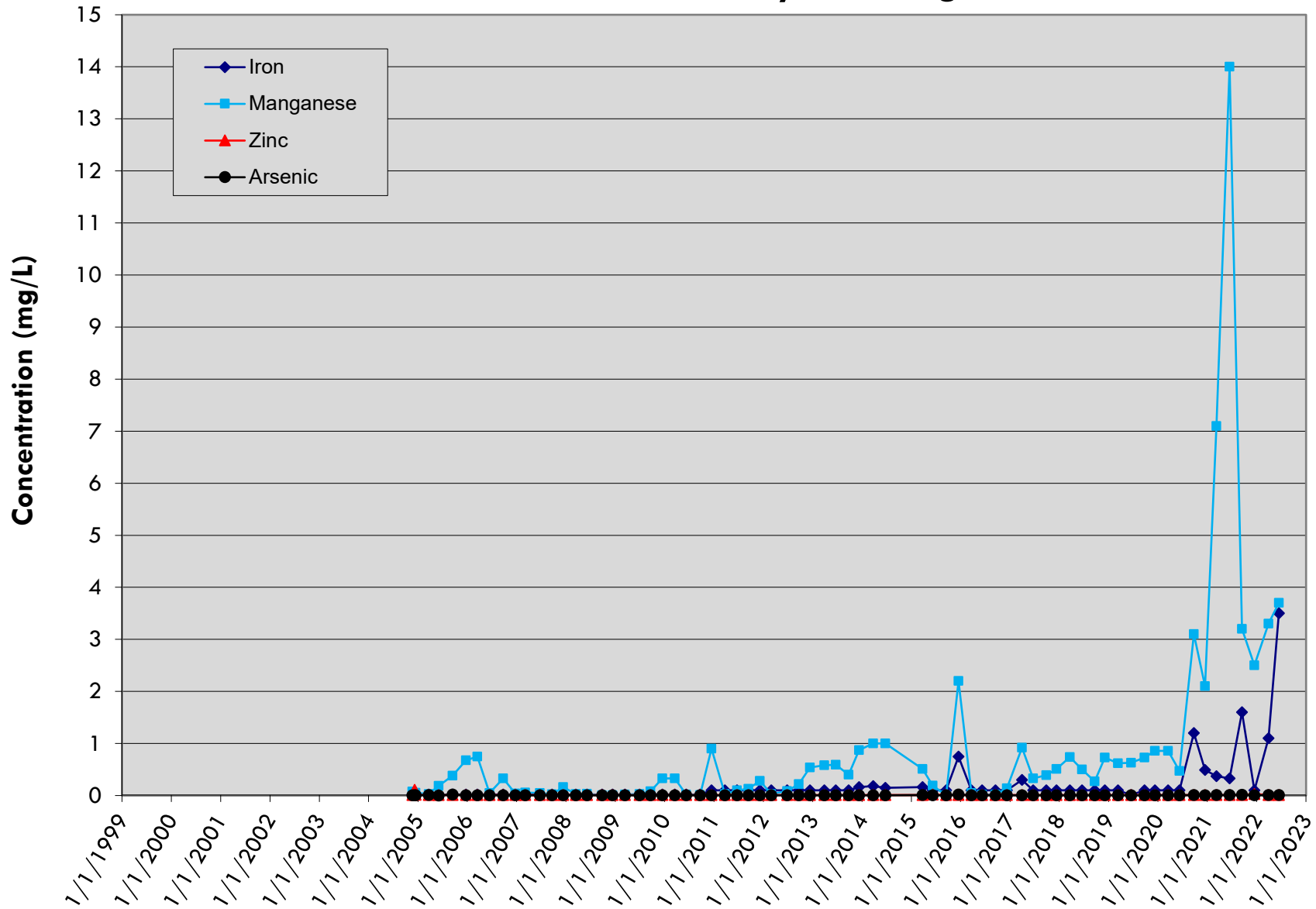
LDCS-2B

LRI Landfill, Pierce County, Washington



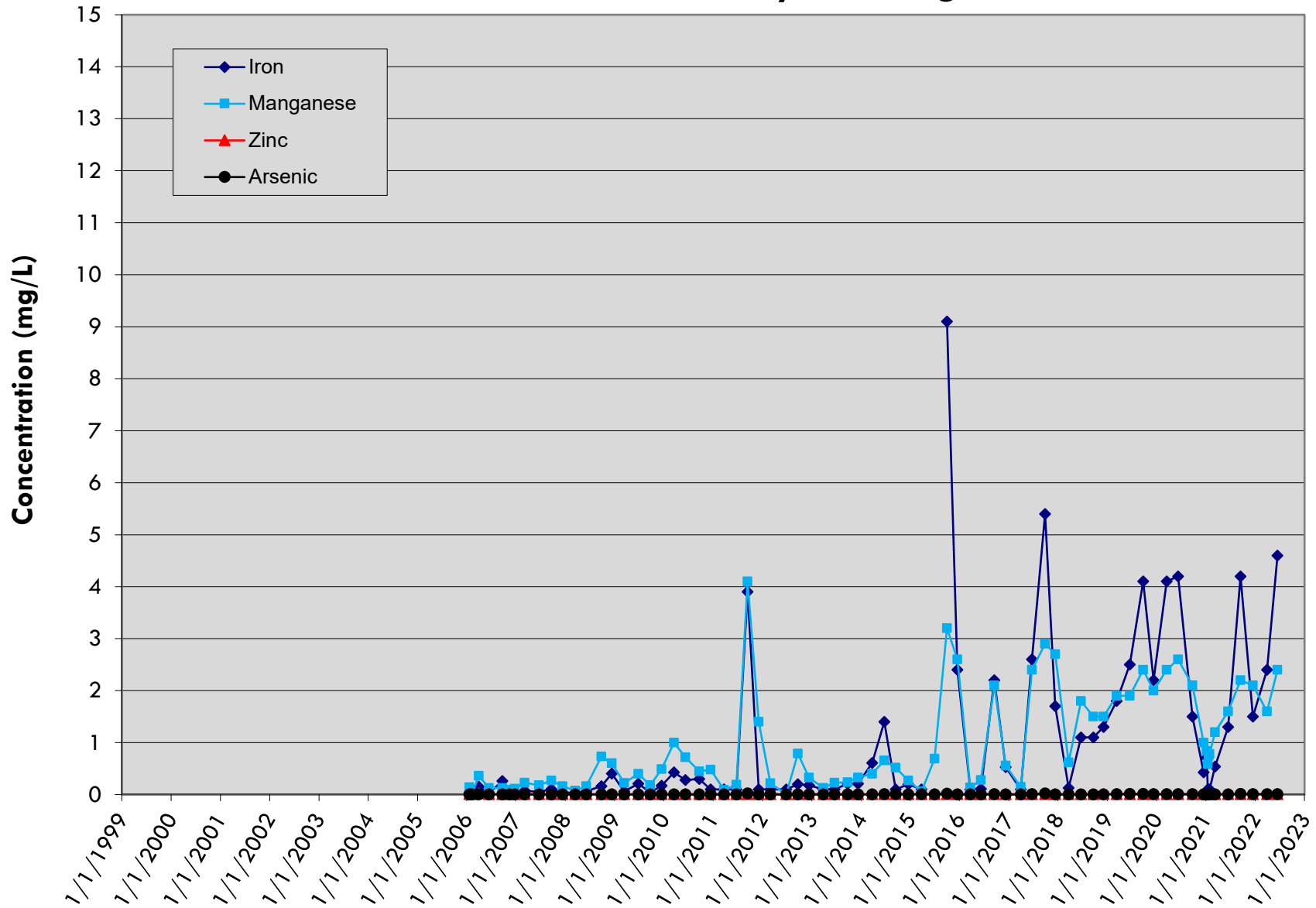
LDCS-3A

LRI Landfill, Pierce County, Washington



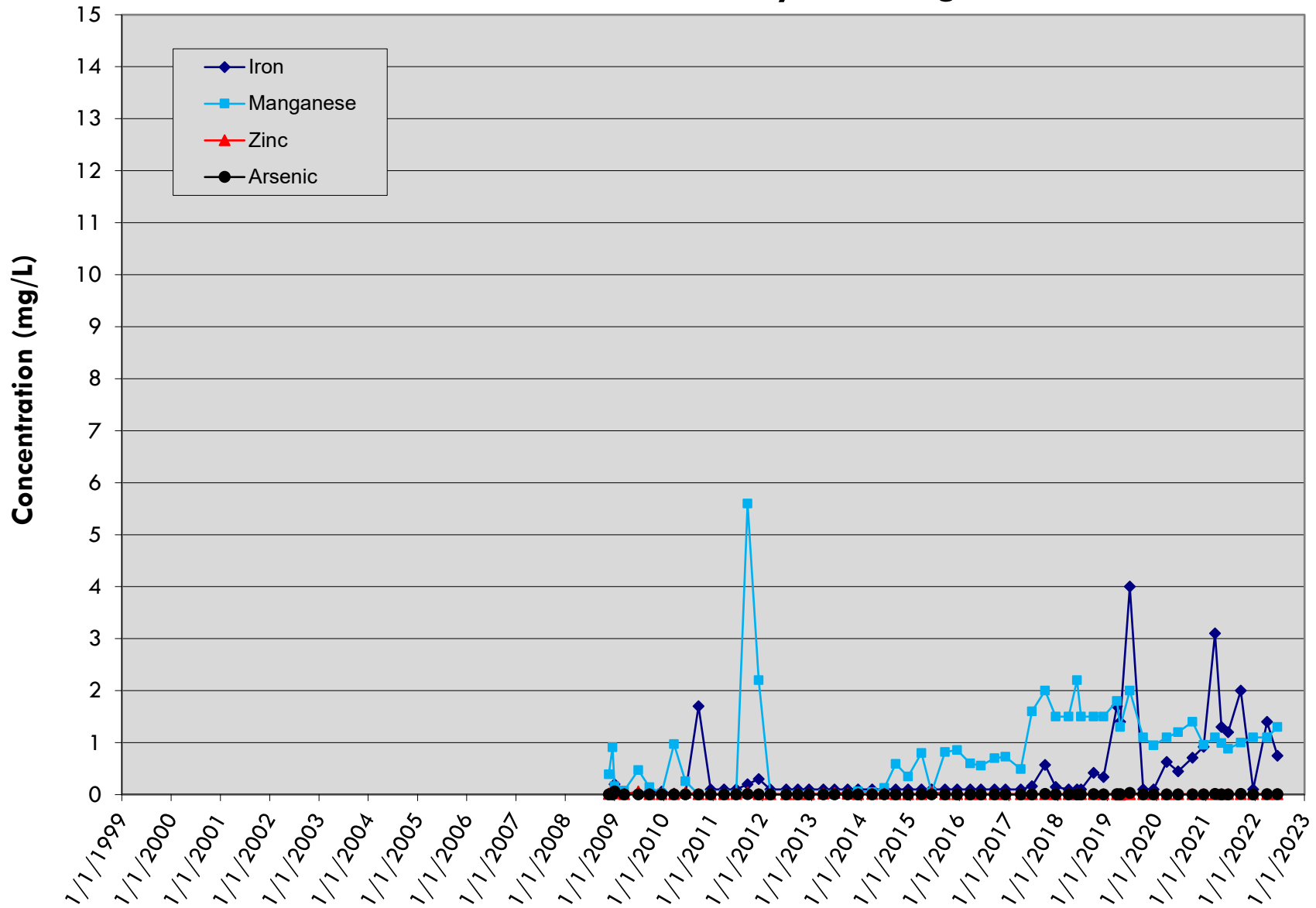
LDCS-4A

LRI Landfill, Pierce County, Washington



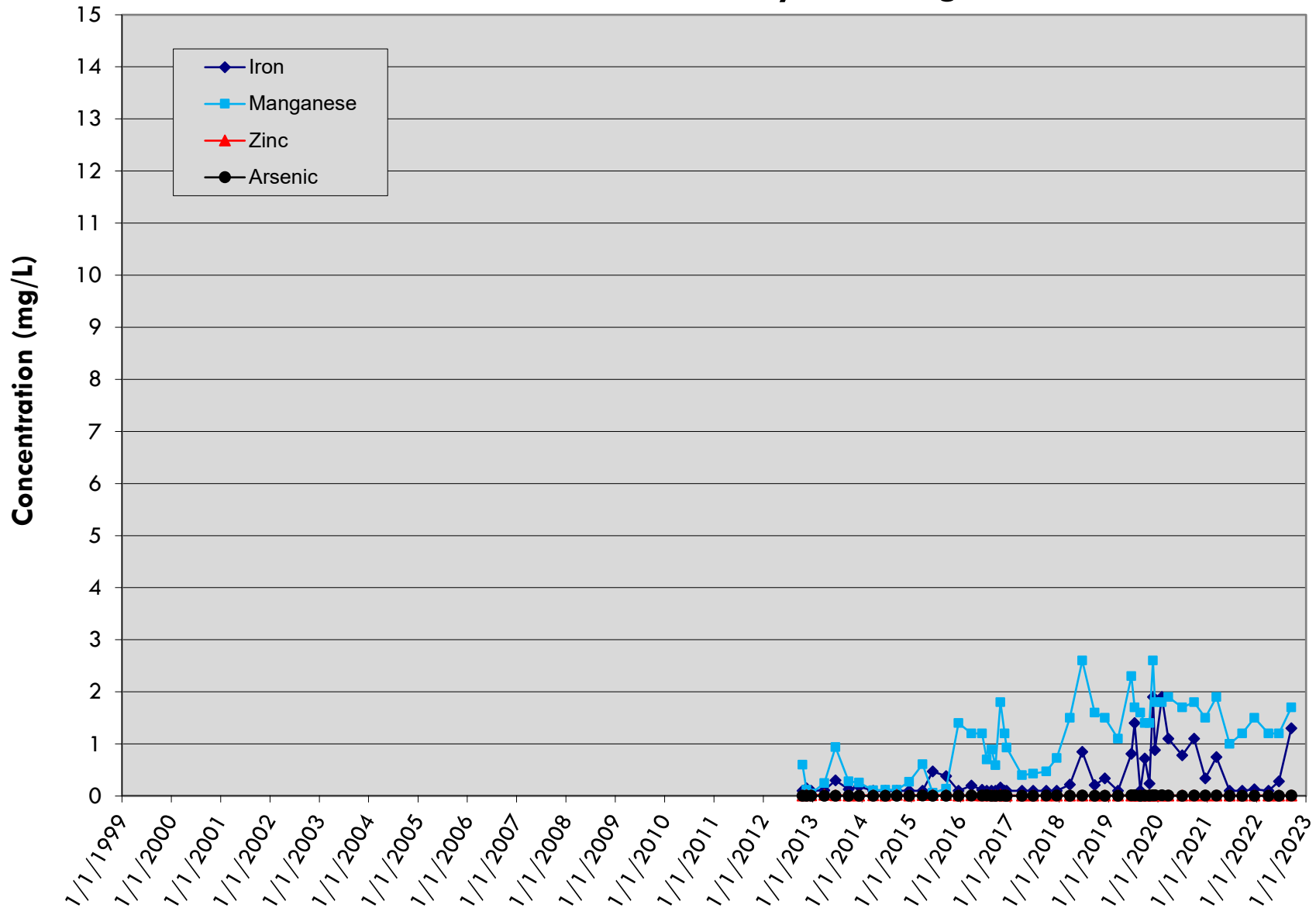
LDCS-4B

LRI Landfill, Pierce County, Washington



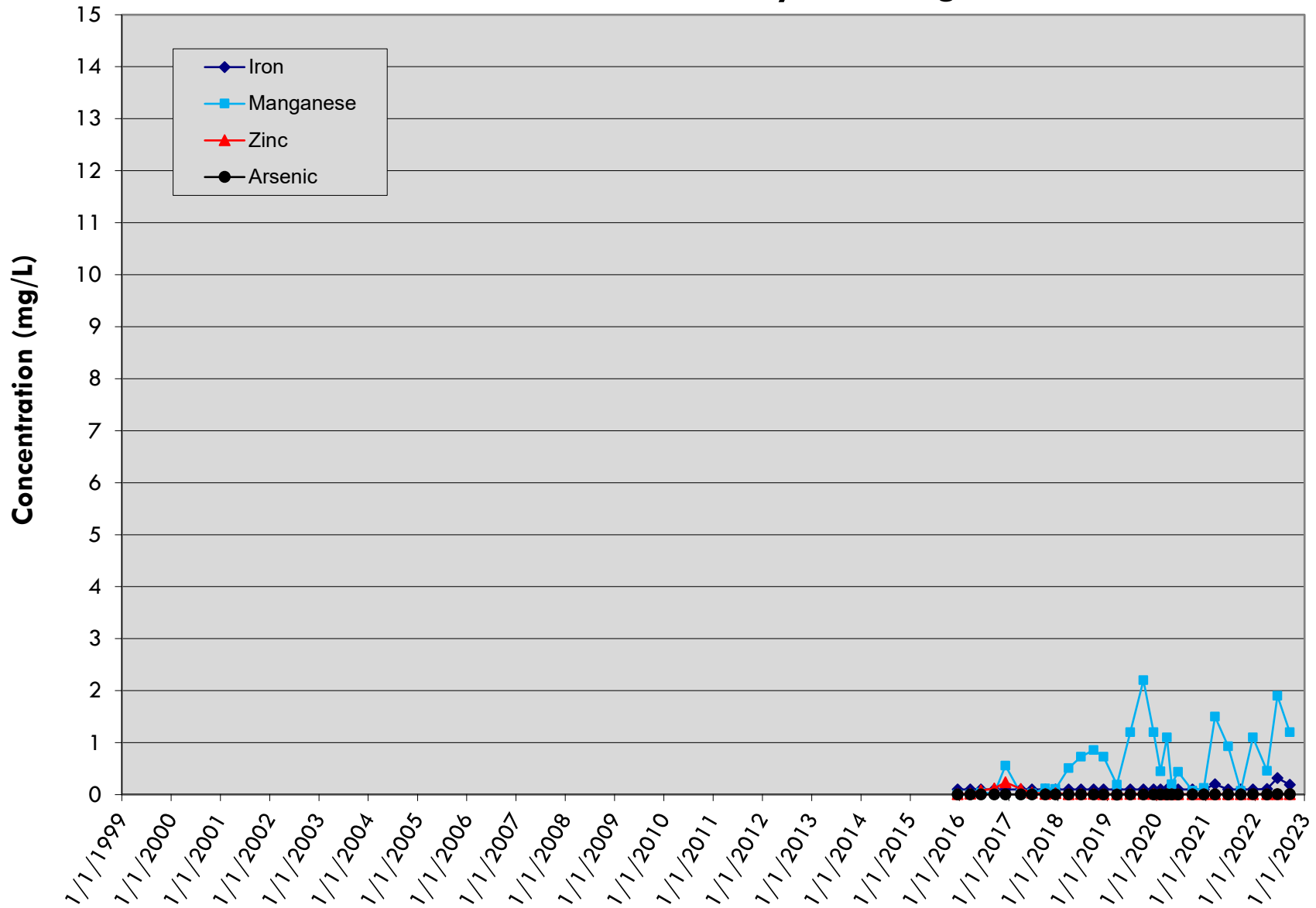
LDCS-5

LRI Landfill, Pierce County, Washington



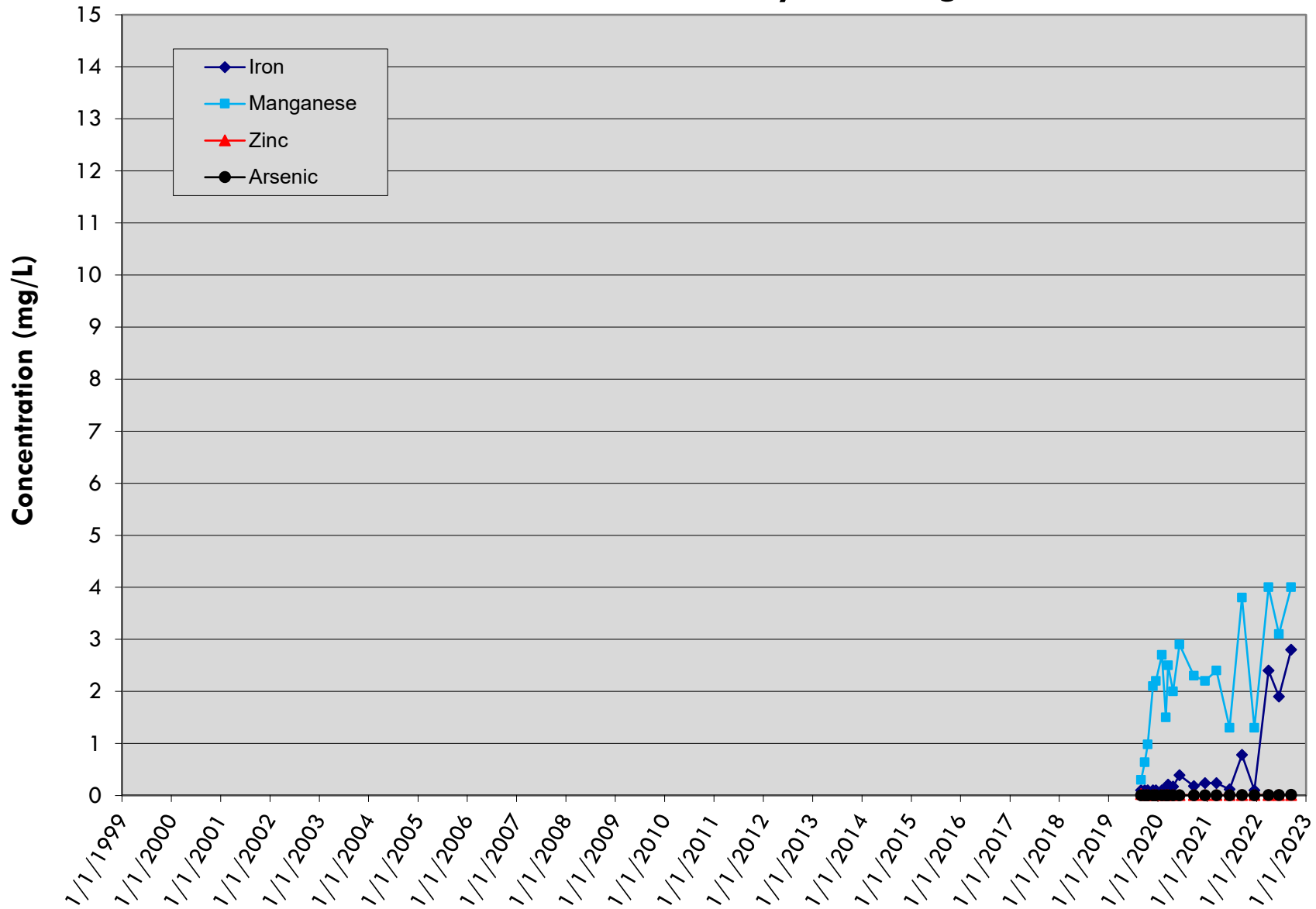
LDCS-6A

LRI Landfill, Pierce County, Washington



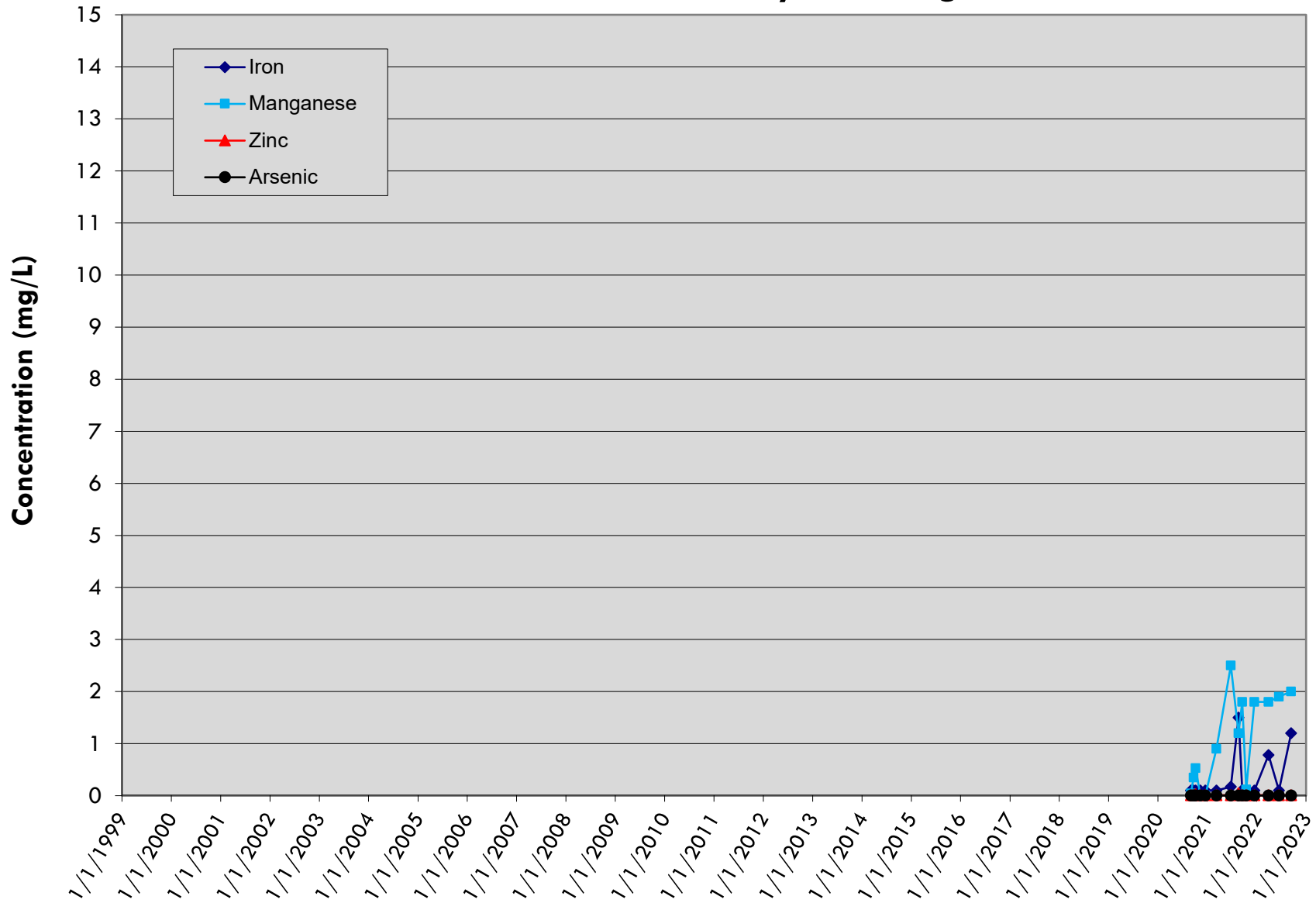
LDCS-7

LRI Landfill, Pierce County, Washington



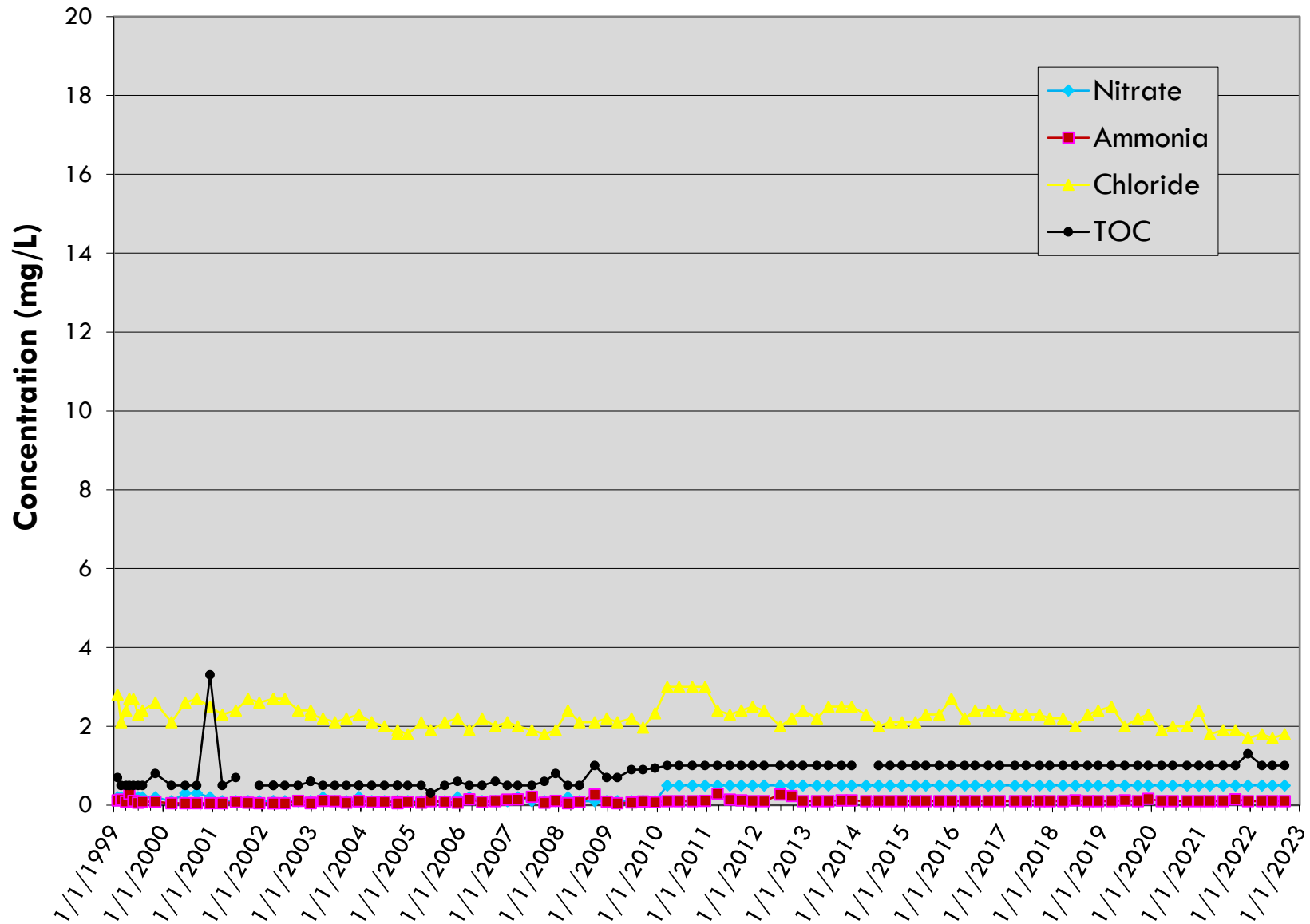
LDCS-8

LRI Landfill, Pierce County, Washington



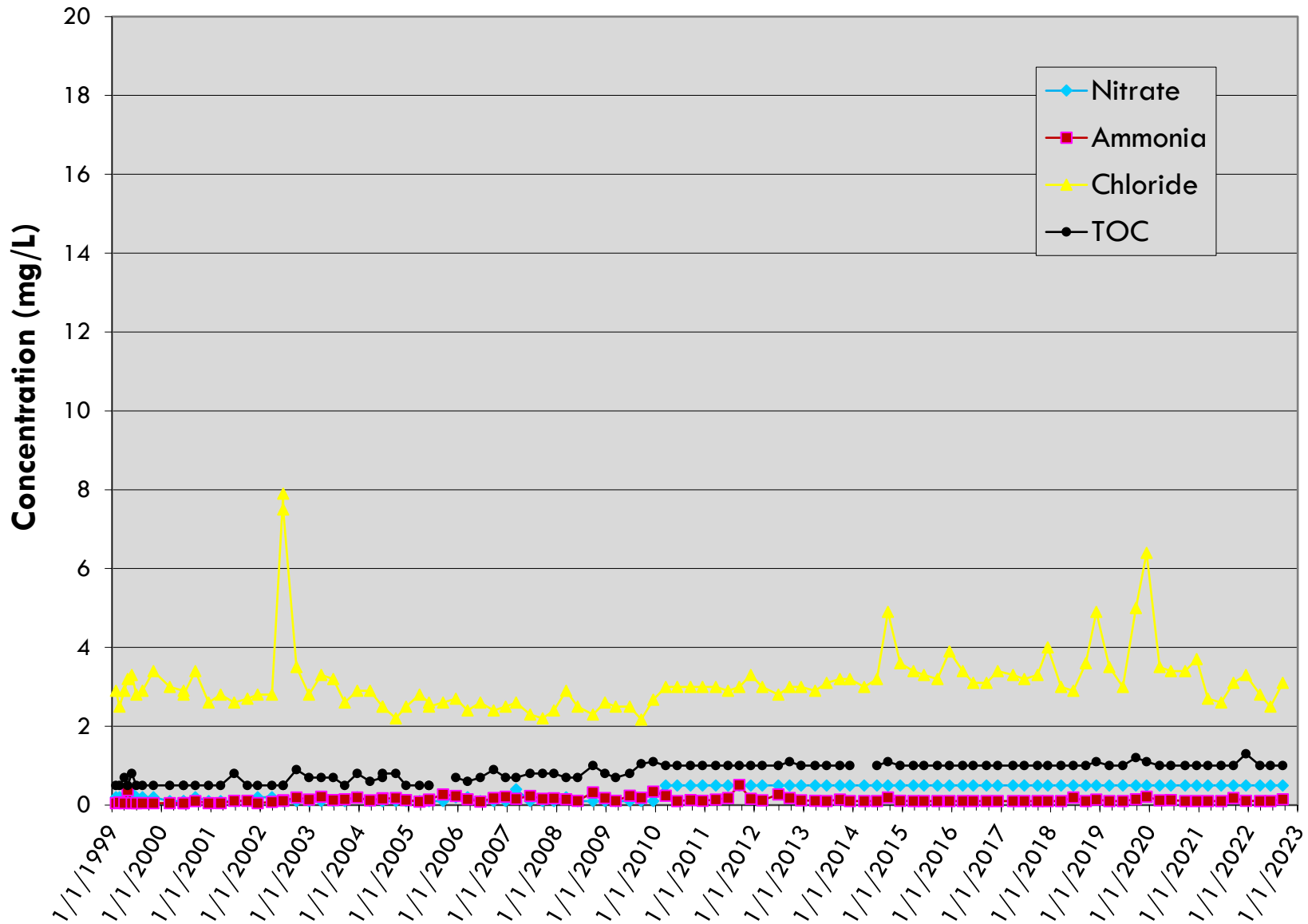
MW-1A

LRI Landfill, Pierce County, Washington



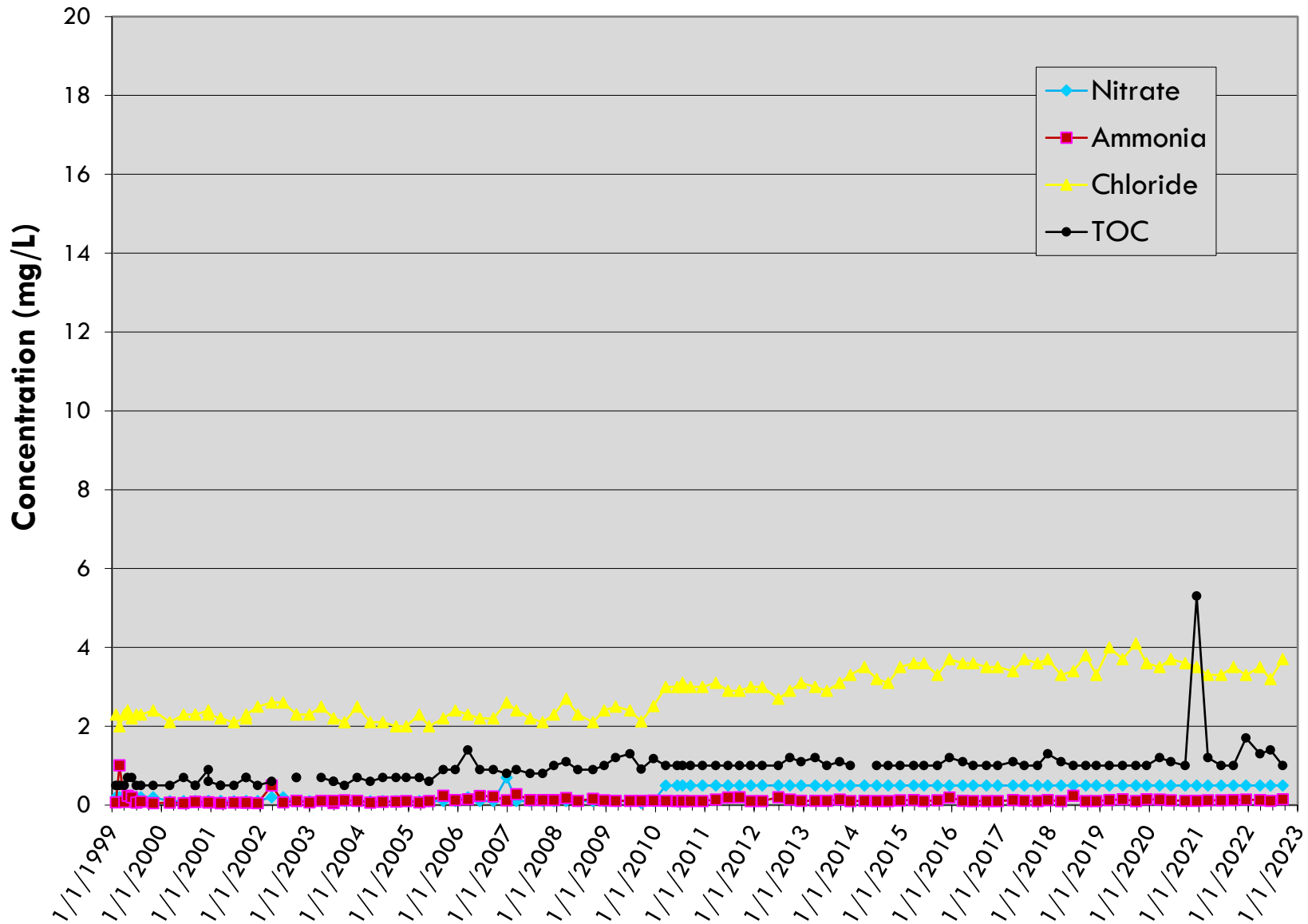
MW-2A

LRI Landfill, Pierce County, Washington



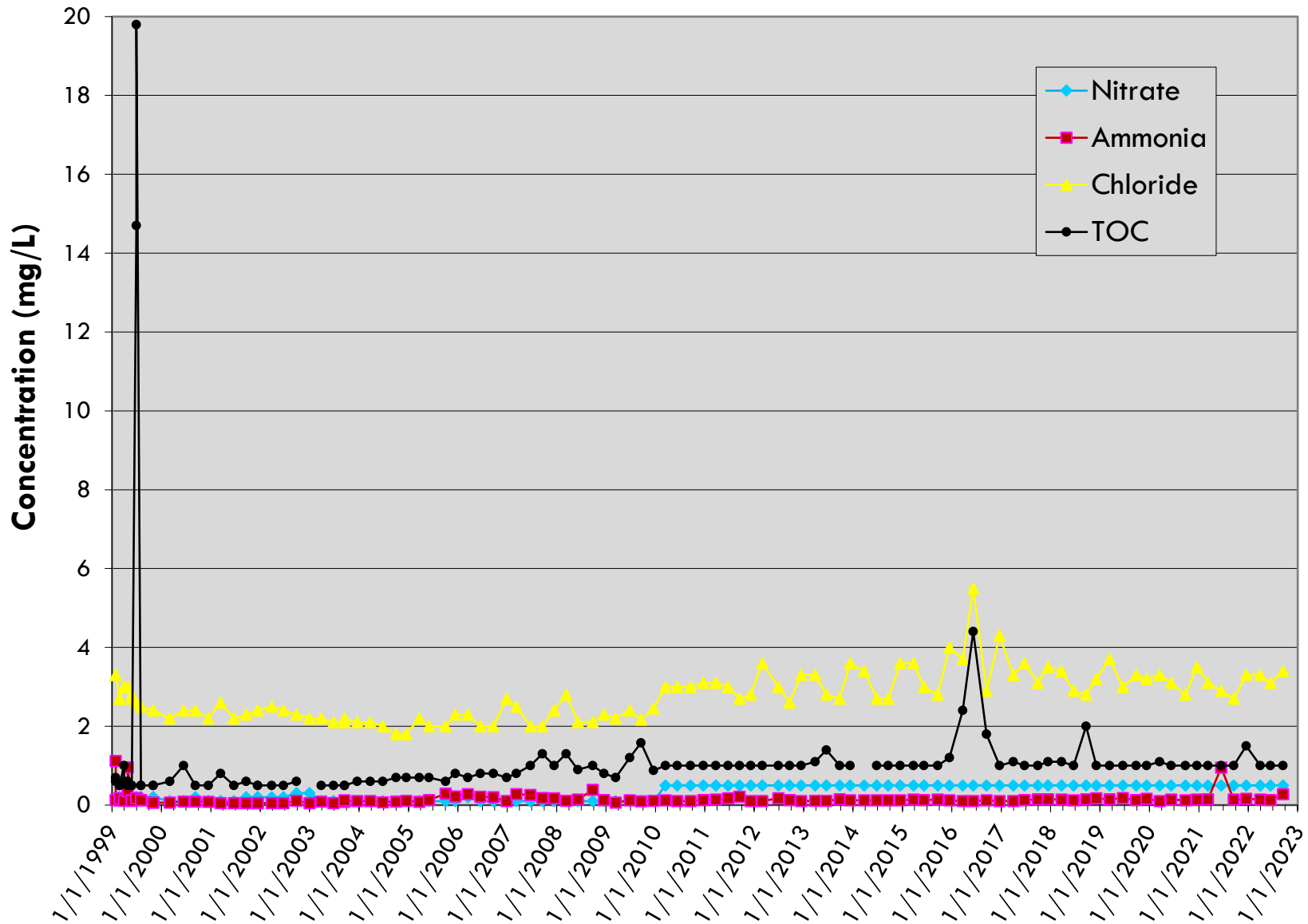
MW-3

LRI Landfill, Pierce County, Washington



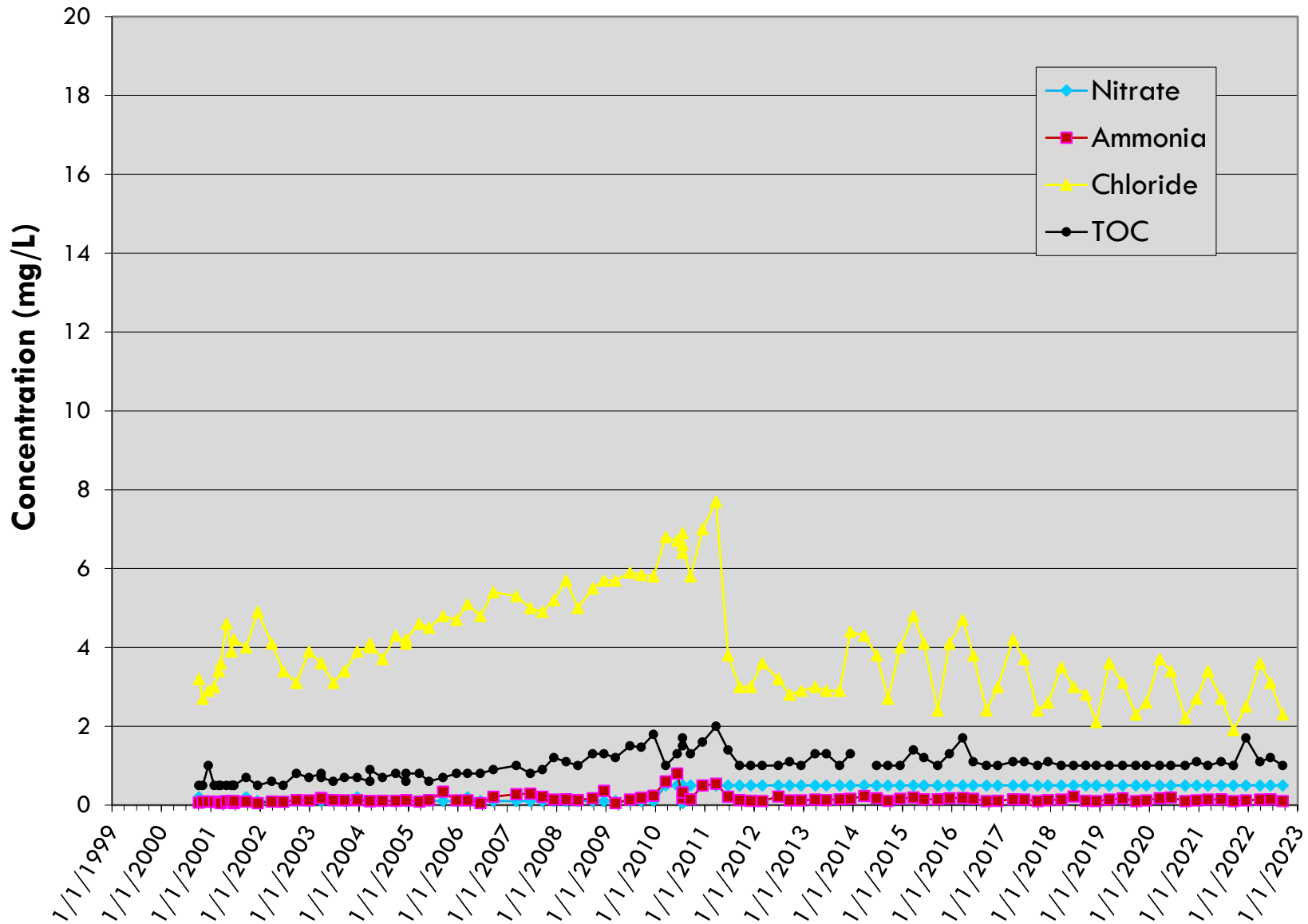
MW-4

LRI Landfill, Pierce County, Washington



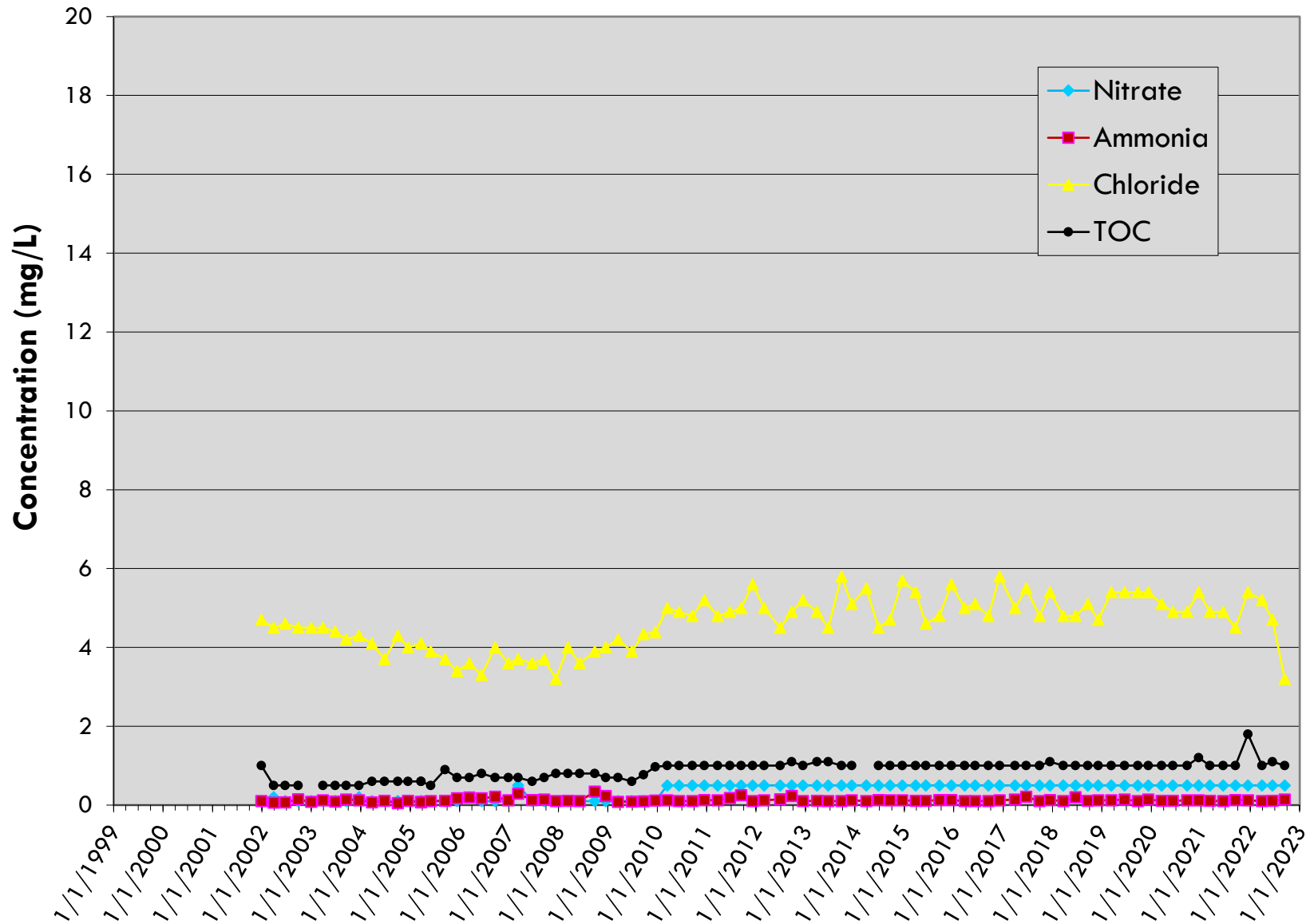
MW-5A

LRI Landfill, Pierce County, Washington



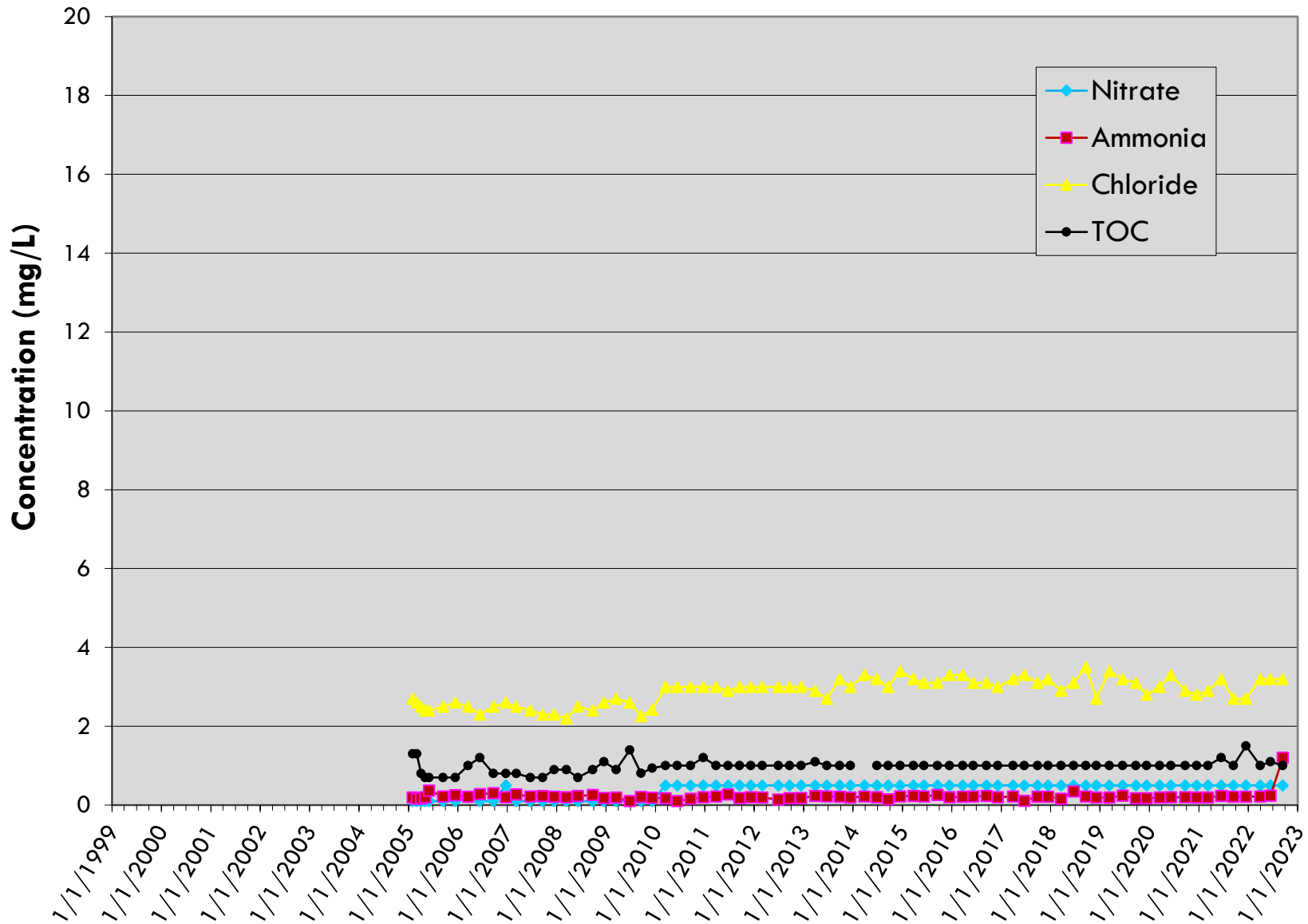
MW-6

LRI Landfill, Pierce County, Washington

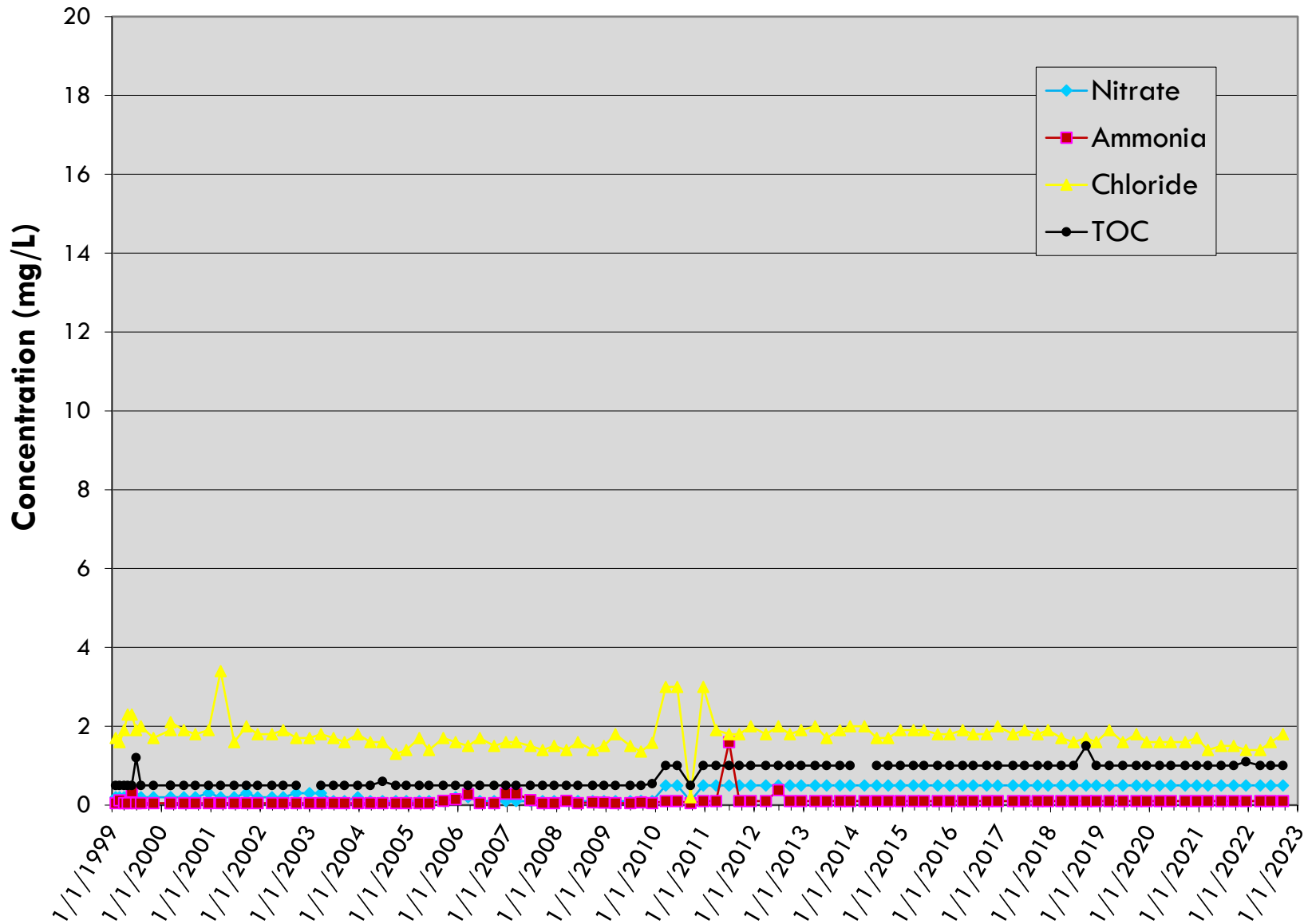


MW-7

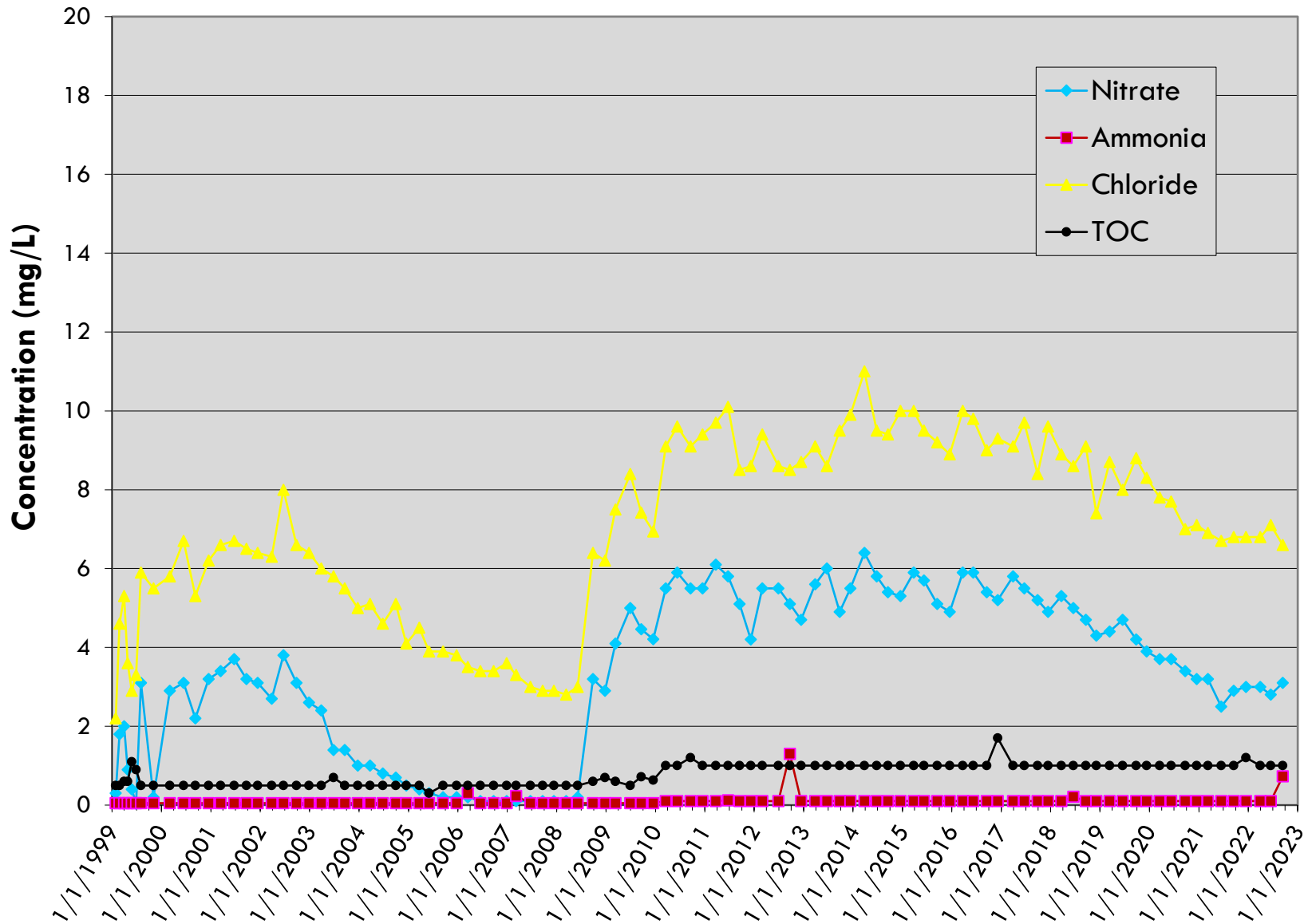
LRI Landfill, Pierce County, Washington



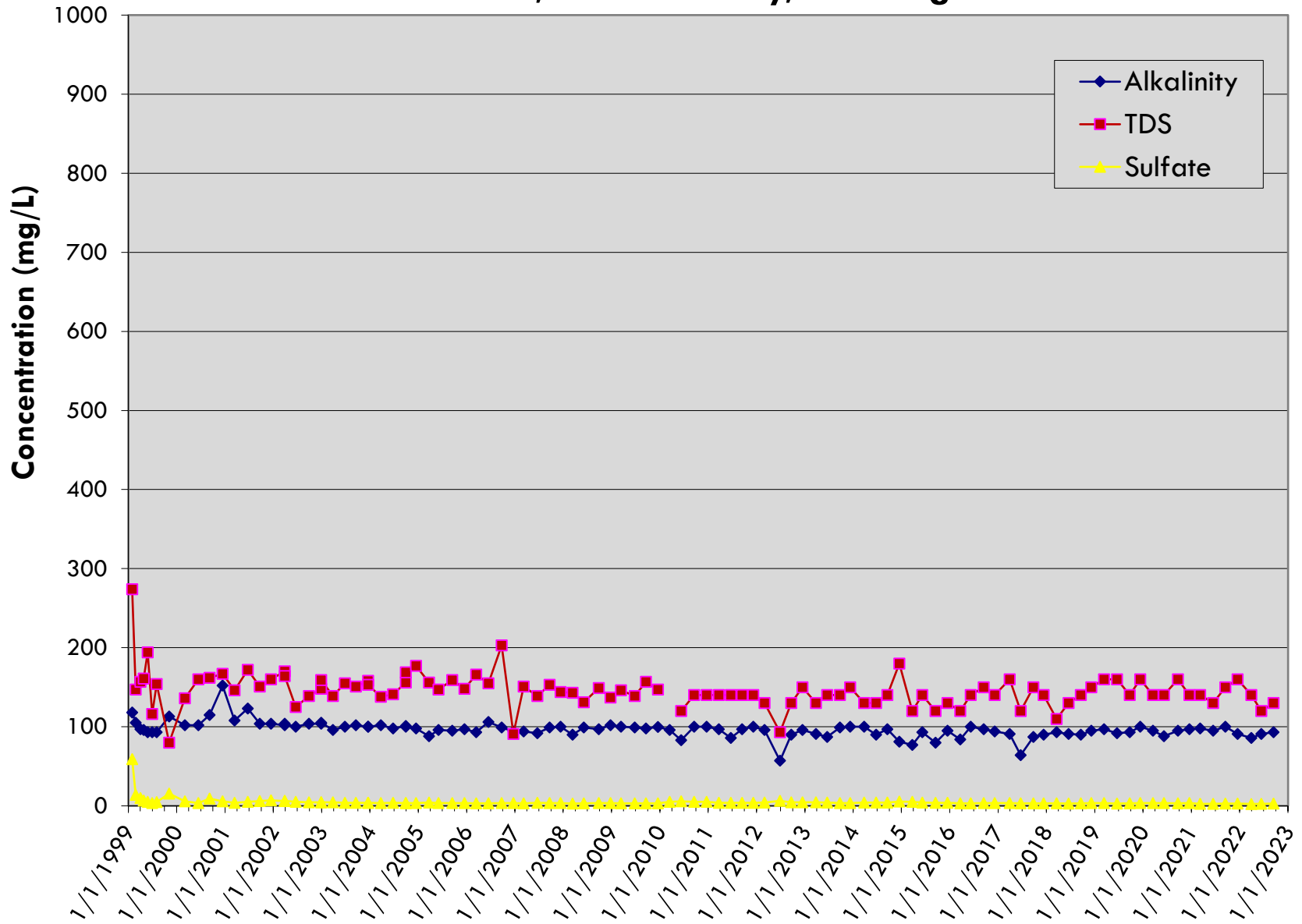
MW-9 (Background) LRI Landfill, Pierce County, Washington



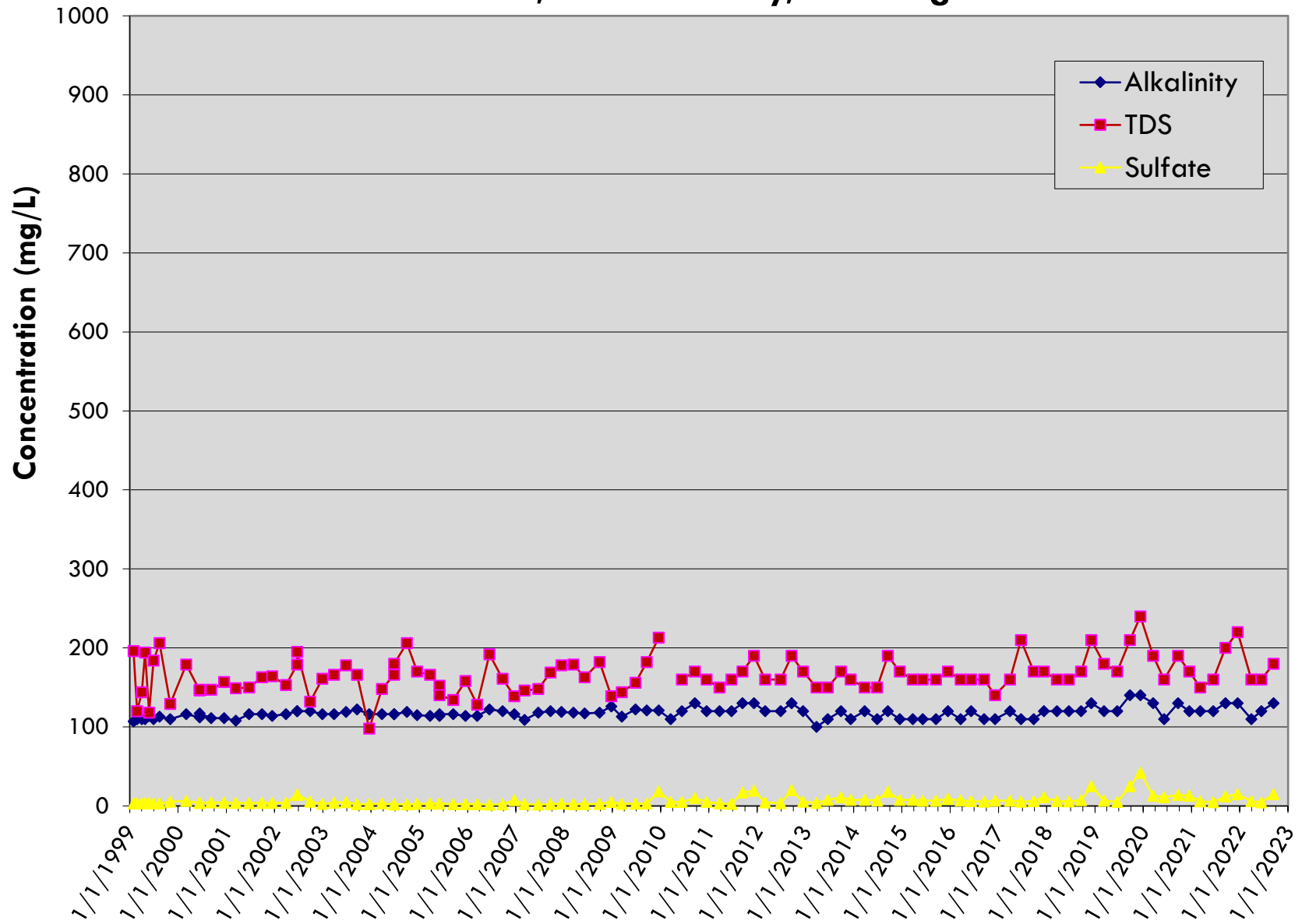
MW-10 (Background) LRI Landfill, Pierce County, Washington



MW-1A
LRI Landfill, Pierce County, Washington

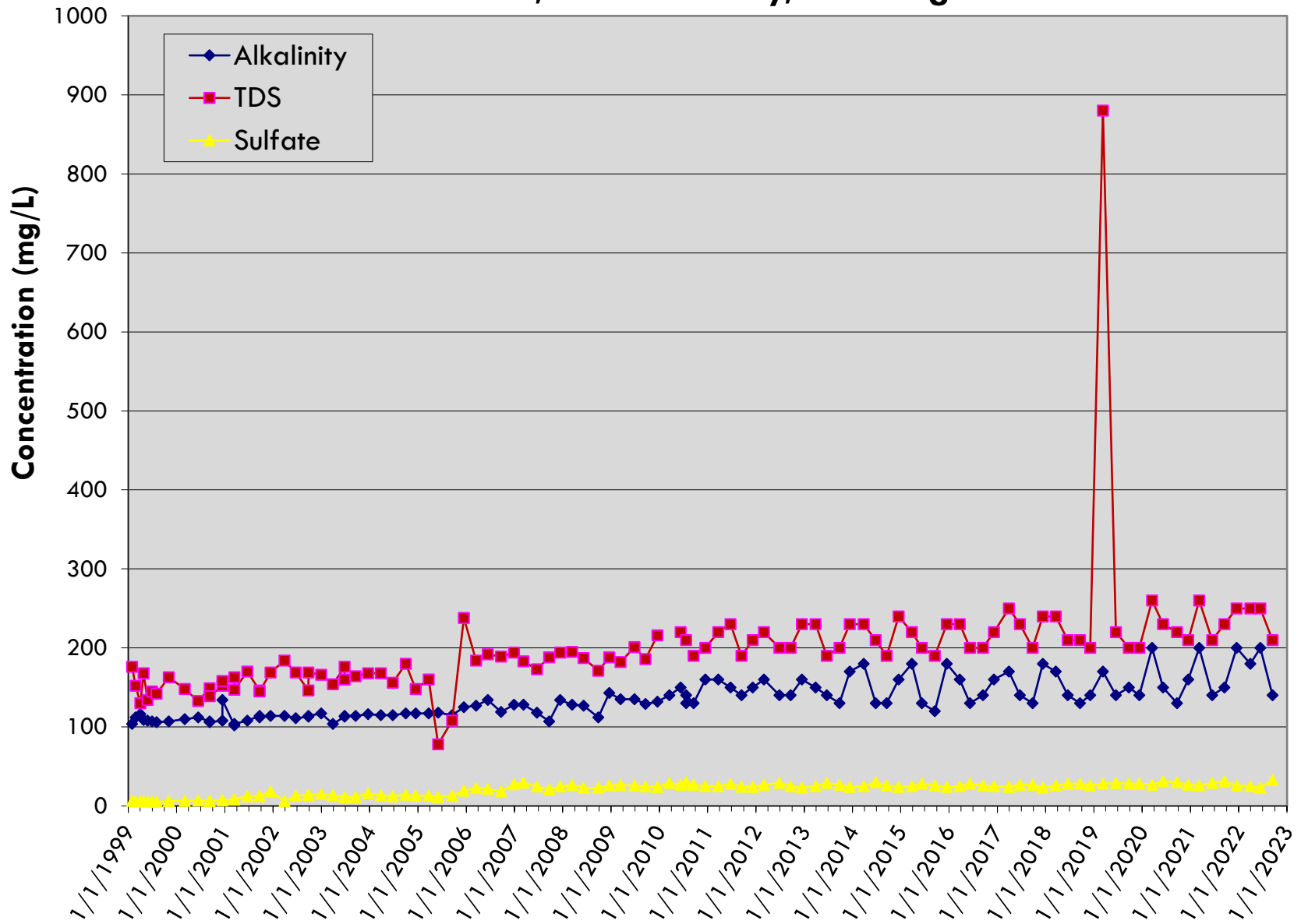


MW-2A
LRI Landfill, Pierce County, Washington

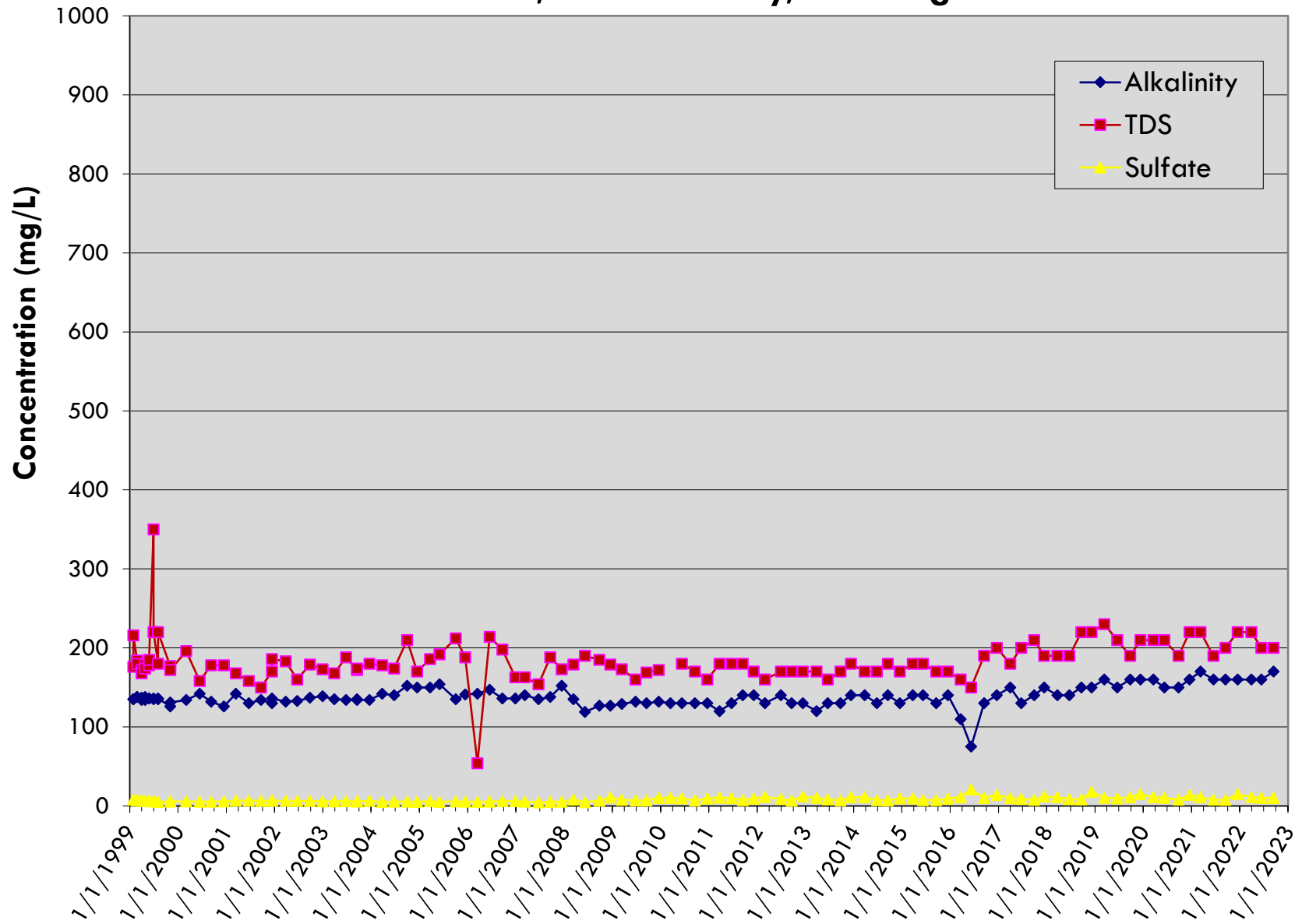


MW-3

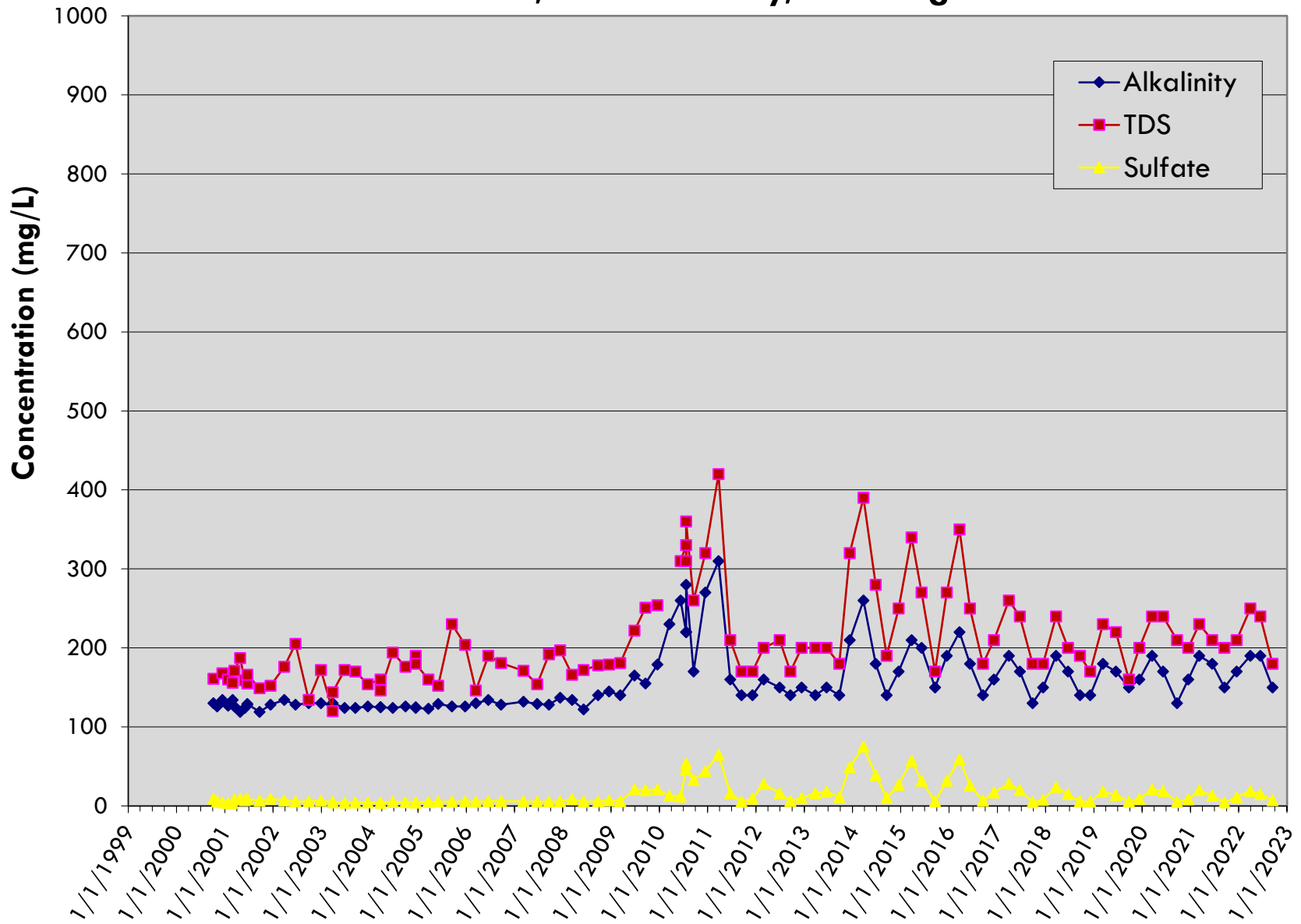
LRI Landfill, Pierce County, Washington



MW-4
LRI Landfill, Pierce County, Washington

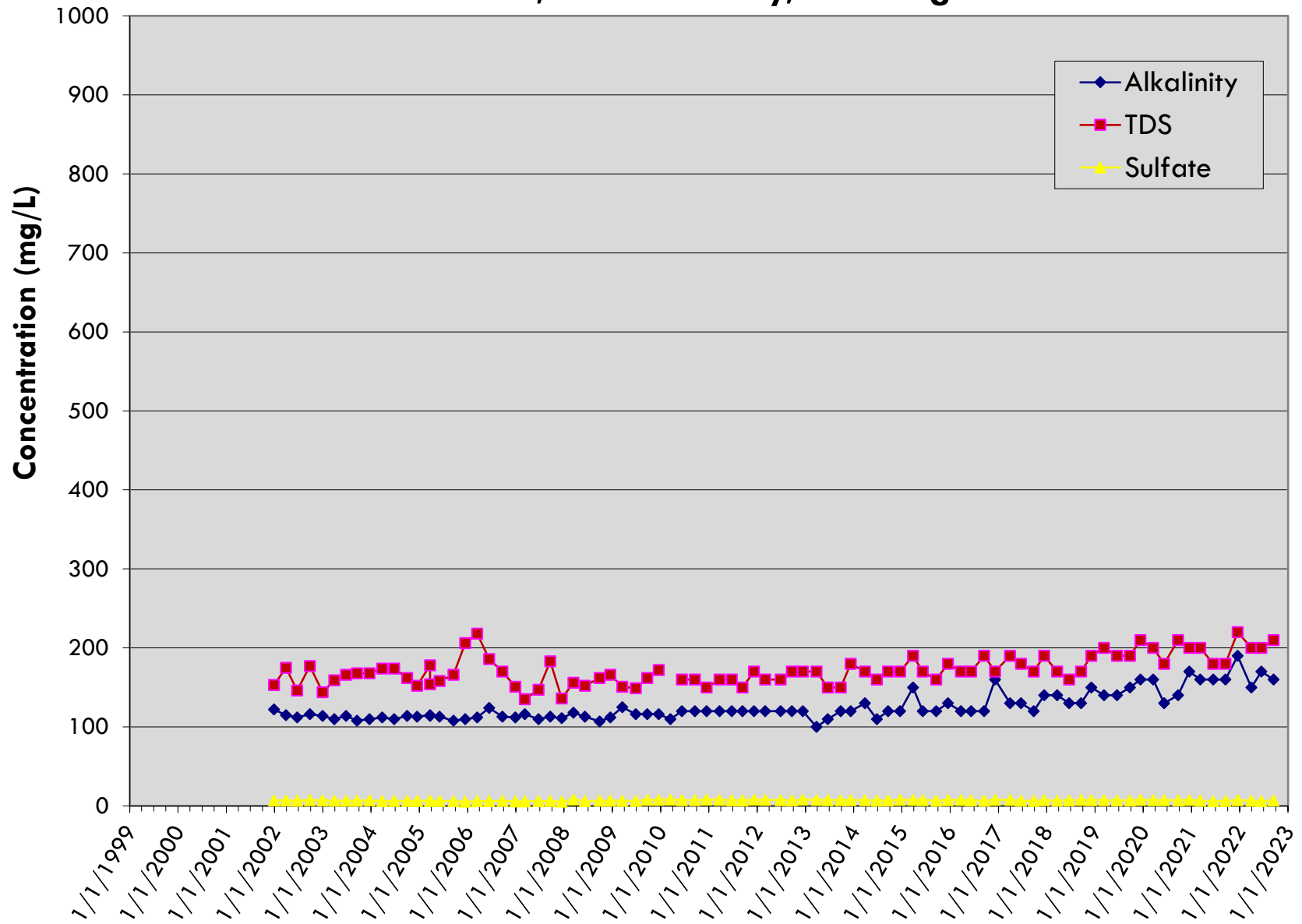


MW-5A
LRI Landfill, Pierce County, Washington

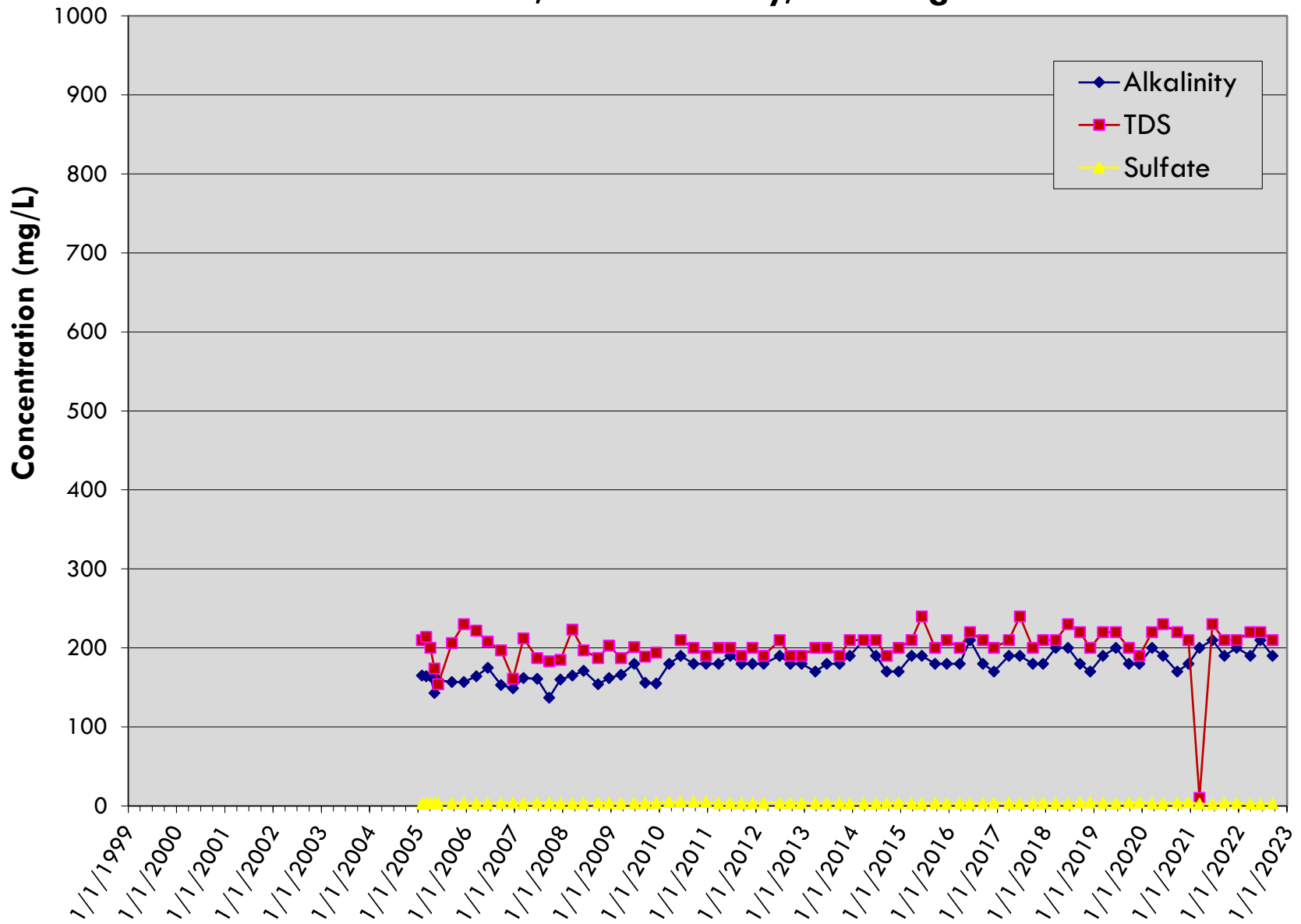


MW-6

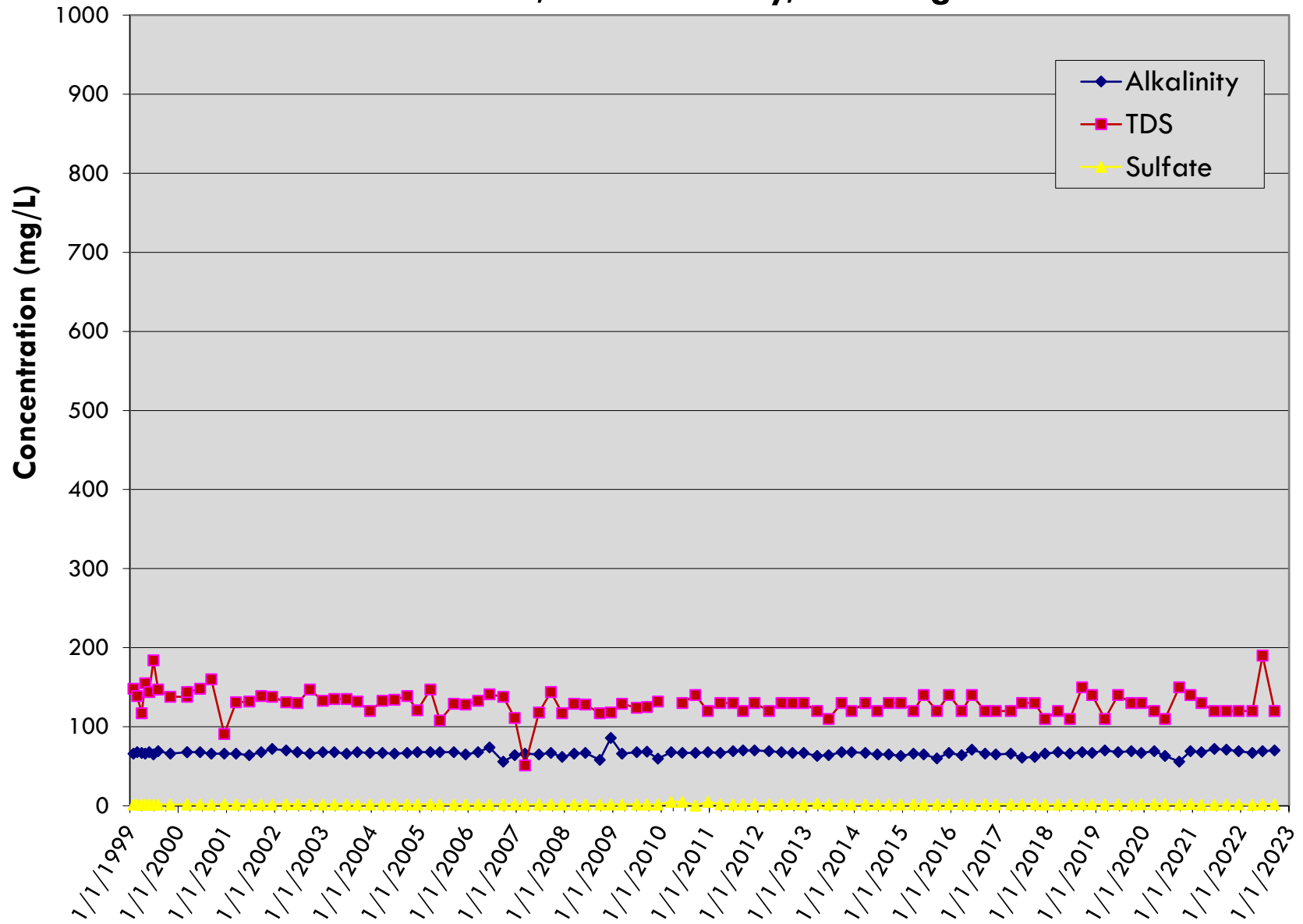
LRI Landfill, Pierce County, Washington



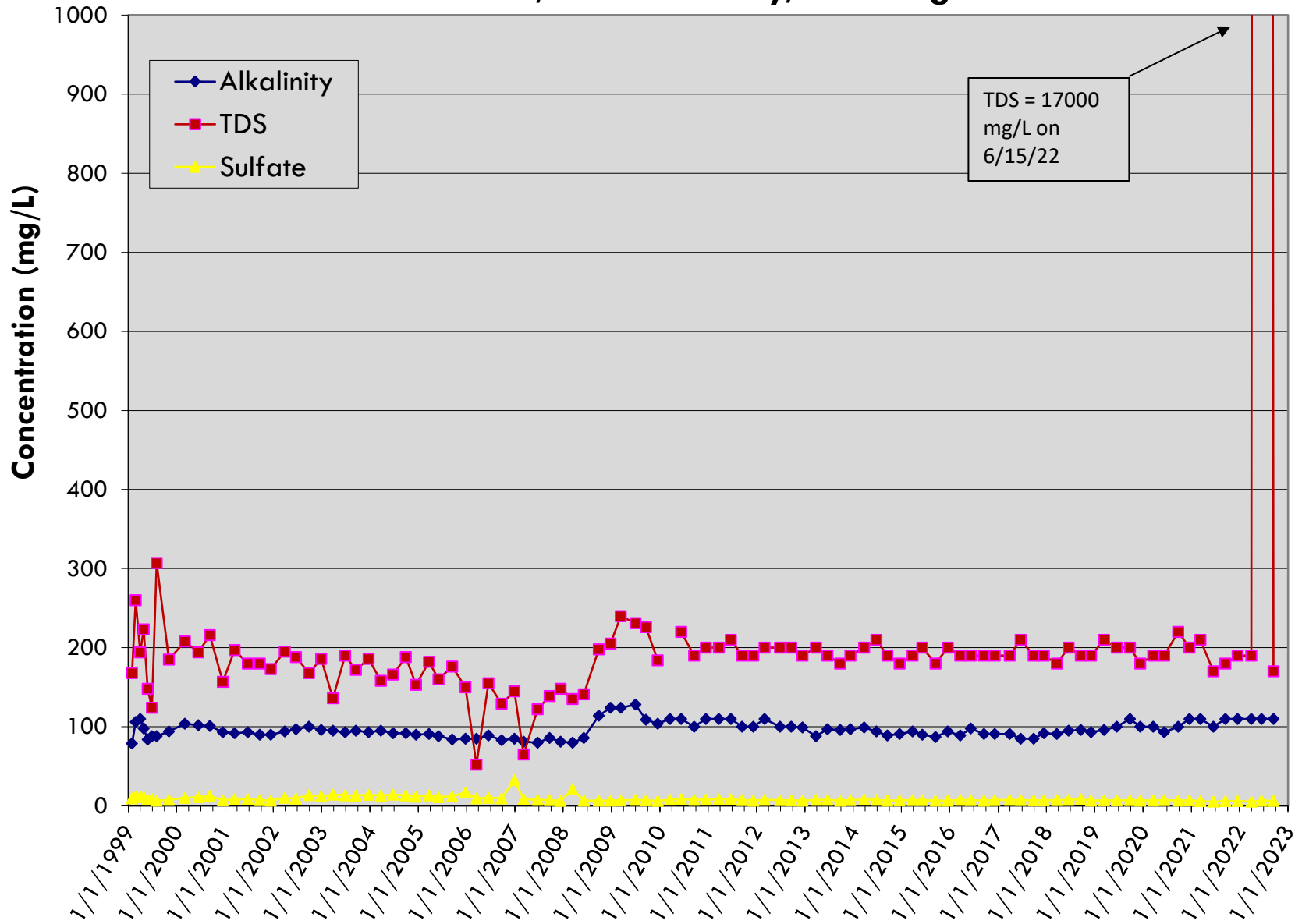
MW-7
LRI Landfill, Pierce County, Washington



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

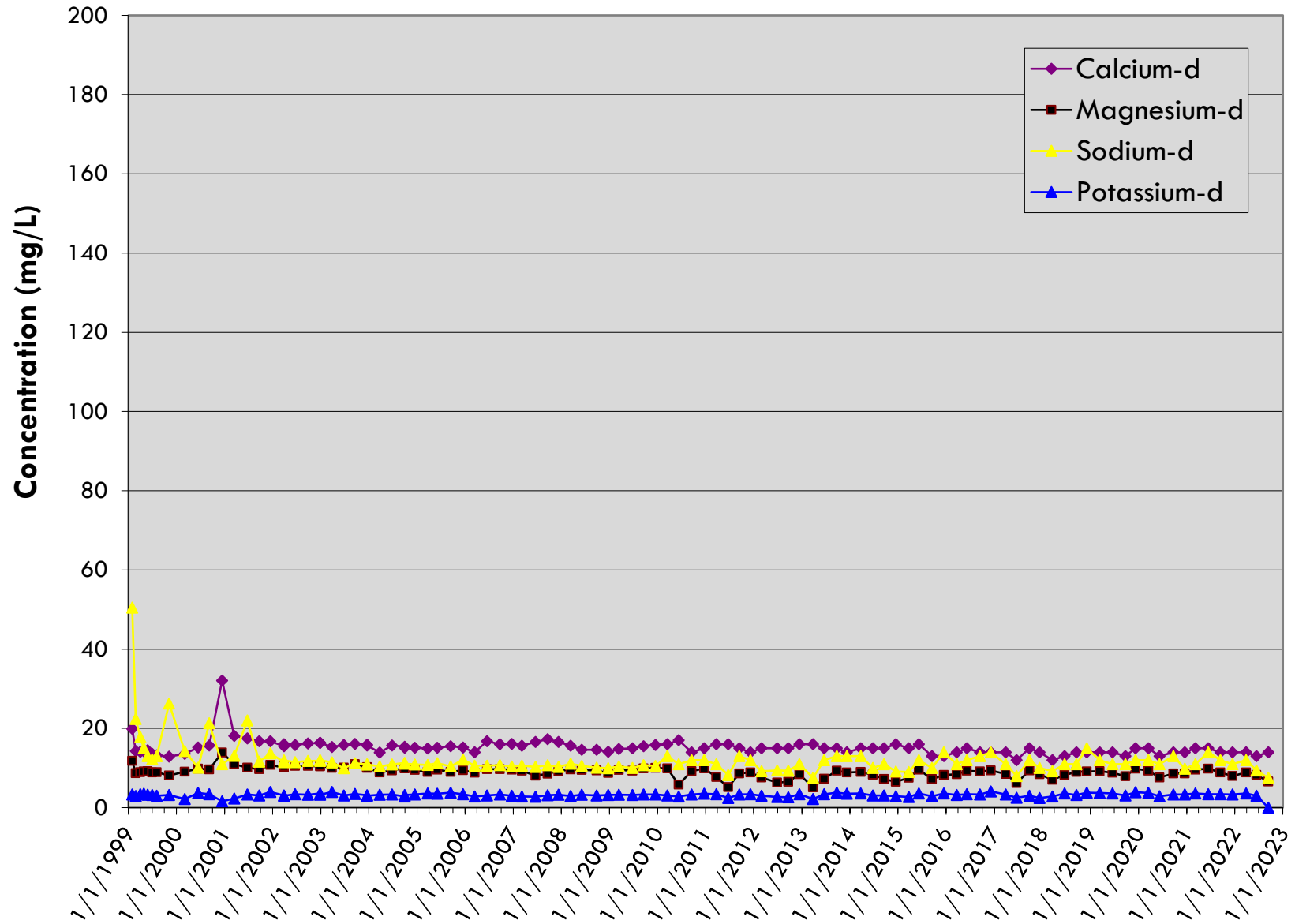


MW-10 (Background) LRI Landfill, Pierce County, Washington



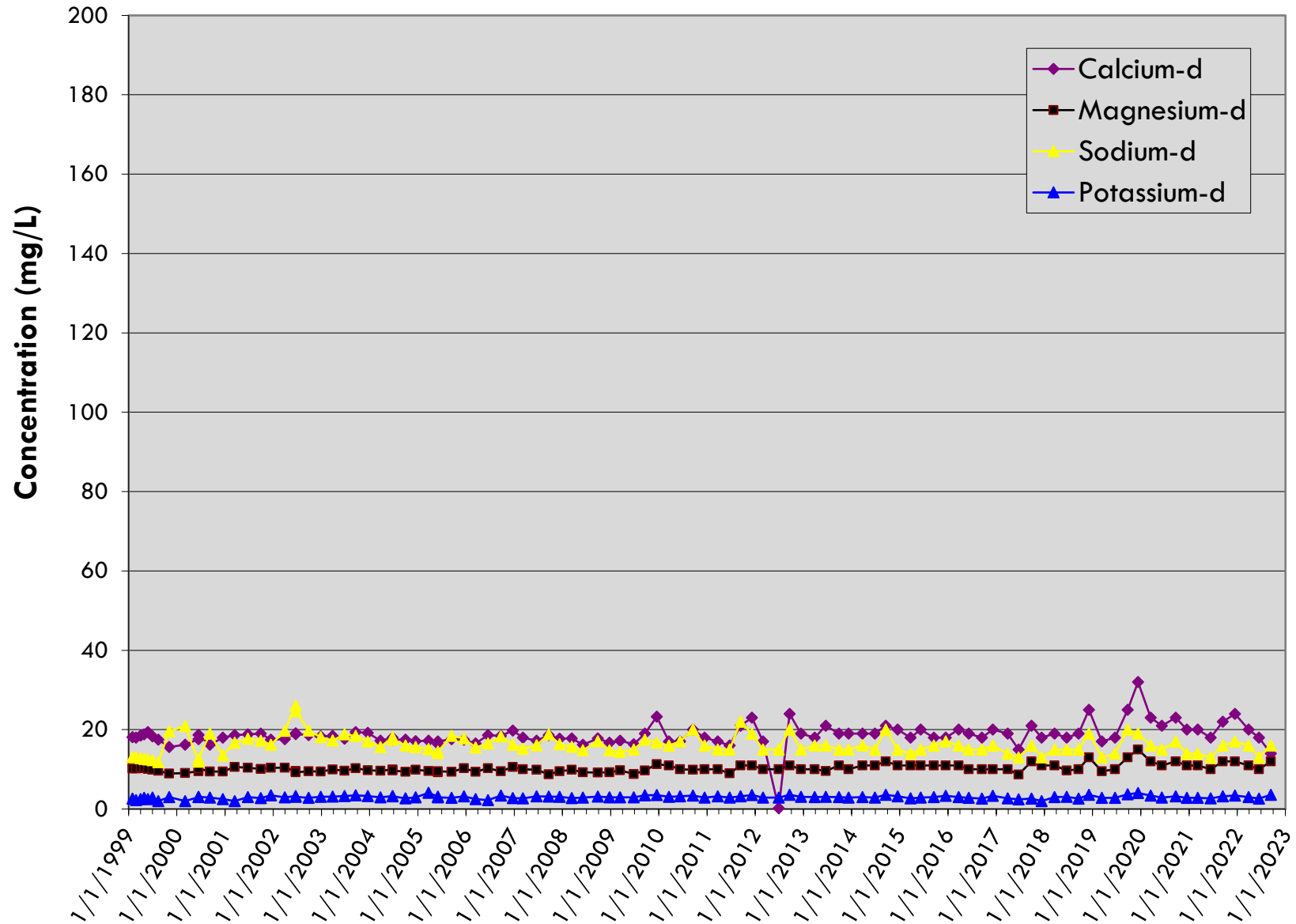
MW-1A

LRI Landfill, Pierce County, Washington



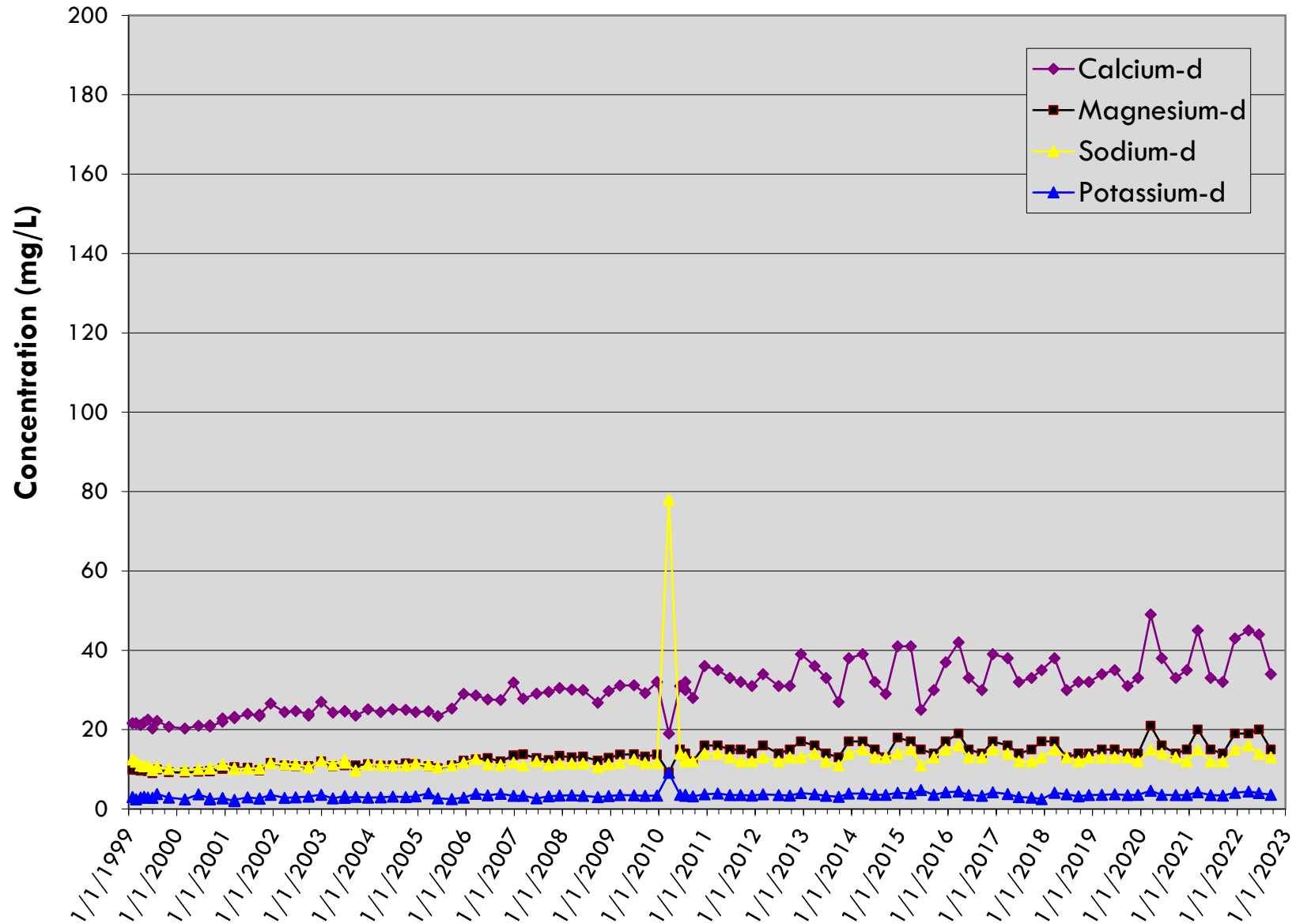
MW-2A

LRI Landfill, Pierce County, Washington



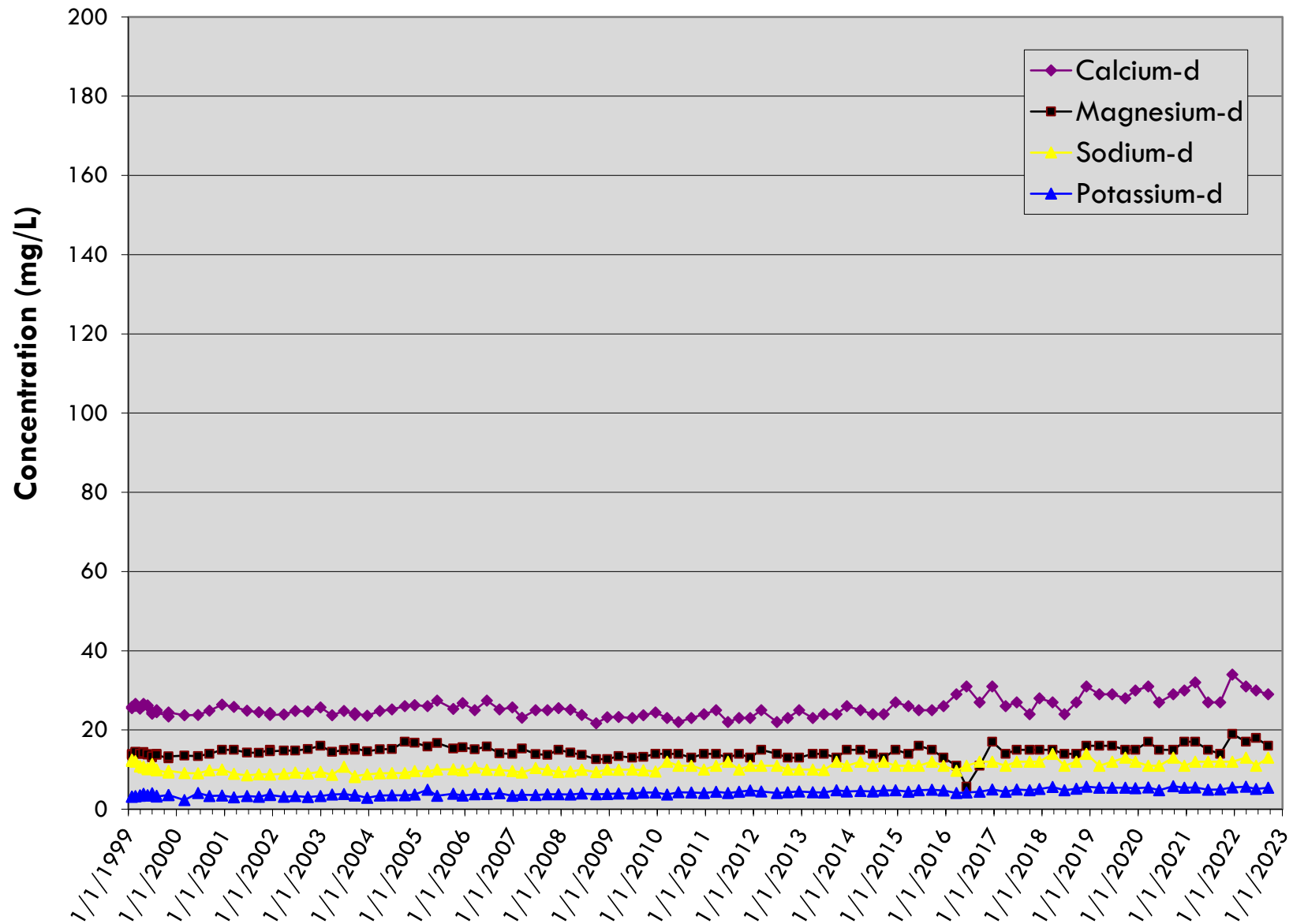
MW-3

LRI Landfill, Pierce County, Washington



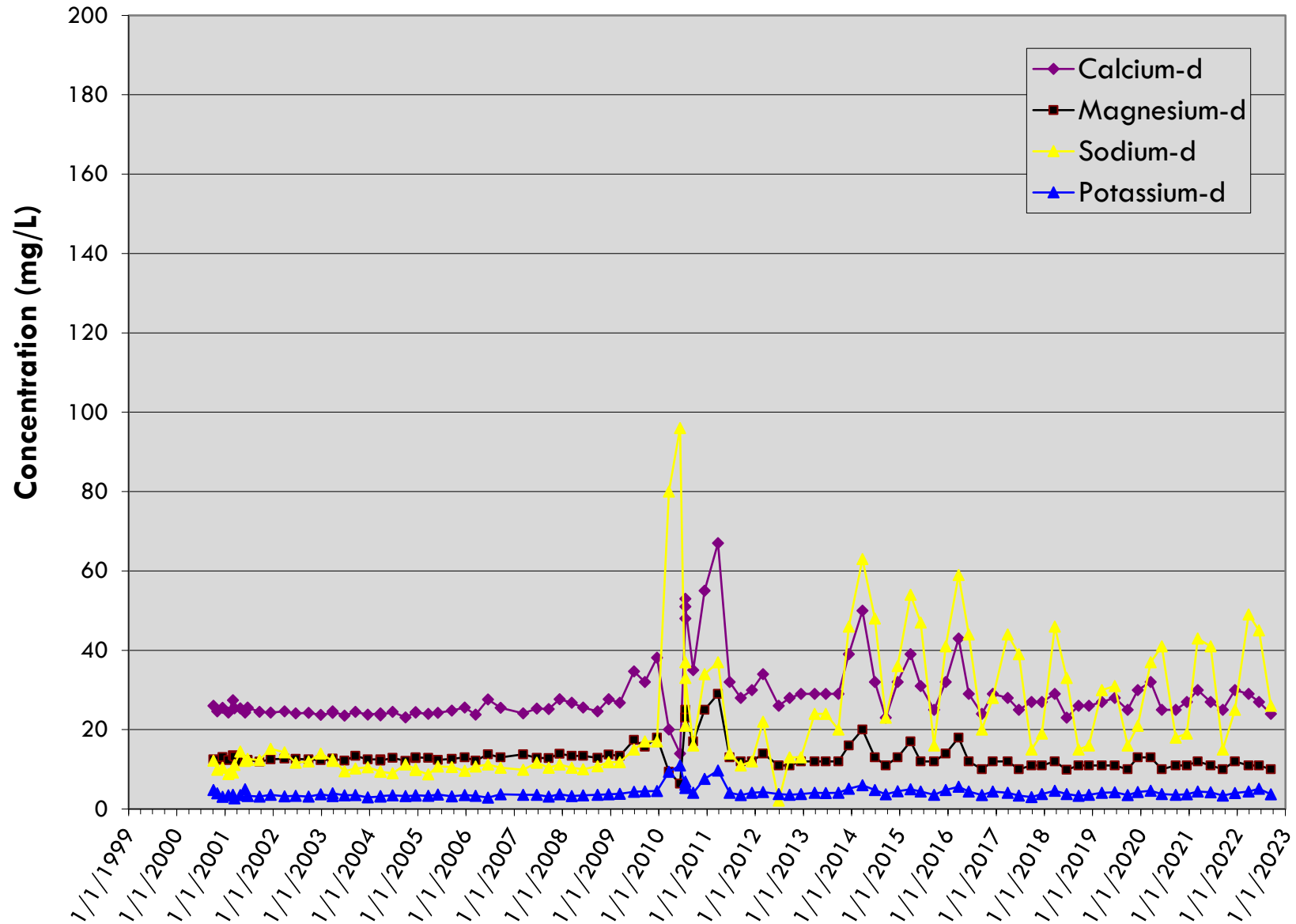
MW-4

LRI Landfill, Pierce County, Washington



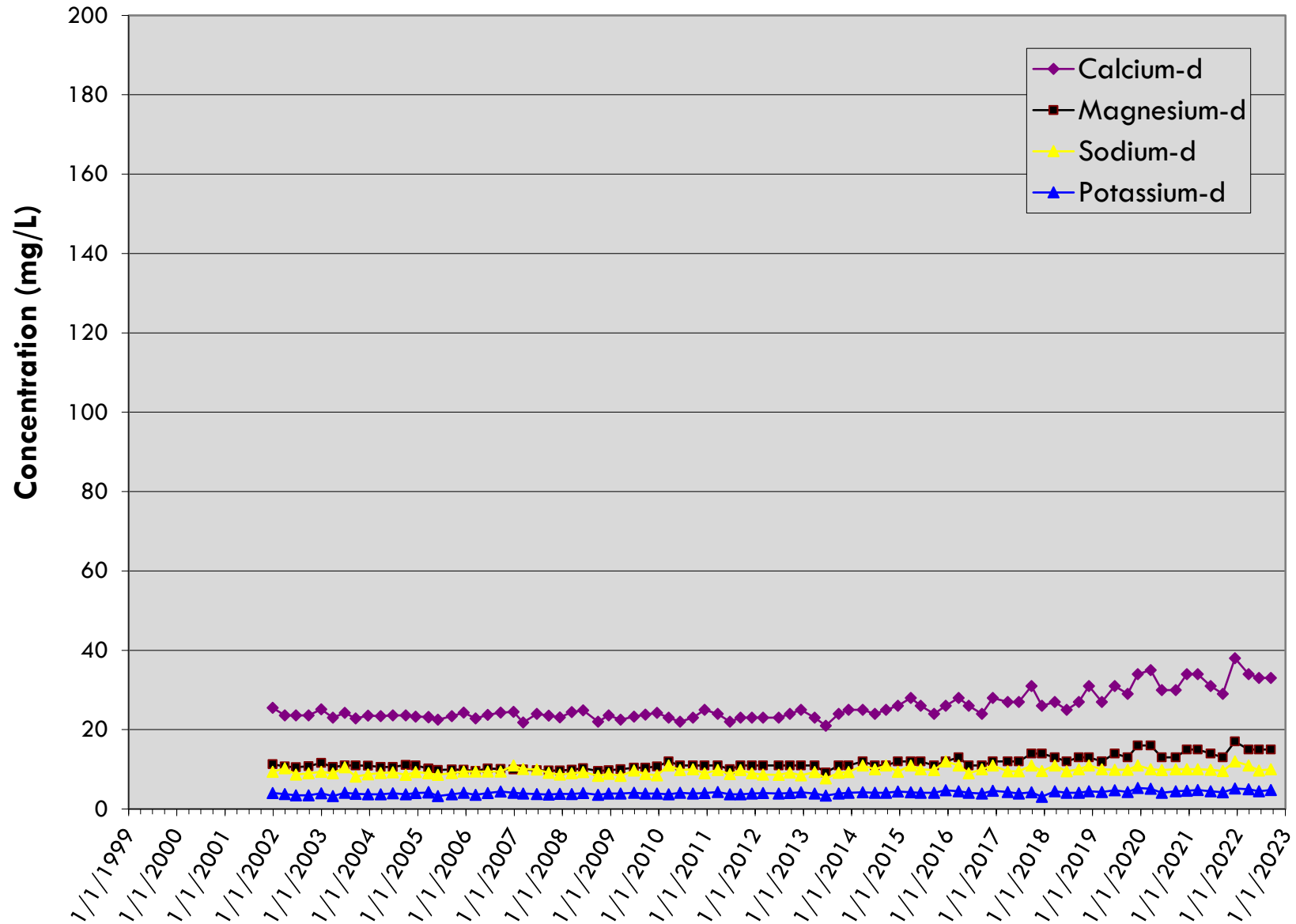
MW-5A

LRI Landfill, Pierce County, Washington

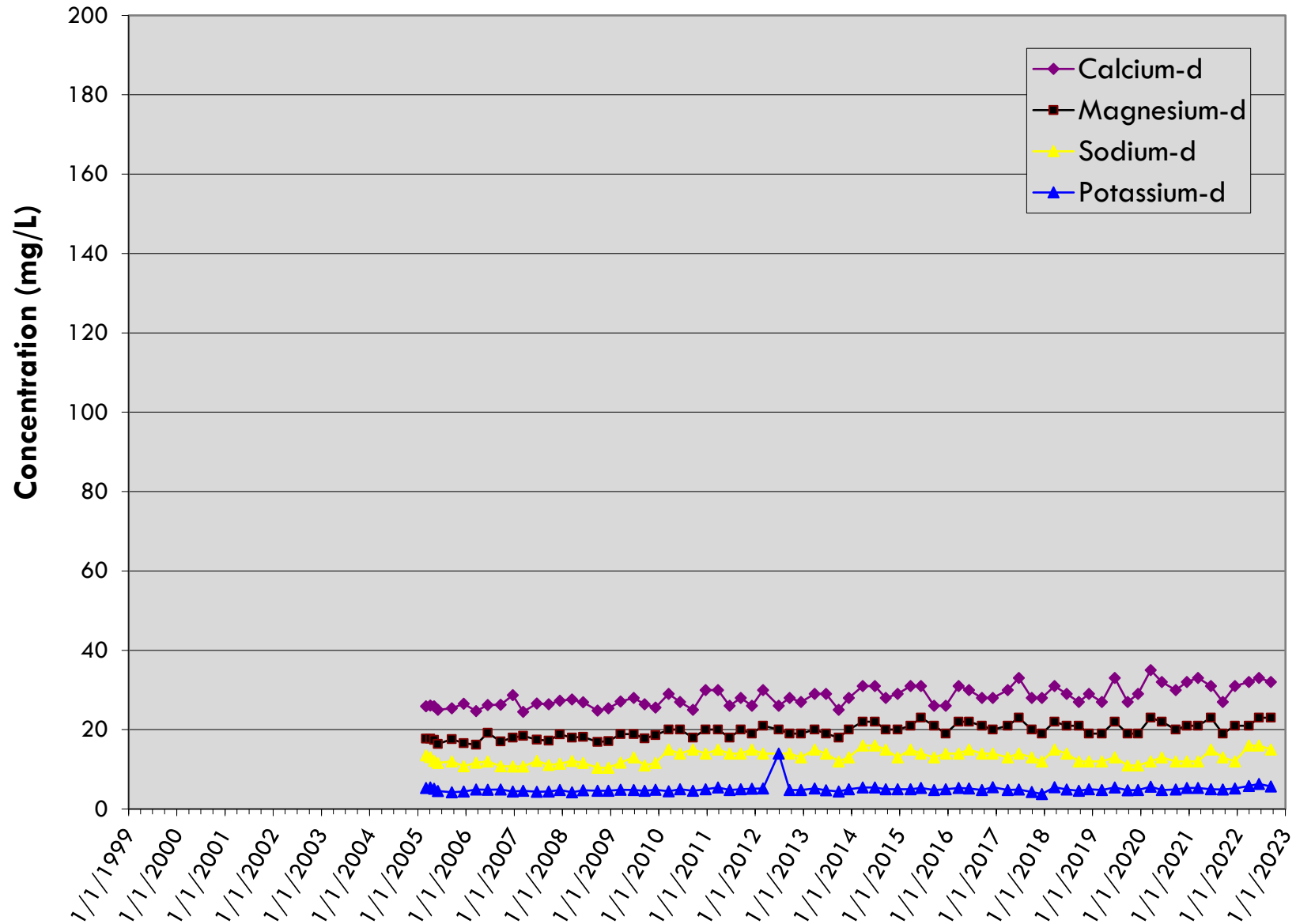


MW-6

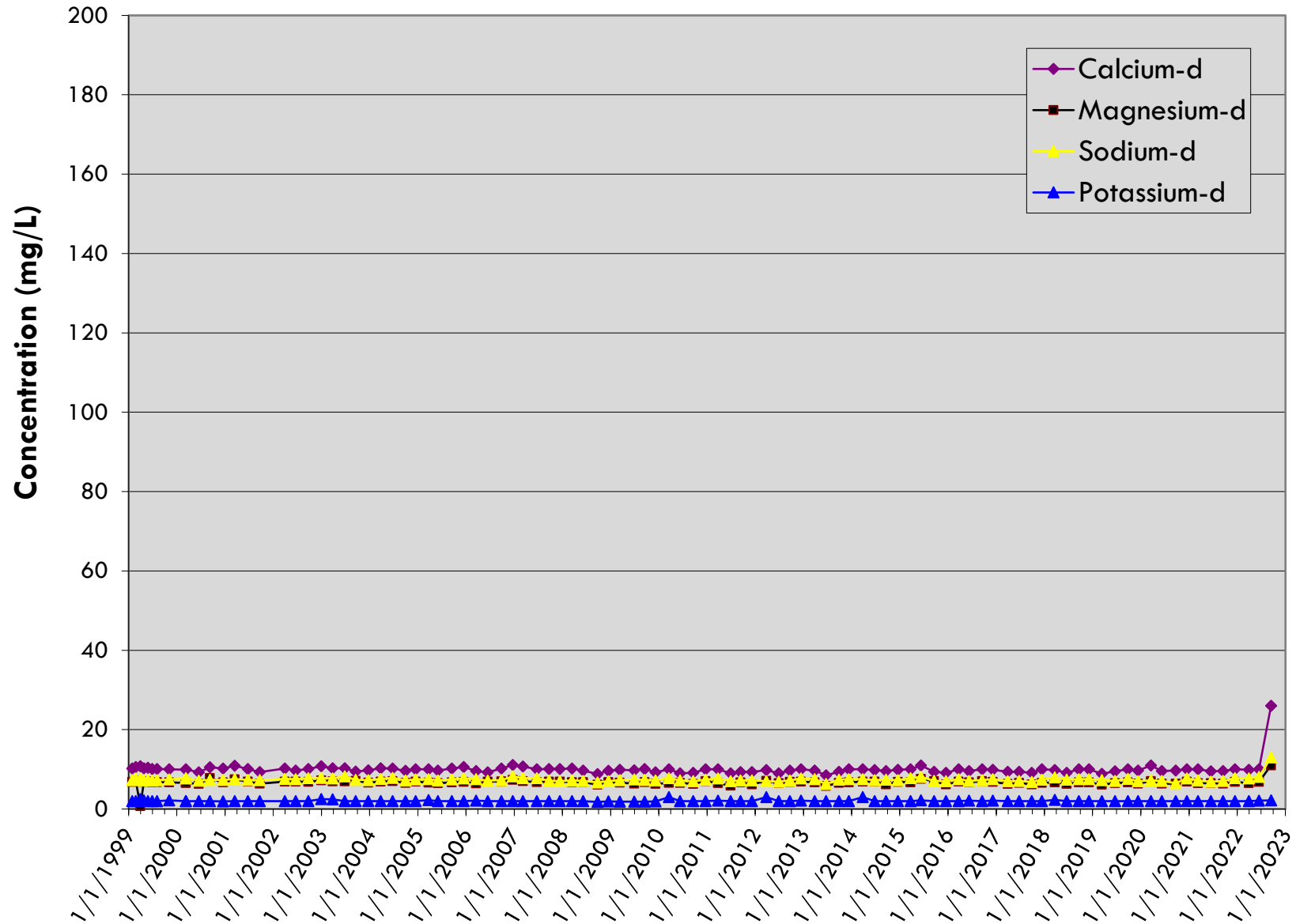
LRI Landfill, Pierce County, Washington



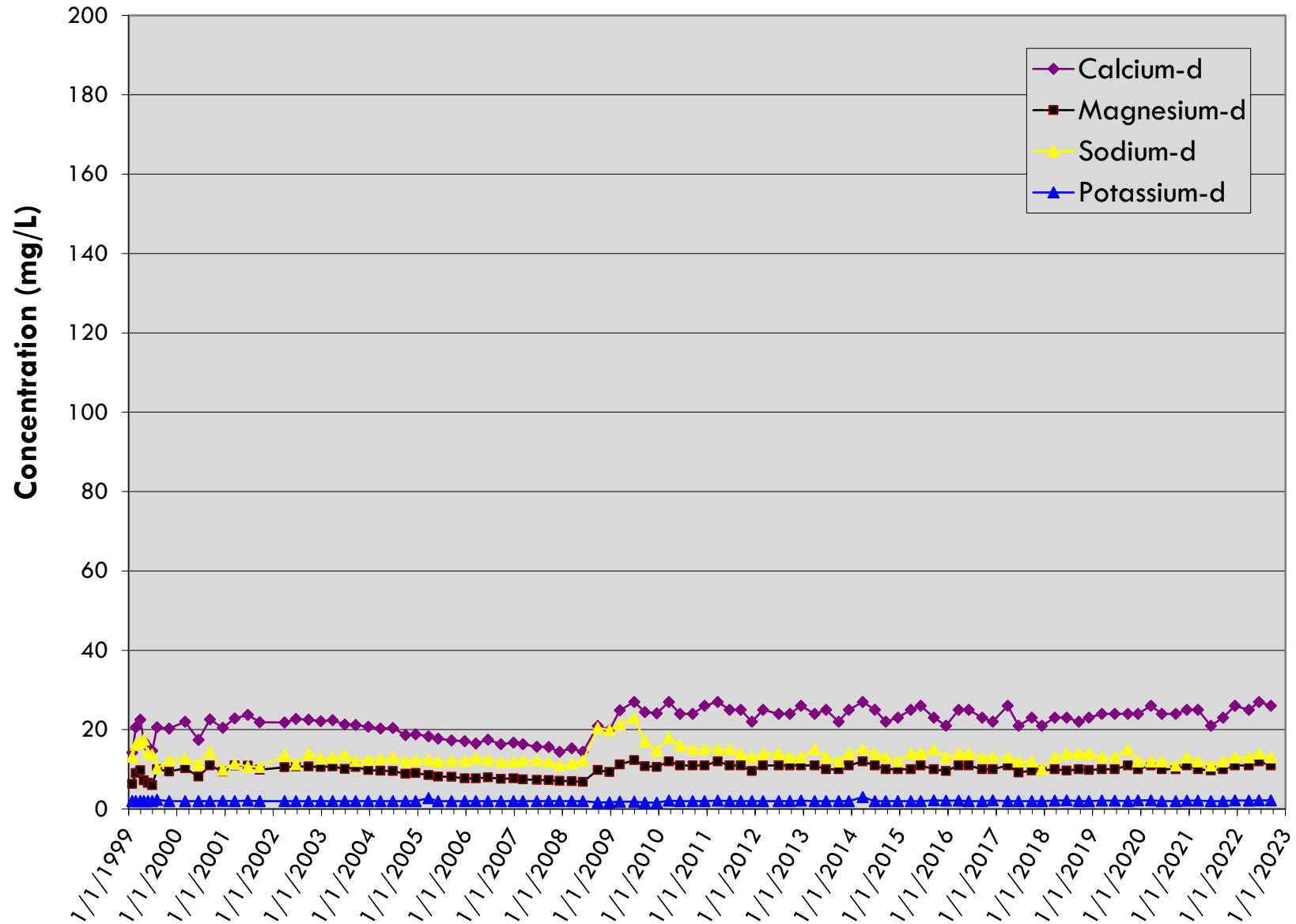
MW-7
LRI Landfill, Pierce County, Washington



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

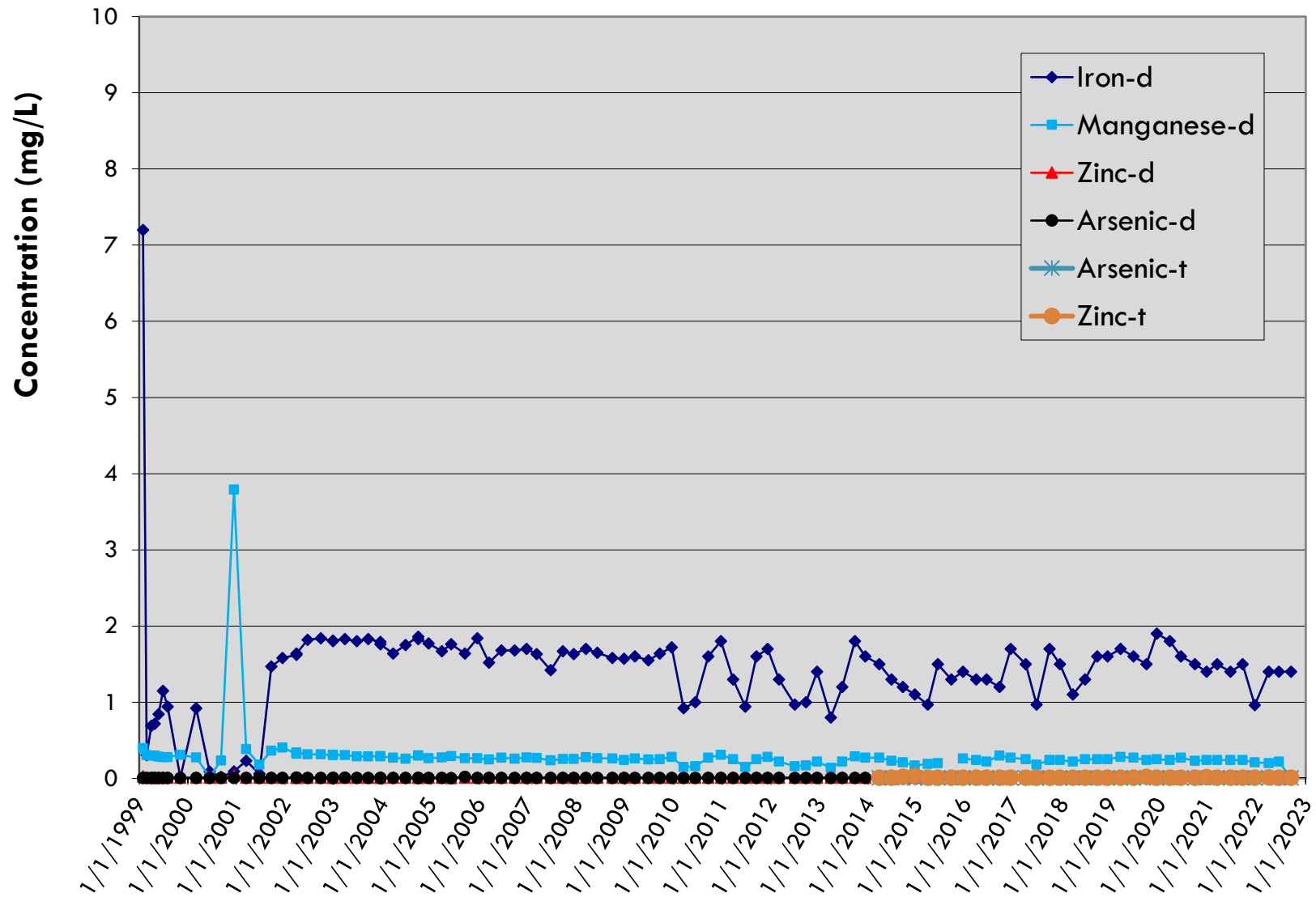


MW-10 (Background) LRI Landfill, Pierce County, Washington



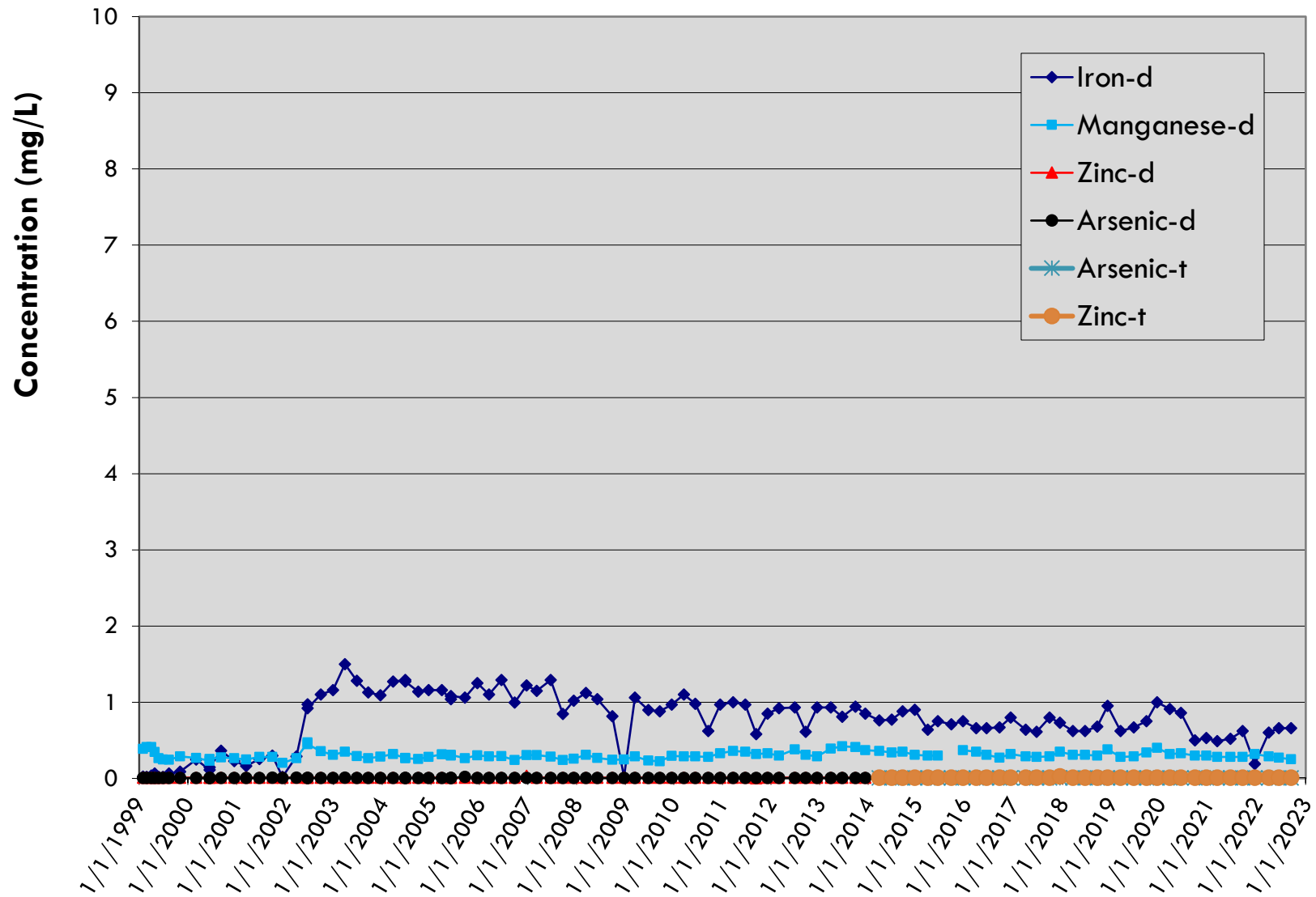
MW-1A

LRI Landfill, Pierce County, Washington



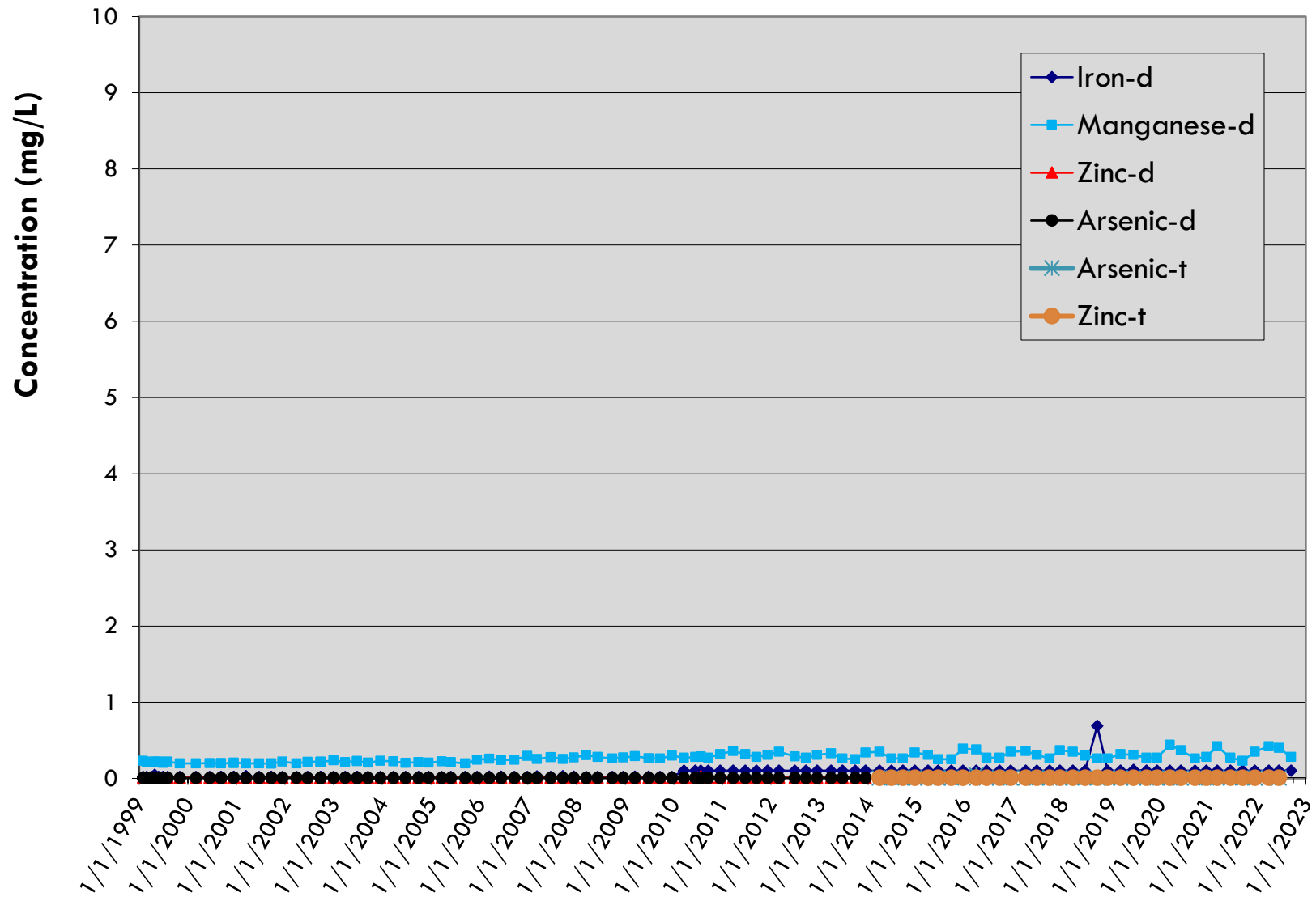
MW-2A

LRI Landfill, Pierce County, Washington

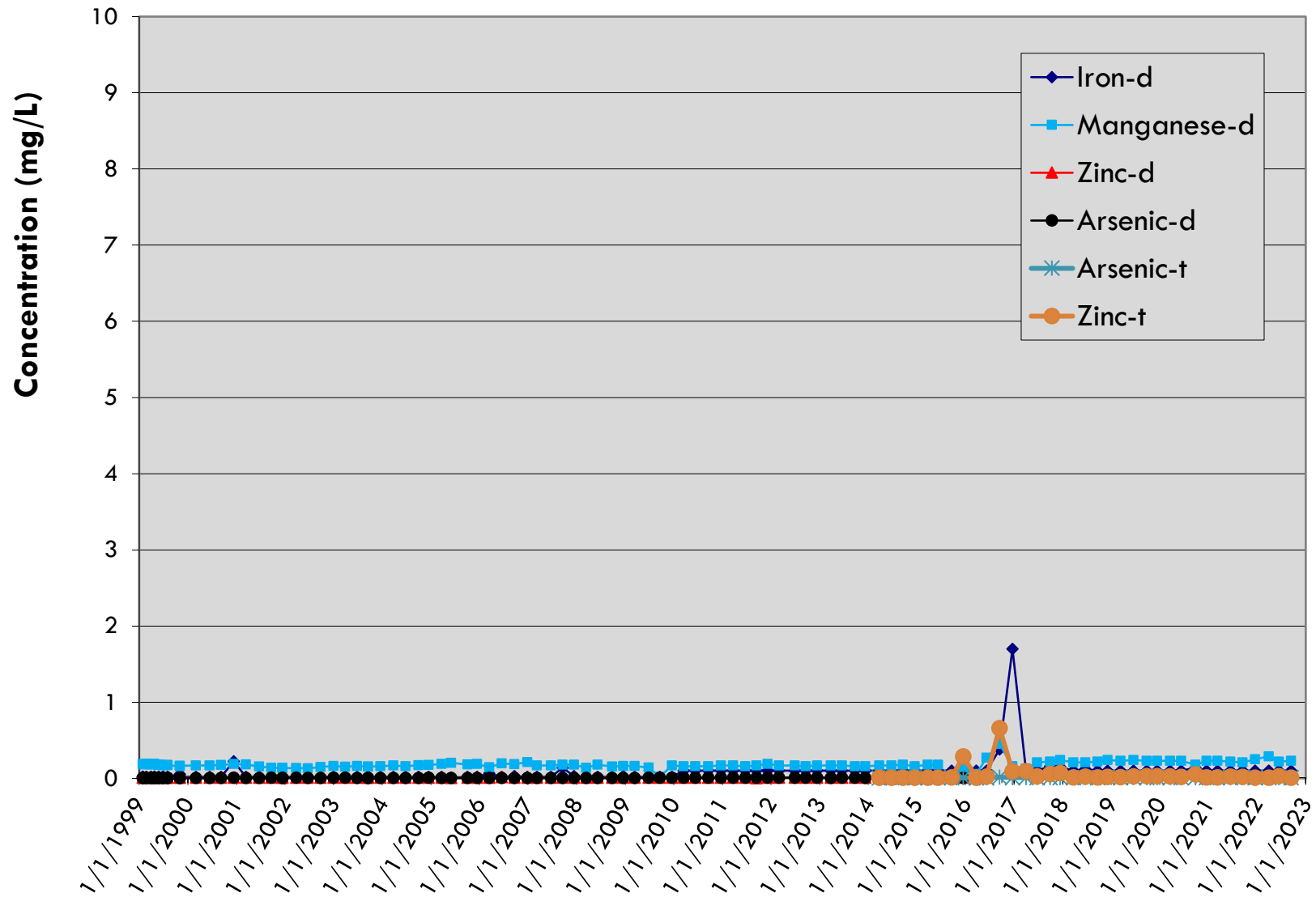


MW-3

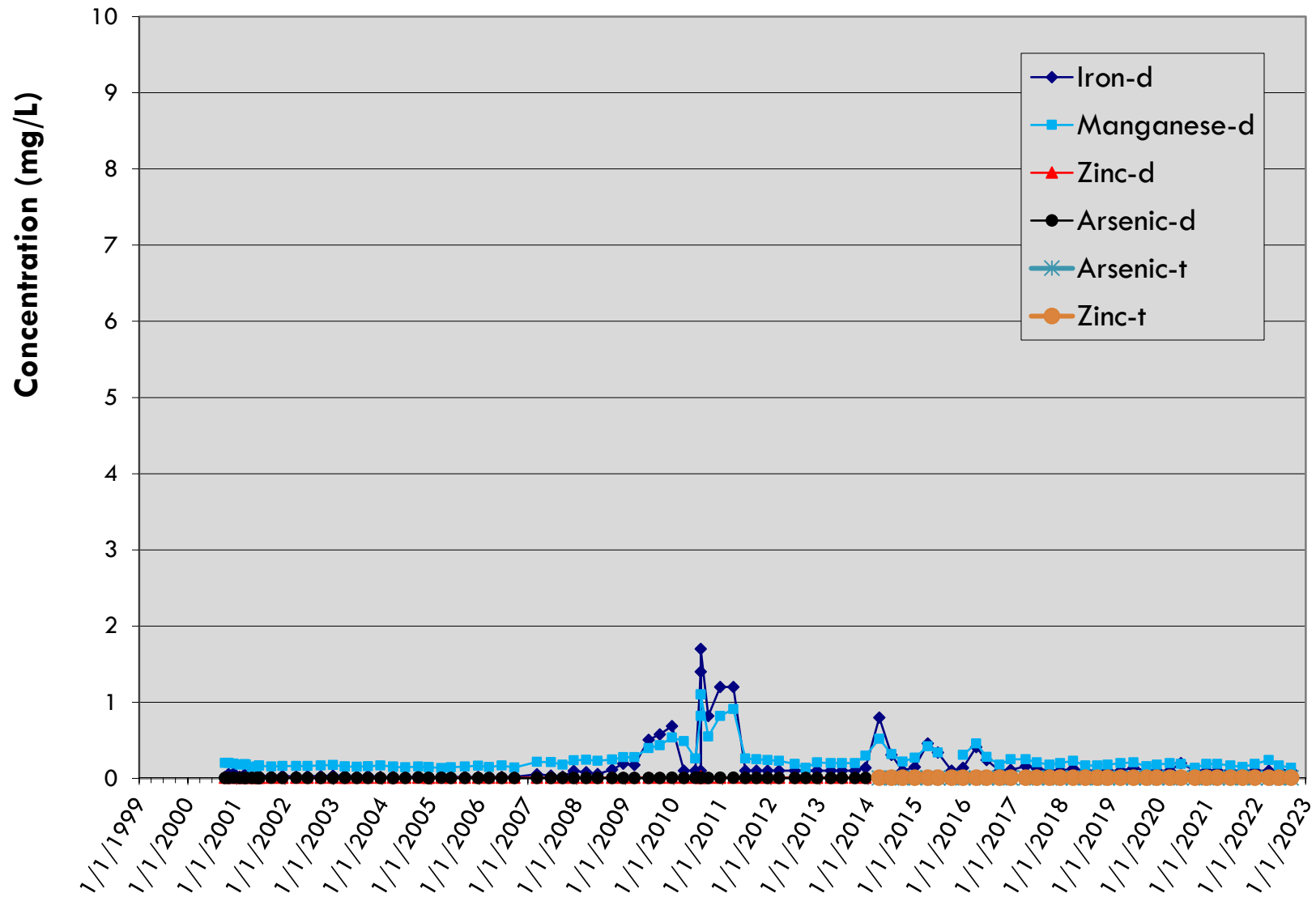
LRI Landfill, Pierce County, Washington



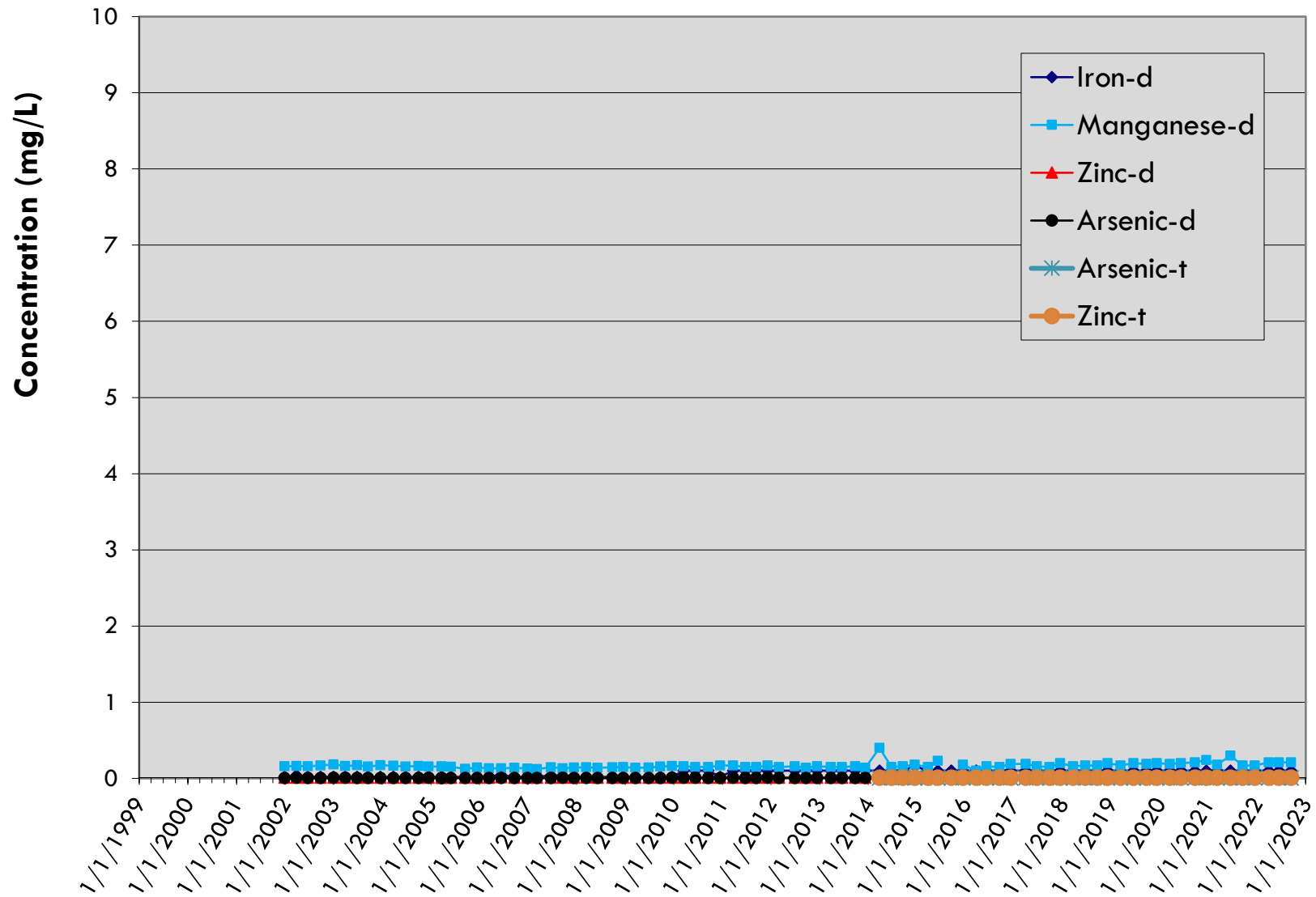
MW-4
LRI Landfill, Pierce County, Washington



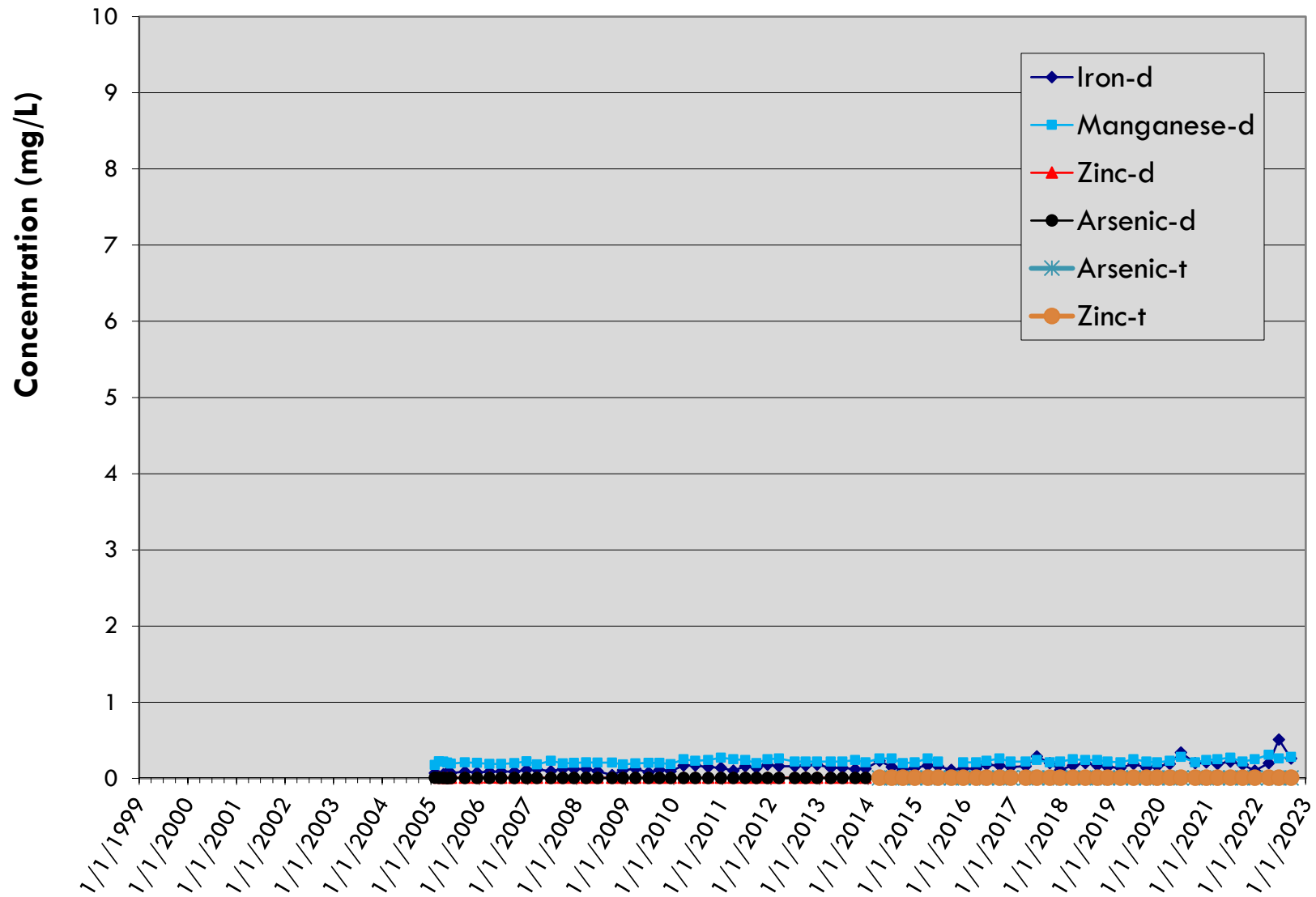
MW-5A
LRI Landfill, Pierce County, Washington



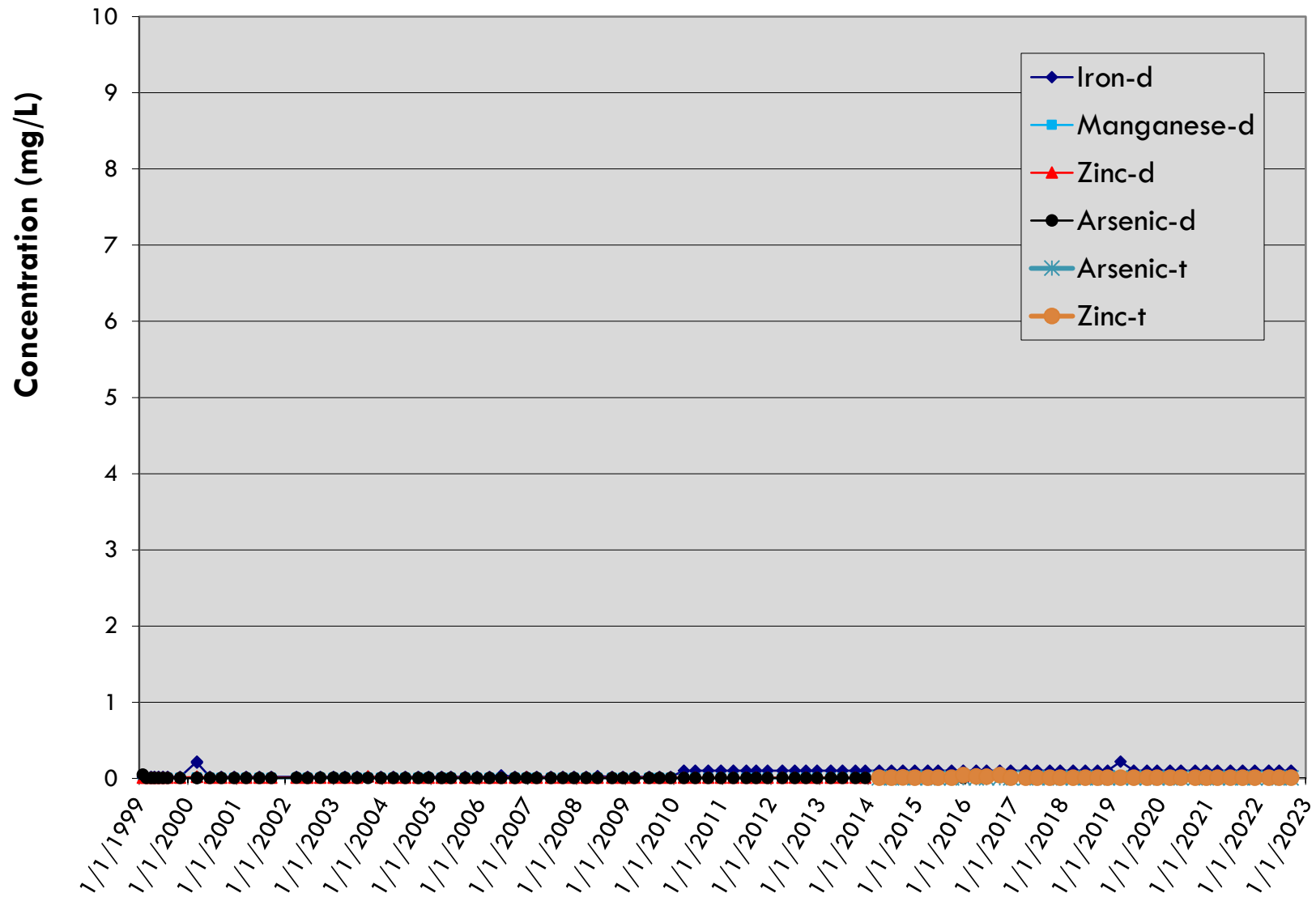
MW-6
LRI Landfill, Pierce County, Washington



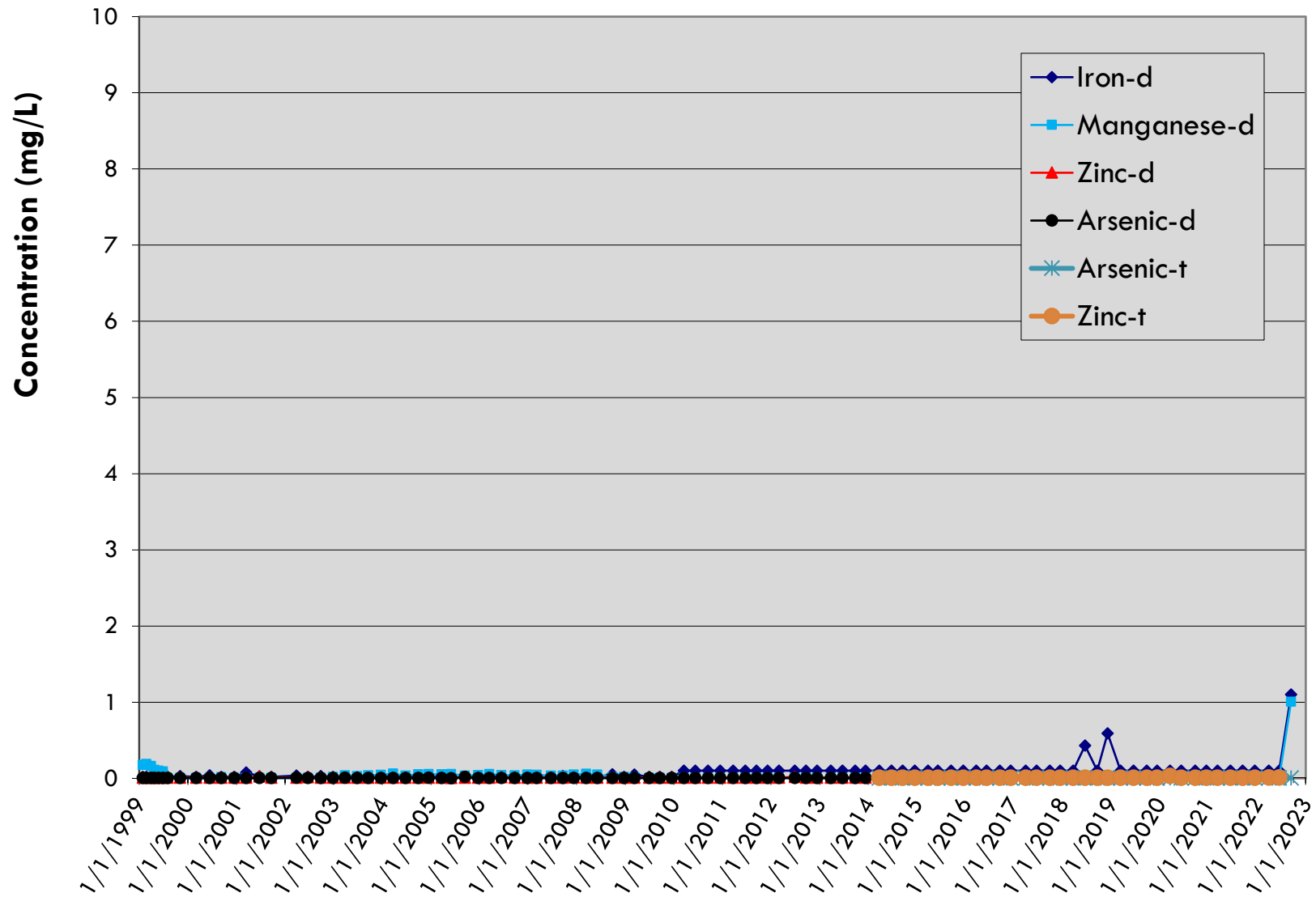
MW-7
LRI Landfill, Pierce County, Washington



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



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





Attachment H

LDCS & Leachate Pumping Records and Conductivity Measurements

Summary of LDCS Volumes Pumped and Conductivity Data
Third Quarter 2022
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)*
7/1/2022	0.00	8,310	400	0	952	0	865	416	925	4,110	--	6,414	987	306	1,000	2,346	982	0	717	3,937	--
7/2/2022	0.00	8,340	404	0	979	0	865	764	933	4,040	--	6,656	990	368	1,000	2,426	996	0	705	3,954	--
7/3/2022	0.00	8,350	405	0	991	0	865	577	934	4,020	--	6,684	990	307	1,000	2,383	1,009	0	718	3,944	--
7/4/2022	0.00	8,360	405	30	994	2,145	865	409	934	3,940	--	6,682	989	367	1,000	2,152	1,020	8,585	724	3,938	--
7/5/2022	0.00	8,340	404	560	997	655	869	589	935	3,660	--	6,774	991	306	1,000	1,995	1,027	6,270	713	3,926	--
7/6/2022	0.17	7,490	404	590	999	612	879	611	936	2,980	--	5,996	993	369	1,000	1,801	1,033	0	735	3,941	--
7/7/2022	0.00	8,280	404	610	998	705	883	198	941	2,820	--	5,538	996	305	1,000	1,650	1,037	6,191	704	3,933	--
7/8/2022	0.00	7,420	404	620	987	54	883	0	967	2,990	--	5,606	998	305	1,000	1,669	1,036	1	736	3,625	--
7/9/2022	0.00	7,850	404	600	985	0	883	0	971	2,990	--	5,324	998	367	1,000	1,827	1,031	0	748	3,623	--
7/10/2022	0.00	6,790	403	650	969	0	883	0	947	3,000	--	5,256	998	305	1,000	1,896	1,025	0	747	3,615	--
7/11/2022	0.00	7,840	242	650	574	2	883	0	921	3,060	--	4,868	998	365	1,000	2,069	1,018	0	742	3,606	--
7/12/2022	0.00	7,550	143	640	355	3	879	0	919	3,120	--	5,108	991	305	1,000	2,169	1,009	0	741	3,919	--
7/13/2022	0.00	6,590	165	600	404	5	879	0	922	3,080	--	4,762	996	303	1,000	2,074	1,006	0	764	3,612	--
7/14/2022	0.00	7,360	228	550	539	2,999	863	3,408	927	3,090	--	4,662	1,003	366	1,000	2,070	1,009	12,537	780	3,606	--
7/15/2022	0.00	6,490	222	660	531	0	863	592	927	2,970	--	4,656	1,009	303	1,000	2,089	1,014	0	797	3,612	--
7/16/2022	0.00	6,510	233	580	568	0	863	599	927	3,030	--	4,888	1,012	305	1,000	2,116	1,020	0	812	3,622	--
7/17/2022	0.00	6,390	202	610	501	0	863	193	927	3,000	--	4,650	1,005	305	1,000	2,105	1,025	0	770	3,770	--
7/18/2022	0.00	6,360	238	590	594	2,633	866	0	927	3,040	--	4,408	1,004	368	1,000	2,145	1,029	12,440	0	3,625	--
7/19/2022	0.00	5,730	199	480	494	632	866	1,513	967	2,980	--	4,386	1,012	304	1,000	2,207	1,033	0	745	3,605	--
7/20/2022	0.00	6,480	134	530	336	0	866	614	967	3,090	--	4,418	1,019	305	1,000	2,257	1,034	0	722	3,606	--
7/21/2022	0.00	5,670	141	560	351	0	866	617	967	3,080	--	4,196	1,013	302	1,000	2,034	1,035	0	744	3,308	--
7/22/2022	0.00	5,640	265	540	661	0	866	416	967	3,090	--	4,192	1,011	305	1,000	1,871	1,037	0	743	3,319	--
7/23/2022	0.00	5,620	350	490	865	0	866	590	967	3,020	--	4,268	1,010	305	1,000	1,774	1,040	0	705	3,314	--
7/24/2022	0.00	5,600	381	550	941	0	866	415	967	3,140	--	4,252	1,010	303	1,000	1,633	1,040	0	727	3,296	--
7/25/2022	0.00	5,560	392	540	977	3,529	860	408	918	3,200	--	4,478	1,010	304	1,000	1,584	1,038	11,825	730	3,297	--
7/26/2022	0.00	5,600	396	550	992	0	860	620	927	3,180	--	4,146	1,010	305	1,000	1,663	1,038	0	699	3,600	--
7/27/2022	0.00	5,580	397	480	994	0	860	447	934	3,240	--	4,164	1,013	303	1,000	1,657	1,038	0	729	3,597	--
7/28/2022	0.00	5,580	397	480	983	0	860	429	939	3,180	--	3,822	1,019	304	1,000	1,402	1,039	0	743	3,595	--
7/29/2022	0.00	4,780	202	480	502	3,245	870	423	919	3,280	--	3,932	1,015	304	1,000	1,376	1,043	11,437	663	3,464	--
7/30/2022	0.00	4,820	269	530	675	0	870	619	919	3,360	--	3,960	1,017	304	1,000	1,332	1,044	0	692	3,292	--
7/31/2022	0.00	4,770	350	480	876	0	757	391	828	3,280	--	4,116	1,022	304	1,000	1,309	1,043	0	721	3,293	--
8/1/2022	0.00	4,760	380	480	954	0	871	409	899	3,250	--	4,018	1,024	243	1,000	1,339	1,040	0	707	3,174	--
8/2/2022	0.00	4,760	391	480	980	2,364	871	413	928	3,320	--	4,192	1,022	305	1,000	1,360	1,040	5,283	700	3,312	--
8/3/2022	0.00	4,260	394	430	977	1,226	871	392	937	3,320	--	4,150	1,020	305	1,000	1,406	1,040	4,505	716	3,317	--
8/4/2022	0.00	4,310	396	460	979	0	871	552	939	3,280	--	4,254	1,019	245	1,000	1,442	1,037	0	718	3,324	--
8/5/2022	0.00	3,960	396	470	973	0	726	383	940	3,200	--	3,994	1,018	305	1,000	1,467	1,008	0	684	3,304	--
8/6/2022	0.00	4,770	396	500	965	5,561	726	378	942	3,200	--	4,114	1,019	242	1,000	1,518	1,024	1,171	698	3,302	--
8/7/2022	0.00	3,960	396	480	963	4,863	726	393	945	3,240	--	4,066	1,021	304	1,000	1,518	1,031	5,640	708	3,299	--
8/8/2022	0.00	3,940	230	420	569	5,476	726	396	904	3,270	--	4,306	1,026	242	1,000	1,475	1,035	1	703	3,309	--
8/9/2022	0.00	4,510	249	440	627	1,866	908	400	912	3,310	--	4,362	1,025	250	1,000	1,458	1,036	0	676	3,325	--
8/10/2022	0.00	3,250	341	410	852	2,858	908	368	928	3,170	--	3,906	1,023	244	1,000	1,450	1,037	0	700	3,331	--
8/11/2022	0.00	3,780	375	400	918	0	908	399	914	2,570	--	3,348	1,022	288	1,000	1,282	1,038	0	709	3,309	--
8/12/2022	0.00	3,910	387	390	937	0	759	389	935	2,220	--	3,406	1,023	244	1,000	1,241	1,037	0	708	3,317	--
8/13/2022	0.00	3,920	391	420	955	8,306	759	383	948	2,090	--	3,468	1,024	244	1,000	1,201	1,038	5,642	676	3,317	--
8/14/2022	0.00	3,110	393	420	954	2,626	759	376	954	1,910	--	3,266	1,024	244	1,000	1,139	1,038	0	692	3,311	--
8/15/2022	0.00	3,900	393	360	960	0	751	373	956	1,980	--	3,184	1,025	242	1,000	1,195	1,037	0	696	3,304	--
8/16/2022	0.00	3,130	393	420	972	0	912	367	956	1,840	--	3,468	1,024	245	1,000	1,220	1,038	0	692	3,312	--
8/17/2022	0.00	3,130	393	440	978	0	912	374	956	1,850	--	3,270	1,024	244	1,000	1,118	1,039	0	669	2,999	--
8/18/2022	0.00	3,900	393	440	987	0	912	383	958	1,890	--	2,992	1,025	182	1,000	1,214	1,042	0	689	3,305	--
8/19/2022	0.00	1,550	392	250	991	0	912	181	957	1,160	--	1,866	1,023	183	1,000	628	1,043	0	700	1,804	--
8/20/2022	0.00	1,550	392	250	992	28,898	912	181	956	1,160	--	1,866	1,023	183	1,000	628	1,043	11,153	702	1,804	--
8/21/2022	0.00	1,550	392	250	992	0	912	181	956	1,160	--	1,866	1,023	183	1,000	628	1,043	0	702	1,804	--
8/22/2022	0.00	1,550	392	250	992	0	937	181	956	1,160	--	1,866	1,023	183	1,000	628	1,043	0	702	1,804	--
8/23/2022	0.00	1,550	392	250	992	0	937	181	956	1,160	--	1,866	1,023	183	1,000	628	1,043	0	702	1,804	--
8/24/2022	0.00	3,090	368	460	924	0	937	193	904	1,870	--	3,592	1,025	182	1,000	984	1,043	0	696	3,305	--
8/25/2022	0.00	3,100	372	360	931	0	937	407	920	1,880	--	3,352	1,027	242	1,000	996	1,044	0	682	3,305	--
8/26/2022	0.00	3,110	383	420	961	0	937	366	948	1,810	--	3,612	1,029	243	1,000	988	1,044	0	672	3,419	--
8/27/2022	0.00	3,100	387	360	971	0	937	360	957	2,030	--	3,776	1,025	182	1,000	530	1,044	0	692	3,179	--
8/28/2022	0.00	2,340	389	360	978	0	937	197	961	1,940	--	3,538	1,020	243	1,000	1,315	1,040	0	693	3,414	--
8/29/2022	0.00	3,130	389	360	987	0	937	410	962	2,030	--	3,388	1,020	183	1,000	1,124	1,036	0	687	3,407	--
8/30/2022	0.00	3,000	389	360	995	0	937	211	965	2,160	--	3,458	1,021	182	1,000	1,228	1,032	0	667	3,400	--
8/31/2022	0.00	2,300																			

Summary of LDCS Volumes Pumped and Conductivity Data
Third Quarter 2022
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)*
9/1/2022	0.00	2,310	228	360	590	0	734	362	964	620	--	3,654	1,029	182	1,000	1,685	1,034	0	695	3,134	--
9/2/2022	0.00	3,090	329	360	849	0	734	215	964	0	--	3,648	1,024	183	1,000	1,456	1,035	0	693	3,127	--
9/3/2022	0.00	2,350	365	370	943	1,195	734	373	916	0	--	3,634	1,022	182	1,000	1,515	1,035	5,567	685	3,133	--
9/4/2022	0.00	2,320	379	360	962	0	734	187	951	0	--	3,572	1,020	121	1,000	1,507	1,035	0	672	3,124	--
9/5/2022	0.00	2,310	384	360	963	15,400	930	373	966	1,298	--	3,696	1,027	182	1,000	1,692	1,037	0	690	3,129	--
9/6/2022	0.00	3,090	386	380	960	272	930	165	971	3,220	--	3,354	1,023	182	1,000	1,771	1,036	538	686	3,119	--
9/7/2022	0.00	2,310	386	380	967	0	926	389	972	2,580	--	3,390	1,021	183	1,000	1,611	1,034	0	680	3,131	--
9/8/2022	0.00	1,750	386	300	969	0	924	341	972	2,350	--	3,674	1,020	182	1,000	1,235	1,034	0	665	3,121	--
9/9/2022	0.00	2,730	387	360	958	0	924	183	973	2,360	--	4,514	1,022	182	1,000	1,524	1,032	0	669	3,122	--
9/10/2022	0.00	2,300	386	360	963	895	924	360	973	2,350	--	3,834	1,023	244	1,000	1,177	1,030	4,920	682	3,111	--
9/11/2022	0.00	1,970	386	300	975	222	924	180	971	2,340	--	3,504	1,025	183	1,000	1,288	1,029	5,473	685	2,598	--
9/12/2022	0.00	1,770	386	360	970	246	922	380	972	2,270	--	3,370	1,033	243	1,000	1,420	1,030	0	689	2,594	--
9/13/2022	0.00	2,550	386	330	963	0	921	359	973	2,350	--	3,402	1,037	182	1,000	1,447	1,034	0	669	2,598	--
9/14/2022	0.00	1,530	385	360	973	482	921	185	974	2,420	--	3,276	1,032	244	1,000	0	1,034	10	693	260	--
9/15/2022	0.00	2,290	385	330	986	0	921	354	974	2,370	--	3,342	1,029	182	1,000	155	1,033	0	698	108	--
9/16/2022	0.00	2,290	385	320	992	0	935	189	976	2,350	--	3,238	1,037	182	1,000	154	1,032	0	690	136	--
9/17/2022	0.00	1,540	385	360	995	840	935	339	975	2,360	--	3,310	1,051	183	1,000	178	1,031	5,448	679	259	--
9/18/2022	0.00	2,280	385	300	998	0	935	183	974	2,350	--	3,310	1,056	182	1,000	136	1,031	0	670	261	--
9/19/2022	0.00	2,300	384	380	999	594	900	357	972	2,240	--	3,408	1,058	244	1,000	151	1,032	1	688	261	--
9/20/2022	0.00	1,540	384	310	1,000	317	900	161	972	2,310	--	3,198	1,057	183	1,000	156	1,036	0	694	260	--
9/21/2022	0.00	2,310	384	300	999	262	899	358	975	2,250	--	3,276	1,058	182	1,000	92	1,043	5,447	692	260	--
9/22/2022	0.00	1,550	384	300	998	0	899	211	977	2,240	--	3,202	1,058	183	1,000	147	1,044	0	676	259	--
9/23/2022	0.00	1,550	385	330	983	0	871	170	977	2,160	--	3,216	1,055	182	1,000	129	1,038	0	675	260	--
9/24/2022	0.00	1,540	385	300	960	831	871	357	979	2,180	--	3,118	1,053	183	1,000	110	1,030	0	684	0	--
9/25/2022	0.00	2,290	386	300	947	0	871	193	980	2,130	--	3,056	1,052	182	1,000	108	1,028	0	675	260	--
9/26/2022	0.00	1,510	386	340	957	0	954	347	979	2,150	--	3,192	1,052	183	1,000	135	1,028	0	669	259	--
9/27/2022	0.00	1,530	386	310	976	815	954	197	979	2,150	--	3,230	1,053	219	1,000	111	1,028	5,402	660	260	--
9/28/2022	0.00	2,280	386	310	990	0	954	171	976	2,130	--	3,282	1,051	183	1,000	83	1,027	0	668	229	--
9/29/2022	0.00	1,530	386	240	992	0	906	355	977	2,130	--	3,210	1,050	182	1,000	0	1,028	0	685	259	--
9/30/2022	0.00	1,540	387	310	970	0	906	190	980	2,120	--	2,972	1,051	122	1,000	0	1,030	0	686	259	--

All conductivity probes were recalibrated on 5/11/22 by site staff

No conductivity data available at LDCS-1, 2A, 2B, 3, 6 or 7 between April 15 and May 11, 2022

* = The conductivity probes at LDCS4A and LDCS-8 did not function properly during the second quarter

-- Readings not available

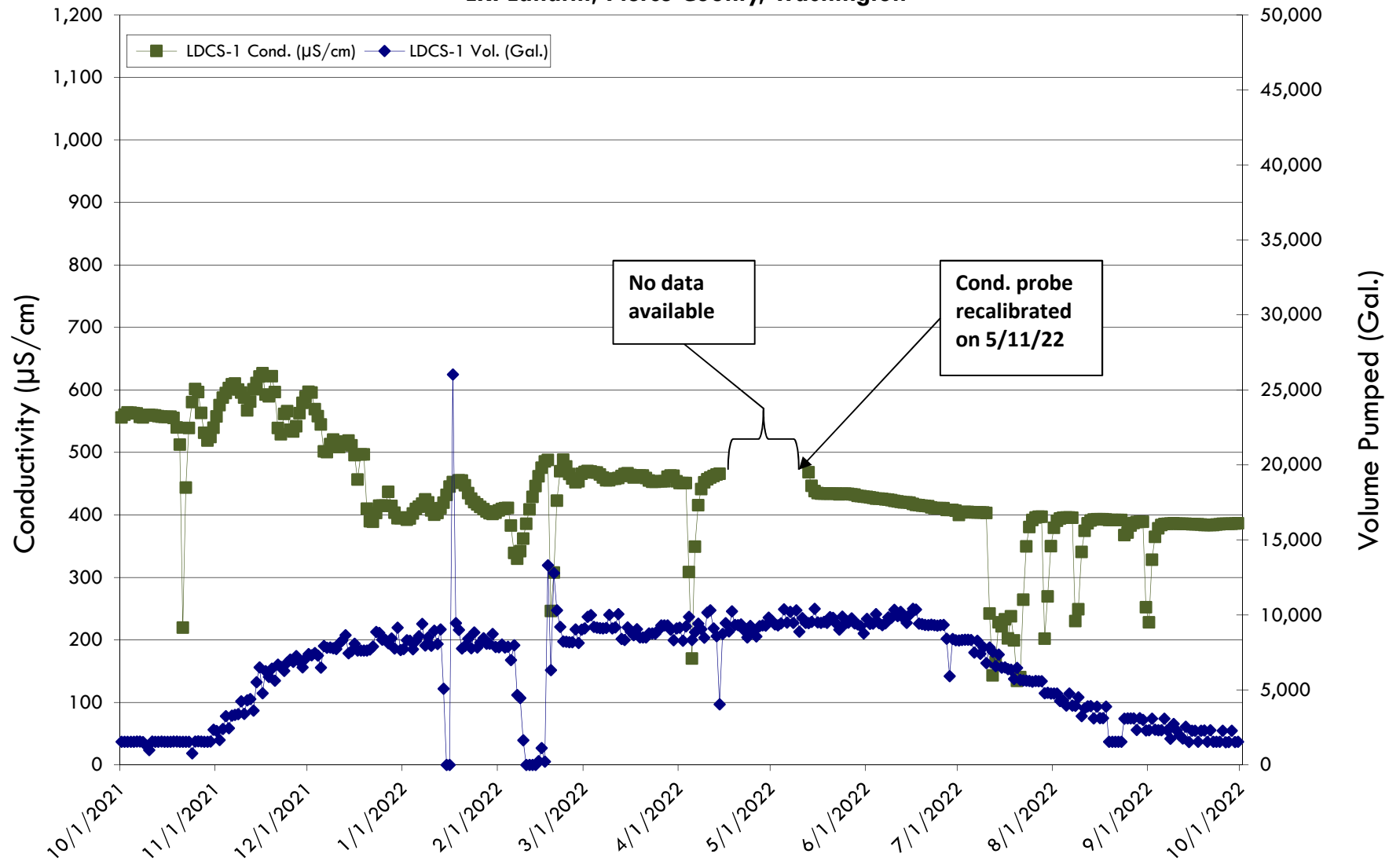
**Summary of Leachate Volume and Depth Data
Third Quarter 2022
LRI Landfill, Pierce County, Washington**

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.)
7/1/2022	8,037	10.7	0	10.2	3,858	10.3	7,412	12.1	1,414	12.1	7,278	18.0	20,045	17.6	15,768	13.3	8,165	12.0	18,426	12.2
7/2/2022	5,894	10.9	7,234	8.8	4,608	11.7	5,693	11.7	1,684	11.7	8,920	19.5	20,045	18.1	19,918	13.6	8,165	12.0	21,022	13.0
7/3/2022	4,972	10.9	0	8.1	5,562	11.3	6,609	13.6	4,432	13.6	14,509	19.2	20,045	16.6	34,379	11.3	8,165	12.0	23,878	12.6
7/4/2022	3,751	11.3	0	9.7	5,119	11.1	7,473	14.5	2,427	14.5	4,985	19.7	5,000	17.5	4,969	10.1	6,038	12.4	14,179	14.1
7/5/2022	4,993	10.9	5,435	9.7	4,910	11.1	6,257	13.6	2,340	13.6	9,361	19.9	8,540	17.5	19,808	12.3	6,446	12.3	23,241	14.6
7/6/2022	3,864	11.1	3,069	7.2	5,409	12.1	7,623	14.7	2,810	14.7	11,121	20.5	6,732	17.8	25,794	12.1	8,631	12.4	24,772	14.2
7/7/2022	13	12.0	0	8.4	8	17.5	7	24.6	11,903	24.6	17,745	18.7	8,611	16.8	23,398	12.0	13	16.0	28,243	12.9
7/8/2022	4	12.6	0	10.4	2	19.2	4	31.2	16,636	31.2	18,132	15.2	8,611	16.3	13,476	9.4	0	18.4	21,279	10.8
7/9/2022	9	13.0	0	11.6	7	19.0	7	34.6	20,504	34.6	24,451	13.8	8,611	15.8	19,782	9.7	0	20.3	27,299	10.8
7/10/2022	60	13.0	65	13.2	56	19.2	60	37.6	15,746	37.6	18,800	12.9	8,611	15.0	16,266	9.6	1,061	21.9	20,550	10.1
7/11/2022	36	13.3	220	14.7	33	24.8	2,471	40.4	34,264	40.4	2	10.0	43,056	15.3	16,950	9.4	36	24.0	25,055	10.4
7/12/2022	0	13.5	0	15.9	24,977	14.7	1,359	42.9	13,557	42.9	18,345	5.9	9,520	15.1	23,154	8.7	52	26.5	23,578	9.9
7/13/2022	14,171	10.4	15,413	12.1	12,748	8.8	33,094	31.7	2,123	31.7	9	14.7	3,315	15.6	19,213	8.9	57,044	22.0	22,929	10.1
7/14/2022	5,415	10.8	0	7.8	20,295	9.2	12,196	9.2	22,151	9.2	16,198	10.8	8,933	14.8	12,856	8.7	7,550	11.1	23,121	10.1
7/15/2022	4,860	10.8	13	9.5	10,653	9.1	8,082	10.1	31,308	10.1	11	7.5	8,933	15.4	18,906	9.9	7,550	11.4	21,651	10.3
7/16/2022	2,764	11.0	22	11.3	6,318	8.7	7,748	10.5	20,676	10.5	8,699	2.0	8,933	15.7	12,147	9.1	7,550	11.6	17,084	10.3
7/17/2022	6,685	10.6	5,859	10.0	13,191	13.1	4,866	12.6	427	12.6	8,082	11.9	8,933	16.5	16,805	10.8	7,550	12.1	21,117	12.3
7/18/2022	4,134	10.6	0	9.8	9,210	10.3	0	0.0	13,974	0.0	13,098	11.1	8,074	15.9	26,361	11.4	7,998	0.0	22,839	11.6
7/19/2022	3,581	10.7	1,043	11.2	12,088	8.8	21,709	11.4	21,965	11.4	2	8.7	8,074	15.3	20,195	9.2	8,336	11.2	21,840	10.9
7/20/2022	3,037	10.8	6,782	8.1	10,052	8.5	8,230	10.3	22,277	10.3	17,208	5.8	8,074	15.1	20,118	8.7	8,336	11.4	23,388	10.2
7/21/2022	2,515	11.0	32	8.9	7,193	8.5	7,841	10.5	33,267	10.5	4	4.4	8,074	15.2	17,042	8.9	8,336	11.4	24,019	10.2
7/22/2022	2,820	10.9	10	10.4	12,614	8.6	6,552	10.4	18,794	10.4	14,963	1.9	8,074	14.9	42,635	51.7	8,336	11.4	23,227	10.2
7/23/2022	3,630	10.9	6,899	9.0	10,507	8.6	8,301	10.4	26,602	10.4	694	1.0	8,074	15.2	22,570	56.0	8,336	11.4	23,765	10.2
7/24/2022	3,980	10.7	16	8.2	7,324	8.3	6,016	10.6	19,093	10.6	12,248	0.8	8,074	15.8	18,742	70.1	8,336	11.5	19,749	10.4
7/25/2022	2,510	11.1	1	10.0	6,883	9.3	7,407	11.6	14,851	11.6	7,347	2.3	9,022	16.4	23,105	45.9	8,336	11.7	21,296	11.7
7/26/2022	3,701	11.0	2,475	10.7	10,808	10.5	7,804	11.5	16,111	11.5	6,717	3.1	9,022	15.5	23,758	20.8	8,336	11.6	22,116	11.3
7/27/2022	2,474	10.9	28	11.3	5,054	8.8	7,099	10.7	15,871	10.7	13,148	2.3	9,022	15.4	21,863	18.8	8,336	11.6	20,359	10.8
7/28/2022	2,325	10.9	17	12.6	5,215	12.8	7,377	10.9	18,351	10.9	1	1.6	9,022	15.3	22,003	116.9	8,336	11.6	20,463	10.8
7/29/2022	3,409	10.9	0	14.2	10,131	15.5	8,057	10.4	16,865	10.4	16,075	6.2	9,022	15.2	22,345	137.7	8,336	11.4	23,397	10.3
7/30/2022	3,734	10.9	0	15.4	4,953	14.5	8,314	10.5	25,467	10.5	4	0.6	9,022	15.2	22,427	137.7	8,336	11.4	23,528	10.3
7/31/2022	2,386	10.9	31	16.5	3,358	15.4	5,707	10.5	15,771	10.5	14,786	0.5	9,022	15.7	19,209	137.7	8,336	11.5	20,461	10.3
8/1/2022	2,219	11.1	2	17.6	6,986	14.2	7,354	10.9	20,254	3.8	8	12.2	8,745	16.3	4,273	49.0	8,688	11.7	22,266	11.6
8/2/2022	2,311	11.1	24	18.5	5,182	12.7	6,668	10.7	16,313	12.4	16,344	12.4	8,745	15.3	0	-1.5	8,688	11.6	19,671	10.6
8/3/2022	3,116	10.8	0	19.5	6,960	14.4	8,376	10.5	23,973	0.0	8	11.7	8,745	15.3	0	3.7	8,688	11.4	23,783	10.2
8/4/2022	2,373	10.7	20,263	12.2	3,711	14.9	6,156	10.3	17,533	0.4	15,397	12.4	9,098	15.2	11,610	8.7	7,874	11.4	23,246	10.2
8/5/2022	2,611	10.7	5	8.2	9,679	16.9	5,756	10.4	24,384	0.0	20	11.7	9,098	12.4	18,450	9.1	7,819	11.5	23,615	10.3
8/6/2022	1,886	10.9	0	9.8	4,218	15.0	5,915	10.5	20,291	0.1	15,232	12.1	9,098	11.4	18,648	9.1	7,819	11.5	23,379	10.3
8/7/2022	2,246	11.0	5,339	9.9	4,289	15.6	8,648	10.6	23,779	0.0	32	11.8	9,098	11.4	19,033	9.1	7,819	11.4	23,450	10.3
8/8/2022	3,222	10.9	0	9.2	5,028	16.5	6,203	10.3	20,811	4.8	15,500	12.0	8,636	11.3	18,862	9.0	7,985	11.5	23,204	10.3
8/9/2022	2,069	11.0	3	10.5	4,882	17.8	5,667	10.5	27,831	0.3	15	11.8	8,484	11.3	17,980	9.1	7,441	11.5	23,453	10.3
8/10/2022	962	11.1	8,057	8.5	9,649	18.4	6,251	10.5	17,998	5.9	15,555	12.0	4,288	11.3	19,332	9.0	13,372	11.1	26,972	11.0
8/11/2022	3,418	10.8	28	7.3	10,257	15.7	6,020	10.6	25,434	0.6	433	12.0	16,028	11.4	18,269	9.1	9,392	11.3	23,671	10.2
8/12/2022	3,280	10.9	0	8.7	6,185	15.1	6,250	10.6	19,908	0.1	15,204	12.2	6,123	11.3	17,477	9.0	6,764	11.4	19,912	10.6
8/13/2022	1,965	10.8	0	10.5	1,614	16.3	6,987	10.5	23,938	0.0	20	11.8	6,123	11.4	17,802	9.1	6,764	11.4	23,342	10.2
8/14/2022	2,803	10.9	7,436	9.0	3,256	16.8	5,811	10.4	9,445	5.8	3,088	13.7	6,123	12.1	12,770	9.6	6,764	11.5	11,727	10.8
8/15/2022	2,729	11.0	0	7.7	6,705	16.0	7,457	11.0	10,519	9.8	20,272	12.6	10,720	12.4	25,306	10.1	8,955	11.7	24,348	12.7
8/16/2022	2,473	10.9	81	9.5	3,812	15.7	6,238	10.6	23,293	2.6	12	11.9	9,037	11.6	19,488	9.2	7,840	11.5	20,108	10.6
8/17/2022	3,641	10.8	1,303	11.0	3,644	16.4	5,758	10.6	19,827	0.3	16,524	12.0	9,037	11.2	18,044	9.0	7,840	11.4	22,880	10.3
8/18/2022	2,370	11.0	0	12.0	2,887	16.3	8,671	10.4	24,124	0.0	6	11.9	9,037	11.2	19,049	9.1	7,840	11.4	23,131	10.3
8/19/2022	0	11.6	0	13.5	483	17.4	3,175	10.6	13,515	0.0	5,173	13.1	9,037	10.1	9,358	8.8	7,840	10.3	24,484	10.3
8/20/2022	0	12.0	0	14.0	483	18.0	3,175	11.0	13,515	0.0	5,173	12.0	9,037	8.0	9,358	8.0	7,840	8.2	13,407	10.3
8/21/2022	0	12.0	0	14.0	483	18.0	3,175	11.0	13,515	0.0	5,173	12.0	9,037	8.0	9,358	8.0	7,840	8.2	13,407	10.3
8/22/2022	0	12.0	0	14.0	483	18.0	3,175	11.0	13,515	0.0	5,173	12.0	8,044	8.0	9,358	8.0	6,985	8.2	13,407	10.3
8/23/2022	0	12.0	0	14.0	483	18.0	3,175	11.0	13,515	0.0	5,173	12.0	8,044	8.0	9,358	8.0	6,985	8.2	13,407	10.3
8/24/2022	2,466	11.3	0	13.4	1,616	18.6	5,778	10.8	22,766	0.0	6	12.4	8,044	9.9	17,995	8.6	6,985	10.2	43,540	11.3
8/25/2022	2,676	11.0	9,859	9.3	1,210	19.6	6,044	10.5	17,946	0.2	15,960	12.1	8,044	11.3	17,946	9.0	6,985	11.4	22,585	10.3
8/26/2022	2,015	11.0	44	8.5	3,779	19.5	6,140	10.6	10,616	1.5	9	11.8	8,044	11.3	18,363	9.1	6,985	11.5	19,013	10.6
8/27/2022	4,012	10.5	4	10.3	2,546	19.3	6,413	10.4	0	9.7	3,903	13.8	8,044	11.7	15,000	9.3	6,985	11.6	16,853	10.3
8/28/2022	3,3																			

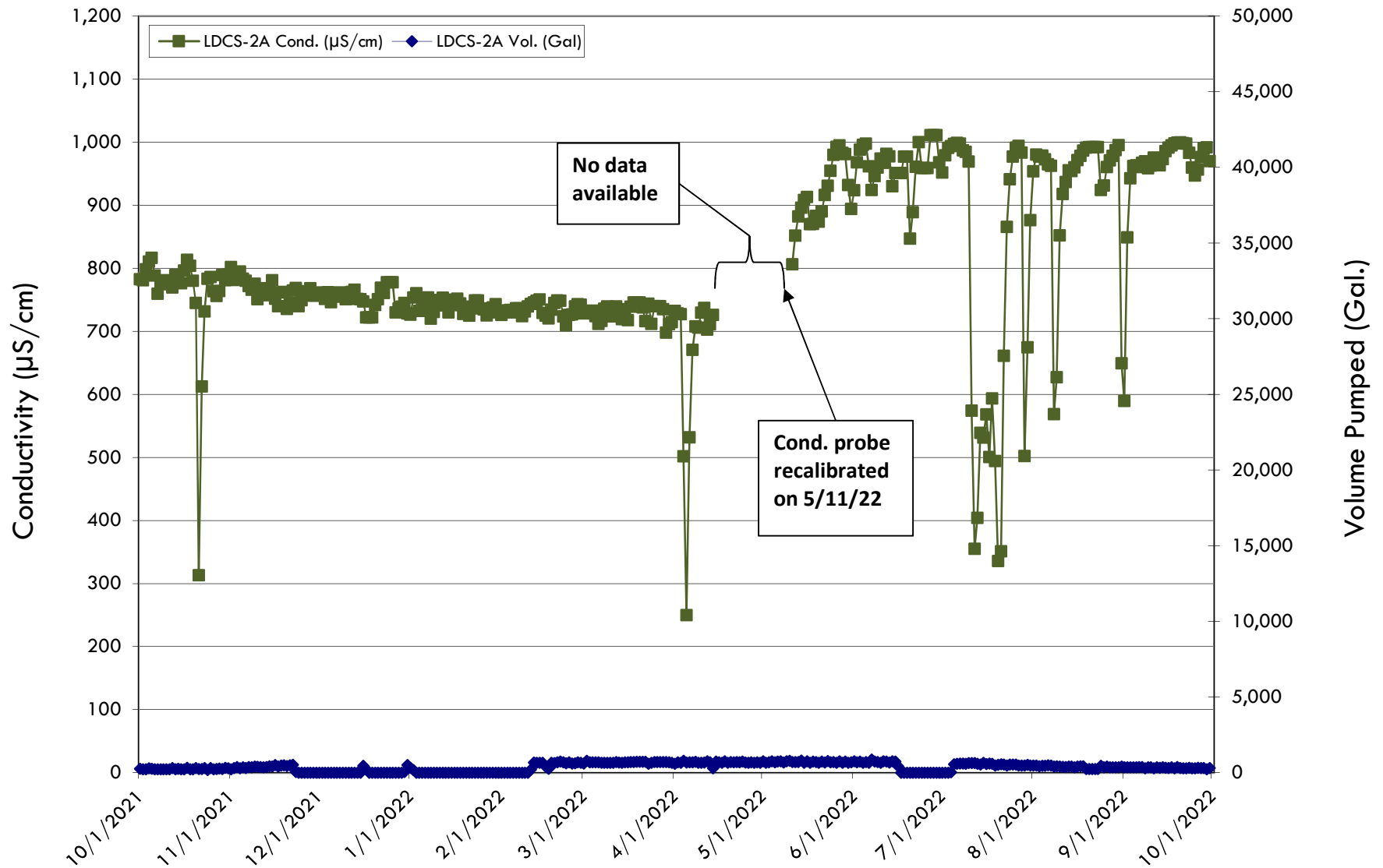
Summary of Leachate Volume and Depth Data
Third Quarter 2022
LRI Landfill, Pierce County, Washington

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.)
9/1/2022	4,041	10.8	40	7.8	8,789	18.2	3,318	10.9	3,630	7.7	10,038	12.9	7,211	11.8	16,432	9.4	5,656	11.5	11,100	10.8
9/2/2022	2,887	10.7	1	9.6	8,794	17.2	5,753	12.5	0	12.3	6,042	13.0	7,211	12.7	20,756	10.2	5,656	11.8	16,592	12.3
9/3/2022	3,367	10.8	0	11.1	3,270	17.9	6,223	14.7	0	13.9	2,161	14.1	7,211	14.5	2,988	13.6	5,656	12.0	7,978	15.2
9/4/2022	4,773	10.4	1	12.6	3,493	18.4	6,418	14.1	0	15.1	3,600	15.5	7,211	14.7	2,335	17.9	5,656	11.9	8,387	19.4
9/5/2022	2,292	10.7	0	14.2	12,140	15.6	6,987	10.6	582	16.0	19,518	13.8	9,412	12.4	50,350	17.1	6,817	11.6	31,003	16.5
9/6/2022	2,338	10.8	0	15.5	3,718	16.3	6,387	10.6	22,230	11.2	1	13.2	9,412	11.9	36,326	10.8	6,817	11.6	20,526	11.2
9/7/2022	2,492	10.8	14,102	10.4	3,300	17.0	3,313	10.7	24,506	3.5	7,189	13.3	8,088	11.3	20,111	8.9	6,456	11.4	21,036	10.1
9/8/2022	3,307	10.7	44	8.3	2,268	17.2	6,479	10.3	19,285	1.7	19,473	12.2	6,963	11.4	18,788	9.0	5,769	11.4	19,791	10.1
9/9/2022	2,788	10.8	0	10.1	977	18.5	5,954	10.5	25,062	0.1	3	11.7	6,963	11.3	21,022	8.9	5,769	11.4	21,662	10.1
9/10/2022	3,729	10.9	2,891	11.1	788	19.3	5,057	11.2	10,955	3.1	2,577	14.3	6,963	12.0	11,316	10.0	5,769	11.5	12,695	10.8
9/11/2022	4,338	10.3	6,218	8.6	2,436	19.2	6,120	13.1	83	11.0	6,075	15.5	6,963	13.8	10,841	14.2	5,769	11.8	12,200	14.2
9/12/2022	2,238	10.8	0	8.1	6,898	18.3	7,552	11.2	4,692	14.1	21,783	14.2	11,460	12.5	46,685	12.4	5,785	11.8	25,885	12.4
9/13/2022	2,261	11.0	0	9.6	7,349	17.6	5,940	10.5	22,592	7.9	194	13.0	8,652	11.7	23,673	9.4	7,427	11.6	21,642	10.0
9/14/2022	2,125	10.8	6,928	10.1	7,930	16.2	6,302	10.6	15,706	1.6	16,448	12.8	8,652	11.3	2,855	8.9	7,266	11.5	2,123	9.9
9/15/2022	2,021	10.8	0	7.5	5,841	16.0	4,129	10.7	24,286	0.7	5,467	11.0	8,652	11.3	910	9.0	7,266	11.4	1,822	10.0
9/16/2022	3,027	10.8	0	9.3	2,216	16.7	5,388	10.5	18,993	0.0	13,248	12.5	8,417	11.3	1,361	9.0	6,478	11.5	1,812	9.9
9/17/2022	3,410	10.7	1,261	10.9	1,247	17.9	6,646	10.6	24,673	0.1	1,929	11.5	8,417	11.2	1,531	8.9	6,478	11.4	1,882	10.0
9/18/2022	3,366	10.6	5,623	7.4	651	19.0	4,852	10.5	19,362	0.4	16,255	12.2	8,417	11.2	2,542	8.8	6,478	11.5	1,844	10.1
9/19/2022	2,214	11.0	0	8.8	76	19.0	5,698	10.5	24,111	0.0	9	12.1	8,176	11.2	2,206	8.9	6,552	11.5	1,840	10.0
9/20/2022	2,057	10.8	0	10.5	5	20.0	6,165	10.4	18,460	0.2	16,577	12.2	8,176	11.2	2,148	9.0	6,552	11.5	1,834	9.9
9/21/2022	3,096	10.7	6,846	8.3	3	21.9	5,840	10.5	22,410	0.0	9	11.9	7,900	11.3	2,073	9.0	6,490	11.5	2	10.2
9/22/2022	2,278	10.8	0	8.4	20,823	16.0	6,299	10.4	15,287	2.3	16,088	12.2	7,788	11.3	1,434	8.9	5,328	11.5	1,828	11.6
9/23/2022	1,884	10.8	0	9.9	7,326	8.9	6,541	10.6	25,288	0.5	6	11.5	6,839	11.3	1,654	9.0	5,634	11.4	1,785	9.7
9/24/2022	2,451	10.7	7,003	9.6	5,310	14.7	3,229	10.5	19,731	0.9	14,336	12.3	6,839	11.3	2,298	9.0	5,634	11.5	1,783	9.7
9/25/2022	3,243	10.7	0	7.6	4,289	16.7	5,950	10.4	22,830	0.0	123	11.7	6,839	11.3	1,712	9.0	5,634	11.5	1,322	9.8
9/26/2022	3,256	10.8	0	9.5	5,548	16.0	6,194	10.6	12,450	2.7	15,101	12.2	9,003	11.7	1,693	9.4	6,421	11.6	1,802	10.5
9/27/2022	2,300	10.9	0	10.8	5,394	15.0	5,791	10.5	21,633	0.5	2	11.9	9,003	11.3	0	9.0	6,421	11.5	1,814	10.0
9/28/2022	2,105	11.0	6,930	7.5	4,312	16.7	6,025	10.6	16,182	0.1	16,094	12.5	9,003	11.2	0	9.0	6,421	11.5	1,780	9.8
9/29/2022	1,862	10.8	0	8.5	3,394	17.0	3,291	10.8	22,795	0.0	739	11.4	9,003	11.3	0	9.0	6,421	11.5	1,742	9.6
9/30/2022	2,984	10.7	0	10.3	6,416	17.7	6,131	10.4	17,924	0.1	14,493	12.3	9,003	11.3	0	9.0	6,421	11.5	1,719	9.6

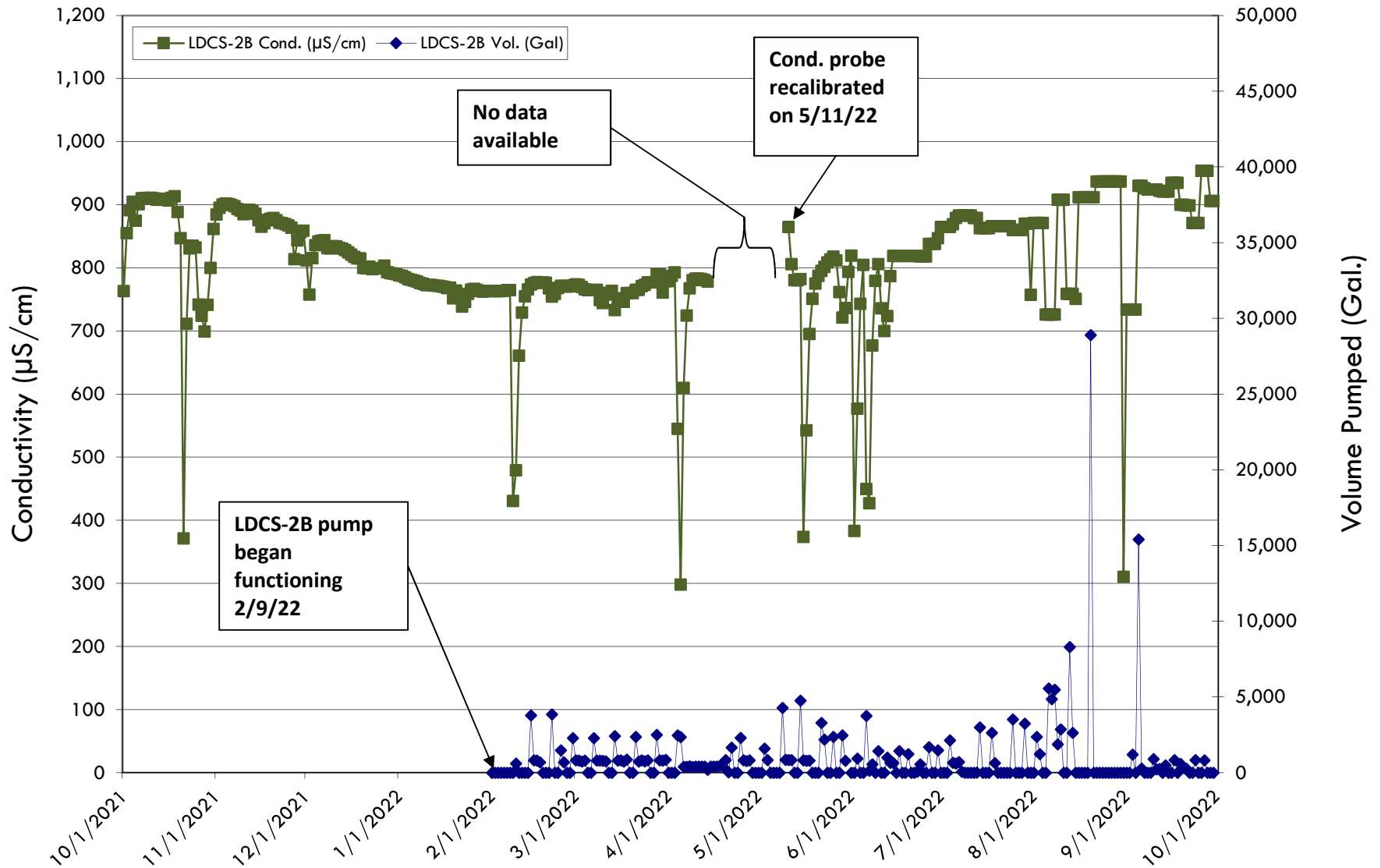
LDCS-1 (DailyTotals)
Conductivity vs Volume Pumped
Third Quarter 2022
LRI Landfill, Pierce County, Washington



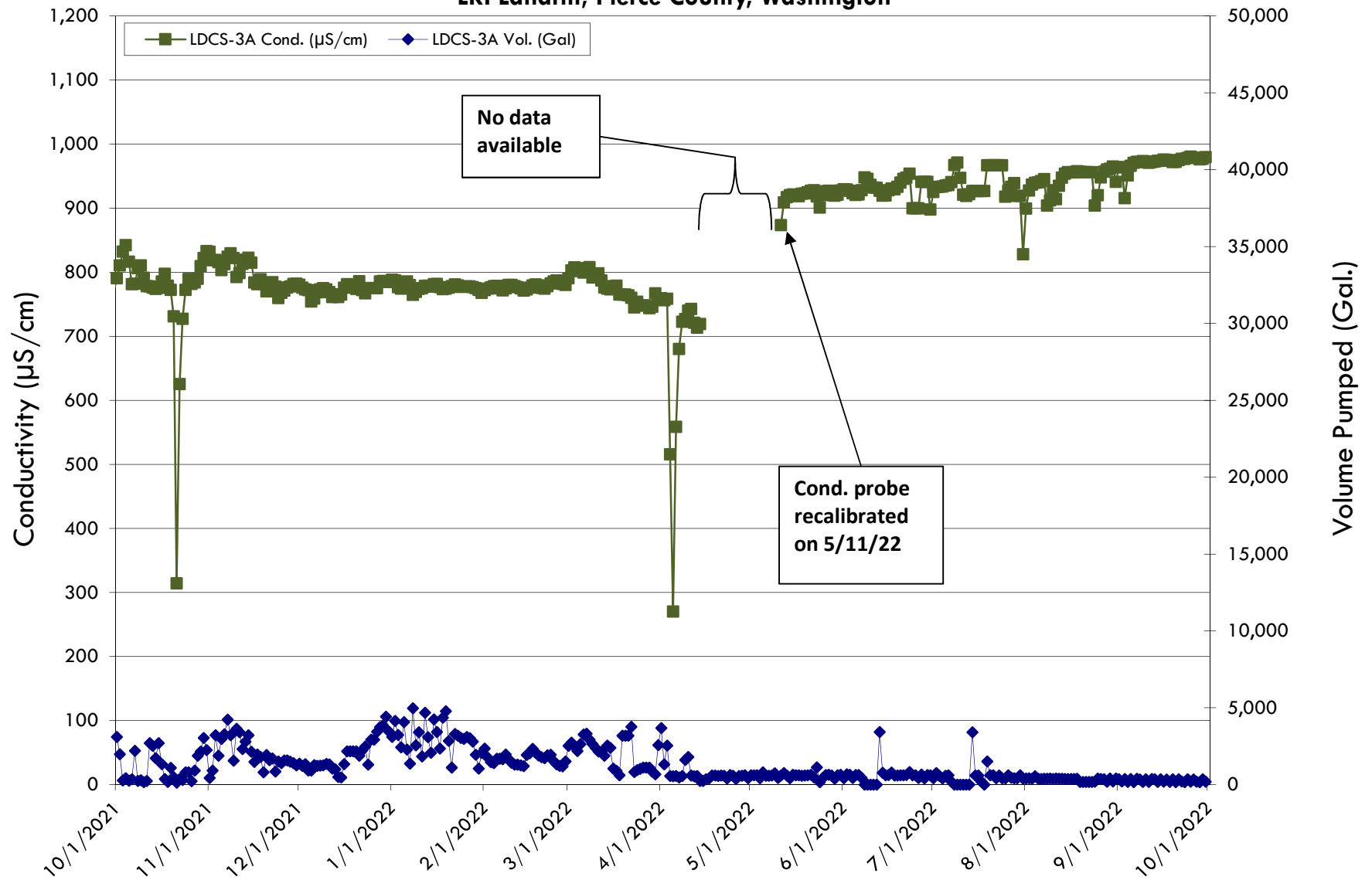
LDCS-2A (Daily Totals)
Conductivity vs Volume Pumped
Third Quarter 2022
LRI Landfill, Pierce County, Washington



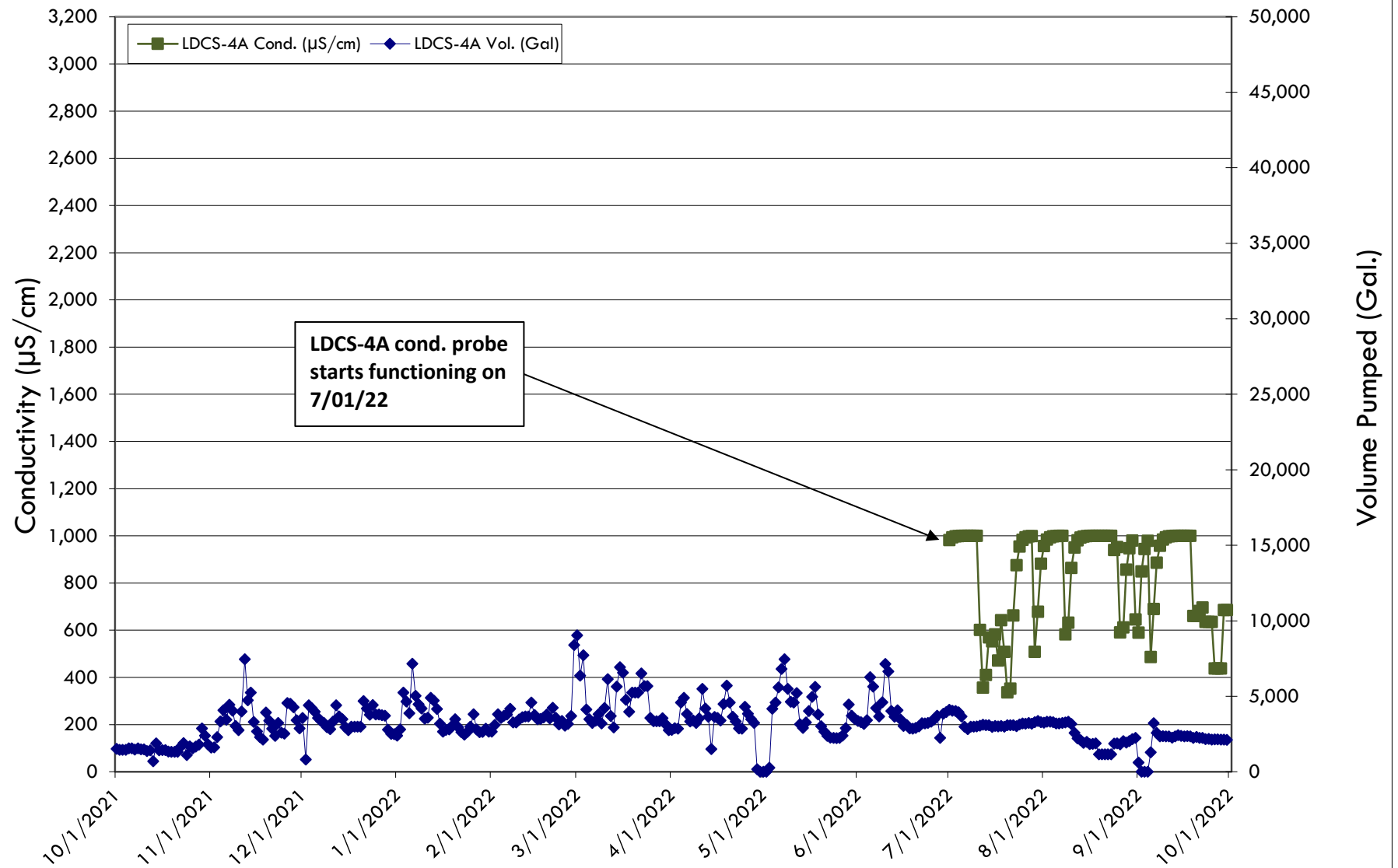
LDCS-2B (Daily Totals)
Conductivity vs Volume Pumped
Third Quarter 2022
LRI Landfill, Pierce County, Washington



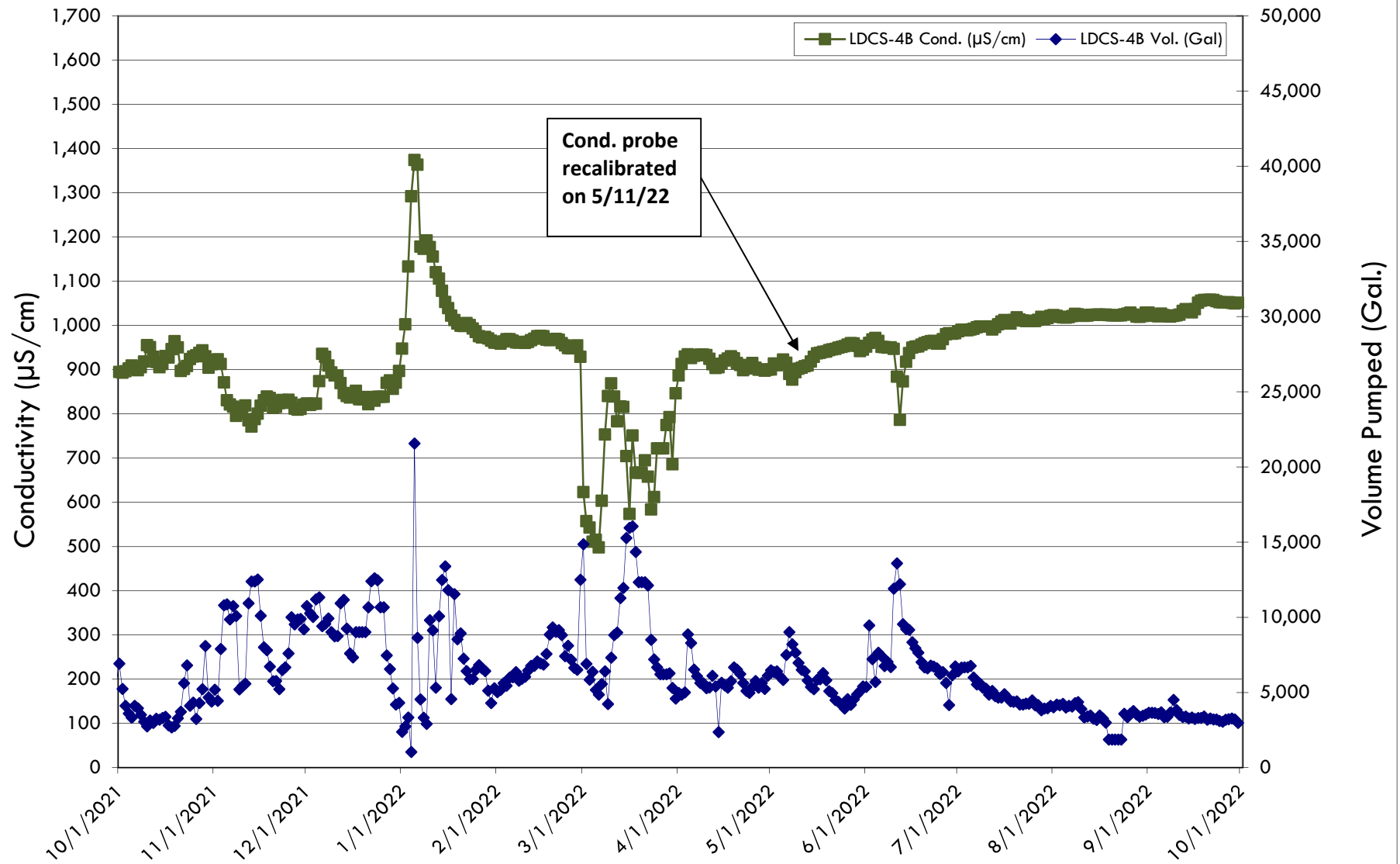
**LDCS-3A (Daily Totals)
Conductivity vs Volume Pumped
Third Quarter 2022
LRI Landfill, Pierce County, Washington**



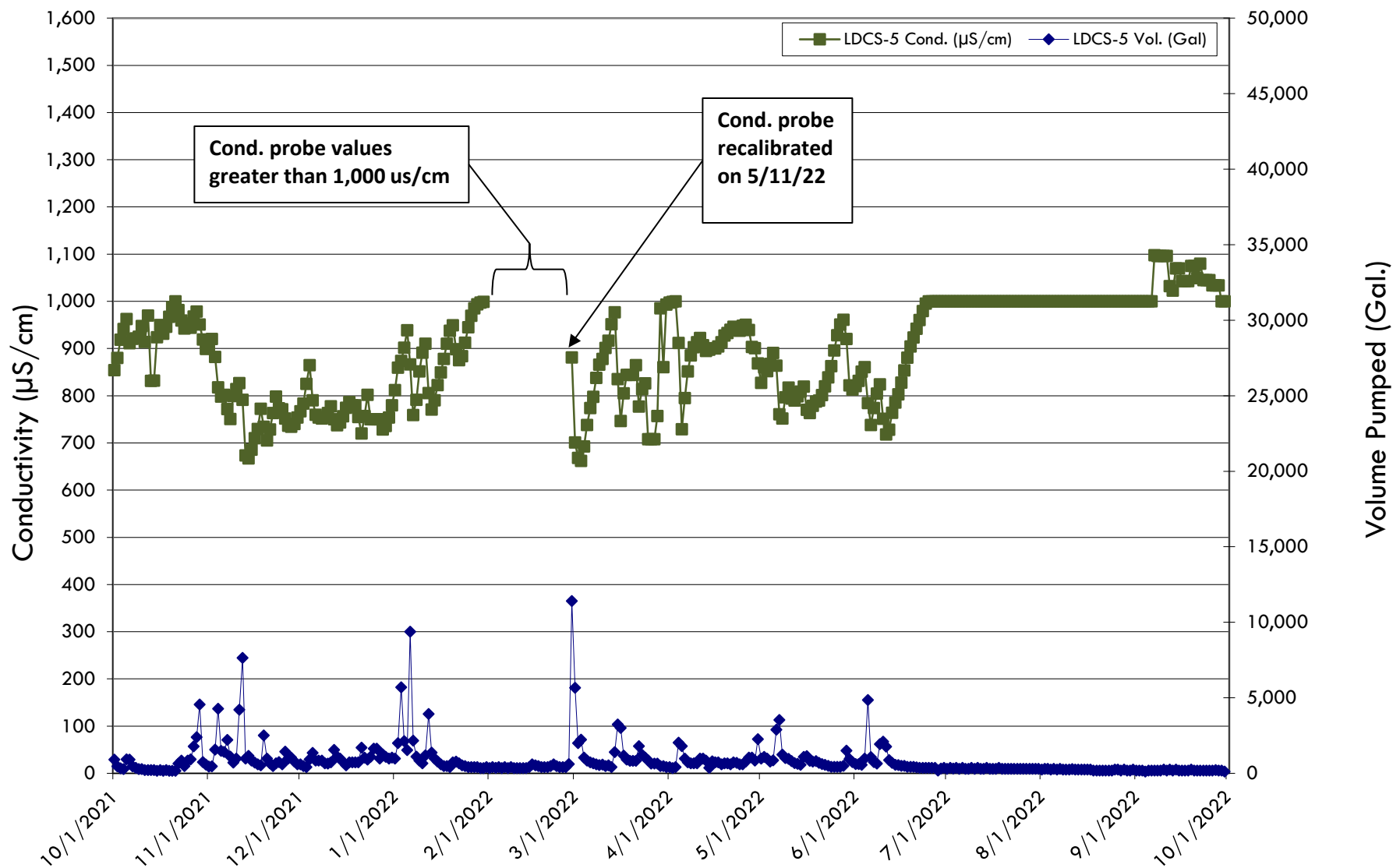
LDCS-4A (Daily Totals)
Conductivity vs Volume Pumped
Third Quarter 2022
LRI Landfill, Pierce County, Washington



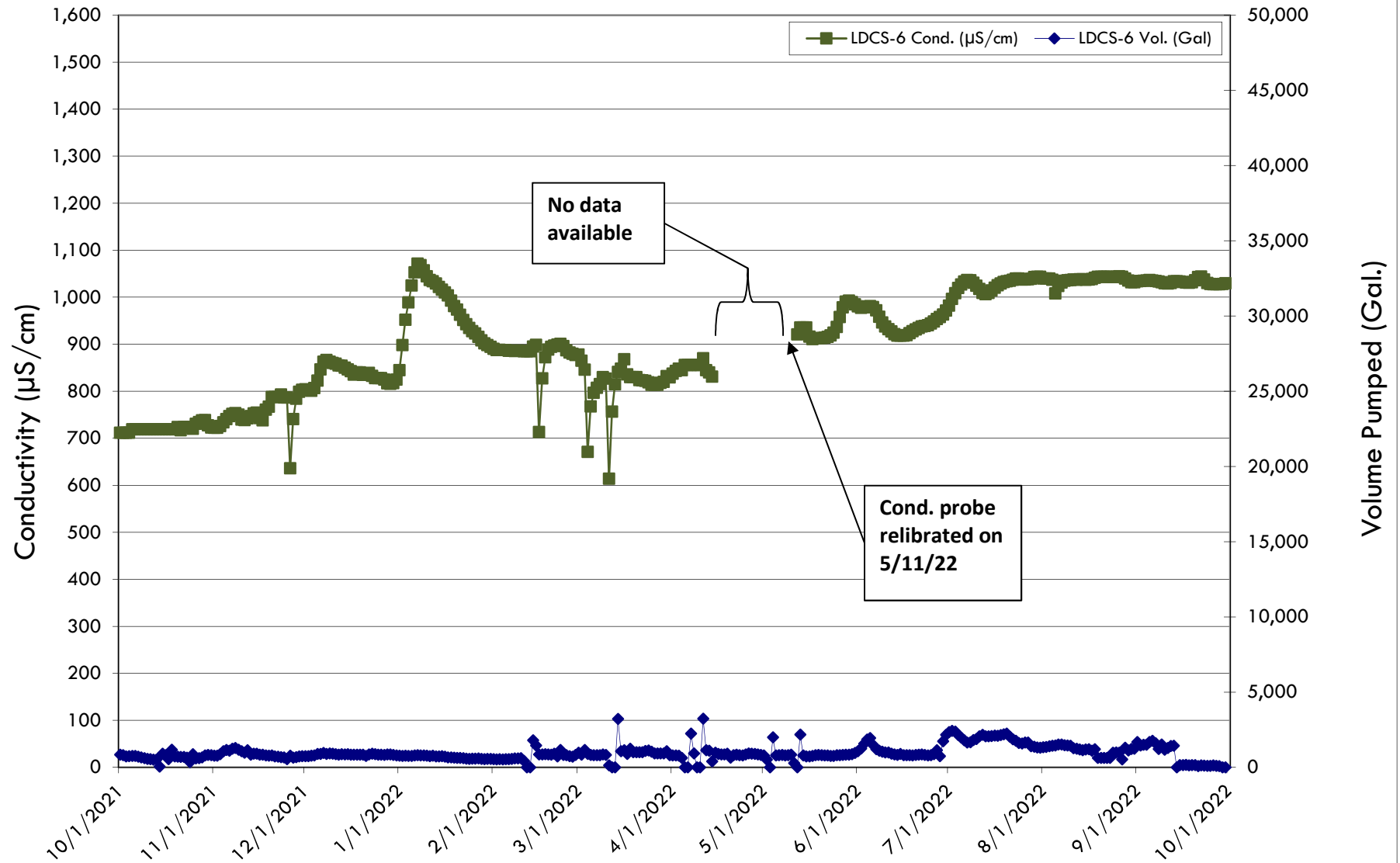
LDCS-4B (Daily Totals)
Conductivity vs Volume Pumped
Third Quarter 2022
LRI Landfill, Pierce County, Washington



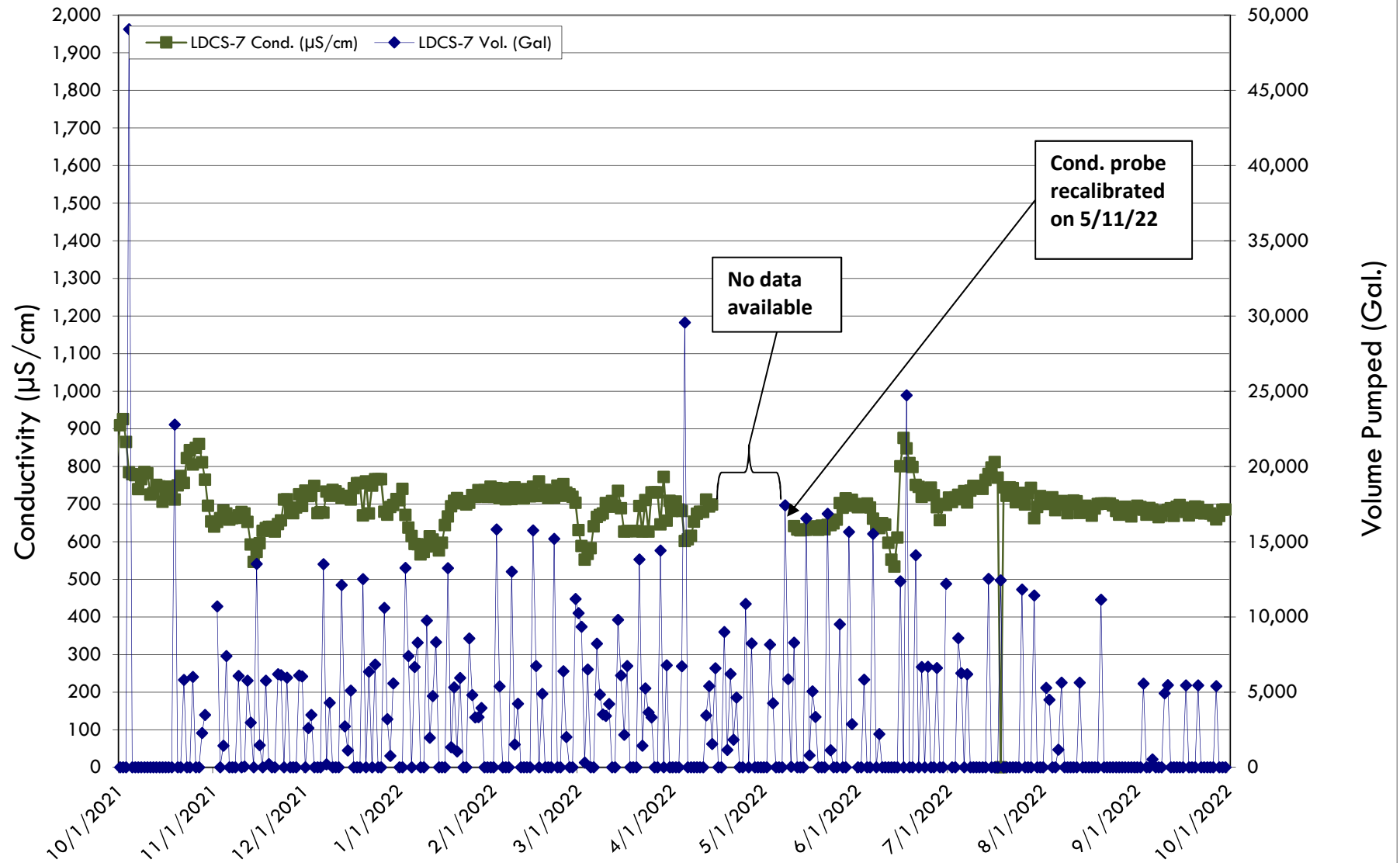
LDCS-5 (Daily Totals)
Conductivity vs Volume Pumped
Third Quarter 2022
LRI Landfill, Pierce County, Washington



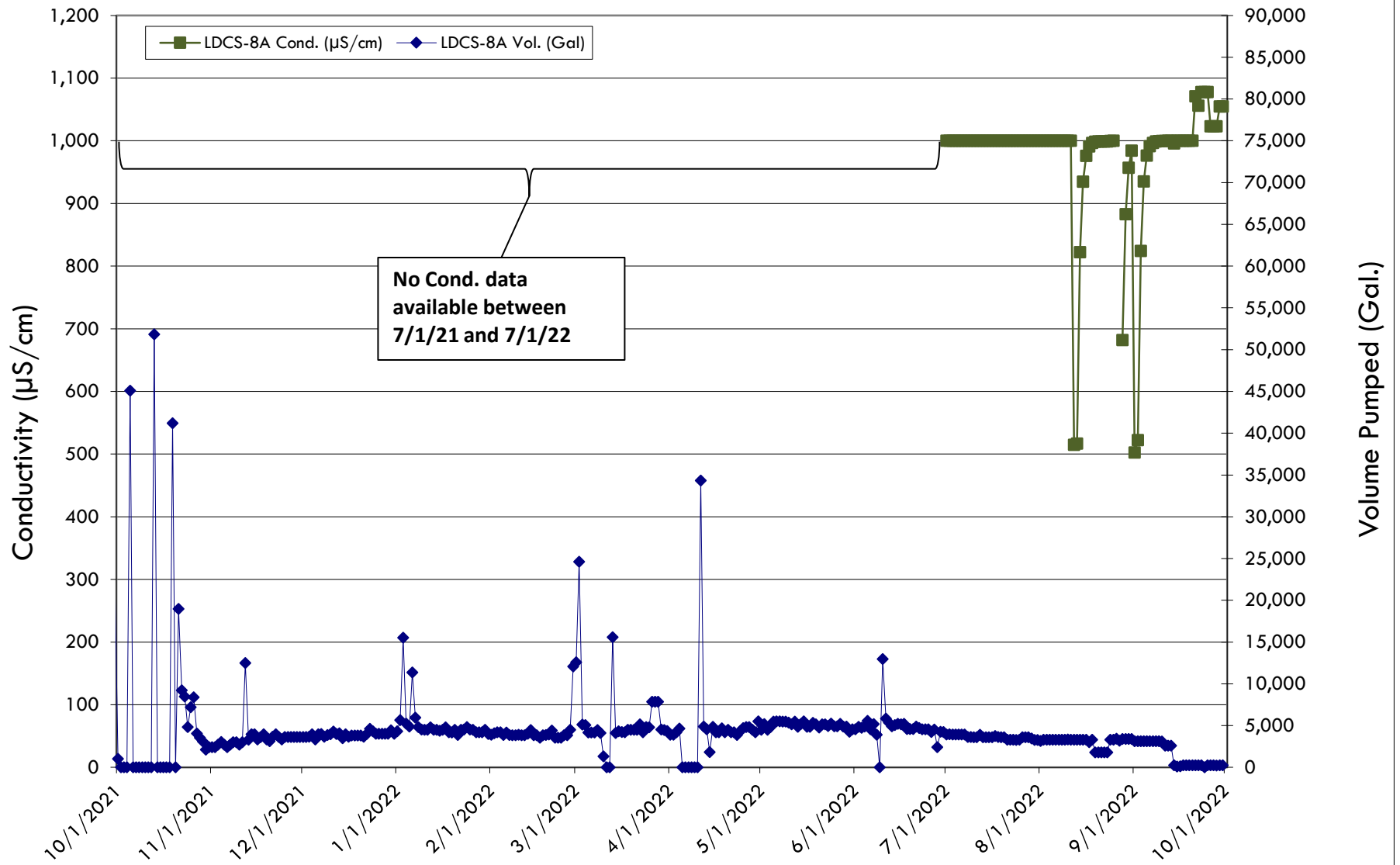
LDCS-6 (Daily Totals)
Conductivity vs Volume Pumped
Third Quarter 2022
LRI Landfill, Pierce County, Washington



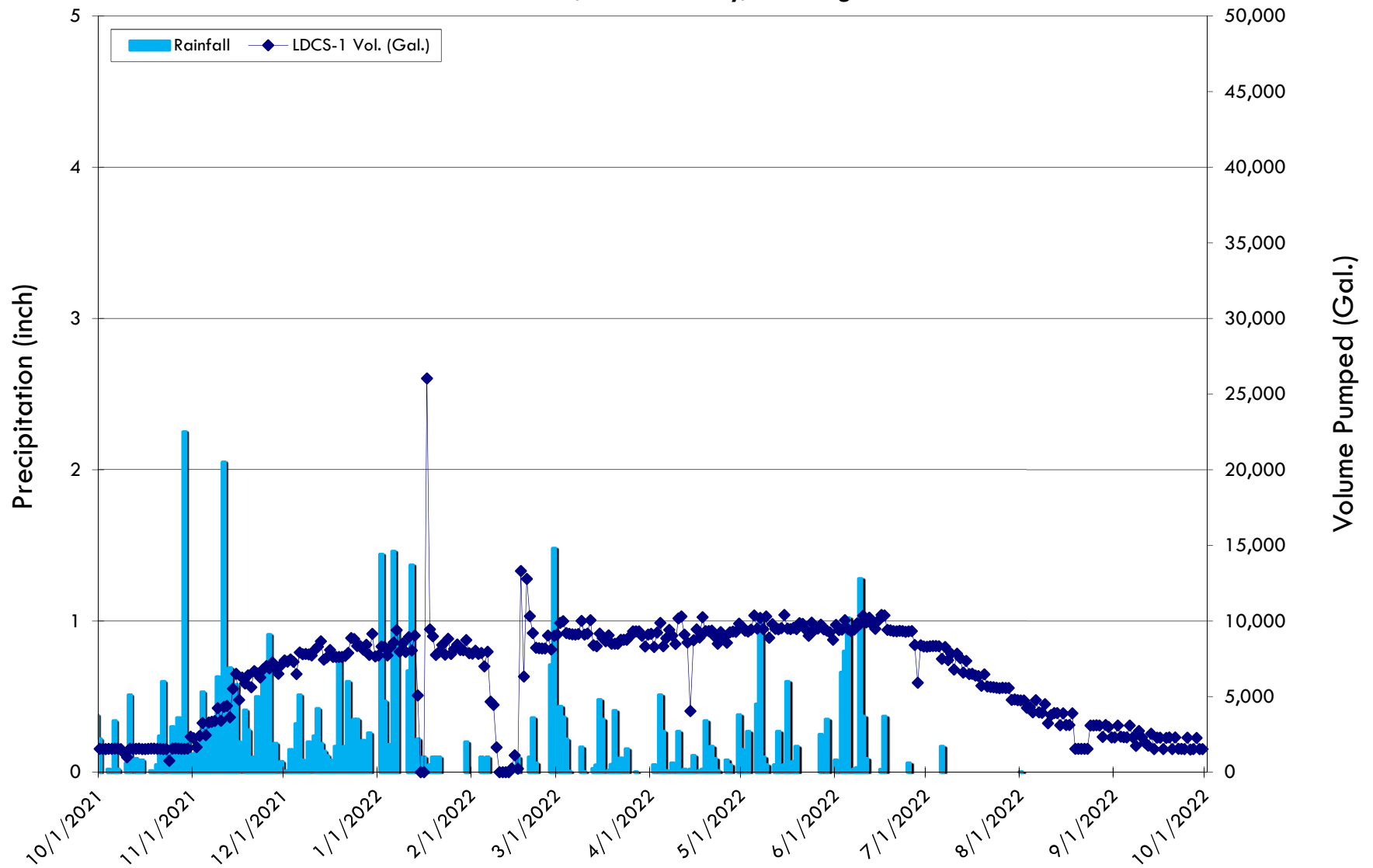
LDCS-7 (Daily Totals)
Conductivity vs Volume Pumped
Third Quarter 2022
LRI Landfill, Pierce County, Washington



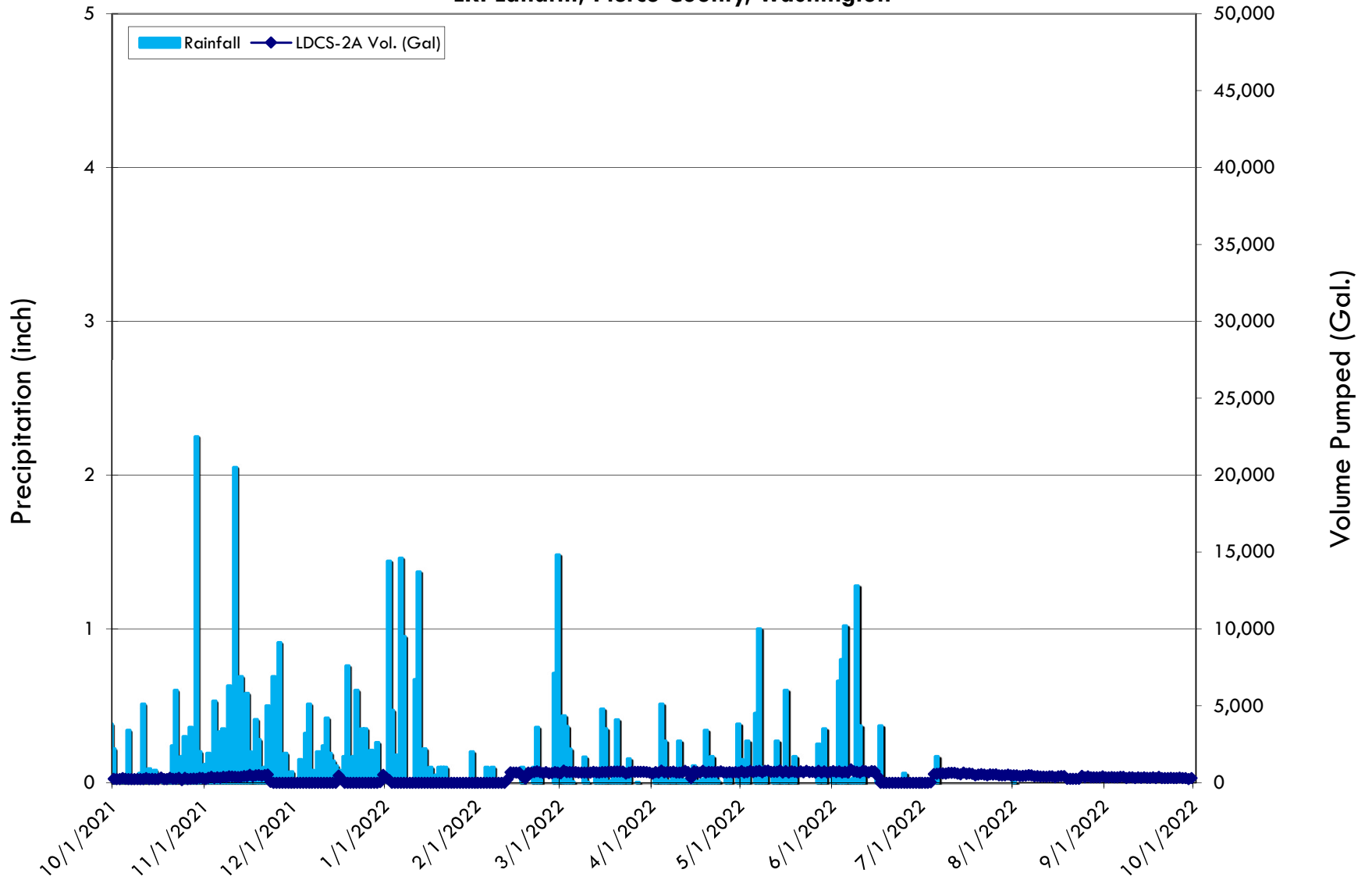
LDCS-8 (Daily Totals)
Conductivity vs Volume Pumped
Third Quarter 2022
LRI Landfill, Pierce County, Washington



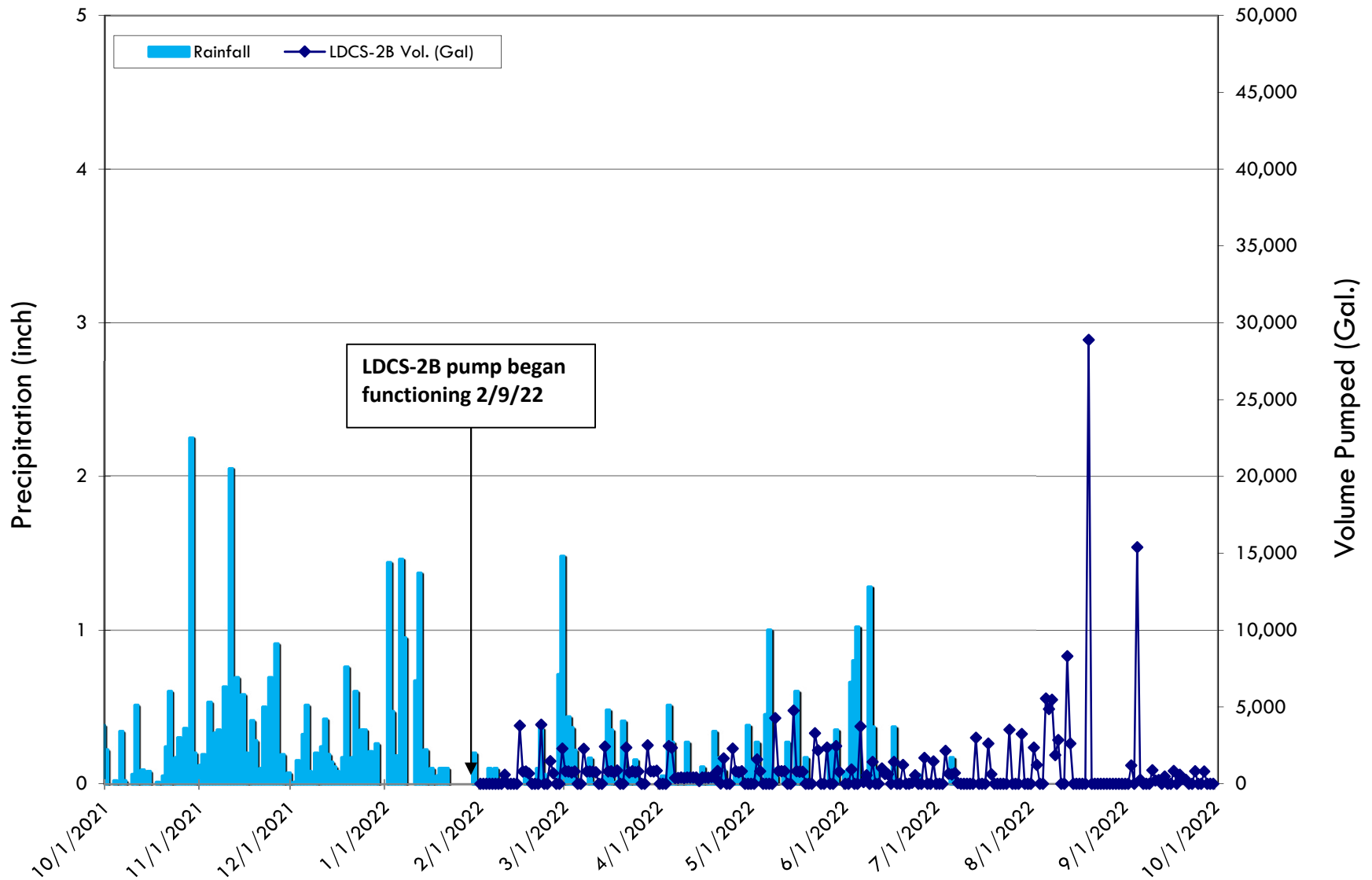
LDCS-1 (Daily Totals)
Volume Pumped vs Precipitation
Third Quarter 2022
LRI Landfill, Pierce County, Washington



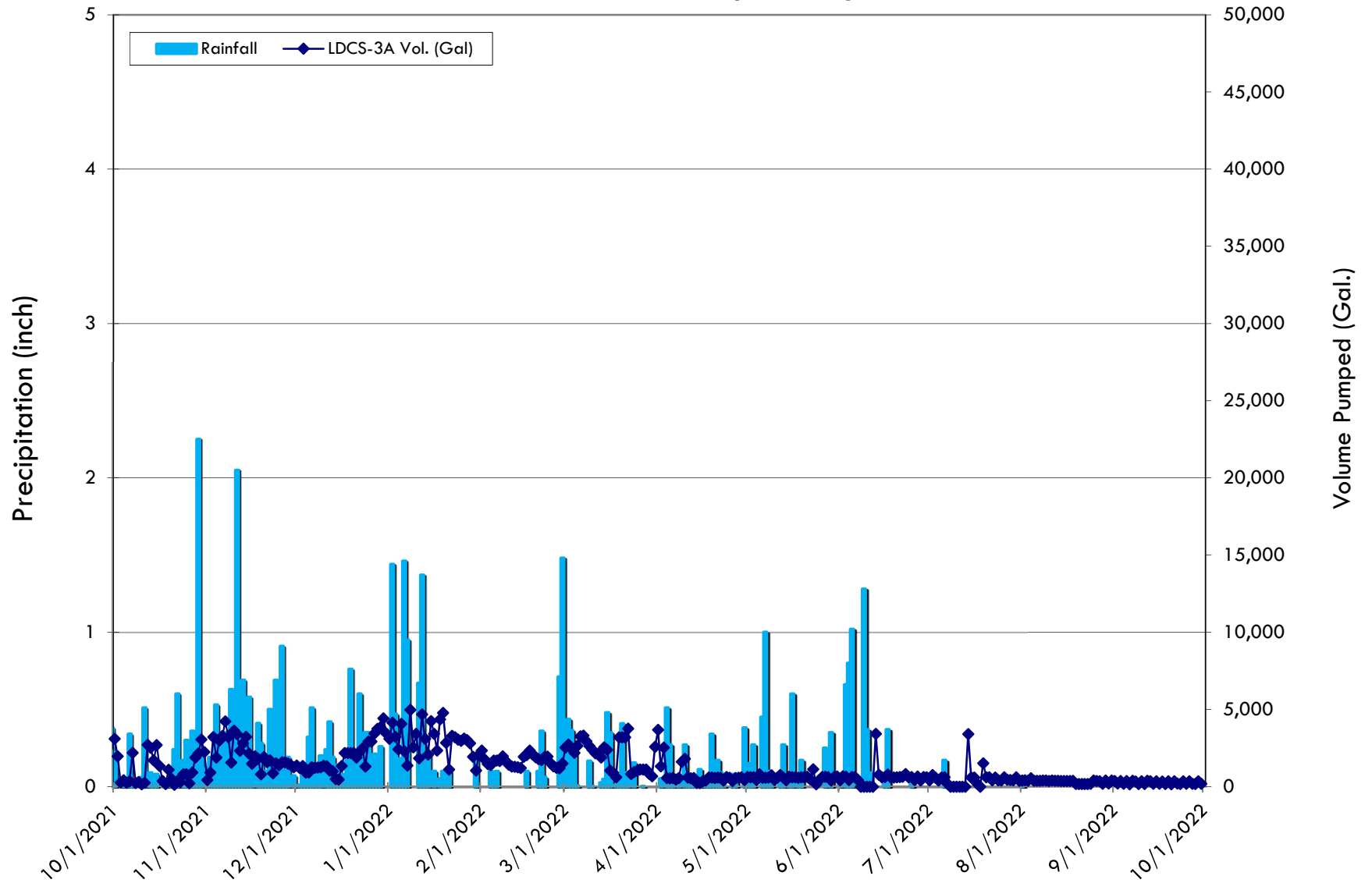
LDCS-2A (Daily Totals)
Volume Pumped vs Precipitation
Third Quarter 2022
LRI Landfill, Pierce County, Washington



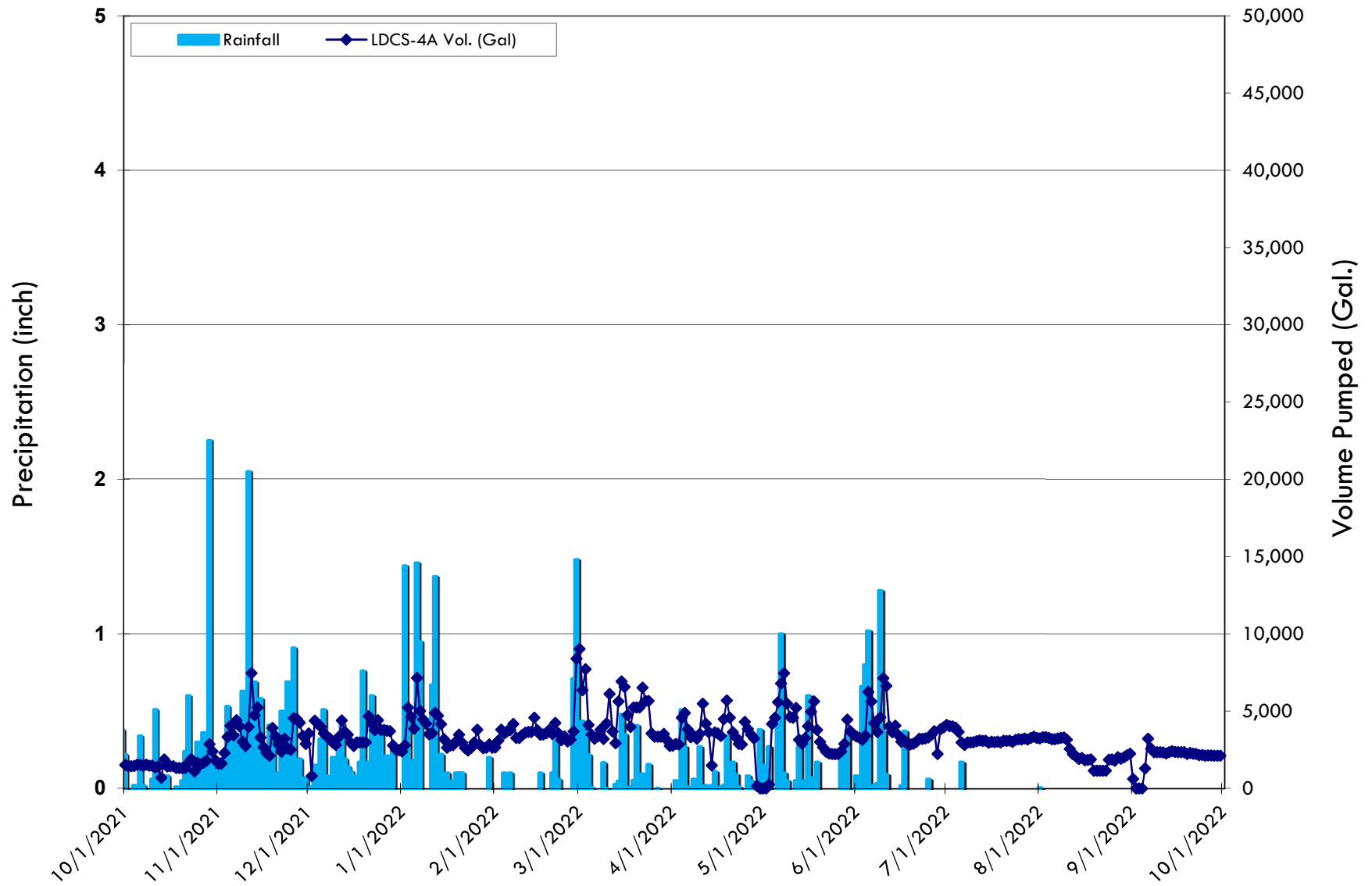
LDCS-2B (Daily Totals)
Volume Pumped vs Precipitation
Third Quarter 2022
LRI Landfill, Pierce County, Washington



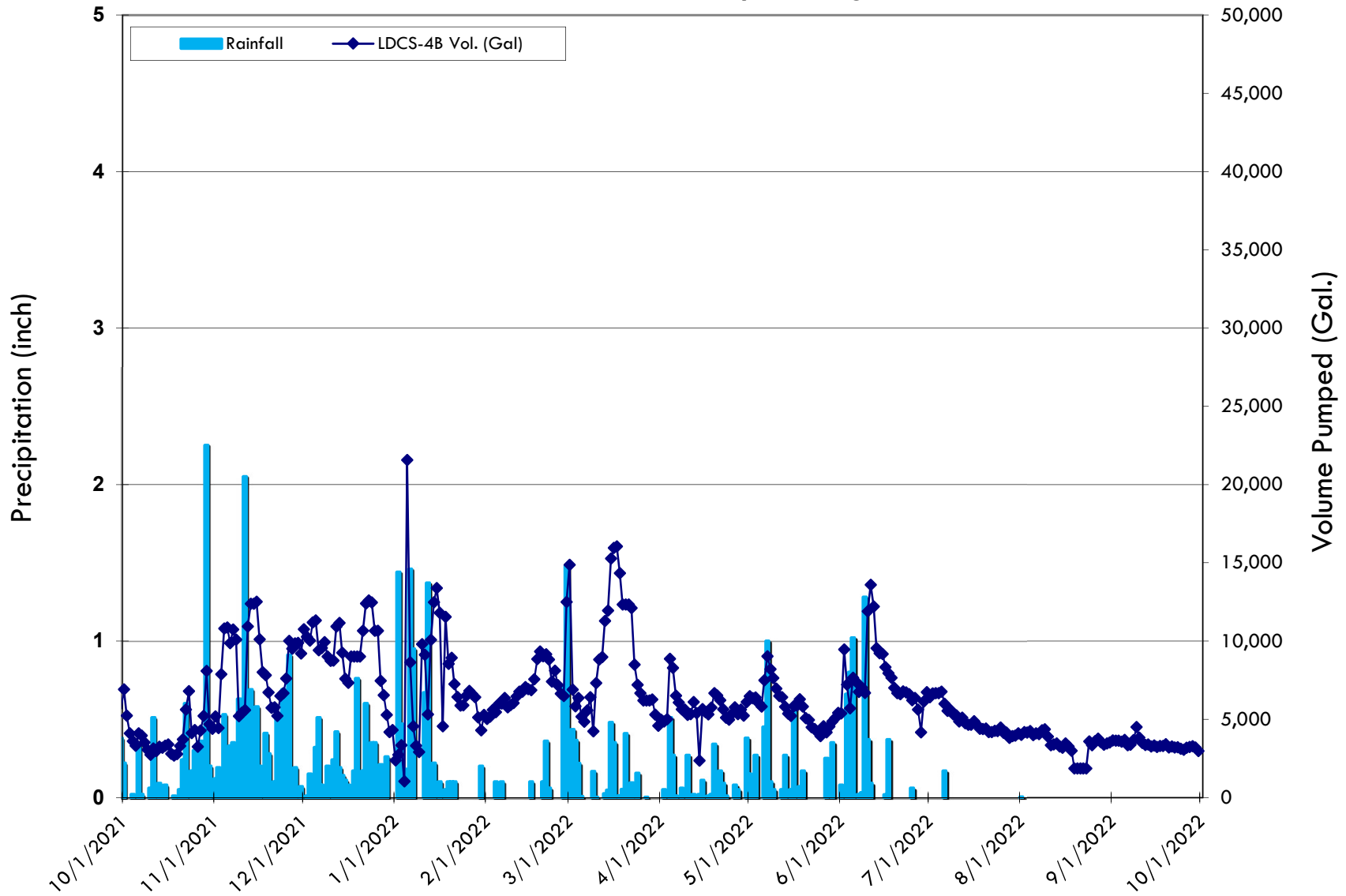
LDCS-3A (Daily Totals)
Volume Pumped vs Precipitation
Third Quarter 2022
LRI Landfill, Pierce County, Washington



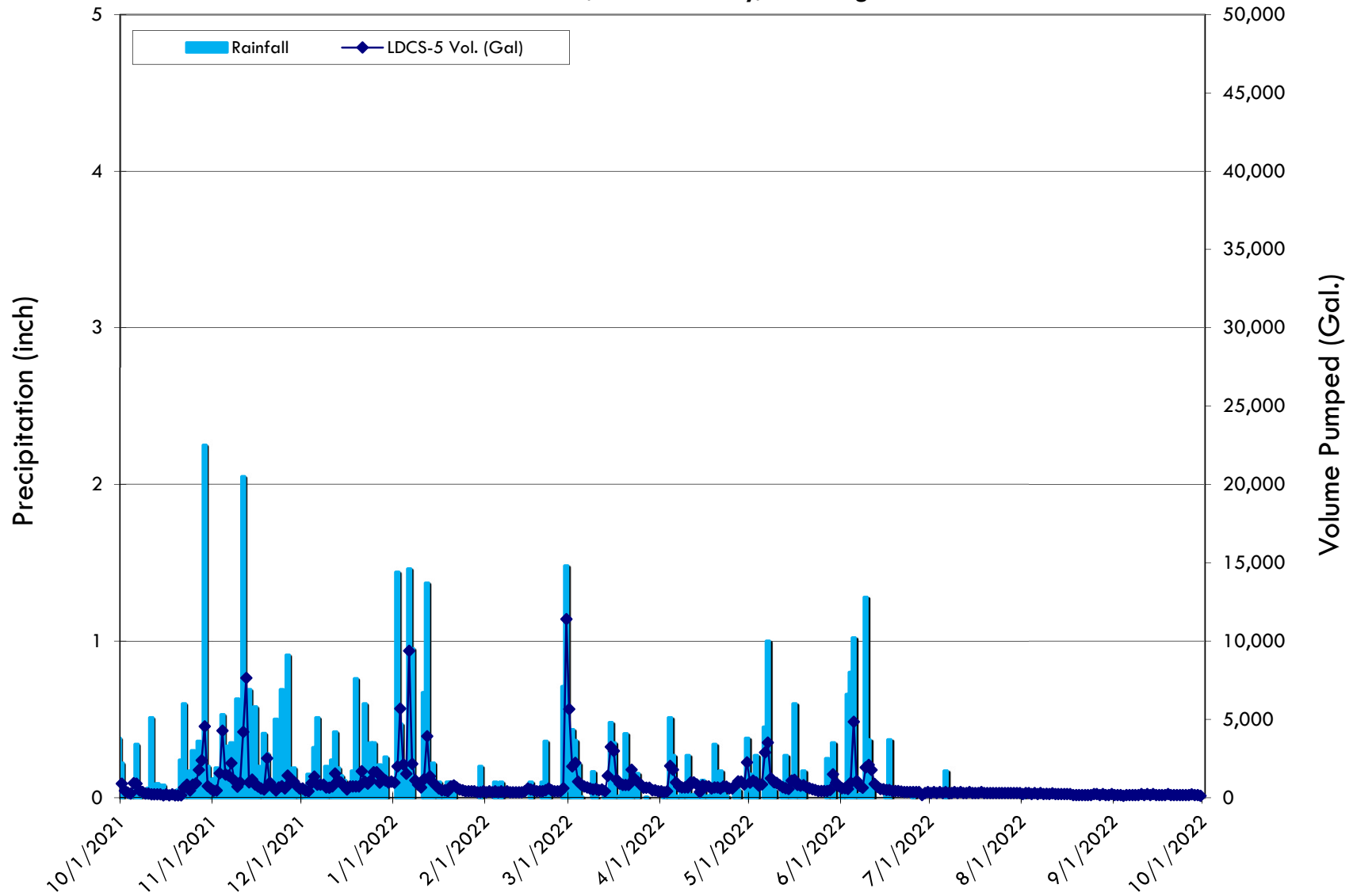
**LDCS-4A (Daily Totals)
Volume Pumped vs Precipitation
Third Quarter 2022
LRI Landfill, Pierce County, Washington**



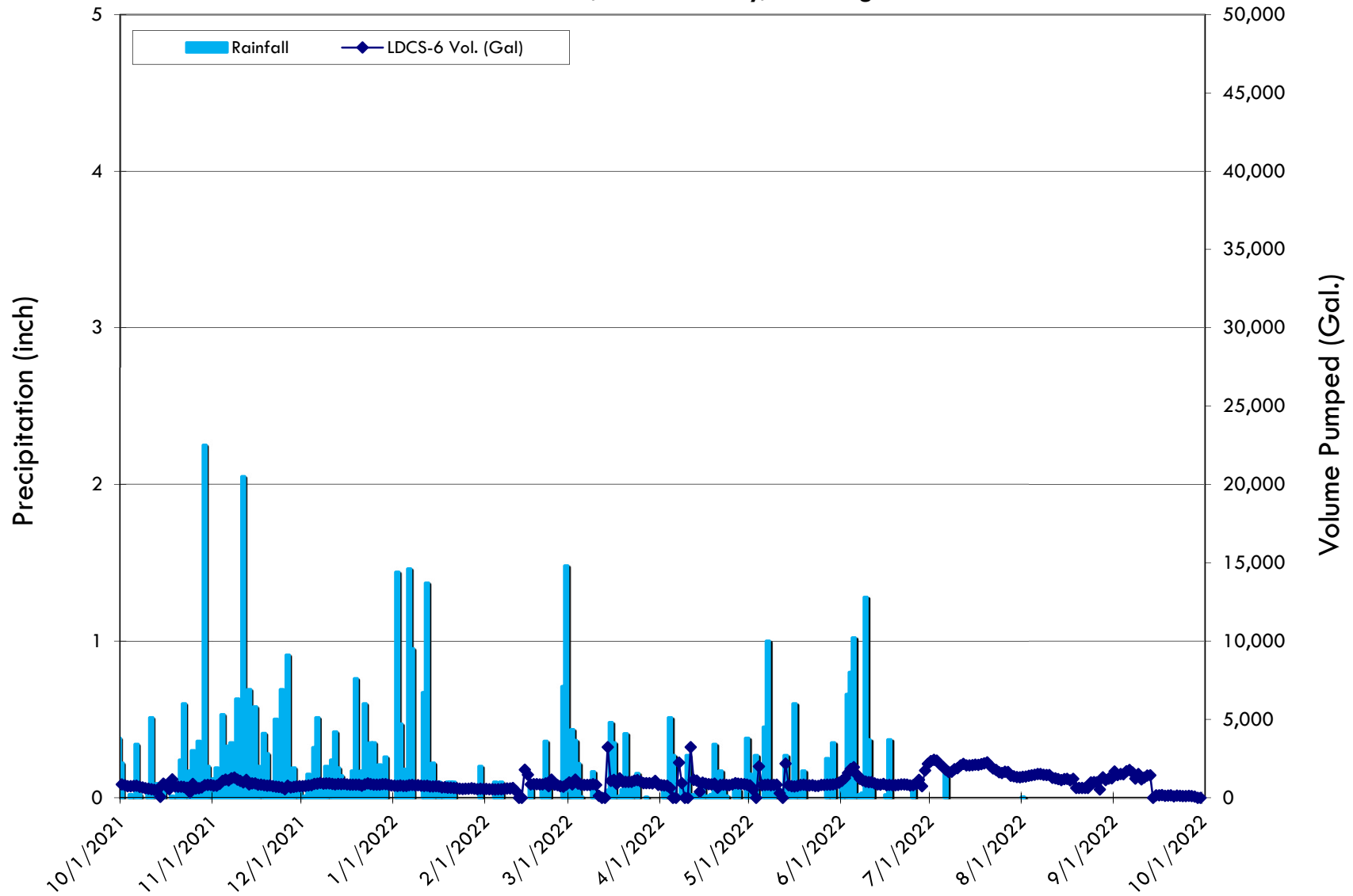
LDCS-4B (Daily Totals)
Volume Pumped vs Precipitation
Third Quarter 2022
LRI Landfill, Pierce County, Washington



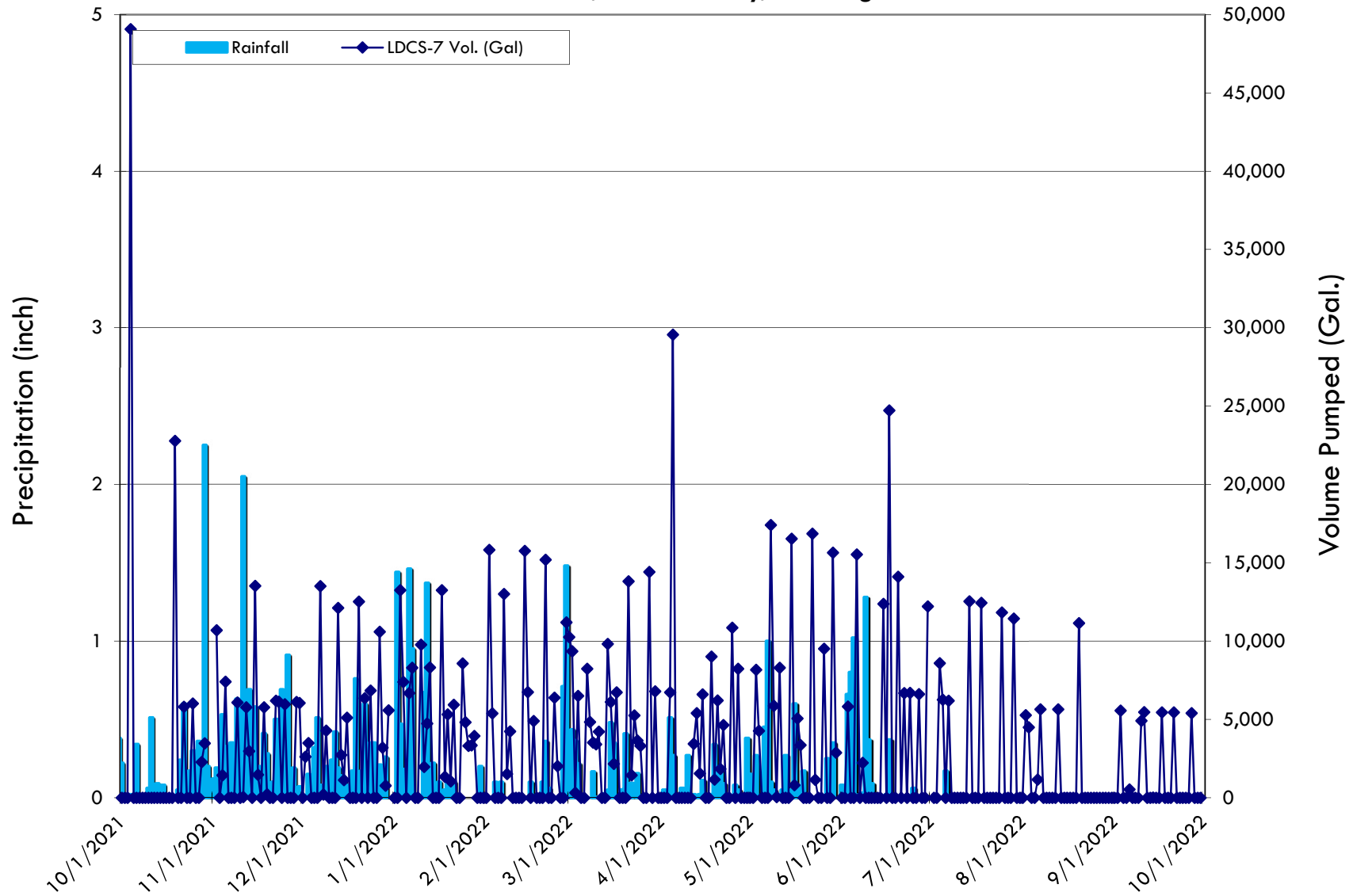
LDCS-5 (Daily Totals)
Volume Pumped vs Precipitation
Third Quarter 2022
LRI Landfill, Pierce County, Washington



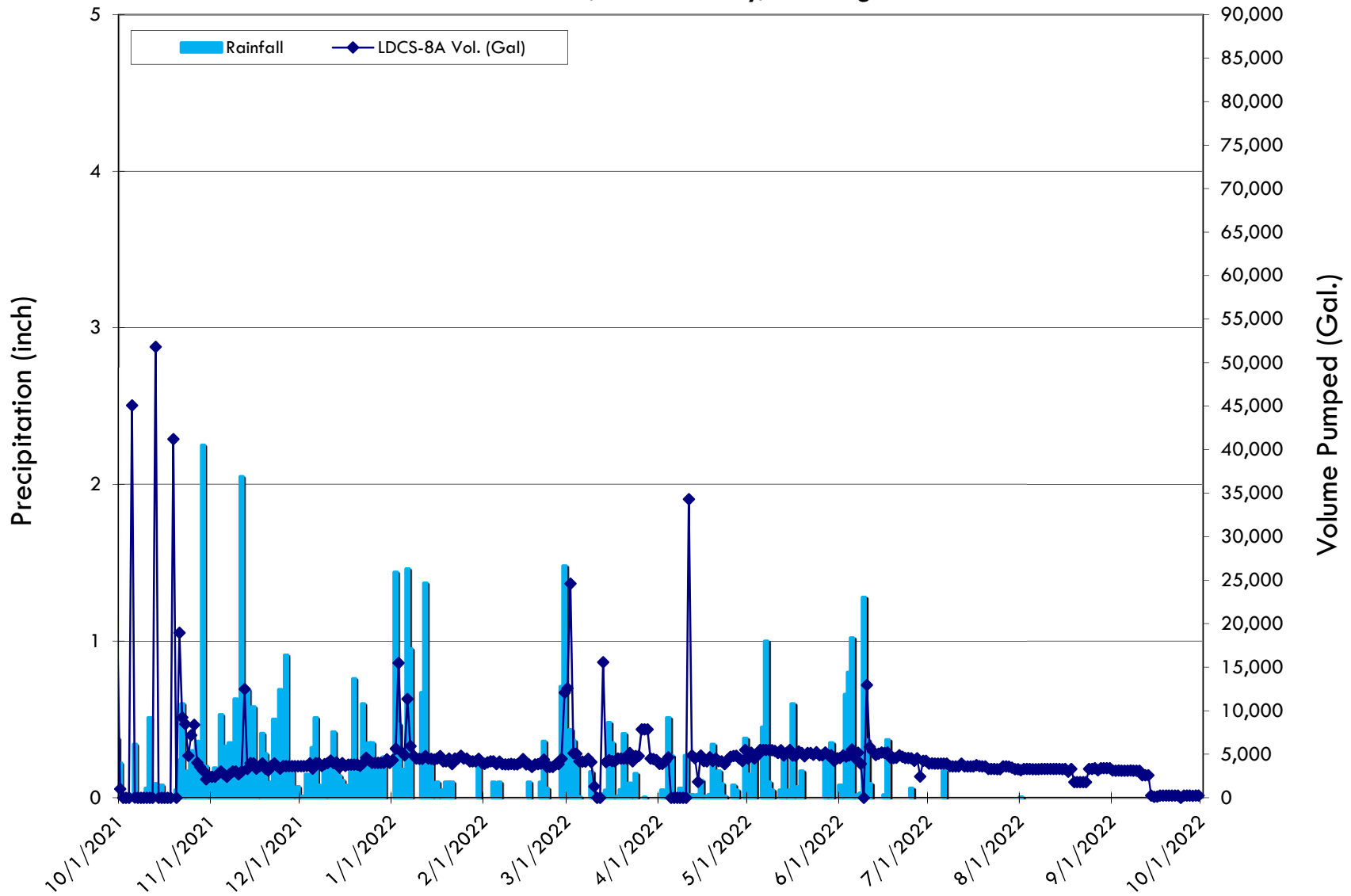
LDCS-6 (Daily Totals)
Volume Pumped vs Precipitation
Third Quarter 2022
LRI Landfill, Pierce County, Washington



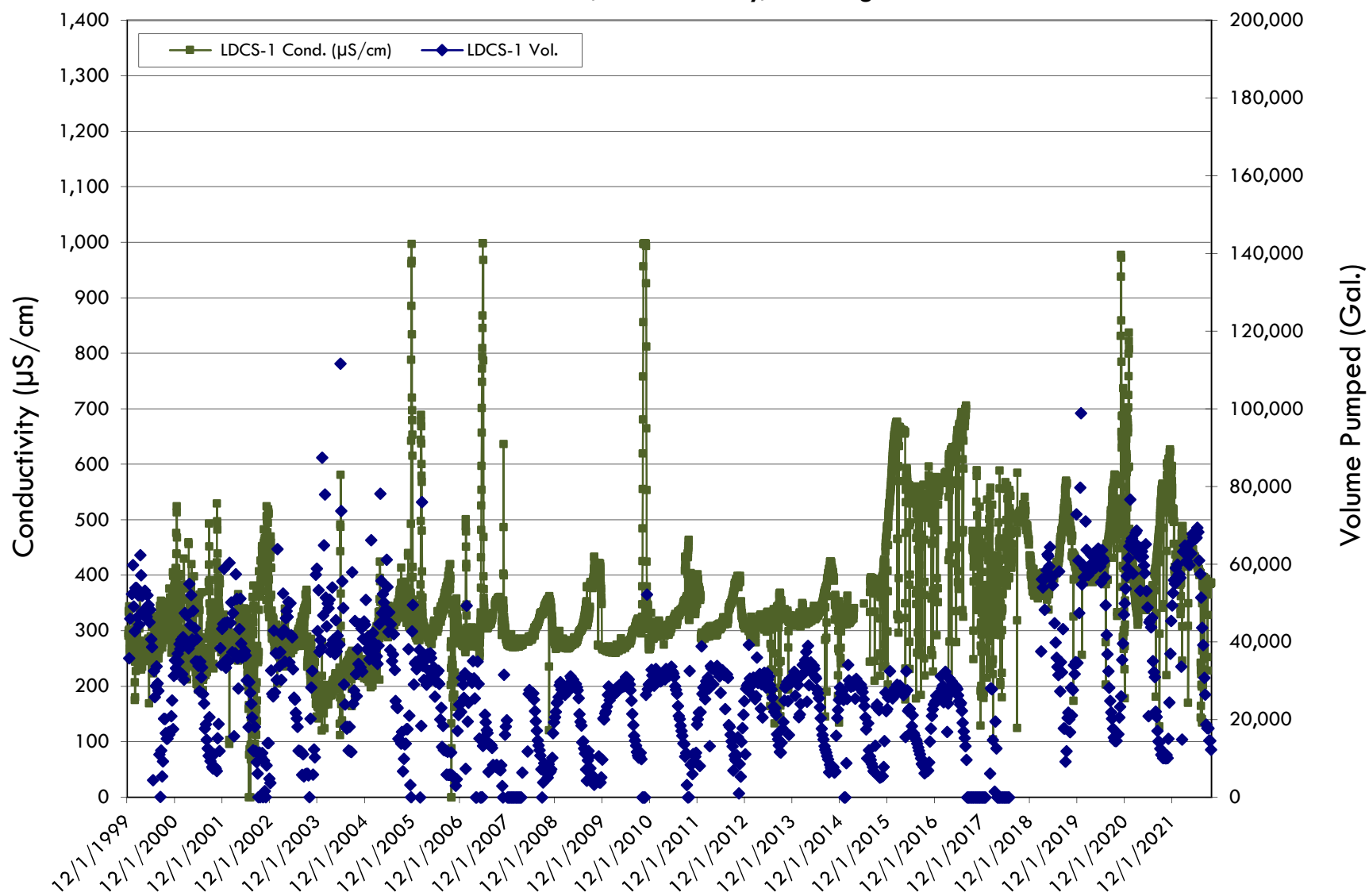
LDCS-7 (Daily Totals)
Volume Pumped vs Precipitation
Third Quarter 2022
LRI Landfill, Pierce County, Washington



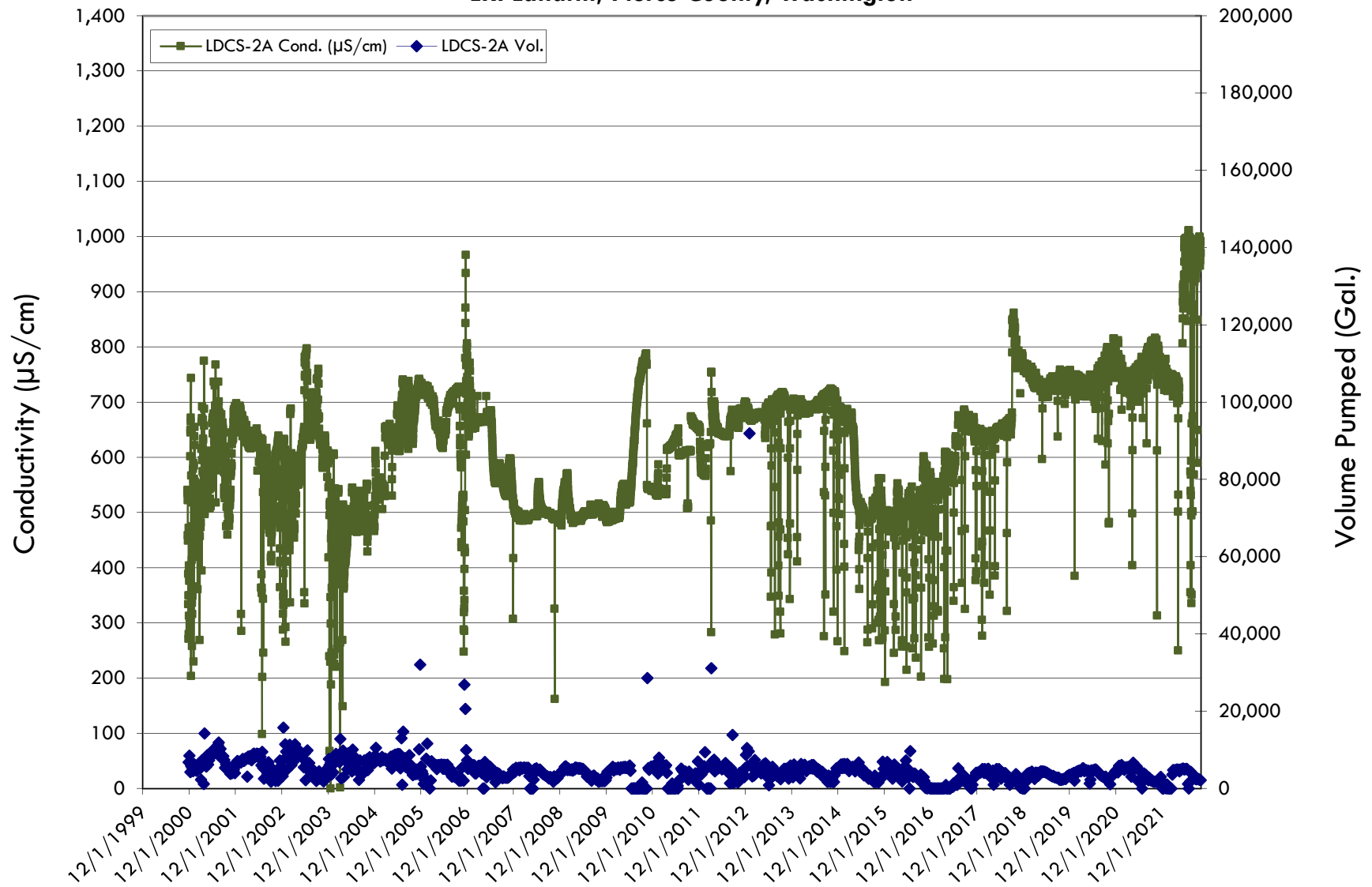
LDCS-8A (Daily Totals)
Volume Pumped vs Precipitation
Third Quarter 2022
LRI Landfill, Pierce County, Washington



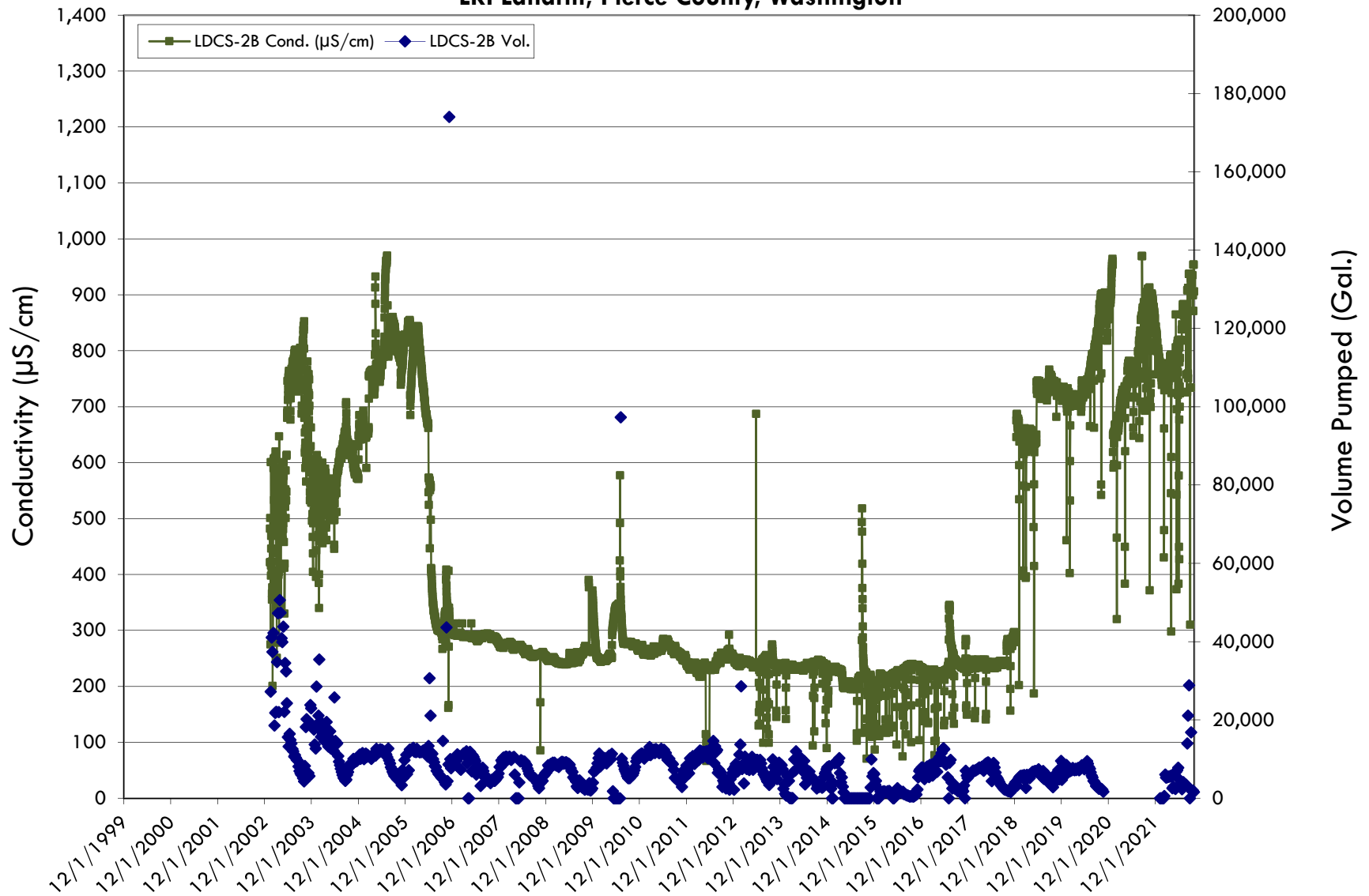
LDCS-1
Daily Conductivity vs Weekly Volume Pumped
Third Quarter 2022
LRI Landfill, Pierce County, Washington



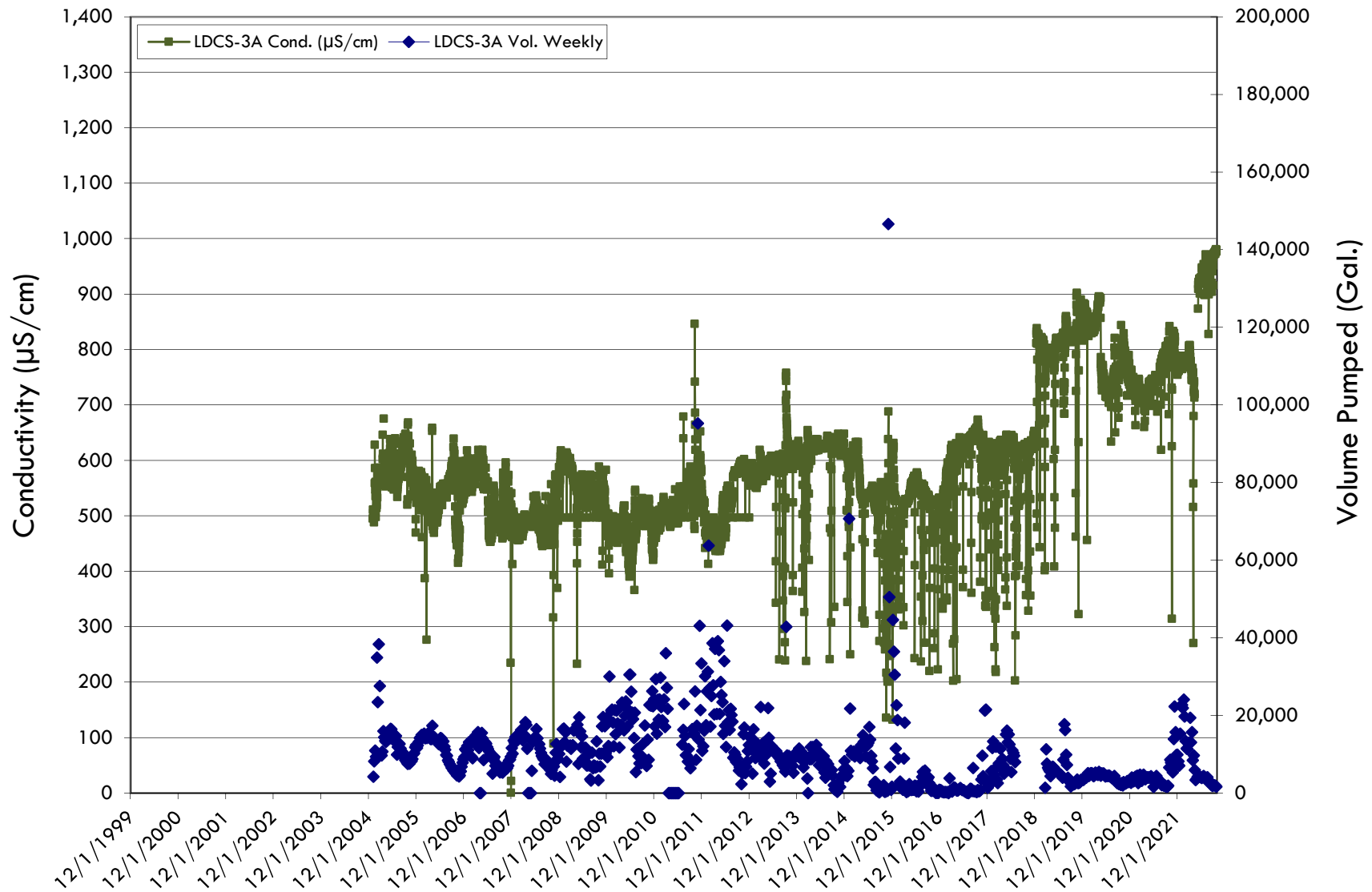
LDCS-2A
Daily Conductivity vs Weekly Volume Pumped
Third Quarter 2022
LRI Landfill, Pierce County, Washington



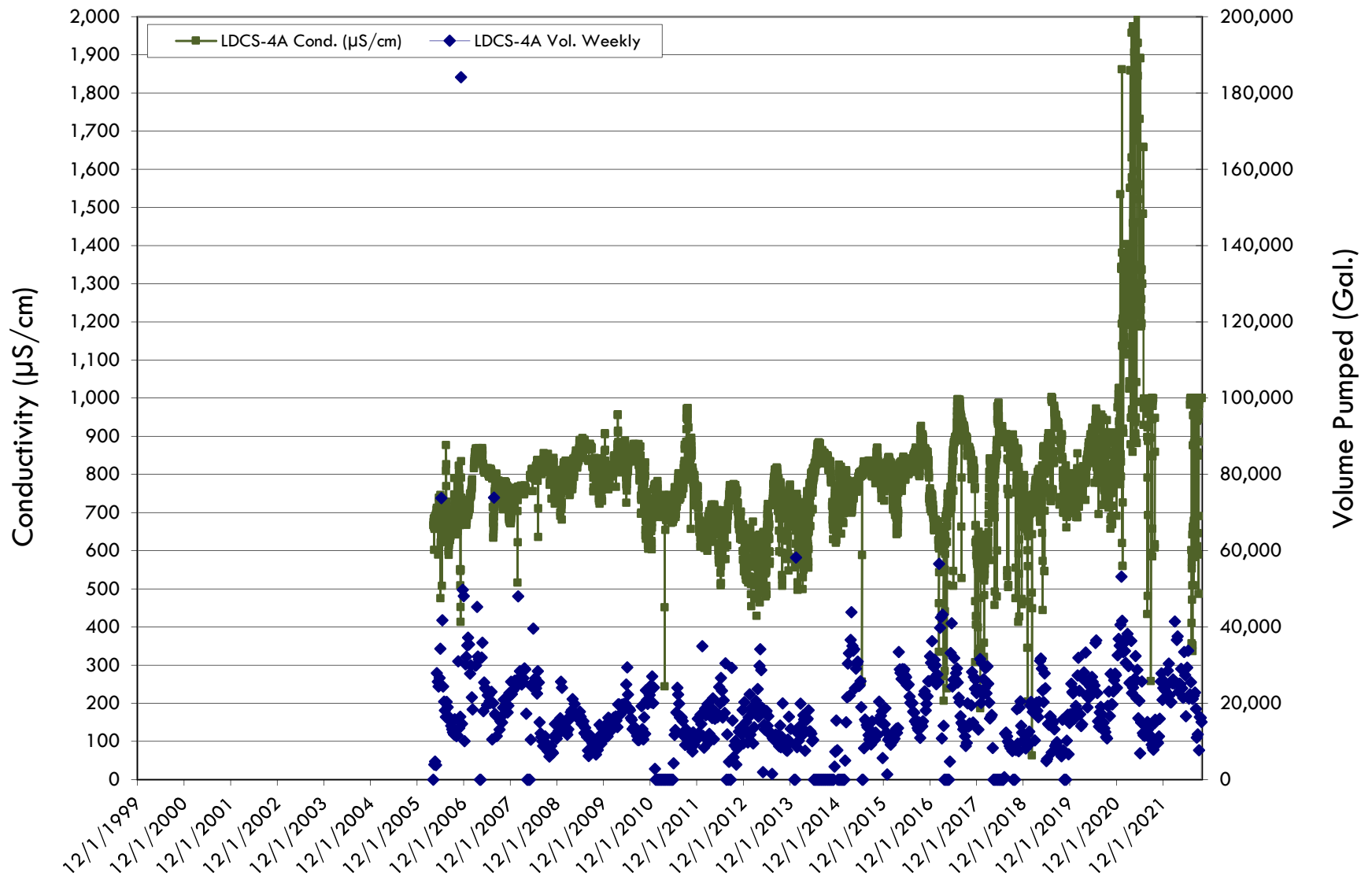
LDCS-2B
Daily Conductivity vs Weekly Volume Pumped
Third Quarter 2022
LRI Landfill, Pierce County, Washington



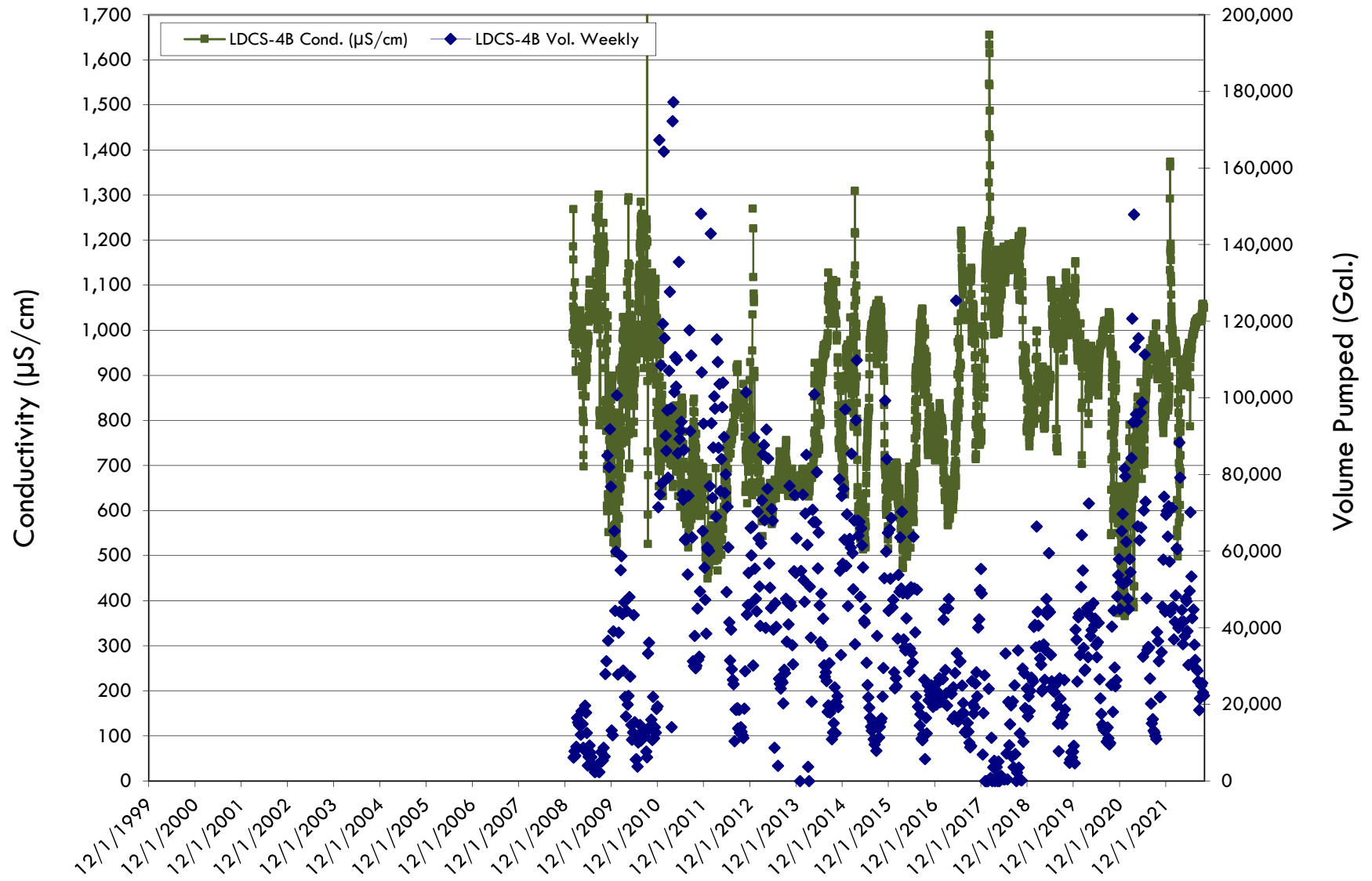
LDCS-3A
Daily Conductivity vs Weekly Volume Pumped
Third Quarter 2022
LRI Landfill, Pierce County, Washington



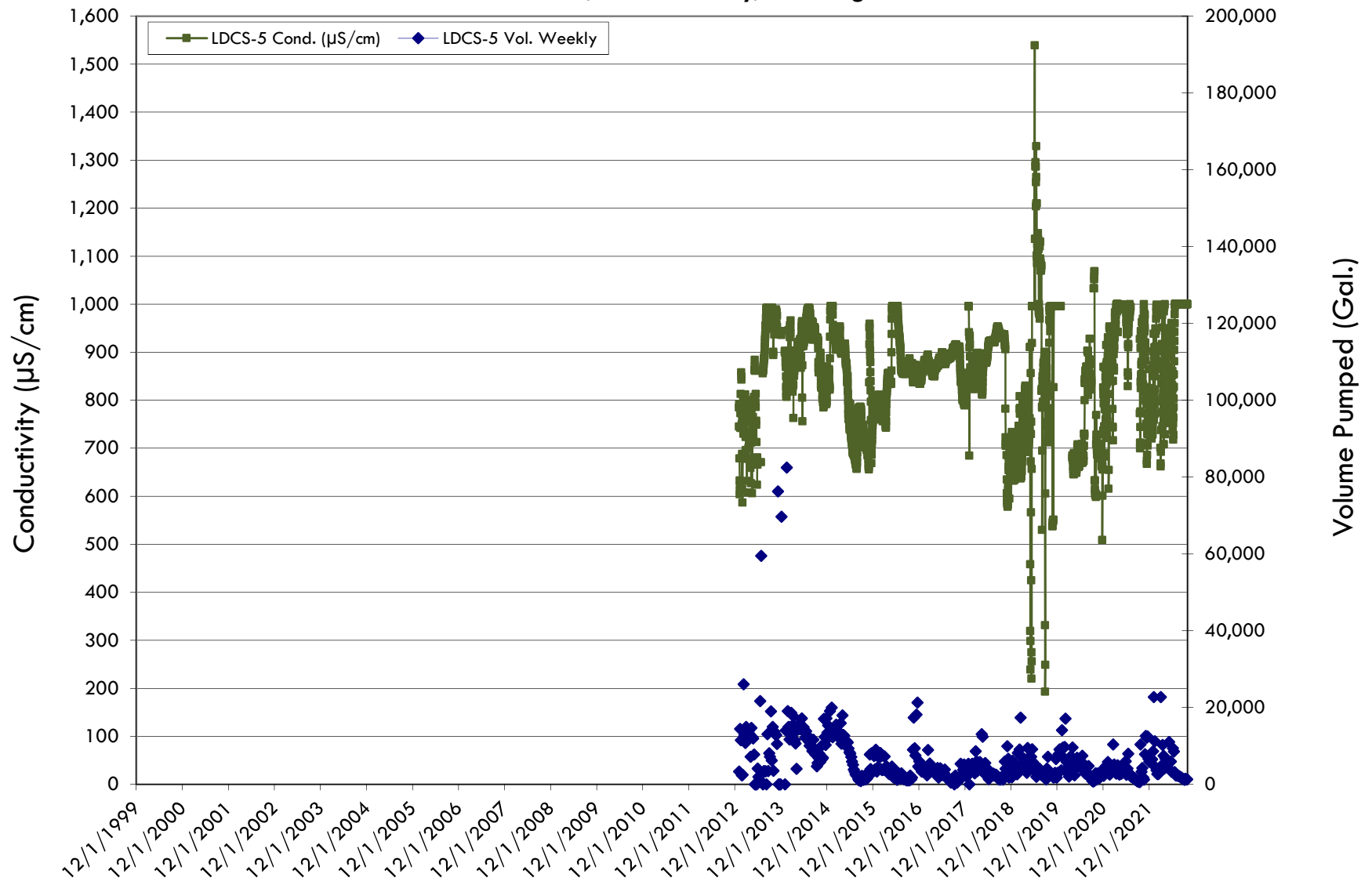
LDCS-4A
Daily Conductivity vs Weekly Volume Pumped
Third Quarter 2022
LRI Landfill, Pierce County, Washington



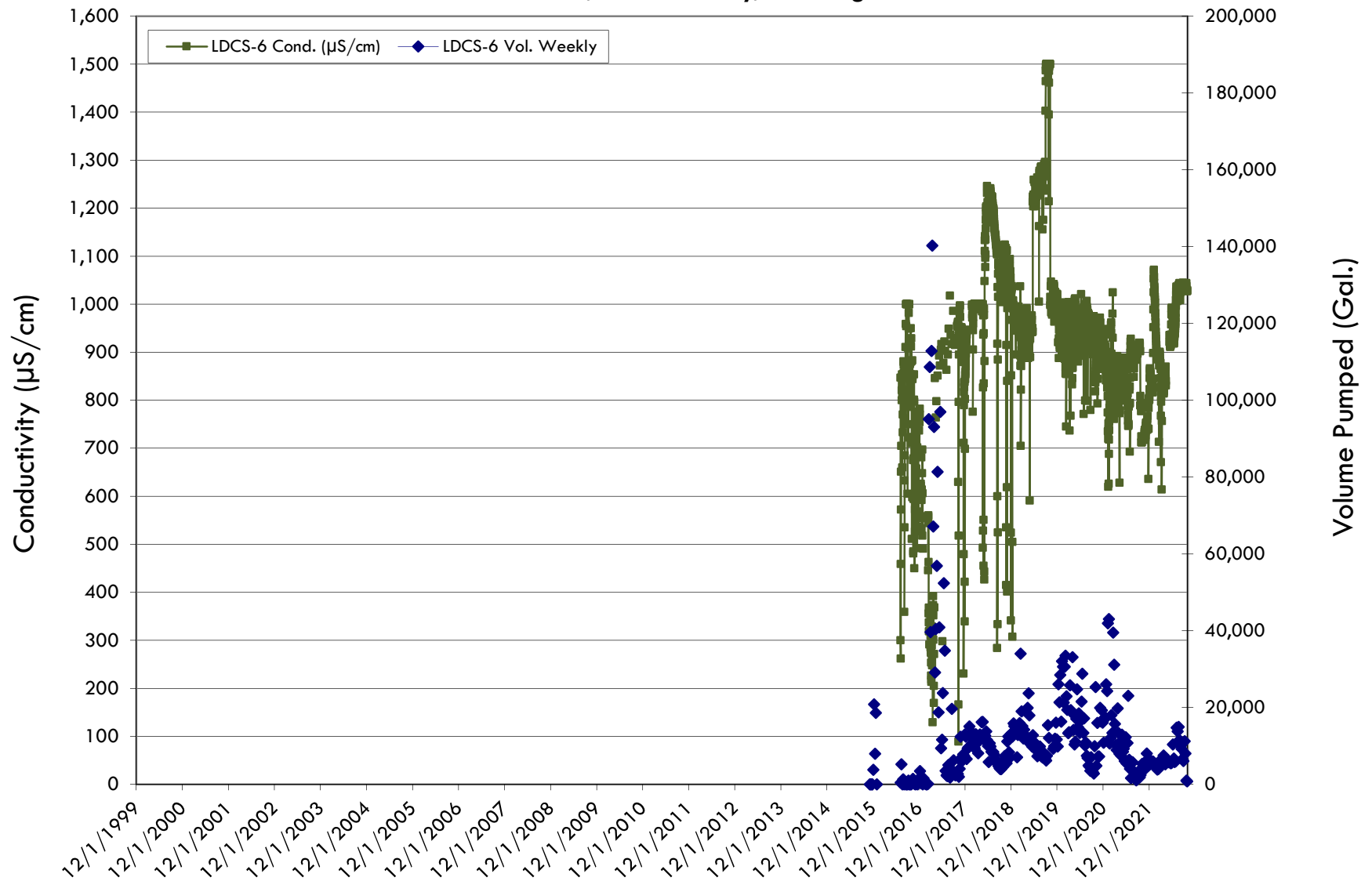
LDCS-4B
Daily Conductivity vs Weekly Volume Pumped
Third Quarter 2022
LRI Landfill, Pierce County, Washington



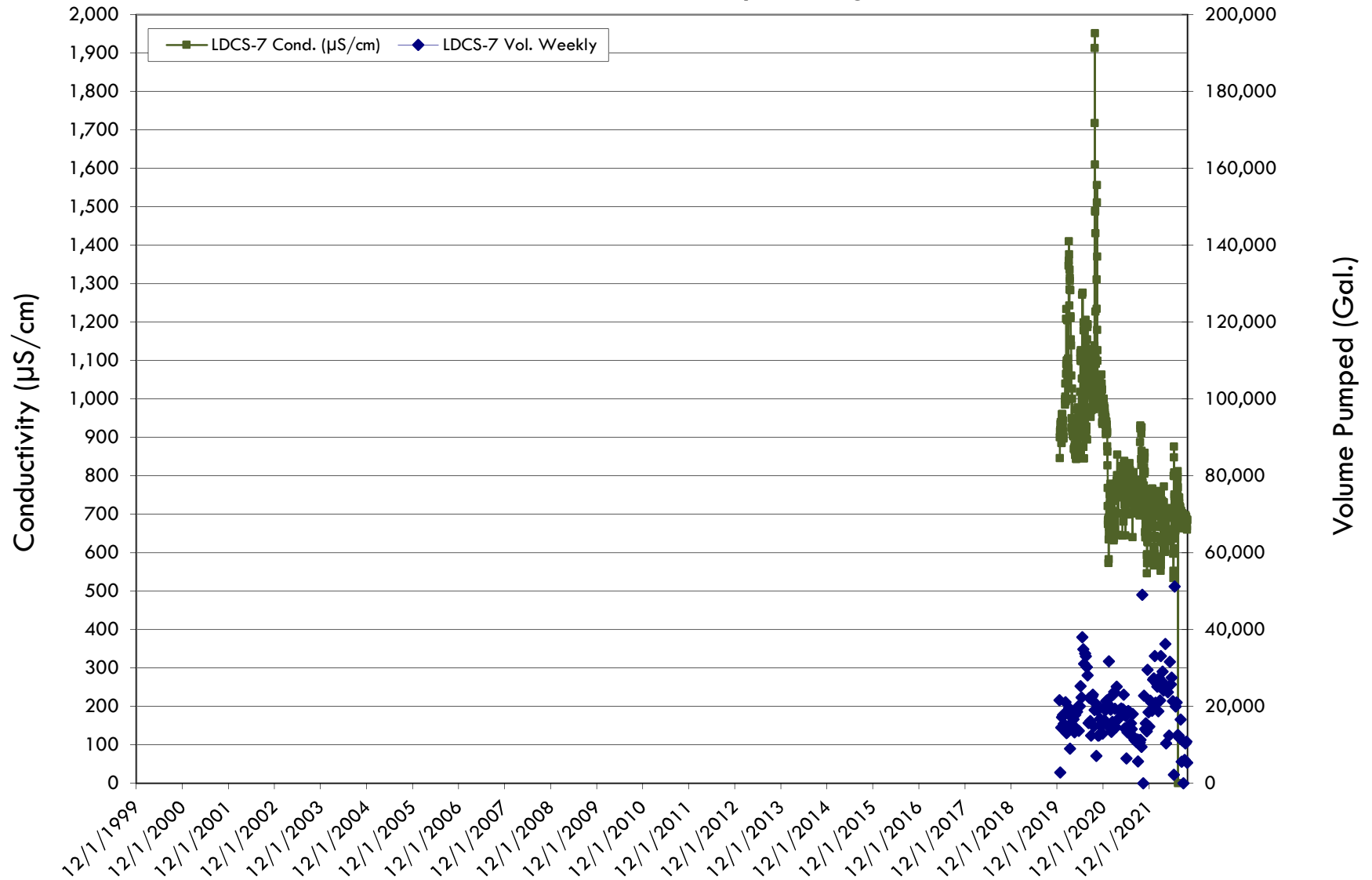
LDCS-5
Daily Conductivity vs Weekly Volume Pumped
Third Quarter 2022
LRI Landfill, Pierce County, Washington



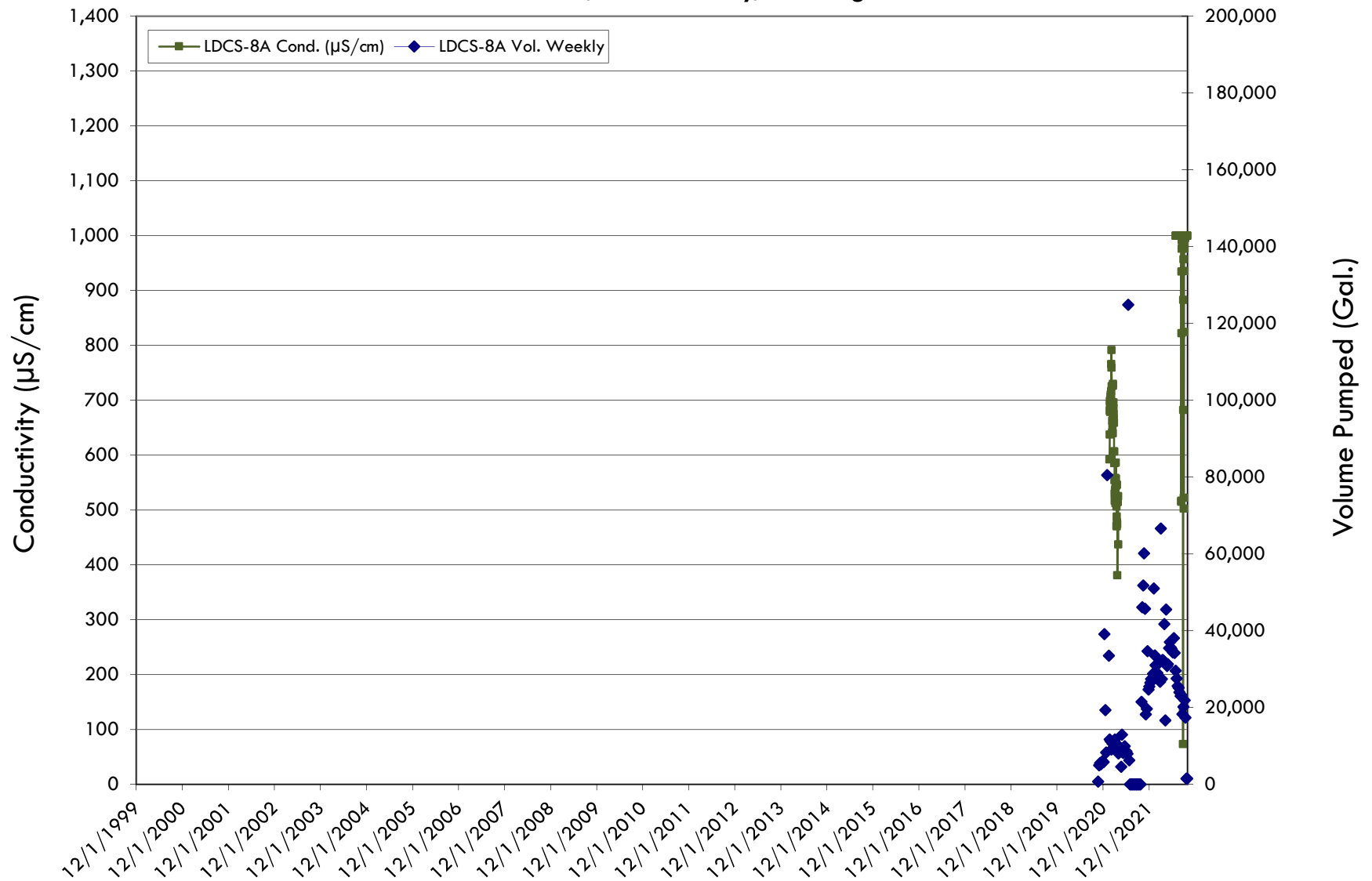
LDCS-6
Daily Conductivity vs Weekly Volume Pumped
Third Quarter 2022
LRI Landfill, Pierce County, Washington



LDCS-7
Daily Conductivity vs Weekly Volume Pumped
Third Quarter 2022
LRI Landfill, Pierce County, Washington



LDCS-8A
Daily Conductivity vs Weekly Volume Pumped
Third Quarter 2022
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: 07/01/2022 - 07/31/2022

Outfall: 001 - South Creek

Version: 2

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
		C8-1	C8-1	C8-2	C8-2	C9-1	C9-1
2-T	7/5/22	9.7	M	C	C	C	C
3-F	7/15/22	0.63	M	C	C	C	C
4-Su	7/17/22	C	C	C	C	C	C
5-M	7/25/22	1.7	M	C	C	C	C
Minimum			M		C		C
			BM: >= 6.5 (RO)		BM: >= 6.5 (RO)		BM: >= 6.5 (RO)
Maximum		9.7	M	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, M - Monitoring Is Conditional/Not Req This MP

Overall DMR Notes/Comment

Construction stormwater treatment was performed using chitosan Enhanced Sand Filtration (CESF) prior to discharge to C8-1. The averaged turbidity value is reported for each day that a discharge occurred.

Outfall: 001 - South Creek

Monitoring Point	Parameter	Sample Date/ Statistical Base	Value	Notes/Comment
C8-2	All Parameters		C	
C9-1	All Parameters		C	

BMPs

Monitoring Point	Week	BMP
C8-1		Check Dams
C8-1		Other
C8-1		Silt Fence
C8-1		Temporary Sediment Pond
C8-2		Check Dams
C8-2		Other
C8-2		Silt Fence
C9-1		Check Dams
C9-1		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

10/15/2022 6:42:21 AM

Signature

Date



Permit Number: WAR002603

Permittee: LRI 304th Street Landfill

Facility County: Pierce

Receiving Waterbody: NEWB 2

Monitoring Period: 08/01/2022 - 08/31/2022

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
		C8-1	C8-1	C8-2	C8-2	C9-1	C9-1
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

Outfall: 001 - South Creek

Monitoring Point	Parameter	Sample Date/ Statistical Base	Value	Notes/Comment
C8-1	All Parameters		C	
C8-2	All Parameters		C	
C9-1	All Parameters		C	

BMPs

Monitoring Point	Week	BMP
C8-1		Check Dams
C8-1		Construction Stormwater Chemical Treatment
C8-1		Other
C8-1		Silt Fence
C8-1		Temporary Sediment Pond
C8-2		Check Dams
C8-2		Other
C8-2		Silt Fence
C9-1		Check Dams
C9-1		Other
C9-1		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

Signature

9/13/2022 7:44:33 AM

Date



Permit Number: WAR002603

Permittee: LRI 304th Street Landfill

Facility County: Pierce

Receiving Waterbody: NEWB 2

Monitoring Period: 09/01/2022 - 09/30/2022

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
		C8-1	C8-1	C8-2	C8-2	C9-1	C9-1
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 September.

Outfall: 001 - South Creek

Monitoring Point	Parameter	Sample Date/ Statistical Base	Value	Notes/Comment
C8-1	All Parameters		C	
C8-2	All Parameters		C	
C9-1	All Parameters		C	

BMPs

Monitoring Point	Week	BMP
C8-1		Check Dams
C8-1		Other
C8-1		Silt Fence
C8-1		Temporary Sediment Pond
C8-2		Check Dams
C8-2		Other
C8-2		Silt Fence
C9-1		Check Dams
C9-1		Other
C9-1		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

10/15/2022 6:39:41 AM

Signature

Date



Permit Number: WAR002557

Permittee: Pierce County Recycling - 304th Street L

Facility County: Pierce

Receiving Waterbody:

Monitoring Period: 07/01/2022 - 09/30/2022

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
7-W	8/10/22	6.0	6.9	No	J 1.9	J 5.4	4.5	8.4	B 0.5	J 7.8	J 43	J 0.38
Minimum			6.9									
			BM: >= 5.0 (RO)									
Average		6			J 1.9	J 5.4						
		BM: <= 25			BM: <= 14	BM: <= 117						
Maximum			6.9									
			BM: <= 9.0 (RO)									
Month 1 Average							4.5	8.4	B 0.5	J 7.8	J 43	J 0.38
							<= 37	<= 27	<= 4.9	<= 16	<= 71	<= 14
Month 2 Average							4.5	8.4	B 0.5	J 7.8	J 43	J 0.38
							<= 37	<= 27	<= 4.9	<= 16	<= 71	<= 14
Month 3 Average							4.5	8.4	B 0.5	J 7.8	J 43	J 0.38
							<= 37	<= 27	<= 4.9	<= 16	<= 71	<= 14

Reporting Codes Used: B - Below Detection Limit/No Detection, J - Estimated Value/Below Quantitation Limit

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

11/14/2022 3:24:42 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
7-W	8/10/22	J 7.8	J 5.4	6.9
Minimum				6.9
				>= 6.0 (RO)
Average				
Maximum				6.9
				<= 9.0 (RO)
Month 1 Average		J 7.8	J 5.4	
		<= 15	<= 110	
Month 2 Average		J 7.8	J 5.4	
		<= 15	<= 110	
Month 3 Average		J 7.8	J 5.4	
		<= 15	<= 110	

Attachment J

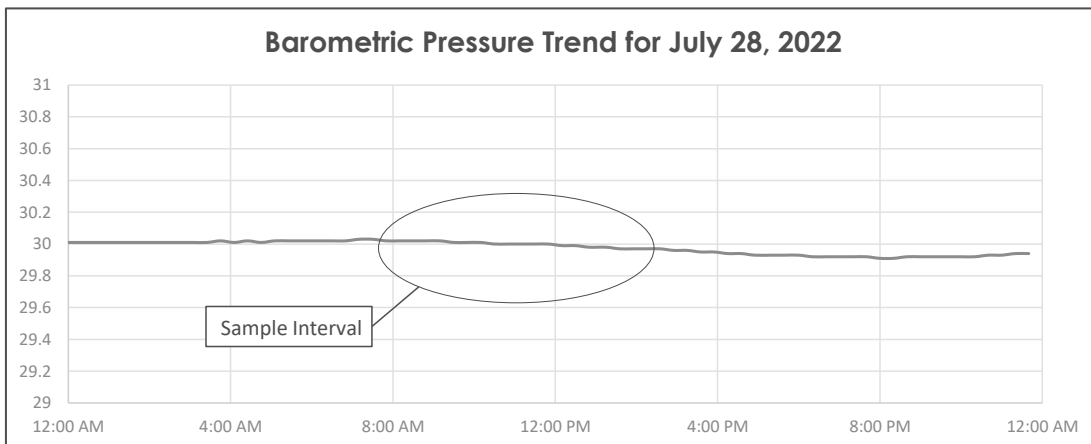
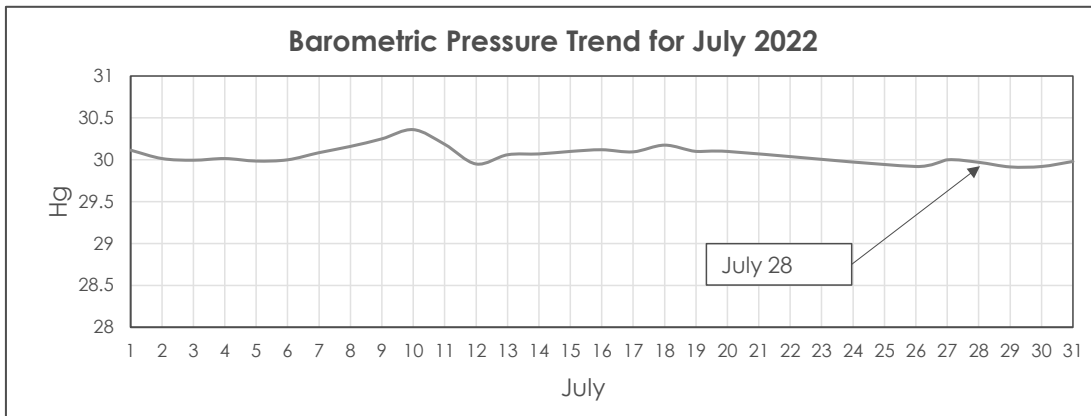
Landfill Gas Monitoring Data

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	-	-				20.0	
(max)			0.77		5.0	5.0	20.3				90.0	
Perimeter Gas Probes												
GP-1	7/28/2022	8:25	0.00	6.7	3.7	5.4	12.5	78.4	19.3	24.3	100.0	
GP-2	7/28/2022	12:44	-0.77	--	1.3	15.9	0.1	82.7	15.2	0.0	0.0	
GP-3	7/28/2022	12:50	0.77	--	0.0	8.0	6.9	85.1	11.0	6.1	100.0	
GP-4	7/28/2022	13:54	-1.03	--	0.0	10.7	5.9	83.4	13.1	3.3	65.0	
GP-9	7/28/2022	13:47	-0.54	--	0.0	11.7	5.5	82.8	14.1	0.8	16.2	
GP-10	7/28/2022	8:13	0.00	--	15.1	31.7	0.5	52.7				
GP-10P	7/28/2022	8:08	0.09	27.4	32.1	40.7	0.4	26.8				<i>Note 5</i>
GP-11	7/28/2022	7:58	-0.01	--	0.0	24.9	2.1	73.0				
GP-12	7/28/2022	7:49	0.03	--	0.0	1.5	19.6	78.9				
GP-13	7/28/2022	7:41	0.06	--	0.0	24.7	1.8	73.5				
GP-14	7/28/2022	12:24	-0.05	--	0.0	0.4	20.1	79.5	14.0	0.0	0.0	
GP-15	7/28/2022	12:03	-0.01	--	2.0	31.0	0.3	66.7	15.6	0.0	0.0	
GP-16	7/28/2022	13:41	0.23	--	0.0	0.5	20.2	79.3	21.8	14.4	96.0	
						Beginning	Ending	Average			Starting Date:	7/28/2022
						Sunny	Sunny	Sunny			Starting Time:	7:41
Weather:						64.8	91.4	78.1			Finishing Date:	7/28/2022
Temperature, T (deg F):						1	2	1.5			Finishing Time:	13:54
Wind Speed (mph):						22.5	22.5	22.5			Monitored by:	J. Faille
Wind Direction:						30.02	29.96	29.99			Instruments:	GEM 2000
Barometric Pressure, P (in Hg):						Falling					Calibration Date:	7/28/2022
24hr Baro.Trend (rising / falling / steady / unsteady)												

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 - July 2022

LRI 304th Landfill, Washington



Monthly Data Source: Wunderground.com (Graham)

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

Data Source:

<https://www.wunderground.com/dashboard/pws/KWAGRAHA52/table/2022-07-28/2022-07-28/monthly>

Daily Data Source: Wunderground.com (Graham)

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

Data Source:

<https://www.wunderground.com/dashboard/pws/KWAGRAHA52/table/2022-07-28/2022-07-28/daily>

Exhibit 3 - Results of Landfill Gas Probe Monitoring

SCS Engineers

Landfill Gas Control System

04222001.04

LRI Landfill

August-22

Location Refer Design.	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	-	-				20.0	
(max)			0.02		5.0	5.0	20.3				90.0	

Perimeter Gas Probes

GP-1	8/20/2022	11:54	0.00	--	0.0	0.2	20.8	79.0	18.9	23.9	100.0	
GP-2	8/20/2022	12:00	-0.01	--	0.0	0.1	20.8	79.1	16.7	0.0	0.0	
GP-3	8/20/2022	12:12	0.00	--	0.0	0.7	19.7	79.6	11.1	6.2	100.0	
GP-4	8/20/2022	12:23	0.00	--	0.0	1.0	19.8	79.2	13.0	3.2	64.0	
GP-9	8/20/2022	12:30	-0.02	--	0.0	1.1	18.9	80.0	13.9	0.6	12.0	
GP-10	8/20/2022	10:13	0.01	--	0.5	2.9	18.6	78.0				
GP-10P	8/20/2022	10:08	0.00	--	0.9	1.6	20.1	77.4				<i>Note 5</i>
GP-11	8/20/2022	9:57	0.00	--	0.0	0.2	21.0	78.8				
GP-12	8/20/2022	9:46	0.02	11.7	11.2	27.2	13.0	48.6				
GP-13	8/20/2022	9:34	0.00	--	0.0	3.0	18.5	78.5				
GP-14	8/20/2022	13:11	-0.04	--	0.0	0.0	20.9	79.1	14.4	0.0	0.0	
GP-15	8/20/2022	13:04	-0.05	--	0.0	0.1	20.9	79.0	14.9	0.0	0.0	
GP-16	8/20/2022	12:36	-0.02	--	0.0	0.1	20.7	79.2	22.1	14.8	98.5	

	Beginning	Ending	Average	Starting Date:	8/20/2022
Weather:	Sunny	Sunny	Sunny	Starting Time:	9:34
Temperature, T (deg F):	58	70	64	Finishing Date:	8/20/2022
Wind Speed (mph):	6	7	6.5	Finishing Time:	13:11
Wind Direction:	180	270	225	Monitored by:	R. Martinez
Barometric Pressure, P (in Hg):	29.58	29.54	29.56	Instruments:	GEM 2000
24hr Baro.Trend (rising / falling / steady / unsteady)	Unsteady			Calibration Date:	8/20/2022

Headings:

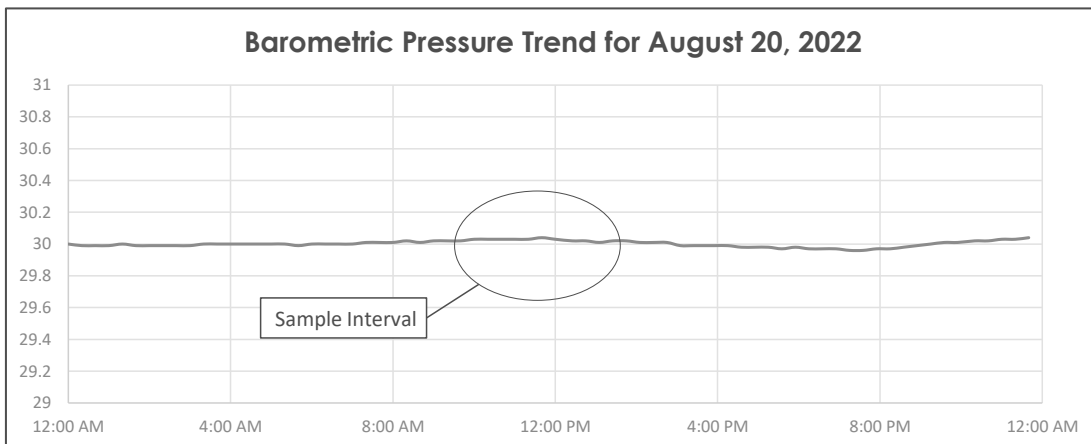
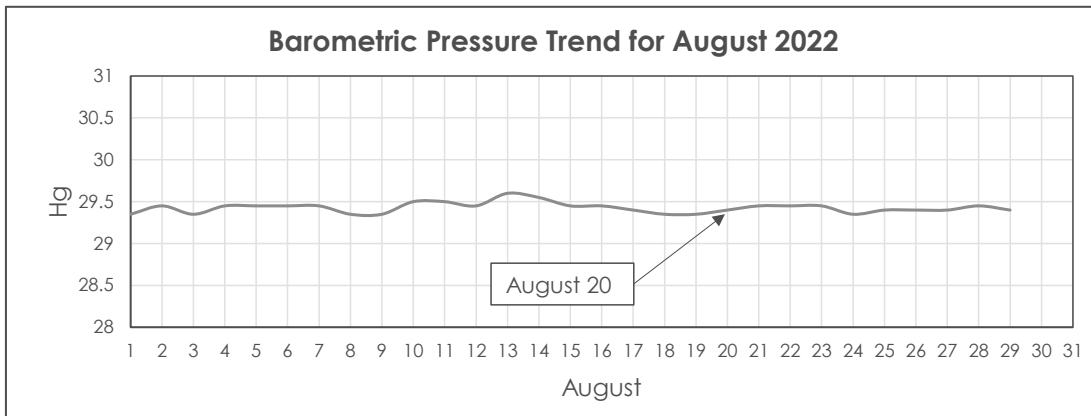
P _(well)	Relative Pressure
CH ₄	Methane
CO ₂	Carbon Dioxide
O ₂	Oxygen
H ₂ O	Water Vapor
N ₂	Nitrogen
TOC	Top of Casing

Notes:

- Measurement for spike concentrations of CH₄ and CO₂ are recorded as a comment if observed during sampling.
- Water level measurements made where gas probe monitoring port allows for measurement, or where there is an adjacent measurement piezometer.
- Exposed Perforation = perforated pipe section not submerged by liquid.
- GP-10P added in January 2018. Monitoring performed at water level piezometer installed in the same boring as GP-10.
- GP-10P connection repaired on October 23rd, 2020.

Barometric Pressure Trend - August 2022

LRI 304th Landfill, Washington



Monthly Data Source: Wunderground.com (Graham)

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

Data Source:

<https://www.wunderground.com/dashboard/pws/KWAGRAHA52/table/2022-08-20/2022-08-20/monthly>

Daily Data Source: Wunderground.com (Graham)

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

Data Source:

<https://www.wunderground.com/dashboard/pws/KWAGRAHA52/table/2022-08-20/2022-08-20/daily>

LRI Landfill

04222001.04

September-22

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	CH ₄	CO ₂	O ₂	Balance (N ₂ & H ₂ O)		(ft)	(%)	
				(% by vol.)	(% by vol.)	(% by vol.)	(% by vol.)	(% by vol.)				
Normal Operating Range:												
(min)			-		0.3	-	-				20.0	
(max)			0.46		5.0	5.0	20.3				90.0	

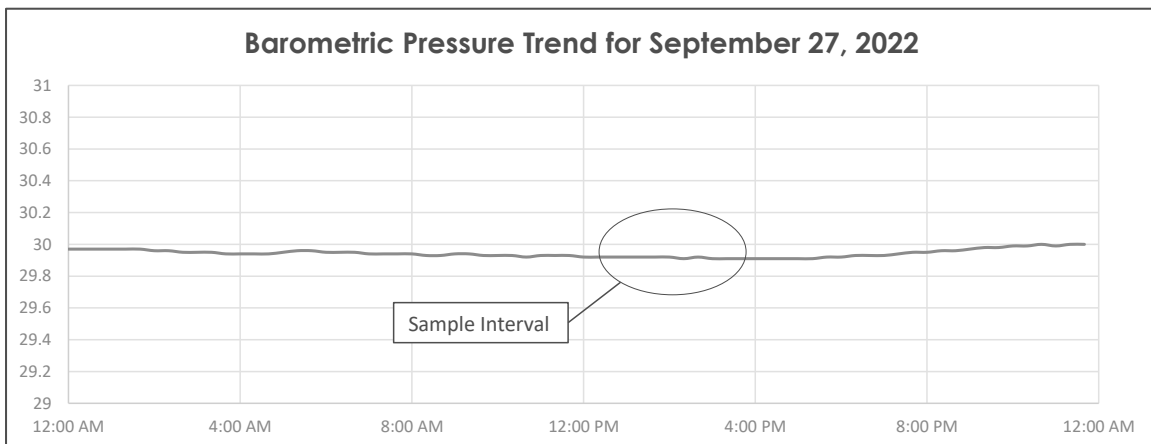
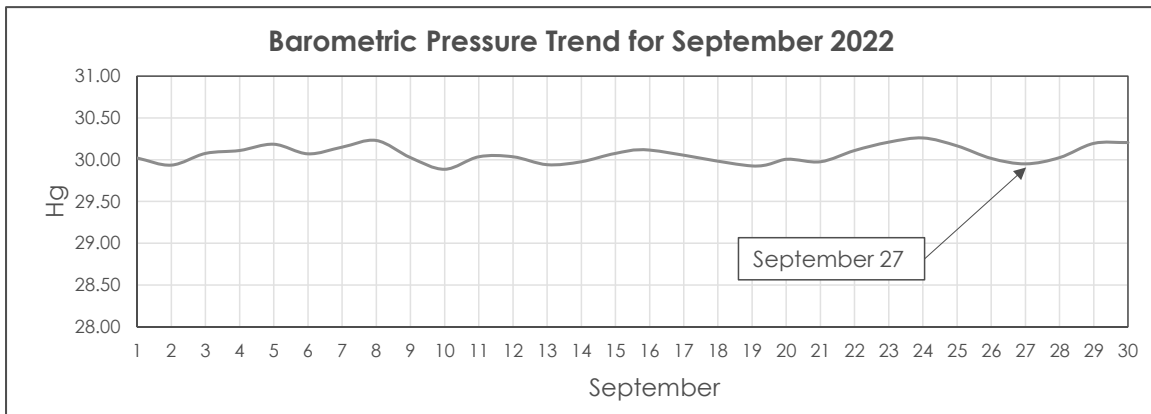
GP-1	9/27/2022	12:22	0.10	20.1	4.4	3.1	16.3	76.2	20.1	25.1	100.0	
GP-2	9/27/2022	12:36	0.00	--	1.9	17.5	0.0	80.6	14.2	0.0	0.0	
GP-3	9/27/2022	12:53	0.46	--	0.0	8.3	10.3	81.4	12.1	7.2	100.0	
GP-4	9/27/2022	13:03	-0.32	--	0.0	9.9	12.5	77.6	14.2	4.4	88.8	
GP-9	9/27/2022	13:10	0.34	--	0.0	11.2	6.8	82.0	15.6	2.4	47.4	
GP-10	9/27/2022	13:40	-0.04	--	8.0	34.7	0.0	57.3				
GP-10P	9/27/2022	13:44	-0.06	--	0.0	11.3	9.7	79.0				Note 5
GP-11	9/27/2022	13:51	0.10	--	0.0	16.1	6.4	77.5				
GP-12	9/27/2022	13:58	-0.13	25.0	24.8	67.4	0.0	7.8				
GP-13	9/27/2022	14:04	-0.07	--	0.3	29.9	0.0	69.8				
GP-14	9/27/2022	14:10	0.08	--	0.0	2.3	18.3	79.4	16.1	0.8	16.4	
GP-15	9/27/2022	14:19	0.04	--	2.1	24.9	6.2	66.8	19.2	3.6	71.4	
GP-16	9/27/2022	13:19	-0.03	--	0.0	0.4	20.3	79.3	22.2	14.9	99.3	
GP-17	9/27/2022	12:30	0.0	--	0.0	0.2	18.7	81.1	12.6	12.6		Note 6
GP-18	9/27/2022	12:46	0.0	--	0.0	0.5	20.1	79.4	8.6	8.6		"
GP-19	9/27/2022	15:26	0.0	--	0.0	1.0	19.2	79.8	13.2	13.2		"
GP-20	9/27/2022	15:47	-0.1	--	0.0	0.8	16.7	82.5	12.2	12.2		"
GP-21	9/27/2022	15:37	-0.1	--	0.0	1.2	13.9	84.9				Note 6

	Beginning	Ending	Average	Starting Date:	9/27/2022
Weather:	Fair	Partly Cloudy	Partly Cloudy	Starting Time:	12:22
Temperature, T (deg F):	69	76	72.5	Finishing Date:	9/27/2022
Wind Speed (mph):	7	12	9.5	Finishing Time:	15:47
Wind Direction:	180	202.5	191.25	Monitored by:	J. Faile
Barometric Pressure, P (in Hg):	29.42	29.41	29.42	Instruments:	GEM 2000
24hr Baro.Trend (rising / falling / steady / unsteady)	Unsteady			Calibration Date:	9/27/2022

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.
		6.	GP-17 through GP-18 added September 2022

Barometric Pressure Trend - September 2022

LRI 304th Landfill, Washington



Monthly Data Source: Wunderground.com (Graham)

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

Data Source:

<https://www.wunderground.com/dashboard/pws/KWAGRAHA52/table/2022-09-20/2022-09-20/monthly>

Daily Data Source: Wunderground.com (Graham)

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

Data Source:

<https://www.wunderground.com/dashboard/pws/KWAGRAHA52/table/2022-09-27/2022-09-27/daily>

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

Date: 8/23/22
Weather Conditions: Partly Cloudy
Instrument: Micro FID
Measured By: R. Martinez + J. Failla

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. Otherwise values recorded on left.

<u>5.0</u>	☐	Main Office - individual office spaces, storage areas and within open crawl-space area.	Conference room
<u>9.2</u>	☒	Repair Shop - survey atmosphere conditions throughout (lower height levels).	bay doors closed
<u> </u>	☒	Pay/Scale Booth - interior of building.	
<u>0.1</u>	☐	Background. Upwind Direction: <u>North</u>	

Signature

October 31, 2022
File No. 04222001.11

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

Subject: **2022 July Gas Extraction Well Installation Report**
LRI Landfill, Graham, Washington

Dear George:

This letter report presents a summary of field activities performed by SCS Engineers (SCS) during the installation of 21 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 2022 Gas System Expansion design plans, approved well construction variance, and well completion schedule issued by SCS on June 14, 2022. 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.

Summary

SCS personnel were onsite from June 16, 2022 through July 12, 2022 to observe drilling and installation of 21 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 and construction logs prepared by SCS. 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-330	IW-01	738.26	HDPE	BKM-556	40	43	18
WE-331	IW-02	732.84	HDPE	BKM-555	40	42	18
WE-332	IW-03	728.66	HDPE	BKM-554	40	40	18
WE-333	IW-08	803.82	HDPE	BKM-560	40	42	18
WE-334	IW-07	802.90	HDPE	BKM-559	40	42	18
WE-336	IW-04	813.30	HDPE	BKM-558	40	42	18
WE-337	IW-05	818.88	HDPE	BKM-557	40	43	18
WE-338	VW-11	835.69	PVC	BKM-565	70	72	50
WE-339	VW-10	837.16	PVC	BKM-564	70	70	50
WE-340	VW-13	845.19	PVC	BKM-562	70	70	50
WE-341	VW-12	846.55	PVC	BKM-563	70	70	50
WE-342	VW-14	856.68	PVC	BKM-561	70	72	50
WE-343	VW-02	805.16	PVC	BKM-566	70	73	50
WE-344	VW-05	790.08	PVC	BKM-570	115	113	95

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-345	VW-04	776.06	PVC	BKM-568	70	72	50
WE-346	VW-01	797.58	PVC	BKM-567	70	72	50
WE-347	VW-03	752.30	PVC	BKM-569	70	73	50
WE-348	VW-06	729.01	PVC	BKM-572	70	57	50
WE-349	VW-07	751.34	PVC	BKM-571	70	71.5	50
WE-350	VW-09	728.06	PVC	BKM-573	70	71	50
WE-351	VW-08	705.03	PVC	BKM-574	38	39.5	18

Notes:

1. Survey data provided by HRK 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.

LFG Extraction Well Drilling and Installation

The borings for the LFG extraction wells were drilled using an IMT AF250 drill rig with a 10 foot long, 36-inch diameter bucket auger, and a 36-inch diameter full flight auger as conditions dictated. For each of the extraction wells, the borings were advanced to within 1.0 to 9.0 feet of the design depths based on drilling conditions. The extraction wells were then constructed using 6 and 8-inch diameter Schedule 80 polyvinyl chloride (PVC) pipe and fittings or 6-inch diameter SDR 11 high-density polyethylene (HDPE) pipe and fittings. Backfill was completed with 2-inch minus round rock, hydrated bentonite chips, and clean soil as shown on the attached well construction 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 in one day. No boreholes were left open overnight.

The wells were completed with approximately 5 feet of pipe stickup above the ground surface to allow for grading, landfill cover/closure, 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 and connected to the existing gas collection and control system (GCCS) within one week.

The following variations to design were completed in conjunction with the well installations. Borings that were completed to within 4.0 feet of the design depth are not included on the following list.

- **WE-348 (VW-06):** At approximately 55-feet bgs, a significant amount of water was encountered perched below a low-permeability soil layer that filled up the boring. Water was removed from this boring but the excess moisture at the bottom caused drilling progress to stall. The boring was completed and constructed at 57-feet bgs rather than the design depth of 70-feet.

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,



Travis Berndahl, EIT
Project Professional
SCS Engineers



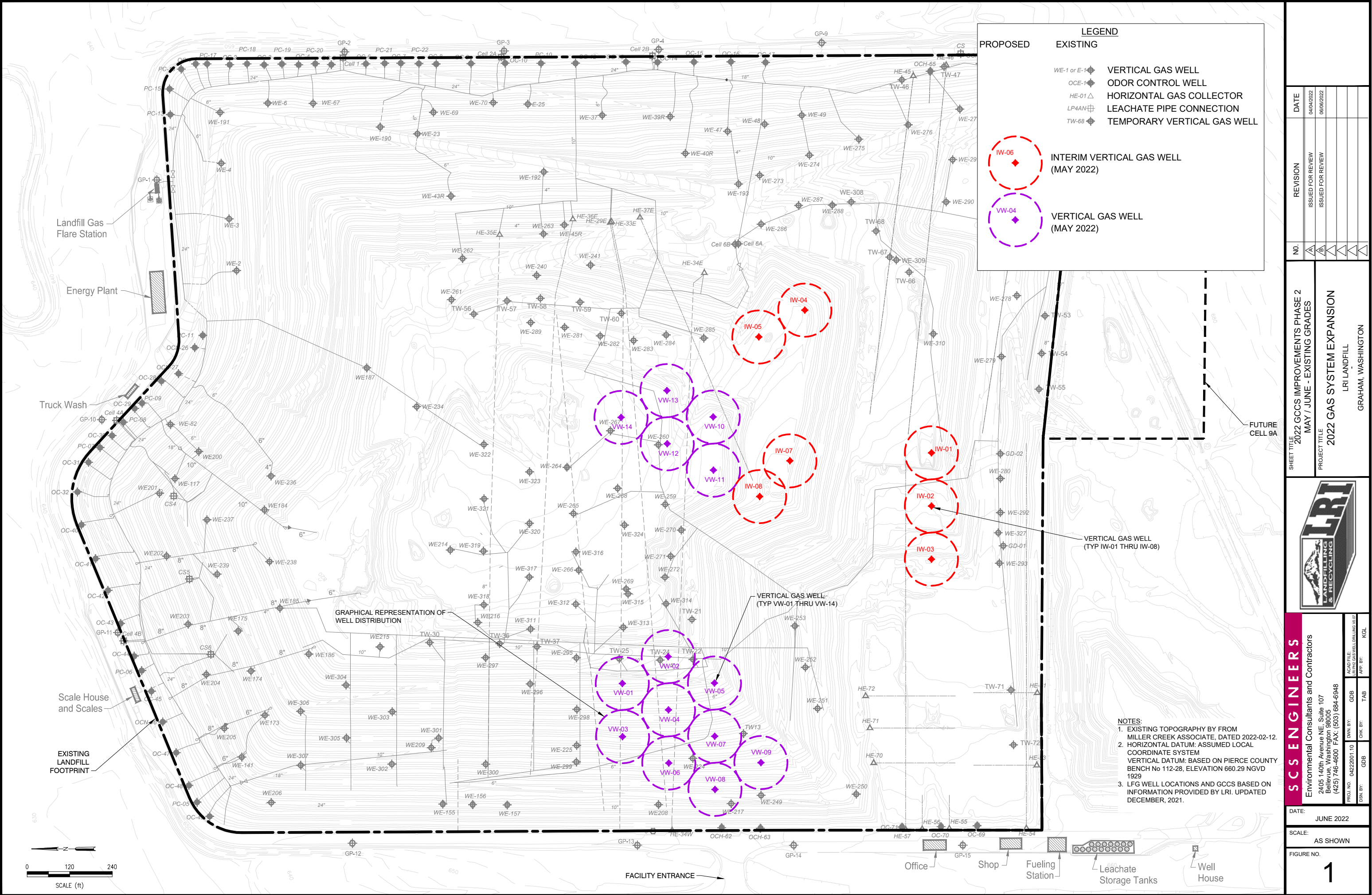
Karam Singh, P.E.
Senior Project Engineer
SCS Engineers

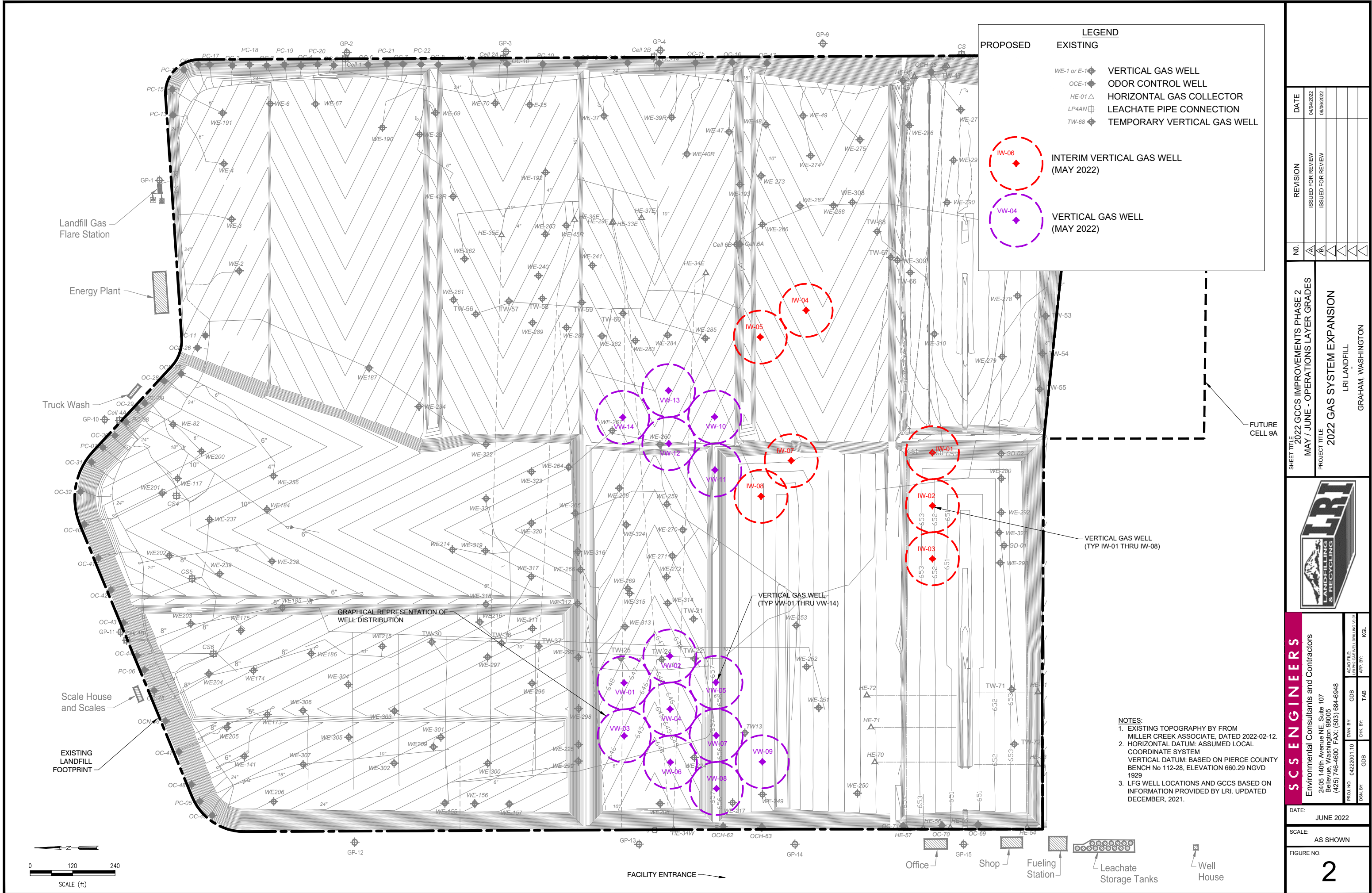
KS/TAB

cc: Ryan Roth, LRI
Olivier Moi, LRI
Kevin Green, LRI
Karam Singh, SCS
Kevin Lakey, SCS
Ruben Martinez-Barrientos, SCS
Jack Faille, SCS

Attachments:

2022 LFG Extraction Well Completion Logs
2022 LRI LF GCCS Site Plan





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Bellevue, Washington 98005-1877

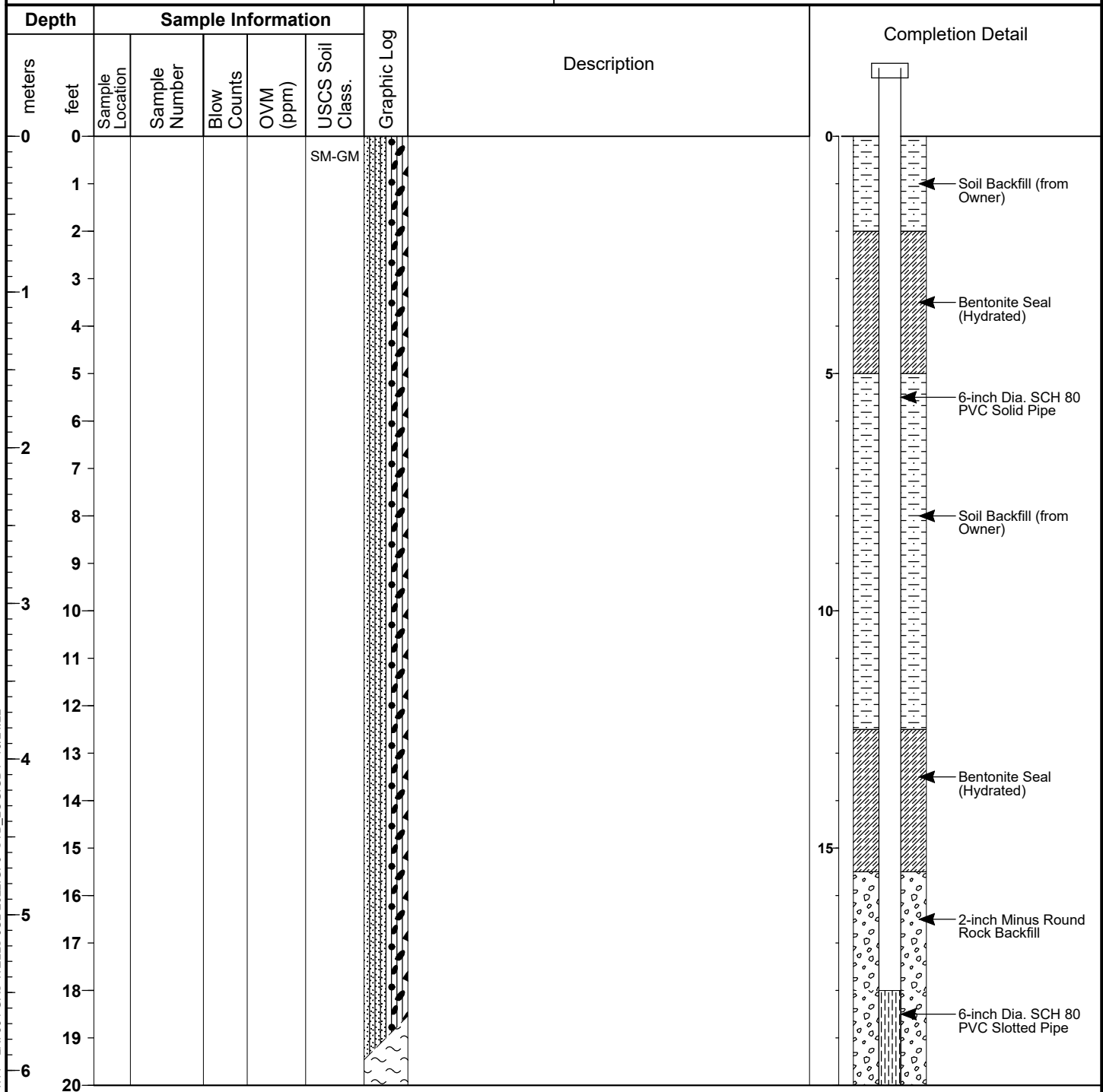
BORING NUMBER: WE-330

Page 1 of 2

LRI Landfill, Gas Wells, July 2022
30919 Meridian East
Graham, Washington

JOB NUMBER: 04222001.11

REMARKS:
Ecology Tag BKM-556. Drawing ID: 2022-C7. IW-01



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

Drilling Method: **IMT AF-250**

Logged By: **J. Faille**

Date Started: **6/17/22**

Date Ended: **6/17/22**

Boring Diameter: **36-inch**

Well Diameter: **6-inch**

Time Started: **09:15**

Time Ended: **10:28**

Total Depth: **40.0 ft.**

STANDARD_LOG_04222001.11 - LRI 304 GAS WELLS JUL 2022.GPJ STD_LOG.GDT 10/21/22

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BORING NUMBER: WE-330

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LRI Landfill, Gas Wells, July 2022

JOB NUMBER: 04222001.11

Depth		Sample Information					Graphic Log	Description	Completion Detail
meters	feet	Sample Location	Sample Number	Blow Counts	OVM (ppm)	USCS Soil Class.			
7	20					REFUSE		0928 Mixed refuse (plastic, wood, paper, and textiles). Moist. Brown. Lite decomposition, T=84°F.	20
	21								
	22								
	23								Centralizer
	24								
	25					REFUSE		0936 Mixed refuse (plastics, textiles, no soil). Moist. Black with some colors. Moderate decomposition. T=100°F.	25
8	26								
	27								
	28								
	29								
9	30								30
	31								
	32								
10	33								
	34					REFUSE		0946 Mixed refuse (plastic, wood, paper, and textiles). Moist. Black with some colors. Moderate decomposition T=100°F.	35
	35								6-inch Dia. SCH 80 PVC Slotted Pipe
	36								2-inch Minus Round Rock Backfill
11	37								
	38								Bottom Cap
	39								
12	40					REFUSE		0958 Mixed refuse (plastic and textiles). Moist. Black/ dark brown. Moderate decomposition. T=104°F. End of Boring at 40 ft	40
	41								16 oz Geotextile
	42								
13	43								
	44								

STANDARD_LOG_04222001.11 - LRI 304 GAS WELLS JUL 2022.GPJ STD_LOG.GDT 10/21/22

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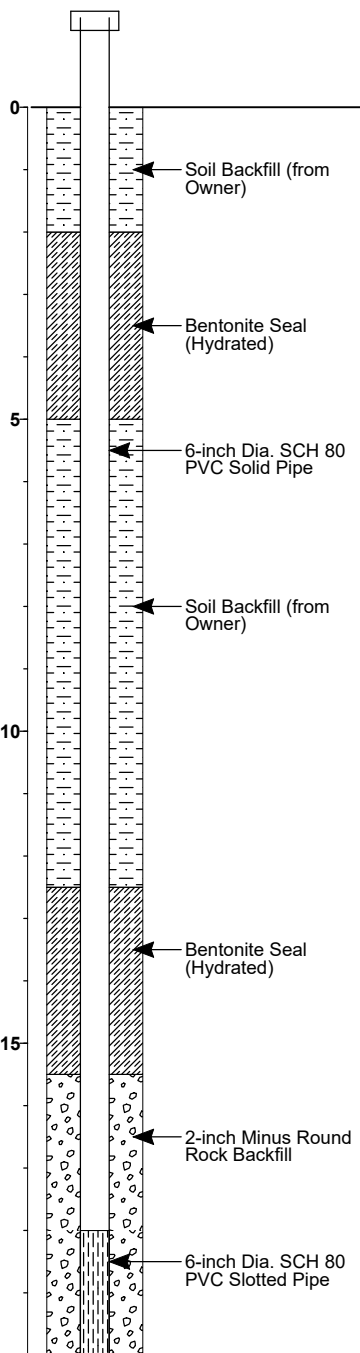
BORING NUMBER: WE-331

Page 1 of 2

LRI Landfill, Gas Wells, July 2022
30919 Meridian East
Graham, Washington

JOB NUMBER: 04222001.11

REMARKS:
Ecology Tag BKM-555. Drawing ID: 2022-C7. IW-02

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		Little to no soil cover	
1	1								
2	2					REFUSE		Mixed refuse (plastics and textiles, foam and rubber). Moist. Light brown. Lite decomposition.	
3	3								
4	4								
5	5								
6	6								
7	7								
8	8								
9	9								
10	10								
11	11								
12	12								
13	13					REFUSE		Mixed refuse (plastics, textiles, rubbers, little soil). Moist. Dark brown. Moderate decomposition. T=87°F	
14	14								
15	15								
16	16								
17	17								
18	18								
19	19								
20	20								

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

Drilling Method: **IMT AF-250**

Logged By: **J. Faille**

Date Started: **6/17/22**

Date Ended: **6/17/22**

Boring Diameter: **36-inch**

Well Diameter: **6-inch**

Time Started: **07:35**

Time Ended: **08:45**

Total Depth: **42.0 ft.**

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BORING NUMBER: WE-331

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LRI Landfill, Gas Wells, July 2022

JOB NUMBER: 04222001.11

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						REFUSE		Mixed refuse (plastics, textiles, rubbers, soil). Moist. Dark brown. Moderate decomposition. T=87°F	
25									25
26									
8 27									
28						REFUSE		Mixed refuse (plastic and textiles). Moist. Dark brown. Moderately decomposition. T=90°F.	
29									
9 30						REFUSE		Mixed refuse (plastic and textiles). Moist. Dark brown. Moderate decomposition. T=87°F.	30
31									
32									
10 33									
34									
35						REFUSE		Mixed refuse (plastic and textiles). Wet. Dark brown. Heavy decomposed. T=92°F.	35
11 36									
37									
38									
12 39									
40									
41									
42						REFUSE		Mixed refuse (plastic and textiles). Shredded tires. Saturated. Black. Heavy decomposition. T=83°F. End of Boring at 42 ft	
13 43									
44									

Centralizer

6-inch Dia. SCH 80
PVC Slotted Pipe

2-inch Minus Round
Rock Backfill

Bottom Cap

16 oz Geotextile

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Bellevue, Washington 98005-1877

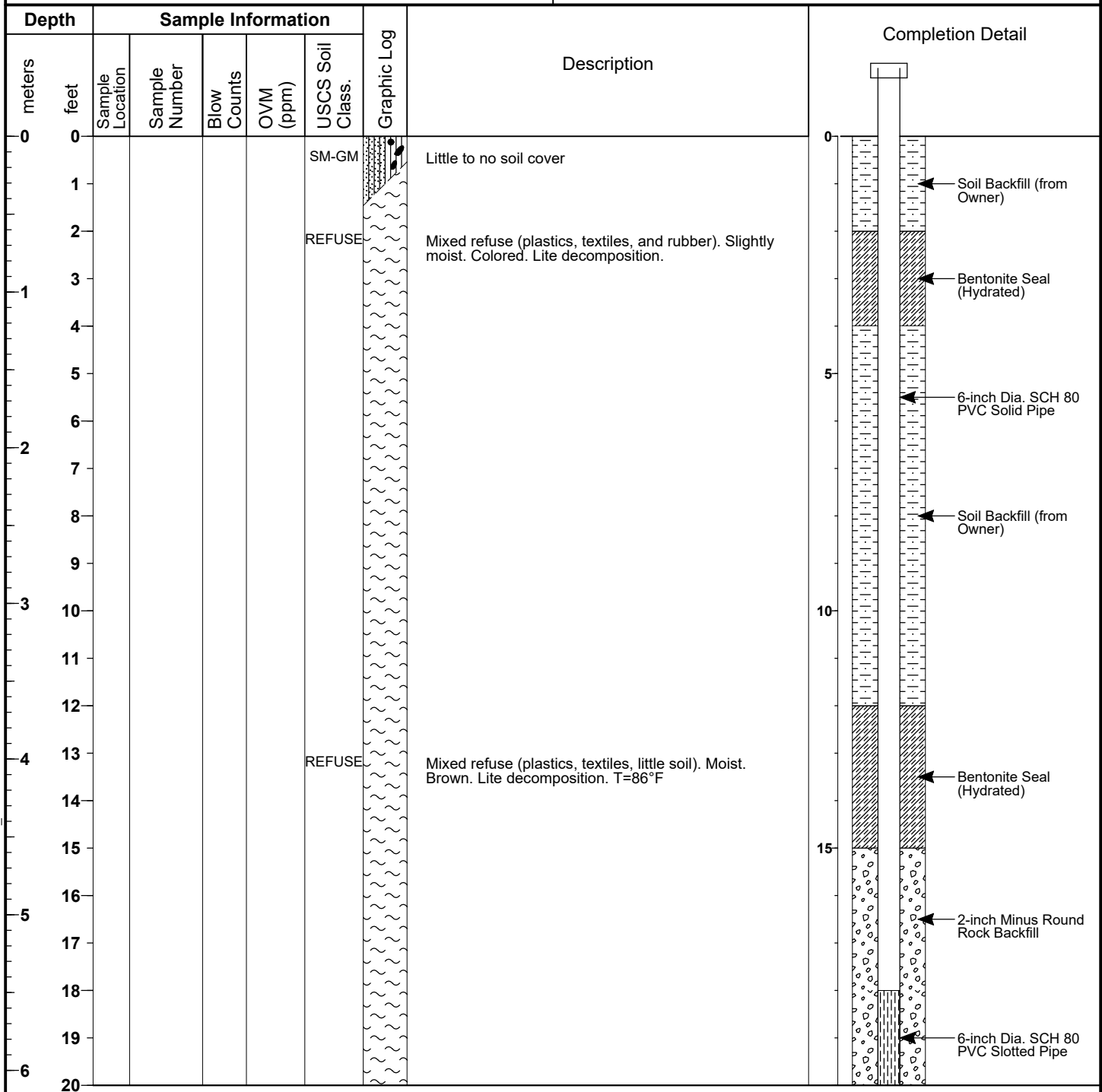
BORING NUMBER: WE-332

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LRI Landfill, Gas Wells, July 2022
30919 Meridian East
Graham, Washington

JOB NUMBER: 04222001.11

REMARKS:
Ecology Tag BKM-554. Drawing ID: 2022-C7. IW-03



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

Drilling Method: **IMT AF-250**

Logged By: **J. Faille**

Date Started: **6/16/22**

Date Ended: **6/16/22**

Boring Diameter: **36-inch**

Well Diameter: **6-inch**

Time Started: **09:57**

Time Ended: **12:32**

Total Depth: **40.0 ft.**

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BORING NUMBER: WE-332

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LRI Landfill, Gas Wells, July 2022

JOB NUMBER: 04222001.11

Depth		Sample Information					Graphic Log	Description	Completion Detail
meters	feet	Sample Location	Sample Number	Blow Counts	OVM (ppm)	USCS Soil Class.			
20						REFUSE		Mixed refuse (plastics, textiles, little soil). Moist. Brown. Lite decomposition. T=89°F	20
21									Centralizer
22									
23									
24									
25									25
26						REFUSE		Mixed refuse (plastic, textiles, rubber, and soil). Moist. Dark brown. Moderate decomposition. T=95°F.	
27									
28									
29									
30									30
31									6-inch Dia. SCH 80 PVC Slotted Pipe
32									2-inch Minus Round Rock Backfill
33									
34									
35									35
36						REFUSE		Mixed refuse (plastic and textiles). Moist. Black. Moderate decomposition. T=99°F.	
37									
38									Bottom Cap
39									
40								End of Boring at 40 ft	40
41									16 oz Geotextile
42									
43									
44									

STANDARD_LOG_04222001.11 - LRI 304 GAS WELLS JUL 2022.GPJ STD_LOG.GDT 10/21/22

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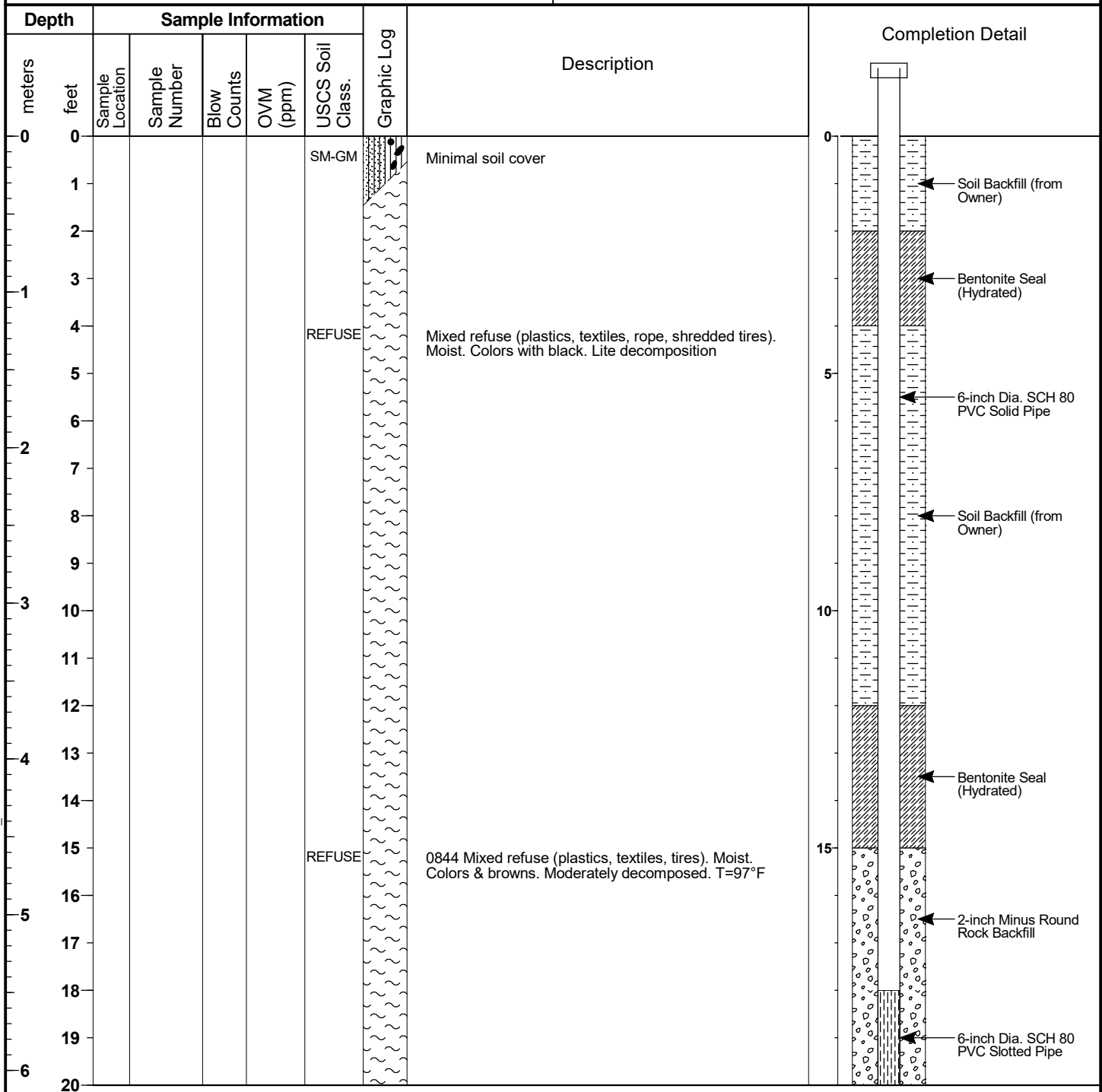
BORING NUMBER: WE-333

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LRI Landfill, Gas Wells, July 2022
30919 Meridian East
Graham, Washington

JOB NUMBER: 04222001.11

REMARKS:
Ecology Tag BKM-559. Drawing ID: 2022-C8. IW-08



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

Drilling Method: **IMT AF-250**

Logged By: **J. Faille**

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

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

Boring Diameter: **36-inch**

Well Diameter: **6-inch**

Time Started: **08:30**

Time Ended: **23:16**

Total Depth: **42.0 ft.**

STANDARD_LOG_04222001.11 - LRI 304 GAS WELLS JUL 2022.GPJ STD_LOG.GDT 10/31/22

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BORING NUMBER: WE-333

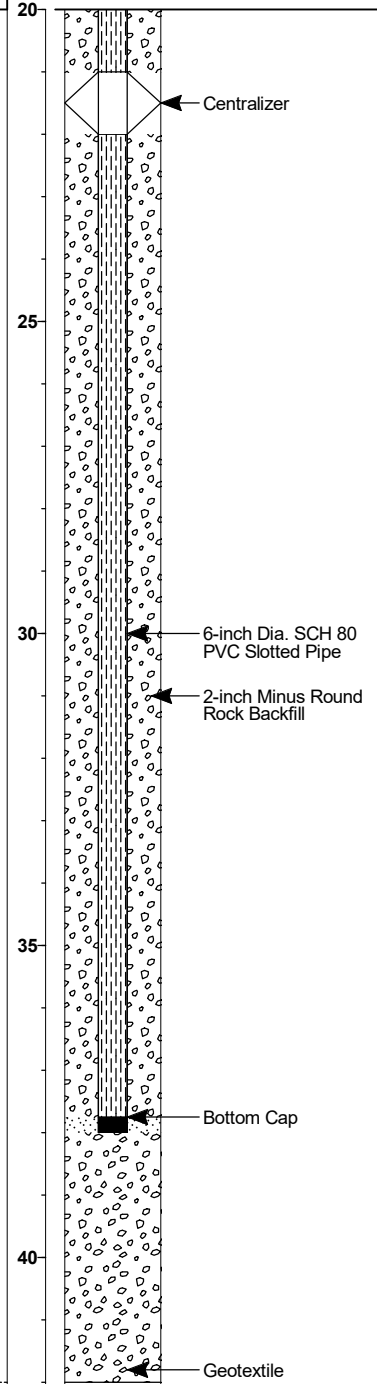
Page 2 of 2

LRI Landfill, Gas Wells, July 2022

JOB NUMBER: 04222001.11

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		0851 Mixed refuse (plastics, textiles, metal, rubber, wood). Moist. Dark brown. Moderately decomposed. T=103°F	25
8 26									
27									
28									
29									
9 30									30
31									
32									
10 33									
34									
35						REFUSE		0909 Mixed refuse (plastics, textiles, metal, rubber, wood). Moist. Dark brown. Moderately decomposed. T=100°F	35
11 36									
37									
38									
12 39									
40									
41									
42						REFUSE		0921 End of Boring at 42 ft	
13 43									
44									

STANDARD_LOG 04222001.11 - LRI 304 GAS WELLS JUL 2022.GPJ STD_LOG.GDT 10/31/22



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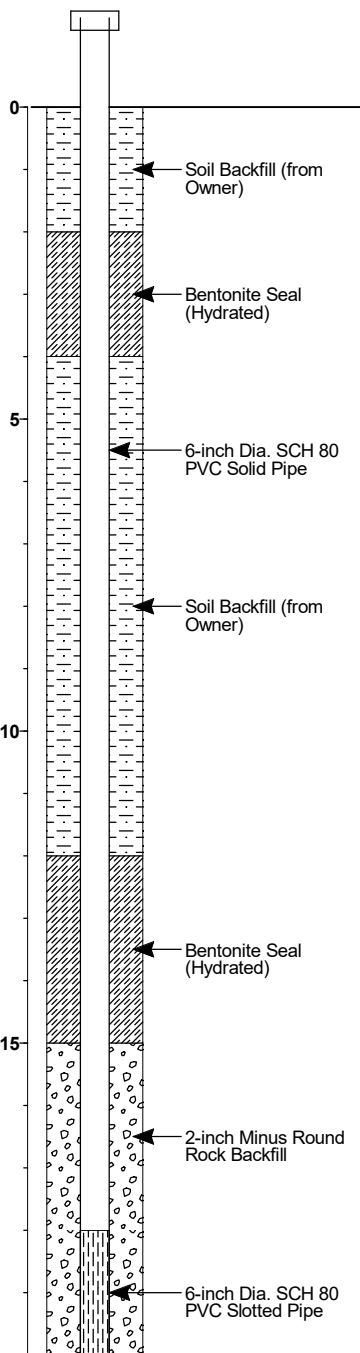
BORING NUMBER: WE-334

Page 1 of 2

LRI Landfill, Gas Wells, July 2022
30919 Meridian East
Graham, Washington

JOB NUMBER: 04222001.11

REMARKS:
Ecology Tag BKM-560. Drawing ID: 2022-C7. IW-07

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		Minimal soil cover	 Soil Backfill (from Owner) Bentonite Seal (Hydrated) 6-inch Dia. SCH 80 PVC Solid Pipe Soil Backfill (from Owner) Bentonite Seal (Hydrated) 2-inch Minus Round Rock Backfill 6-inch Dia. SCH 80 PVC Slotted Pipe
1	1								
2	2								
3	3					REFUSE		Mixed refuse (plastics, textiles, and rubber). Moist. Dark brown. Moderately decomposed.	
4	4								
5	5								
6	6								
7	7								
8	8								
9	9								
10	10								
11	11								
12	12								
13	13								
14	14								
15	15					REFUSE		1041 Mixed refuse (plastics, textiles, and rubber). Moist. Dark brown. Moderately decomposed. T=95°F	
16	16								
17	17								
18	18								
19	19								
20	20								

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

Drilling Method: **IMT AF-250**

Logged By: **J. Faille**

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

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

Boring Diameter: **36-inch**

Well Diameter: **6-inch**

Time Started: **10:35**

Time Ended: **23:16**

Total Depth: **42.0 ft.**

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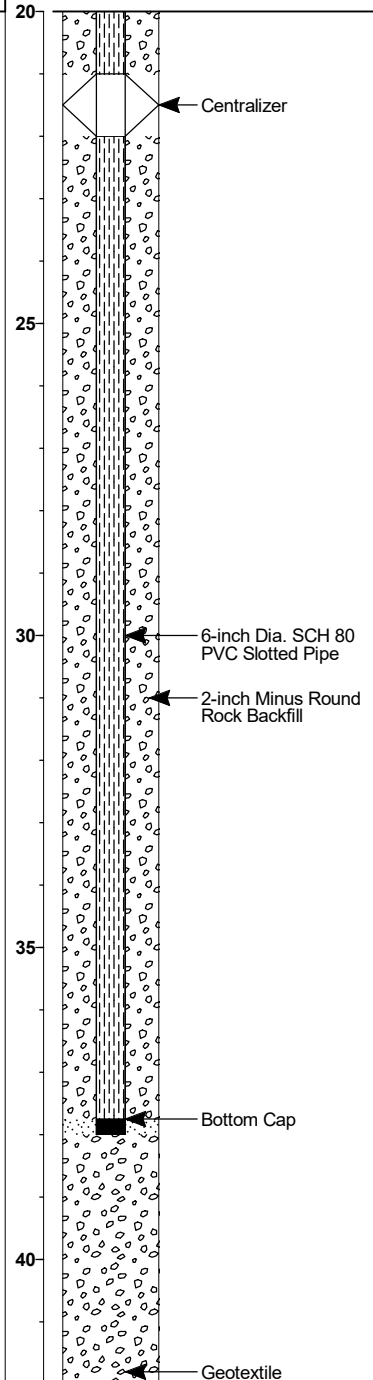
BORING NUMBER: WE-334

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LRI Landfill, Gas Wells, July 2022

JOB NUMBER: 04222001.11

Depth		Sample Information					Graphic Log	Description	Completion Detail
meters	feet	Sample Location	Sample Number	Blow Counts	OVM (ppm)	USCS Soil Class.			
20						REFUSE		1045 Mixed refuse (plastics, textiles, rubber, wood, soil). Moist. Dark brown. Moderately decomposed. T=101°F	20
21									
22									
7 23									
24									
25						REFUSE		1053 Mixed refuse (plastic, textiles). Moist. Colors. Lightly decomposed. T=100°F.	25
26									
8 27									
28									
29									
9 30									
31									
32									
10 33						REFUSE		1105 Mixed refuse (plastic, textiles, wood). Moist. Colors and browns. Moderately decomposed. Strong ammonia smell from waste steam. T=107°F.	30
34									
35									
11 36									
37									
38						REFUSE			
12 39									
40									
41									
42						REFUSE		1116 Mixed refuse (plastic, textiles, wood). Moist. Colors and browns. Moderately decomposed. Strong ammonia smell from waste steam. T=108°F. End of Boring at 42 ft	35
13 43									
44									



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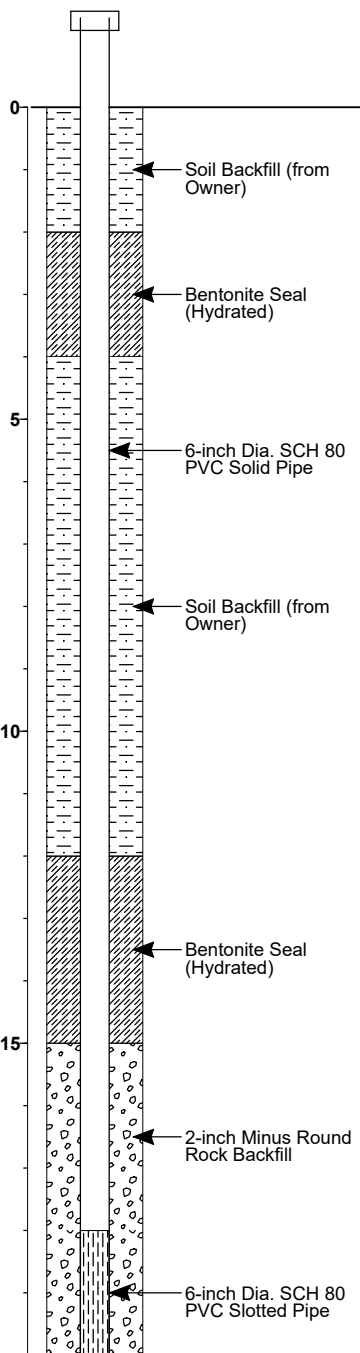
BORING NUMBER: WE-336

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LRI Landfill, Gas Wells, July 2022
30919 Meridian East
Graham, Washington

JOB NUMBER: 04222001.11

REMARKS:
Ecology Tag BKM-558. Drawing ID: 2022-C7. IW-04

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		No soil cover layer.	 Soil Backfill (from Owner) Bentonite Seal (Hydrated) 6-inch Dia. SCH 80 PVC Solid Pipe Soil Backfill (from Owner) Bentonite Seal (Hydrated) 2-inch Minus Round Rock Backfill 6-inch Dia. SCH 80 PVC Slotted Pipe
1	1								
2	2								
3	3					REFUSE		Mixed refuse (plastics and textiles). Moist. Blacks with some colors. Moderate decomposition.	
4	4								
5	5								
6	6								
7	7								
8	8								
9	9								
10	10								
11	11								
12	12								
13	13								
14	14								
15	15					REFUSE		1056 Mixed refuse (plastics and textiles). Moist. Colors. Moderate decomposition. T=107°F	
16	16								
17	17								
18	18								
19	19								
20	20								

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

Drilling Method: **IMT AF-250**

Logged By: **J. Faille**

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

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

Boring Diameter: **36-inch**

Well Diameter: **6-inch**

Time Started: **10:50**

Time Ended: **12:15**

Total Depth: **42.0 ft.**

STANDARD_LOG_04222001.11 - LRI 304 GAS WELLS JUL 2022.GPJ STD_LOG.GDT 10/21/22

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LRI Landfill, Gas Wells, July 2022

JOB NUMBER: 04222001.11

Depth		Sample Information					Graphic Log	Description	Completion Detail
meters	feet	Sample Location	Sample Number	Blow Counts	OVM (ppm)	USCS Soil Class.			
7	20								20
	21					REFUSE		1102 Mixed refuse (plastic, wood, and textiles). Very moist. Dark brown Moderate decomposition. T=118°F.	Centralizer
	22								
	23								
	24								
	25					REFUSE		1109 Mixed refuse (plastic, wood, and textiles). Very moist. Dark brown, Moderate decomposition. T=119°F.	
8	26								
	27								
	28								
	29								
9	30								6-inch Dia. SCH 80 PVC Slotted Pipe
	31								2-inch Minus Round Rock Backfill
	32								
10	33								
	34								
	35					REFUSE		1118 Mixed refuse (plastic, wood, and textiles). Very moist. Dark brown. Moderate decomposition. T=119°F.	
11	36								
	37								
	38								Bottom Cap
12	39								
	40								
	41								
	42					REFUSE		1129 Mixed refuse (plastic, wood, and textiles). Very moist. Dark brown. Moderate decomposition. T=125°F.	16 oz Geotextile
13	43							End of Boring at 42 ft	
	44								

STANDARD_LOG_04222001.11 - LRI 304 GAS WELLS JUL 2022.GPJ STD_LOG.GDT 10/21/22

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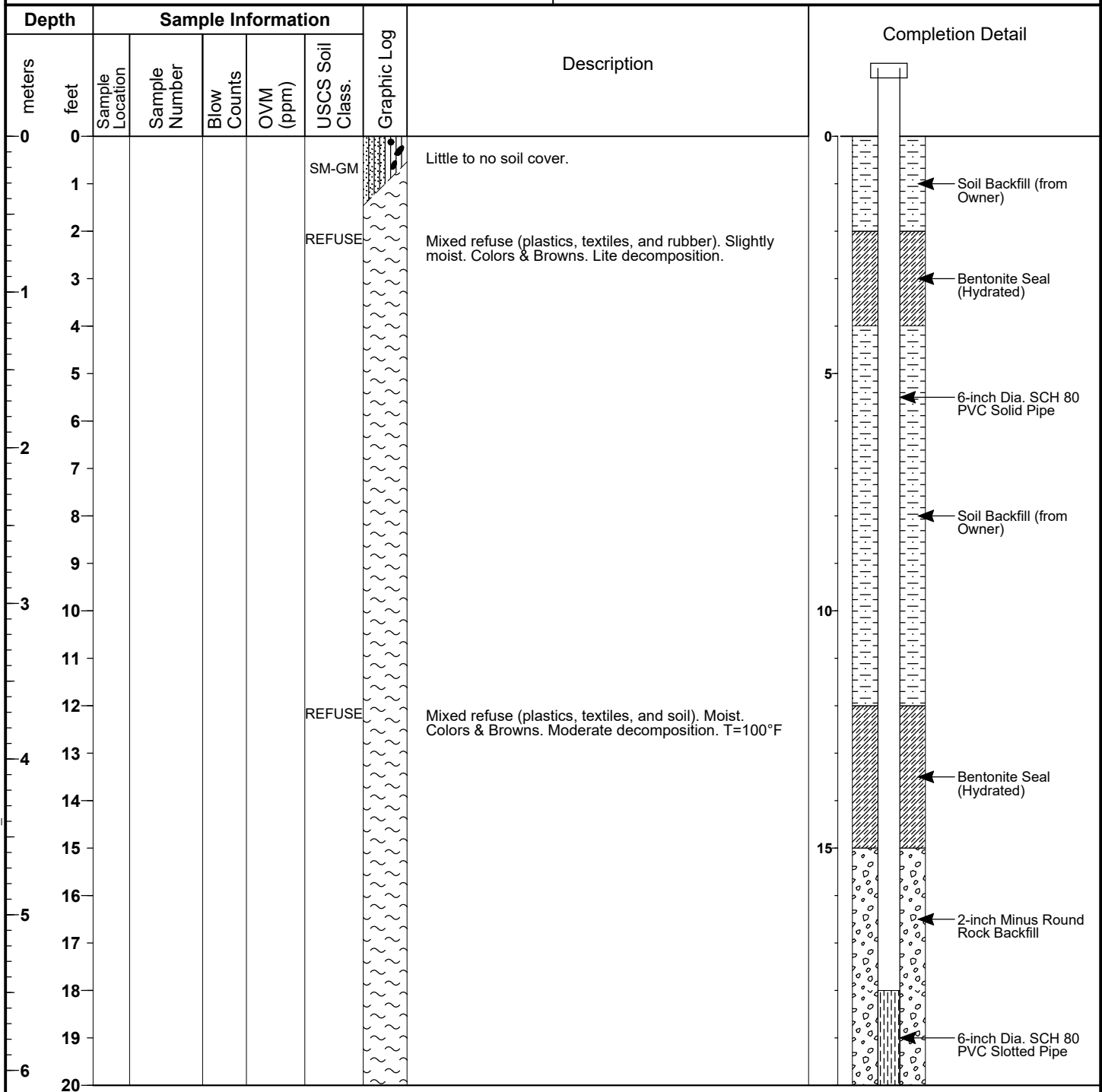
BORING NUMBER: WE-337

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LRI Landfill, Gas Wells, July 2022
30919 Meridian East
Graham, Washington

JOB NUMBER: 04222001.11

REMARKS:
Ecology Tag BKM-557. Drawing ID: 2022-C7. IW-05



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

Drilling Method: **IMT AF-250**

Logged By: **J. Faille**

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

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

Boring Diameter: **36-inch**

Well Diameter: **6-inch**

Time Started: **08:27**

Time Ended: **10:30**

Total Depth: **43.0 ft.**

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LRI Landfill, Gas Wells, July 2022

JOB NUMBER: 04222001.11

Depth		Sample Information					Graphic Log	Description	Completion Detail
meters	feet	Sample Location	Sample Number	Blow Counts	OVM (ppm)	USCS Soil Class.			
7	20								20
	21					REFUSE		Mixed refuse (plastics, textiles, and soil). Moist. Brown. Moderate decomposition. T=114°F	Centralizer
	22								
	23								
	24								
	25								25
8	26								
	27								
	28								
	29								
9	30								30
	31					REFUSE		Mixed refuse (plastic, insulation, and some metal). Slightly moist. Brown. Moderate decomposition. T=118°F.	6-inch Dia. SCH 80 PVC Slotted Pipe
	32								
10	33								2-inch Minus Round Rock Backfill
	34								
	35					REFUSE		Mixed refuse (plastic, insulation, and some metal). Slightly moist. Brown. Moderate decomposition. T=113°F.	
11	36								
	37								
	38					REFUSE		Mixed refuse (plastic, insulation, textiles, some soil). Moist. Dark brown. Moderate decomposition. T=121°F.	Bottom Cap
12	39								
	40								
	41								
	42								
13	43					REFUSE		End of Boring at 43 ft	16 oz Geotextile
	44								

STANDARD_LOG_04222001.11 - LRI 304 GAS WELLS JUL 2022.GPJ STD_LOG.GDT 10/21/22

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LRI Landfill, Gas Wells, July 2022
30919 Meridian East
Graham, Washington

JOB NUMBER: 04222001.11

REMARKS:
Ecology Tag BKM-565. Drawing ID: 2022-C6. VW-11

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		Brown soil, dry.	Soil Backfill (from Owner) Bentonite Seal (Hydrated) 6-inch Dia. SCH 80 PVC Solid Pipe Soil Backfill (from Owner) Settlement Joint / SCH 80 PVC Solid Pipe 8-inch Dia. SCH 80 PVC Solid Pipe Bentonite Seal (Hydrated) 2-inch Minus Round Rock Backfill 8-inch Dia. SCH 80 PVC Screened Pipe
1	1					REFUSE		Mixed Refuse (plastics, textiles, foam, rubber, wood). Moist. Many colors. Lite decomposition.	
2	2								
3	3								
4	4								
5	5								
6	6								
7	7								
8	8								
9	9								
10	10					REFUSE		0735 Mixed refuse (plastics, textiles, metal, wood, soil). Very moist. Black/dark brown, few colors. Medium decomposition. T=90°F	
11	11								
12	12								
13	13								
14	14								
15	15								
16	16								
17	17								
18	18								
19	19								
20	20								

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

Drilling Method: **IMT AF-250**

Logged By: **J. Faille**

Date Started: **6/27/22**

Date Ended: **6/27/22**

Boring Diameter: **36-inch**

Well Diameter: **8-inch**

Time Started: **07:25**

Time Ended: **09:20**

Total Depth: **71.0 ft.**

STANDARD_LOG_04222001.11 - LRI 304 GAS WELLS JUL 2022.GPJ STD_LOG.GDT 10/23/22

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LRI Landfill, Gas Wells, July 2022

JOB NUMBER: 04222001.11

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		0745 Mixed refuse (plastics, textiles, wire, soil). Very moist. Black/dark brown, few colors. Medium decomposition. T=105°	25
8 26									
27									
28									
29									
9 30									30
31									
32									
10 33									
34									
35									35
11 36									8-inch Dia. SCH 80 PVC Screened Pipe
37									2-inch Minus Round Rock Backfill
38						REFUSE		0800 Mixed refuse (plastics, textiles, wood, soil). Moist. Browns, few colors. Medium decomposition. T=102°	
12 39									
40									40
41									
42									
13 43									
44									

STANDARD_LOG 04222001.11 - LRI 304 GAS WELLS JUL 2022.GPJ STD_LOG.GDT 10/23/22

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BORING NUMBER: WE-338

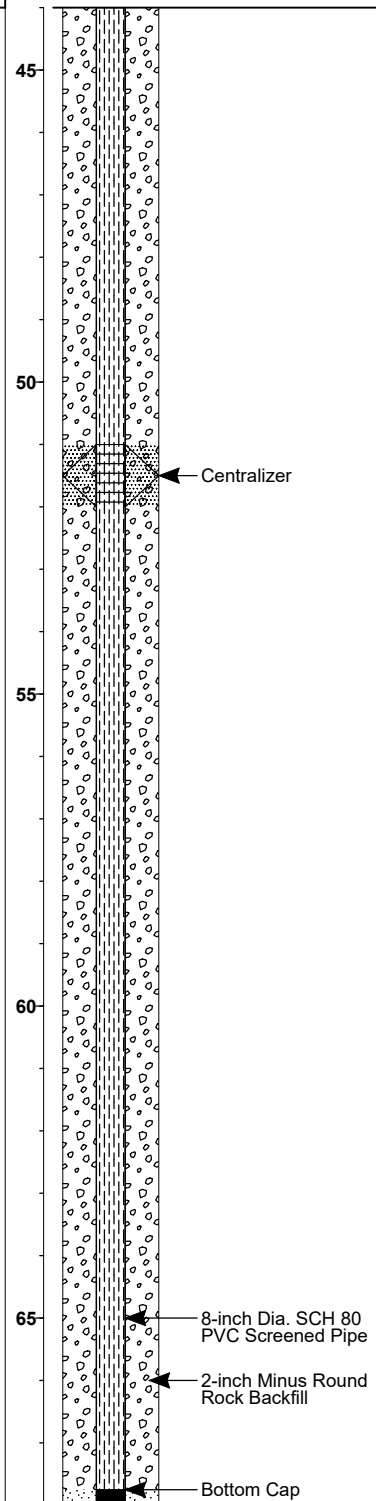
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LRI Landfill, Gas Wells, July 2022

JOB NUMBER: 04222001.11

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						REFUSE		0820 Mixed refuse (plastics, textiles, soil). Moist. Dark browns, few colors. Medium decomposition. T=111°	
52									
16	53								
54									
55									
17	56								
57						REFUSE		0834 Mixed refuse (plastics, textiles, soil). Moist. Dark browns, few colors. Medium decomposition. T=115°	
58									
18	59								
60									
61									
19	62					REFUSE		0847 Mixed refuse (plastics, textiles, soil). Moist. Black/dark browns, few colors. Medium decomposition. T=113°	
63									
64									
65									
20	66								
67									
68									

STANDARD_LOG 04222001.11 - LRI 304 GAS WELLS JUL 2022.GPJ STD_LOG.GDT 10/23/22



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JOB NUMBER: 04222001.11

Depth		Sample Information					Graphic Log	Description	Completion Detail
meters	feet	Sample Location	Sample Number	Blow Counts	OVM (ppm)	USCS Soil Class.			
68									
21	69								
	70								
	71								
22	72					REFUSE		0920 End of Boring at 71 ft. T=117°	
	73								
	74								
	75								
23	76								
	77								
	78								
24	79								
	80								
	81								
25	82								
	83								
	84								
26	85								
	86								
	87								
	88								
27	89								
	90								
	91								
28	92								

STANDARD_LOG 04222001.11 - LRI 304 GAS WELLS JUL 2022.GPJ STD_LOG.GDT 10/23/22

70

75

80

85

90

Geotextile

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BORING NUMBER: WE-339

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LRI Landfill, Gas Wells, July 2022
30919 Meridian East
Graham, Washington

JOB NUMBER: 04222001.11

REMARKS:
Ecology Tag BKM-564. Drawing ID: 2022-C6. VW-10

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		Brown soil, dry.	
1	1					REFUSE		Mixed Refuse (plastics, textiles, rubber, wood, metal wire, sheeting). Moist, Many colors. Lite decomposition.	
2	2								
3	3								
4	4								
5	5								
6	6								
7	7								
8	8								
9	9								
10	10					REFUSE		0820 Mixed Refuse (plastics, textiles). Moist, Many colors. Medium decomposition. T=108°F	
11	11								
12	12								
13	13								
14	14								
15	15								
16	16								
17	17								
18	18					REFUSE		0820 Mixed Refuse (plastics, textiles). Moist, Many colors. Medium decomposition. T=112°F	
19	19								
20	20								

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

Drilling Method: **IMT AF-250**

Logged By: **J. Faille**

Date Started: **6/27/22**

Date Ended: **6/27/22**

Boring Diameter: **36-inch**

Well Diameter: **8-inch**

Time Started: **08:10**

Time Ended: **11:50**

Total Depth: **70.0 ft.**

STANDARD_LOG_04222001.11 - LRI 304 GAS WELLS JUL 2022.GPJ STD_LOG.GDT 10/23/22

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LRI Landfill, Gas Wells, July 2022

JOB NUMBER: 04222001.11

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
8 26						REFUSE		0841 Mixed Refuse (plastics, textiles, soil). Moist. Many colors. Lite decomposition. T=118°F	
27									
28									
29									
9 30									30
31									
32									
10 33									
34									
35									35
11 36									
37									
38						REFUSE		0911 Mixed refuse (plastics, textiles, soils). Wet. Browns and some colors. Medium decomposition. T=122°F	
39									
12 40									40
41									
42									
13 43									
44									

Centralizer

8-inch Dia. SCH 80
PVC Screened Pipe

2-inch Minus Round
Rock Backfill

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BORING NUMBER: WE-339

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LRI Landfill, Gas Wells, July 2022

JOB NUMBER: 04222001.11

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						REFUSE		0920 Mixed refuse (plastics, textiles, soils). Wet. Browns and some colors. Medium decomposition. T=124°F	
51									
52									Centralizer
16	53								
54									
55									
17	56								
57									
58									
18	59								
60						REFUSE		0952 Mixed refuse (plastics, textiles, soils). Slightly moist. Browns and some colors. Medium decomposition. T=130°F	
61									
62						REFUSE		Blue clay layer	
19	63								
64									
65									8-inch Dia. SCH 80 PVC Screened Pipe
20	66								2-inch Minus Round Rock Backfill
67									
68									Bottom Cap

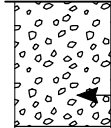
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LRI Landfill, Gas Wells, July 2022

JOB NUMBER: 04222001.11

Depth		Sample Information					Graphic Log	Description	Completion Detail
meters	feet	Sample Location	Sample Number	Blow Counts	OVM (ppm)	USCS Soil Class.			
68									
21	69								
	70					REFUSE		1000 End of Boring at 70 ft	 Geotextile
	71								
22	72								
	73								
	74								
	75								
23	76								
	77								
	78								
24	79								
	80								
	81								
25	82								
	83								
	84								
26	85								
	86								
	87								
	88								
27	89								
	90								
	91								
28	92								

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BORING NUMBER: WE-340

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LRI Landfill, Gas Wells, July 2022
30919 Meridian East
Graham, Washington

JOB NUMBER: 04222001.11

REMARKS:
Ecology Tag BKM-562. Drawing ID: 2022-C6. VW-13

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		Brown soil, dry.	Soil Backfill (from Owner) Bentonite Seal (Hydrated) 6-inch Dia. SCH 80 PVC Solid Pipe Soil Backfill (from Owner) Settlement Joint / SCH 80 PVC Solid Pipe 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					REFUSE		Mixed Refuse (plastics, textiles, wood). Dry. Blacks, browns and some colors.	
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					REFUSE		0735 Mixed refuse (plastics, textiles, soil). Wet. Black. Lite decomposition. T=75°F	
16	16								
17	17								
18	18								
19	19								
20	20								

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

Drilling Method: **IMT AF-250**

Logged By: **K. Shah**

Date Started: **6/24/22**

Date Ended: **6/24/22**

Boring Diameter: **36-inch**

Well Diameter: **8-inch**

Time Started: **07:15**

Time Ended: **11:40**

Total Depth: **70.0 ft.**

STANDARD_LOG_04222001.11 - LRI 304 GAS WELLS JUL 2022.GPJ STD_LOG.GDT 10/24/22

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JOB NUMBER: 04222001.11

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						REFUSE		0807 Mixed refuse (plastics, textiles, soil). Wet. Black. Lite decomposition. T=95°F	30
31									
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						REFUSE		0818 Mixed refuse (plastics, textiles, soil). Wet. Black. Lite decomposition. T=106°F	
13 43									
44									

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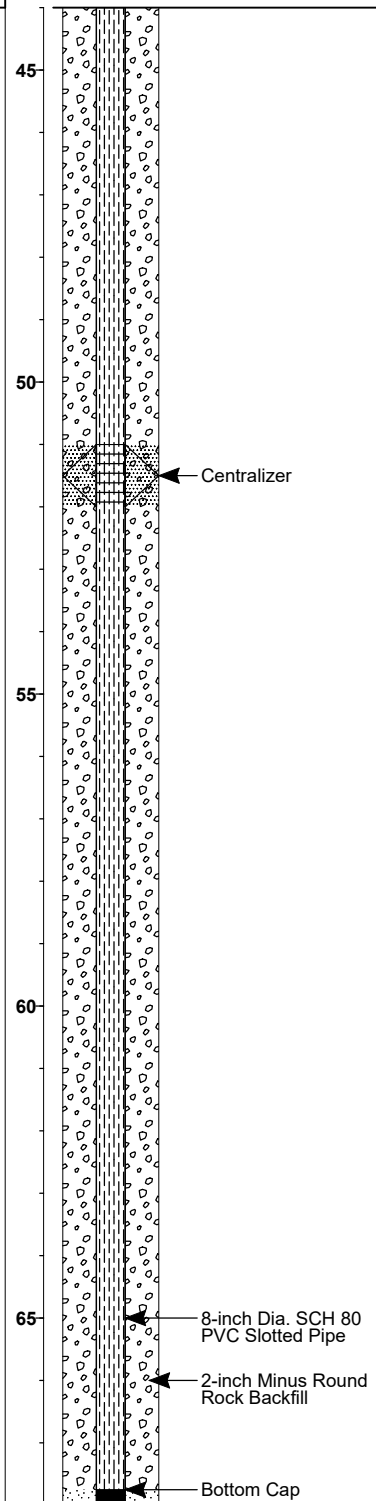
BORING NUMBER: WE-340

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LRI Landfill, Gas Wells, July 2022

JOB NUMBER: 04222001.11

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									
16	53								
54									
55									
17	56								
57									
58									
18	59								
60									
61									
19	62								
63									
64									
65									
20	66								
67									
68									



STANDARD_LOG 04222001.11 - LRI 304 GAS WELLS JUL 2022.GPJ STD_LOG.GDT 10/24/22

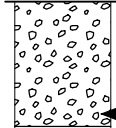
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JOB NUMBER: 04222001.11

Depth		Sample Information					Graphic Log	Description	Completion Detail
meters	feet	Sample Location	Sample Number	Blow Counts	QVM (ppm)	USCS Soil Class.			
68									
21	69								
	70					REFUSE		0905 Mixed refuse (plastics, textiles, soil). Black/brown. Medium decomposition. T=105°F End of Boring at 70 ft	 16 oz Geotextile
	71								
22	72								
	73								
	74								
	75								
23	76								
	77								
	78								
24	79								
	80								
	81								
25	82								
	83								
	84								
26	85								
	86								
	87								
	88								
27	89								
	90								
	91								
28	92								

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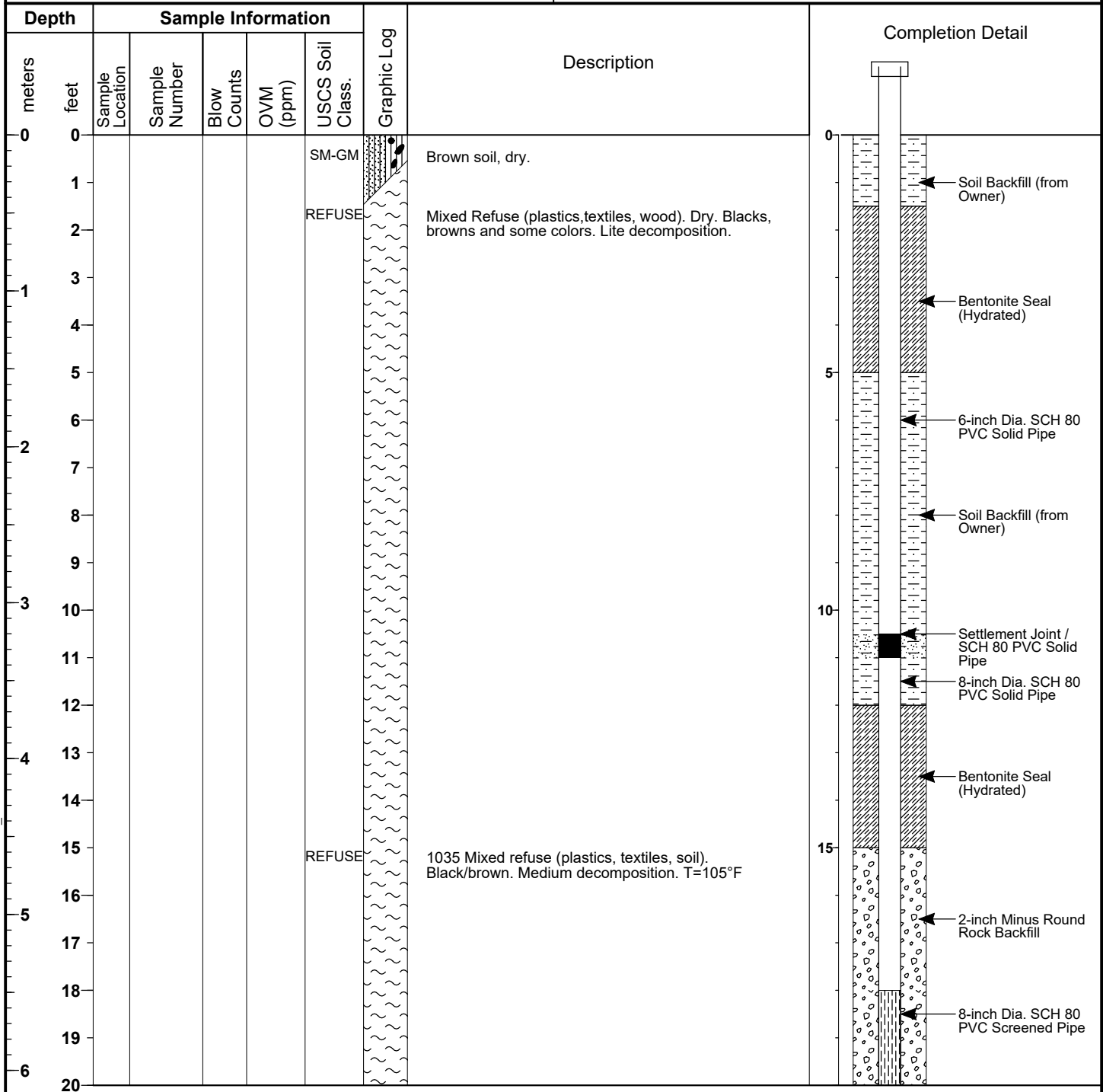
BORING NUMBER: WE-341

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LRI Landfill, Gas Wells, July 2022
30919 Meridian East
Graham, Washington

JOB NUMBER: 04222001.11

REMARKS:
Ecology Tag BKM-563. Drawing ID: 2022-C6. VW-12



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

Drilling Method: **IMT AF-250**

Logged By: **K. Shah**

Date Started: **6/26/22**

Date Ended: **6/26/22**

Boring Diameter: **36-inch**

Well Diameter: **8-inch**

Time Started: **09:35**

Time Ended: **12:10**

Total Depth: **72.0 ft.**

STANDARD_LOG_04222001.11 - LRI 304 GAS WELLS JUL 2022.GPJ STD_LOG.GDT 10/24/22

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BORING NUMBER: WE-341

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JOB NUMBER: 04222001.11

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						REFUSE		1047 Mixed refuse (plastics, textiles, wood, soil). T=95°F	30
31									
32									
10 33									
34									
35									35
11 36									8-inch Dia. SCH 80 PVC Screened Pipe
37									2-inch Minus Round Rock Backfill
38									
39									
12 40									40
41									
42									
13 43									
44									

STANDARD_LOG_04222001.11 - LRI 304 GAS WELLS JUL 2022.GPJ STD_LOG.GDT 10/24/22

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JOB NUMBER: 04222001.11

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		1110 Mixed refuse (plastics, textiles, soil). Black. Medium decomposition. T=108°F	
48									
15	49								
50									
51									
52									
16	53								
54									
55									
17	56								
57									
58									
18	59								
60									
61									
19	62								
63									
64									
65									
20	66								
67									
68									

45

50

55

60

65

Centralizer

8-inch Dia. SCH 80
PVC Screened Pipe

2-inch Minus Round
Rock Backfill

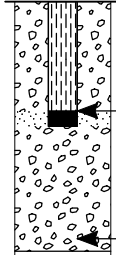
2405 140th Avenue NE, Suite 107
Bellevue, Washington 98005-1877

BORING NUMBER: WE-341

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LRI Landfill, Gas Wells, July 2022

JOB NUMBER: 04222001.11

Depth		Sample Information					Graphic Log	Description	Completion Detail
meters	feet	Sample Location	Sample Number	Blow Counts	OVM (ppm)	USCS Soil Class.			
68	68								
21	69								
	70								
	71								
22	72					REFUSE		1018 Mixed refuse (plastics, textiles, soil). Black/brown. Heavy decomposition. T=118°F End of Boring at 72 ft	 Bottom Cap Geotextile
	73								
	74								
	75								
23	76								
	77								
	78								
24	79								
	80								
	81								
25	82								
	83								
	84								
26	85								
	86								
	87								
	88								
27	89								
	90								
	91								
28	92								

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Bellevue, Washington 98005-1877

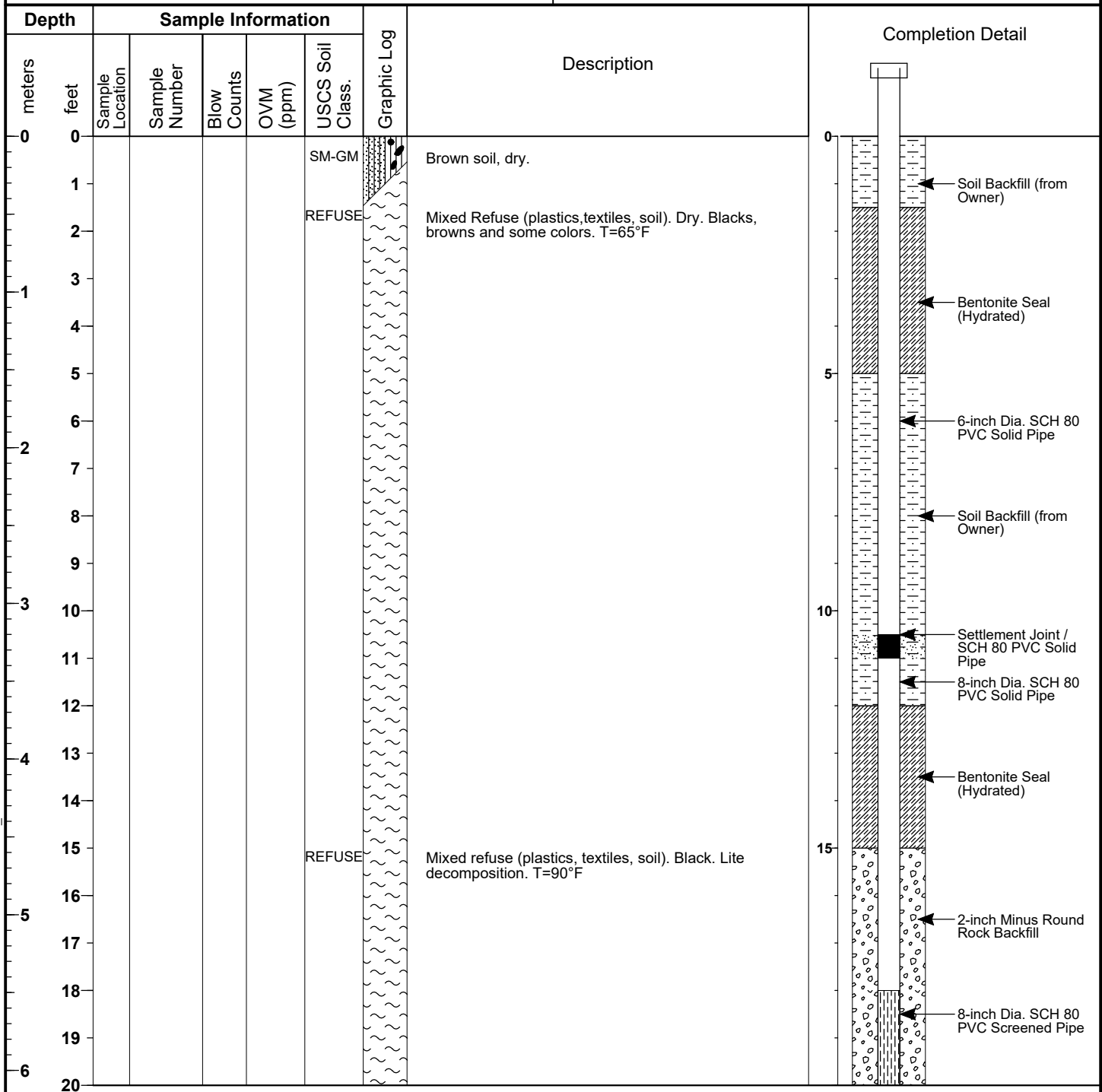
BORING NUMBER: WE-342

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LRI Landfill, Gas Wells, July 2022
30919 Meridian East
Graham, Washington

JOB NUMBER: 04222001.11

REMARKS:
Ecology Tag BKM-561. Drawing ID: 2022-C6. VW-14



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

Drilling Method: **IMT AF-250**

Logged By: **K. Shah**

Date Started: **6/23/22**

Date Ended: **6/23/22**

Boring Diameter: **36-inch**

Well Diameter: **8-inch**

Time Started: **08:15**

Time Ended: **12:00**

Total Depth: **72.0 ft.**

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Bellevue, Washington 98005-1877

BORING NUMBER: WE-342

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LRI Landfill, Gas Wells, July 2022

JOB NUMBER: 04222001.11

Depth		Sample Information					Graphic Log	Description	Completion Detail
meters	feet	Sample Location	Sample Number	Blow Counts	QVM (ppm)	USCS Soil Class.			
20									20
21									
22									
7 23									
24									
25									25
26									
8 27									
28									
29									
9 30						REFUSE		Mixed refuse (plastics, textiles, soil). Wet. Brown. Lite decomposition. T=95°F	30
31									
32									
10 33									
34									
35									35
11 36									8-inch Dia. SCH 80 PVC Screened Pipe
37									2-inch Minus Round Rock Backfill
38									
39									
12 40									40
41									
42									
13 43									
44									

STANDARD_LOG_04222001.11 - LRI 304 GAS WELLS JUL 2022.GPJ STD_LOG.GDT 10/24/22

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

BORING NUMBER: WE-342

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LRI Landfill, Gas Wells, July 2022

JOB NUMBER: 04222001.11

Depth		Sample Information					Graphic Log	Description	Completion Detail
meters	feet	Sample Location	Sample Number	Blow Counts	OVM (ppm)	USCS Soil Class.			
44						REFUSE		0953 Mixed refuse (plastics). Wet. Black. Lite decomposition. T=107°F	
45									
14	46								
47									
48									
15	49								
50									
51									
52						REFUSE		1012 Mixed refuse (plastics). Wet. Black. Medium decomposition. T=101°F	
16	53								
54									
55									
17	56								
57									
58									
18	59								
60									
61									
19	62								
63									
64									
65									
20	66								
67									
68									

45

50

55

60

65

Centralizer

8-inch Dia. SCH 80
PVC Screened Pipe

2-inch Minus Round
Rock Backfill

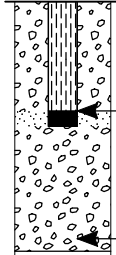
2405 140th Avenue NE, Suite 107
Bellevue, Washington 98005-1877

BORING NUMBER: WE-342

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LRI Landfill, Gas Wells, July 2022

JOB NUMBER: 04222001.11

Depth		Sample Information					Graphic Log	Description	Completion Detail
meters	feet	Sample Location	Sample Number	Blow Counts	OVM (ppm)	USCS Soil Class.			
68	68								
21	69								
	70								
	71								
22	72					REFUSE		1200 Mixed refuse (plastics, textiles, soil). Black/brown. Medium decomposition. T=103°F End of Boring at 72 ft	 Bottom Cap 16 oz Geotextile
	73								
	74								
	75								
23	76								
	77								
	78								
24	79								
	80								
	81								
25	82								
	83								
	84								
26	85								
	86								
	87								
	88								
27	89								
	90								
	91								
28	92								

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Bellevue, Washington 98005-1877

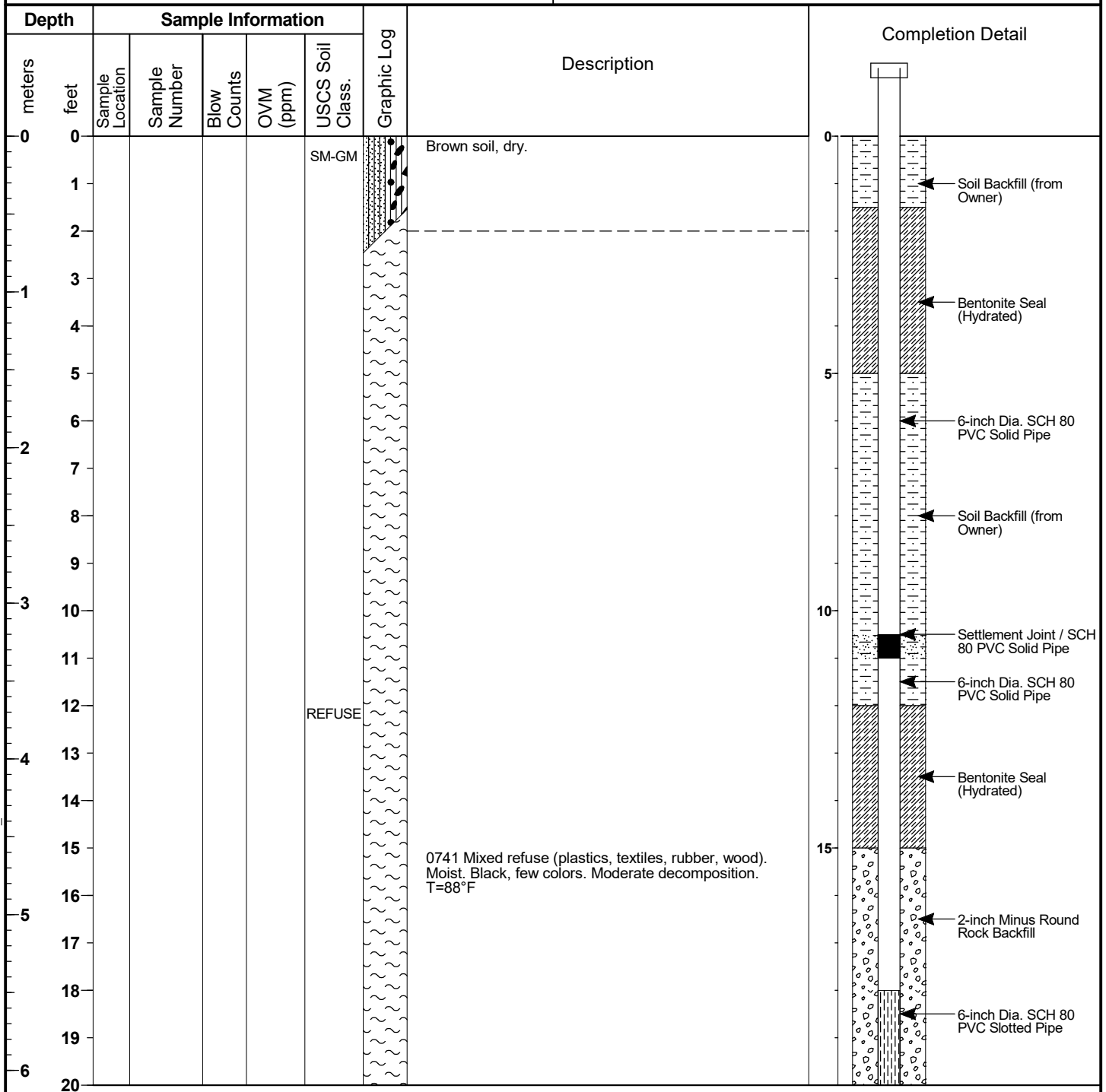
BORING NUMBER: WE-343

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LRI Landfill, Gas Wells, July 2022
30919 Meridian East
Graham, Washington

JOB NUMBER: 04222001.11

REMARKS:
Ecology Tag BKM-566. Drawing ID: 2022-C5. VW-02



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

Drilling Method: **IMT AF-250**

Logged By: **J. Faille**

Date Started: **6/29/22**

Date Ended: **6/29/22**

Boring Diameter: **36-inch**

Well Diameter: **8-inch**

Time Started: **07:30**

Time Ended: **00:35**

Total Depth: **73.0 ft.**

STANDARD_LOG_04222001.11 - LRI 304 GAS WELLS JUL 2022.GPJ STD_LOG.GDT 10/31/22

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BORING NUMBER: WE-343

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LRI Landfill, Gas Wells, July 2022

JOB NUMBER: 04222001.11

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								0750 Mixed refuse (plastics, textiles, wood, metal). Moist. Dark browns and colors. Moderate decomposition. T=96°F	25
8 26									
27									
28									
29									
9 30						REFUSE		0759 Mixed refuse (plastics, metal wire). Moist. Black, few colors. Moderate decomposition. T=109°F	30
31									
32									
10 33									
34									
35									35
11 36						REFUSE			6-inch Dia. SCH 80 PVC Slotted Pipe
37									2-inch Minus Round Rock Backfill
38									
39									
12 40									40
41									
42								0816 Mixed refuse (plastics, metal wire). Moist. Black, few colors. Moderate decomposition. T=116°F	
13 43									
44									

STANDARD_LOG 04222001.11 - LRI 304 GAS WELLS JUL 2022.GPJ STD_LOG.GDT 10/31/22

2405 140th Avenue NE, Suite 107
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BORING NUMBER: WE-343

Page 3 of 4

LRI Landfill, Gas Wells, July 2022

JOB NUMBER: 04222001.11

Depth		Sample Information					Graphic Log	Description	Completion Detail
meters	feet	Sample Location	Sample Number	Blow Counts	OVM (ppm)	USCS Soil Class.			
44						REFUSE			
45									
14	46								
47									
48									
15	49								
50									
51								0831 Mixed refuse (plastics, textiles). Wet. Black, few colors. Moderate decomposition. T=125°F	
52									
16	53								
54									
55									
17	56					REFUSE			
57									
58									
18	59								
60									
61									
19	62								
63									
64									
65									
20	66								
67									
68									

45

50

55

60

65

Centralizer

6-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-343

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LRI Landfill, Gas Wells, July 2022

JOB NUMBER: 04222001.11

Depth		Sample Information					Graphic Log	Description	Completion Detail
meters	feet	Sample Location	Sample Number	Blow Counts	OM (ppm)	USCS Soil Class.			
68									
21	69								
	70								
	71								
	72					REFUSE		Browns and colors, saturated, mixed refuse (plastics, textiles, soil). Very decomposed. T=125°F	
22								End of boring at 72 ft	
	73								
	74								
	75								
23	76								
	77								
	78								
24	79								
	80								
	81								
25	82								
	83								
	84								
26	85								
	86								
	87								
	88								
27	89								
	90								
	91								
28	92								

STANDARD_LOG 04222001.11 - LRI 304 GAS WELLS JUL 2022.GPJ STD_LOG.GDT 10/31/22

70

75

80

85

90

16 oz Geotextile

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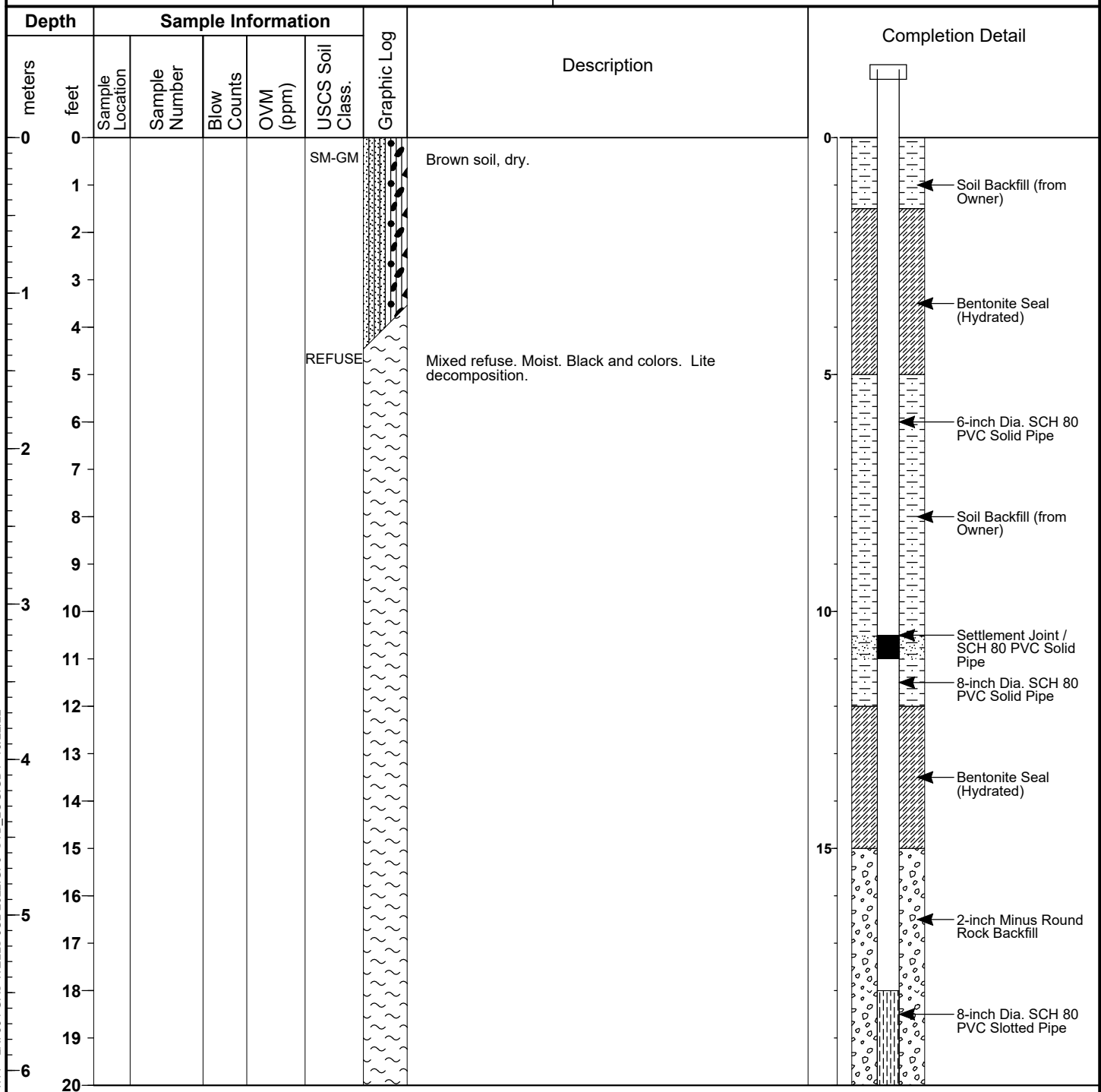
BORING NUMBER: WE-344

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LRI Landfill, Gas Wells, July 2022
30919 Meridian East
Graham, Washington

JOB NUMBER: 04222001.11

REMARKS:
Ecology Tag BKM-570. Drawing ID: 2022-C5. VW-05



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

Drilling Method: **IMT AF-250**

Logged By: **J. Faille**

Date Started: **7/7/22**

Date Ended: **7/7/22**

Boring Diameter: **36-inch**

Well Diameter: **8-inch**

Time Started: **07:30**

Time Ended: **14:10**

Total Depth: **113.0 ft.**

STANDARD_LOG_04222001.11 - LRI 304 GAS WELLS JUL 2022.GPJ STD_LOG.GDT 10/22/22

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BORING NUMBER: WE-344

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LRI Landfill, Gas Wells, July 2022

JOB NUMBER: 04222001.11

Depth		Sample Information					Graphic Log	Description	Completion Detail
meters	feet	Sample Location	Sample Number	Blow Counts	OVM (ppm)	USCS Soil Class.			
20						REFUSE		Mixed refuse. Saturated. Black and colors. Lite decomposition.	20
21									Centralizer
22									
23									
24									
25						REFUSE		0751 Mixed refuse (platics, textiles). Lite decomposition. Wet. Mostly Black and some colors. T=84°F	25
26									
27									
28									
29									
30									
31									
32									
33									
34									
35						REFUSE		0805 Mixed refuse (platics, textiles). Moderate/heavy decomposition. Wet. T=111°F	35
36									8-inch Dia. SCH 80 PVC Slotted Pipe
37									2-inch Minus Round Rock Backfill
38									
39									
40									
41									
42									
43									
44									

STANDARD_LOG_04222001.11 - LRI 304 GAS WELLS JUL 2022.GPJ STD_LOG.GDT 10/22/22

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Bellevue, Washington 98005-1877

BORING NUMBER: WE-344

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LRI Landfill, Gas Wells, July 2022

JOB NUMBER: 04222001.11

Depth		Sample Information					Graphic Log	Description	Completion Detail
meters	feet	Sample Location	Sample Number	Blow Counts	OVM (ppm)	USCS Soil Class.			
44									
45						REFUSE		0820 Mixed refuse (plastics, textiles). Moderate decomposition. Slightly wet. Browns and colors. T=106°F	
14 46									
47									
48									
15 49									
50						REFUSE		0835 Mixed refuse (plastics, textiles). Moderate decomposition. Very wet. Blacks, dark browns, and colors. T=103°F	
51									
52									Centralizer
16 53									
54									
55						REFUSE		0848 Soil layer with blue till. Mixed refuse (plastics). Heavy decomposition. Very Wet. Blacks, greys, few colors. T=117°F	
17 56									
57									
58									
18 59									
60									
61									
19 62									
63									
64									
65									8-inch Dia. SCH 80 PVC Slotted Pipe
20 66						REFUSE		0902 Mixed refuse (plastics, textiles). Moderate/heavy decomposition. Very wet. T=110°F	2-inch Minus Round Rock Backfill
67									
68									

STANDARD_LOG_04222001.11 - LRI 304 GAS WELLS JUL 2022.GPJ STD_LOG.GDT 10/22/22

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Bellevue, Washington 98005-1877

BORING NUMBER: WE-344

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LRI Landfill, Gas Wells, July 2022

JOB NUMBER: 04222001.11

Depth		Sample Information					Graphic Log	Description	Completion Detail
meters	feet	Sample Location	Sample Number	Blow Counts	OVM (ppm)	USCS Soil Class.			
68									
21	69								
	70								
	71								
22	72								
	73								
	74								
	75								
23	76								
	77								
	78								
24	79								
	80								
	81								
25	82					REFUSE		0951 Mixed refuse (plastics). Heavy decomposition. Wet. T=119°F	Centralizer
	83								
	84								
26	85								
	86								
	87								
	88								
27	89								
	90								
	91								
28	92								

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Bellevue, Washington 98005-1877

BORING NUMBER: WE-344

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LRI Landfill, Gas Wells, July 2022

JOB NUMBER: 04222001.11

Depth		Sample Information					Graphic Log	Description	Completion Detail
meters	feet	Sample Location	Sample Number	Blow Counts	OVM (ppm)	USCS Soil Class.			
92									
93									
94									
29 95									95
96									
97									
98									
30 99									
100						REFUSE		1030 Mixed refuse (plastics, textiles). Heavy decomposition. Very wet. Blacks with few colors. T=115°F	100
101									
31 102									
103									
104									
32 105									105
106									
107									
33 108									
109									
110									110
34 111									
112									Bottom Cap
113						REFUSE		1137 End of Boring at 113 ft. T=128°F	16 oz Geotextile
114									
35 115									115
116									

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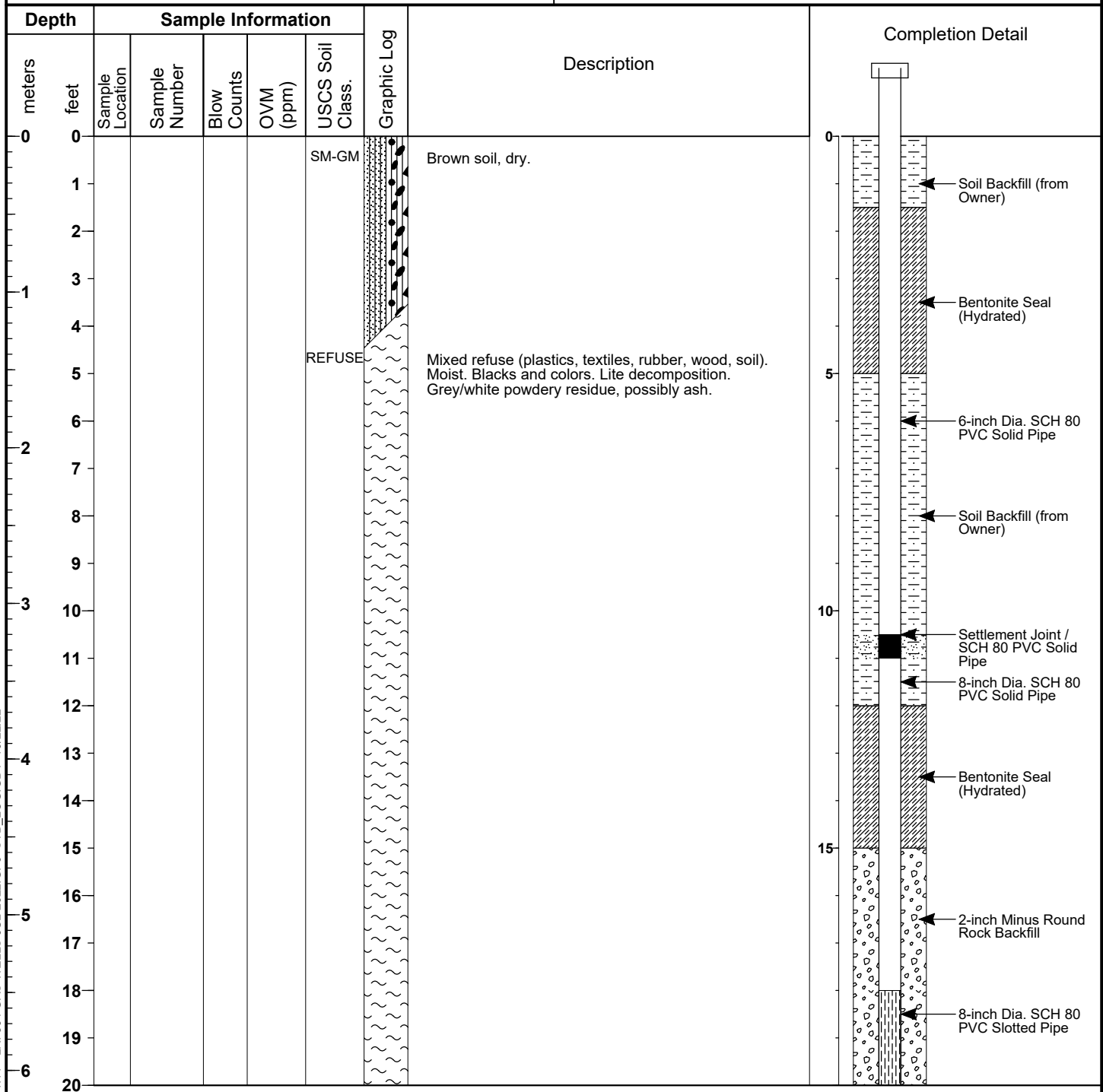
BORING NUMBER: WE-345

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LRI Landfill, Gas Wells, July 2022
30919 Meridian East
Graham, Washington

JOB NUMBER: 04222001.11

REMARKS:
Ecology Tag BKM-568. Drawing ID: 2022-C5. VW-04



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

Drilling Method: **IMT AF-250**

Logged By: **J. Faille**

Date Started: **7/1/22**

Date Ended: **7/1/22**

Boring Diameter: **36-inch**

Well Diameter: **8-inch**

Time Started: **07:50**

Time Ended: **11:55**

Total Depth: **72.0 ft.**

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BORING NUMBER: WE-345

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LRI Landfill, Gas Wells, July 2022

JOB NUMBER: 04222001.11

Depth		Sample Information					Graphic Log	Description	Completion Detail
meters	feet	Sample Location	Sample Number	Blow Counts	OVM (ppm)	USCS Soil Class.			
20						REFUSE		0808 Mixed refuse (plastics, textiles, metal, rubber, soil). Slightly moist. Blacks and colors. Lite/moderate decomposition. No sign of ashy substance. T=99°F	20
21									Centralizer
22									
23									
24									
25									25
26									
27									
28						REFUSE		0818 Mixed refuse (plastics, textiles, rubber, carpet). Moist. Blacks, browns, and colors. Moderate decomposition. T=109°F	
29									
30									30
31									
32									
33									
34									
35									35
36									8-inch Dia. SCH 80 PVC Slotted Pipe
37									2-inch Minus Round Rock Backfill
38									
39									
40						REFUSE		0833 Mixed refuse (plastics, textiles, rubber, carpet). Moist. Blacks, browns, and colors. Moderate decomposition. T=109°F	40
41									
42									
43									
44									

STANDARD_LOG_04222001.11 - LRI 304 GAS WELLS JUL 2022.GPJ STD_LOG.GDT 10/22/22

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Bellevue, Washington 98005-1877

BORING NUMBER: WE-345

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LRI Landfill, Gas Wells, July 2022

JOB NUMBER: 04222001.11

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		Blue clay layer	
48									
15	49					REFUSE		0844 Mixed refuse (plastics, textiles). Very moist. Blacks and colors. Moderate decomposition. T=108°F	
50									
51									
52									Centralizer
16	53								
54									
55									
17	56					REFUSE		0859 Mixed refuse (plastics, textiles). Very moist. Black. Moderate/heavy decomposition. T=111°F	
57									
58									
18	59								
60									
61									
19	62								
63									
64						REFUSE		0925 Mixed refuse (plastics, textiles). Saturated. Black. Heavy decomposition. T=111°F	
65									8-inch Dia. SCH 80 PVC Slotted Pipe
20	66								2-inch Minus Round Rock Backfill
67									Bottom Cap
68									

STANDARD_LOG 04222001.11 - LRI 304 GAS WELLS JUL 2022.GPJ STD_LOG.GDT 10/22/22

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

BORING NUMBER: WE-345

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LRI Landfill, Gas Wells, July 2022

JOB NUMBER: 04222001.11

Depth		Sample Information					Graphic Log	Description	Completion Detail
meters	feet	Sample Location	Sample Number	Blow Counts	QVM (ppm)	USCS Soil Class.			
68									
21	69								
	70								
	71								
22	72					REFUSE		0945 End of Boring at 72 ft	
	73								
	74								
	75								
23	76								
	77								
	78								
24	79								
	80								
	81								
25	82								
	83								
	84								
26	85								
	86								
	87								
	88								
27	89								
	90								
	91								
28	92								

STANDARD_LOG 04222001.11 - LRI 304 GAS WELLS JUL 2022.GPJ STD_LOG.GDT 10/22/22

70

75

80

85

90

16 oz Geotextile

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

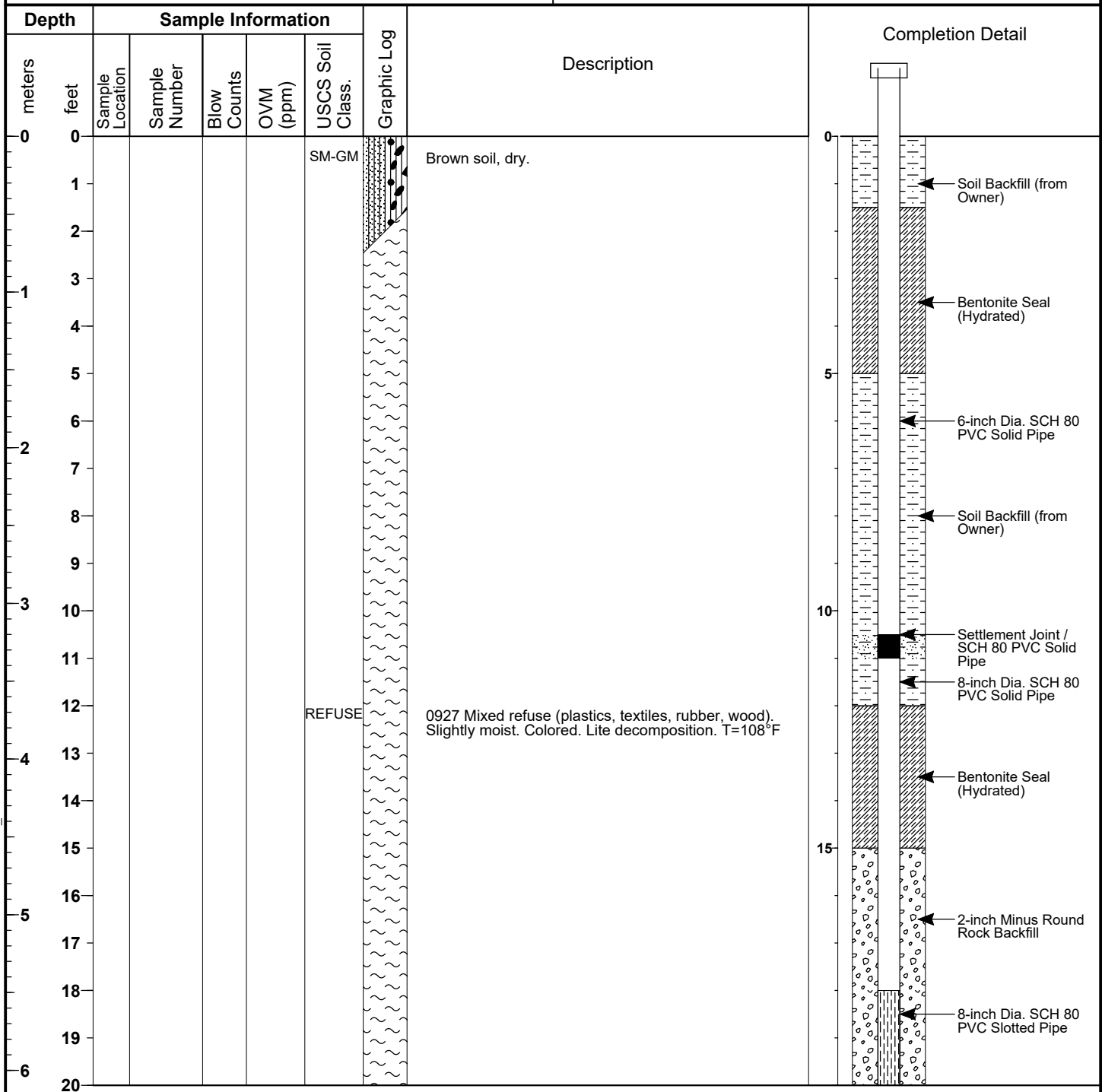
BORING NUMBER: WE-346

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LRI Landfill, Gas Wells, July 2022
30919 Meridian East
Graham, Washington

JOB NUMBER: 04222001.11

REMARKS:
Ecology Tag BKM-567. Drawing ID: 2022-C5. VW-01



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

Drilling Method: **IMT AF-250**

Logged By: **J. Faille**

Date Started: **6/30/22**

Date Ended: **6/30/22**

Boring Diameter: **36-inch**

Well Diameter: **8-inch**

Time Started: **09:15**

Time Ended: **13:17**

Total Depth: **72.0 ft.**

STANDARD_LOG_04222001.11 - LRI 304 GAS WELLS JUL 2022.GPJ STD_LOG.GDT 10/21/22

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BORING NUMBER: WE-346

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LRI Landfill, Gas Wells, July 2022

JOB NUMBER: 04222001.11

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						REFUSE		0950 Mixed refuse (plastics, textiles, rubber, carpet, soil). Moist. Browns and colors. Lite decomposition. T=118°F	30
31									
32									
10 33									
34									
35									35
11 36						REFUSE		0958 Mixed refuse (plastics, textiles, rubber, carpet, soil). Moist. Browns and colors. Lite decomposition. T=118°F	
37									
38									
39									
12 40									
41									
42									
13 43									
44									

Centralizer

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-346

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LRI Landfill, Gas Wells, July 2022

JOB NUMBER: 04222001.11

Depth		Sample Information					Graphic Log	Description	Completion Detail
meters	feet	Sample Location	Sample Number	Blow Counts	OVM (ppm)	USCS Soil Class.			
44						REFUSE		1017 Mixed refuse (plastics, textiles, soil). Saturated. Browns and colors. Lite decomposition. T=126°F	
45									
14	46								
	47								
	48								
15	49								
	50								
	51								
	52								
16	53								
	54								
	55								
17	56					REFUSE		Mixed refuse (plastics, textiles, soil). Saturated. Browns and colors. Moderate decomposition. T=123°F	
	57								
	58								
18	59								
	60								
	61								
19	62								
	63								
	64								
20	65								8-inch Dia. SCH 80 PVC Slotted Pipe
	66								2-inch Minus Round Rock Backfill
	67								
	68								Bottom Cap

STANDARD_LOG 04222001.11 - LRI 304 GAS WELLS JUL 2022.GPJ STD_LOG.GDT 10/21/22

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Bellevue, Washington 98005-1877

BORING NUMBER: WE-346

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LRI Landfill, Gas Wells, July 2022

JOB NUMBER: 04222001.11

Depth		Sample Information					Graphic Log	Description	Completion Detail
meters	feet	Sample Location	Sample Number	Blow Counts	OVM (ppm)	USCS Soil Class.			
68									
21	69								
	70								
	71								
22	72					REFUSE		1102 Mixed refuse (plastics, textiles, soil). Saturated. Browns and colors. Heavy decomposition. T=125°F End of boring at 72 ft	16 oz Geotextile
	73								
	74								
	75								
23	76								
	77								
	78								
24	79								
	80								
	81								
25	82								
	83								
	84								
26	85								
	86								
	87								
	88								
27	89								
	90								
	91								
28	92								

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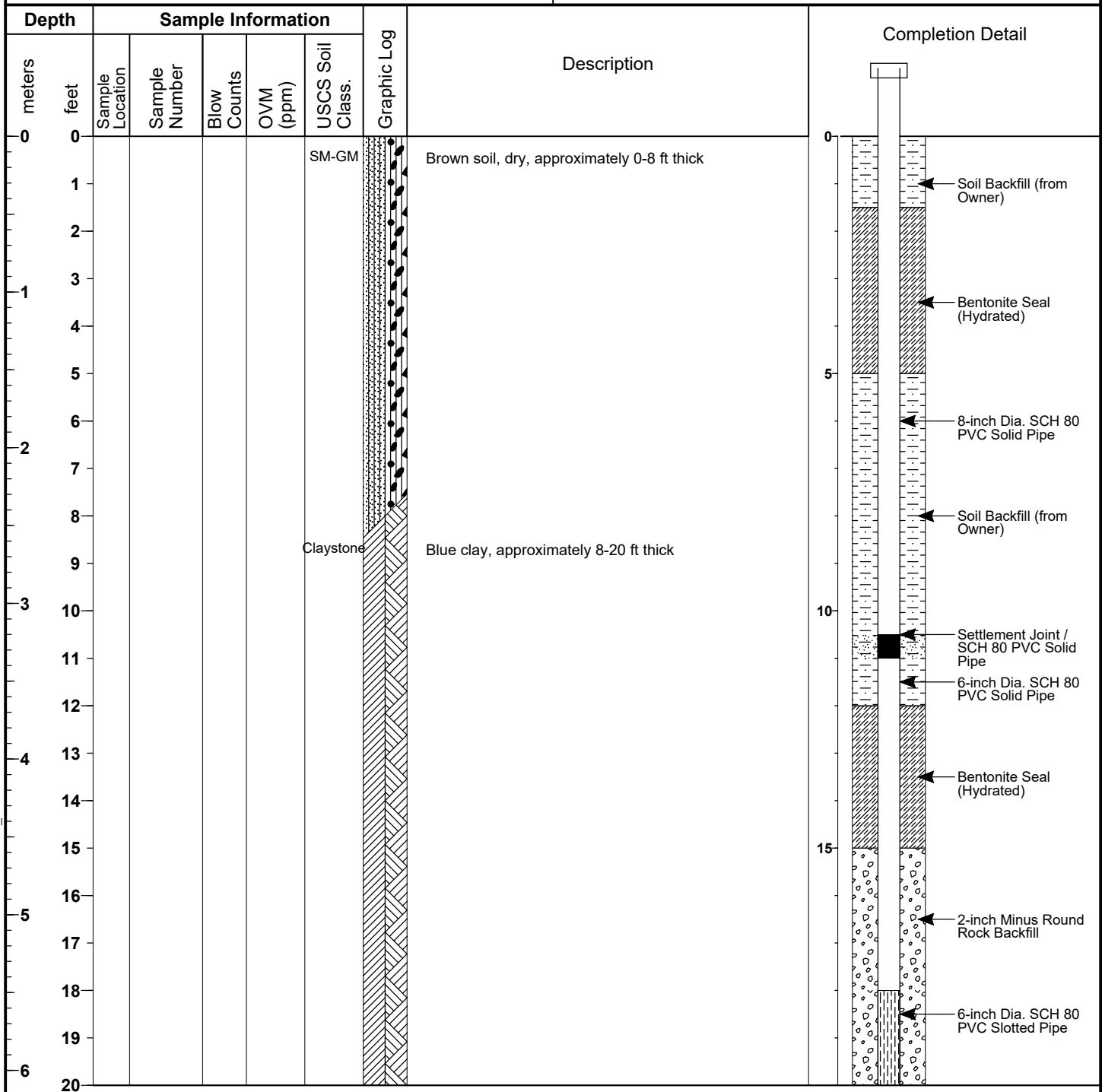
BORING NUMBER: WE-347

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LRI Landfill, Gas Wells, July 2022
30919 Meridian East
Graham, Washington

JOB NUMBER: 04222001.11

REMARKS:
Ecology Tag BKM-569. Drawing ID: 2022-C5. VW-03



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

Drilling Method: **IMT AF-250**

Logged By: **J. Faille**

Date Started: **7/5/22**

Date Ended: **7/5/22**

Boring Diameter: **36-inch**

Well Diameter: **8-inch**

Time Started: **08:03**

Time Ended: **12:45**

Total Depth: **73.0 ft.**

STANDARD_LOG_04222001.11 - LRI 304 GAS WELLS JUL 2022.GPJ STD_LOG.GDT 10/22/22

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BORING NUMBER: WE-347

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LRI Landfill, Gas Wells, July 2022

JOB NUMBER: 04222001.11

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						REFUSE		0830 Mixed refuse (plastics, textiles, shredded material, soil). Moist. Blacks and colors. Moderate decomposition. T=89°F	
27									
28									
29									
9 30						REFUSE		0847 Layer of plastic shreds/strips ~2 ft thick. T=102°F	30
31									
32									
10 33									
34									
35									35
11 36									
37									
38						REFUSE		0908 Mixed refuse (plastics, textiles, soil). Very moist. Blacks and some colors. Moderate/heavy decomposition. T=106°F	
12 39									
40									
41						REFUSE		0913 Mixed refuse (plastics, textiles, shredded material, soil). Very moist. Blacks and colors. Moderate decomposition.	
42									
13 43									
44									

Centralizer

6-inch Dia. SCH 80 PVC Slotted Pipe

2-inch Minus Round Rock Backfill

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Bellevue, Washington 98005-1877

BORING NUMBER: WE-347

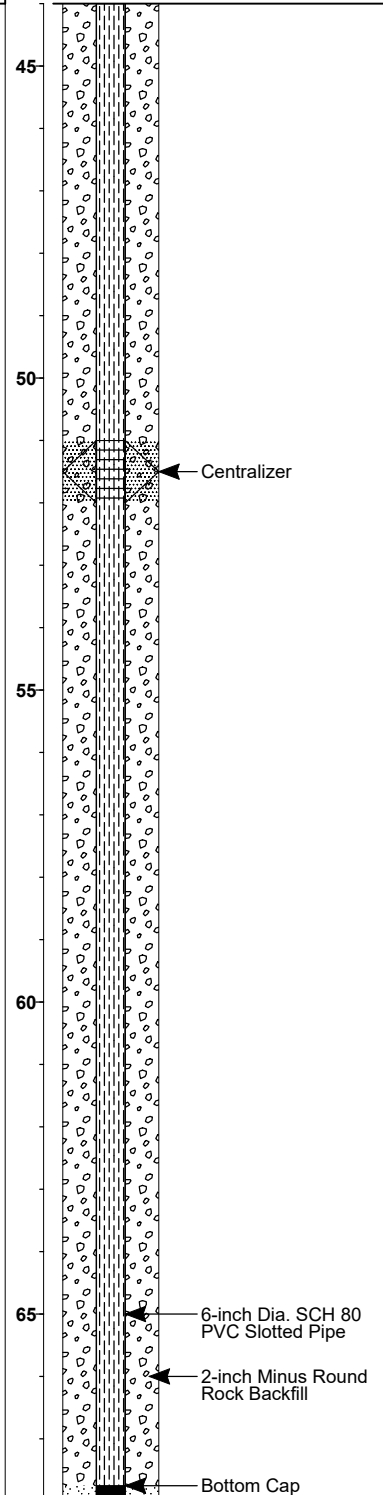
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LRI Landfill, Gas Wells, July 2022

JOB NUMBER: 04222001.11

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									
16	53								
54									
55						REFUSE		0924 Mixed refuse (plastics, textiles, soil). Very moist. Blacks and some colors. Moderate/heavy decomposition. T=117°F	
17	56								
57									
58									
18	59								
60									
61									
62									
19	63								
64						REFUSE		Mixed refuse (plastics, textiles, soil). Very wet. Blacks and greys/browns. Heavy decomposition.	
65									
20	66								
67						REFUSE		1000 Mixed refuse (plastics, textiles, soil). Wet. Colors. Moderate decomposition. T=120°F	
68									

STANDARD_LOG_04222001.11 - LRI 304 GAS WELLS JUL 2022.GPJ STD_LOG.GDT 10/22/22



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LRI Landfill, Gas Wells, July 2022

JOB NUMBER: 04222001.11

Depth		Sample Information					Graphic Log	Description	Completion Detail
meters	feet	Sample Location	Sample Number	Blow Counts	OVM (ppm)	USCS Soil Class.			
68									
21	69								
	70								
	71								
22	72								
	73					REFUSE		1011 End of Broing at 73 ft	16 oz Geotextile
	74								
	75								
23	76								
	77								
	78								
24	79								
	80								
	81								
25	82								
	83								
	84								
26	85								
	86								
	87								
	88								
27	89								
	90								
	91								
28	92								

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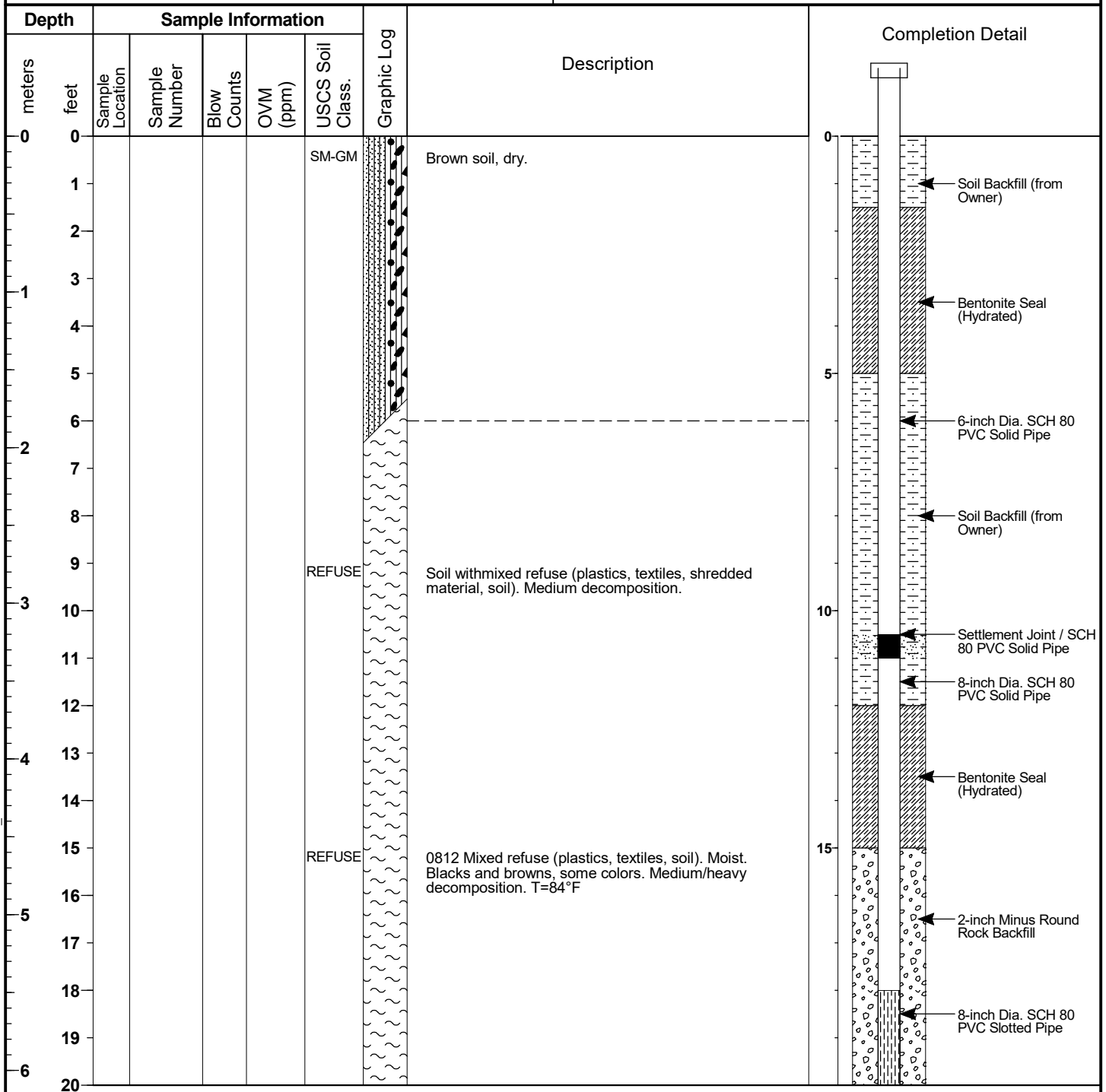
BORING NUMBER: WE-348

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LRI Landfill, Gas Wells, July 2022
30919 Meridian East
Graham, Washington

JOB NUMBER: 04222001.11

REMARKS:
Ecology Tag BKM-572. Drawing ID: 2022-C5. VW-06



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

Drilling Method: **IMT AF-250**

Logged By: **J. Faille**

Date Started: **7/8/22**

Date Ended: **7/8/22**

Boring Diameter: **36-inch**

Well Diameter: **8-inch**

Time Started: **08:00**

Time Ended: **12:07**

Total Depth: **57.0 ft.**

STANDARD_LOG_04222001.11 - LRI 304 GAS WELLS JUL 2022.GPJ STD_LOG.GDT 10/31/22

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BORING NUMBER: WE-348

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LRI Landfill, Gas Wells, July 2022

JOB NUMBER: 04222001.11

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						REFUSE		0823 Mixed refuse (plastics, textiles, wood). Moist. Blacks and some colors. Medium/heavy decomposition. Strong ammonia odor. T=97°F	30
31									
32									
10 33									
34									
35									35
11 36									
37									
38									
39									
12 40						REFUSE		0839 Mixed refuse (plastics, textiles, wood). Moist. Blacks and some colors. Medium/heavy decomposition. Strong ammonia odor. T=104°F	40
41									
42									
13 43									
44									

STANDARD_LOG 04222001.11 - LRI 304 GAS WELLS JUL 2022.GPJ STD_LOG.GDT 10/31/22

Centralizer

8-inch Dia. SCH 80
PVC Slotted Pipe

2-inch Minus Round
Rock Backfill

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BORING NUMBER: WE-348

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LRI Landfill, Gas Wells, July 2022

JOB NUMBER: 04222001.11

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						REFUSE		0854 Mixed refuse (plastics, textiles). Moist. Blacks and few colors. Medium/heavy decomposition. moderate ammonia odor. T=108°F	
51									
52									Centralizer
16	53								8-inch Dia. SCH 80 PVC Slotted Pipe
54									2-inch Minus Round Rock Backfill
55									
17	56								Bottom Cap
57						REFUSE		0945 Very moist/wet. Blue till layer encountered with wet waste on top. Heavy decomposition. Waste under blue till is mildly decomposed. Many colors in waste under till. T=106°F End of Boring at 57 ft Large amounts of pressurized water encountered below layer of blue till. Refuse down to 55 ft moist, below till was saturated upon next attempt at drilling. Kelly bar and barrel were flooded. Hole tapped to reveal 60 ft. Water level at 17 ft. Observation is that water was trapped under till layer. Water taped and retaped at 1000 and 1020, with no change in level. After discussion with Oliver, SCS, and DBM, it was determined to proceed with well installation at current depth, remeasured at 57 ft.	16 oz Geotextile
58									
18	59								
60									
61									
19	62								
63									
64									
65									
20	66								
67									
68									

STANDARD_LOG_04222001.11 - LRI 304 GAS WELLS JUL 2022.GPJ STD_LOG.GDT 10/31/22

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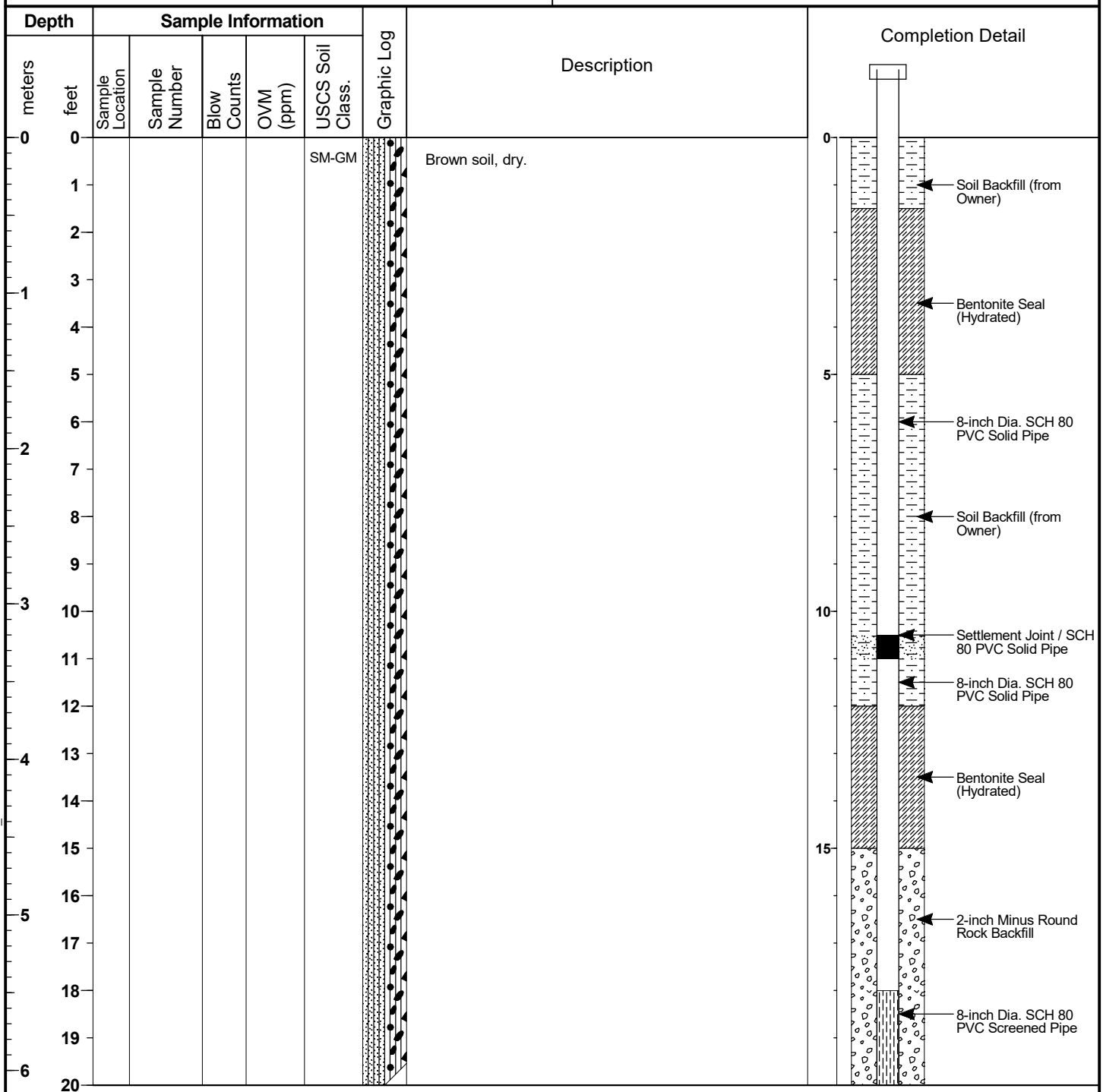
BORING NUMBER: WE-349

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LRI Landfill, Gas Wells, July 2022
30919 Meridian East
Graham, Washington

JOB NUMBER: 04222001.11

REMARKS:
Ecology Tag BKM-571. Drawing ID: 2022-C5. VW-07



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

Drilling Method: **IMT AF-250**

Logged By: **J. Faille**

Date Started: **7/6/22**

Date Ended: **7/6/22**

Boring Diameter: **36-inch**

Well Diameter: **8-inch**

Time Started: **07:40**

Time Ended: **09:48**

Total Depth: **71.5 ft.**

STANDARD_LOG_04222001.11 - LRI 304 GAS WELLS JUL 2022.GPJ STD_LOG.GDT 10/31/22

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LRI Landfill, Gas Wells, July 2022

JOB NUMBER: 04222001.11

Depth		Sample Information					Graphic Log	Description	Completion Detail
meters	feet	Sample Location	Sample Number	Blow Counts	OM (ppm)	USCS Soil Class.			
20						REFUSE			20
21									
22									
7 23									
24									
25									25
26									
8 27									
28									
29									
9 30						REFUSE		Mixed Refuse (plastics, textiles), dry, Browns and colors. Lite decomposition. T=90°F Started on site at 0822. Drilling started prior to engineer on site, at 0740.	30
31									
32									
10 33									
34									
35									35
11 36									
37									
38									
39									
12 40									
41									
42									
13 43						REFUSE		0838 Mixed refuse (plastics, textiles, soil). Moist. Black/ dark brown. Medium decomposition. T=98°F	
44									

STANDARD_LOG_04222001.11 - LRI 304 GAS WELLS JUL 2022.GPJ STD_LOG.GDT 10/31/22

Centralizer

8-inch Dia. SCH 80
PVC Screened Pipe

2-inch Minus Round
Rock Backfill

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BORING NUMBER: WE-349

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LRI Landfill, Gas Wells, July 2022

JOB NUMBER: 04222001.11

Depth		Sample Information					Graphic Log	Description	Completion Detail
meters	feet	Sample Location	Sample Number	Blow Counts	OVM (ppm)	USCS Soil Class.			
44									
45						REFUSE		0858 Mixed refuse (plastics, textiles, soil). Moist. Black. Medium decomposition. T=118°F	
14 46									
47									
48									
15 49									
50									
51									
52									
16 53						REFUSE		0916 Mixed refuse (plastics, textiles). Wet. Black. Heavy decomposition. T=125°F	
54									
55									
17 56									
57						REFUSE		0938 Mixed refuse (plastics, textiles, soils). Wet. Black. Heavy decomposition. T=136°F	
58									
18 59									
60						REFUSE		0926 Mixed refuse (plastics, textiles, soils). Wet. Black. Heavy decomposition. T=132°F	
61									
19 62									
63									
64									
65									
20 66									
67									
68									

Centralizer

8-inch Dia. SCH 80
PVC Screened Pipe

2-inch Minus Round
Rock Backfill

Bottom Cap

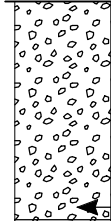
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LRI Landfill, Gas Wells, July 2022

JOB NUMBER: 04222001.11

Depth		Sample Information					Graphic Log	Description	Completion Detail
meters	feet	Sample Location	Sample Number	Blow Counts	OVM (ppm)	USCS Soil Class.			
68									
21	69								
	70								
	71								
22	72					REFUSE		0938 Mixed refuse (plastics, textiles, soils). Wet. Black. Heavy decomposition. T=138°F End of Boring at 71.5 ft	 Geotextile
	73								
	74								
	75								
23	76								
	77								
	78								
24	79								
	80								
	81								
25	82								
	83								
	84								
26	85								
	86								
	87								
	88								
27	89								
	90								
	91								
28	92								

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LRI Landfill, Gas Wells, July 2022
30919 Meridian East
Graham, Washington

JOB NUMBER: 04222001.11

REMARKS:
Ecology Tag BKM-573. Drawing ID: 2022-C6. VW-09

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		Brown soil, dry.	Soil Backfill (from Owner) Bentonite Seal (Hydrated) 8-inch Dia. SCH 80 PVC Solid Pipe Soil Backfill (from Owner) Bentonite Seal (Hydrated) 2-inch Minus Round Rock Backfill 8-inch Dia. SCH 80 PVC Screened Pipe
1	3								
2	6								
3	9								
4	13								
5	16								
6	19								
	20								
						REFUSE		Mixed Refuse (plastics, textiles, wood). Very moist. Blacks, browns and some colors. Lite/medium decomposition.	

STANDARD_LOG_04222001.11 - LRI 304 GAS WELLS JUL 2022.GPJ STD_LOG.GDT 10/31/22

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

Drilling Method: **IMT AF-250**

Logged By: **J. Faille**

Date Started: **7/11/22**

Date Ended: **7/11/22**

Boring Diameter: **36-inch**

Well Diameter: **8-inch**

Time Started: **08:45**

Time Ended: **11:43**

Total Depth: **71.0 ft.**

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BORING NUMBER: WE-350

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LRI Landfill, Gas Wells, July 2022

JOB NUMBER: 04222001.11

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		0907 Mixed refuse (plastics, textiles, soil). Wet. Black/dark brown and some colors. Medium decomposition. T=106°F	Centralizer
7 23									
24									
25									25
26									
8 27									
28									
29									
9 30						REFUSE		0913 Mixed refuse (plastics, textiles, soil). Slightly wet. Black/dark brown and some colors. Medium/heavy decomposition. T=110°F	30
31									
32									
10 33									
34									
35									35
11 36									8-inch Dia. SCH 80 PVC Screened Pipe
37									2-inch Minus Round Rock Backfill
38									
39									
12 40						REFUSE		0926 Mixed refuse (plastics, textiles, soil). Slightly wet. Black/dark brown and some colors. Medium/heavy decomposition. T=117°F	40
41									
42									
13 43									
44									

STANDARD_LOG_04222001.11 - LRI 304 GAS WELLS JUL 2022.GPJ STD_LOG.GDT 10/31/22

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BORING NUMBER: WE-350

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LRI Landfill, Gas Wells, July 2022

JOB NUMBER: 04222001.11

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									
16	53								
54									
55									
17	56								
57									
58									
18	59								
60						REFUSE		1001 Mixed refuse (plastics, textiles, soil). Slightly wet. Black/dark brown and some colors. Medium/heavy decomposition. T=118°F	
61									
19	62								
63									
64						REFUSE		1008 Mixed refuse (plastics, textiles, soil). Wet. Black/dark brown and some colors. Medium/heavy decomposition. T=120°F	
65									
20	66								
67									
68									

45

50

55

60

65

Centralizer

8-inch Dia. SCH 80
PVC Screened Pipe

2-inch Minus Round
Rock Backfill

Bottom Cap

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BORING NUMBER: WE-350

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LRI Landfill, Gas Wells, July 2022

JOB NUMBER: 04222001.11

Depth		Sample Information					Graphic Log	Description	Completion Detail
meters	feet	Sample Location	Sample Number	Blow Counts	OVM (ppm)	USCS Soil Class.			
68									
21	69								
	70								
	71					REFUSE		1018 End of Boring at 71 ft	
22	72								
	73								
	74								
	75								
23	76								
	77								
	78								
24	79								
	80								
	81								
25	82								
	83								
	84								
26	85								
	86								
	87								
	88								
27	89								
	90								
	91								
28	92								

STANDARD_LOG 04222001.11 - LRI 304 GAS WELLS JUL 2022.GPJ STD_LOG.GDT 10/31/22

70

75

80

85

90

Geotextile

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BORING NUMBER: WE-351

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LRI Landfill, Gas Wells, July 2022
30919 Meridian East
Graham, Washington

JOB NUMBER: 04222001.11

REMARKS:
Ecology Tag BKM-574. Drawing ID: 2022-C6. VW-08

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		Brown soil, dry.	
	1								Soil Backfill (from Owner)
	2								
	3								Bentonite Seal (Hydrated)
	4								
	5								6-inch Dia. SCH 80 PVC Solid Pipe
	6								Soil Backfill (from Owner)
	7								
	8								
	9								
	10								Settlement Joint / SCH 80 PVC Solid Pipe
	11								8-inch Dia. SCH 80 PVC Solid Pipe
	12								
	13								Bentonite Seal (Hydrated)
	14					REFUSE		Mixed refuse (plastics, textiles, soil). Moist. Moderate/heavy decomposition. Blacks and some browns, few colors.	
	15								
	16								2-inch Minus Round Rock Backfill
	17								
	18								8-inch Dia. SCH 80 PVC Screened Pipe
	19								
	20								

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

Drilling Method: **IMT AF-250**

Logged By: **J. Faille**

Date Started: **7/12/22**

Date Ended: **7/12/22**

Boring Diameter: **36-inch**

Well Diameter: **8-inch**

Time Started: **08:45**

Time Ended: **00:20**

Total Depth: **39.5 ft.**

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BORING NUMBER: WE-351

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LRI Landfill, Gas Wells, July 2022

JOB NUMBER: 04222001.11

Depth		Sample Information					Graphic Log	Description	Completion Detail
meters	feet	Sample Location	Sample Number	Blow Counts	OVM (ppm)	USCS Soil Class.			
7	20								20
	21					REFUSE		0901 Mixed refuse (plastics, textiles, rubber, soil). Moist. Moderate decomposition. Many colors. T=96°F	Centralizer 8-inch Dia. SCH 80 PVC Screened Pipe 2-inch Minus Round Rock Backfill Bottom Cap Geotextile
	22								
	23								
	24								
	25								
	26					REFUSE		0910 Mixed refuse (plastics, textiles, wood, soil). Moist. Moderate/heavy decomposition. Blacks and some colors. Strong ammonia smell. T=111°F	
	27								
	28								
	29								
	30								
10	31								
	32								
	33								
	34								
	35					REFUSE		0926 Mixed refuse (plastics, textiles, wood, soil). Moist. Moderate/heavy decomposition. Blacks and some colors. Strong ammonia smell. T=117°F	
11	36								
	37								
	38								
	39								
12	40					REFUSE		0933 End of Boring at 39.5 ft	
	41								
	42								
13	43								
	44								