

First Quarter 2022 Monitoring Report

LRI Landfill

Graham, Washington

Pierce County Recycling, Composting
& Disposal, LLC dba LRI
17925 Meridian Street East
Puyallup, Washington 98375



SCS ENGINEERS

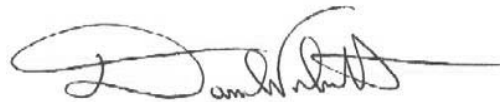
04222001.02 | July 19, 2022

2405 140th Avenue NE, Suite 107
Bellevue, WA 98005
425-746-4600

This document is the First 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 Sam Graber, Dan Venchiarutti and Kevin Lakey of SCS Engineers and submitted to Mr. Keith Johnston of the Tacoma-Pierce County Health Department (TPCHD).



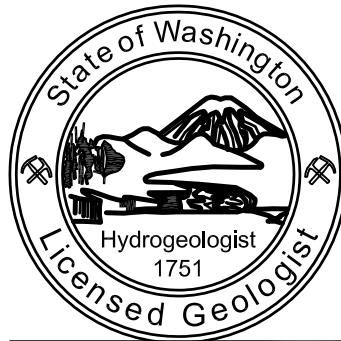
Sam Graber, LG
Project Scientist
SCS Engineers



Daniel A. Venchiarutti, LG, LHG
Project Director
SCS Engineers



Kevin Lakey, LHG, PE
Vice President/Project Director
SCS Engineers



Kevin G. Lakey

Attachments: Attachment A: Groundwater Flow Map
Attachment B: Groundwater Data Summary Tables
Attachment C: Field Sampling Documentation
Attachment D: Statistical Calculations
Attachment E: Trilinear Diagrams
Attachment F: Analytical Data Validation Report
Attachment G: Groundwater and LDCS Time Trend Plots
Attachment H: LDCS & Leachate Pumping Records and Conductivity Measurements
Attachment I: Surface Water Data
Attachment J: Landfill Gas Data

cc: Peter Lyon, Ecology (email)
Suzy Lewis, Ecology (email)
George Duvendack, LRI (email and hard copy)
Kevin Green, LRI (email)
Jody Snyder, LRI (email)
Olivier Moi, LRI (email)
Ryan Roth, LRI (email)
Maria Finley, LRI (email and CD)

GROUNDWATER MONITORING

First quarter 2022 groundwater samples were collected on March 29 and 30, 2022. Nine monitoring well samples (MW-1A, MW-2A, MW-3, MW-4, MW-5A, MW-6, MW-7, MW-9, and MW-10), ten leak detection collection samples (LDCS-1, LDCS-2A, LDCS-2B, LDCS-3A, LDCS-4A, LDCS-4B, LDCS-5, LDCS-6, LDCS-7, and LDCS-8), and one leachate sample (Cell 8) were collected during this monitoring period. Water level elevations were measured on March 29 and 30, 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 first quarter monitoring event is included as Figure 1 in Attachment A. The average groundwater gradients and flow directions calculated for the quarter remain similar to those previously reported at the facility, with a flow rate of about 45 feet per year towards the northwest for horizontal groundwater movement within the uppermost aquifer (assuming a horizontal hydraulic conductivity of 1×10^{-3} centimeters per second and an effective porosity of 30 percent).

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

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

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

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

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 first quarter. The highest concentrations of chloride and nitrate in the uppermost aquifer continue to be observed in background well MW-10.

Reported detections of inorganic parameters and metals measured at downgradient monitoring wells during the first 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	**	**	**	0.010	**	0.0079	0.0059
Iron, Dissolved	0.30	1.4	0.60	*	*	*	*	*
Manganese, Dissolved	0.05	0.20	0.29	0.42	0.29	0.24	0.21	0.31
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 0.10 and 0.22 mg/L) were reported at downgradient wells MW-3, MW-4, MW-5A, MW-6 and MW-7. Similar low-level ammonia detections have been reported in the past; including at background well MW-10 during the Second Quarter 2018 monitoring event. Therefore, the low-level ammonia concentrations appear to be due to site-wide aquifer chemistry, which has also affected water quality within the LDCS.

The cation-anion balance evaluates the difference in the sum of cations and anions (in milliequivalents per liter [meq/L]) within a water sample to determine if it is electroneutral (balanced cation and anion charges). Consistent with WAC 173-350-430(5), a threshold of ten percent difference is used if the total cation-anion sum is less than 5.0 meq/L, and a threshold of five percent difference is used if the total cation-anion sum is greater than or equal to 5.0 meq/L. During

the first quarter, the cation-anion balance evaluation slightly exceeded the appropriate threshold for monitoring well MW-2A. 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 first quarter.

LEAK DETECTION/COLLECTION SYSTEM (LDCS) MONITORING

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

LDCS Maintenance. A new liquid flow meter was installed and began recording data at LDCS-2B on February 9, 2022. The conductivity probe at LDCS-4A needs to be checked for probe connections and be recalibrated or replaced as needed. The conductivity probe at LDCS-8 needs to be checked to determine if the meter range can be increased above 1,000 $\mu\text{S}/\text{cm}$. No other significant maintenance activities occurred during the first 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 readings at LDCS-1 displayed an increase beginning on February 12, 2022. However, the LDCS pump did not operate between February 10 and 13, 2022. Given the timing of when the increase in conductivity occurred and when the pump was not operating, it is interpreted that groundwater within the LDCS came in contact with the overlying soil liner, which in turn, caused the conductivity of the groundwater to rise. The conductivity levels at LDCS-1 have been consistent since February 24, 2022.

Conductivity readings at LDCS-4B and LDCS-6 displayed increases during the first week of January 2022. However, large rain events totaling 4.68 inches fell at the site between January 2 and January 7, 2022. Given the timing of when the increases in conductivity occurred and when the rain events were recorded, it is interpreted that the rainfall events may have caused groundwater within the LDCS to come in contact with the overlying soil liner, which in turn, caused the conductivity of the groundwater to rise. The conductivity levels at LDCS-4B and LDCS-6 decreased to levels more consistent with historic data beginning on January 28, 2022.

LDCS-5 conductivity values were greater than 1,000 $\mu\text{S}/\text{cm}$ during the month of February. Values above 1,000 $\mu\text{S}/\text{cm}$ at this location are outside of the meter range and are shown on the trend

graph as blank. LRI will work with the panel programmer (Cascade Water Systems) to see if the range of the recorded conductivity values can be increased.

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

LDCS Quarterly Monitoring. Samples were collected with disposable bailers at LDCS-1, LDCS-2A, and LDCS-2B, and with dedicated QED Sleeper Pumps at LDCS-3A, LDCS-4A, LDCS-4B, LDCS-5, LDCS-6, and LDCS-7. The sample from LDCS-8 was collected as a grab sample from the dewatering pump discharge spigot.

Reduced concentrations of alkalinity were reported at LDCS-1, LDCS-2A, LDCS-2B, LDCS-3, LDCS-4A and LDCS-7 during the first quarter monitoring event. All of these sample results were included in the same laboratory report. Although Eurofins indicated no issues with the analyses, given the systemic drop in concentrations associated with this batch of samples compared with the relatively stable historic results, it is likely that the reduced results reported during this event are related to the laboratory.

LDCS-1 and LDCS-2A water quality results included low-level detections of 1-4-dichlorobenzene at 0.85 µg/L and 0.57 µg/L, respectively. Similar low-level detections of 1-4-dichlorobenzene have been reported at these locations in the past. Additionally, slightly elevated concentrations of dissolved iron (1.7 mg/L at LDCS-1) and dissolved manganese (1.8 mg/L at LDCS-1 and 0.86 mg/L at LDCS-2A) were reported in the samples collected during the first quarter. At both locations, the primary leachate indicator parameters, acetone and 2-butanone, were not detected and secondary leachate indicator parameters, ammonia and chloride, were not detected or remained low, respectively. Therefore, the detections reported above do not appear to be the result of leachate.

LDCS-2B water quality results included elevated concentrations of dissolved iron (15 mg/L) and manganese (2.7 mg/L). Similar elevated concentrations of dissolved iron and manganese have been reported at this location in the past (see summary tables in Attachment B and time trend plots in Attachment G) and do not appear to be related to leachate.

LDCS-3A water quality results included elevated concentrations of dissolved iron (1.1 mg/L) and dissolved manganese (3.3 mg/L). Additionally, results from LDCS-3A display a general slowly increasing trend of alkalinity and TDS (see the time trend plot in Attachment G). However, primary leachate indicator parameters, acetone and 2-butanone, were non-detect and secondary indicator parameters, ammonia and chloride, remained low during the first quarter. Therefore, the elevated concentrations listed above do not appear to be the result of leachate.

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

The LDCS-7 and LDCS-8 water quality results include generally elevated concentrations of alkalinity, chloride, sulfate, TDS, TOC, and dissolved calcium, iron, magnesium, manganese and sodium. Since elevated concentrations of 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 collected during the first quarter.

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

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

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

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

SURFACE WATER MONITORING

Surface water monitoring was performed per the requirements of NPDES Construction Stormwater General Permit (CSWGP) WAR 002603C and NPDES Industrial Stormwater General Permit (ISGP) WAR 002557. During the first quarter, construction stormwater treatment using Chitosan Sand Enhanced Filtration (CESF) was utilized in January, February, and March.

Discharge Monitoring Reports (DMR's) were submitted to Ecology on a monthly (Construction Permit) and quarterly (Industrial Permit) basis. Copies of the first quarter 2022 DMR's are included in Attachment I. The surface water benchmark for turbidity of 25 NTU was exceeded at C8-2 (146 NTU) on February 28, 2022. No other 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
Totals	12,839,847	13.61

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 January 13, February 24, and March 17 using a Landtec GEM2000 portable gas monitor. Methane measurements were less than the lower explosive limit (LEL) of five percent by volume during the first quarter except at performance probes GP-2 and GP-10P (see Exhibit 3). Previous barhole monitoring surveys, including a surveys conducted in December of 2019 and December of 2021 along the base of the perimeter berm adjacent to gas probe GP-2, have demonstrated that similar methane levels at these probes do not result in the migration of landfill gas to the property line.

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

Monitoring Date	GP-1	GP-2	GP-3	GP-4	GP-9	GP-10	GP-10P	GP-11	GP-12	GP-13	GP-14	GP-15	GP-16
January 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
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 January 13. 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

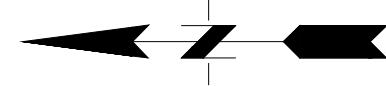
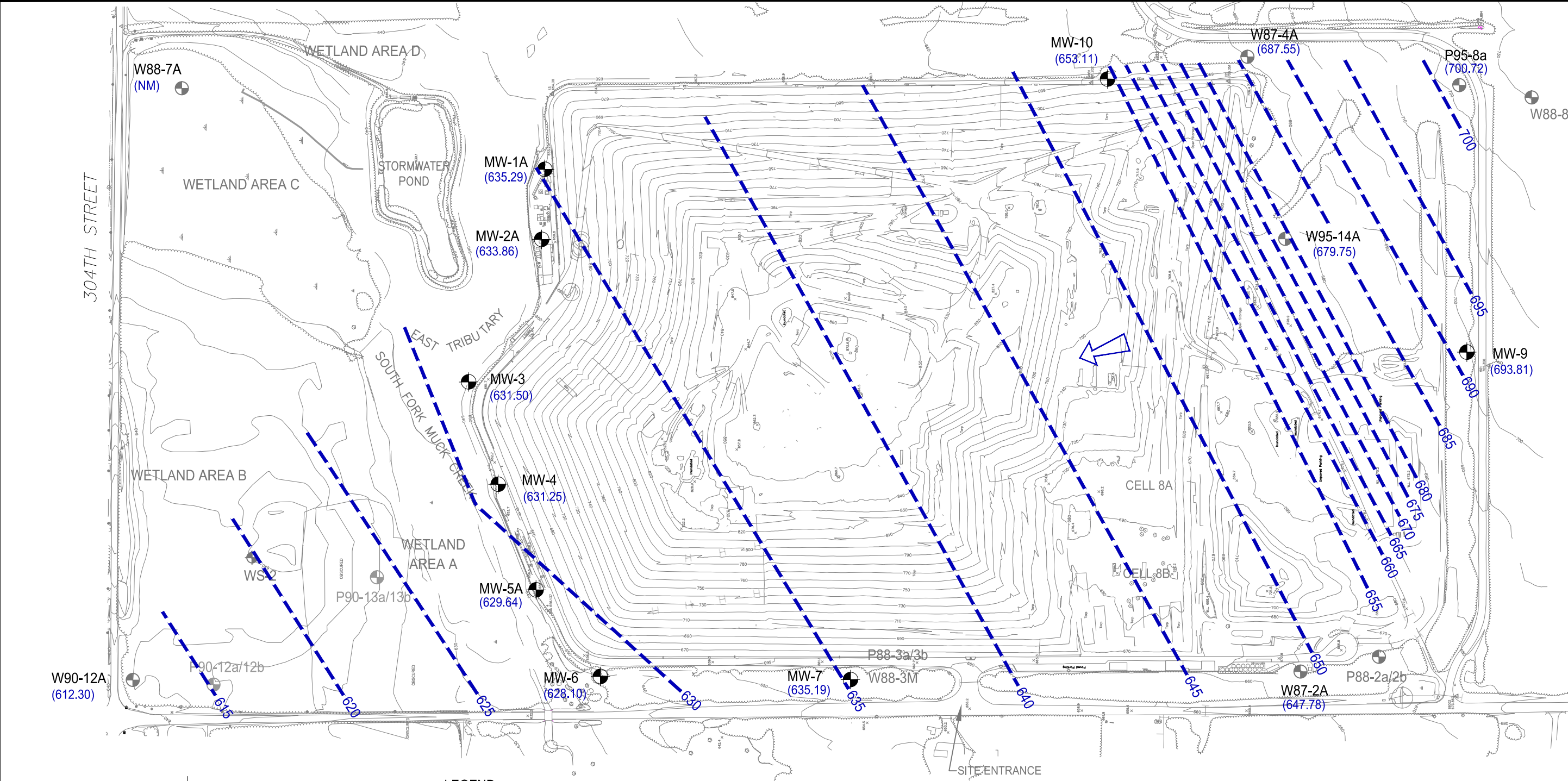
Eighteen (18) new landfill gas extraction wells were installed between January 28 and February 11, 2022. A copy of the Well Installation Report is included in Attachment J.

GROUNDWATER MONITORING WELL CONSTRUCTION AND MAINTENANCE

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

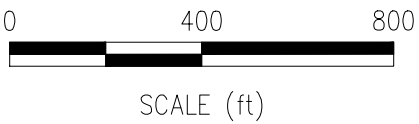
Attachment A

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



Attachment B

Groundwater Data Summary Tables

Table 1. Groundwater Level Elevations
March 29, 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	16.23	647.78
W87-4A	693.29	5.74	687.55
W88-3M	658.11	12.71	645.40
W88-7A	632.51	NM*	--
W88-8M	721.05	39.18	681.87
W90-12A	640.84	28.54	612.30
W95-14A	680.49	0.74	679.75
MW-1A	652.57	17.28	635.29
MW-2A	651.93	18.07	633.86
MW-3	637.41	5.91	631.50
MW-4 ^a	652.37	21.12	631.25
MW-5A	655.55	25.91	629.64
MW-6	635.71	7.61	628.10
MW-7 ^a	656.03	20.84	635.19
MW-9 ^a	701.77	7.96	693.81
MW-10 ^a	678.37	25.26	653.11
Piezometers			
P13-14A	665.96	21.27	644.69
P88-2A	663.96	NM*	--
P88-2B	663.48	NM*	--
P88-3A	656.20	10.58	645.62
P88-3B	655.98	14.46	641.52
P95-8A	722.07	21.35	700.72
P90-12A	640.79	4.01	636.78
P90-12B	640.73	2.76	637.97
P90-13A	645.19	NM*	--
P90-13B	643.63	NM*	--
GP-1P ^b	652.00	16.31	635.69
GP-2P ^b	658.61	19.40	639.21
GP-3P ^b	658.51	7.57	650.94
GP-4P ^b	662.01	9.52	652.49
GP-9P ^b	674.03	10.22	663.81
GP-16 ^b	689.51	18.73	670.78
South Creek			
SWSC-1	632.68	0.80	631.88
SWSC-2	629.98	6.30	623.68
Leak Detection System			
LDCS-1	657.26	26.36	630.90
LDCS-2A	659.24	28.82	630.42
LDCS-2B	661.70	28.00	633.70

Notes:

NM = not measured

-- = not applicable

Measurements taken on 3/29/22 unless otherwise noted

a = measurements taken on 3/30/22

b = gas probe measurements taken on 3/17/22

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

**Table 2. Field Parameters
First 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	304-032922-02	3/29/2022	DP	6.91	148	13.3
MW-2A	304-032922-04	3/29/2022	DP	7.13	239	12.9
MW-3	304-032922-06	3/29/2022	DP	7.17	418	10.5
MW-4	304-033022-21	3/30/2022	SP	7.58	356	13.1
MW-5A	304-032922-08	3/29/2022	DP	7.62	406	12.4
MW-6	304-032922-12	3/29/2022	DP	7.66	328	10.7
MW-7	304-033022-14	3/30/2022	DP	6.88	372	10.6
MW-9	304-033022-18	3/30/2022	DP	6.91	129	10.2
MW-10	304-033022-16	3/30/2022	DP	6.44	258	11.2
Leak Detection System						
LDCS-1	304-032922-09	3/29/2022	DB	6.74	419	23.2
LDCS-2A	304-032922-07	3/29/2022	DB	7.42	856	21.0
LDCS-2B	304-032922-05	3/29/2022	DB	7.18	781	20.7
LDCS-3A	304-032922-03	3/29/2022	DP	6.62	927	20.9
LDCS-4A	304-032922-11	3/29/2022	DP	6.76	752	21.6
LDCS-4B	304-033022-19	3/30/2022	DP	7.00	954	23.0
LDCS-5	304-033022-17	3/30/2022	DP	6.73	814	20.9
LDCS-6	304-033022-13	3/30/2022	DP	6.65	927	13.7
LDCS-7	304-032922-01	3/29/2022	DP	6.29	989	17.8
LDCS-8	304-033022-20	3/30/2022	GB	6.40	1,121	17.1
Leachate Collection System						
Leachate, Cell 8	304-033022-22	3/30/2022	GB	7.28	11,172	19.3

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
First 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	86	*	1.8	*	2.4	140	*	4.4
MW-2A	110	*	2.8	*	6.1	160	*	*
MW-3	180	0.13	3.5	*	25	250	1.3	*
MW-4	160	0.14	3.3	*	11	220	*	4.0
MW-5A	190	0.14	3.6	*	19	250	1.1	4.0
MW-6	150	0.10	5.2	* H	6.8	200	1.0	*
MW-7	190	0.22	3.2	*	2.7	220	*	*
(BG) MW-9	67	*	1.4	*	1.4	120	*	*
(BG) MW-10	110	*	6.8	3.0	5.5	190	*	5.6
Leak Detection System								
LDCS-1	15	*	4.3	* H	4.5	250	3.9	—
LDCS-2A	*	*	6.0	* H	28	510	3.3	—
LDCS-2B	*	0.26	10	* H	49	460	6.3	—
LDCS-3A	52	0.11	4.0	* H	54	550	2.2	—
LDCS-4A	140	0.19	21	* H	38	440	5.5	—
LDCS-4B	360	0.19	37	*	63	540	4.4	—
LDCS-5	310	0.47	26	*	54	470	7.2	—
LDCS-6	370	*	18	*	79	560	3.3	—
LDCS-7	15	*	17	* H	16	580	5.4	—
LDCS-8	460	*	19	*	55	580	7.3	—
Leachate Collection System								
Leachate, Cell 8	4100 H	540	1300	1.1	21	7100	1600	—

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

H = analyzed after specified holding time due to Fedex shipping delay

Table 4. WAC 173-351 Appendix I Metals
First 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	—	*	—	*	—	0.019	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	0.014	
MW-2A	—	*	—	*	—	0.012	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	
MW-3	—	*	—	*	—	0.016	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	
MW-4	—	*	—	0.010	—	0.017	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	
MW-5A	—	*	—	*	—	0.015	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	
MW-6	—	*	—	0.0079	—	0.016	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	
MW-7	—	*	—	0.0059	—	0.017	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	
(BG) MW-9	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	0.015	—	*	
(BG) MW-10	—	*	—	*	—	0.015	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	0.013	
Leak Detection System																															
LDCS-1	*	—	0.0092	—	0.021	—	—	—	—	—	*	—	0.0011	—	*	—	*	—	*	—	—	—	—	—	—	—	—	*	—	*	—
LDCS-2A	*	—	*	—	0.022	—	—	—	—	—	*	—	*	—	*	—	*	—	*	—	—	—	—	—	—	—	—	*	—	*	—
LDCS-2B	*	—	0.027	—	0.045	—	—	—	—	—	*	—	0.0066	—	*	—	*	—	*	—	—	—	—	—	—	—	—	*	—	*	—
LDCS-3A	*	—	0.010	—	0.022	—	—	—	—	—	*	—	0.0028	—	*	—	*	—	*	—	—	—	—	—	—	—	—	*	—	*	—
LDCS-4A	*	—	0.0099	—	0.032	—	—	—	—	—	*	—	0.0019	—	*	—	*	—	*	—	—	—	—	—	—	—	—	*	—	*	—
LDCS-4B	*	—	0.0099	—	0.032	—	—	—	—	—	*	—	*	—	*	—	*	—	*	—	—	—	—	—	—	—	—	*	—	*	—
LDCS-5	*	—	*	—	0.046	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*
LDCS-6	*	—	0.0072	—	0.014	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*
LDCS-7	*	—	0.010	—	0.045	—	*	—	*	—	*	—	0.0058	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*
LDCS-8	*	—	*	—	0.042	—	*	—	*	—	*	—	0.0035	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*
Leachate Collection System																															
Leachate, Cell 8	—	*	—	0.13	—	1.0	—	*	—	*	—	0.23	—	0.047	—	0.054	—	0.021	—	0.21	—	*	—	*	—	*	—	0.19	—	0.81	

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)
First 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	8.9	0.20	3.6	12
MW-2A	20	0.60	11	0.29	3.0	16
MW-3	45	*	19	0.42	4.4	16
MW-4	31	*	17	0.29	5.7	13
MW-5A	29	*	11	0.24	4.4	49
MW-6	34	*	15	0.21	5.0	11
MW-7	32	0.20	21	0.31	5.8	16
(BG) MW-9	10	*	6.5	*	2.0	7.7
(BG) MW-10	25	*	11	0.016	2.1	13
Leak Detection System						
LDCS-1	40	1.7	16	1.8	5.0	18
LDCS-2A	94	0.10	36	0.86	9.3	31
LDCS-2B	88	15	35	2.7	7.3	21
LDCS-3A	100	1.1	41	3.3	6.2	24
LDCS-4A	70	2.4	40	1.6	5.9	24
LDCS-4B	99	1.4	44	1.1	6.6	30
LDCS-5	70	*	42	1.2	7.7	32
LDCS-6	97	0.11	49	0.46	4.8	28
LDCS-7	120	2.4	40	4.0	3.9	31
LDCS-8	110	0.78	68	1.8	4.6	36
Leachate Collection System**						
Leachate, Cell 8	530 B	19	150	9.3	310	1,300

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

B = Compound was found in the blank and the sample

BG = Background

Table 6. Volatile Organic Compounds (µg/L)
First Quarter 2022
LRI Landfill, Pierce County, Washington

Parameter	1,4-Dichlorobenzene	2-Butanone (MEK)	4-Methyl-2-pentanone (MIBK)	Acetone	Benzene	Ethylbenzene	Methylene Chloride	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	6.00	5.00	10.00	0.50	1.00	2.0	0.50	0.50	0.50
WAC 173-200 Criteria	4.0	—	—	—	1.0	—	5.0	—	—	—
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	0.85	*	*	*	*	*	*	*	*	*
LDCS-2A	0.57	*	*	*	*	*	*	*	*	*
LDCS-2B	*	*	*	*	*	*	*	*	*	*
LDCS-3A	*	*	*	*	*	*	*	*	*	*
LDCS-4A	*	*	*	*	*	*	*	*	*	*
LDCS-4B	*	*	*	*	*	*	*	*	*	*
LDCS-5	*	*	*	*	*	*	*	*	*	*
LDCS-6	*	*	*	*	*	*	*	*	*	*
LDCS-7	*	*	*	*	*	*	*	*	*	*
LDCS-8	*	*	*	*	*	*	*	*	*	*
Leachate Collection System										
Leachate, Cell 8	*	12,000	250	7,900	6.0	19	36	39	20	1,600
Quality Control Samples										
Field Blank	*	*	*	*	*	*	*	*	*	*

Notes:

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

Analyses performed by Eurofins TestAmerica of Denver, Colorado

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

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

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

— = not applicable or not performed

BG = Background

Table 7. Cation-Anion Balance
First 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	8.9	3.6	12	38.5	0.70	0.73	0.08	0.52	2.03	29.7	34.3	36.0
MW-2A	20	11	3.0	16	50.0	1.00	0.91	0.07	0.70	2.67	28.6	37.4	33.9
MW-3	45	19	4.4	16	84.4	2.25	1.56	0.10	0.70	4.60	17.3	48.8	34.0
MW-4	31	17	5.7	13	66.7	1.55	1.40	0.13	0.57	3.64	19.1	42.5	38.4
MW-5A	29	11	4.4	49	93.4	1.45	0.91	0.10	2.13	4.58	48.7	31.6	19.8
MW-6	34	15	5.0	11	65	1.70	1.23	0.11	0.48	3.52	16.8	48.2	35.0
MW-7	32	21	5.8	16	74.8	1.60	1.73	0.13	0.70	4.15	19.9	38.5	41.6
MW-9	9.9	6.5	2.0	7.7	26.1	0.49	0.53	0.05	0.33	1.41	27.0	35.1	38.0
MW-10	25	11	2.1	13	51.1	1.25	0.91	0.05	0.57	2.77	22.2	45.1	32.7
LDCS-1	40	16	5.0	18	79	2.00	1.32	0.11	0.78	4.21	21.3	47.4	31.3
LDCS-2A	94	36	9.3	31	170.3	4.69	2.96	0.21	1.35	9.21	16.9	50.9	32.2
LDCS-2B	88	35	7.3	21	151.3	4.39	2.88	0.16	0.91	8.35	12.9	52.6	34.5
LDCS-3A	100	41	6.2	24	171.2	4.99	3.37	0.14	1.04	9.55	12.4	52.3	35.3
LDCS-4A	70	40	5.9	24	139.9	3.49	3.29	0.13	1.04	7.96	14.8	43.9	41.3
LDCS-4B	99	44	6.6	30	179.6	4.94	3.62	0.15	1.31	10.02	14.5	49.3	36.2
LDCS-5	70	42	7.7	32	151.7	3.49	3.46	0.17	1.39	8.52	18.4	41.0	40.6
LDCS-6	97	49	4.8	28	178.8	4.84	4.03	0.11	1.22	10.20	13.0	47.5	39.5
LDCS-7	120	40	3.9	31	194.9	5.99	3.29	0.09	1.35	10.72	13.4	55.9	30.7
LDCS-8	110	68	4.6	36	218.6	5.49	5.60	0.10	1.57	12.76	13.1	43.0	43.9
Leachate, Cell 8	530	150	310	1,300	2,290	26.45	12.35	7.00	56.55	102.34	62.1	25.8	12.1

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	103.2	1.8	0.50	2.4	107.9	1.69	0.05	0.008	0.05	1.80	2.8	94.0	2.8	3.84	6.1	10	○
MW-2A	132	2.8	0.50	6.1	141.4	2.16	0.08	0.008	0.13	2.38	3.3	91.0	5.3	5.05	5.7	5	Exceeds
MW-3	216	3.5	0.50	25	245	3.54	0.10	0.008	0.52	4.17	2.4	85.0	12.5	8.77	5.0	5	○
MW-4	192	3.3	0.50	11	206.8	3.15	0.09	0.008	0.23	3.48	2.7	90.5	6.6	7.12	2.3	5	○
MW-5A	228	3.6	0.50	19	251.1	3.74	0.10	0.008	0.40	4.24	2.4	88.1	9.3	8.83	3.8	5	○
MW-6	180	5.2	0.50	6.8	192.5	2.95	0.15	0.008	0.14	3.25	4.5	90.9	4.4	6.77	4.1	5	○
MW-7	228	3.2	0.50	2.7	234.4	3.74	0.09	0.008	0.06	3.89	2.3	96.0	1.4	8.05	3.2	5	○
MW-9	80.4	1.4	0.50	1.4	83.7	1.32	0.04	0.008	0.03	1.40	2.8	94.5	2.1	2.80	0.5	10	○
MW-10	132	6.8	3.0	5.5	147.3	2.16	0.19	0.048	0.11	2.52	7.6	85.9	4.5	5.28	4.7	5	○
LDCS-1	18	4.3	0.50	4.5	27.3	0.30	0.12	0.008	0.09	0.52	23.4	57.0	18.1	4.73	78.1	10	Exceeds
LDCS-2A	12	6.0	0.50	28	46.5	0.20	0.17	0.008	0.58	0.96	17.7	20.6	60.9	10.17	81.2	5	Exceeds
LDCS-2B	12	10.0	0.50	49	71.5	0.20	0.28	0.008	1.02	1.51	18.7	13.1	67.7	9.86	69.4	5	Exceeds
LDCS-3A	62.4	4.0	0.50	54	120.9	1.02	0.11	0.008	1.12	2.27	5.0	45.1	49.5	11.82	61.6	5	Exceeds
LDCS-4A	168	21	0.50	38	228	2.76	0.59	0.008	0.79	4.15	14.3	66.5	19.1	12.11	31.5	5	Exceeds
LDCS-4B	432	37	0.50	63	533	7.08	1.04	0.008	1.31	9.45	11.0	75.0	13.9	19.46	2.9	5	○
LDCS-5	372	26	0.50	54	453	6.10	0.73	0.008	1.12	7.97	9.2	76.6	14.1	16.48	3.3	5	○
LDCS-6	444	18	0.50	79	542	7.28	0.51	0.008	1.64	9.44	5.4	77.1	17.4	19.64	3.9	5	○
LDCS-7	18	17	0.50	16	52	0.30	0.48	0.008	0.33	1.12	43.0	26.5	29.8	11.83	81.1	5	Exceeds
LDCS-8	552	19	0.50	55	627	9.05	0.54	0.008	1.14	10.74	5.0	84.3	10.7	23.50	8.6	5	Exceeds
Leachate, Cell 8	4,920	1,300	1.10	21	6,242	80.69	36.66	0.018	0.44	117.80	31.1	68.5	0.4	220.14	7.0	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
First 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	190	180	5.4
Ammonia	0.1	0.14	0.15	6.9
Chloride	0.2	3.6	3.6	0.0
Sulfate	0.2	19	19	0.0
Total Dissolved Solids	10	250	260	3.9
Total Organic Carbon	1	1.1	1.1	0.0
Total Suspended Solids	4.0	4.0	*	0.0
Dissolved Metals (mg/L)				
Calcium	0.2	29	29	0.0
Magnesium	0.1	11	12	8.7
Manganese	0.005	0.24	0.19	23.3
Potassium	2.0	4.4	4.6	4.4
Sodium	1.0	49	48	2.1
Total Metals (mg/L)				
Arsenic	0.005	*	0.0065	26.1
Barium	0.005	0.015	0.016	6.5

Notes:

Analyses performed by Eurofins TestAmerica of Denver, Colorado

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

RPD = relative percent difference

µg/L = micrograms per liter

mg/L = milligrams per liter

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

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

Attachment C

Field Sampling Documentation

March 31, 2022

File No. 04222001.02

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

NOTES/SAMPLE DECODING:

Event Dates: March 29 & 30, 2022

Field Staff: Sam Graber & Ruben Martinez

- 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.
- The sample from LDCS-8 was collected from the channel discharge spigot.
- A non-dedicated Sample Pro pump was used for purging and sampling well MW-4.
- A round of water level measurements was completed on March 29 & 30, 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
304-032922-01	LDCS-7
304-032922-02	MW-1A
304-032922-03	LDCS-3A
304-032922-04	MW-2A
304-032922-05	LDCS-2B
304-032922-06	MW-3
304-032922-07	LDCS-2A
304-032922-08	MW-5A
304-032922-09	LDCS-1
304-032922-10	MW-5A (Duplicate)
304-032922-11	LDCS-4A
304-032922-12	MW-6
304-033022-13	LDCS-6
304-033022-14	MW-7
304-033022-15	QC, FB

304-033022-16	MW-10
304-033022-17	LDCS-5
304-033022-18	MW-9
304-033022-19	LDCS-4B
304-033022-20	LDCS-8
304-033022-21	MW-4
304-033022-22	Leachate, Cell 8

SCS ENGINEERS

2405 140th ave NE #107

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>LDC5-7</u>	MP-20	Refill: <u>11.5</u>	One Well Volume (liters)		Other:	
Sample ID: <u>304-03 29 22-01</u>	<u>YSI</u>	Discharge: <u>3.5</u>	Total Volume Bailed (liters)		Flow Setting:	
Date: <u>3/29/22</u>	BOS	Pressure: <u>40</u>				
Weather: <u>cloudy</u>	Total Depth	Flow: <u>200 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	125 ml Poly		
	500 ml HNO3 x2	500 ml H2SO4 x2	40 ml VOA x3 x6	1000 ml Amber		
	125 ml NaOH					

TIME	DTW	Temp.	Sp.Cond.	DO	pH	Eh	Turbidity	Q/Vol.
1000		13.4	1029	0.73	6.53	179.3	3.91	
1005		14.1	1037	0.50	6.68	152.3	4.75	
1008		15.1	1029	0.49	6.82	141.8	6.06	775
1011		16.0	1035	0.46	6.94	126.4	6.58	
1014		16.7	1039	0.42	6.87	1.5	5.81	
1617		17.1	1020	0.39	6.38	-11.4	4.21	
1020		17.5	1000	0.37	6.26	0.9	3.78	
1023		17.7	989	0.37	6.25	17.1	3.68	
1026		17.8	989	0.36	6.29	22.3	3.62	

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

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

SAMPLER: Sam Graber
Printed Name

Signature [Signature]

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-1A	TOS	MP-20	Refill	9	One Well Volume	Other:	
Sample ID:	304-0329 22- 02	Intake	YSI	Discharge	6	(liters)	Flow	
Date:	3/ 29 /22	BOS		Pressure	30	Total Volume Bailed	Setting:	
Weather:	overcast	Total Depth		Flow	350 mL/s	(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.
0950		13.10	168	8.55	6.42	143.3		
0955		13.73	165	5.47	6.90	122.0		
0958		13.50	69	3.00	6.55	102		
~~09-100~~		13.44	655	2.96	6.44	88.6		
1004		13.37	99	2.36	6.50	190	11.0	
1007		13.35	135	1.48	6.84	-30.3		
1010	21.35	13.33	141	1.39	6.86	-36	8.2	
1013		13.31	148	1.24	6.91	-46.0	9.3	

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

SAMPLER: R M andrew
Printed Name

Signature  

Bellevue, WA 98005

(425) 746-4600

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:	LDL5-3	MP-20	Refill	12	One Well Volume	Other:		
Sample ID:	304-0329 22-03	YSI	Discharge	3	(liters)	Flow		
Date:	3/29/22		Pressure	40	Total Volume Bailed	Setting:		
Weather:	cloudy		Flow	200 mL/min	(liters)			
Filtered? ☒ Y ☐ N	Locked? ☐ Y ☒ N	Water in Protector? ☐ Y ☒ N	Damaged? ☐ 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

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			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:	304-03 29 22- 04			YSI	Discharge	6	(liters)		Flow			
Date:	3/ 29 /22			BOS	Pressure	30	Total Volume Bailed		Setting:			
Weather:	overcast			Total Depth	Flow	vac mb/m	(liters)					
Filtered?	Y	N		Locked?	Y	N		Notes / Observations (color, odor, anomalies, etc):				
Sample Containers:	1000 ml Poly			Water in Protector?	Y	N						
	500 ml HNO3 x2				500 ml Poly			250 ml Poly			125 ml Poly	
	125 ml NaOH				500 ml H2SO4 x2			40 ml VOA x3 x6			1000 ml Amber	

TIME	DTW	Temp.	Sp.Cond.	DO	pH	Eh	Turbidity	Q / Vol.
1050	~~13.15~~	^{13.15} 12.99	264	4.34	7.01	-22.3		
1055		12.99	240	1.12	7.04	-43.3		
1058		12.94	241	0.89	7.08	-49.5		
1101		12.91	239	0.85	7.10	-54.3	0.2	
1104		12.89	238	0.60	7.11	-58.2		
1107		12.88	239	0.65	7.13	-62.7		
1110	~~17.83~~	12.89	239	0.67	7.13	-63.6	0.4	

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

[illegible]

Bellevue, WA 98005

(425) 746-4600

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-3			MP-20	Refill	9	One Well Volume	Other :		
Sample ID:	304-03 29 22- 06			YSI	Discharge	6	(liters)	Flow		
Date:	3/ 29 /22			BOS	Pressure	35	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):										

[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

(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:					
Well ID:	LDC5-2A	MP-20	Refill	1 ft water = 0.62L 1L = 0.26 gallons				
Sample ID:	304-0329 22-07	YSI	Discharge	One Well Volume (liters) _____ Other: _____				
Date:	3/29/22		Pressure	Total Volume Bailed (liters) _____ Flow Setting: _____				
Weather:	cloudy		Flow					
Filtered?	Y N							
Locked?	Y N							
Water in Protector?	Y N							
Damage?	Y N							
Sample Containers:	1000 ml Poly	500 ml Poly	250 ml Poly	125 ml Poly				
	500 ml HNO3 x2	500 ml H2SO4 x2	40 ml VOA x3 x6	1000 ml Amber				
	125 ml NaOH							
Notes / Observations (color, odor, anomalies, etc):								

[illegible]

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

SAMPLER: Jim Orner
Printed Name

Signature

Bellevue, WA 98005

(425) 746-4600

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-5A	MP-20	Refill	9	One Well Volume	Other:		
Sample ID:	304-03 29 22- 08	YSI	Discharge	6	(liters)	Flow		
Date:	3/29/22		Pressure	40	Total Volume Bailed	Setting:		
Weather:	cloudy		Flow	400ml/min	(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	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							

TIME	DTW	Temp.	Sp.Cond.	DO	pH	Eh	Turbidity	Q / Vol.
1245		12.08	314	7.70	7.40	3.0		
1250		12.39	402	1.60	7.45	-55.1		
1253		12.41	410	0.50	7.62	-66.3	13.00	
1256		12.43	409	3.31	7.64	-77.1		
1259		12.47	407	0.61	7.64	-77.8	5.31	
1302		12.40	406	0.44	7.63	-80.8		
1305	27.20	12.38	406	0.42	7.62	-81	4.8	

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

Project #:	04222001.02	 26.36	Sampling Method:	Dedicated	1.75" QED SamplePro	Bail	Peristaltic	Grab	Other	
Site	LRI 304th		DTW	Meter:	CONTROL SETTINGS:		1 ft water = 0.62L	1L = 0.26 gallons		
Well ID:	LDCS-1		TOS	MP-20	Refill		One Well Volume	Other:		
Sample ID:	304-0329 22-09		Intake	YSI	Discharge		(liters)	Flow		
Date:	3/29/12		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 _____

Signature _____

SCS ENGINEERS

2405 140th ave NE #107

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>665-4A</u>	MP-20	Refill: <u>11</u>	One Well Volume (liters)		Other: _____	
Sample ID: <u>304-032922-11</u>	<u>YSI</u>	Discharge: <u>4</u>	Total Volume Bailed (liters)		Flow Setting: _____	
Date: <u>3/29/22</u>	BOS	Pressure: <u>40</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	125 ml Poly		
	500 ml HNO3 x2	500 ml H2SO4 x2	40 ml VOA x3 x6	1000 ml Amber		
	125 ml NaOH					

TIME	DTW	Temp.	Sp.Cond.	DO	pH	Eh	Turbidity	Q/Vol
1403		16.3	663	0.84	6.48	10.65	11.59	
1408		14.7	730	0.54	6.41	26.6		
1411		20.5	750	0.39	6.53	18.7	11.2	
1414		20.8	747	0.37	6.60	11.7	55.58	
1417		21.1	747	0.34	6.68	3.5	40.11	
1420		21.0	748	0.33	6.71	0.6	37.41	1601
1423		21.1	748	0.31	6.71	-3.4	27.73	
1426		21.5	750	0.30	6.72	-7.5	20.18	
1429		21.6	752	0.30	6.76	-9.9	21.80	

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

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 [Signature]

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-6		TOS		MP-20		Refill 9		One Well Volume		Other:			
Sample ID: 304-03 29 22- 13		Intake		YSI		Discharge 6		(liters)		Flow			
Date: 3/ 29 /22		BOS				Pressure 25		Total Volume Bailed		Setting:			
Weather: Cloudy		Total Depth				Flow 350 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.
1410		10.36	344	5.00	7.61	-45.5		
1415		11.49	343	1.33	7.00	-101.1		
1418		11.75	344	1.40	6.92	-103.2	2.8	
1421		10.43	337	1.60	6.56	-77.7		
1424		10.64	329	0.54	7.31	-82.1	4.8	
1427		10.69	328	0.41	7.61	-85.4	2.1	
1430	8.69	10.73	328	0.37	7.66	-85	3.4	

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

SAMPLER: R. Martinez
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-6

Sample ID: 304-03 30 22- 13

Date: 3/30/22

Weather: cloudy

Filtered? ☒ 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

One Well Volume (liters)

Other:

Discharge 3

Pressure 40

Total Volume Bailed (liters)

Flow Setting:

Flow 100 mL/min



DTW

TOS

Intake

BOS

Total Depth

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

level at 12.0. water right away.

TIME	DTW	Temp.	Sp.Cond.	DO	pH	Eh	Turbidity	SpC panel QTVol.
940		12.4	951	7.10	6.87	200.9	10.07	
943		12.5	953	7.05	7.02	175.8	9.71	
948		12.5	959	7.02	7.11	151.9	9.53	
951		12.6	947	6.21	7.00	145.6	10.01	
954		12.7	939	~~6.05~~ 5.81	6.95	134.7	10.40	839
957		12.9	931	4.75	6.75	131.8	11.2	
1000		13.1	924	3.99	6.63	128.7	12.08	
1005		13.6	927	3.62	6.62	125.4	7.99	
1010		13.8	929	3.12	6.64	122.6	7.57	
1013		13.7	927	2.99	6.65	122.5	9.67	837

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

SAMPLER:

Printed Name

Sunny Guber

Signature

[Signature]

Bellevue, WA 98005

(425) 746-4600

Project #:	04221001.02			Sampling Method:	Dedicated	1.75" QED SamplePro	Bail	Peristaltic	Grab	Other	
Site	LRI 304th			Meter:	CONTROL SETTINGS:		1 ft water = 0.62L	1L = 0.26 gallons			
Well ID:	MW-7			MP-20	Refill	9	One Well Volume (liters)	Other:			
Sample ID:	304-09-21-304-033022			YSI	Discharge	6	Flow Setting:				
Date:	9/121-3/30/22			BOS	Pressure	3d	Total Volume Bailed (liters)				
Weather:	cloudy			Total Depth	Flow	40 m/min					
Filtered?	Y	N	Locked?	Y	N	Water in Protector?	Y	N	Damage?	Y	N
Sample Containers:	1000 ml Poly		500 ml Poly		250 ml Poly		125 ml Poly				
	500 ml HNO3 x2		500 ml H2SO4 x2		40 ml VOA x3 x6		1000 ml Amber				
	125 ml NaOH										
Notes / Observations (color, odor, anomalies, etc):											

TIME	DTW	Temp.	Sp.Cond.	DO	pH	Eh	Turbidity	Q / Vol.
0920		9.91	342	5.91	6.36	-27.4		
0925		9.72	368	1.49	6.45	-34.1		
0928		9.70	371	1.16	6.63	-37.8		
0931		9.71	373	0.99	6.76	-39.4		
0934		9.80	373	0.88	6.85	-42.6		
0937		10.30	375	0.65	6.99	-49.4		
0940	24.15	10.57	372	0.65	6.88	-45.0	3.4	

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

SAMPLER: B. Martinez
Printed Name

Signature

(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:	Field blank		MP-20	Refill		One Well Volume (liters)	Other:				
Sample ID:	304-03 30 22-15		YSI	Discharge			Flow Setting:				
Date:	3/30/22		BOS	Pressure		Total Volume Bailed (liters)					
Weather:	Sunny		Total Depth	Flow							
Filtered?	Y	N	Locked?	Y	N	Water in Protector?	Y	N	Damage?	Y	N
Sample Containers:	1000 ml Poly		500 ml Poly		250 ml Poly	125 ml Poly					
	500 ml HNO3	x2	500 ml H2SO4	x2	40 ml VOA	x3	x6	1000 ml Amber			
	125 ml NaOH										
Notes / Observations (color, odor, anomalies, etc):											

[illegible]

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

SAMPLER:

Printed Name _____

Signature _____

Bellevue, WA 98005

(425) 746-4600

Groundwater Sampling Data Sheet

Project #:	04221001.02			Sampling Method :	Dedicated	1.75" QED SamplePro	Bail	Peristaltic	Grab	Other
Site	LRI 304th			Meter:	CONTROL SETTINGS:			1 ft water = 0.62L	1L = 0.26 gallons	
Well ID:	MW-10			MP-20	Refill	9	One Well Volume	Other :		
Sample ID:	304-09 21- 304-033022			YSI	Discharge	6	(liters)	Flow		
Date:	9/ /21 3/30/22-16				Pressure	40	Total Volume Bailed	Setting :		
Weather:	cloudy				Flow	350 ml/min 200	(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.
1040		11.70	253	4.08	6.58	9.7		
1045		11.25	267	0.83	6.49	27.4		
1048		11.29	263	0.66	6.49	32.7		
1051		11.14	257	0.53	6.44	35.7		
1054		11.26	257	0.50	6.43	36.7		
1057		11.49	257	0.47	6.44	34.7		
1100	27.81	11.23	258	0.48	6.44	34.6	2.8	

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

SAMPLER: R. Mantione
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: 304-03 30 22- 17

Date: 3/30/22

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

DTW

Meter:

CONTROL SETTINGS:

1 ft water = 0.62L

1L = 0.26 gallons

TOS

MP-20

Refill

One Well Volume

Other:

Intake

YSI

Discharge

(liters)

Flow

BOS

Pressure

Total Volume Bailed

Setting:

Total Depth

Flow

150 mL/min

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

Leak at 10.3. Water right away

TIME	DTW	Temp.	Sp.Cond.	DO	pH	Eh	Turbidity	Q/Vol.
1115		13.5	625	6.60	7.14	87.3	20.20	
1120		16.9	602	1.96	6.42	115.9	3.95	
1123		17.9	608	1.02	6.45	61.2	4.01	
1126		19.4	613	0.71	6.49	30.7	5.61	
1129		19.7	711	0.47	6.55	37.9	11.20	
1132		20.2	800	0.38	6.62	48.8	19.57	
1135		20.1	805	0.35	6.62	62.7	19.82	
1138		20.1	810	0.32	6.63	84.4	20.86	1000
1145		20.8	814	0.30	6.76	94.7	20.84	
1148		21.0	813	0.29	6.72	97.9	20.85	
1151		20.9	814	0.30	6.73	100.6	20.79	

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 Gruber

Signature

[Signature]

Bellevue, WA 98005

(425) 746-4600

Groundwater Sampling Data Sheet

Project #: 04221001.02		Sampling Method: Dedicated		1.75" QED SamplePro		Bail		Peristaltic		Grab		Other	
Site: LRI 304th		7.96 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		Other:			
Sample ID: 304-09 21- 304-0330 ²² -18		Intake		YSI		Discharge 6		(liters)		Flow			
Date: 9/ 121 3/30/22		BOS				Pressure 45		Total Volume Bailed		Setting:			
Weather: Cloudy		Total Depth				Flow 350 ml/min 300		(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.
1305		10.20	130	10.00	6.45	30.0		
1310		10.11	129	4.60	6.69	31.3		
1313		10.11	128	4.27	6.85	30.4		
1316		10.08	129	4.12	6.88	30.9		
1319		10.31	129	4.03	6.90	37.8		
1322		10.32	129	4.00	6.90	35.8		
1325	8.18	10.18	129	3.97	6.91	34.5	2.9	

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

SAMPLER: Roben Martinez
Printed Name

Signature _____

SCS ENGINEERS

2405 140th ave NE #107

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>MP-20</u>	CONTROL SETTINGS:		1 ft water = 0.62L	1L = 0.26 gallons	
Well ID: <u>LDCS-4B</u>	Intake: <u>YSI</u>	Refill: <u>12</u>	One Well Volume (liters)	Other: _____		
Sample ID: <u>304-03 30 22-19</u>	BOS	Discharge: <u>3</u>	Total Volume Bailed (liters)	Flow Setting: _____		
Date: <u>3/30/22</u>	Total Depth	Pressure: <u>40</u>				
Weather: <u>cloudy</u>		Flow: <u>150 mL/min</u>				
Filtered? <u>Y</u>	Locked? <u>Y</u>	Water in Protector? <u>Y</u>	Damage? <u>Y</u>			
Sample Containers:	1000 ml Poly	500 ml Poly	250 ml Poly	125 ml Poly		
	500 ml HNO3 x2	500 ml H2SO4 x2	40 ml VOA x3 x6	1000 ml Amber		
	125 ml NaOH					

TIME	DTW	Temp.	Sp.Cond.	DO	pH	Eh	Turbidity	Q/Vol.
1237	began pumping							
1252		23.8	953	0.39	6.75	-10.8	4.36	
1257		24.2	958	0.33	7.05	-13.7	3.84	
1300		24.3	957	0.31	7.12	-15.8	3.93	
1303		24.0	956	0.31	7.14	-16.9	3.75	
1306		23.7	956	0.31	7.17	-18.2	3.68	
1309		23.5	955	0.30	7.10	-19.2	3.69	
1312		23.1	955	0.30	7.07	-19.7	3.68	
1315		22.9	954	0.30	7.02	-20.2	3.61	
1318		23.0	954	0.29	7.00	-20.8	3.69	833

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

Level at 20.

13 mins to get water

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

SAMPLER: Samir Gabe
Printed Name

Signature [Signature]

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: MW-4

Sample ID: 304-03 30 22- 21

Date: 3/ 30 122

Weather: Cloudy

Filtered? ☒ 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

9

One Well Volume

(liters)

Other:

Discharge

6

Pressure

50

Total Volume Bailed

(liters)

Flow

Setting:

Flow

250 mL/min



21.12

DTW

TOS

Intake

BOS

Total Depth

77.71

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

21.11

TIME	DTW	Temp.	Sp.Cond.	DO	pH	Eh	Turbidity	Q / Vol.
1427		15.4	365	1.52	8.56	26.5	27.28	
1432		13.5	356	0.96	7.70	-17.6	13.34	
1435		13.4	356	0.86	7.61	-34.5	12.74	
1438		13.1	356	0.72	7.60	-44.7	9.35	
1441		13.1	356	0.64	7.59	-52.8	8.16	
1443		13.1	356	0.59	7.59	-56.8	7.91	
1447		13.1	356	0.55	7.59	-61.7	7.75	
1450		13.1	356	0.52	7.58	-64.2	8.18	
1453		13.1	356	0.50	7.58	-65.6	8.78	

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 Gabor

Signature

[Signature]

Bellevue, WA 98005

(425) 746-4600

Project #: 04221001.02		Sampling Method :		Dedicated	1.75" QED SamplePro	Bail	Peristaltic	Grab	Other
Site LRI 304th		DTW		Meter:	CONTROL SETTINGS:		1 ft water = 0.62L		1L = 0.26 gallons
Well ID: Leachate cell 8		TOS		MP-20	Refill	One Well Volume	Other :		
Sample ID: 304-09 21- 304-033022		Intake		YSI	Discharge	(liters)	Flow		
Date: 9/ 121 3/30/22 -22		BOS			Pressure	Total Volume Bailed	Setting :		
Weather: Cloudy		Total Depth			Flow	(liters)			
Filtered? Y N	Locked? Y N	Water in Protector? Y N	N/A	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.
~~1510~~		~~19.50~~	~~11069~~		7.29			
			<u>11078</u>					
1510		19.26	11172	3.30	7.28	2.5	>100	

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

SAMPLER: Ruben Martinez
Printed Name

Signature _____

GROUNDWATER SAMPLING INSTRUMENT CALIBRATION DOCUMENTATION FORM

	Conductivity	pH 4	pH 7	D.O.	Turbidity	Comments/Exceptions
Date	BUS 3/29/22					
Time						
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	1402	4.36	6.92	9.21		
Post Cal Reading	1413	4.00	7.00	8.5		
Discrepancy	No					
Calib. Successful?	Yes					
Calibration by	SEB					
Instrument Type, ID	YSI Pro DDS / YSI 556 / Rental				YSI Pro DDS / HACH2000	
Calibration Location	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	3/29/22					
Time	0840					
Weather (sky or precip, temp)	over cast					
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	1406	3.97	7.03	8.65	—	
Post Cal Reading	1413	4.00	7.00	8.50	—	
Discrepancy	no					
Calib. Successful?	yes					
Calibration by	RMB					
Instrument Type, ID	YSI Pro DDS / YSI 556 / Rental				YSI Pro DDS / HACH2000	
Calibration Location	LRI MWI					

* 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	3/30/22					
Time	8:00					
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	1419	4.04	7.00	8.32		
Post Cal Reading	1413	4.00	7.00	8.5		
Discrepancy	no					
Calib. Successful?	yes					
Calibration by	RMB					
Instrument Type, ID	YSI Pro DDS / YSI 556 / Rental				YSI Pro DDS / HACH2000	
Calibration Location	LRI Parking lot					

* 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	3/30/22					
Time	915					
Weather (sky or precip, temp)	cloudy / l. rain.					
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	3.93	7.00	9.13		
Post Cal Reading	1413	4.00	7.00	8.5		
Discrepancy	No					
Calib. Successful?	Yes					
Calibration by	SEB					
Instrument Type, ID	YSI Pro DDS / YSI 556 / Rental				YSI Pro DDS / HACH2000	
Calibration Location	Booth					

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

LRI Landfill

Water Level Data

Date: 3/29 & 3/30 2022

Measured by: SG & PM

	Ground Elevation	PVC Elevation	Total Depth	Depth to Water	Water Level Elevation	Time	Comments
Wells							
W87-2A	662.5	664.01		16.23	664.01		
W88-3M R	654.8	656.48		12.71	656.48		
W87-4a	691.9	693.29		5.74	693.29		
W88-7A	631.3	632.51		Lost	632.51		
W88-8M	719.7	721.05		39.18	721.05		
W90-12A S	638.6	640.84		28.54	640.84		
W95-14A R	678.6	680.49		0.74	680.49		* equilibrated?
MW-1A	653.2	652.57	75.7	17.28	652.57		
MW-2A	652.2	651.93	67.2	18.07	651.93		
MW-3	635.7	637.41	70.4	5.91	637.41		
MW-4 S		652.37		21.12	652.37		
MW-5		654.40		abandoned	654.40		
MW-5A		655.55		25.91	655.55		
MW-6	633.4	635.71	52.4	7.61	635.71		
MW-7	654.7	656.03	58.0	20.84	656.03		
MW-9	699.1	701.77	76.8	7.96	701.77		
MW-10	671.5	674.17		25.26	674.17		
Piezometers							
P88-2a	633.0	663.96		Lost			
P88-2b	633.0	663.48		Lost			
P88-3a R	655.1	656.20	27.4	10.58	656.20		
P88-3b R	655.1	655.98	39.8	14.46	655.98		
P95-8a	721.2	722.07		21.35	722.07		
P90-12a S	638.6	640.79		4.01			
P90-12b S	638.6	640.73		2.76			
P90-13a	643.5	645.19		Lost			
P90-13b	643.5	643.63		Lost			
P13-14A O				21.27			
GP-1P		652.00			652.00		
GP-2P		656.61			656.61		
GP-3P		658.51			658.51		
GP-4P		662.01			662.01		
GP-9P		674.03			674.03		
GP-10P		649.86			649.86		
~~GP-11P~~ P21-1				6.23			
~~GP-12P~~ P21-2				19.60			
~~GP-13P~~ P21-3				5.00			
South Creek							
SWSC-1 S		Head Wall 632.79		0.80			
SWSC-2 S		629.95		6.30	629.95		"from top of concrete"
Leak Detection System							
LDCS-1		657.26		26.36	657.26		
LDCS-2A		659.24		28.92	659.24		
LDCS-2B		661.70		28.00	661.70		



Attachment D

Statistical Calculations

Groundwater Prediction Limits (mg/L)
Appendix I Parameters, First 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, First 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.				
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	0.001	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	0.5	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	0.002	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	0.032	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	0.01	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	0.01	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	0.01	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	0.01	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				
Number Detected	0			0			8			0			0			0			0			0			0			0			0			2			0			0			0					
Minimum Concentration		0.001		0.0025		0.02		0.0005		0.0005		0.001		0.0005		0.001		0.0005		0.0005		0.001		0.0005		0.001		0.0025		0.0025		0.0005		0.0025		0.0005		0.0025		0.005		0.005		0.25				
Maximum Concentration		0.025		0.0025		0.03		0.0025		0.0025		0.0025		0.0025		0.005		0.001		0.005		0.001		0.01		0.0025		0.005		0.0025		0.005		0.0025		0.005		0.032		0.032		0.25						
Average Concentration		NC		NC		0.02288		NC		NC		NC		NC		NC		NC		NC		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		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		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		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		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	0.5	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	0.005	L	0.0025	0.005	L	0.0025	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	0.01	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	0.01	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	0.01	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	0.01	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	0.01	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				
Number Detected	0			0			8			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		0.0005		0.001		0.0005		0.001		0.0025		0.0025		0.0005		0.0025		0.0005		0.0025		0.005		0.005		0.25				
Maximum Concentration		0.025		0.0025		0.018		0.0025		0.0025		0.0025		0.0025		0.005		0.0025		0.005		0.001		0.01		0.0025		0.005		0.0025		0.005		0.0025		0.005		0.005		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		NC		NC		NC		NC		NC		NC		NC		
Variance		NC		NC		3.3E-06		NC																																								

Statistical Summary of Total Metals and Nitrate Groundwater Data
Appendix I Parameters, First 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-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		0.001		0.0005		0.001		0.0025		0.0025		0.0005		0.0025		0.005		0.25	
Maximum Concentration		0.025		0.011		0.091		0.0025		0.0025		0.011		0.005		0.063		0.042		0.01		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		NC		NC		NC		NC		NC		NC	
Variance		NC		1.6E-06		0.00076		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC	
Standard Deviation		NC		0.00125		0.02763		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC	
Coefficient of Variation (%)		NC		14.0465		121.469		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC	
Standard Error		NC		0.00044		0.00977		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC	
MW-5	3/24/2014	0.002	L 0.001	0.0072	0.0072	0.032	0.032	0.001	L 0.0005	0.005	L 0.0025	0.002	L 0.001	0.01	L 0.005	0.002	L 0.001	0.001	L 0.0005	0.002	L 0.001	0.005	L 0.0025	0.01	L 0.005	0.001	L 0.0005	0.01	L 0.005	0.01	L 0.005	0.5	L 0.25
	6/25/2014	0.002	L 0.001	0.0067	0.0067	0.033	0.033	0.001	L 0.0005	0.005	L 0.0025	0.0036	0.0036	0.01	L 0.005	0.0061	0.0061	0.001	L 0.0005	0.0043	0.0043	0.005	L 0.0025	0.01	L 0.005	0.001	L 0.0005	0.01	L 0.005	0.01	L 0.005	0.5	L 0.25
	9/16/2014	0.05	L 0.025	0.0059	0.0059	0.036	0.036	0.005	L 0.0025	0.005	L 0.0025	0.0051	0.0051	0.01	L 0.005	0.01	L 0.005	0.002	L 0.001	0.02	L 0.01	0.005	L 0.0025	0.01	L 0.005	0.005	L 0.0025	0.01	L 0.005	0.01	L 0.005	0.5	L 0.25
	12/16/2014	0.05	L 0.025	0.0055	0.0055	0.022	0.022	0.001	L 0.0005	0.001	L 0.0005	0.005	L 0.0025	0.001	L 0.0005	0.01	L 0.005	0.002	L 0.001	0.02	L 0.01	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.01	L 0.005	0.5	L 0.25
	3/23/2015	0.05	L 0.025	0.008	0.008	0.03	0.03	0.001	L 0.0005	0.001	L 0.0005	0.005	L 0.0025	0.001	L 0.0005	0.01	L 0.005	0.002	L 0.001	0.02	L 0.01	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.01	L 0.005	0.5	L 0.25
	6/8/2015	0.05	L 0.025	0.0075	0.0075	0.02	0.02	0.001	L 0.0005	0.001	L 0.0005	0.005	L 0.0025	0.001	L 0.0005	0.01	L 0.005	0.002	L 0.001	0.02	L 0.01	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.01	L 0.005	0.5	L 0.25
	9/18/2015	0.05	L 0.025	0.005	L 0.0025	0.014	0.014	0.001	L 0.0005	0.001	L 0.0005	0.005	L 0.0025	0.001	L 0.0005	0.01	L 0.005	0.002	L 0.001	0.02	L 0.01	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.01	L 0.005	0.5	L 0.25
	12/14/2015	0.05	L 0.025	0.0072	0.0072	0.021	0.021	0.001	L 0.0005	0.001	L 0.0005	0.005	L 0.0025	0.001	L 0.0005	0.01	L 0.005	0.002	L 0.001	0.02	L 0.01	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.01	L 0.005	0.5	L 0.25
	Number Analyzed	8		8		8		8		8		8		8		8		8		8		8		8		8		8		8		8	
Number Detected	0		7		8		0		0		2		0		1		0		1		0		0		0		0		1		0		
Minimum Concentration		0.001		0.0025		0.014		0.0005		0.0005		0.001		0.0005		0.001		0.0005		0.001		0.0025		0.0025		0.0005		0.0025		0.005		0.25	
Maximum Concentration		0.025		0.008		0.036		0.0025		0.0025		0.0051		0.005		0.0061		0.001		0.001		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																													

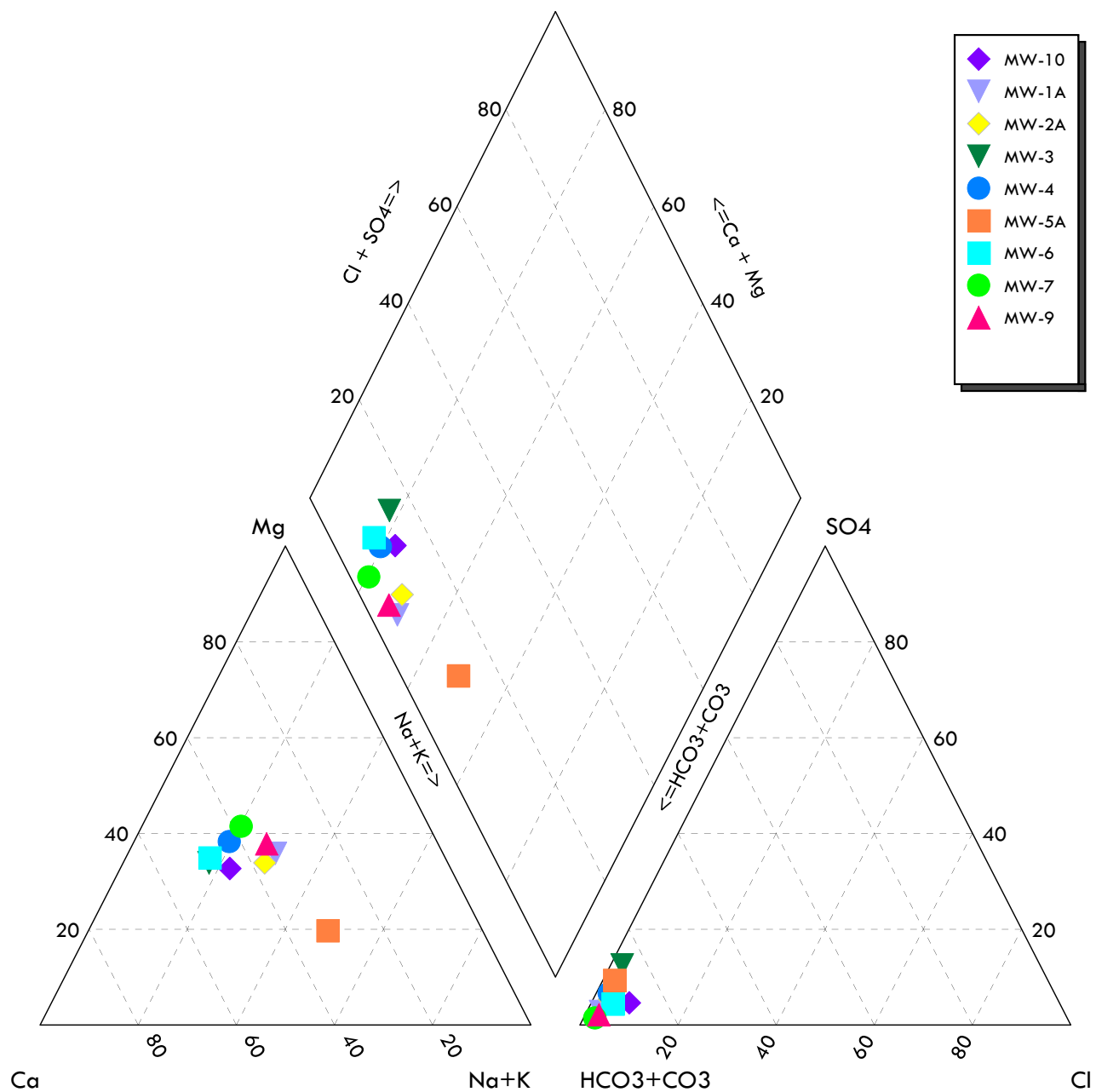
Statistical Summary of Total Metals and Nitrate Groundwater Data
Appendix I Parameters, First Quarter 2022
LRI Landfill, Pierce County, Washington

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	0.005	L	0.0005	0.016	0.016	0.01	L	0.005	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	0.005	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	0.005	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	0.001	L	0.005	0.002	L	0.001	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	0.002	L	0.01	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	0.002	L	0.01	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	0.002	L	0.01	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	0.002	L	0.01	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	0.002	L	0.01	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	0.002	L	0.01	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	0.002	L	0.01	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	0.002	L	0.01	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	0.002	L	0.01	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	0.002	L	0.01	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	0.002	L	0.01	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	0.002	L	0.01	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	0.002	L	0.01	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	0.002	L	0.01	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	0.002	L	0.01	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	0.002	L	0.01	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	0.002	L	0.01	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	0.002	L	0.01	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	0.002	L	0.01	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	0.002	L	0.01	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	0.002	L	0.01	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	0.002	L	0.01	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	0.002	L	0.01	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	0.002	L	0.01	0.005	L	0.0025	0.014	0.						

Attachment E

Trilinear Diagrams

First Quarter 2022, Groundwater Monitoring Wells



DESCRIPTION: Piper Diagram - 1Q22 Groundwater

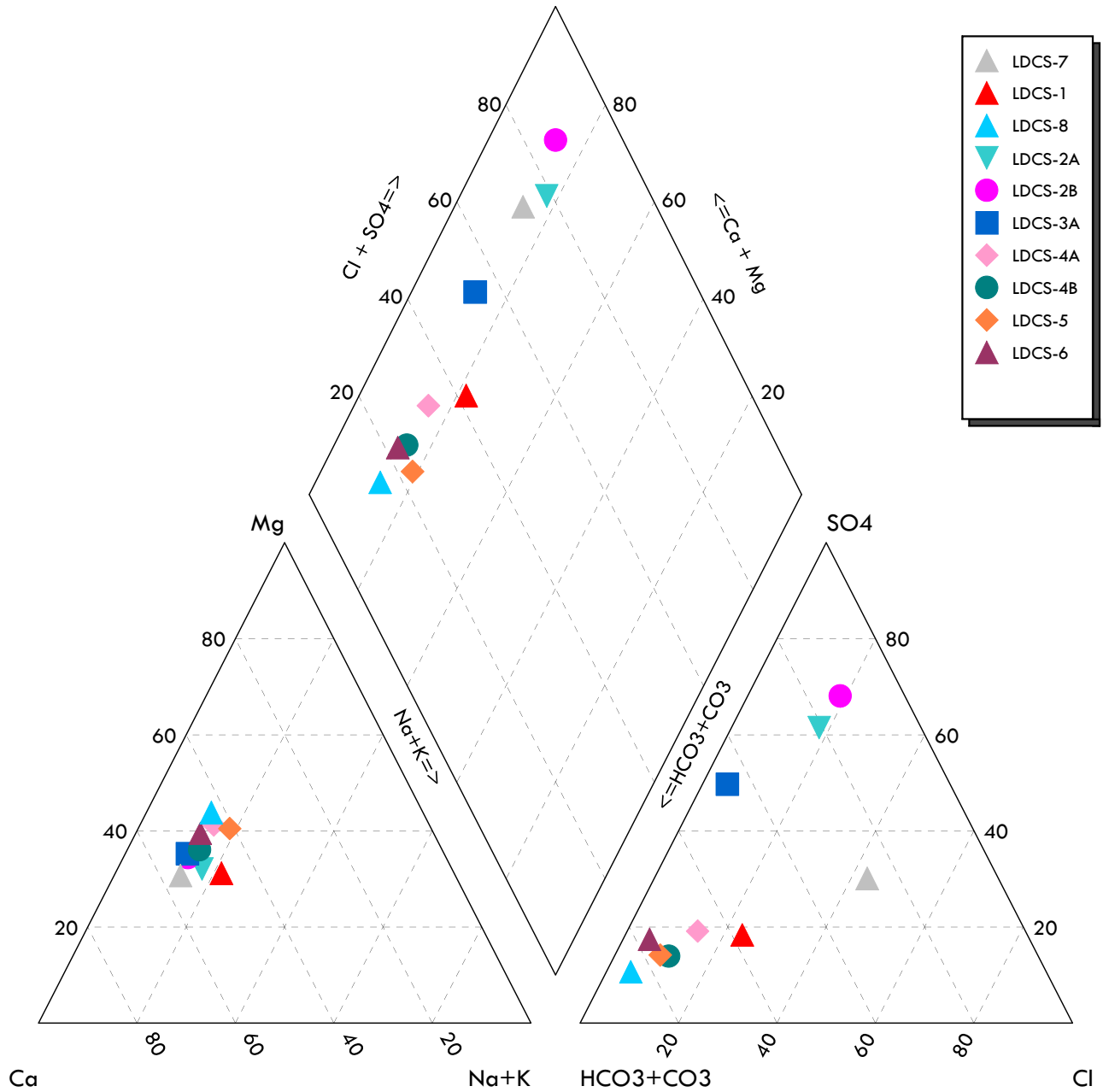
PROJECT: LRI Landfill

PROJECT NO: 04222001.02

CLIENT: LRI, Inc.

DATE: June 2022

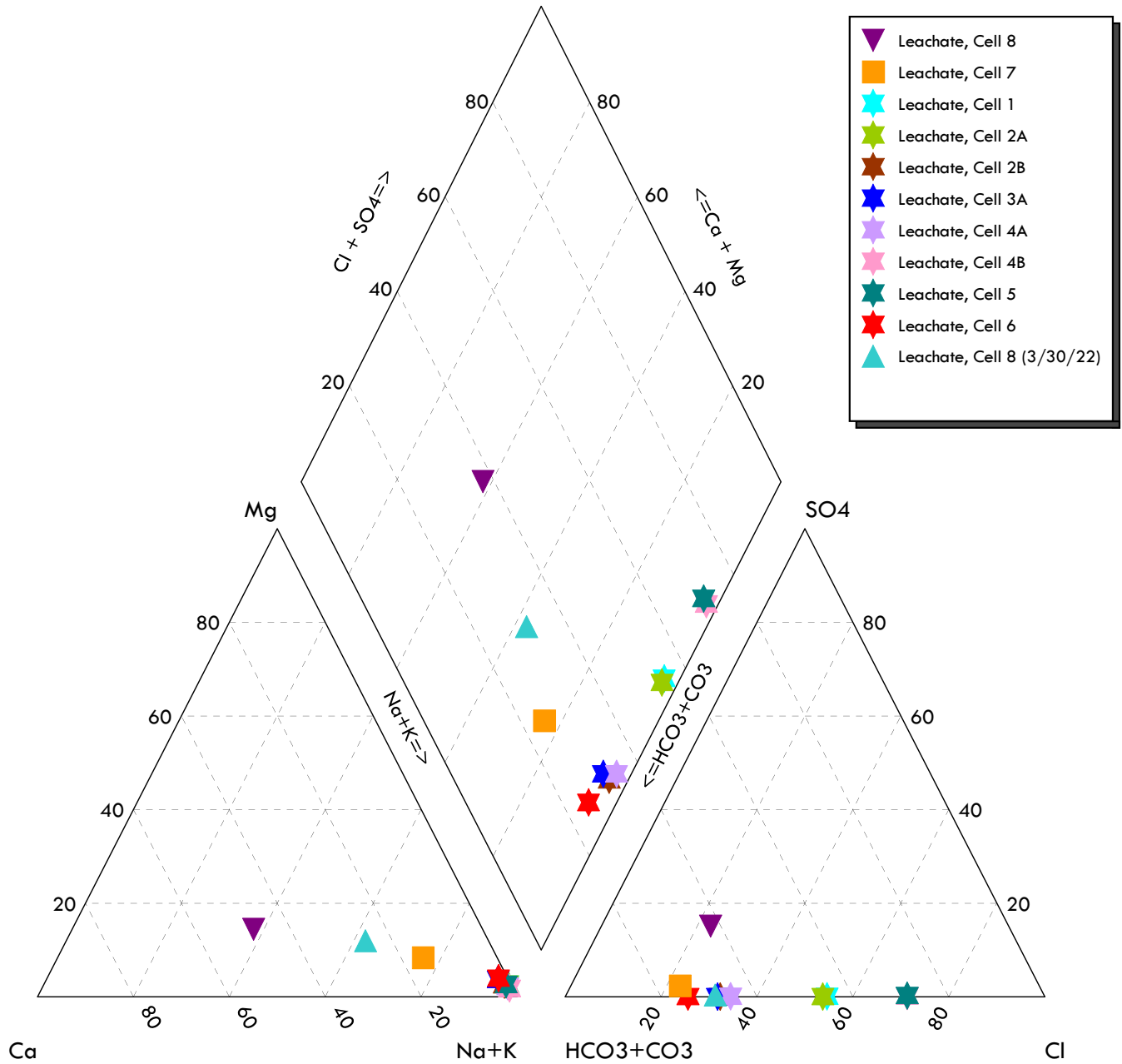
First Quarter 2022, Leak Detection Collection Recovery System



DESCRIPTION: Piper Diagram - 1Q22 LDCRS

	PROJECT: LRI Landfill	PROJECT NO: 04222001.02
	CLIENT: LRI, Inc.	DATE: June 2022

Fourth Quarter 2021, Leachate



DESCRIPTION: Piper Diagram - 4Q21 Leachate

PROJECT: LRI Landfill

PROJECT NO: 04222001.02

CLIENT: LRI, Inc.

DATE: June 2022

Attachment F

Analytical Data Validation Report

FIRST QTR. 2022 DATA VALIDATION REPORT – LRI LANDFILL

Project Details

Project No.	04222001.02	Site Name	LRI 304 th Street LF
Data Validator	Ketan Shah	Data Level	Level 2
Date	5/2/22	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)
280-160343-1	Sample "-10" and "-12" were delayed in transit. Cooler was recorded above the temperature threshold of 6.0 degrees celcius. SCS directed laboratory to proceed with analysis. The nitrate analyses for these samples was performed outside out the holding time.	TestAmerica, Denver, CO
280-160381-1	None.	TestAmerica, Denver, CO
280-160386-1	Samples "-09" and "-11" were delayed in transit. Cooler was recorded above the temperature threshold of 6.0 degrees celcius. SCS directed laboratory to proceed with analysis. Due to the shipping delay, the nitrate analyses for samples "-01", "-03", "-05", "-07", "-09", "-11", was performed outside out the holding time.	TestAmerica, Denver, CO
280-160388-1	None.	TestAmerica, Denver, CO
280-160399-1	The original Alkalinity result for the sample "-22" was over the calibration range, therefore the sample was reanalyzed outside of the 14-day holding time.	TestAmerica, Denver, CO

Analytical Summary

Sample Group	Analyses					
	TDS/Alk/NO3	Metals	NH3/TOC	VOCs	Anions	TSS
280-160343-1	X	X ²	X	X	X	X
280-160381-1	X	X ²	X	X	X	X
280-160386-1	X	X ¹	X	X	X	-
280-160388-1	X	X ¹	X	X	X	-
280-160399-1	X	X ³	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	Acceptable.	See case narratives.
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	280-160386-1, 280-160388-1	Calibration Blank (ICB and/or CCB) is outside acceptance limits.
4	280-160343-1, 280-160381-1, 280-160386-1, 280-160388-1, 280-160399-1	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	280-160399-1	Compound was found in the blank and sample.
F1	280-160388-1, 280-160399-1	MS and/or MSD recovery exceeds control limits.
F2	280-160388-1, 280-160399-1	MS/MSD RPD exceeds control limits
E	280-160343-1, 280-160386-1	Result exceeded calibration range.
H	280-160343-1, 280-160386-1, 280-160399-1	Sample was prepped or analyzed beyond the specified holding time
J	280-160343-1, 280-160381-1, 280-160386-1, 280-160388-1, 280-160399-1	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

*+	280-160343-1, 280-160386-1	LCS and/or LCSD is outside acceptance limits, high biased.
*1	280-160343-1, 280-160381-1, 280-160386-1, 280-160388-1, 280-160399-1	LCS/LCSD RPD exceeds control limits.
*-	280-160381-1, 280-160386-1, 280-160388-1, 280-160399-1	LCS and/or LCSD is outside acceptance limits, low biased.

Duplicate Evaluation

Analyte	Units	MW-5A (304-032922-08)	MW-5A DUP (304-032922-10)	RPD (%)
Alkalinity, Total	mg/L	190	180	5.4
Ammonia	mg/L	0.14	0.15	6.9
Chloride	mg/L	3.6	3.6	0.0
Sulfate	mg/L	19	19	0.0
Total Dissolved Solids	mg/L	250	260	3.9
Total Organic Carbon	mg/L	1.1	1.1	0.0
Total Suspended Solids	mg/L	4.0	4.0 U	0.0
Calcium, Dissolved	mg/L	29	29	0.0
Magnesium, Dissolved	mg/L	11	12	8.7
Manganese, Dissolved	mg/L	0.24	0.19	23.3
Potassium, Dissolved	mg/L	4.4	4.6	4.4
Sodium, Dissolved	mg/L	49	48	2.1
Arsenic, Total	mg/L	0.005 U	0.0065	26.1
Barium, Total	mg/L	0.015	0.016	6.5

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

Additional Data Flags

Flag	Description
U	Not detected above the method reporting limit.

Qualified Data and Usability

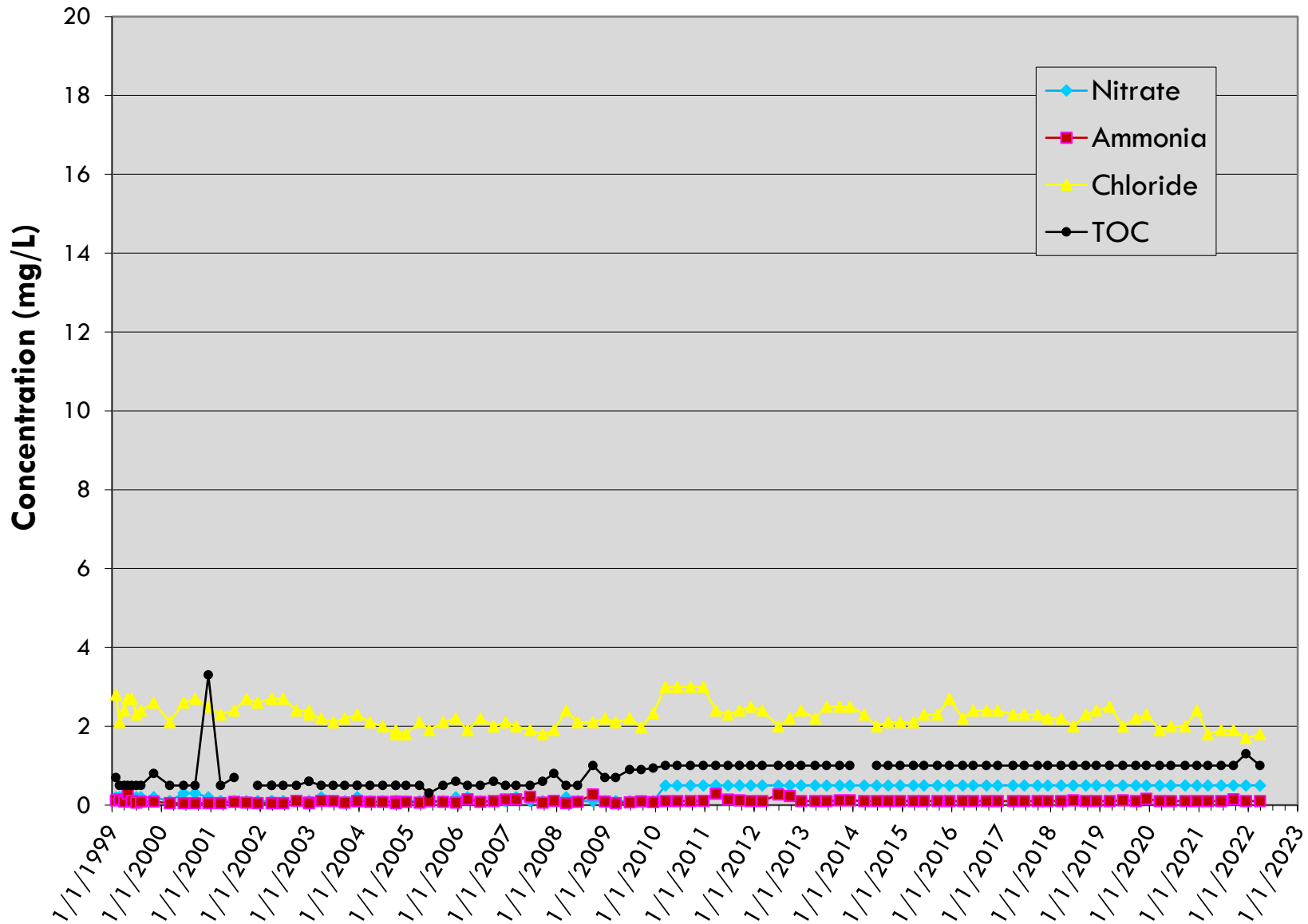
Lab qualifiers are noted. All data, as qualified, are acceptable for use.

Attachment G

Groundwater and LDCS Time Trend Plots

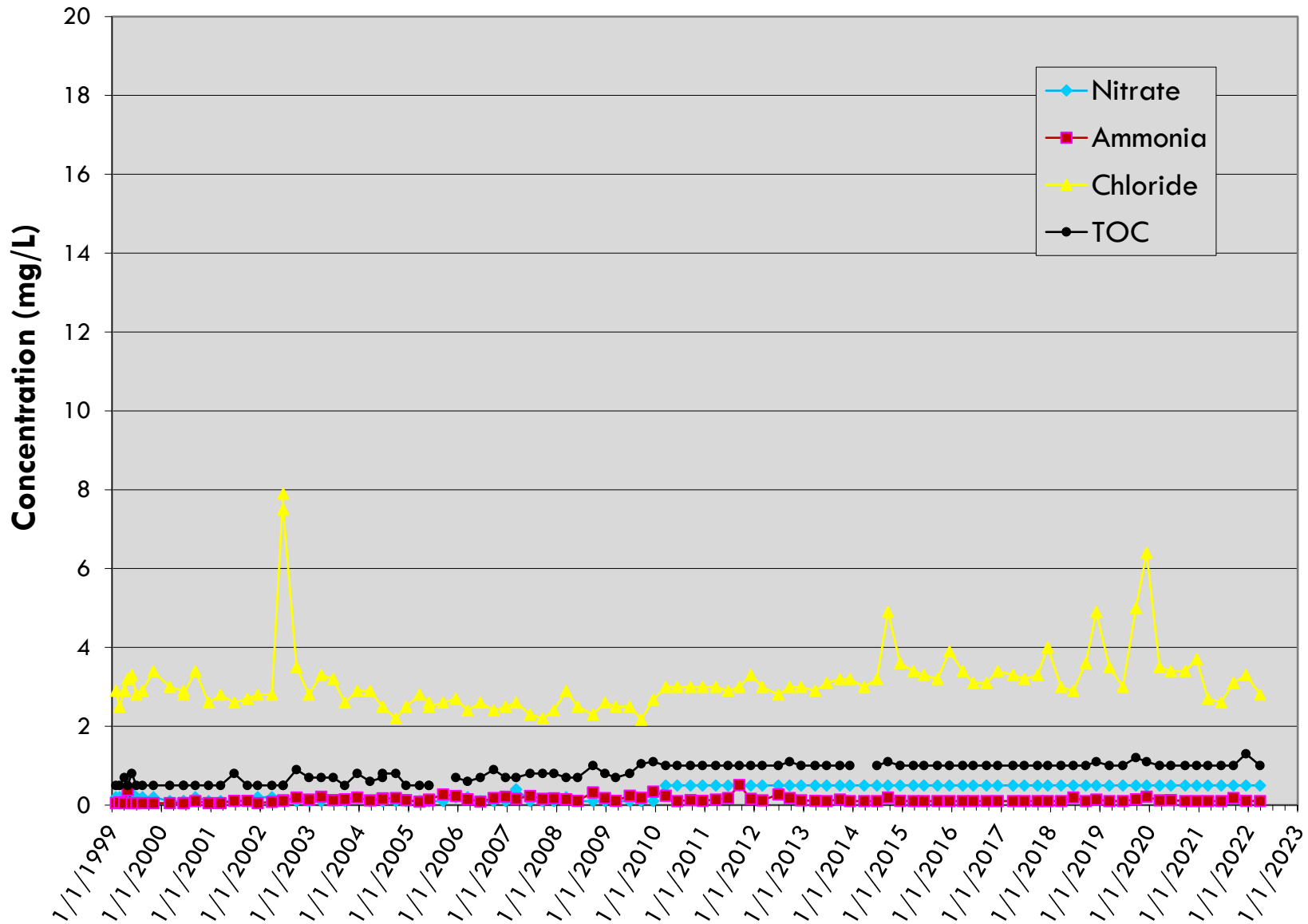
MW-1A

LRI Landfill, Pierce County, Washington



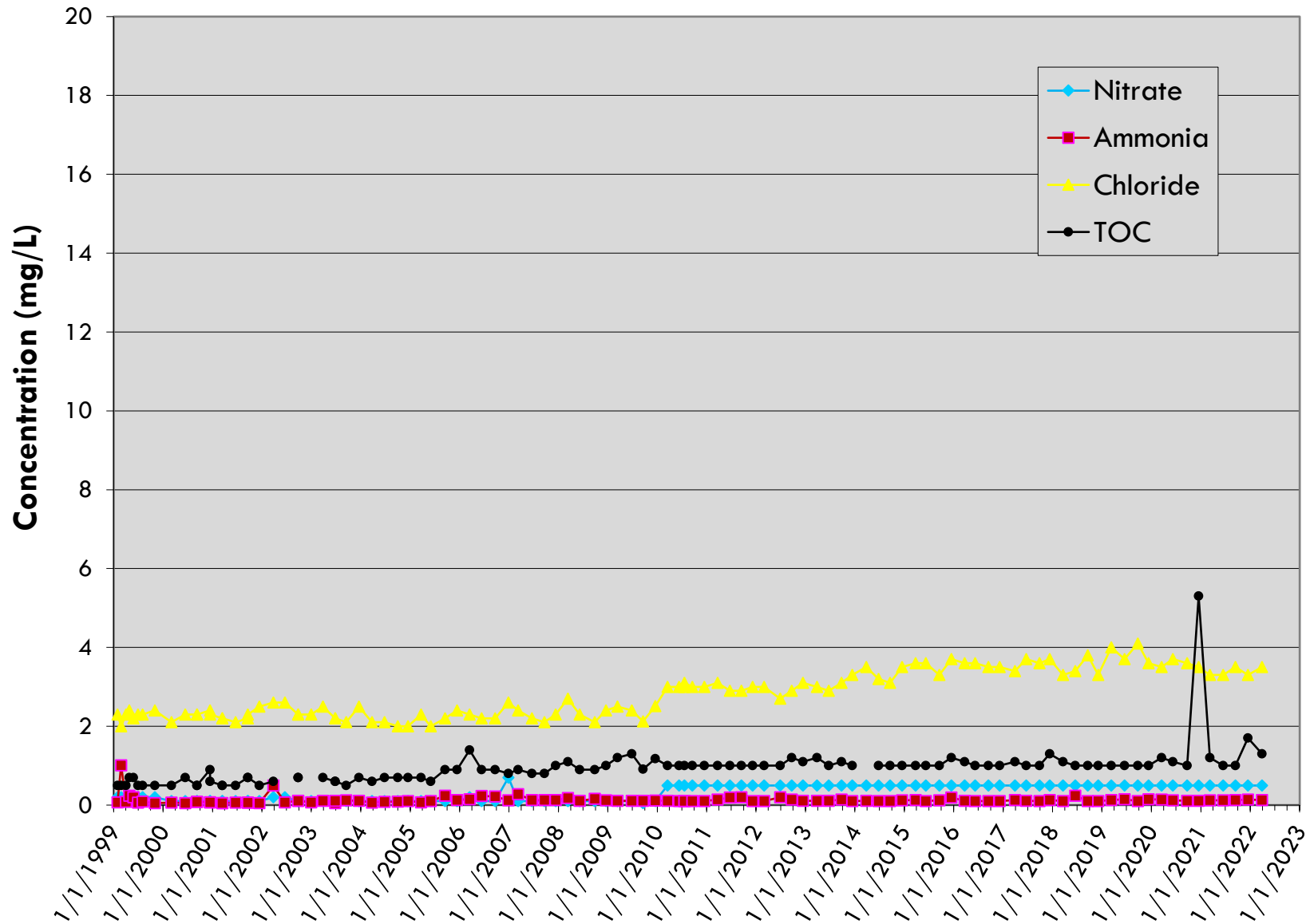
MW-2A

LRI Landfill, Pierce County, Washington



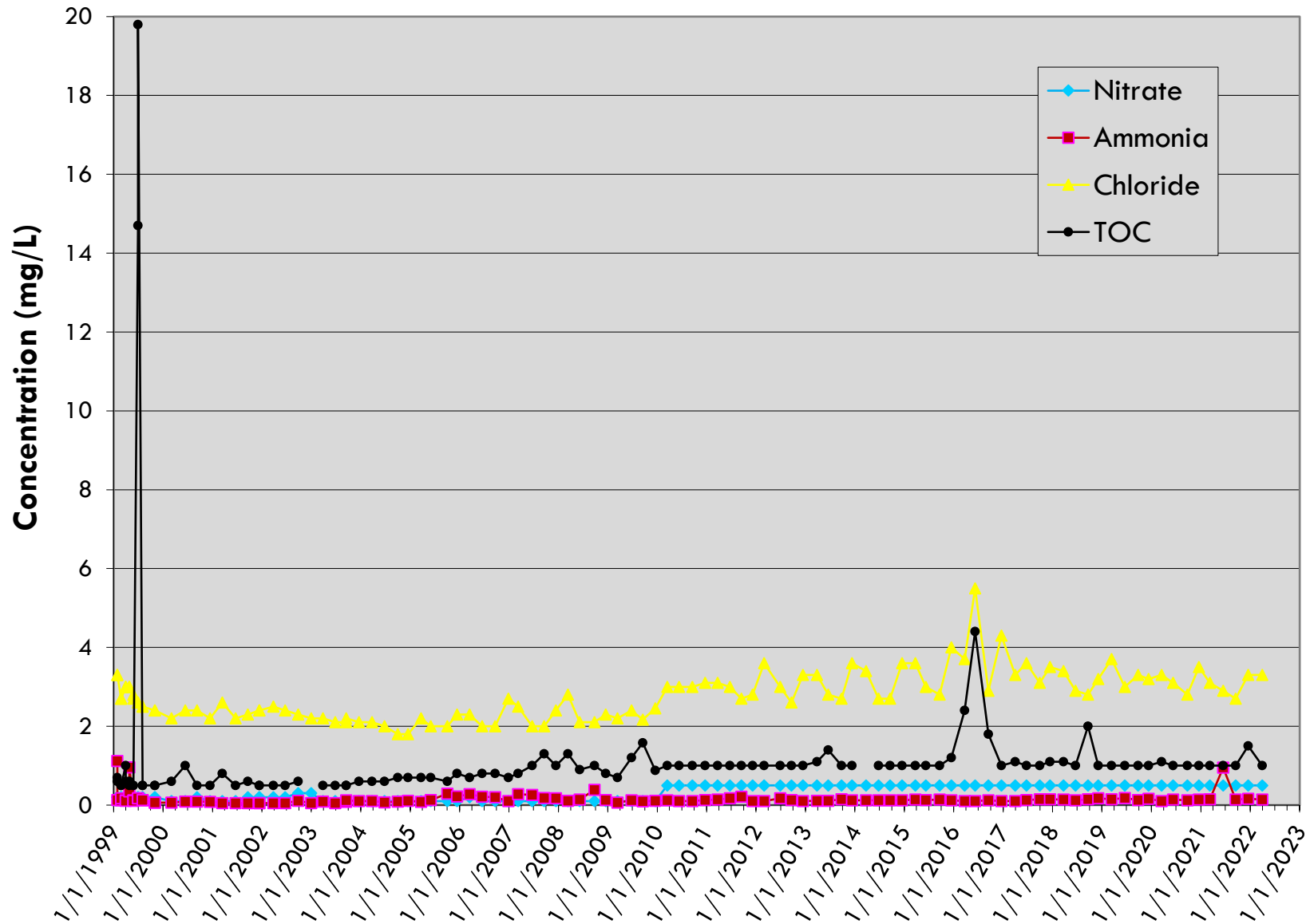
MW-3

LRI Landfill, Pierce County, Washington



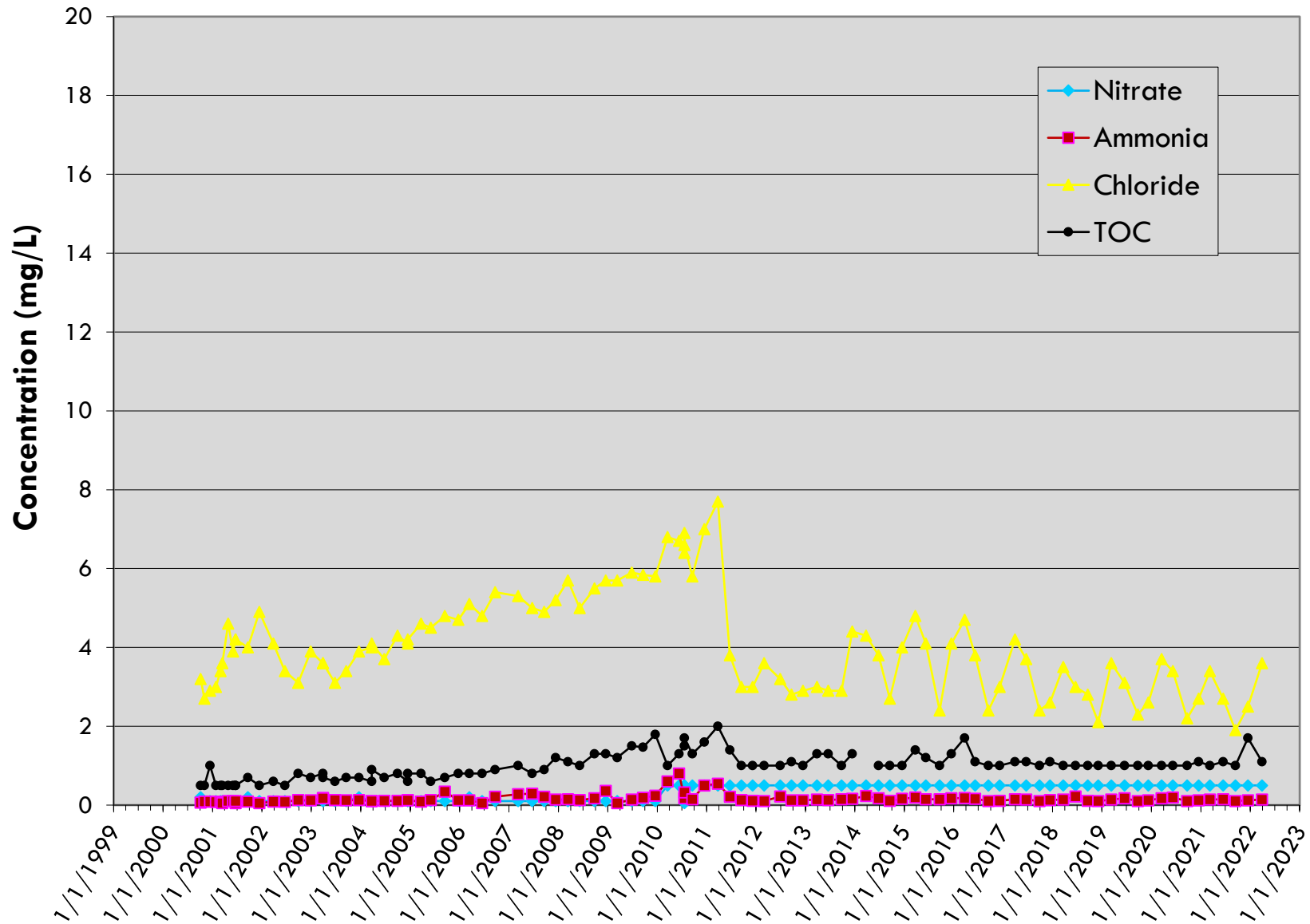
MW-4

LRI Landfill, Pierce County, Washington



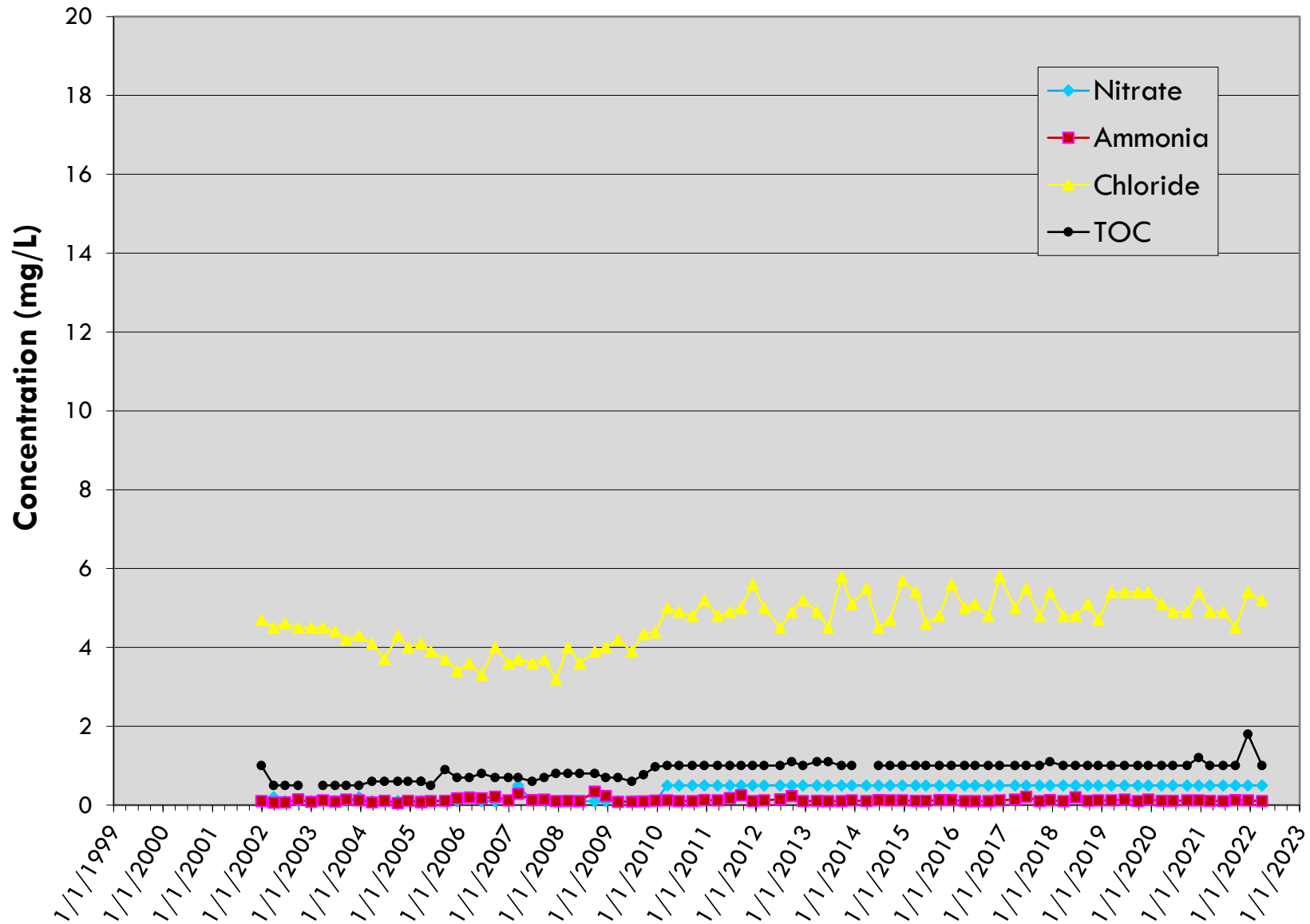
MW-5A

LRI Landfill, Pierce County, Washington



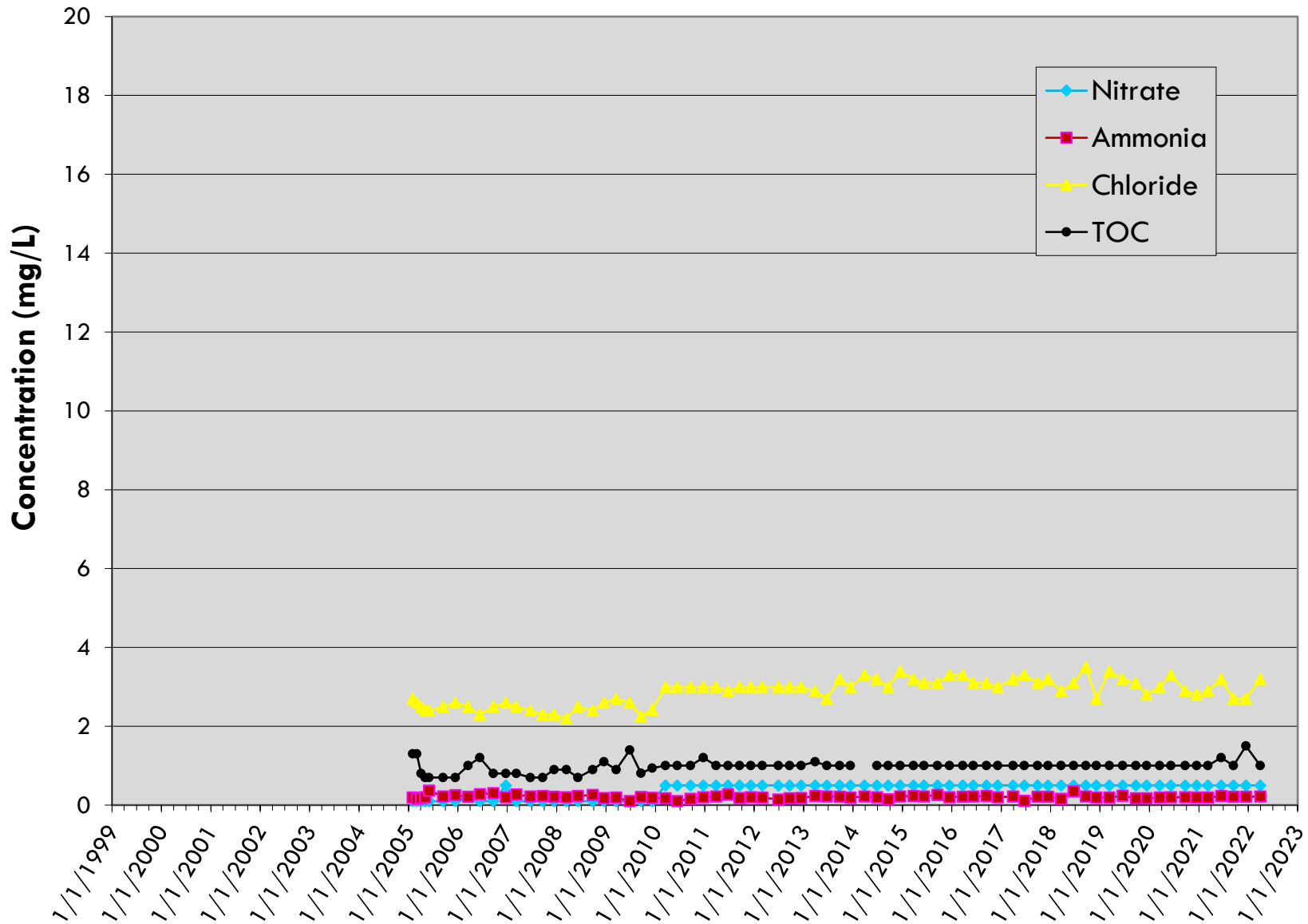
MW-6

LRI Landfill, Pierce County, Washington

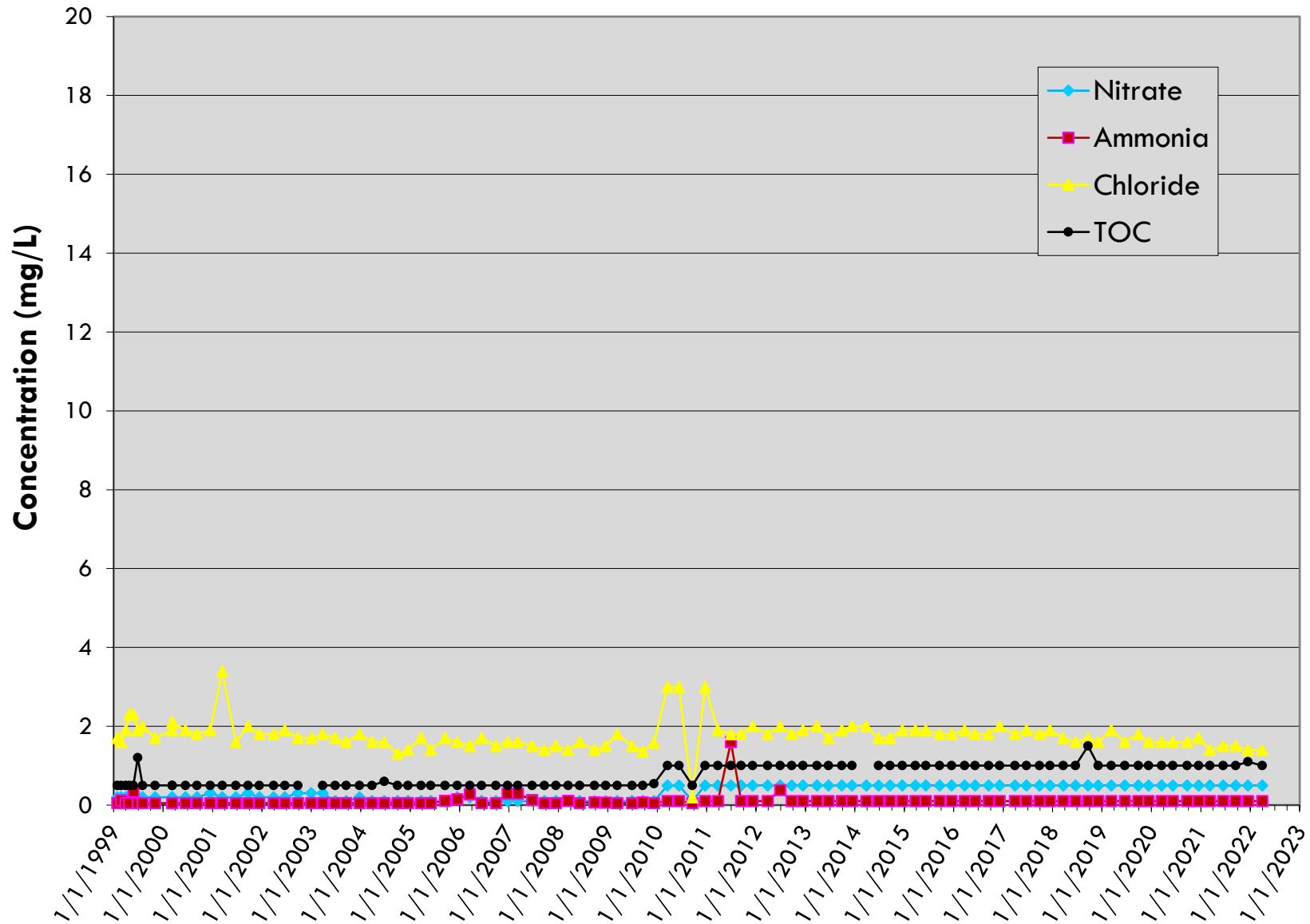


MW-7

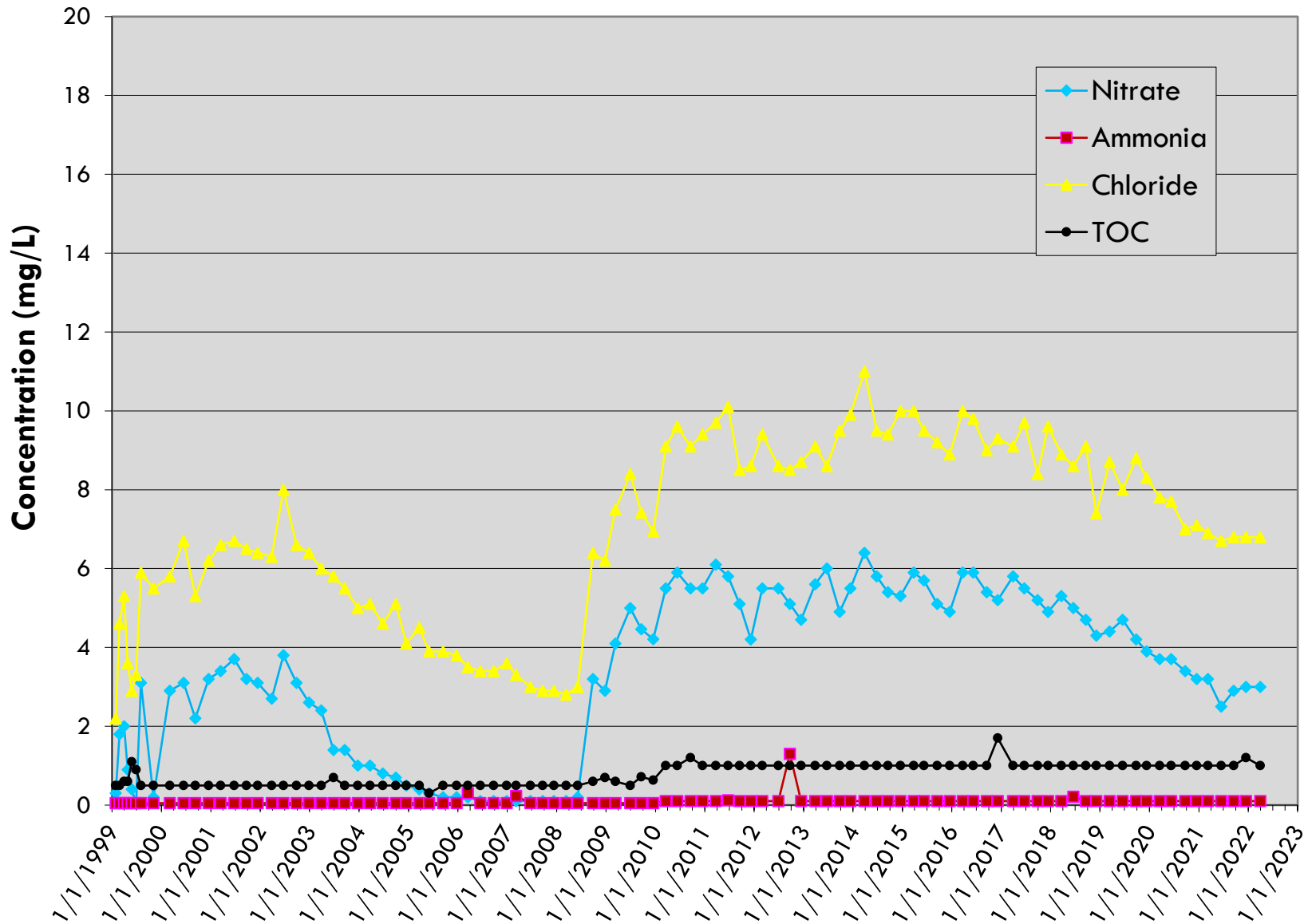
LRI Landfill, Pierce County, Washington



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

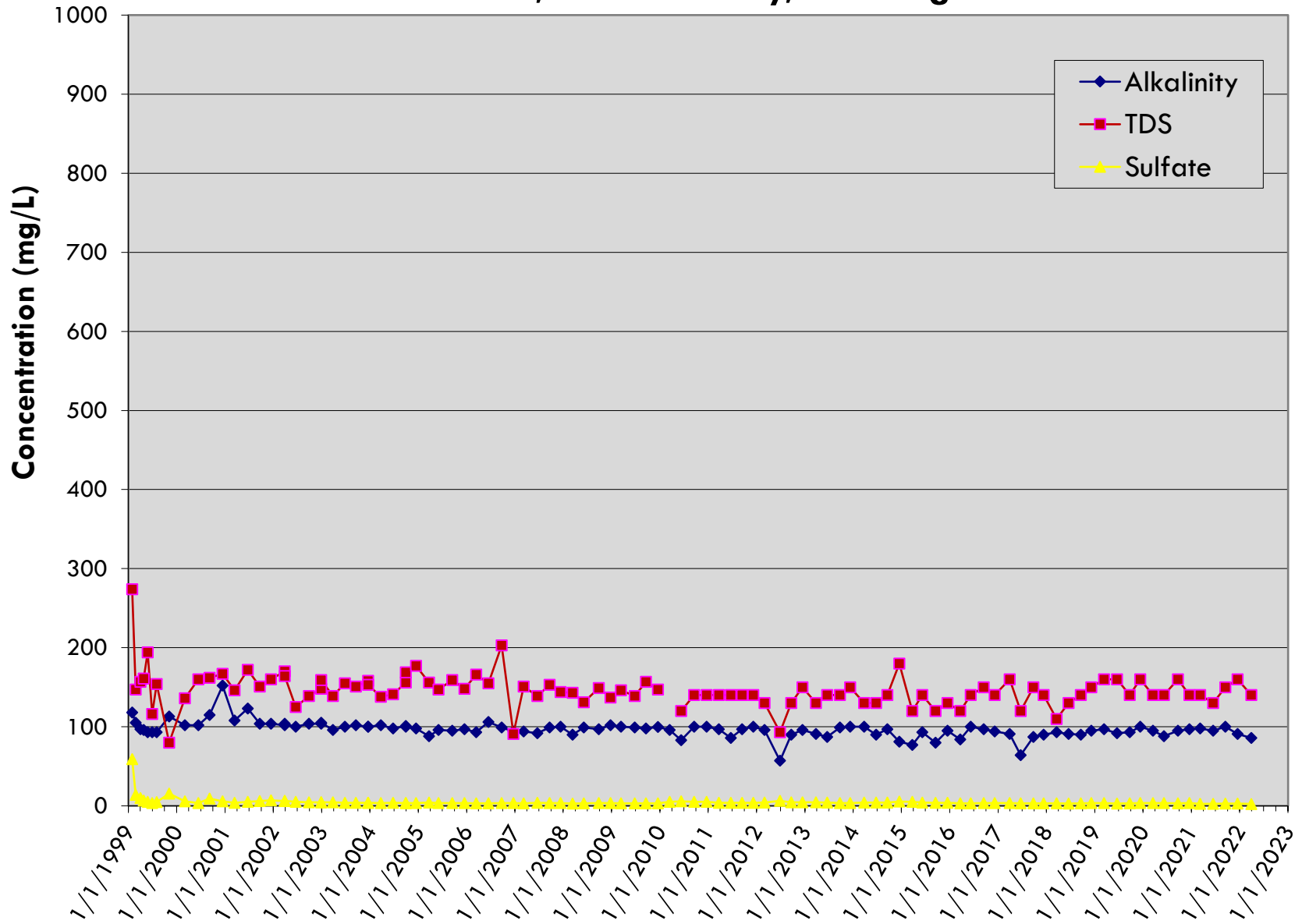


MW-10 (Background) LRI Landfill, Pierce County, Washington

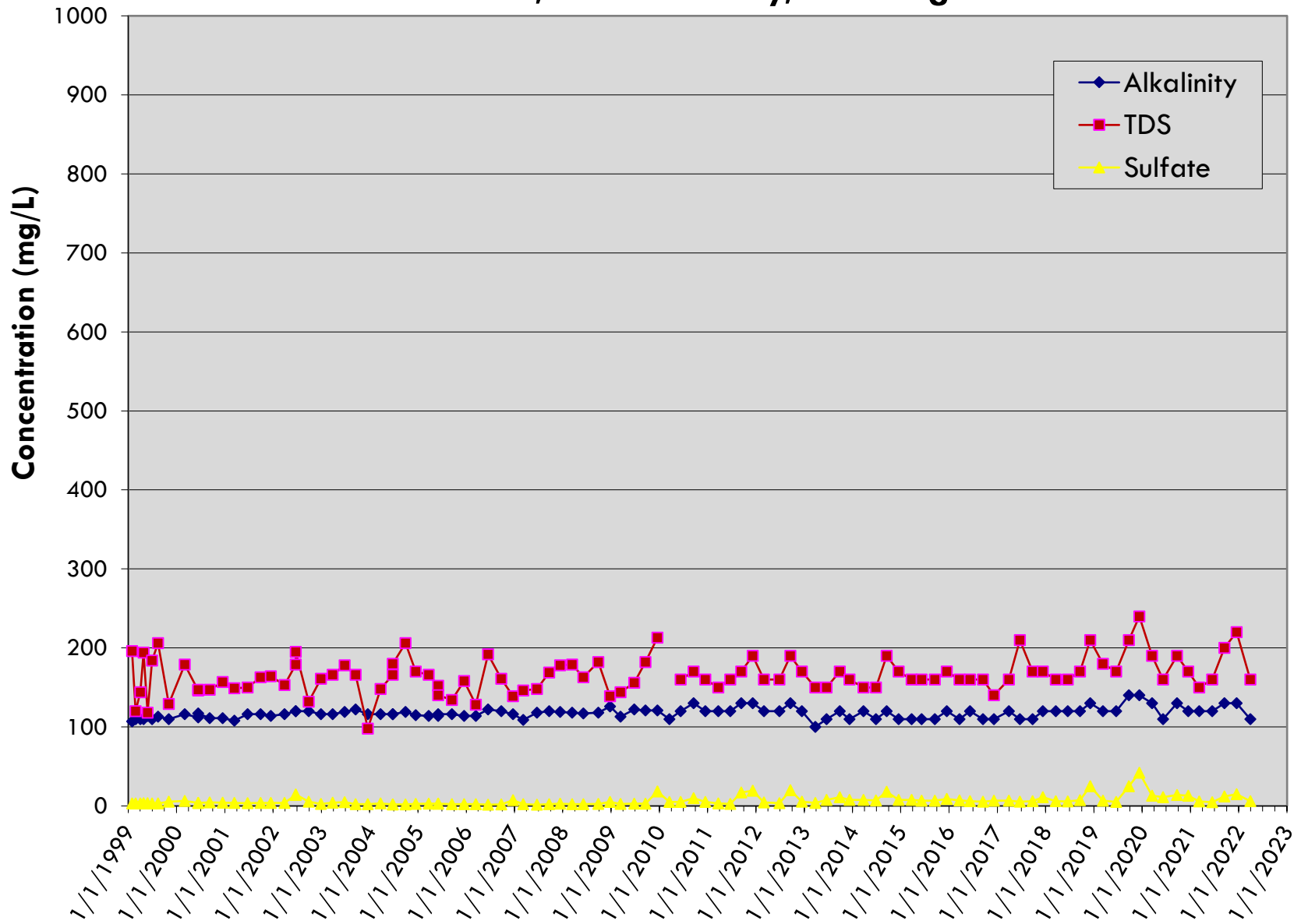


MW-1A

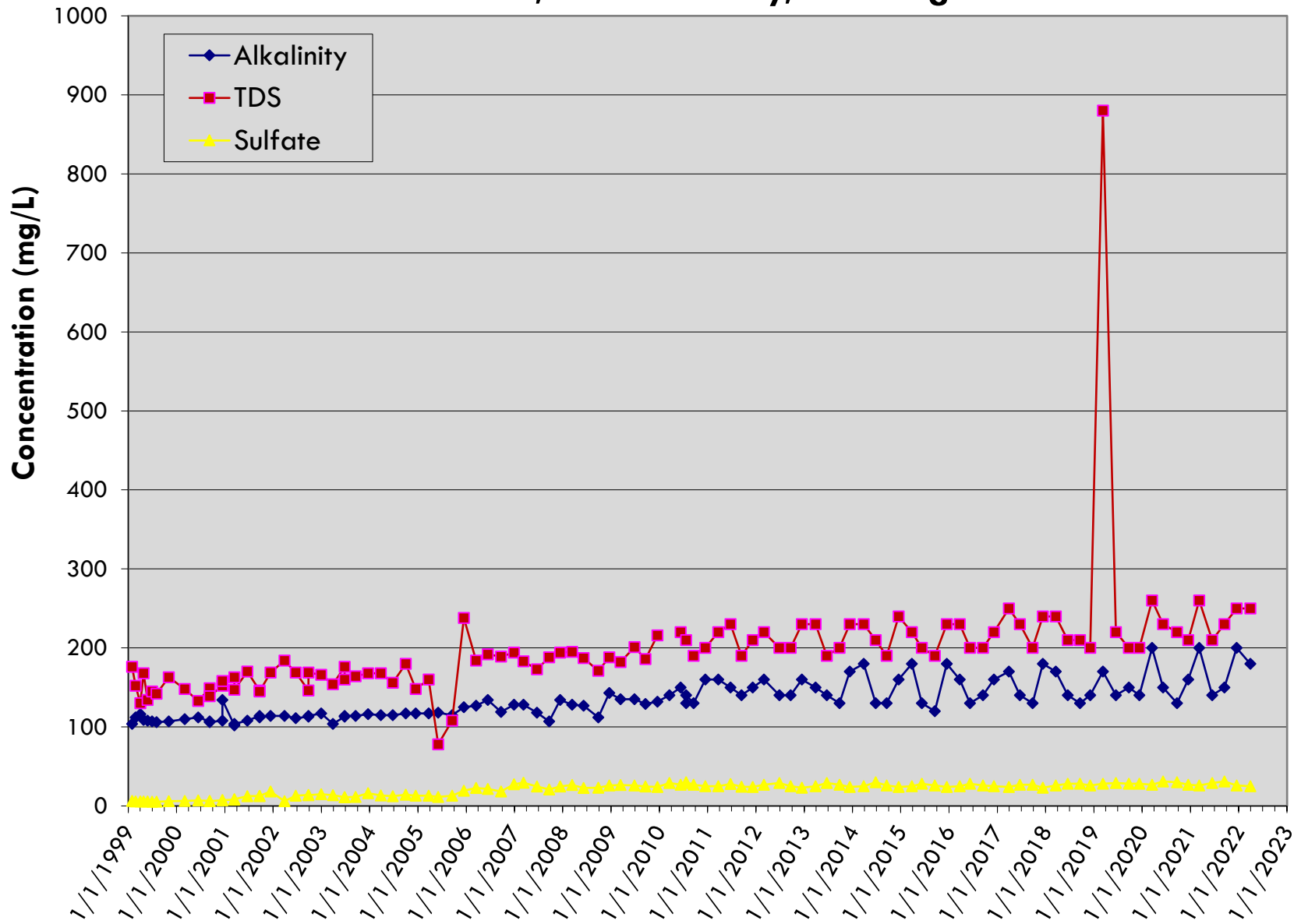
LRI Landfill, Pierce County, Washington



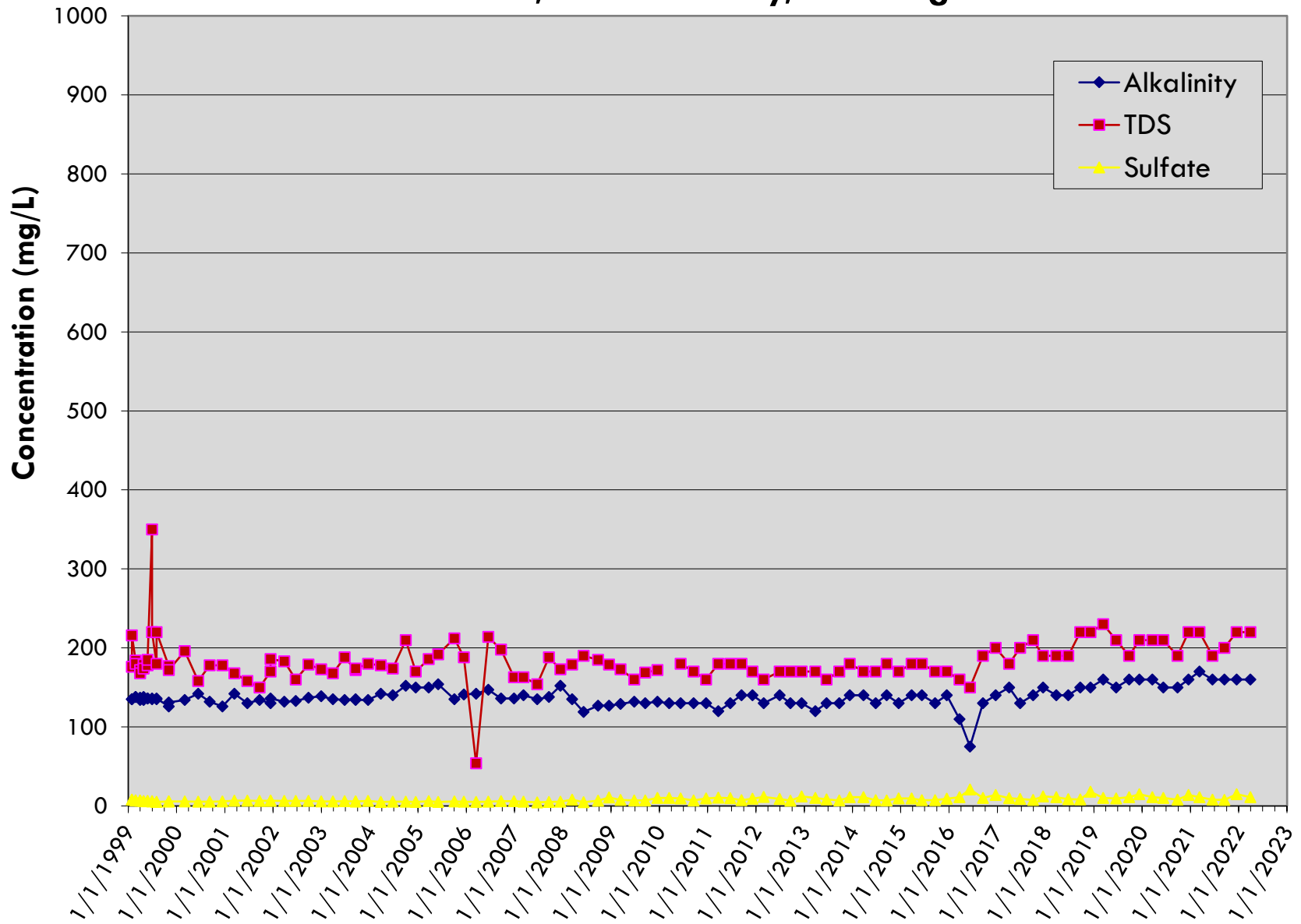
MW-2A
LRI Landfill, Pierce County, Washington



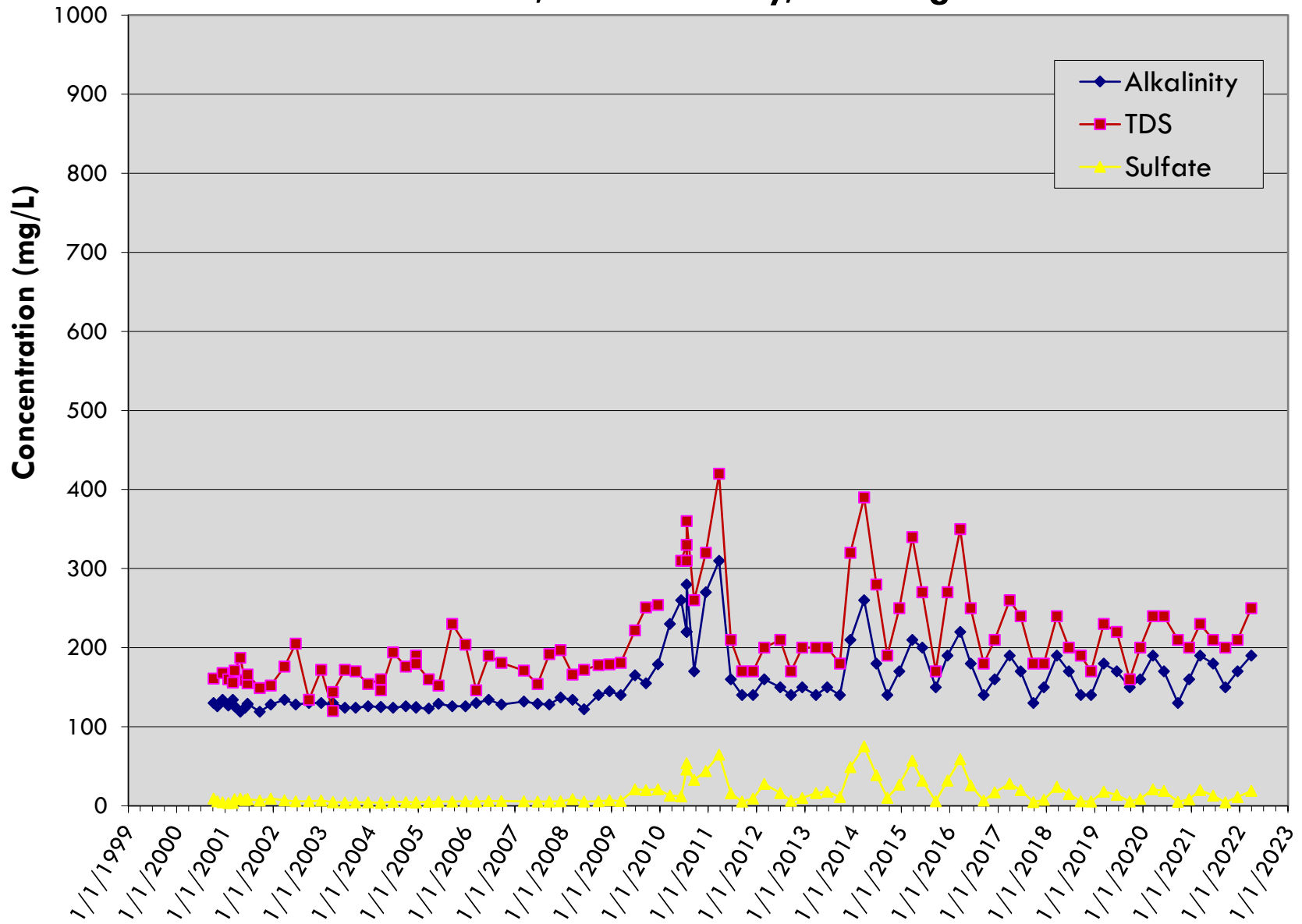
MW-3
LRI Landfill, Pierce County, Washington



MW-4
LRI Landfill, Pierce County, Washington

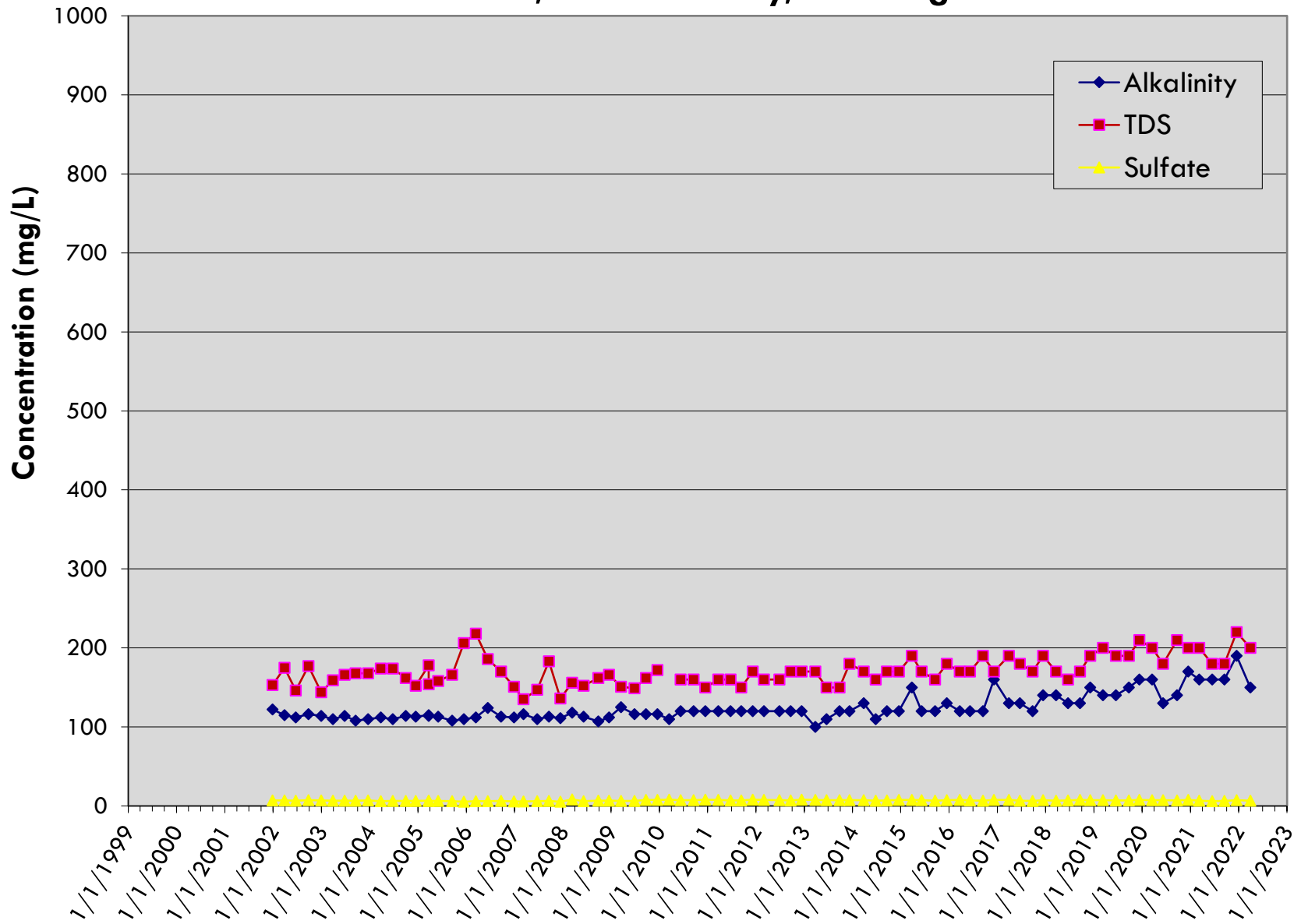


MW-5A
LRI Landfill, Pierce County, Washington

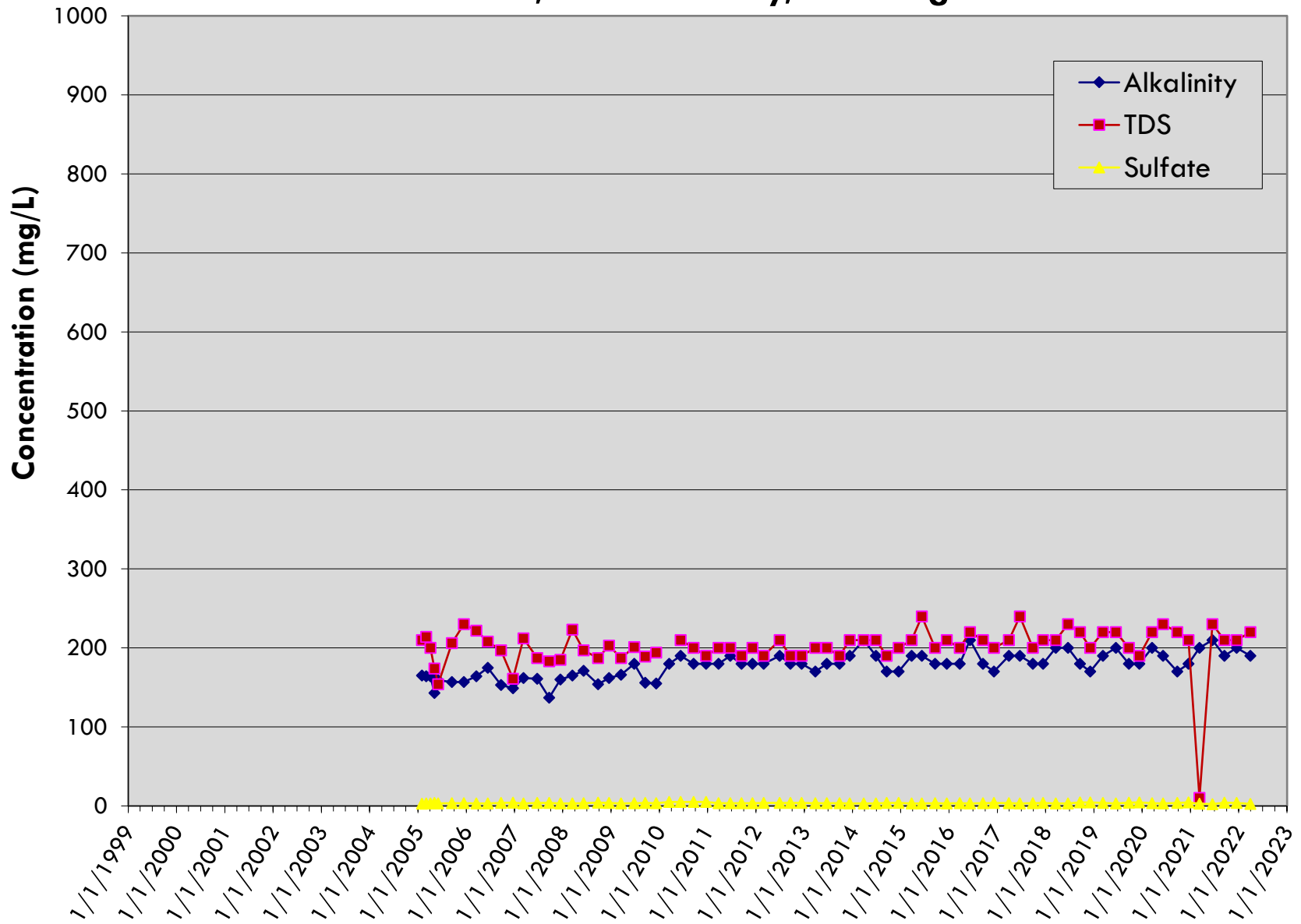


MW-6

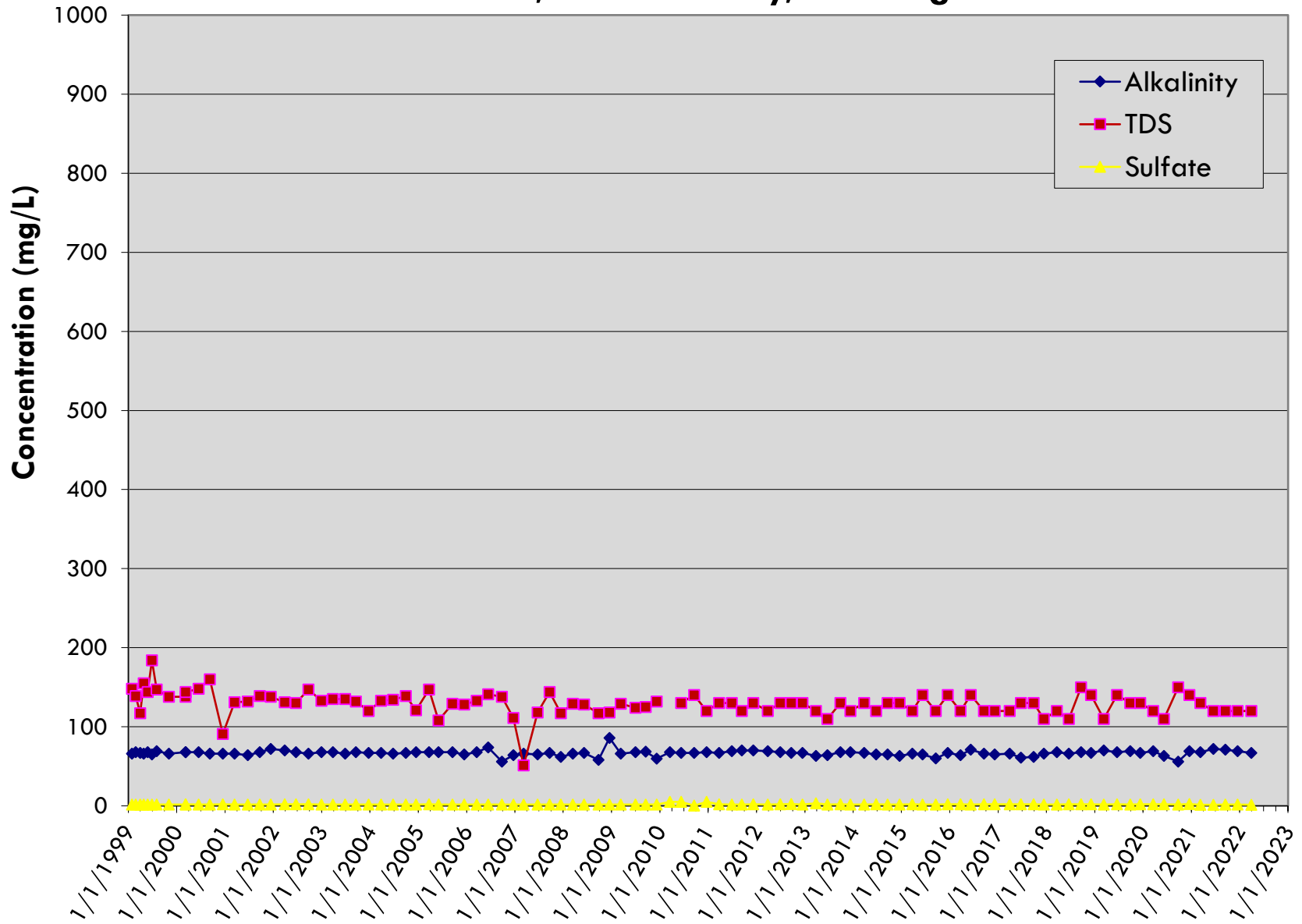
LRI Landfill, Pierce County, Washington



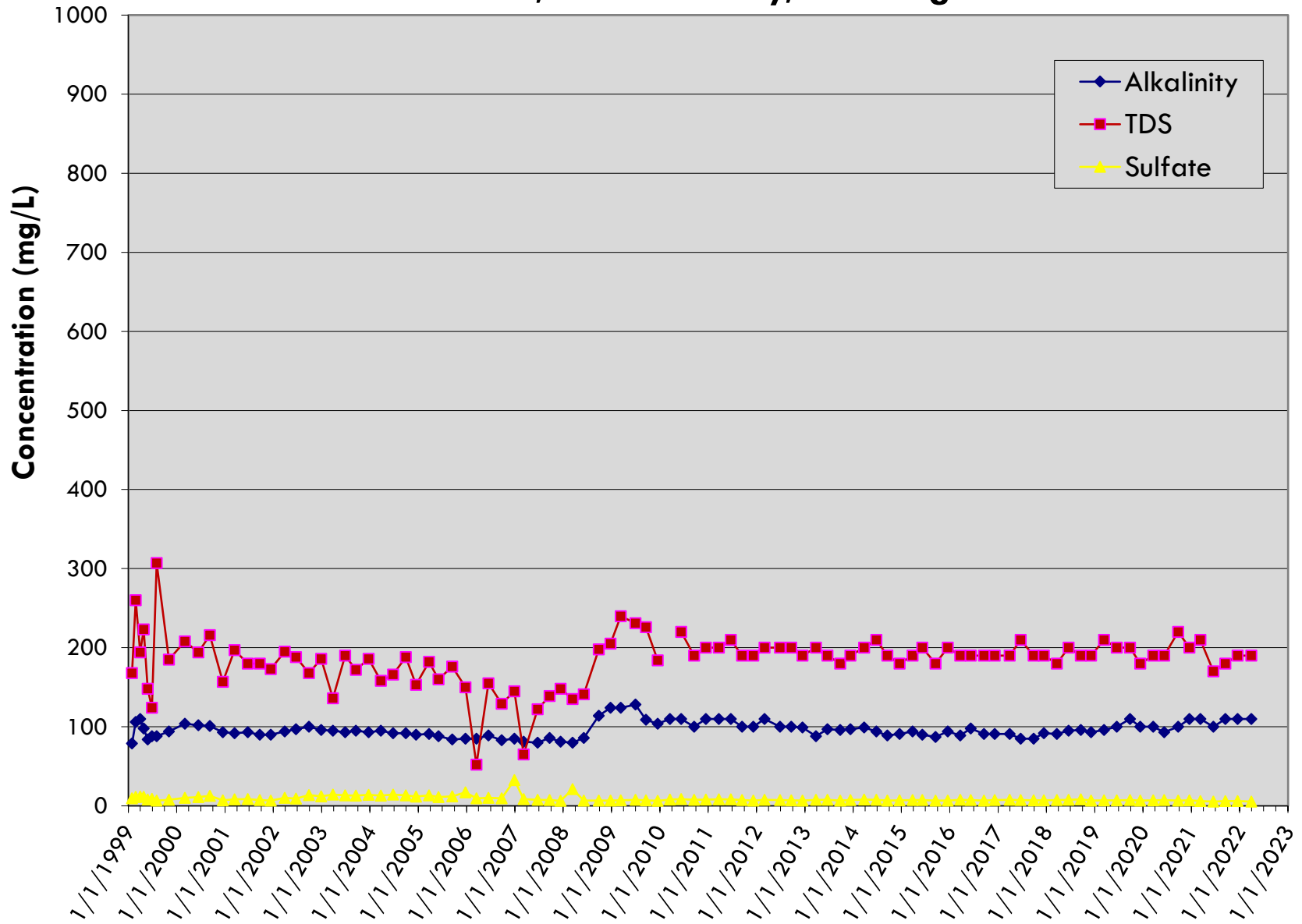
MW-7
LRI Landfill, Pierce County, Washington



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

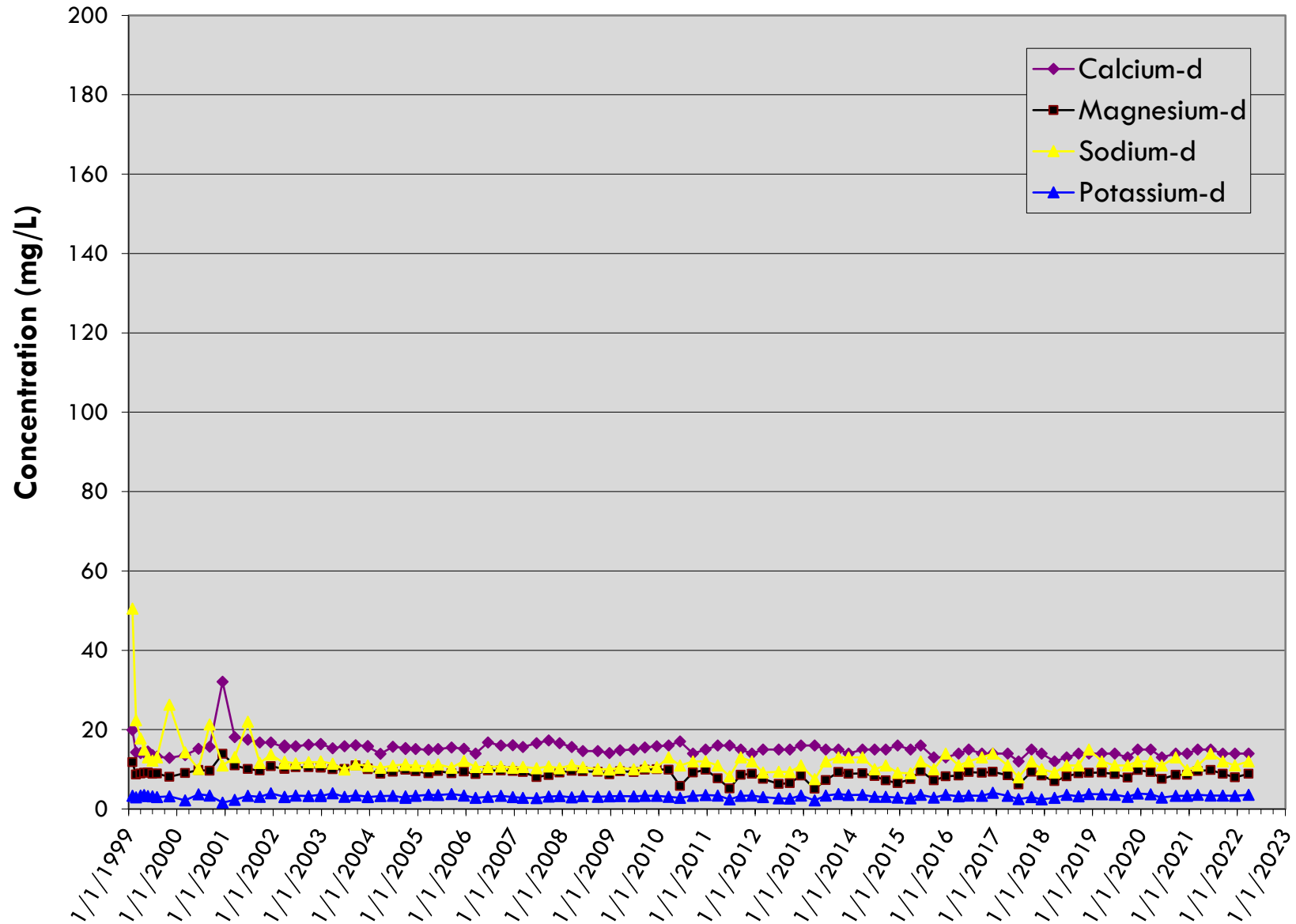


MW-10 (Background) LRI Landfill, Pierce County, Washington

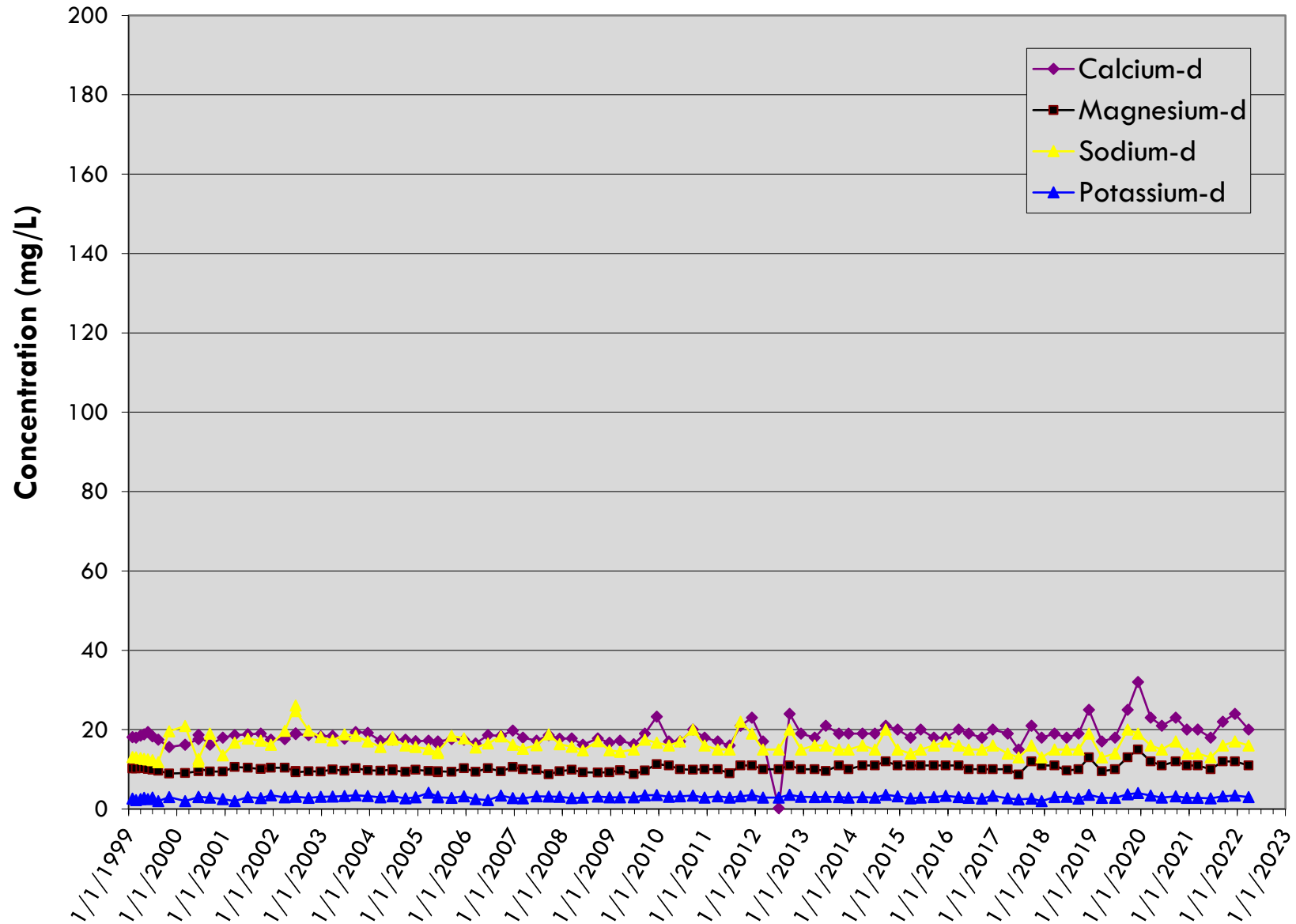


MW-1A

LRI Landfill, Pierce County, Washington

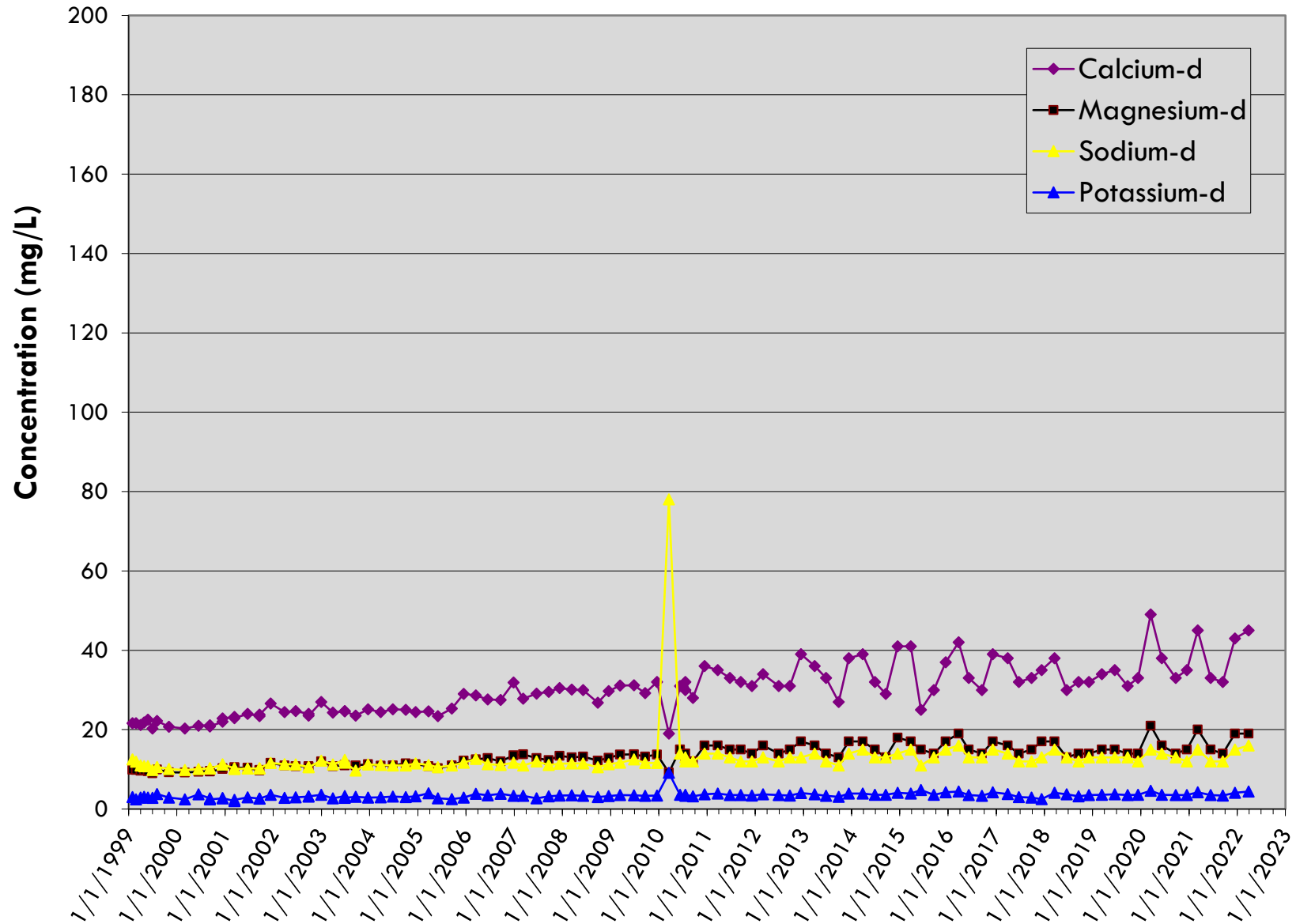


MW-2A
LRI Landfill, Pierce County, Washington

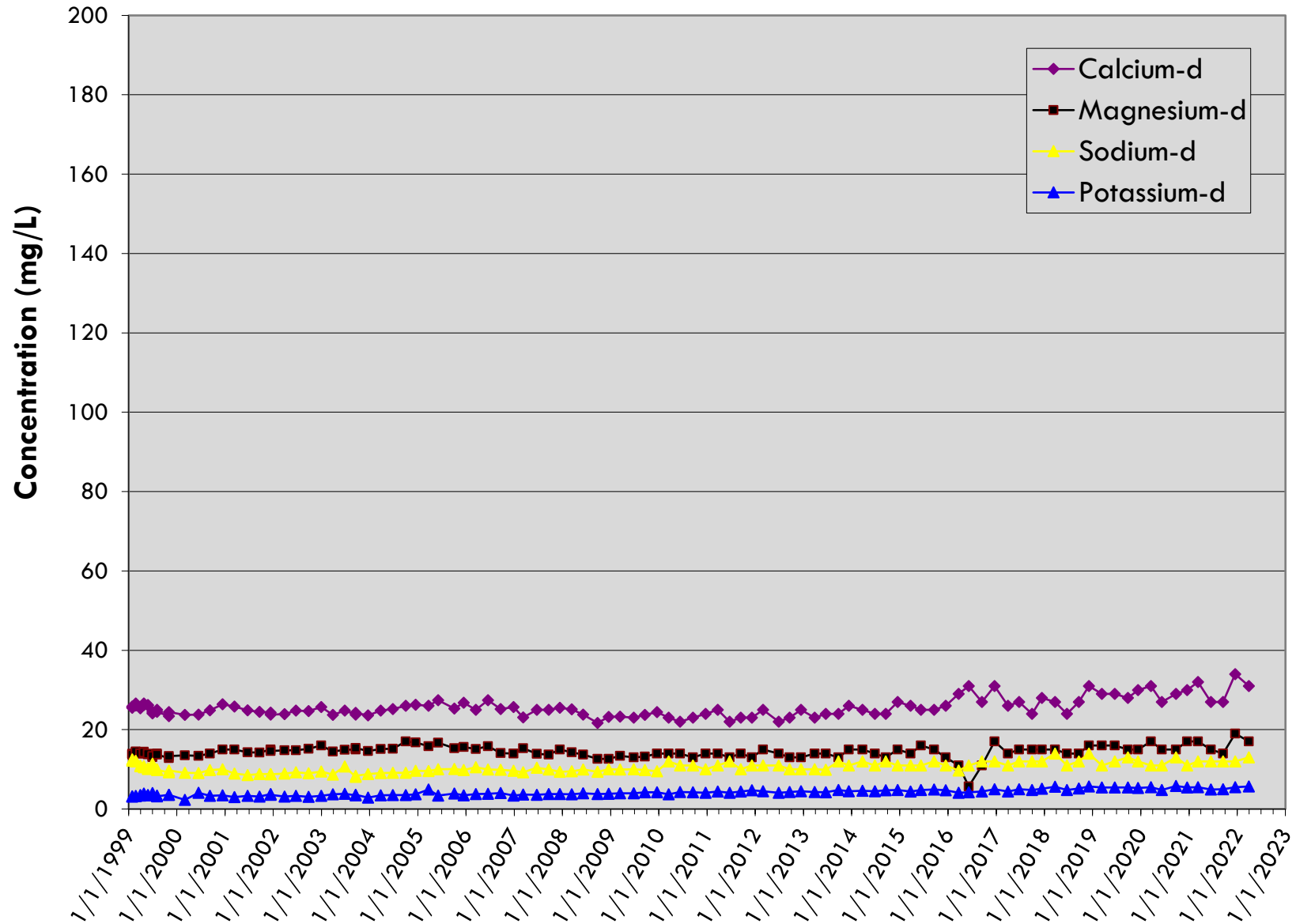


MW-3

LRI Landfill, Pierce County, Washington

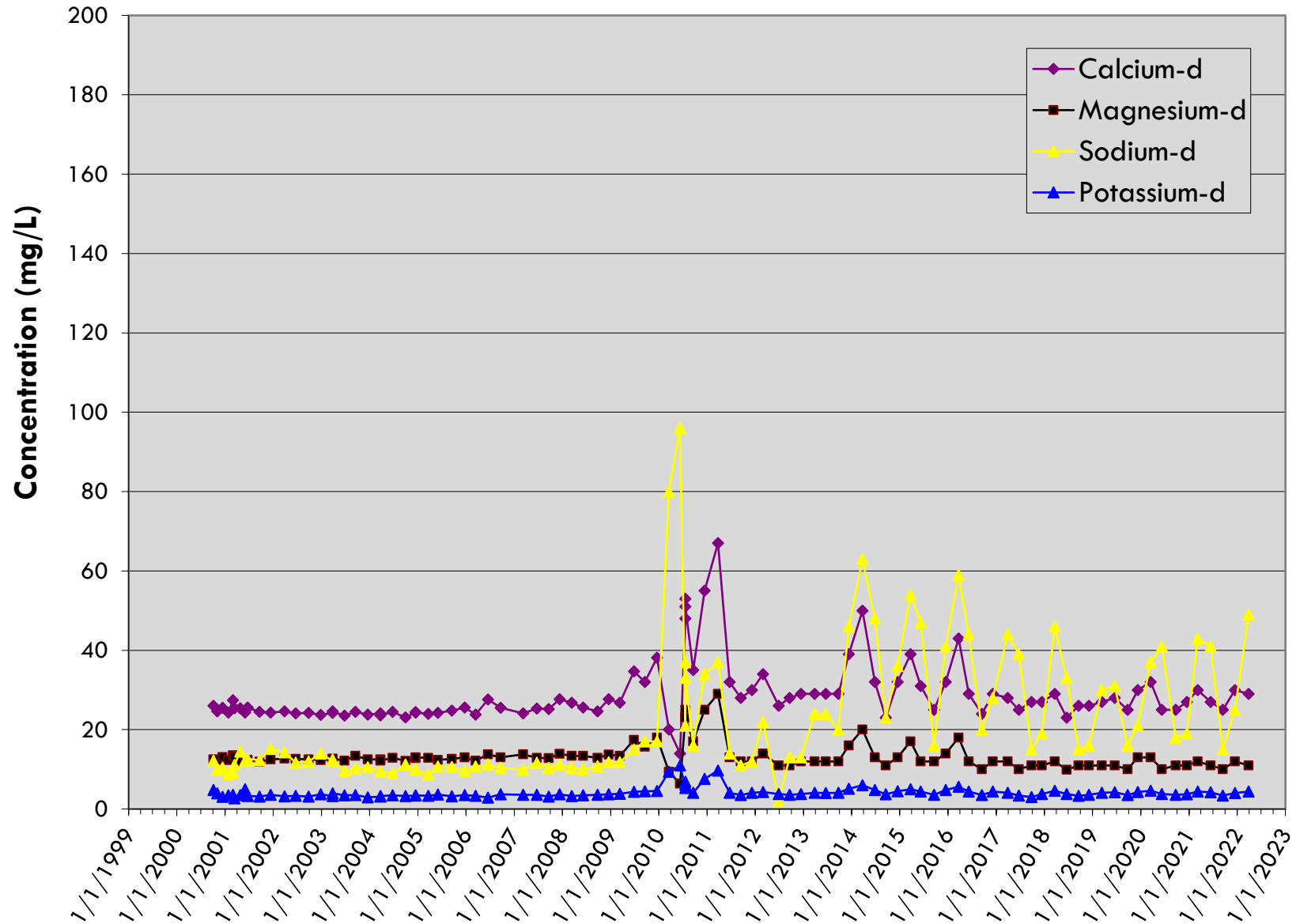


MW-4
LRI Landfill, Pierce County, Washington



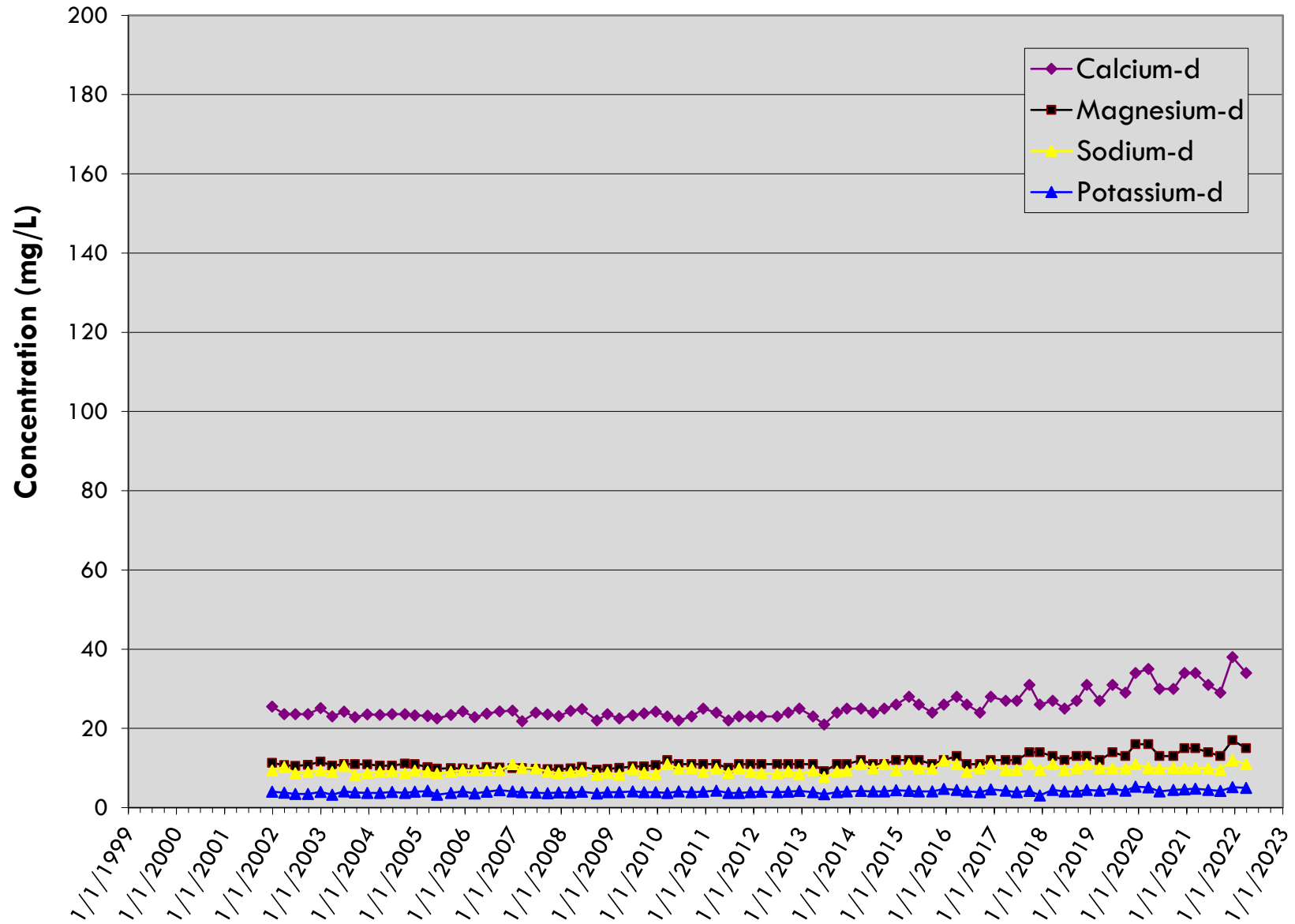
MW-5A

LRI Landfill, Pierce County, Washington

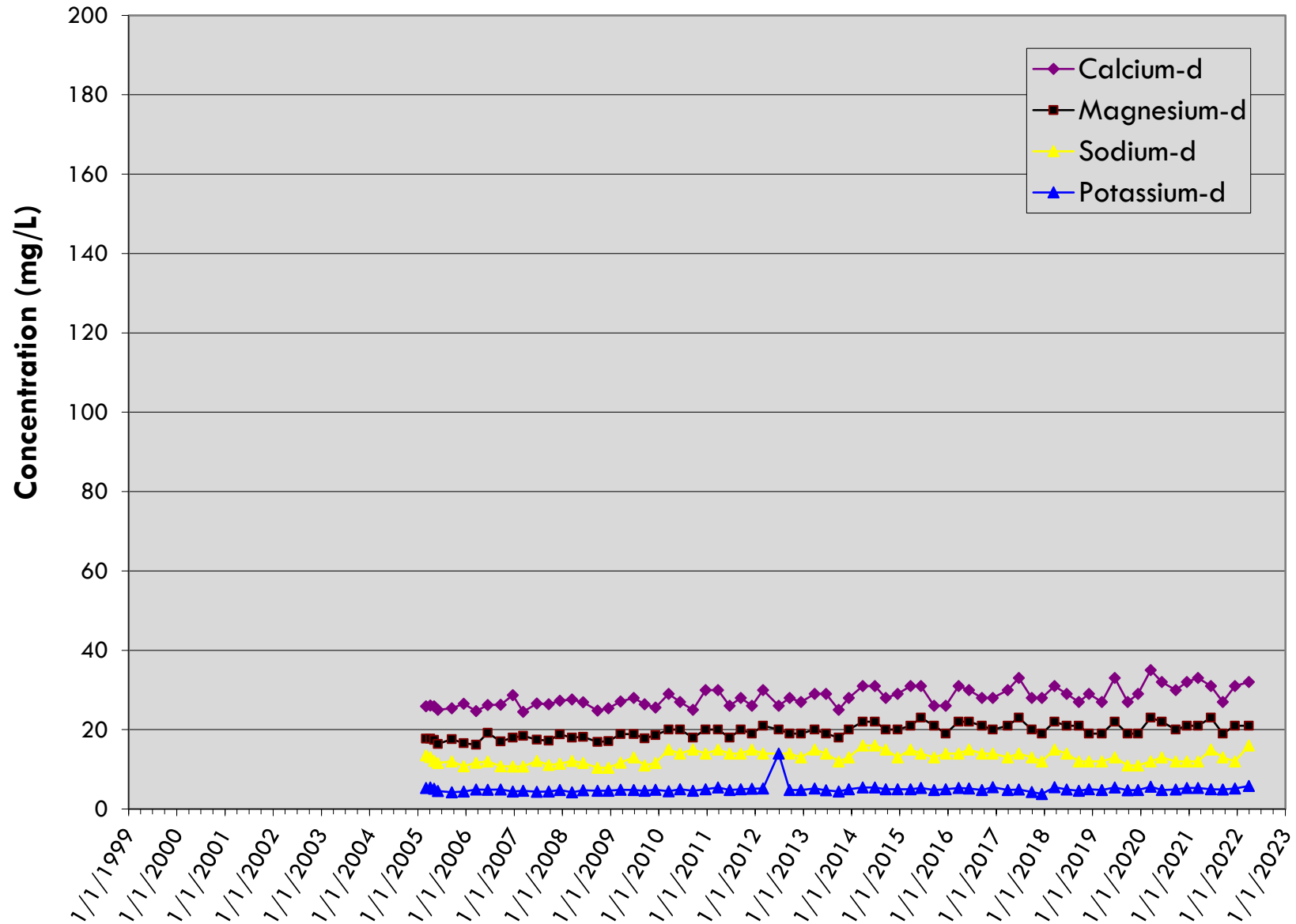


MW-6

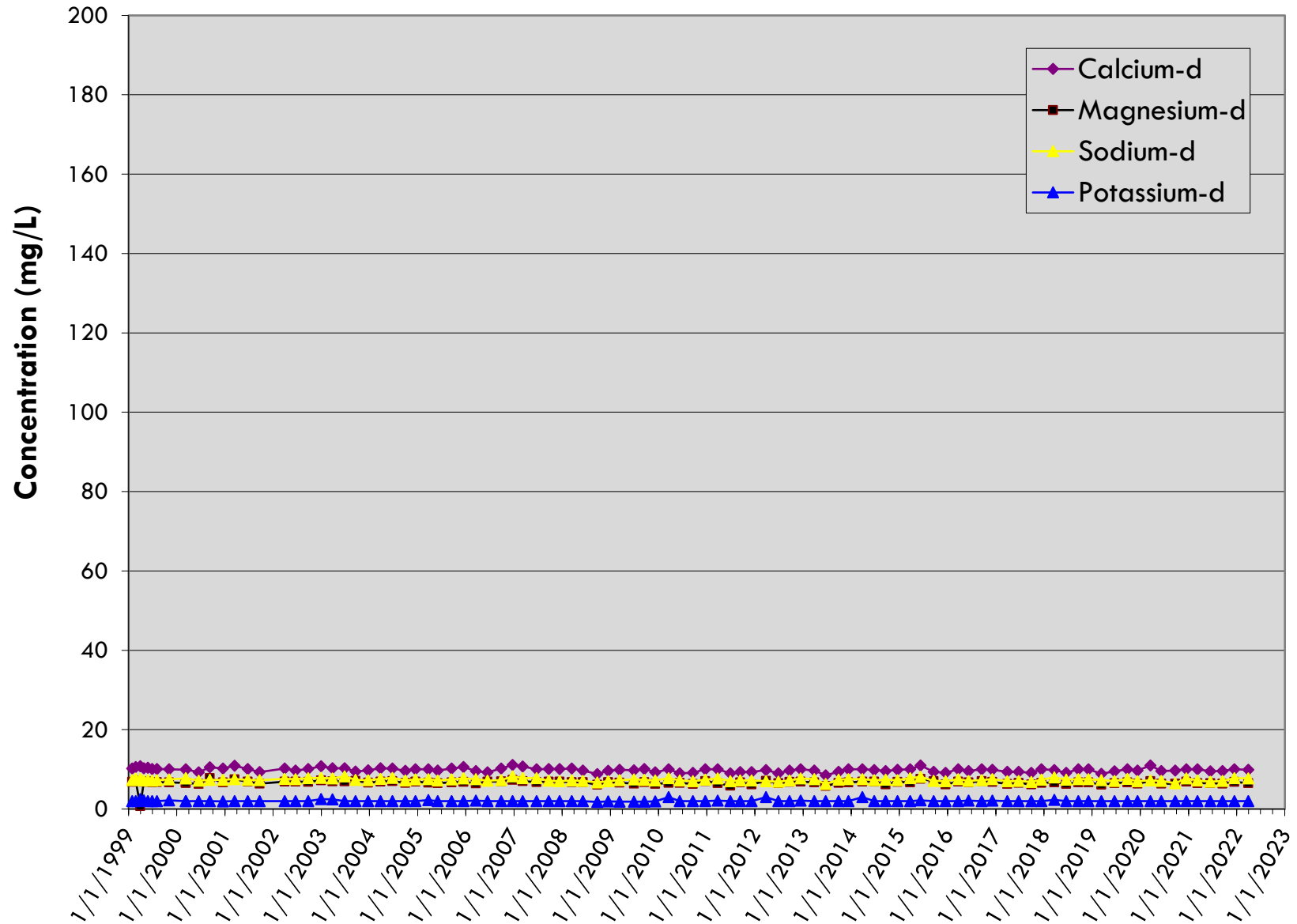
LRI Landfill, Pierce County, Washington



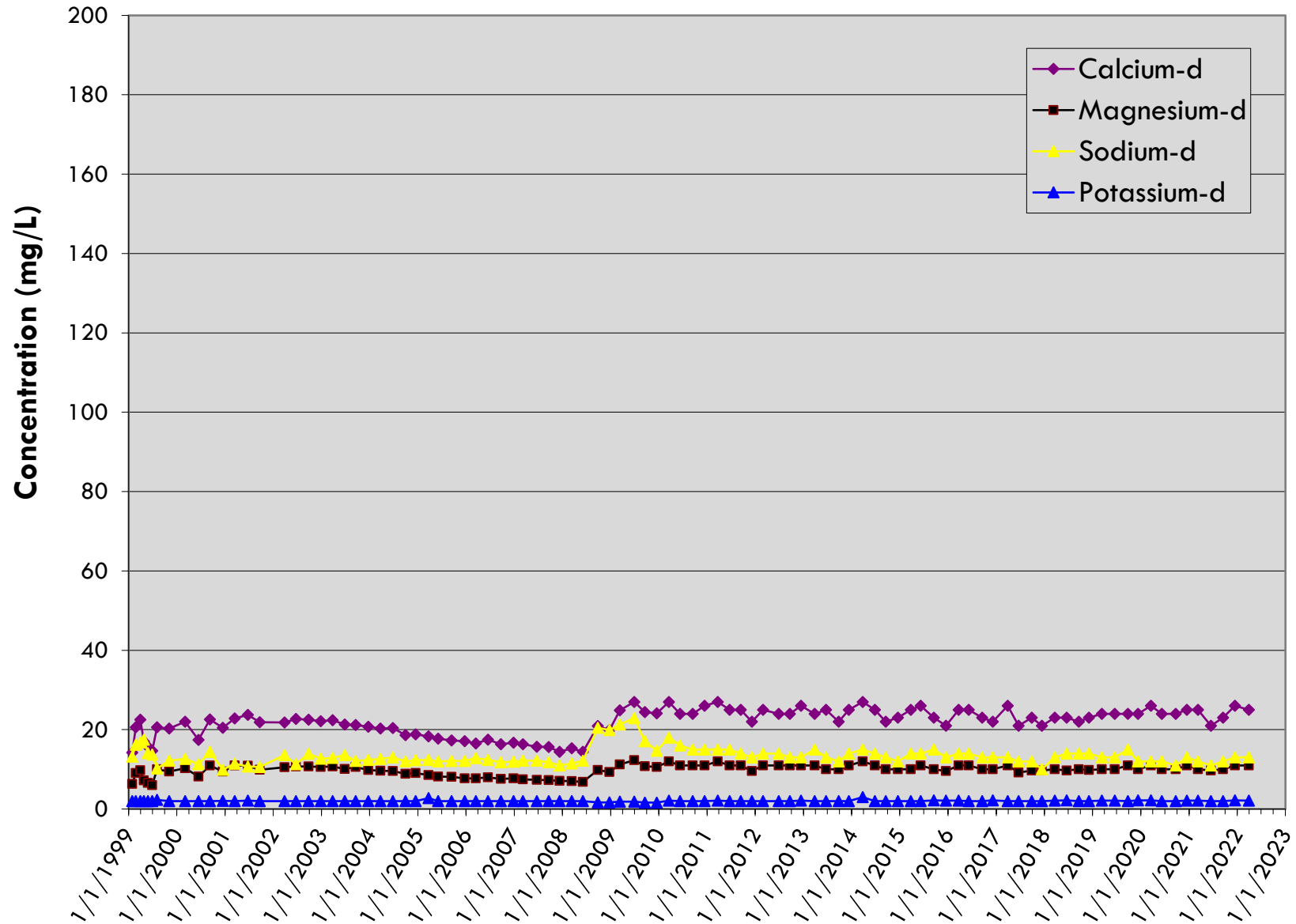
MW-7
LRI Landfill, Pierce County, Washington



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

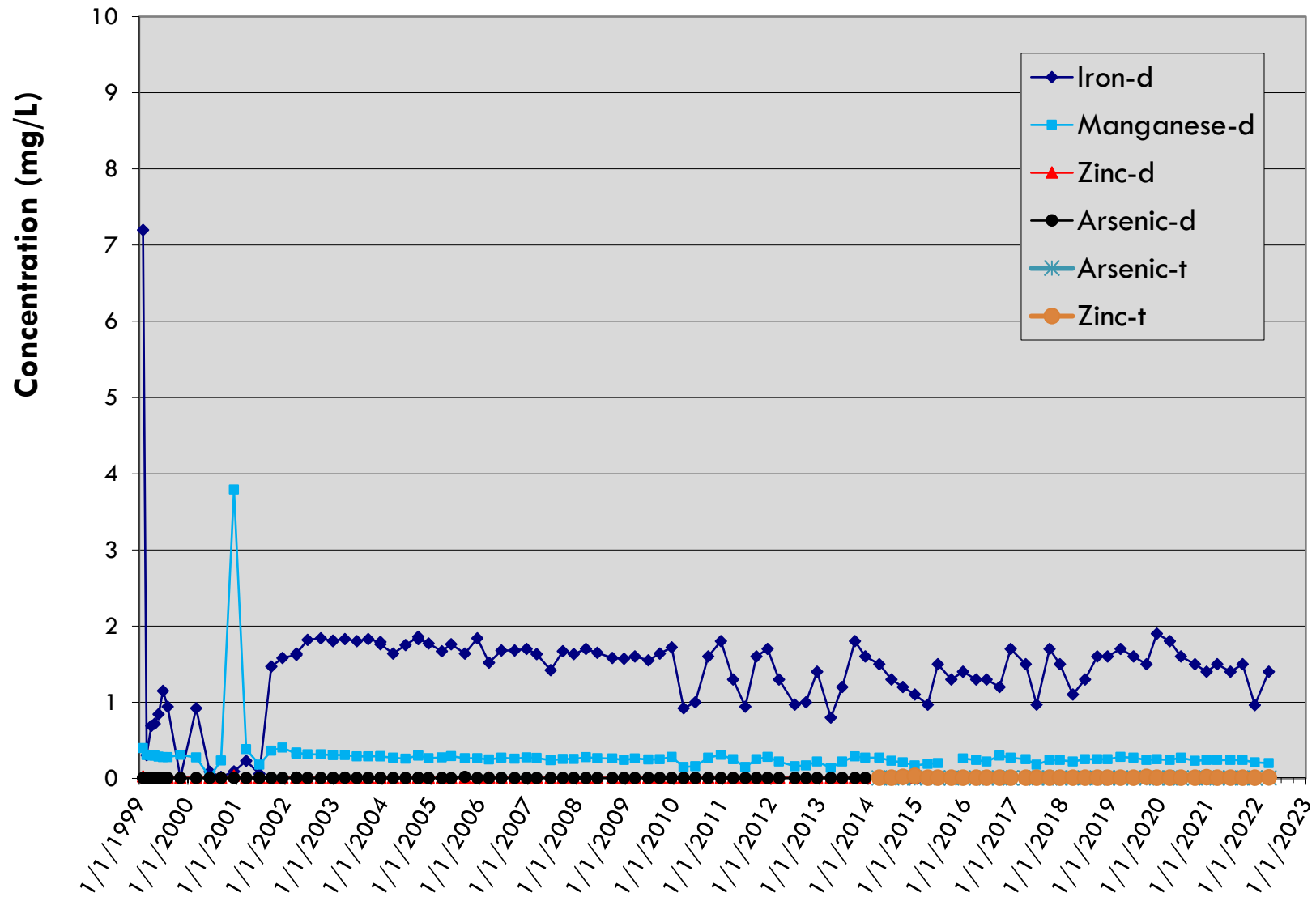


MW-10 (Background) LRI Landfill, Pierce County, Washington



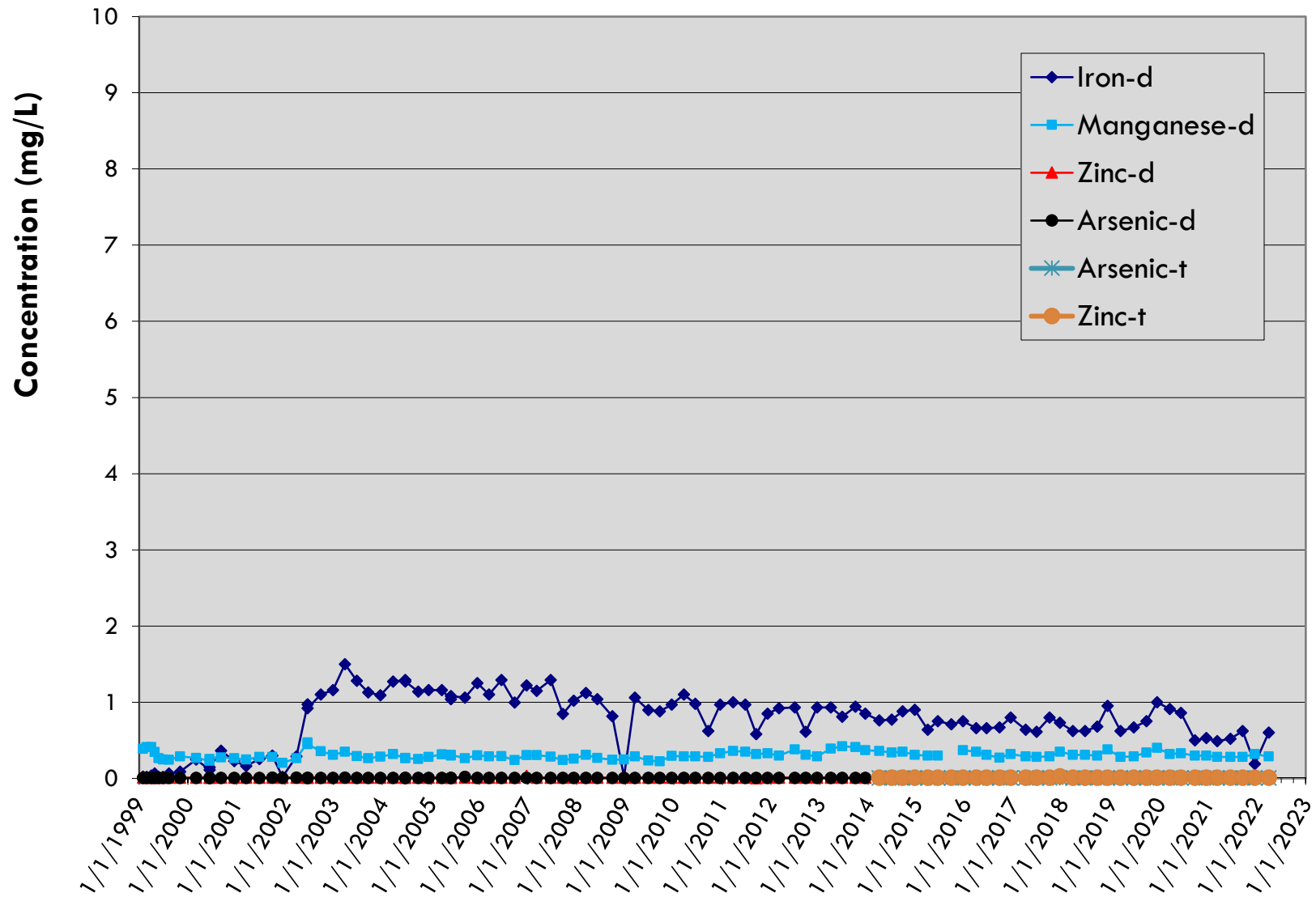
MW-1A

LRI Landfill, Pierce County, Washington



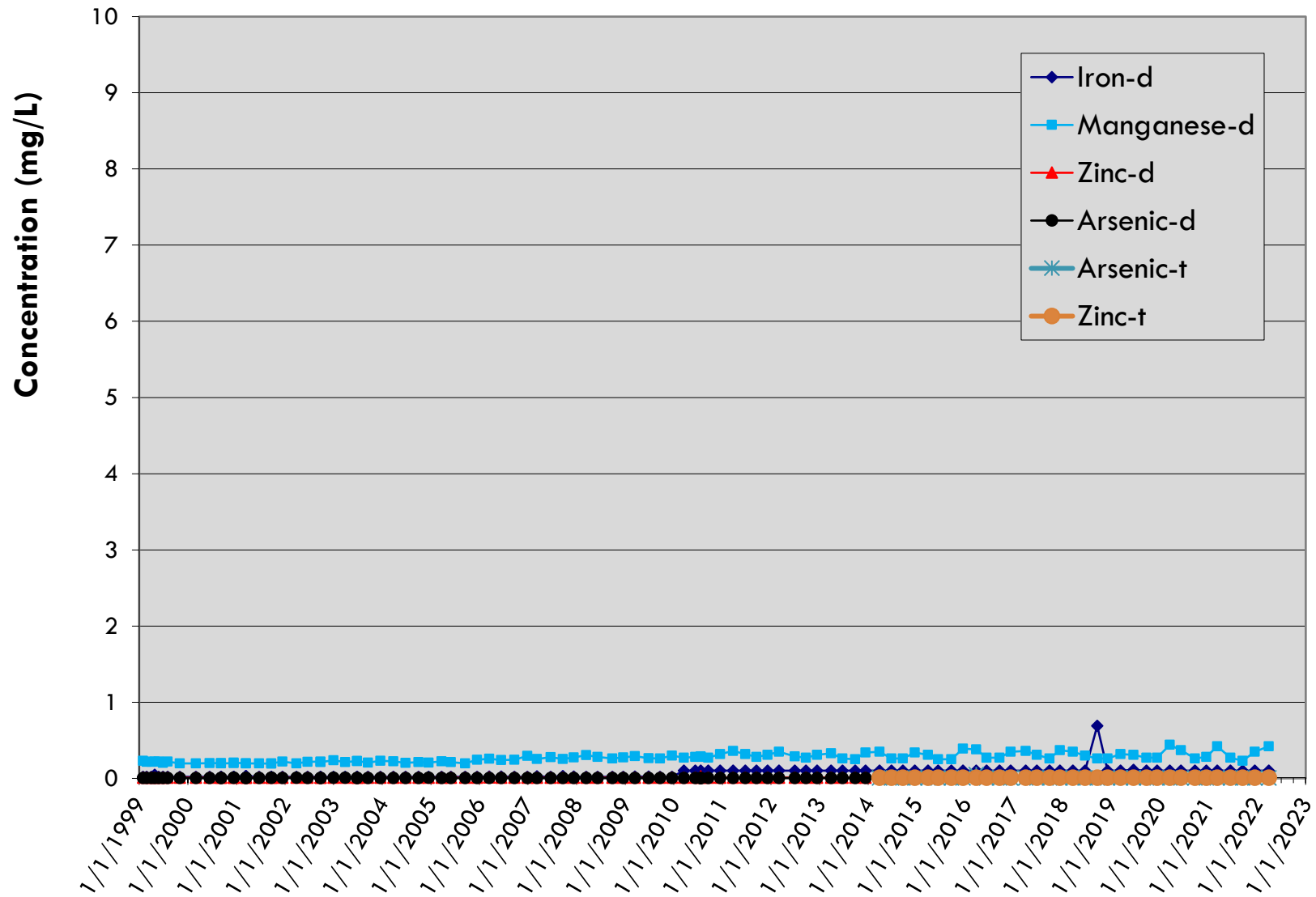
MW-2A

LRI Landfill, Pierce County, Washington

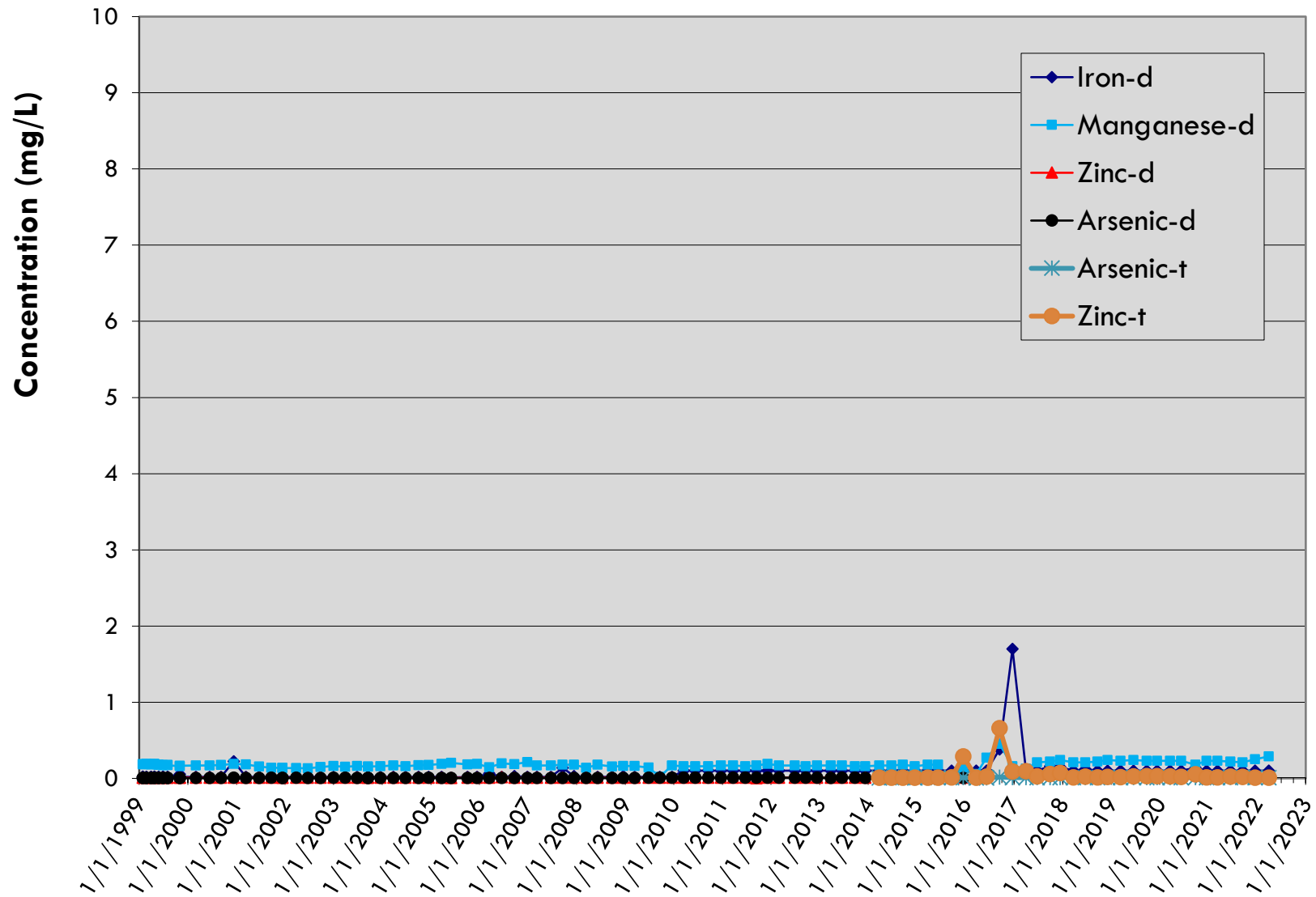


MW-3

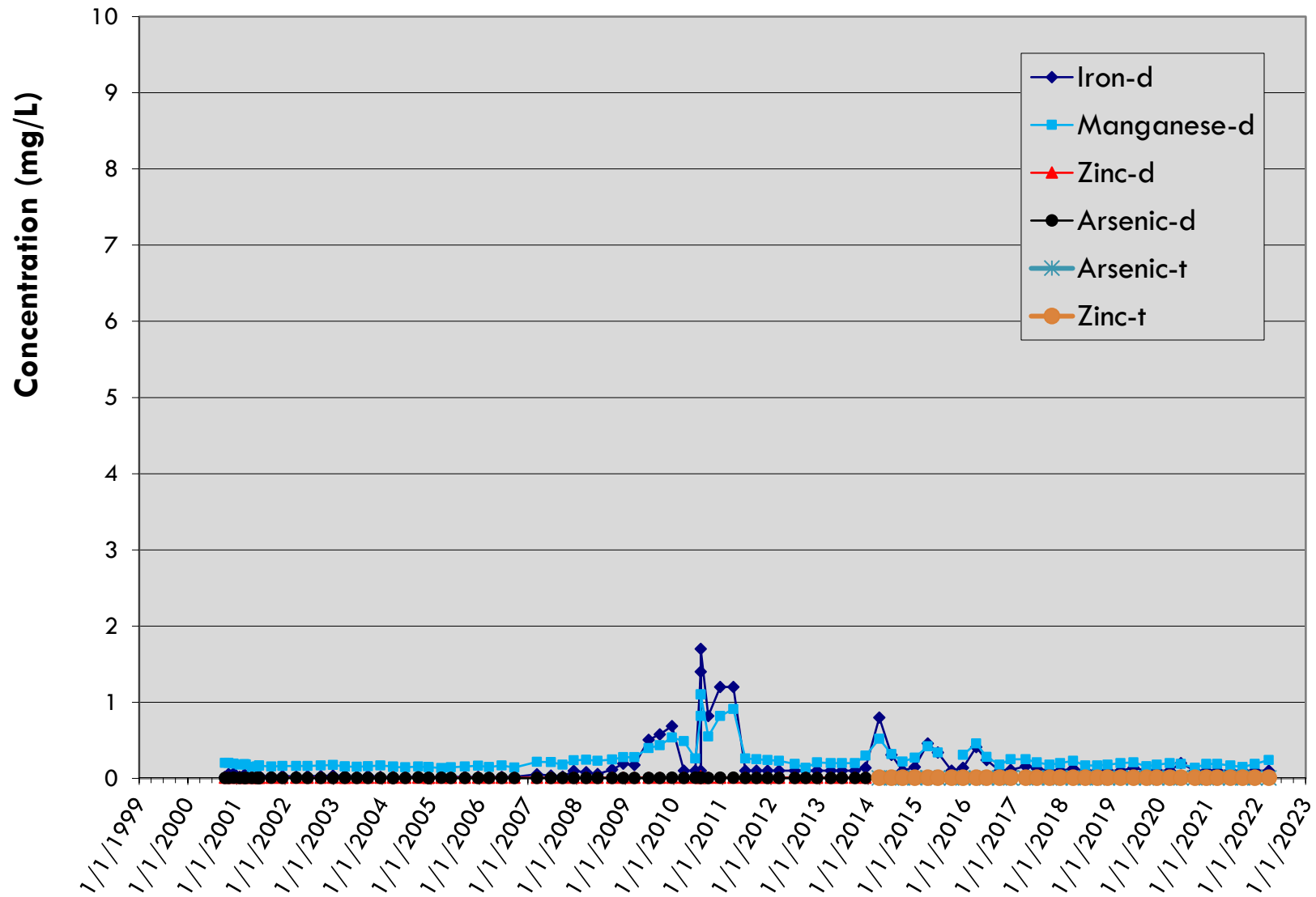
LRI Landfill, Pierce County, Washington



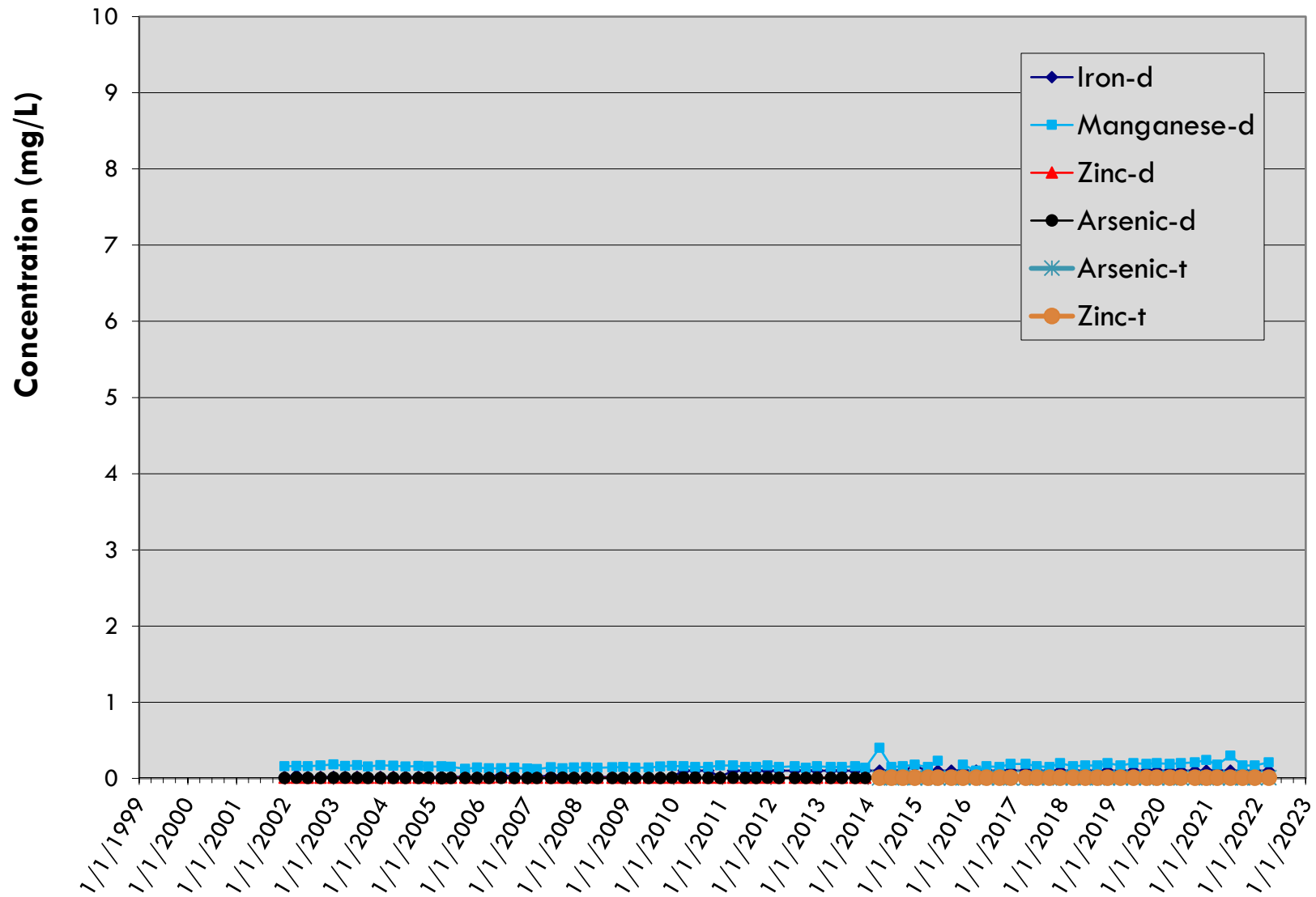
MW-4
LRI Landfill, Pierce County, Washington



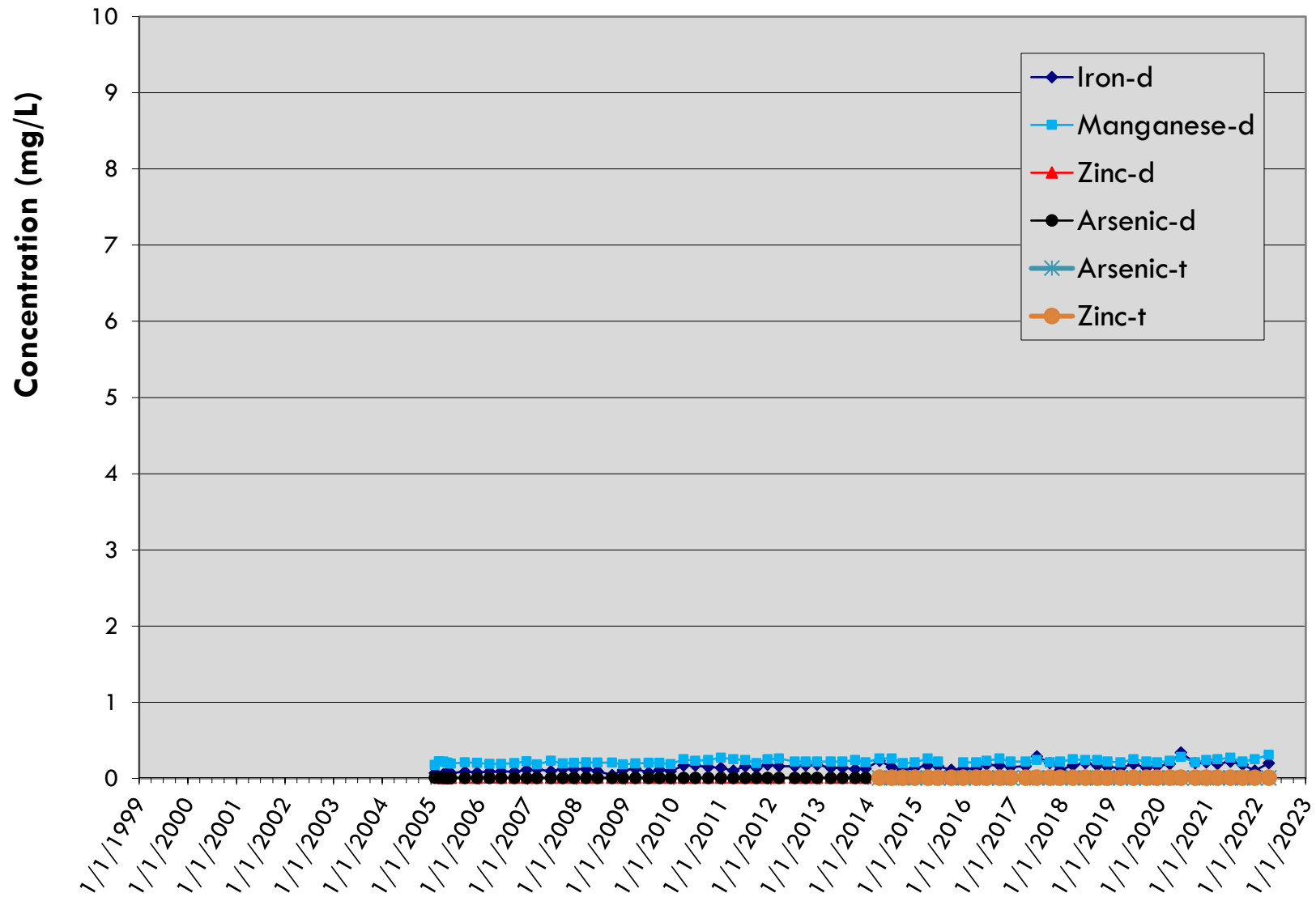
MW-5A
LRI Landfill, Pierce County, Washington



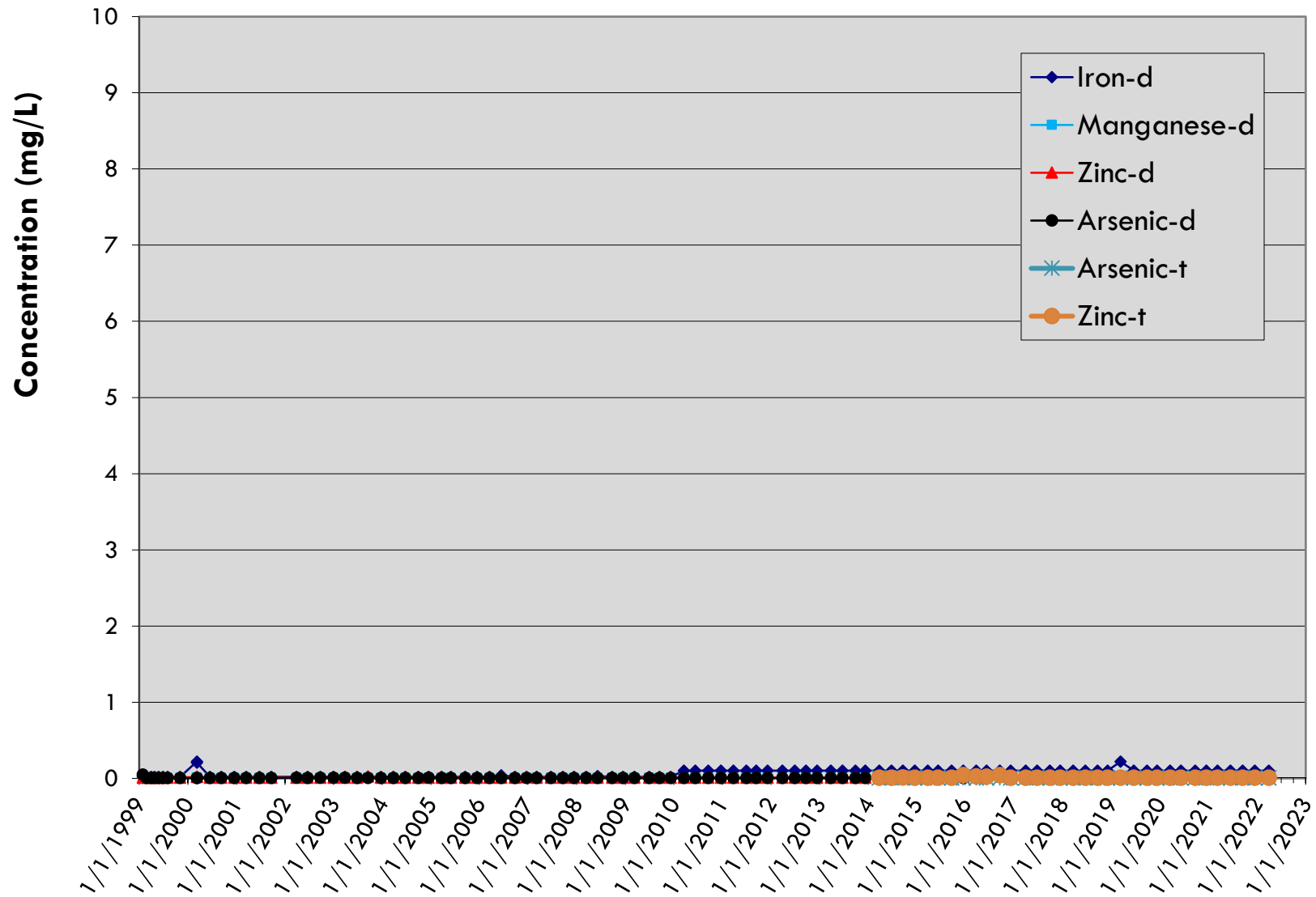
MW-6
LRI Landfill, Pierce County, Washington



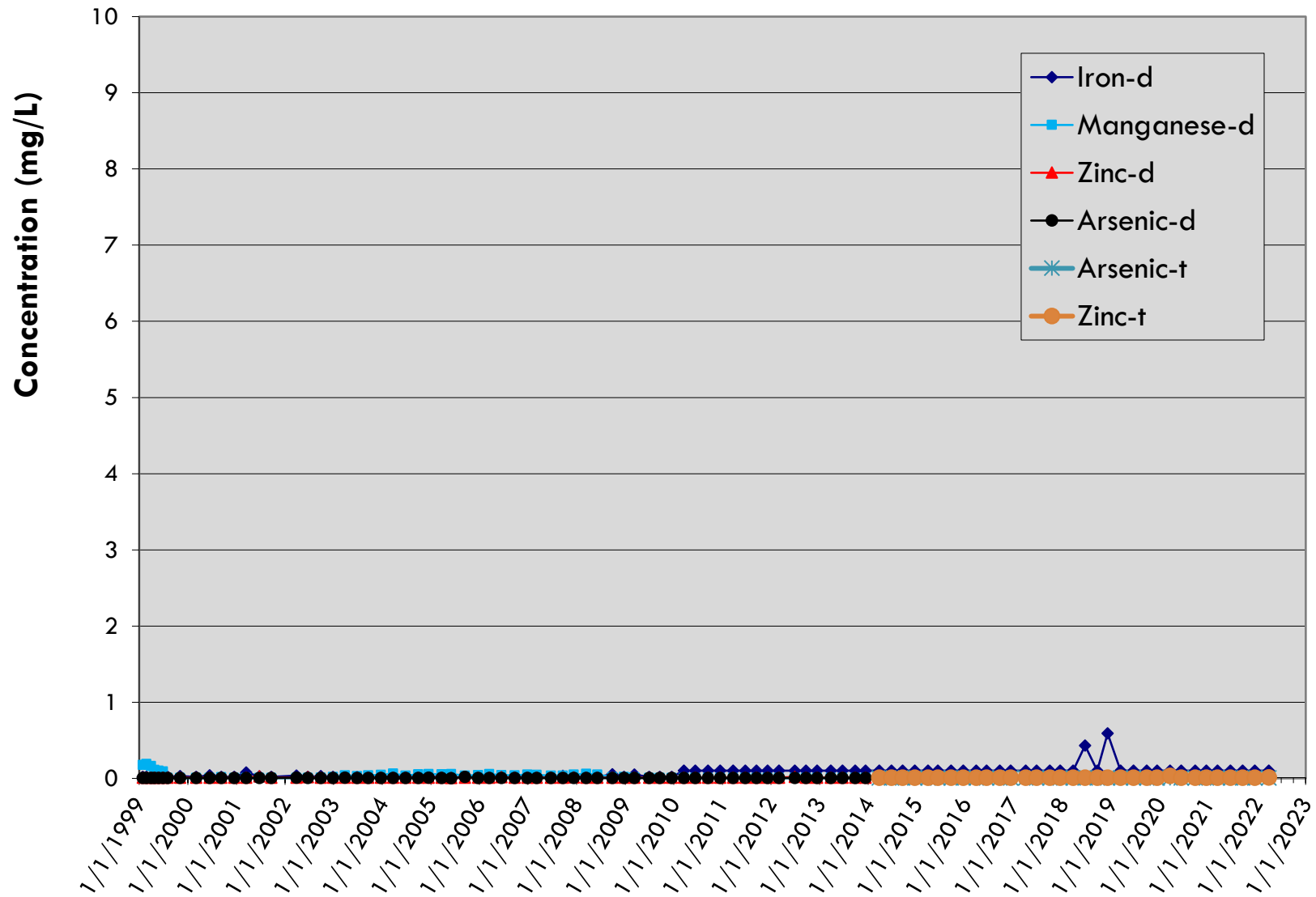
MW-7
LRI Landfill, Pierce County, Washington



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

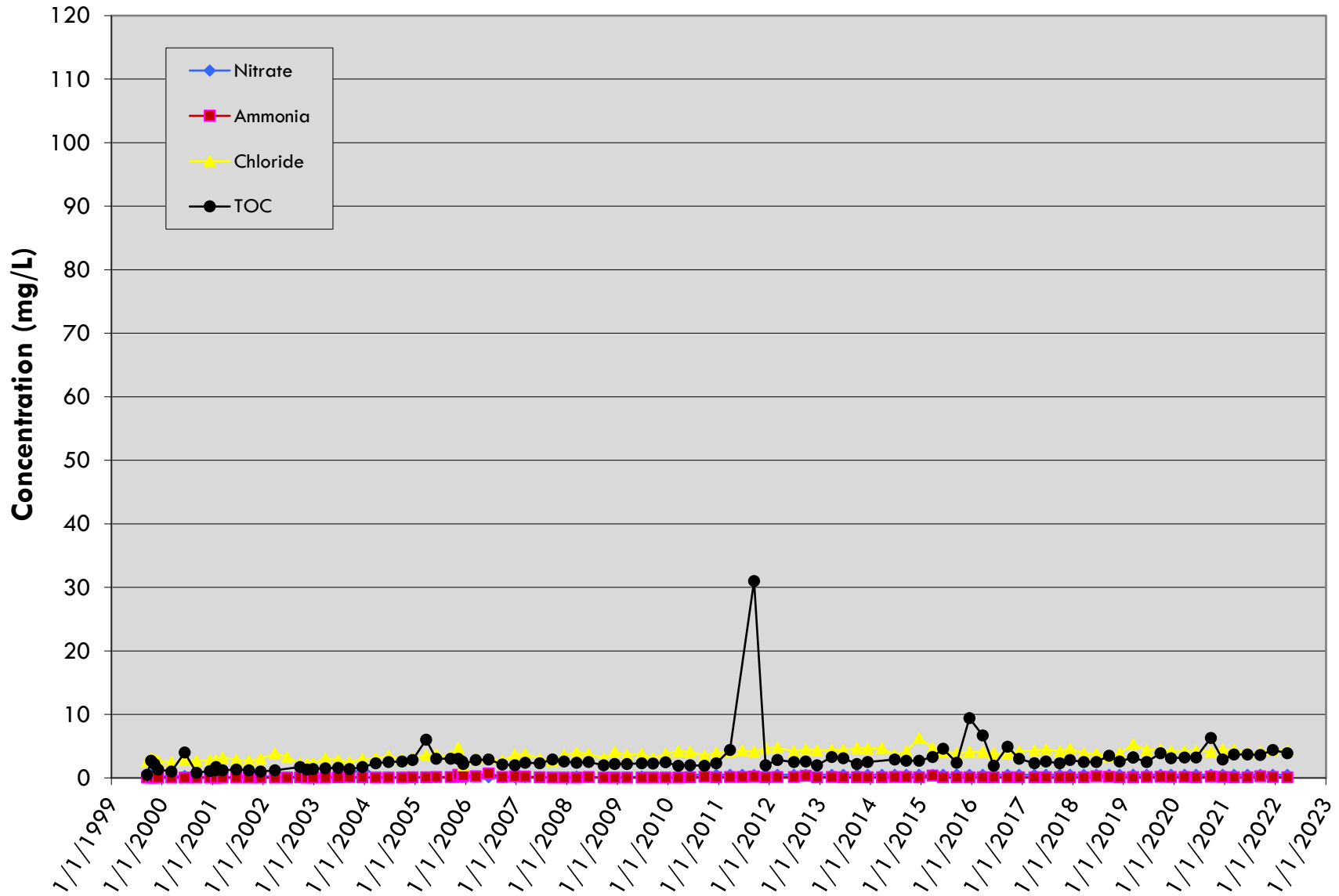


MW-10 (Background) LRI Landfill, Pierce County, Washington



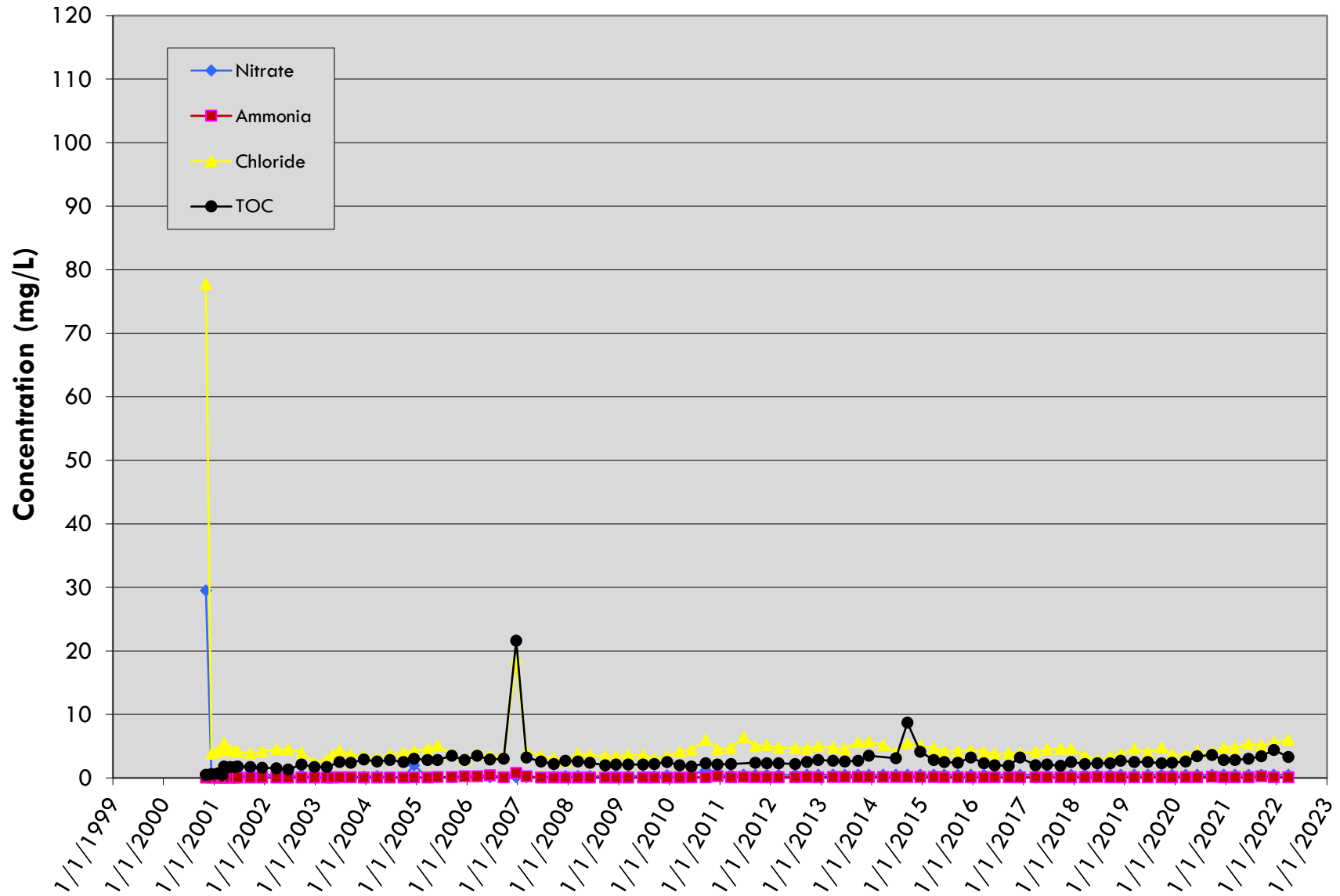
LDCS-1

LRI Landfill, Pierce County, Washington



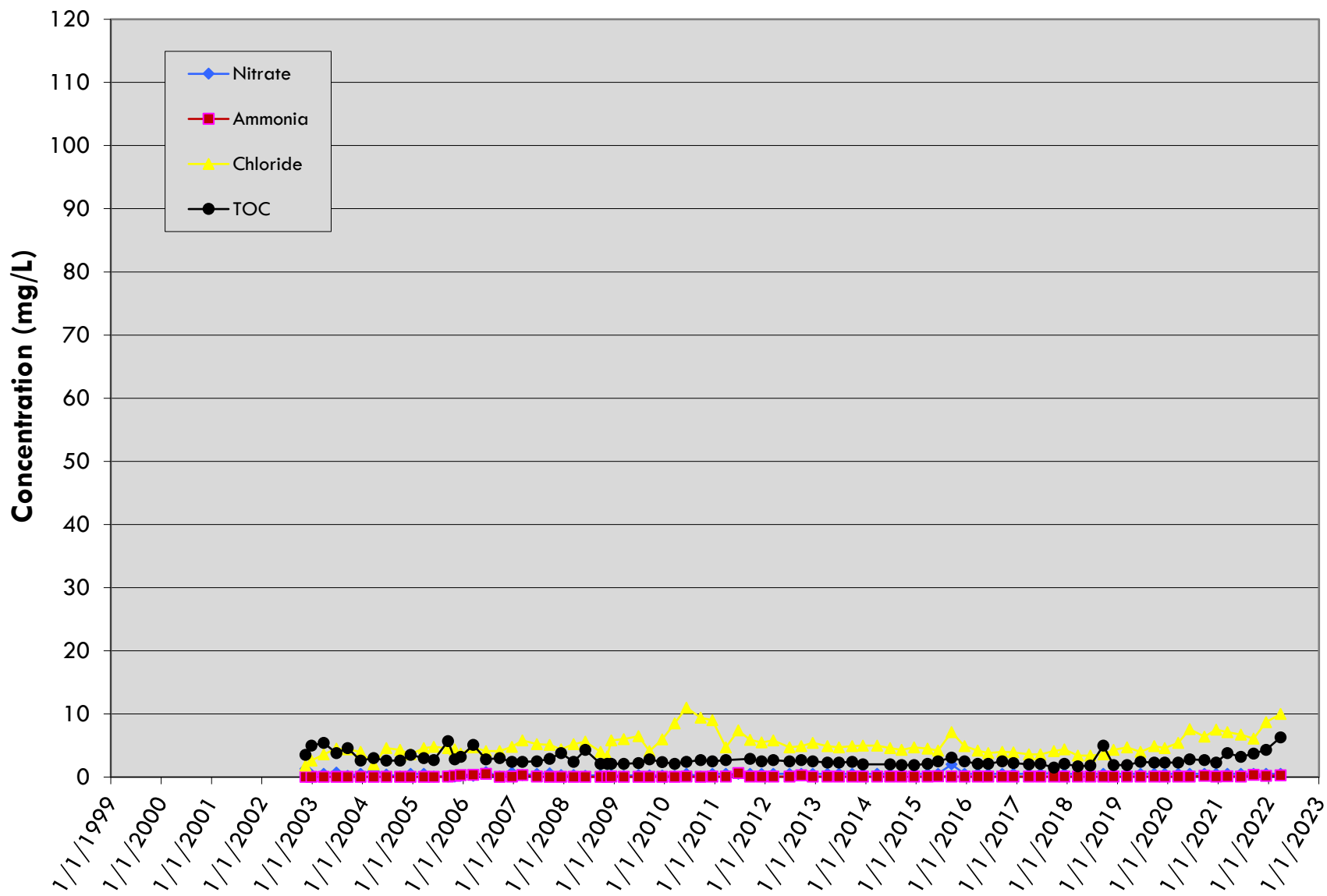
LDCS-2A

LRI Landfill, Pierce County, Washington



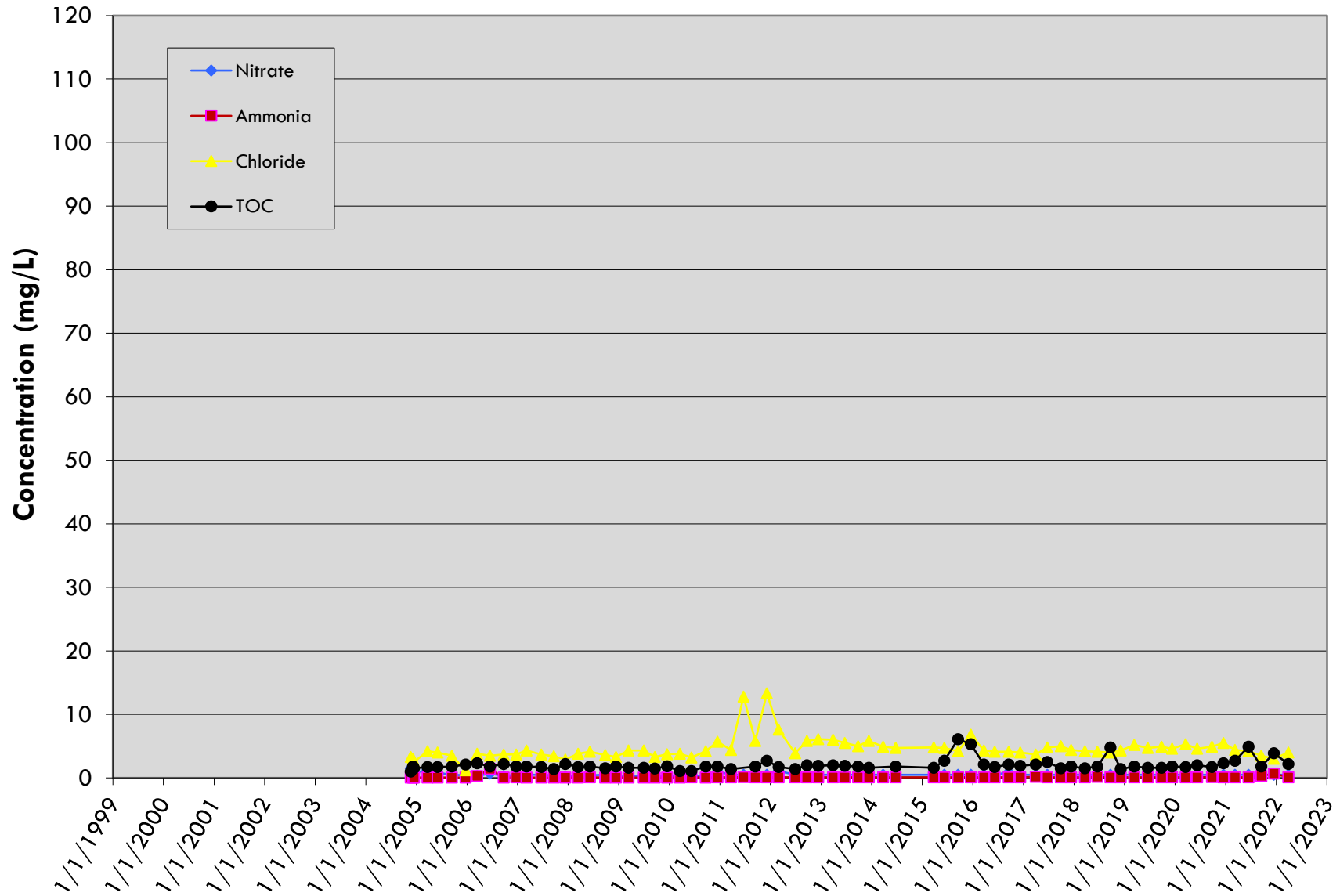
LDCS-2B

LRI Landfill, Pierce County, Washington



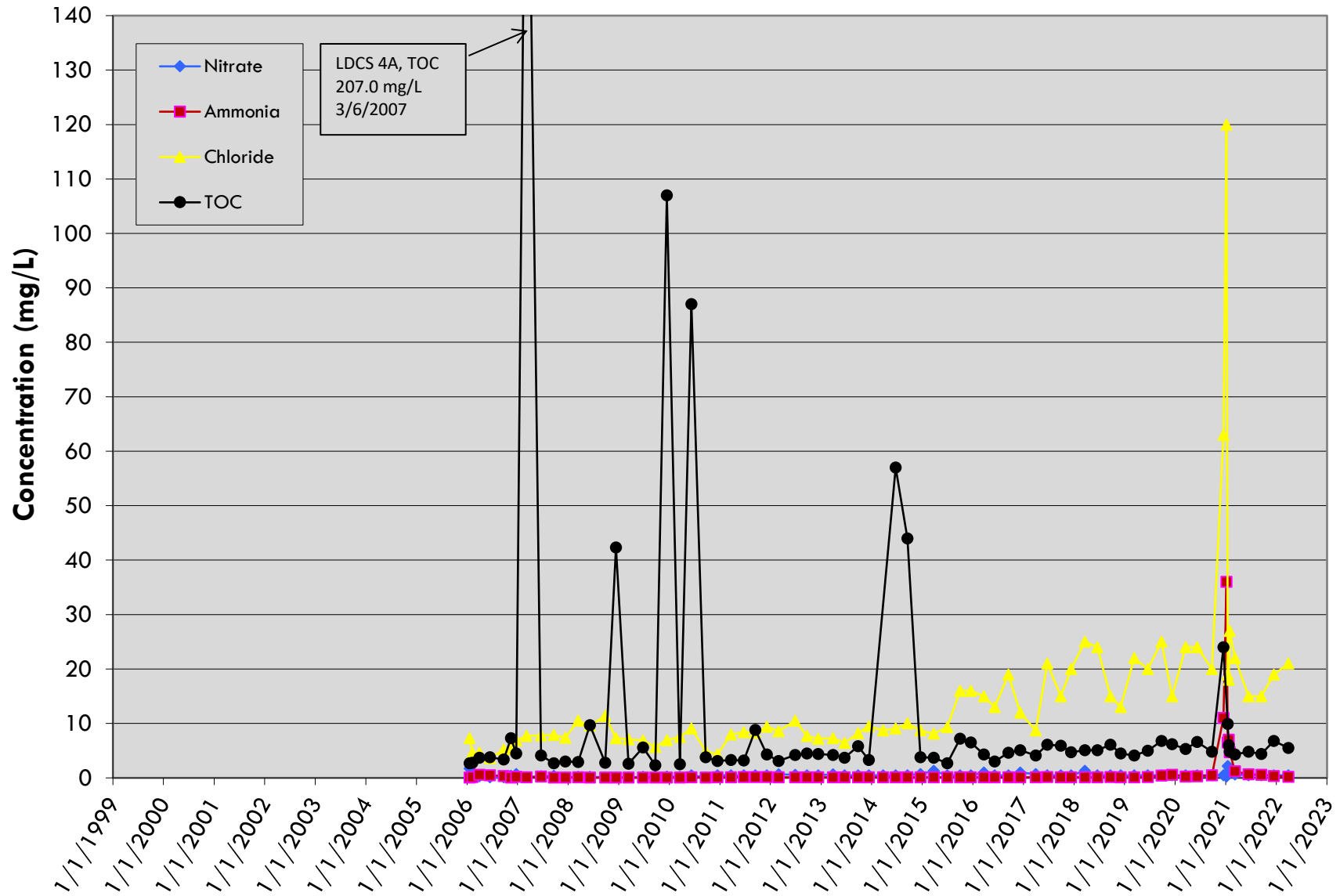
LDCS-3A

LRI Landfill, Pierce County, Washington



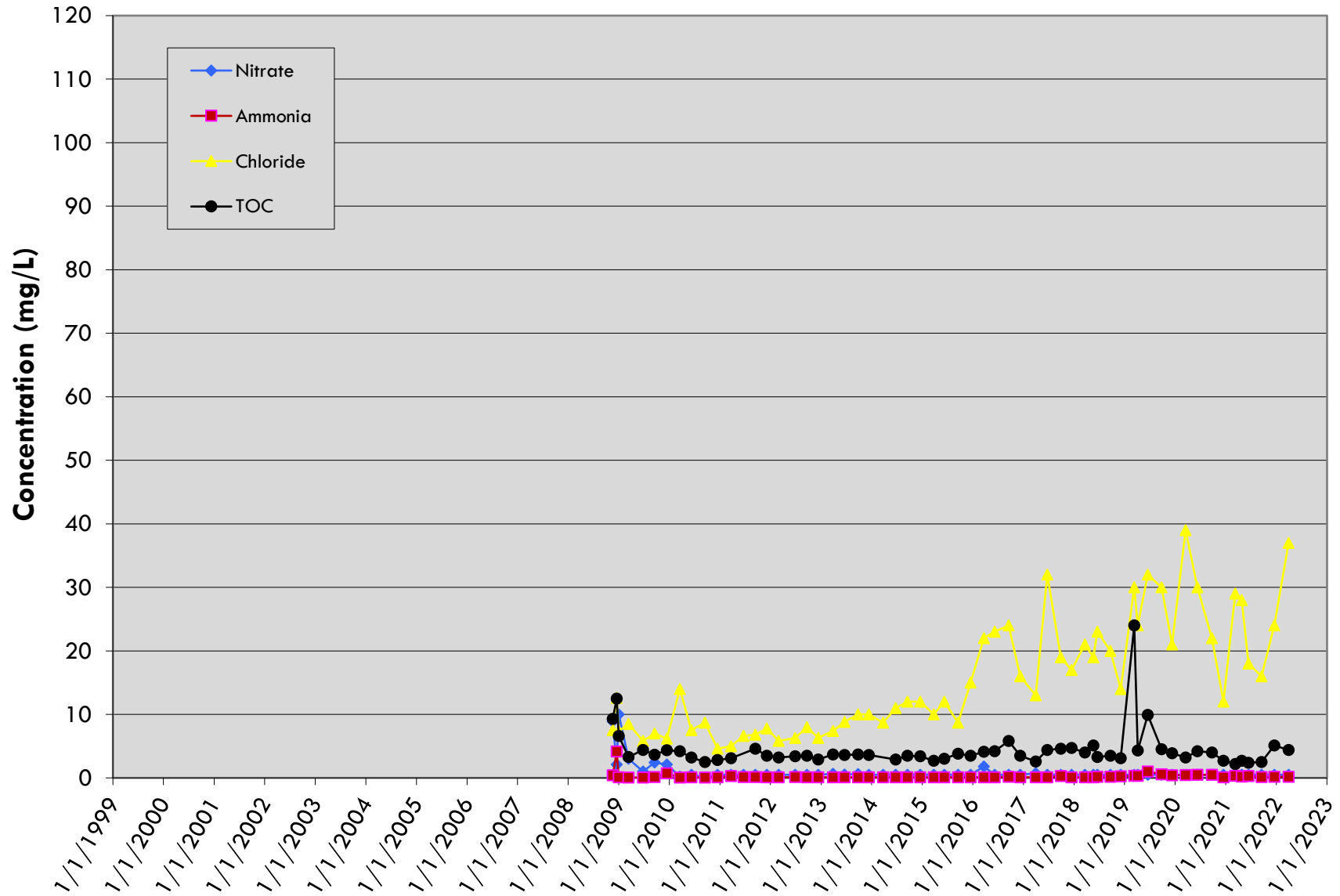
LDCS-4A

LRI Landfill, Pierce County, Washington



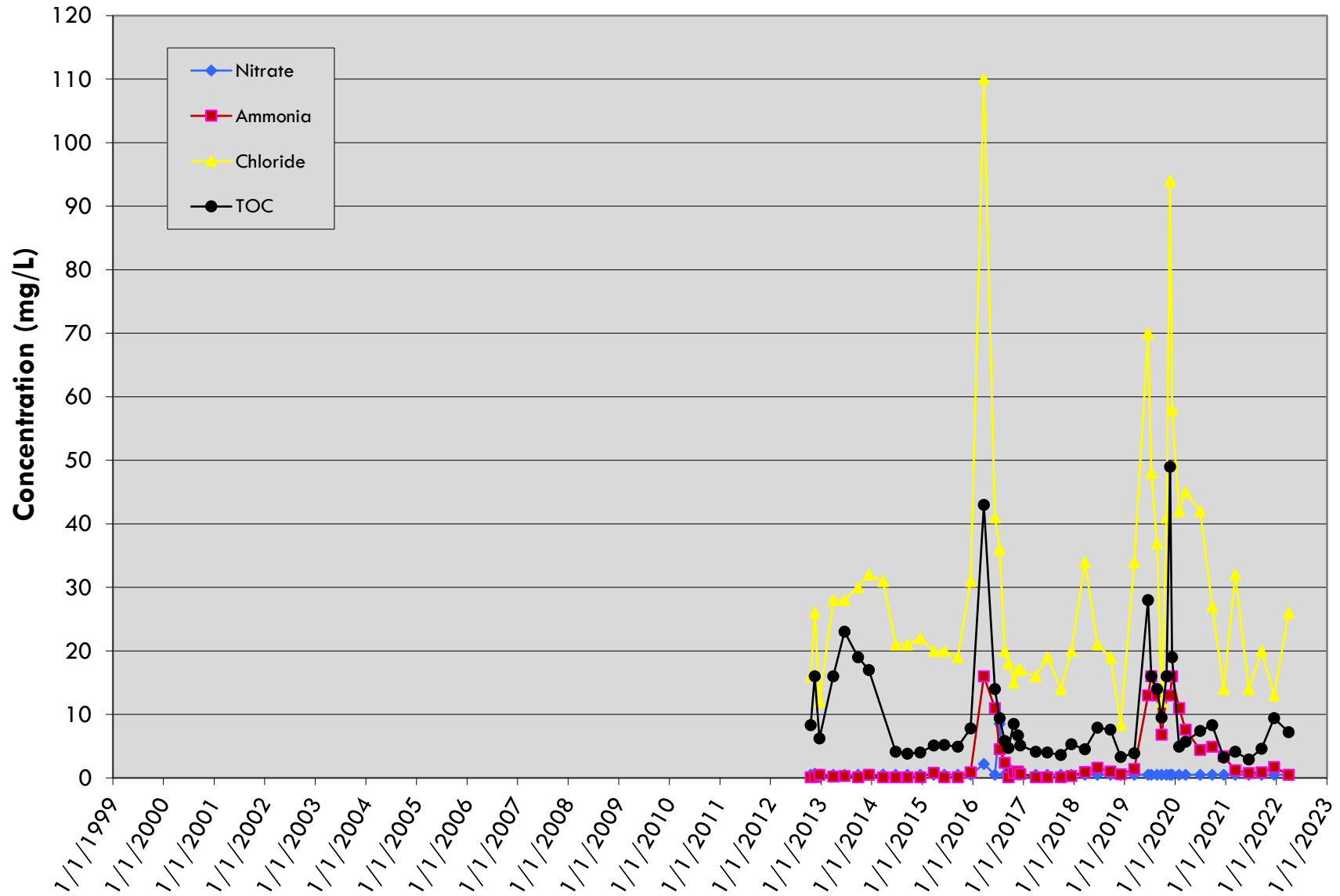
LDCS-4B

LRI Landfill, Pierce County, Washington



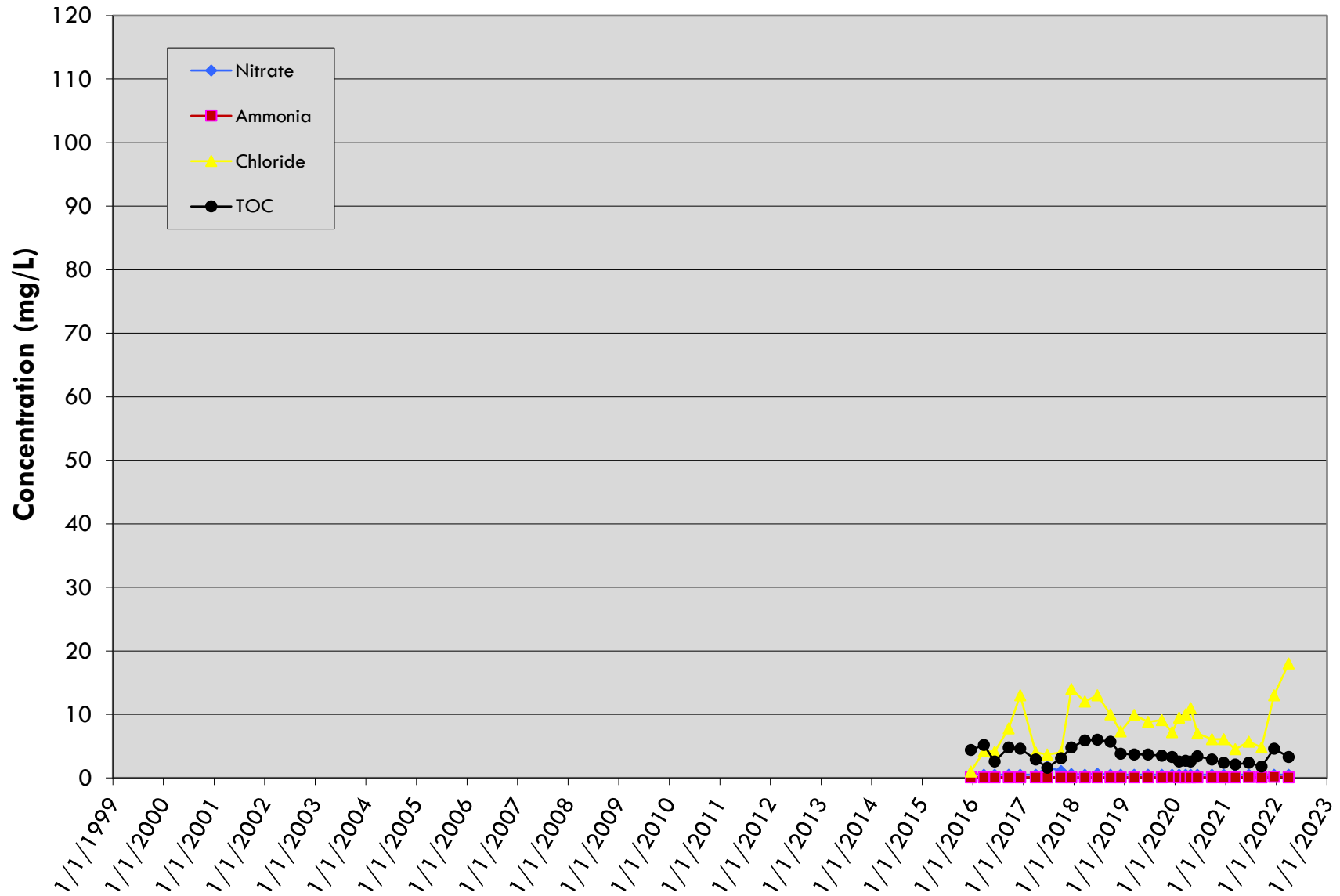
LDCS-5

LRI Landfill, Pierce County, Washington



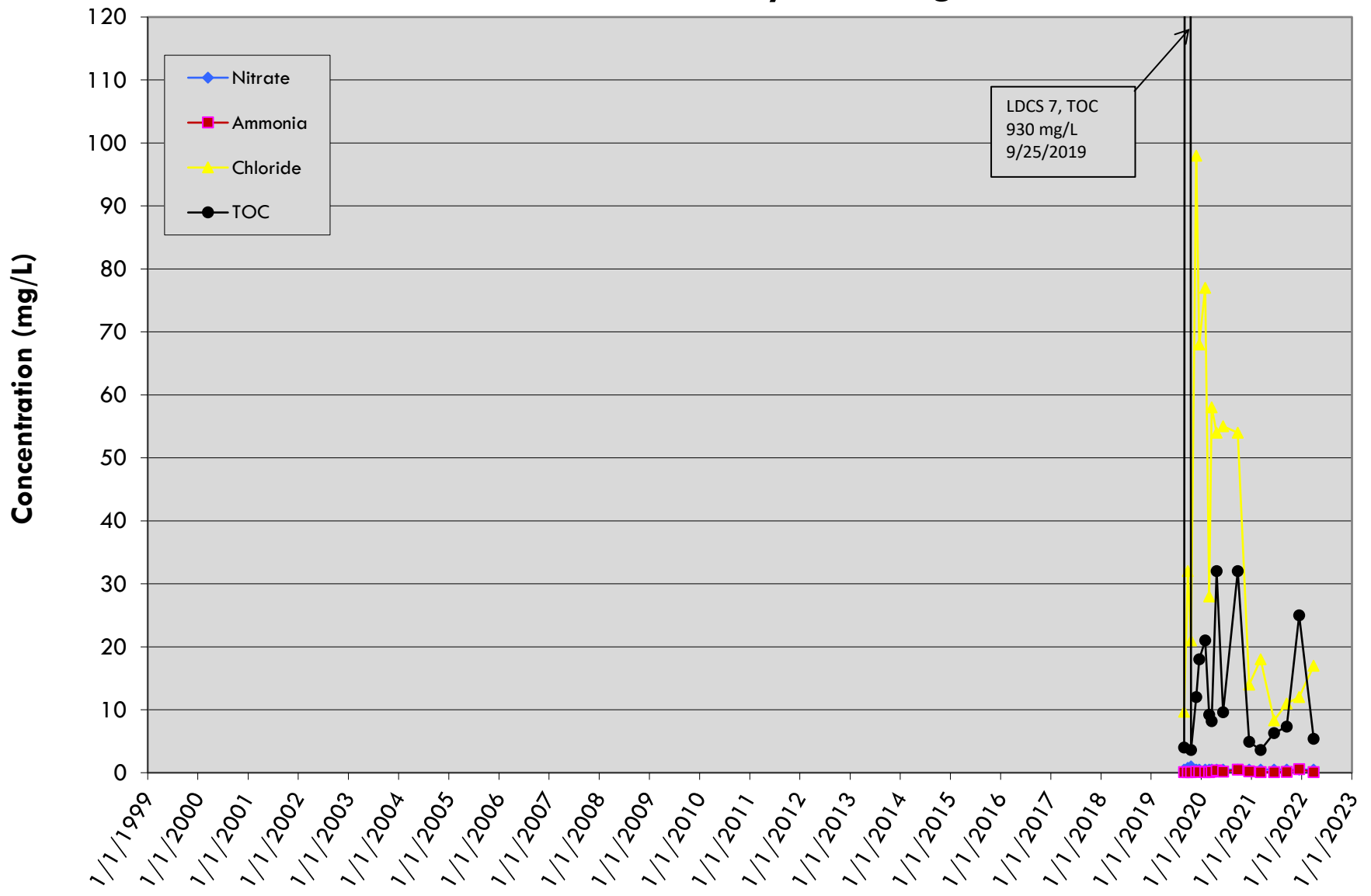
LDCS-6A

LRI Landfill, Pierce County, Washington



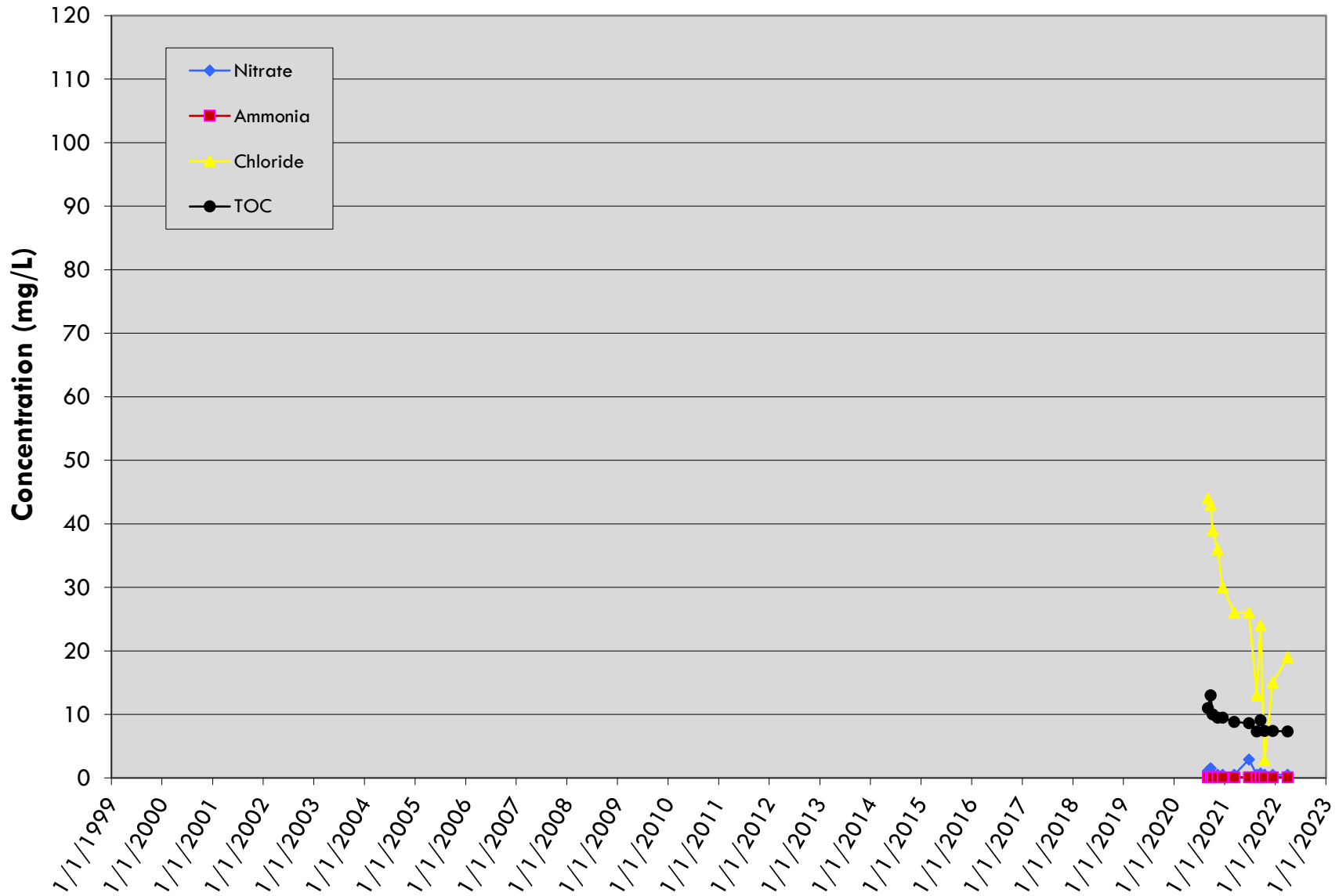
LDCS-7

LRI Landfill, Pierce County, Washington



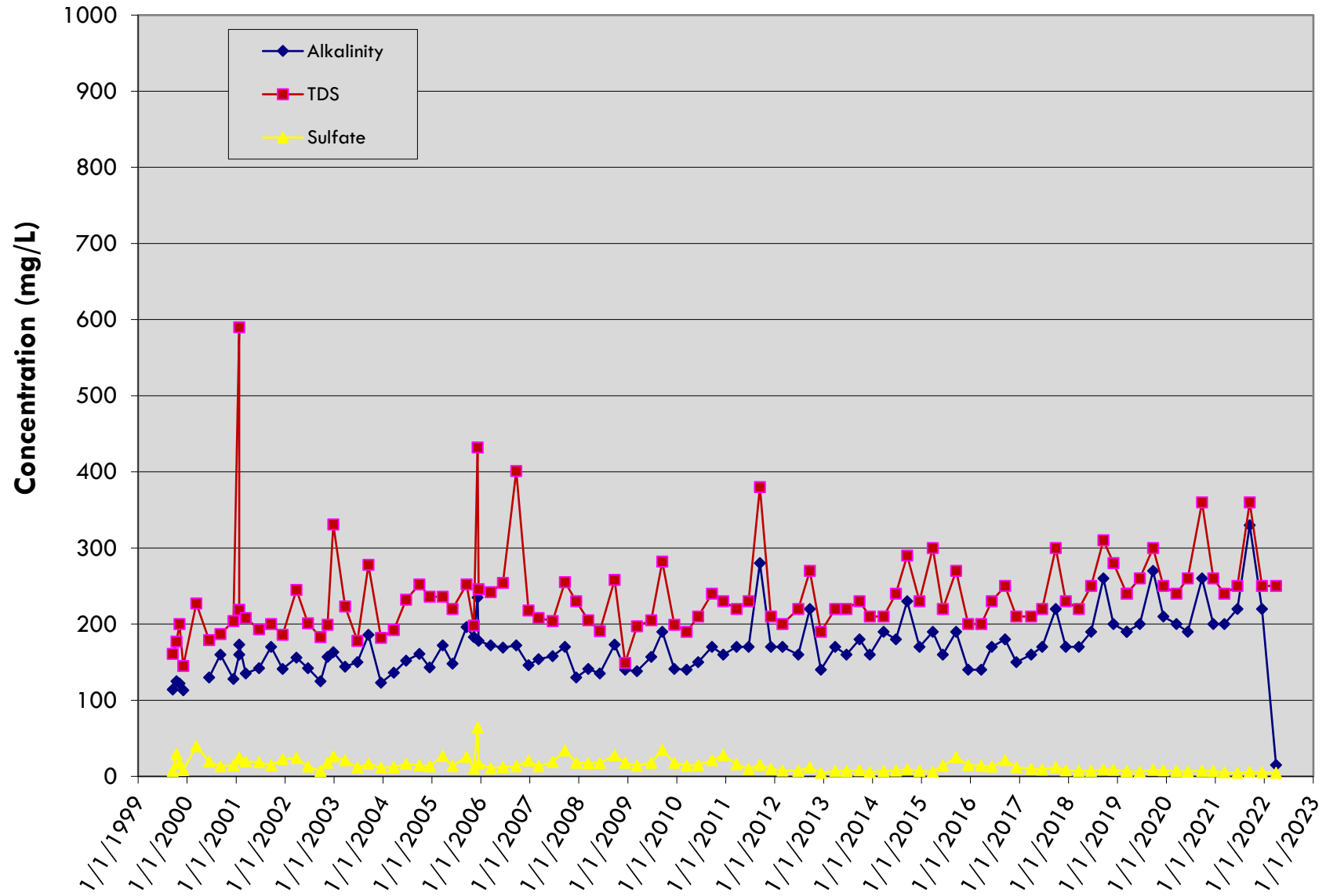
LDCS-8

LRI Landfill, Pierce County, Washington



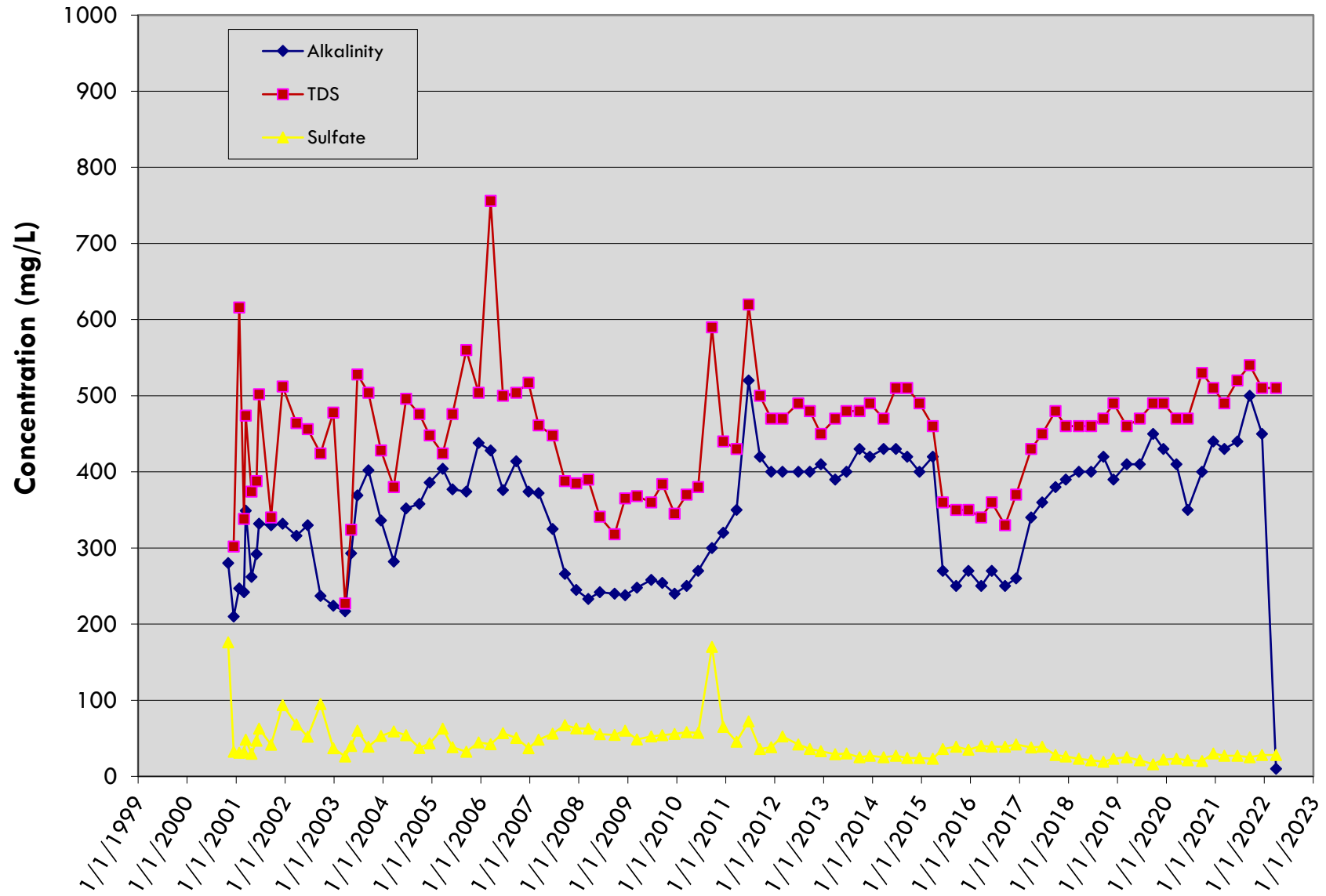
LDCS-1

LRI Landfill, Pierce County, Washington



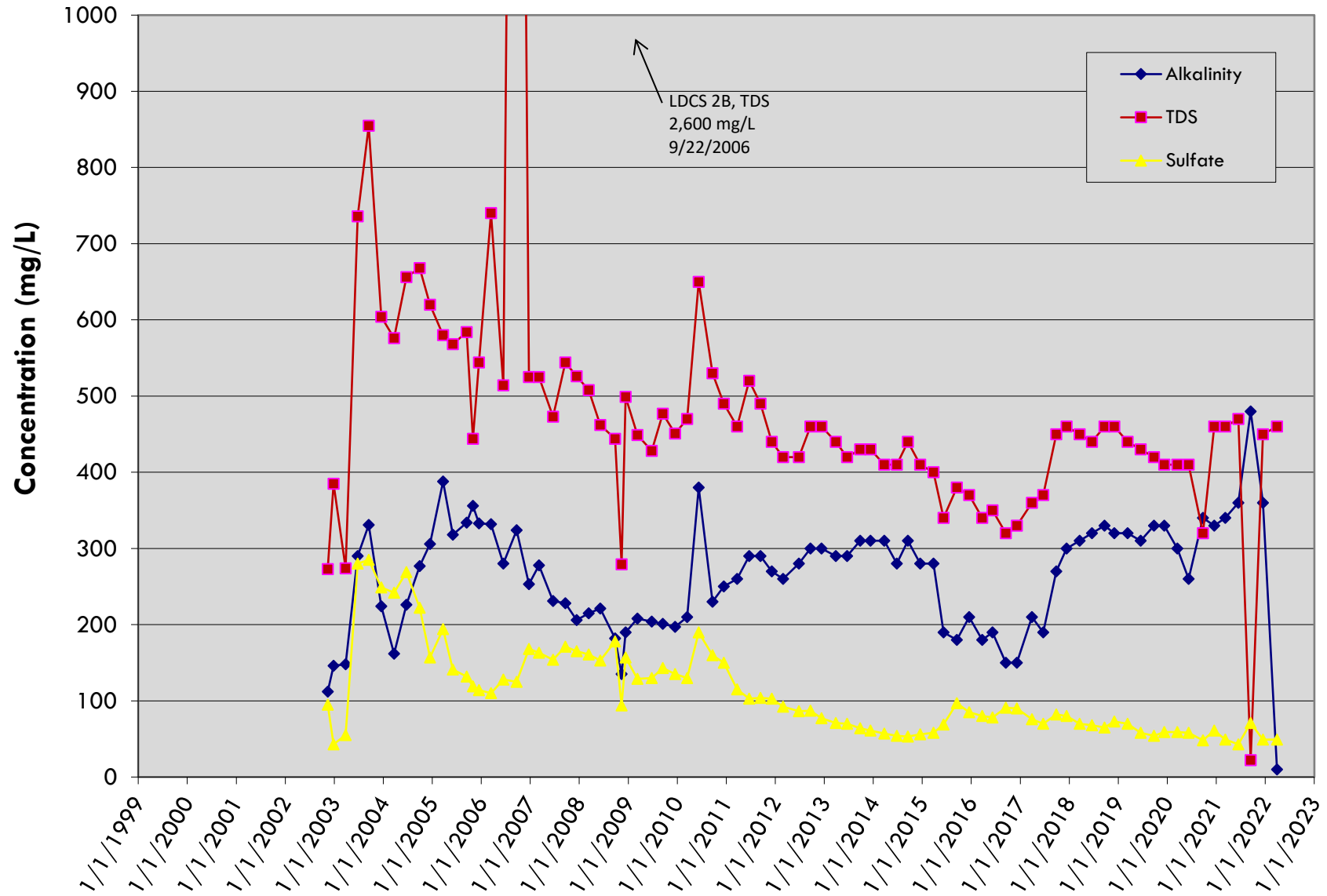
LDCS-2A

LRI Landfill, Pierce County, Washington



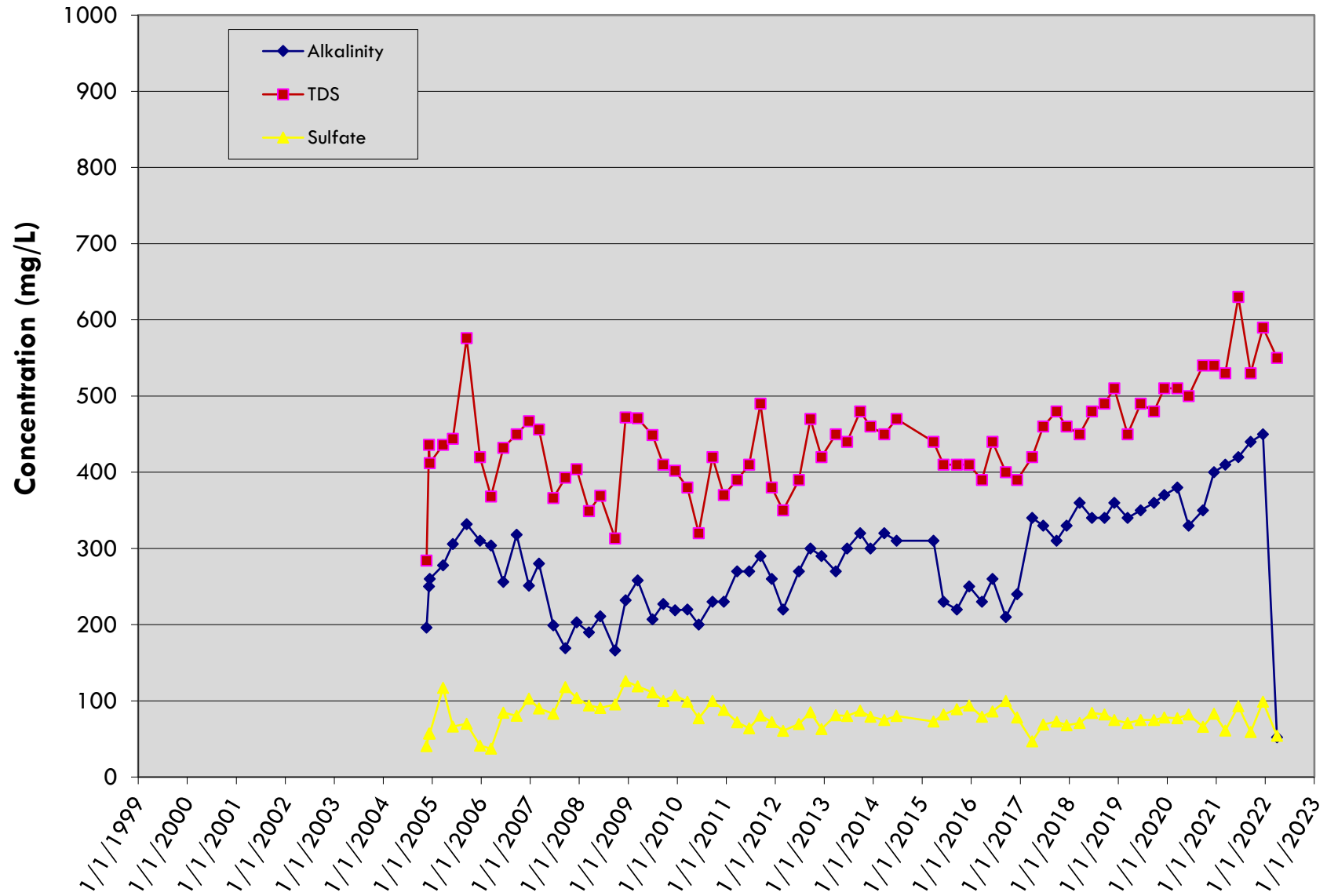
LDCS-2B

LRI Landfill, Pierce County, Washington



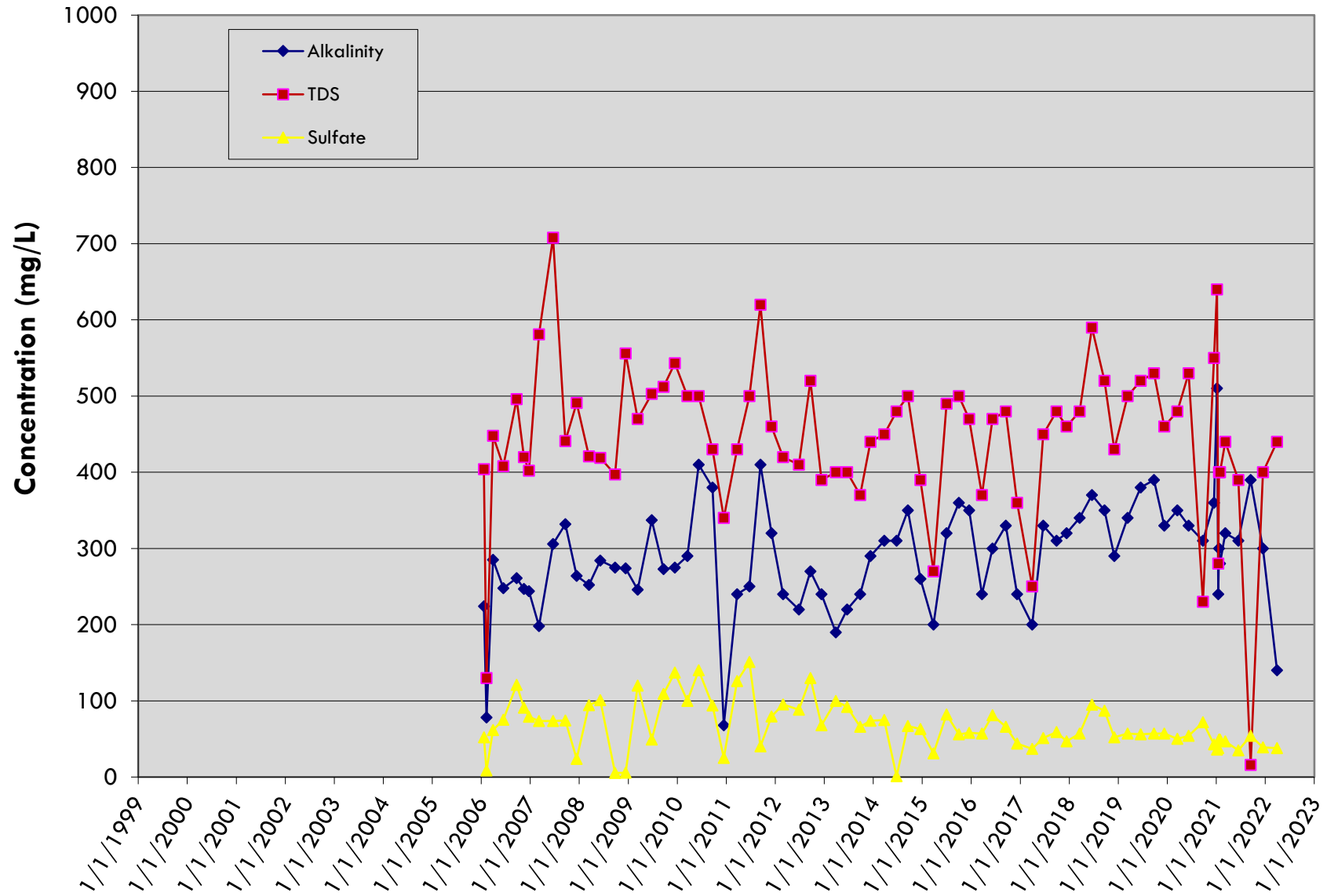
LDCS-3A

LRI Landfill, Pierce County, Washington



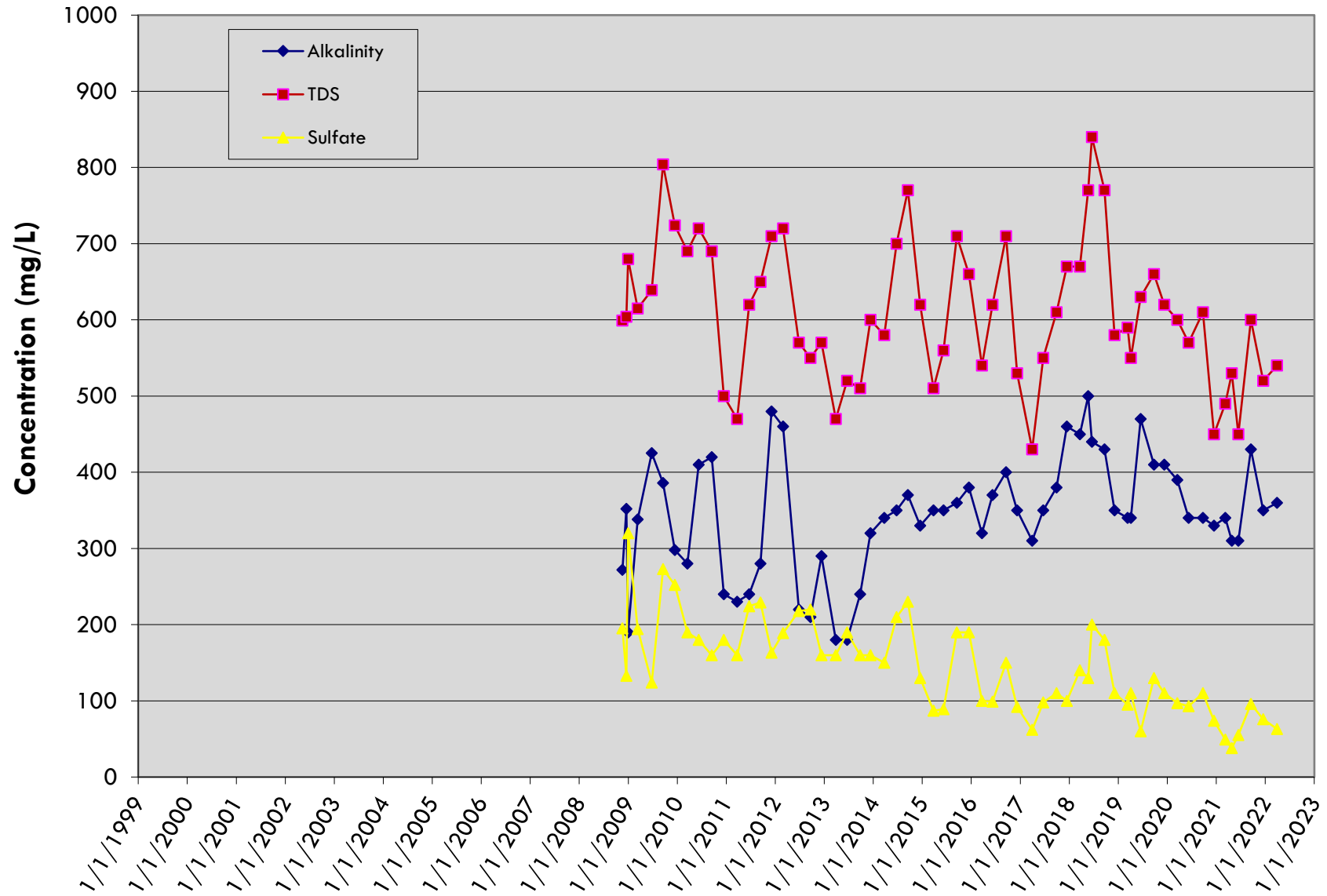
LDCS-4A

LRI Landfill, Pierce County, Washington



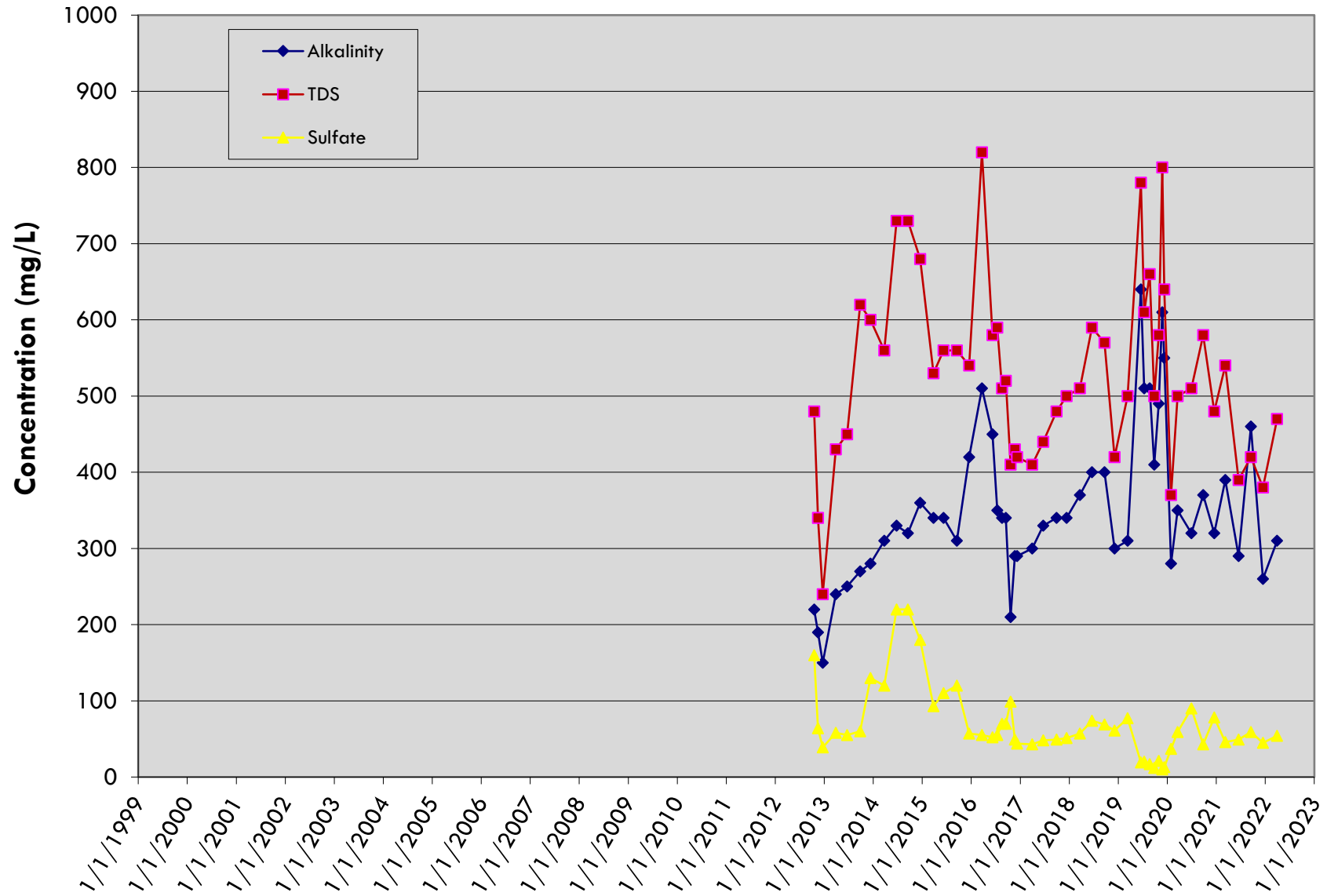
LDCS-4B

LRI Landfill, Pierce County, Washington



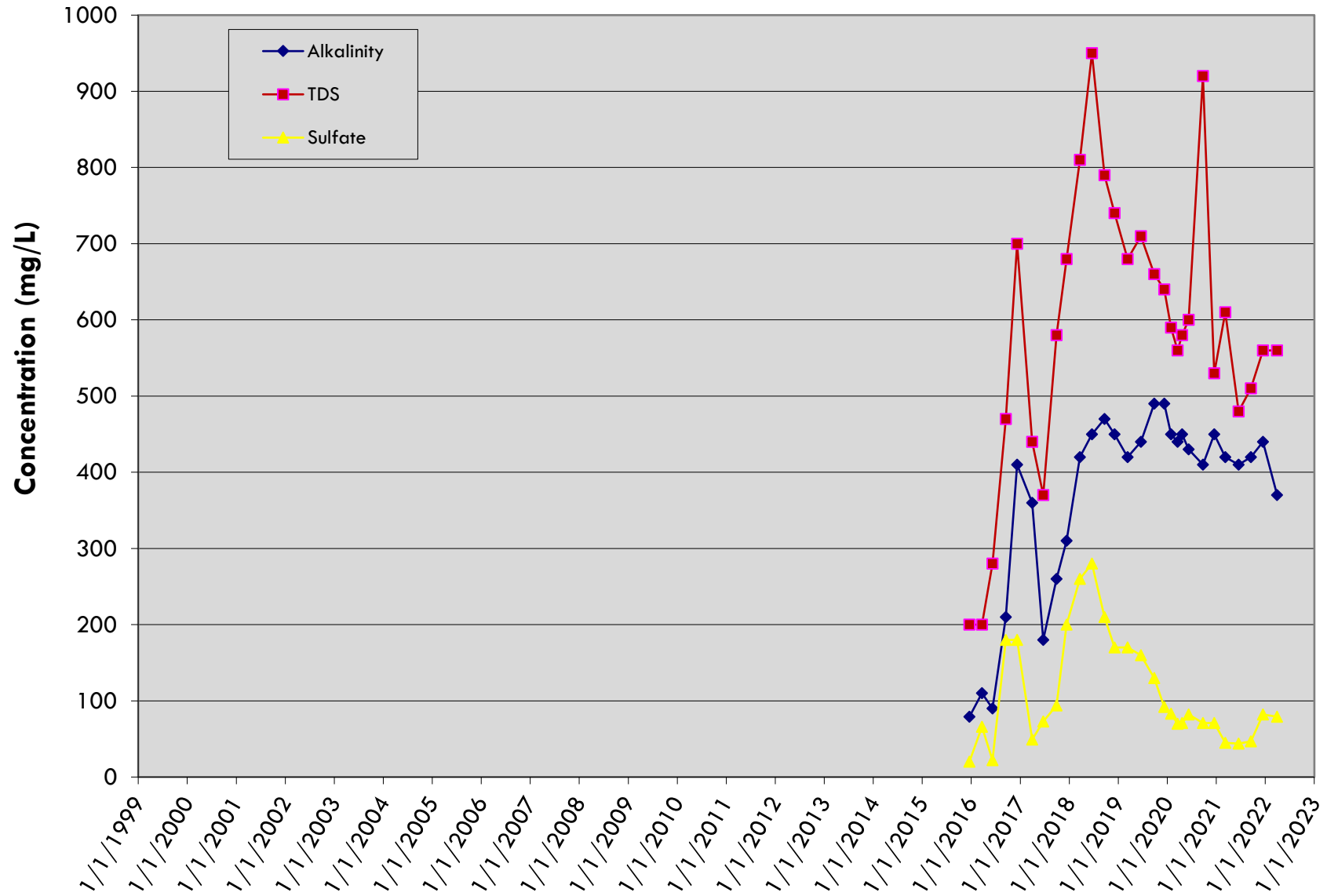
LDCS-5

LRI Landfill, Pierce County, Washington



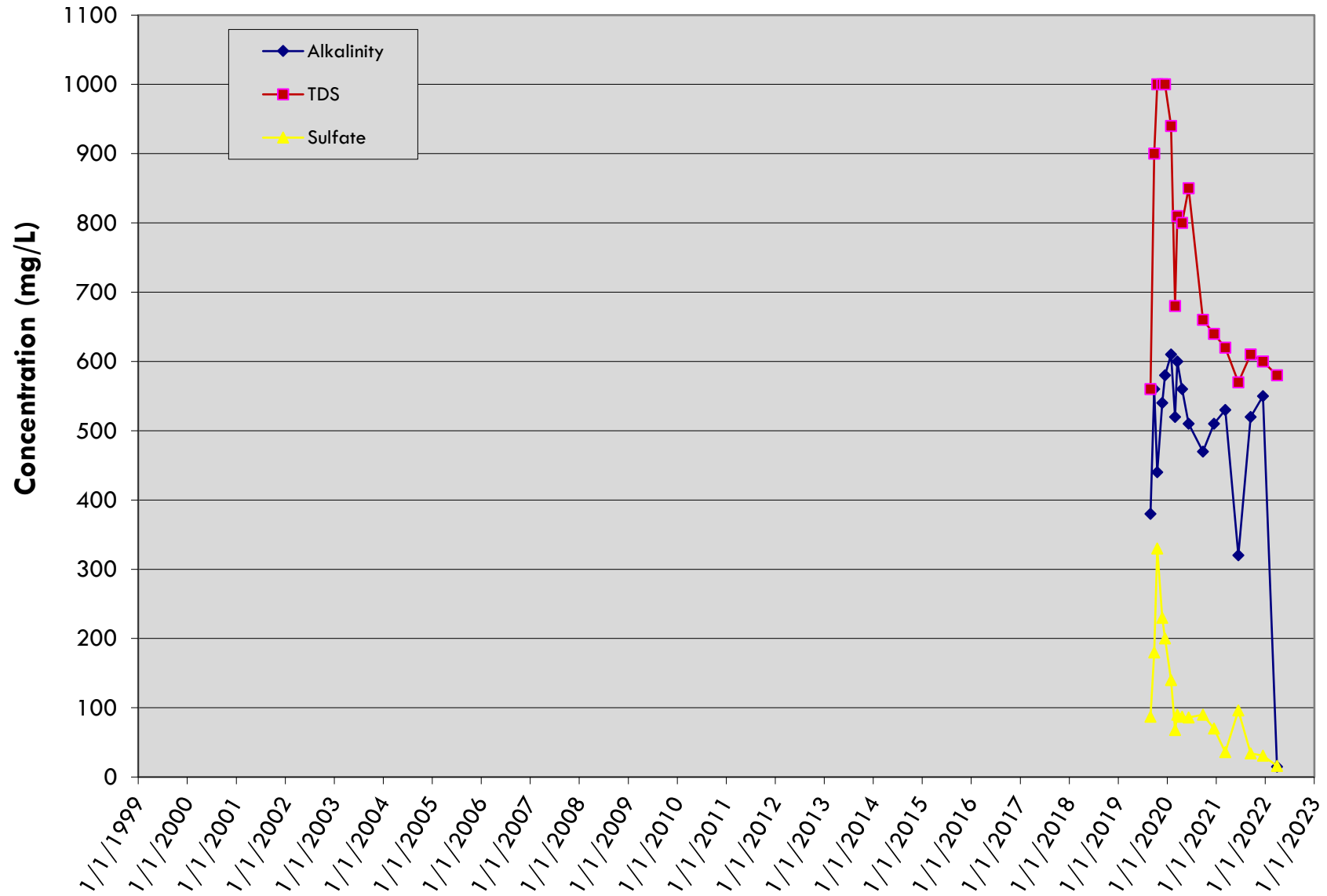
LDCS-6A

LRI Landfill, Pierce County, Washington

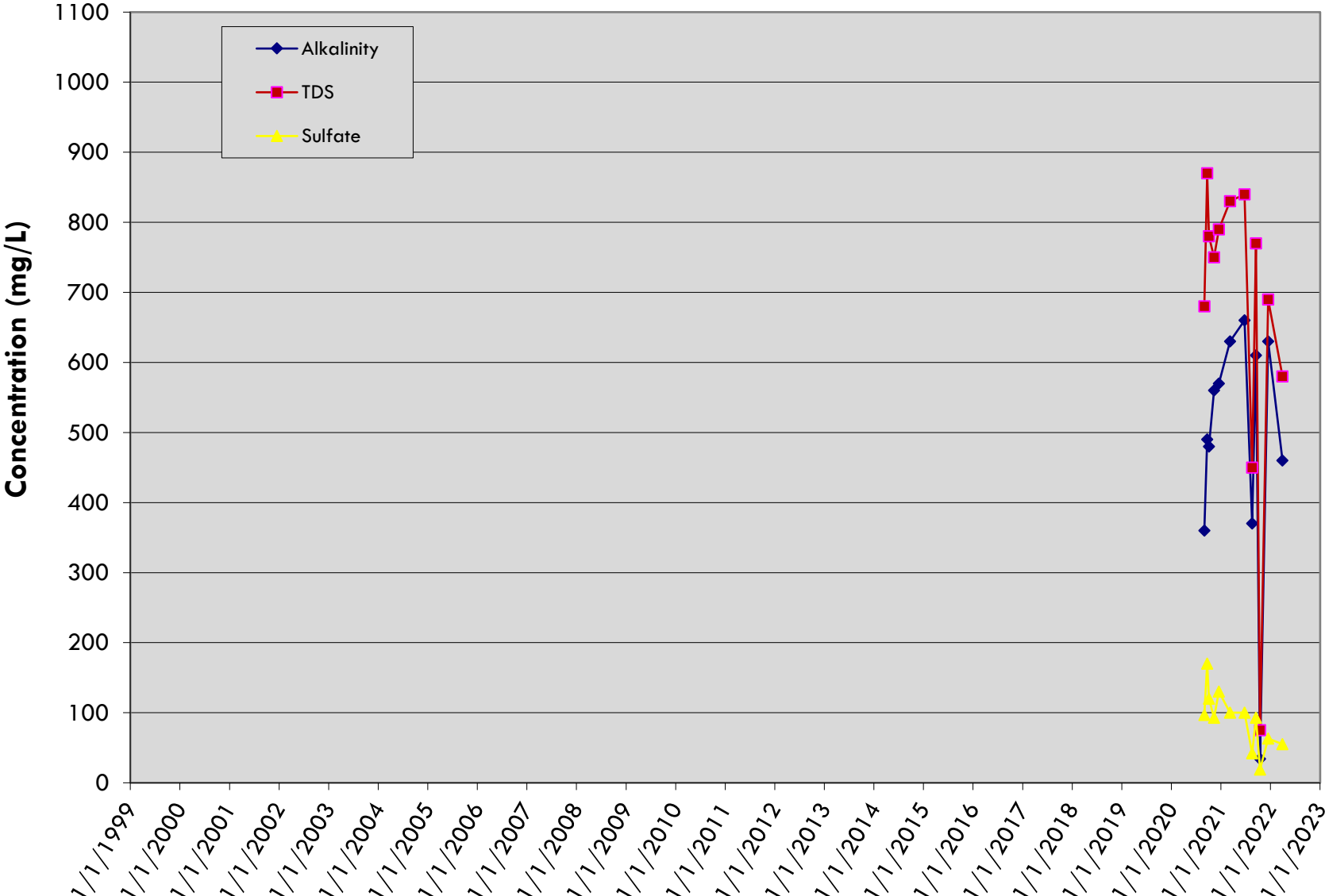


LDCS-7

LRI Landfill, Pierce County, Washington

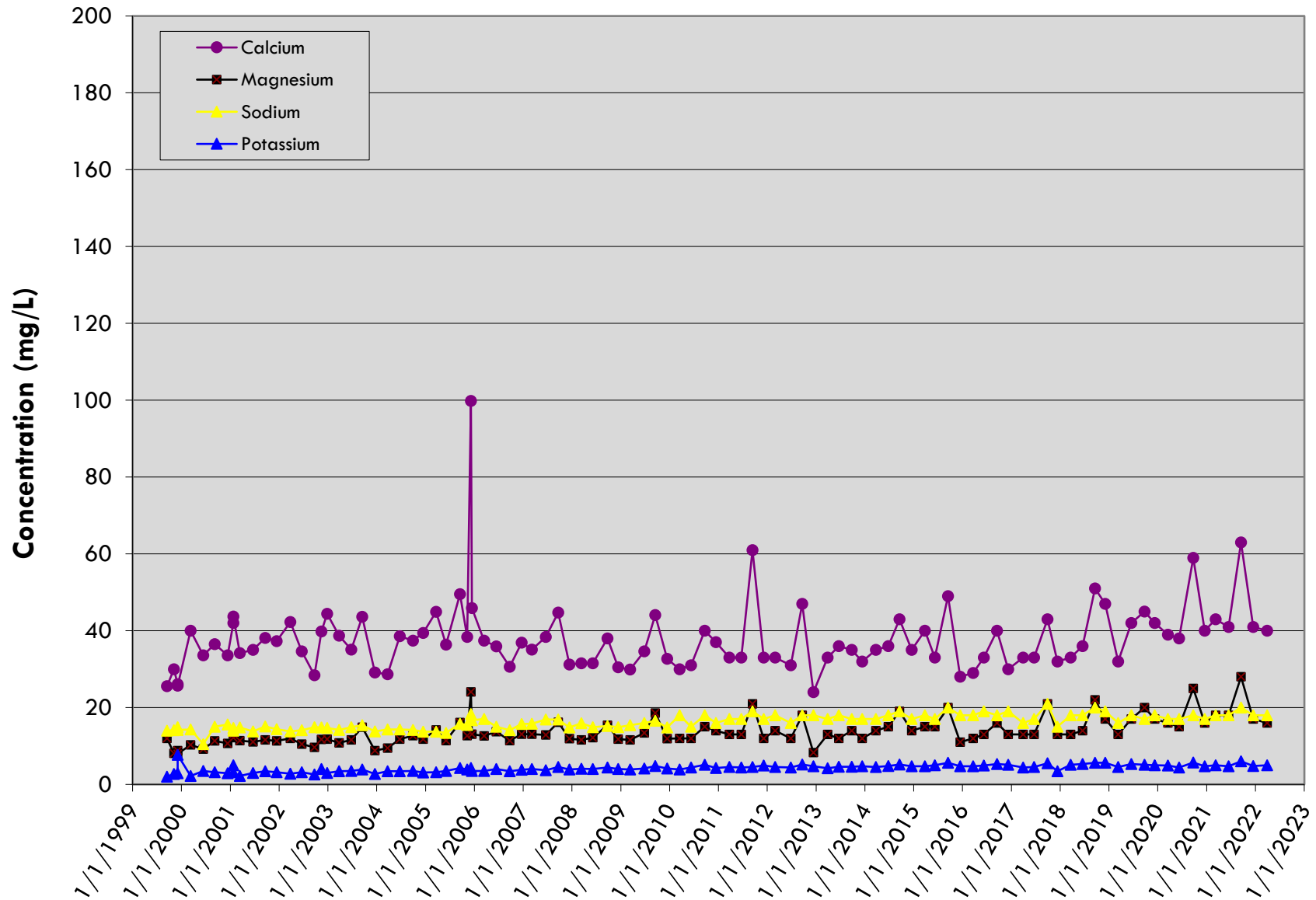


LDCS-8
LRI Landfill, Pierce County, Washington



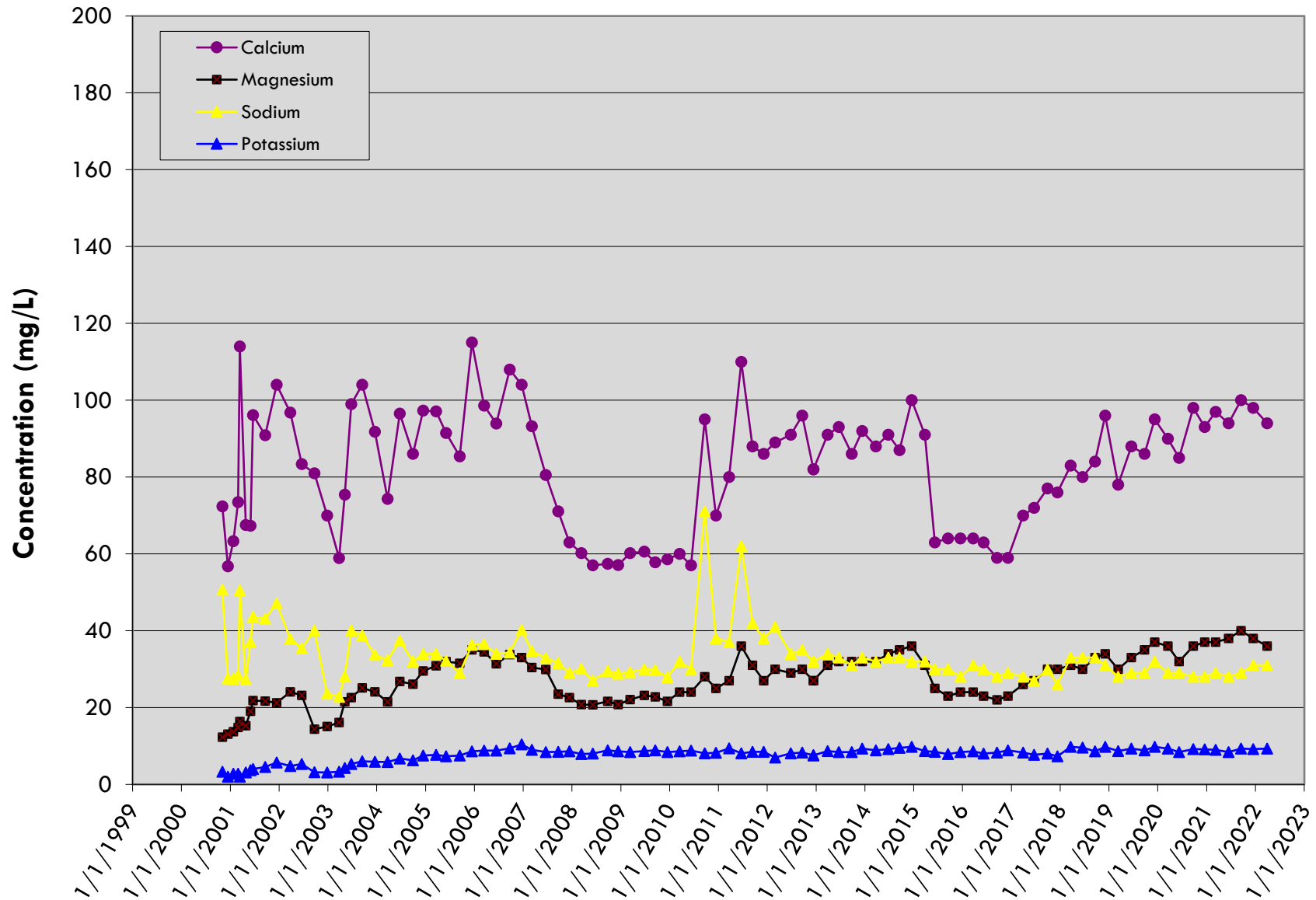
LDCS-1

LRI Landfill, Pierce County, Washington



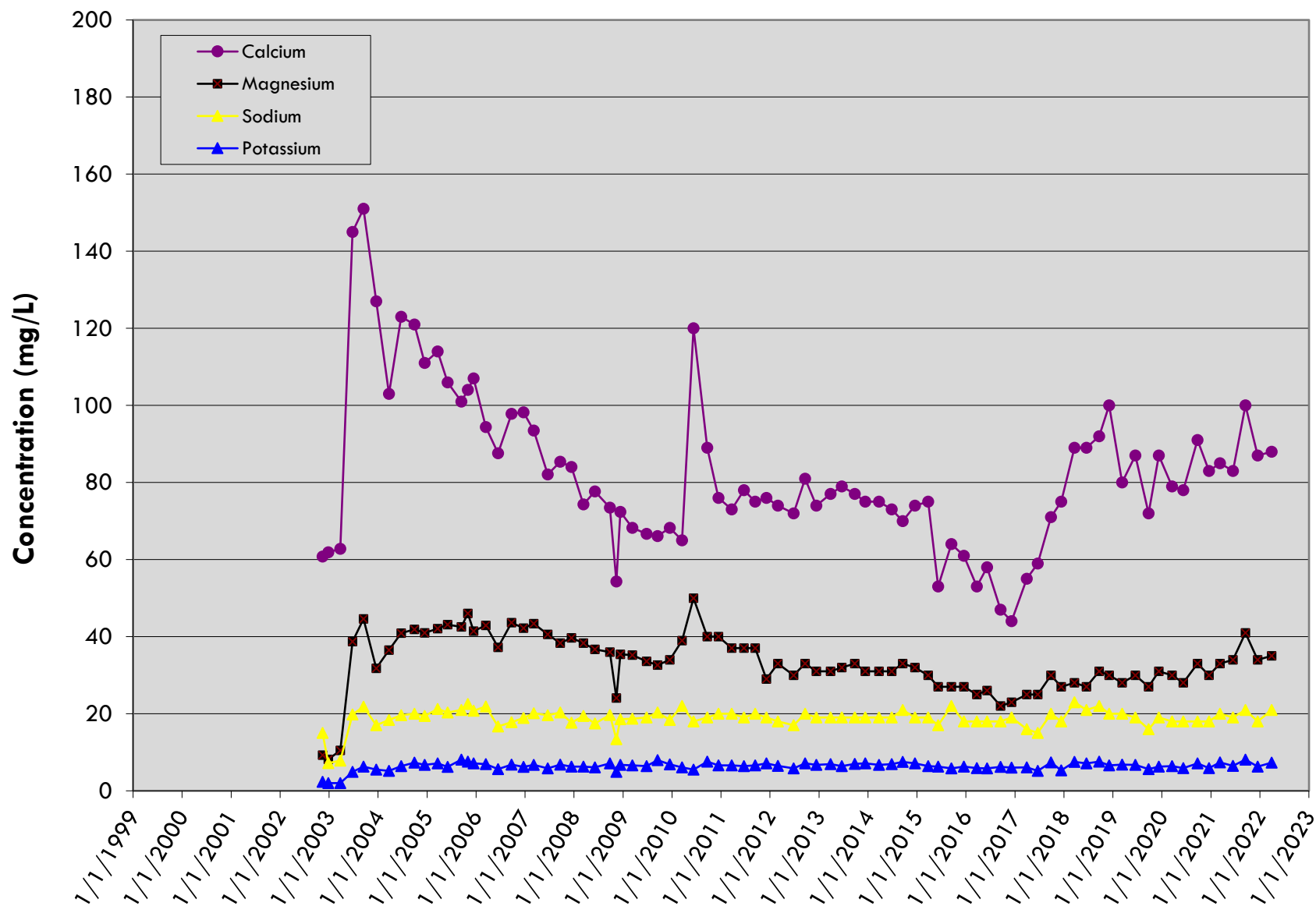
LDCS-2A

LRI Landfill, Pierce County, Washington



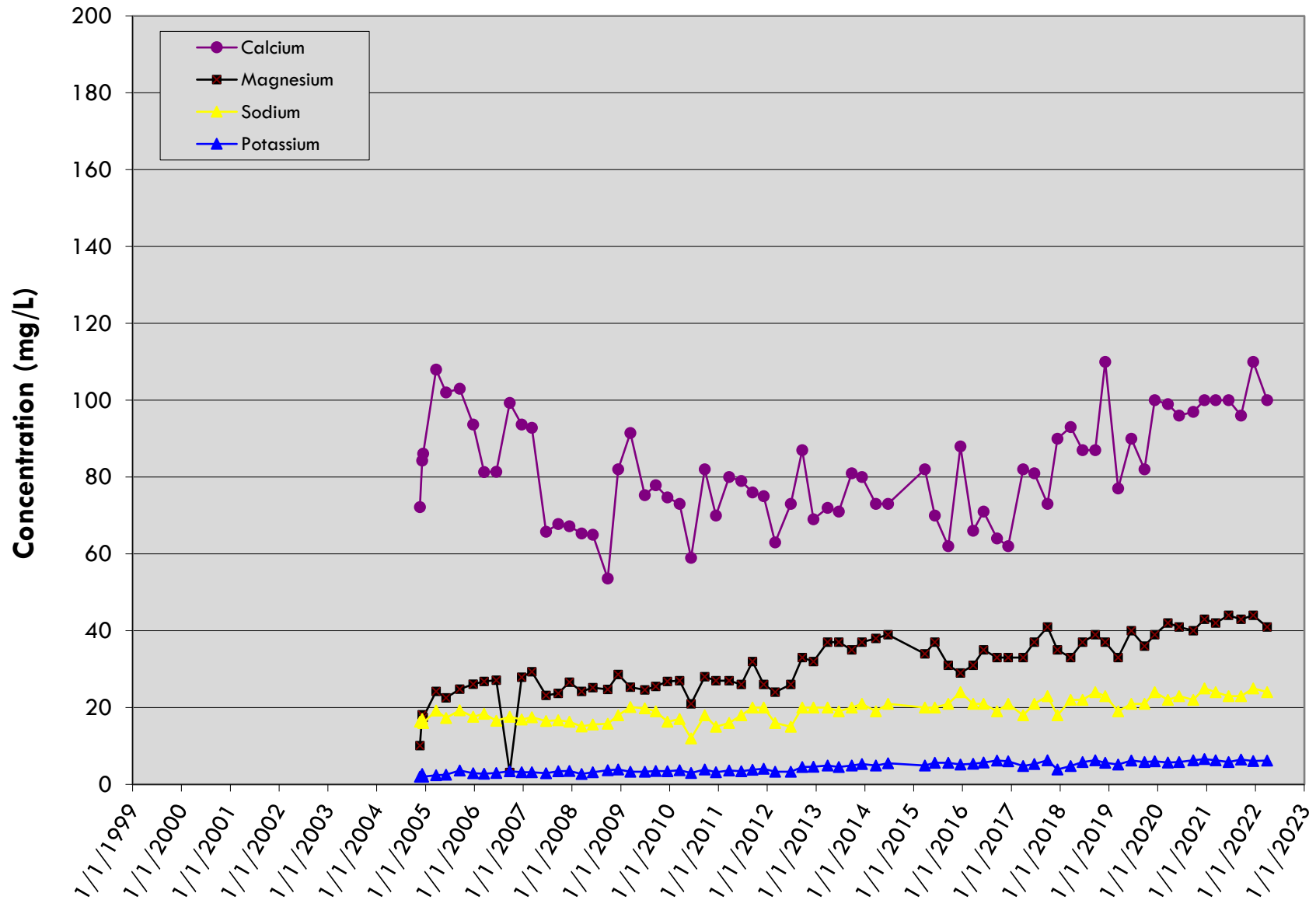
LDCS-2B

LRI Landfill, Pierce County, Washington



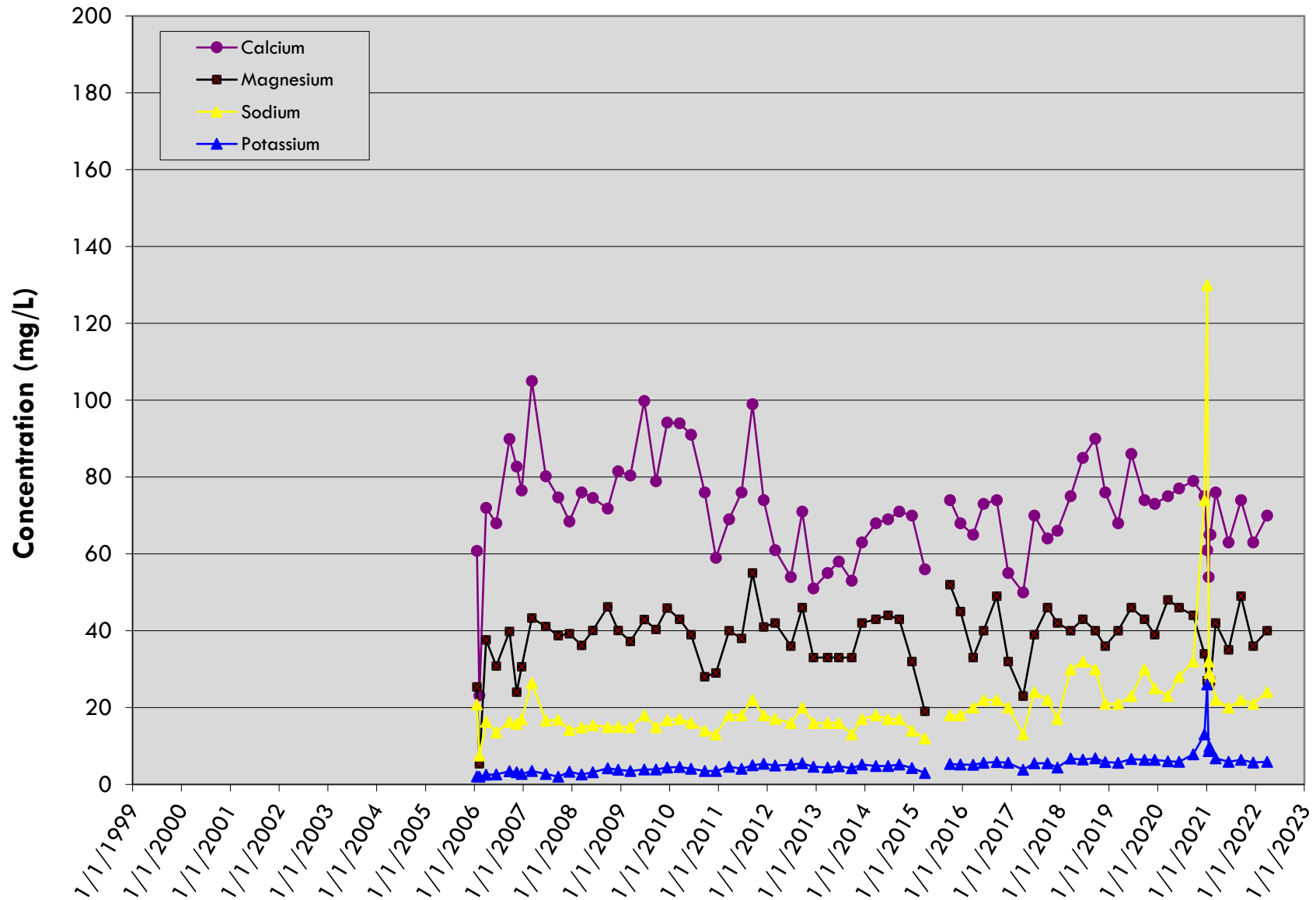
LDCS-3A

LRI Landfill, Pierce County, Washington



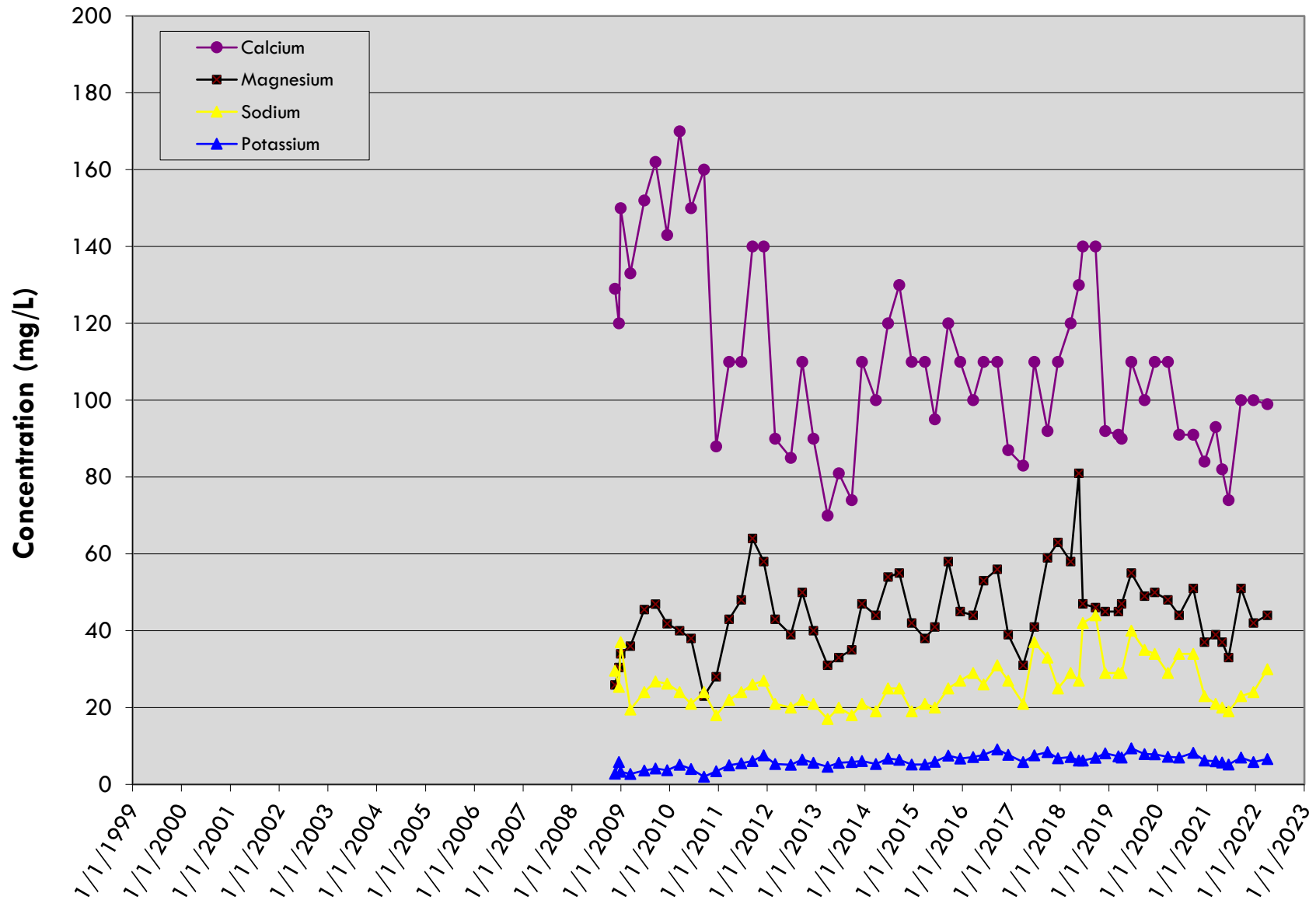
LDCS-4A

LRI Landfill, Pierce County, Washington



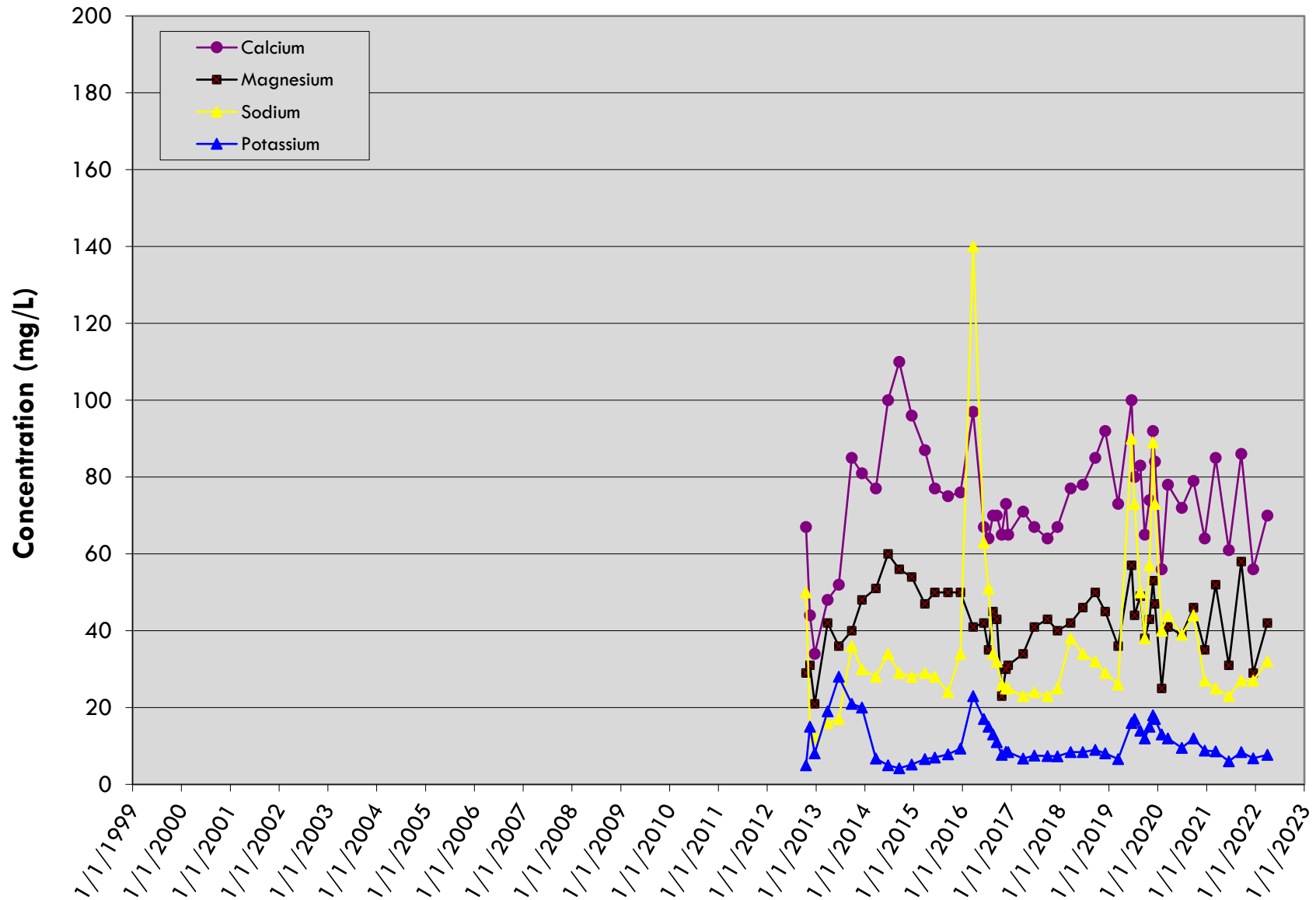
LDCS-4B

LRI Landfill, Pierce County, Washington



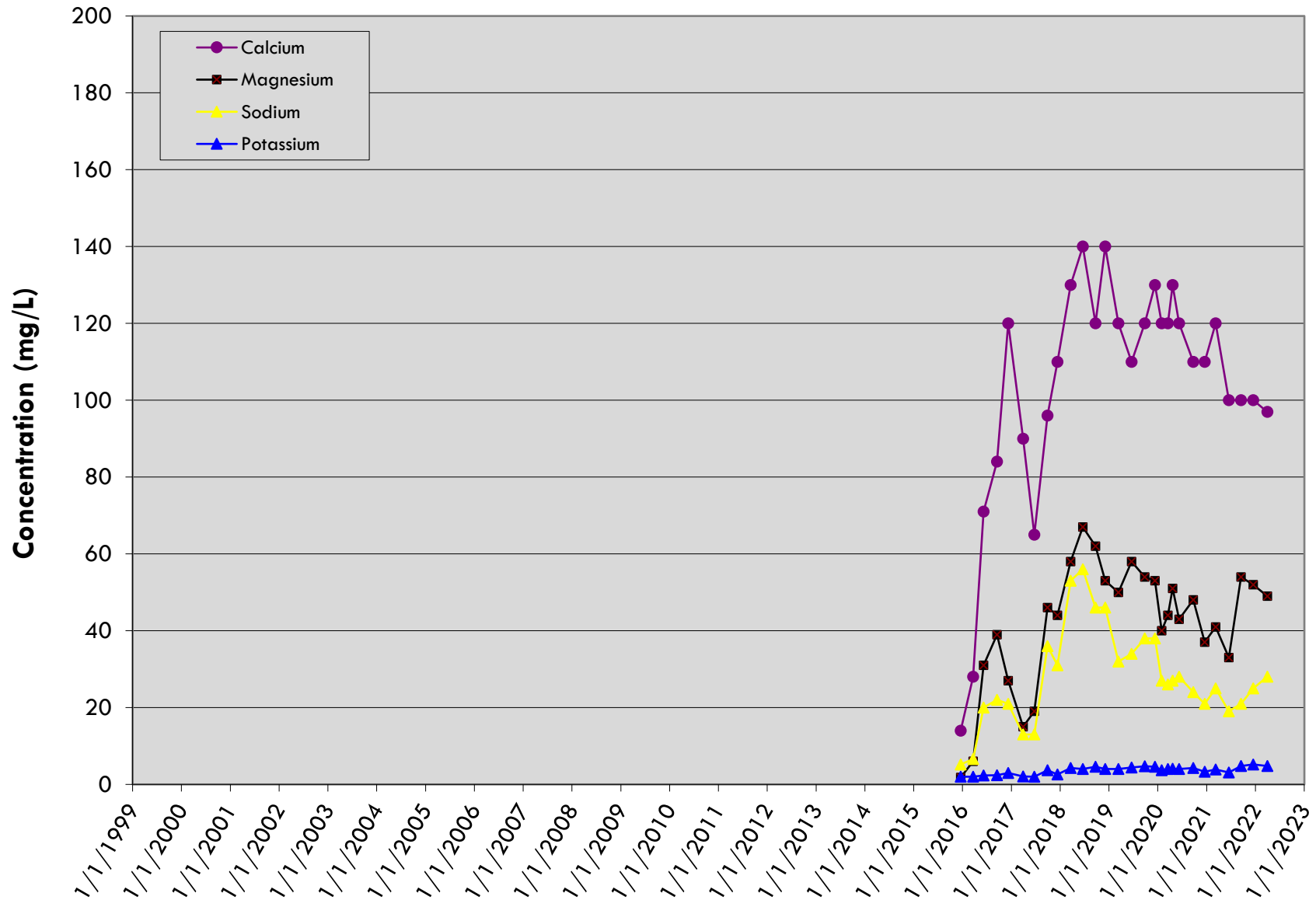
LDCS-5

LRI Landfill, Pierce County, Washington



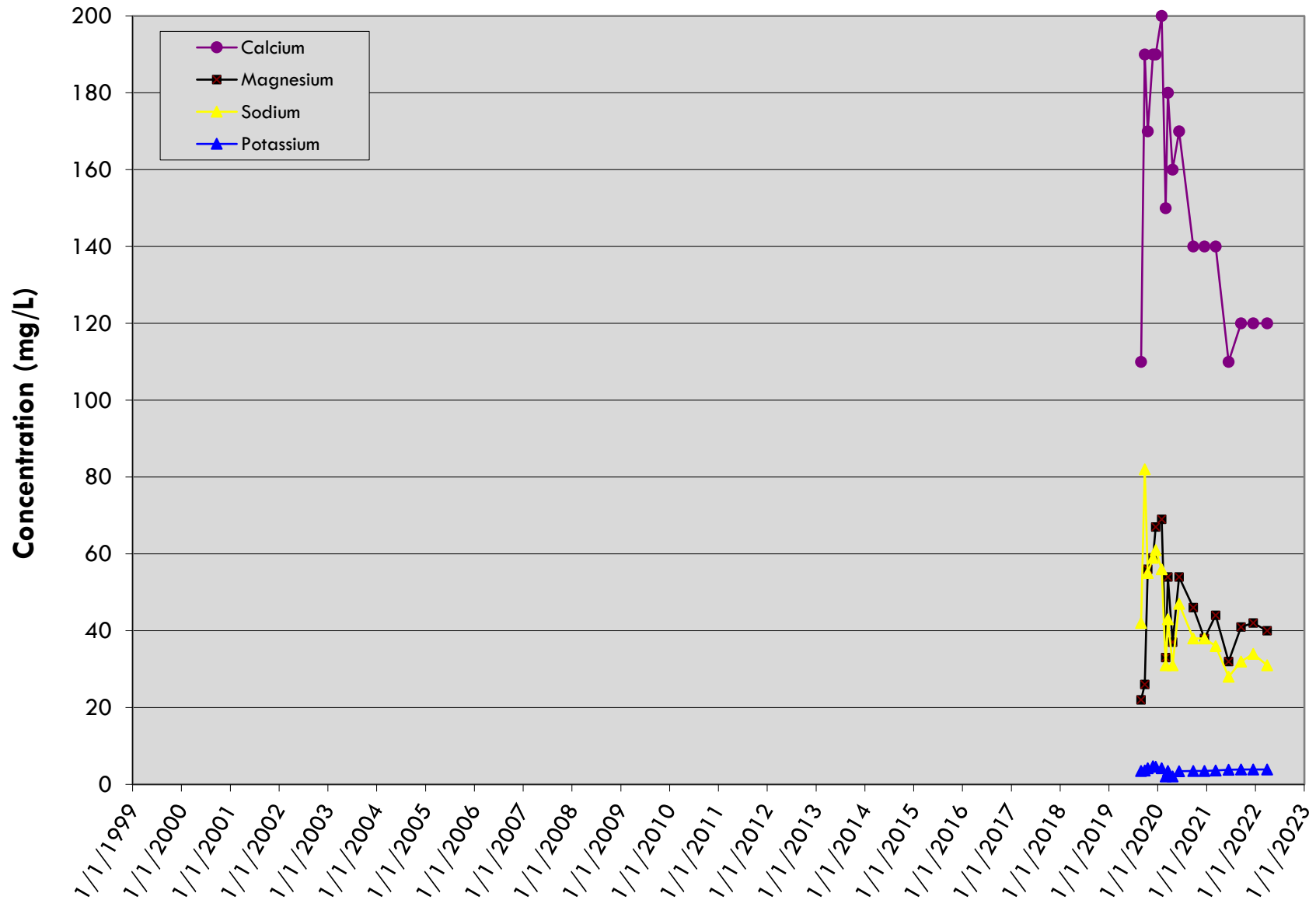
LDCS-6A

LRI Landfill, Pierce County, Washington



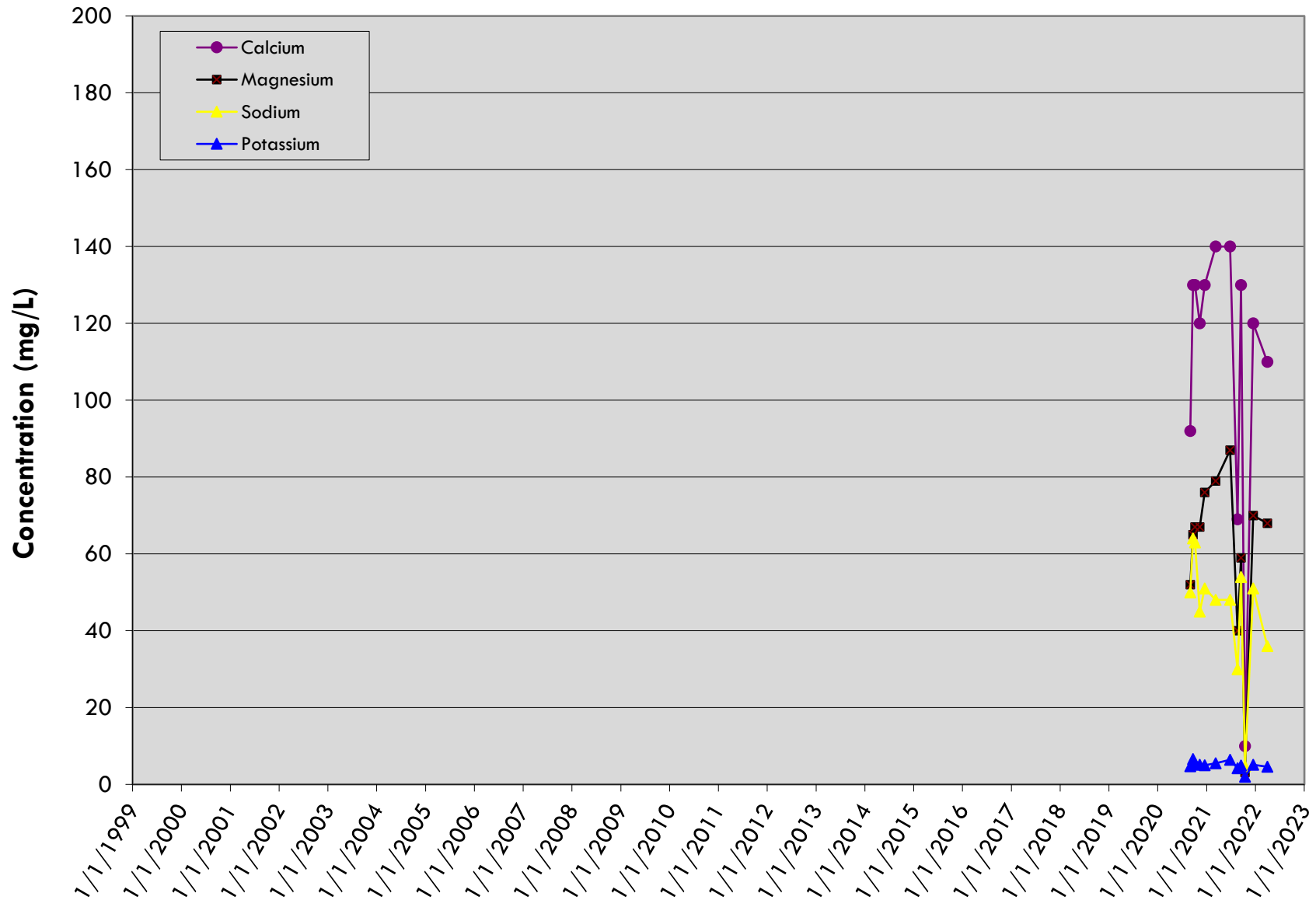
LDCS-7

LRI Landfill, Pierce County, Washington



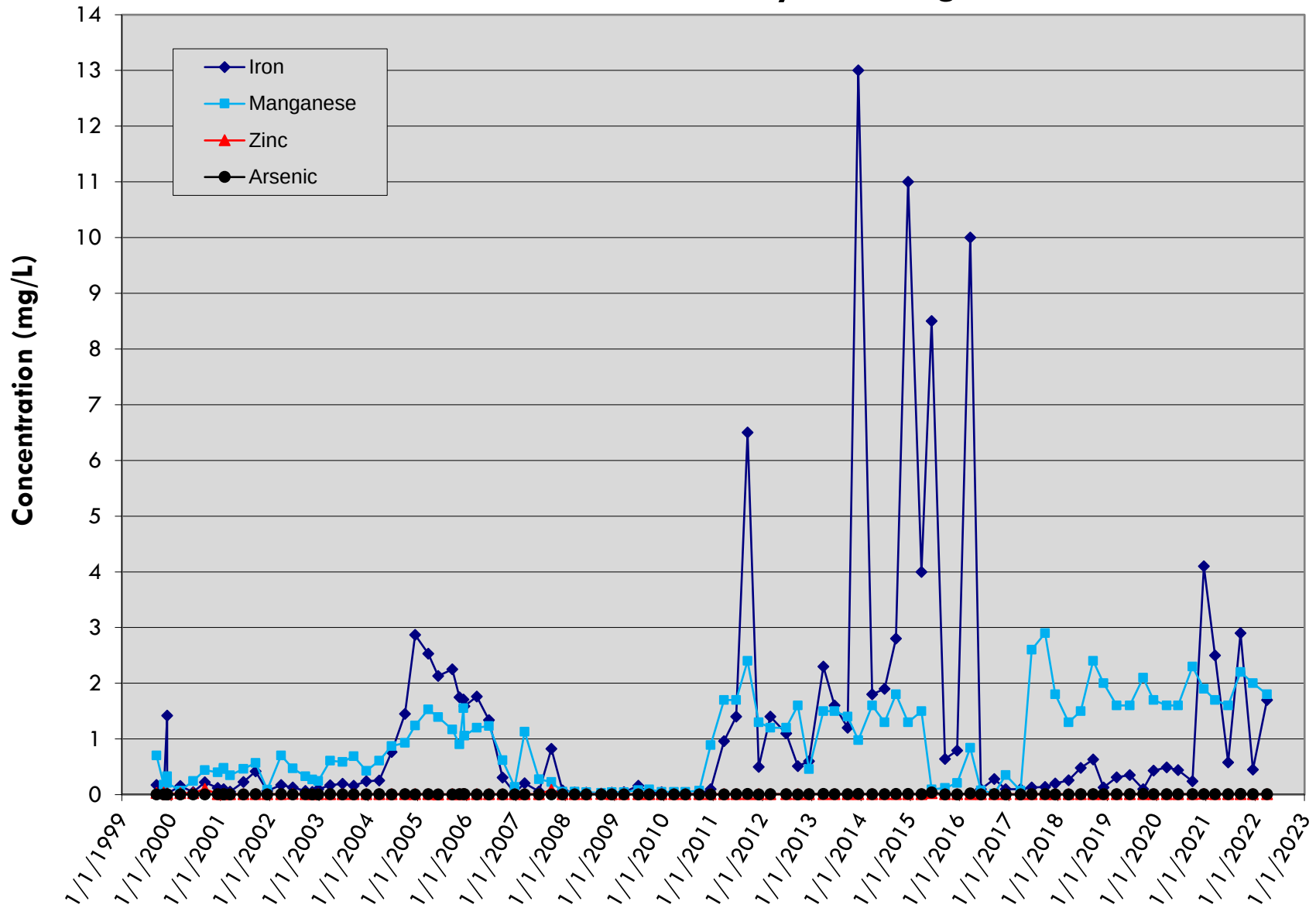
LDCS-8

LRI Landfill, Pierce County, Washington



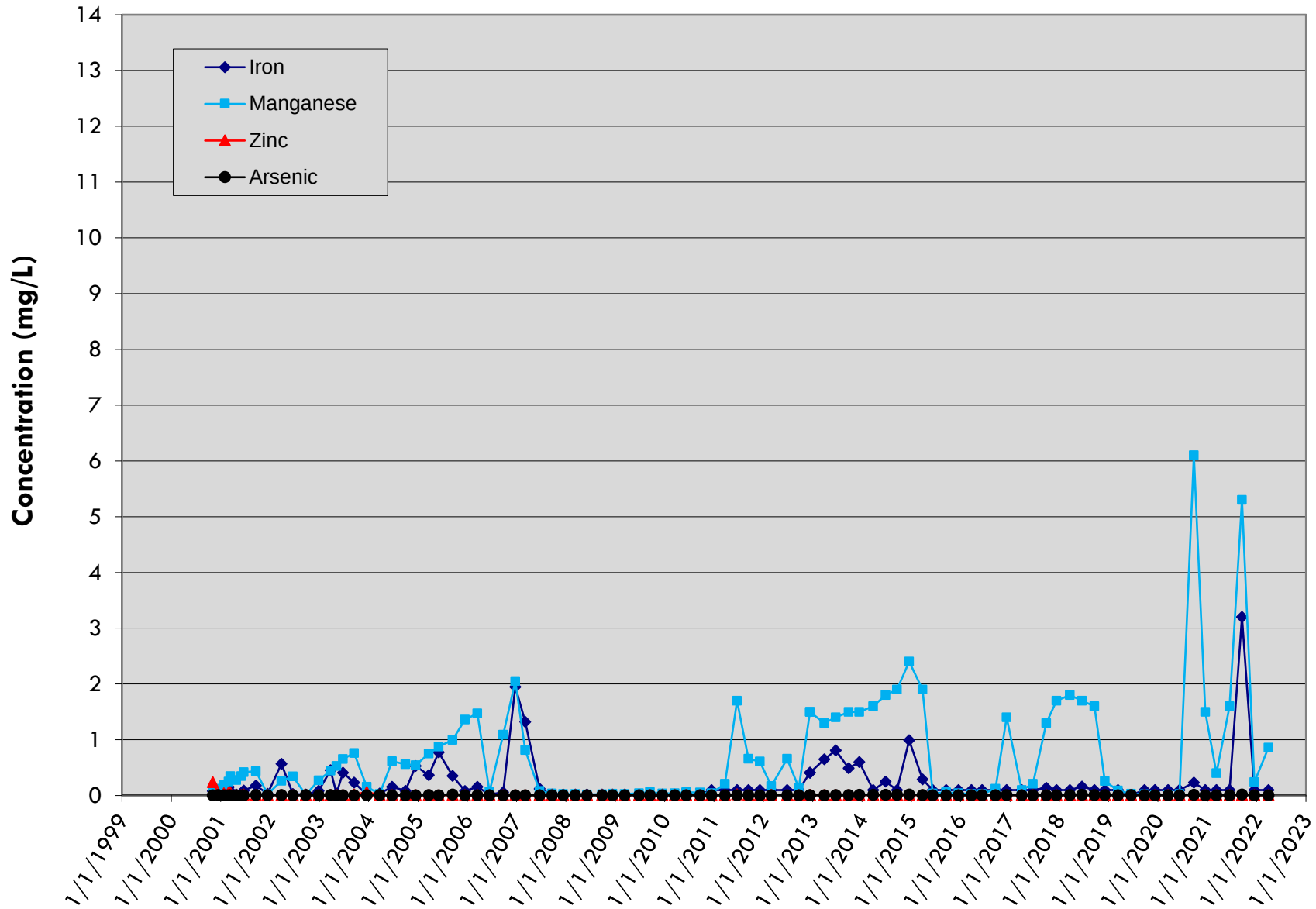
LDCS-1

LRI Landfill, Pierce County, Washington



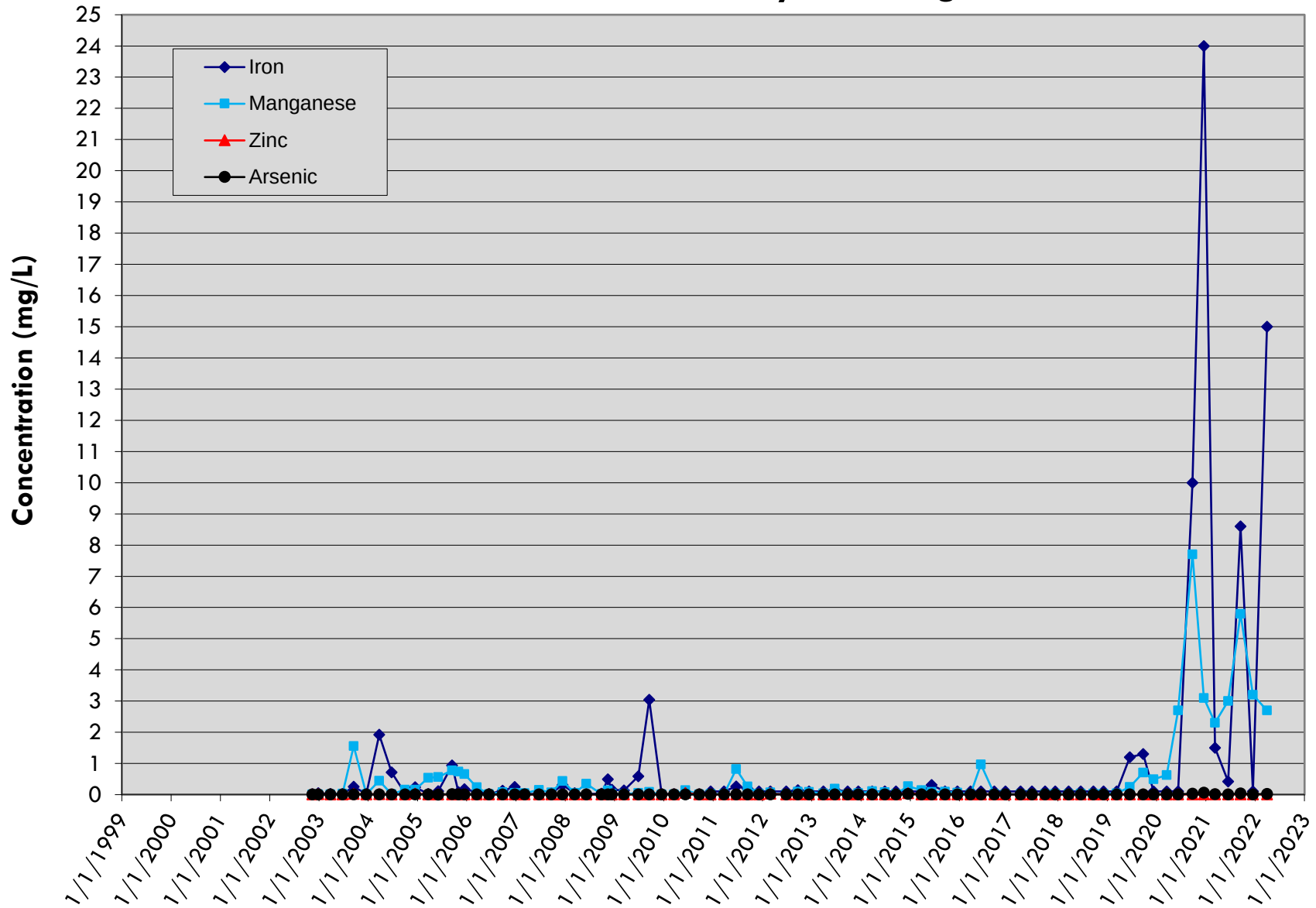
LDCS-2A

LRI Landfill, Pierce County, Washington



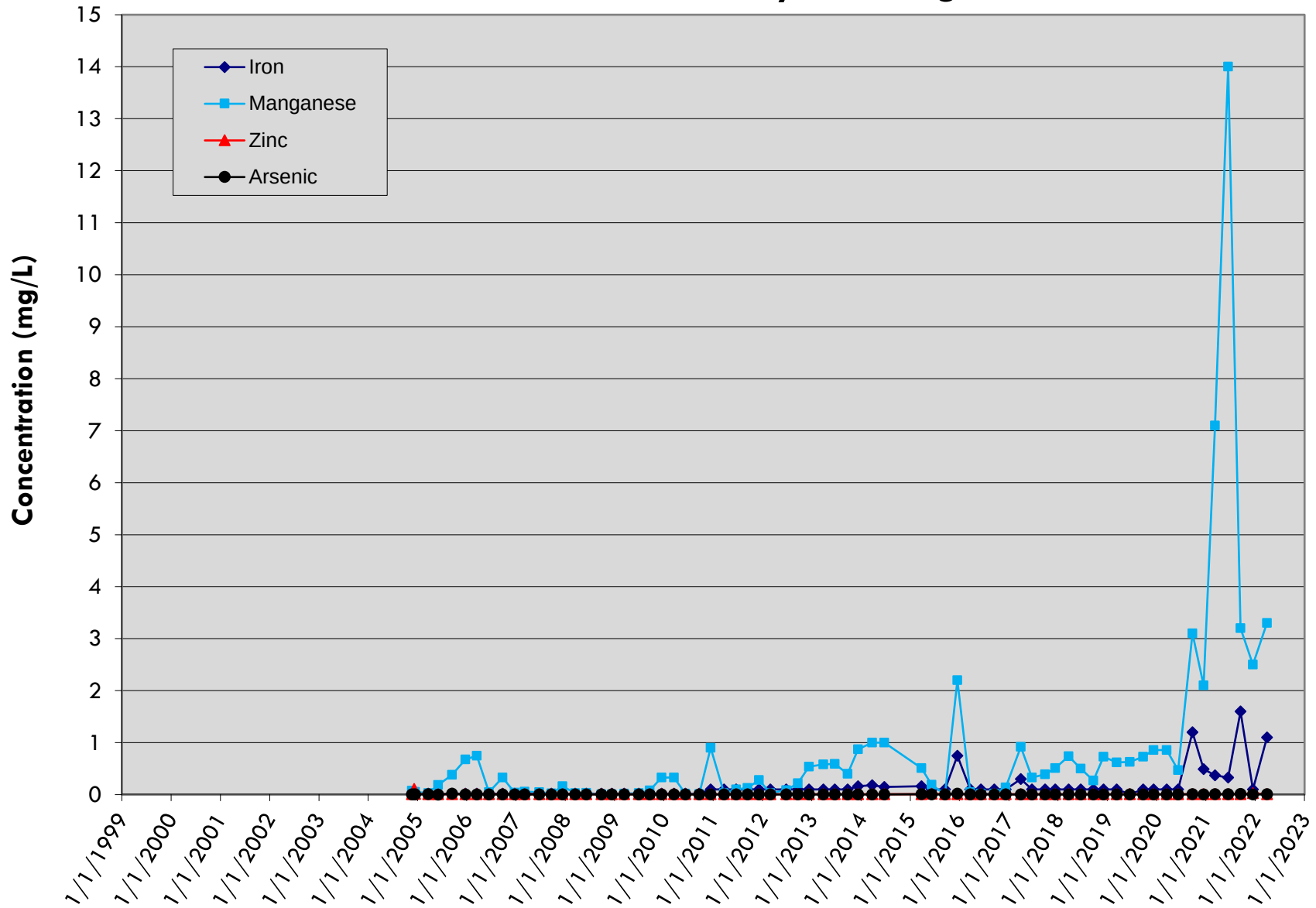
LDCS-2B

LRI Landfill, Pierce County, Washington



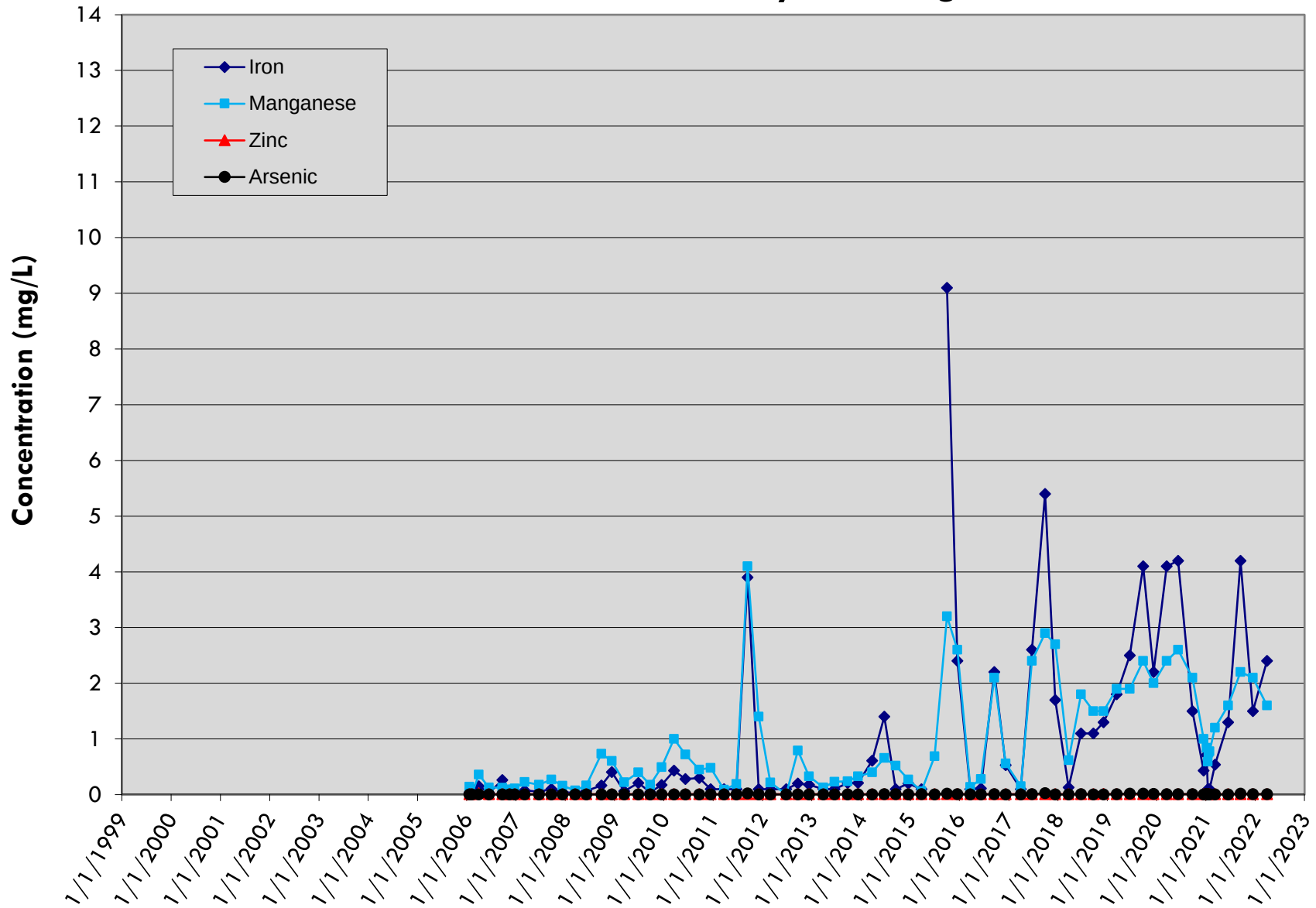
LDCS-3A

LRI Landfill, Pierce County, Washington



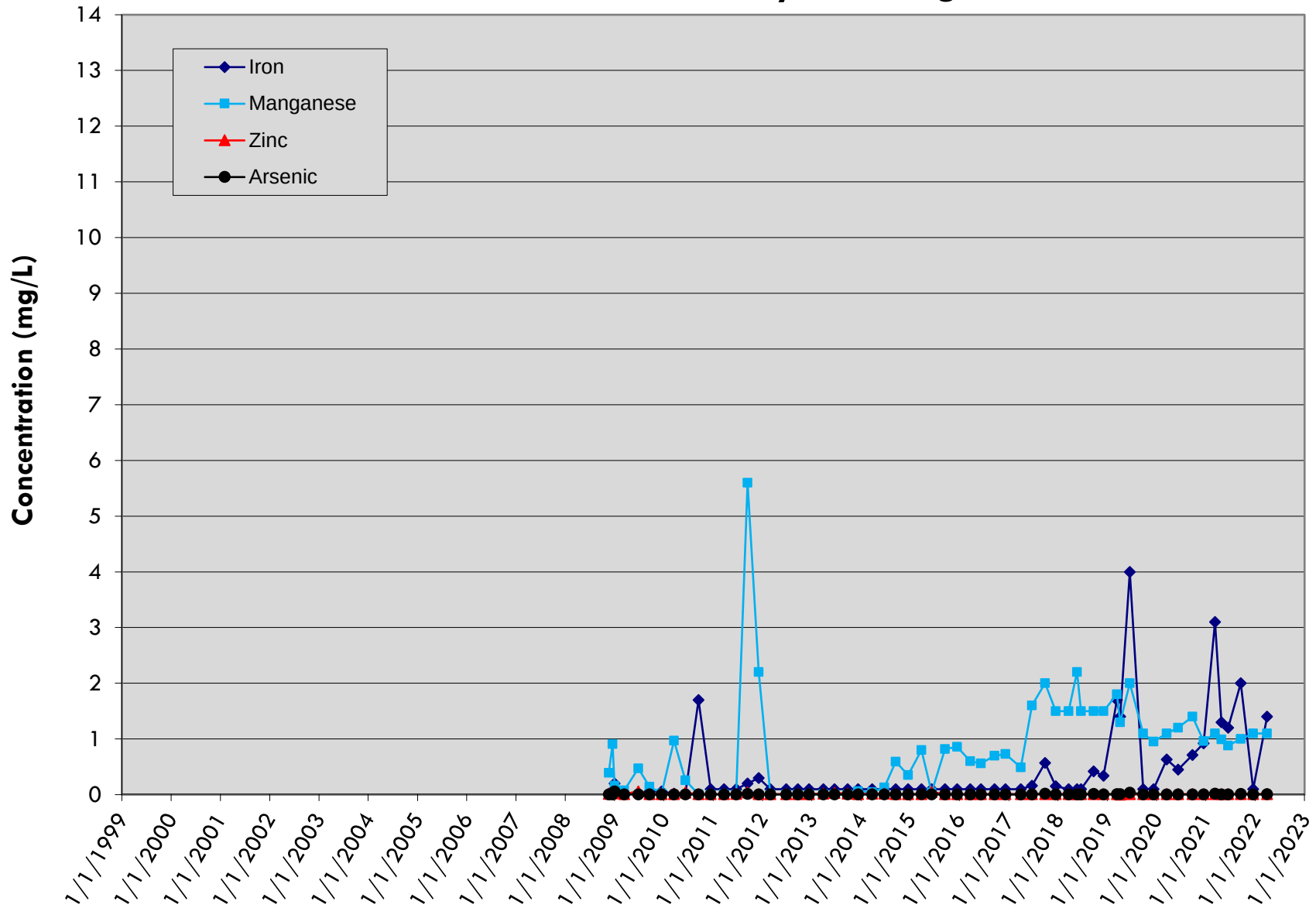
LDCS-4A

LRI Landfill, Pierce County, Washington



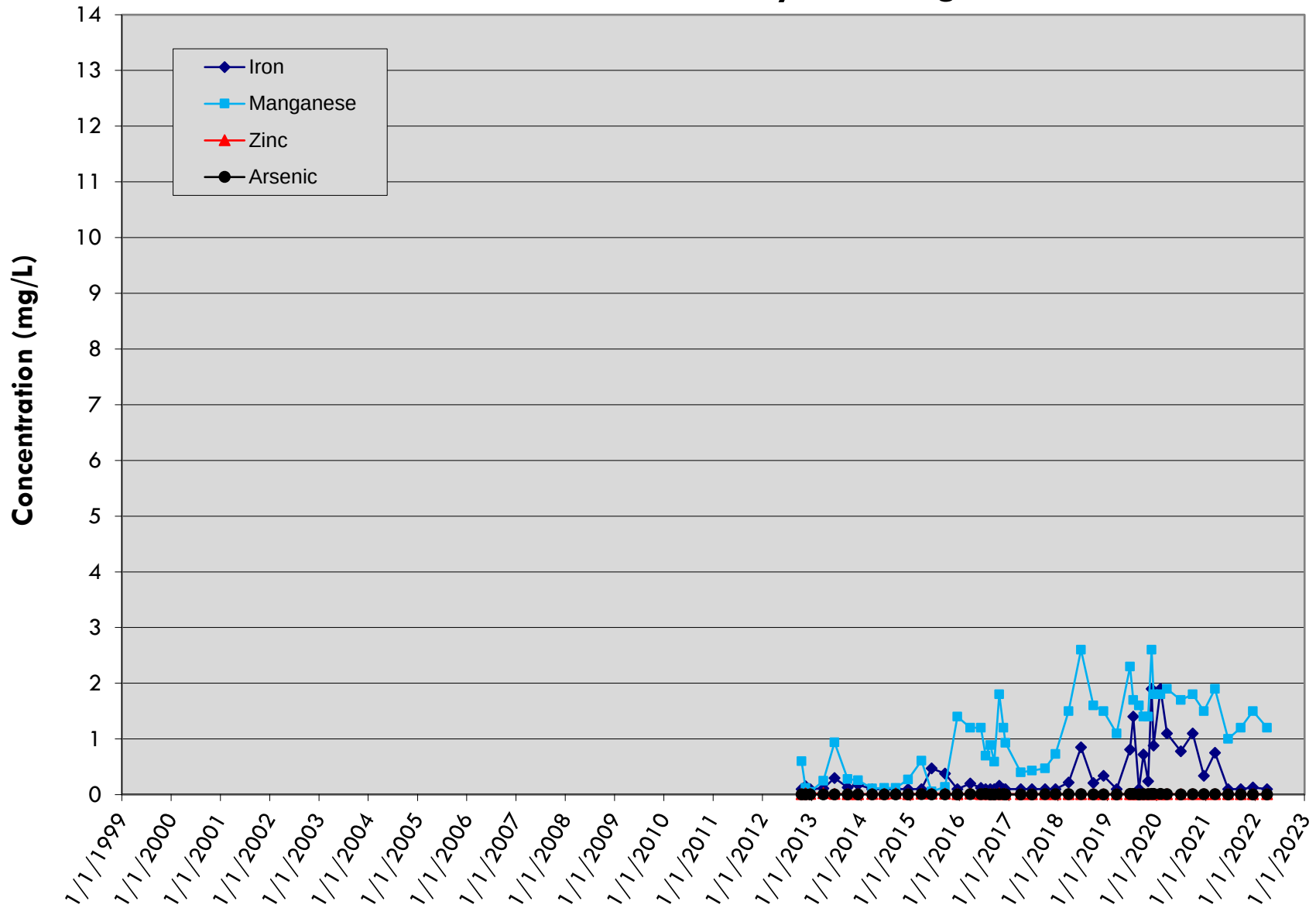
LDCS-4B

LRI Landfill, Pierce County, Washington



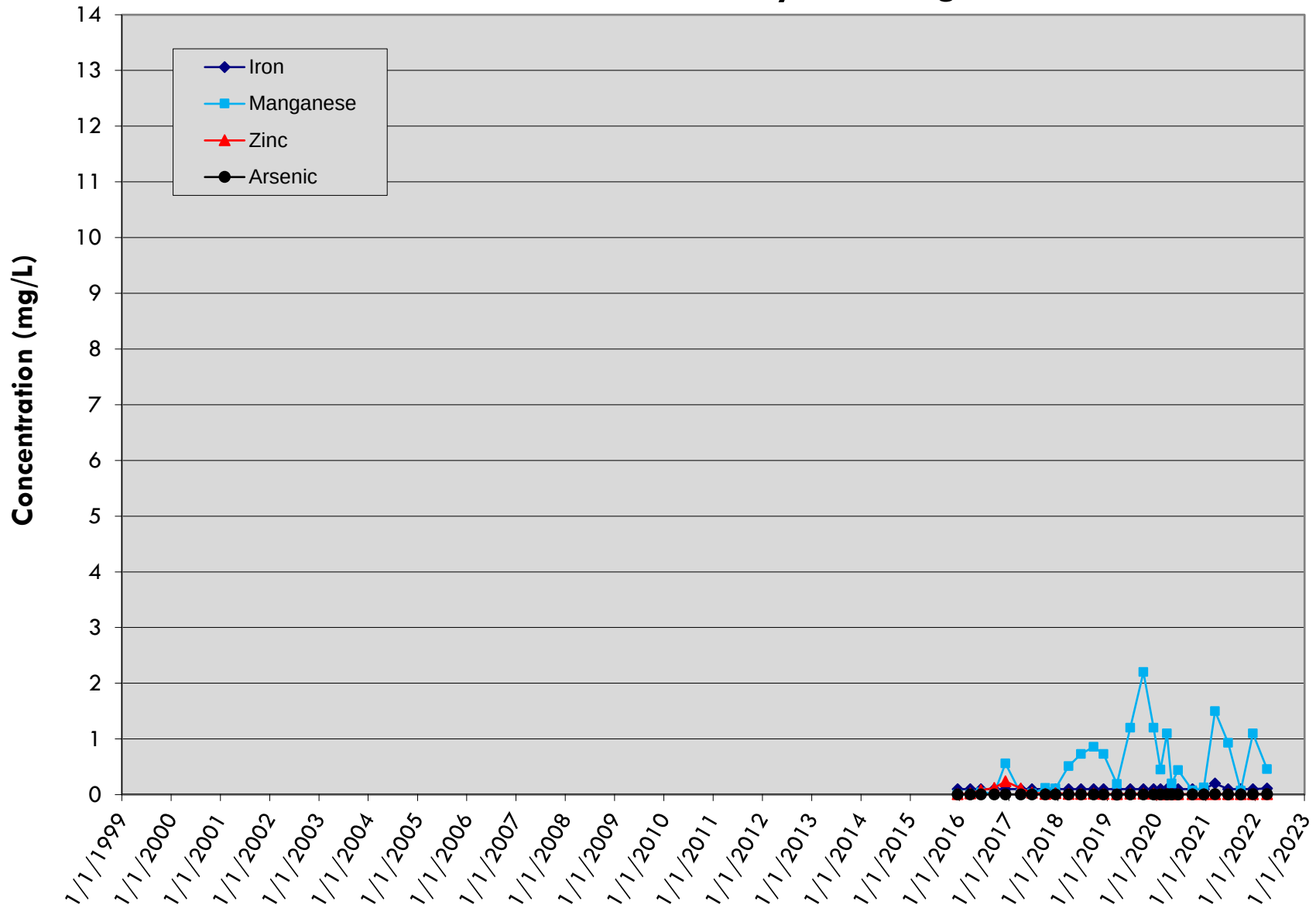
LDCS-5

LRI Landfill, Pierce County, Washington



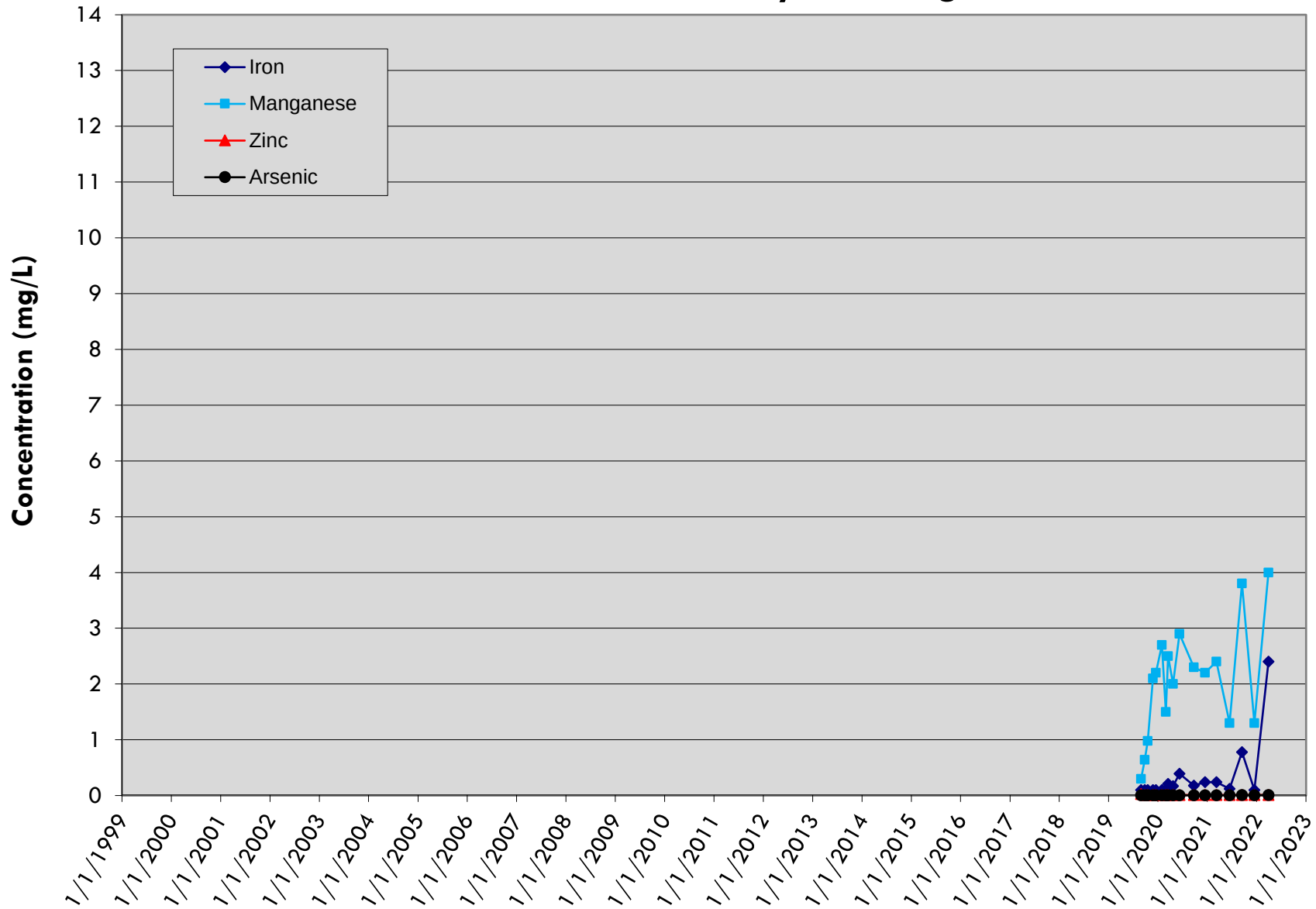
LDCS-6A

LRI Landfill, Pierce County, Washington



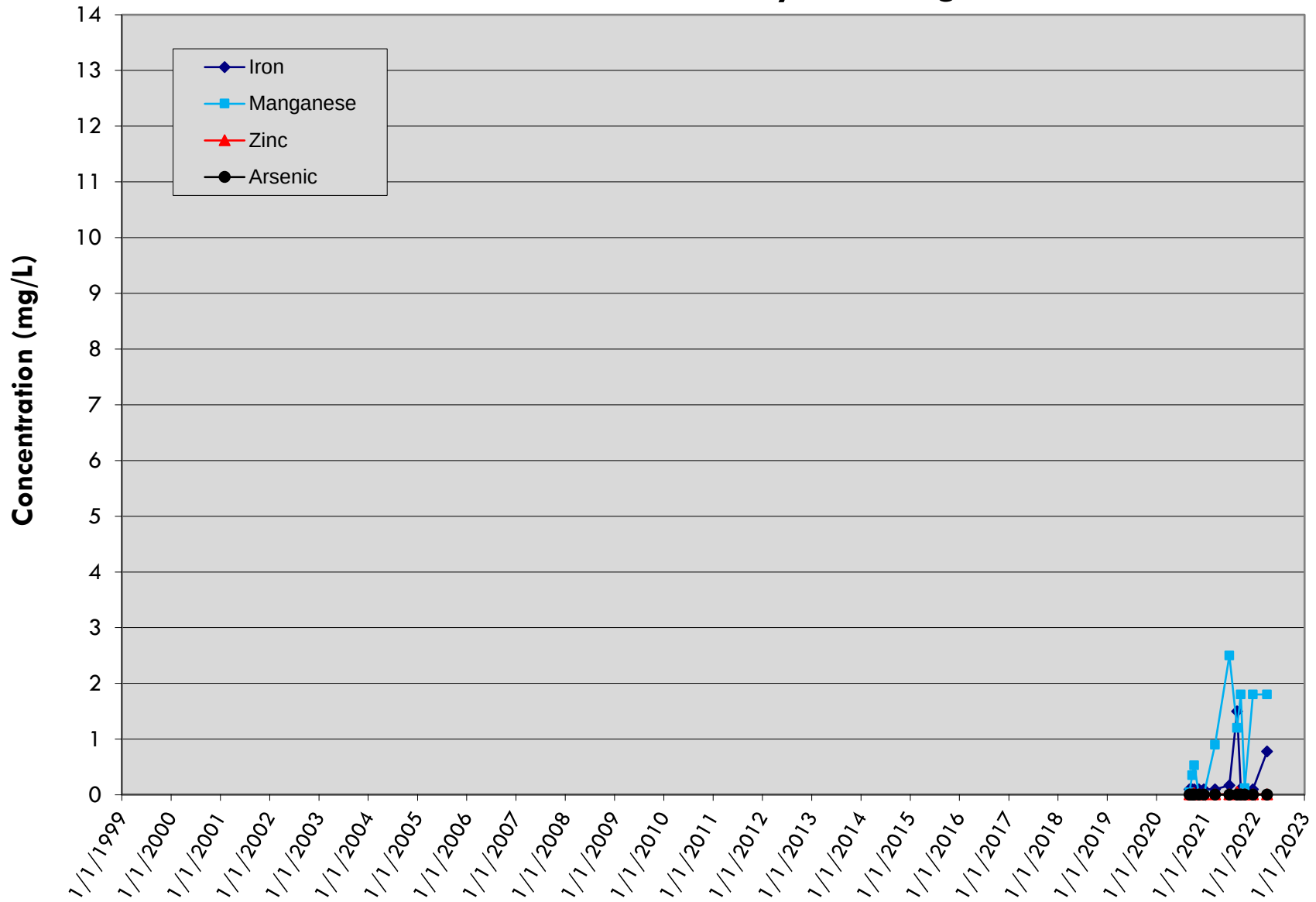
LDCS-7

LRI Landfill, Pierce County, Washington



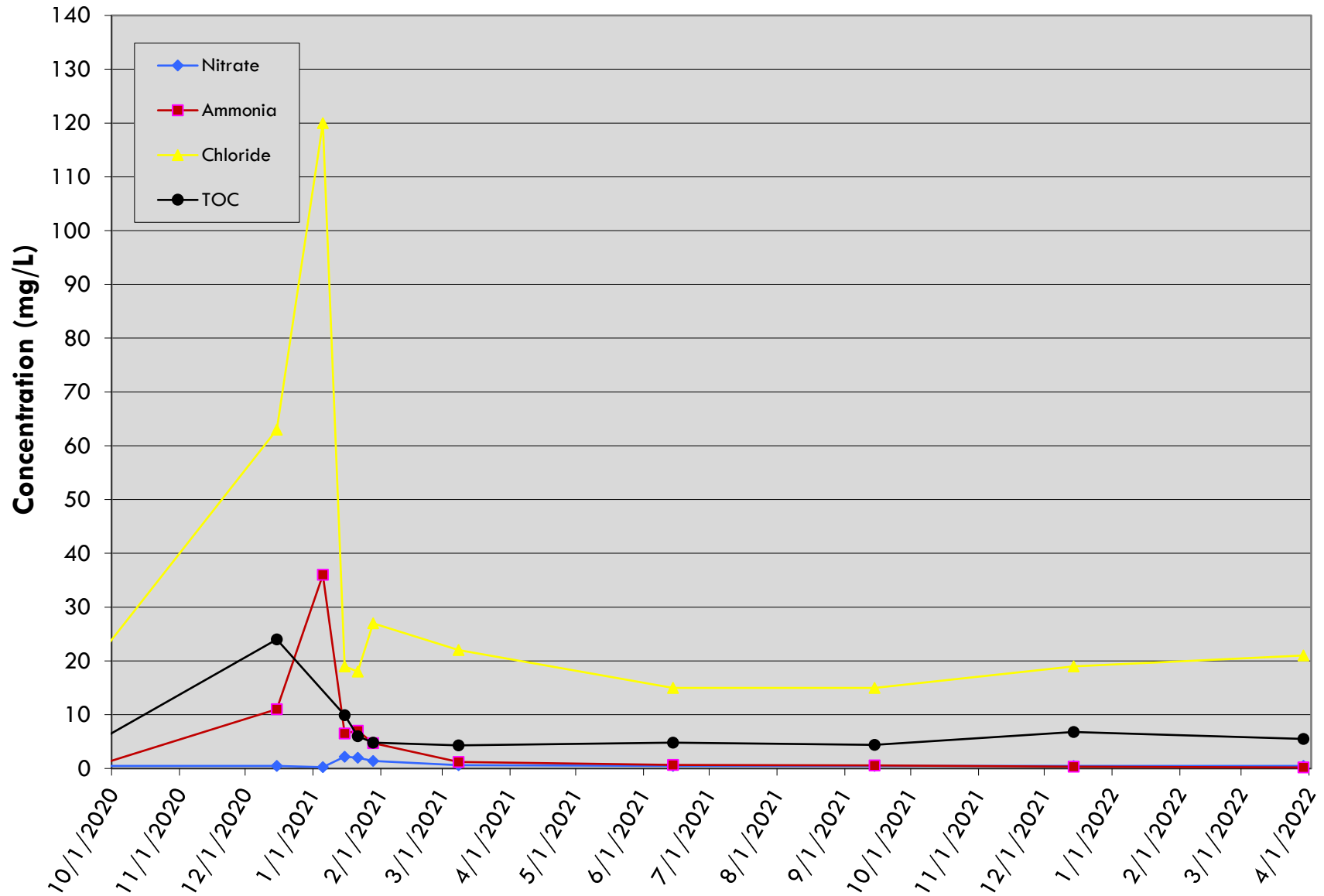
LDCS-8

LRI Landfill, Pierce County, Washington



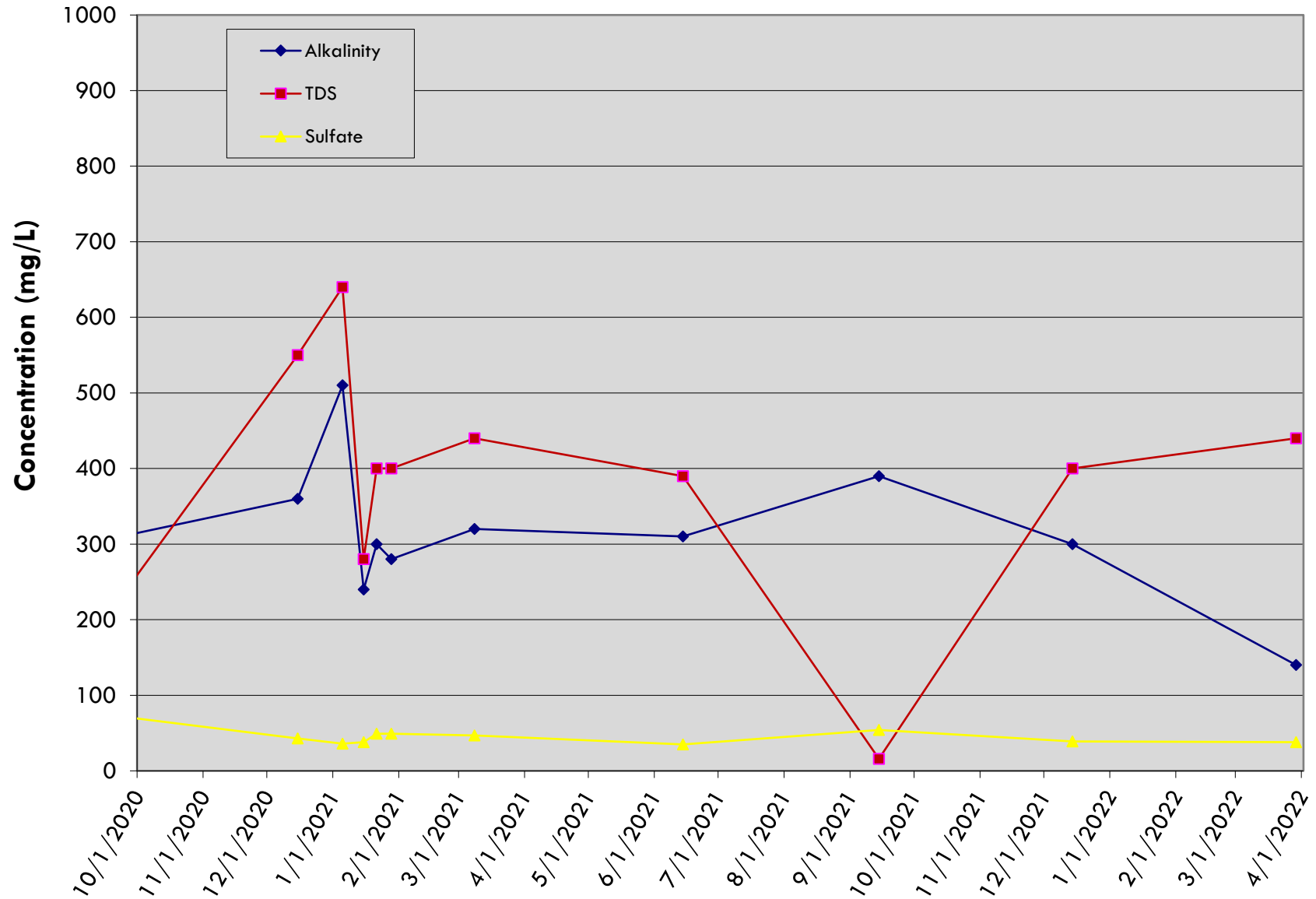
LDCS-4A

LRI Landfill, Pierce County, Washington



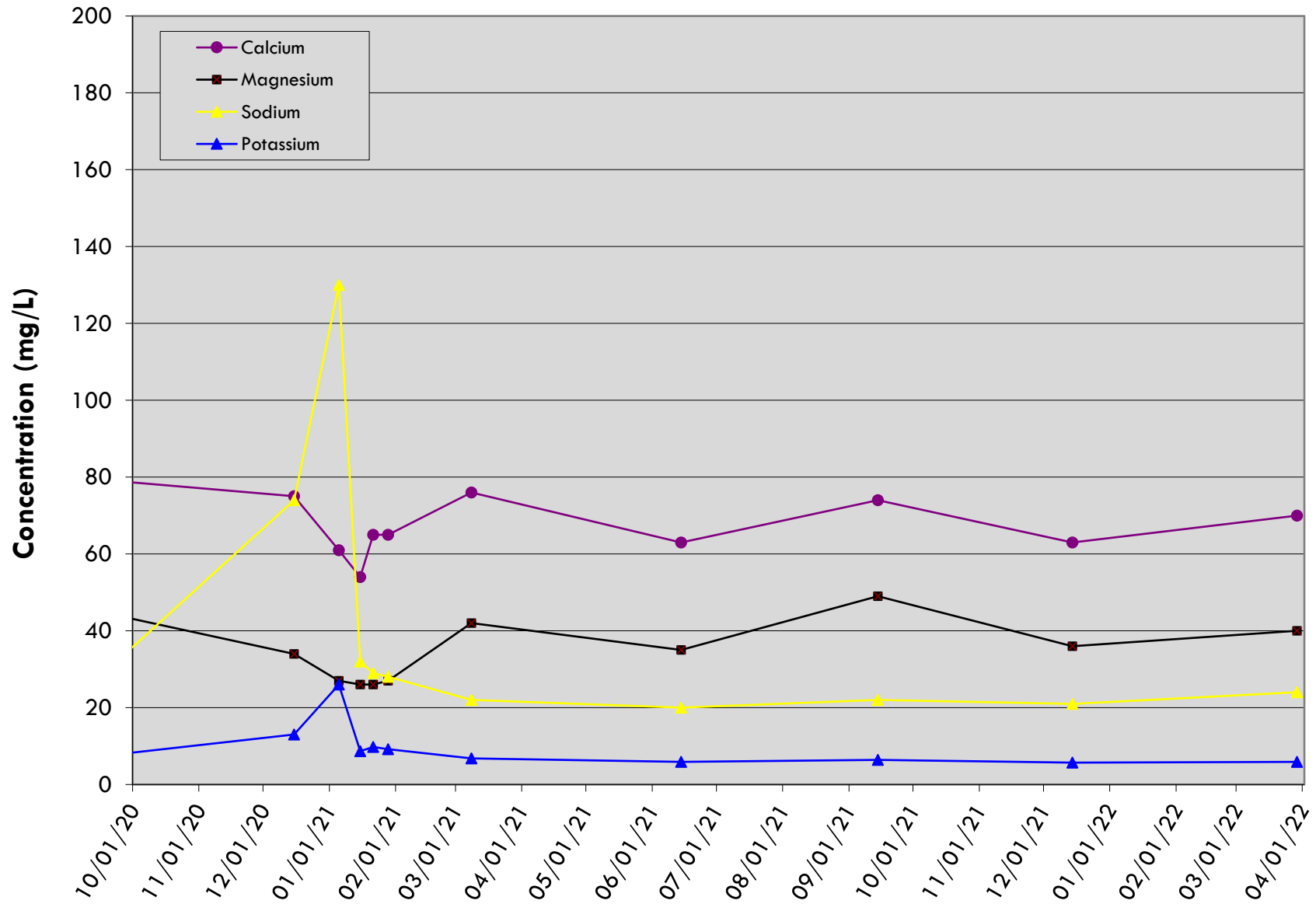
LDCS-4A

LRI Landfill, Pierce County, Washington



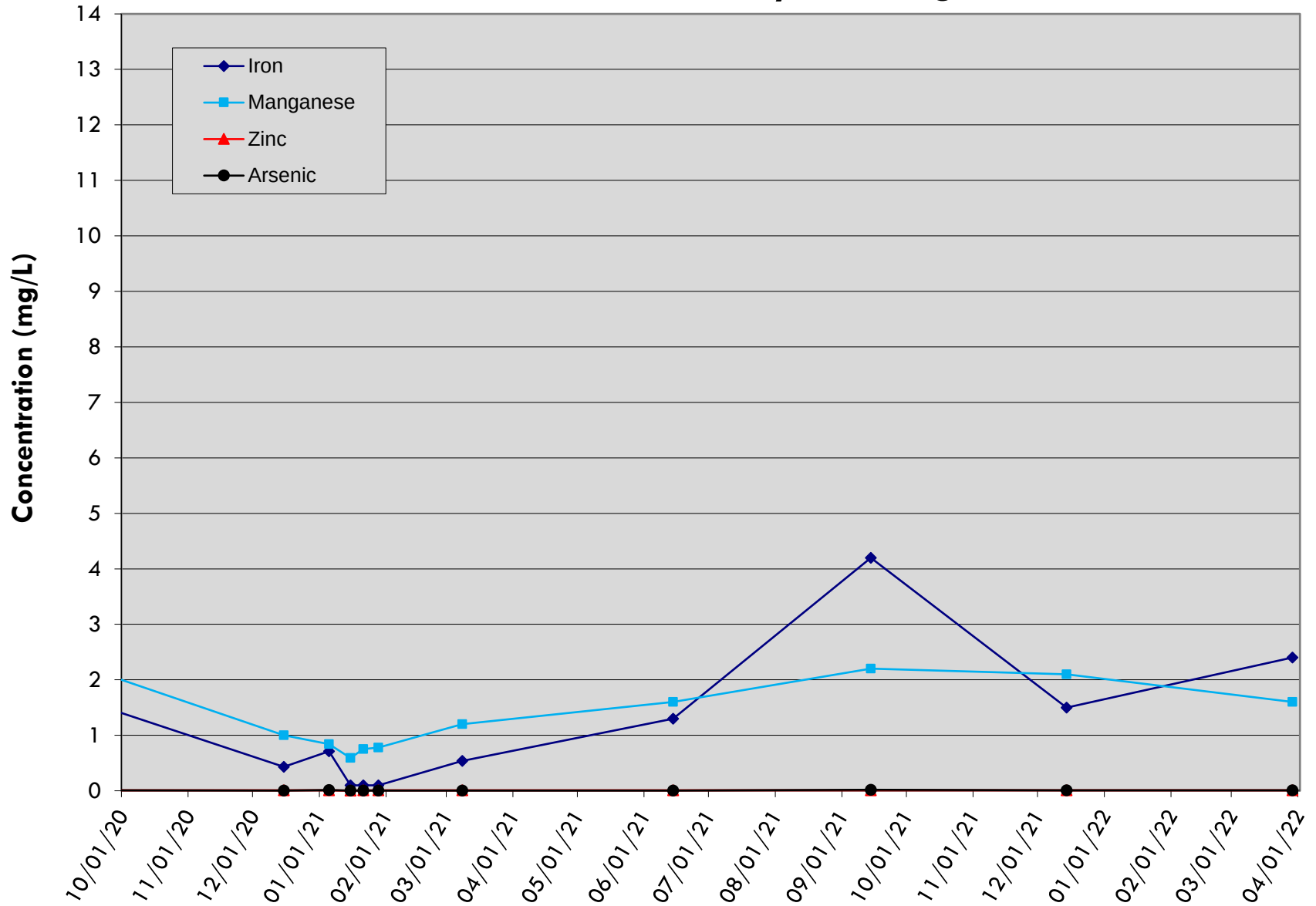
LDCS-4A

LRI Landfill, Pierce County, Washington



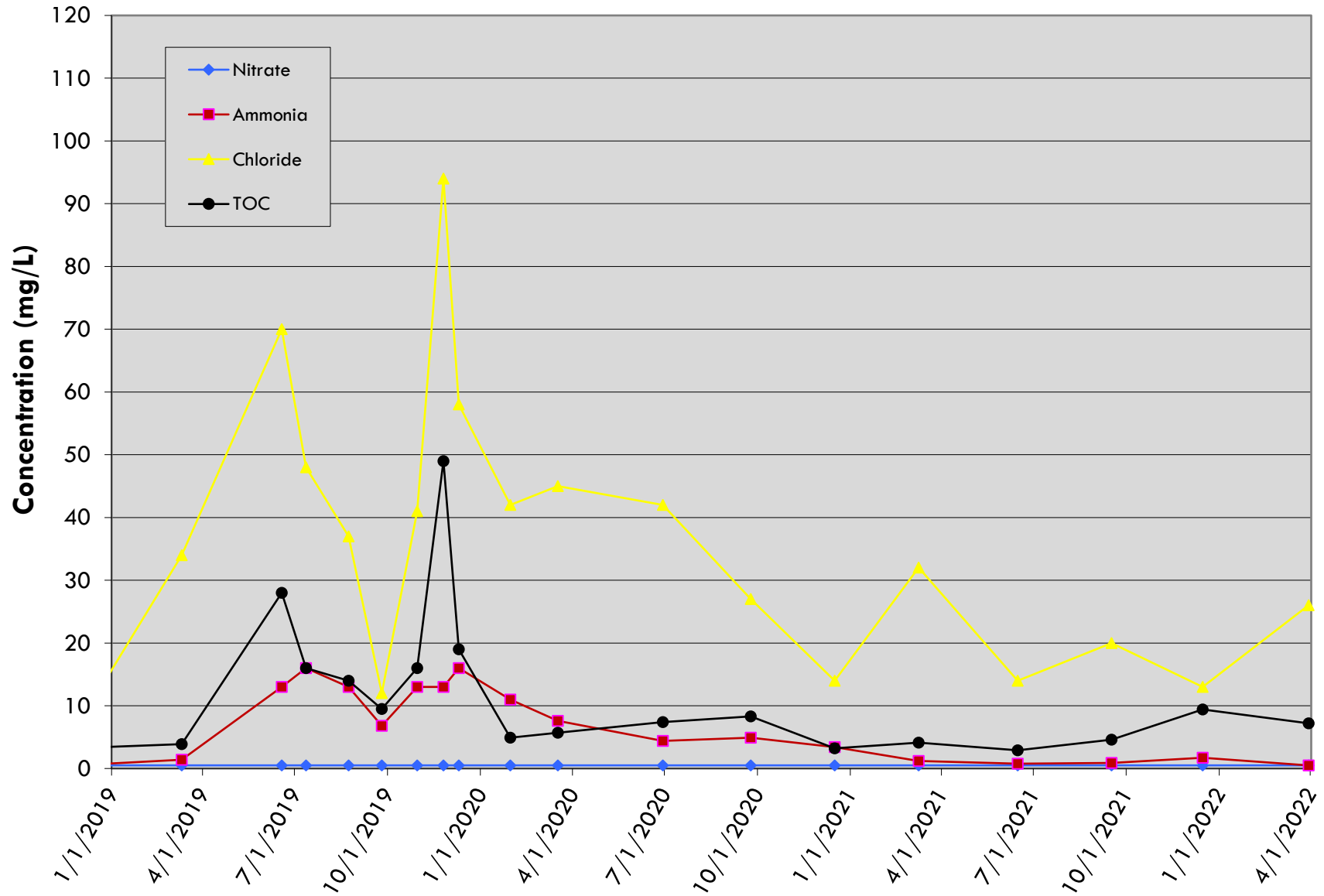
LDCS-4A

LRI Landfill, Pierce County, Washington



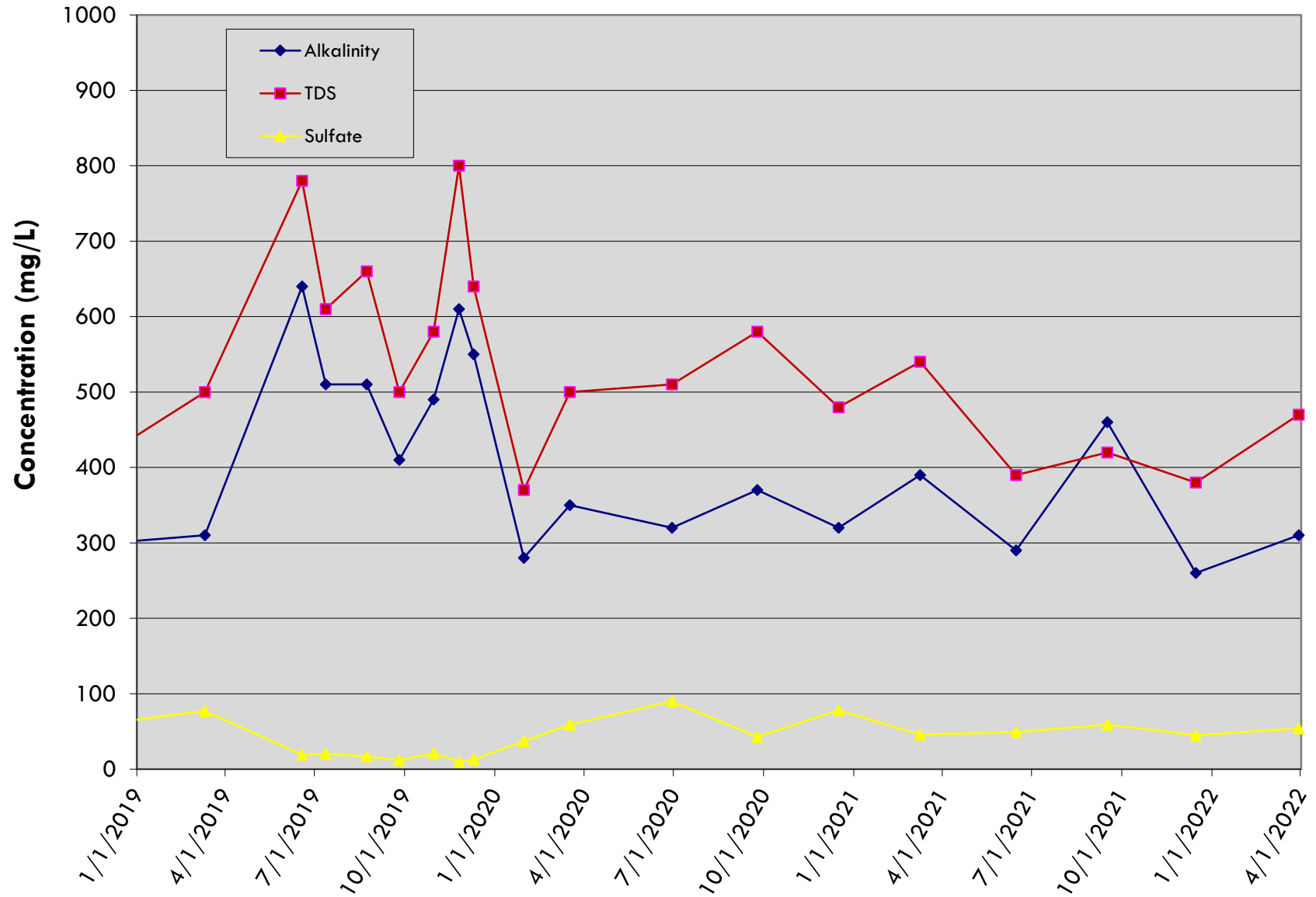
LDCS-5

LRI Landfill, Pierce County, Washington



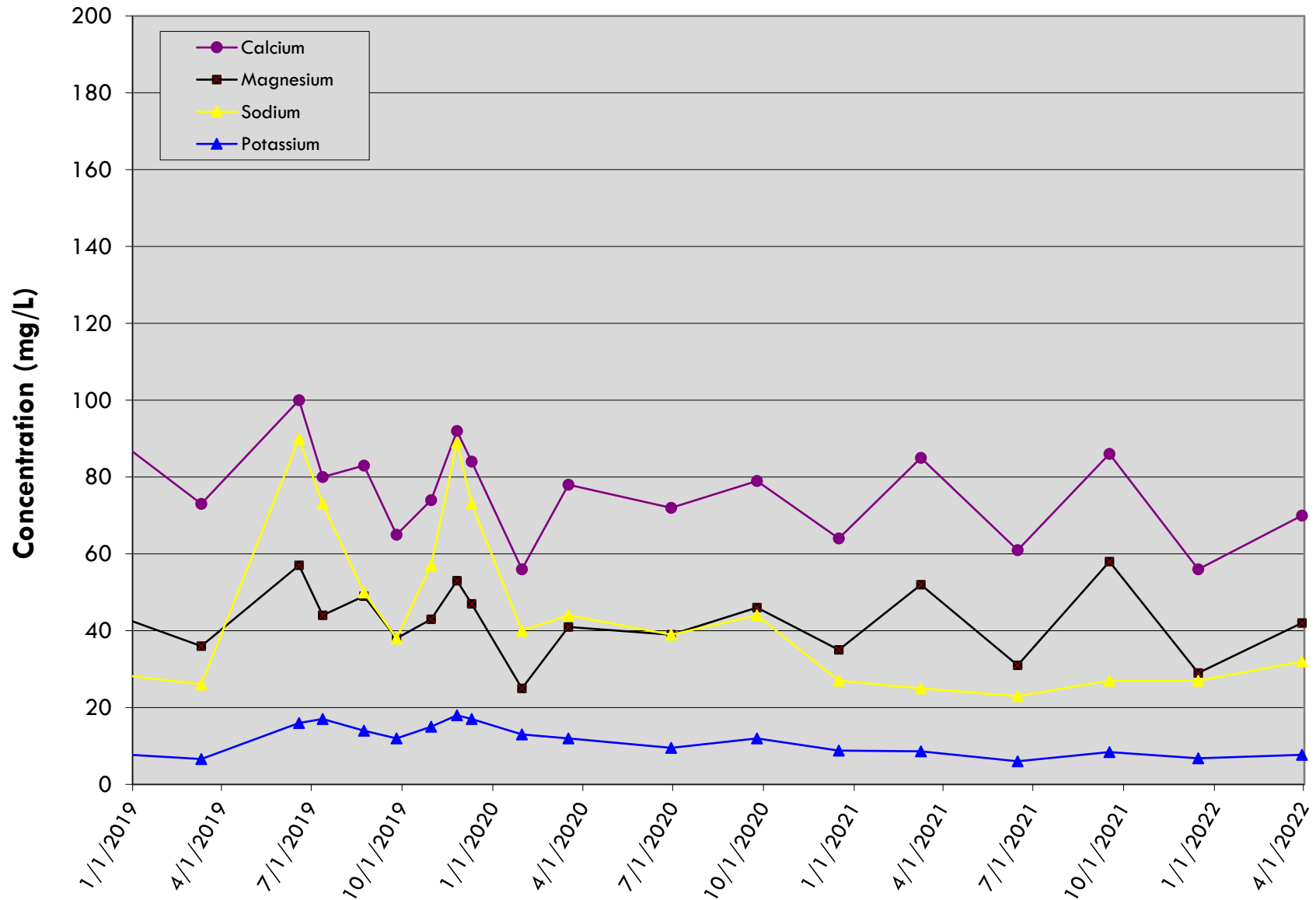
LDCS-5

LRI Landfill, Pierce County, Washington



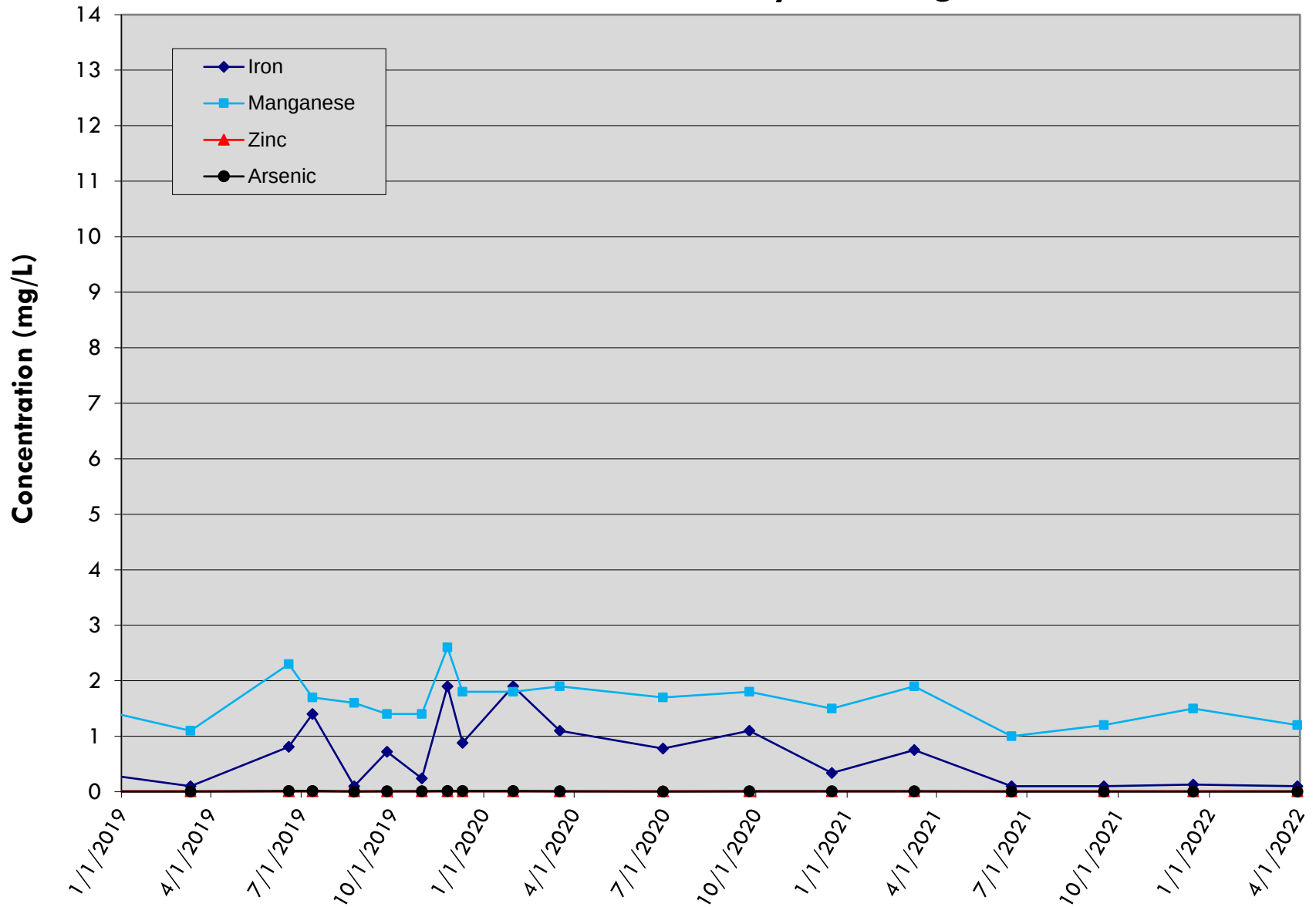
LDCS-5

LRI Landfill, Pierce County, Washington



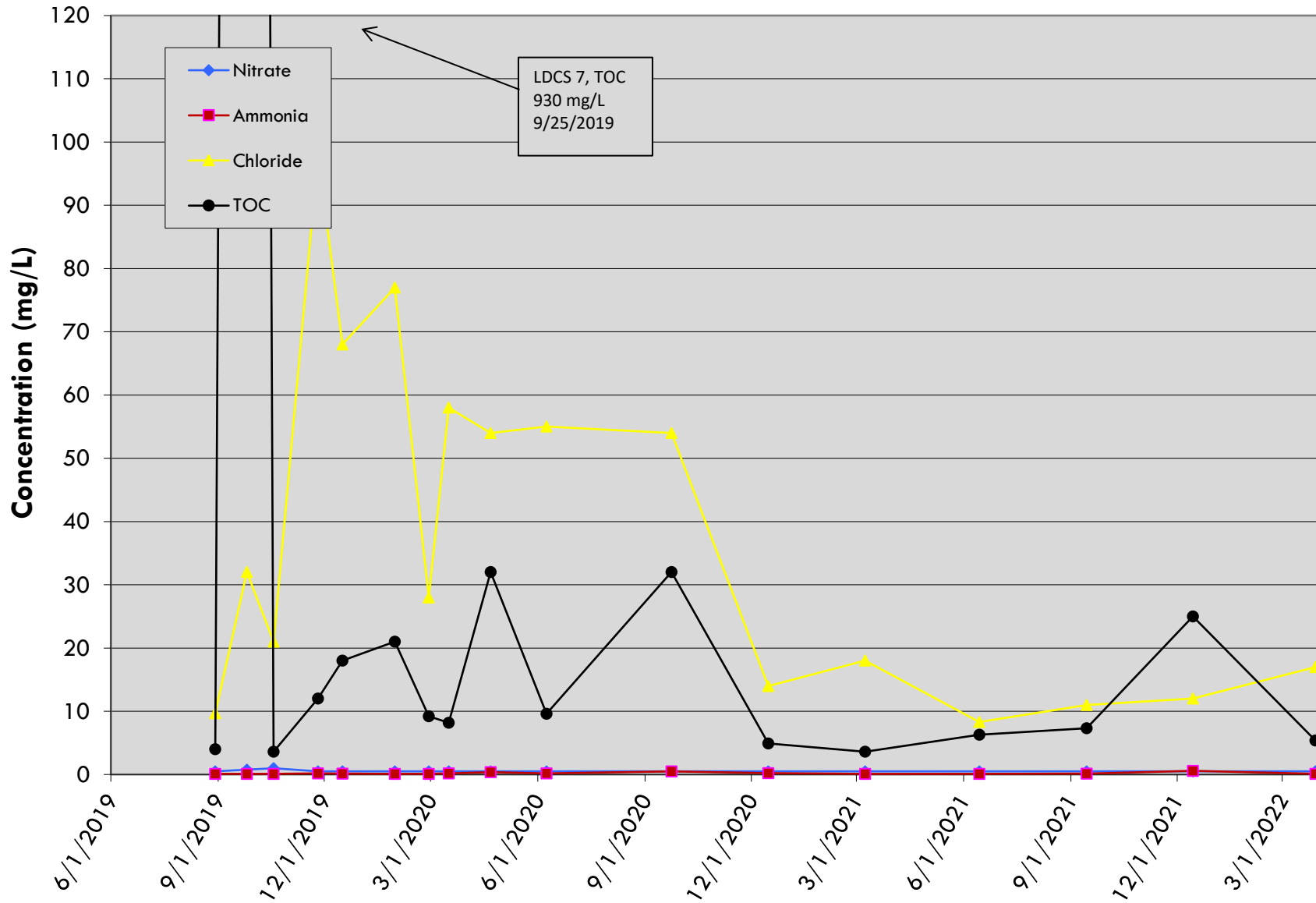
LDCS-5

LRI Landfill, Pierce County, Washington



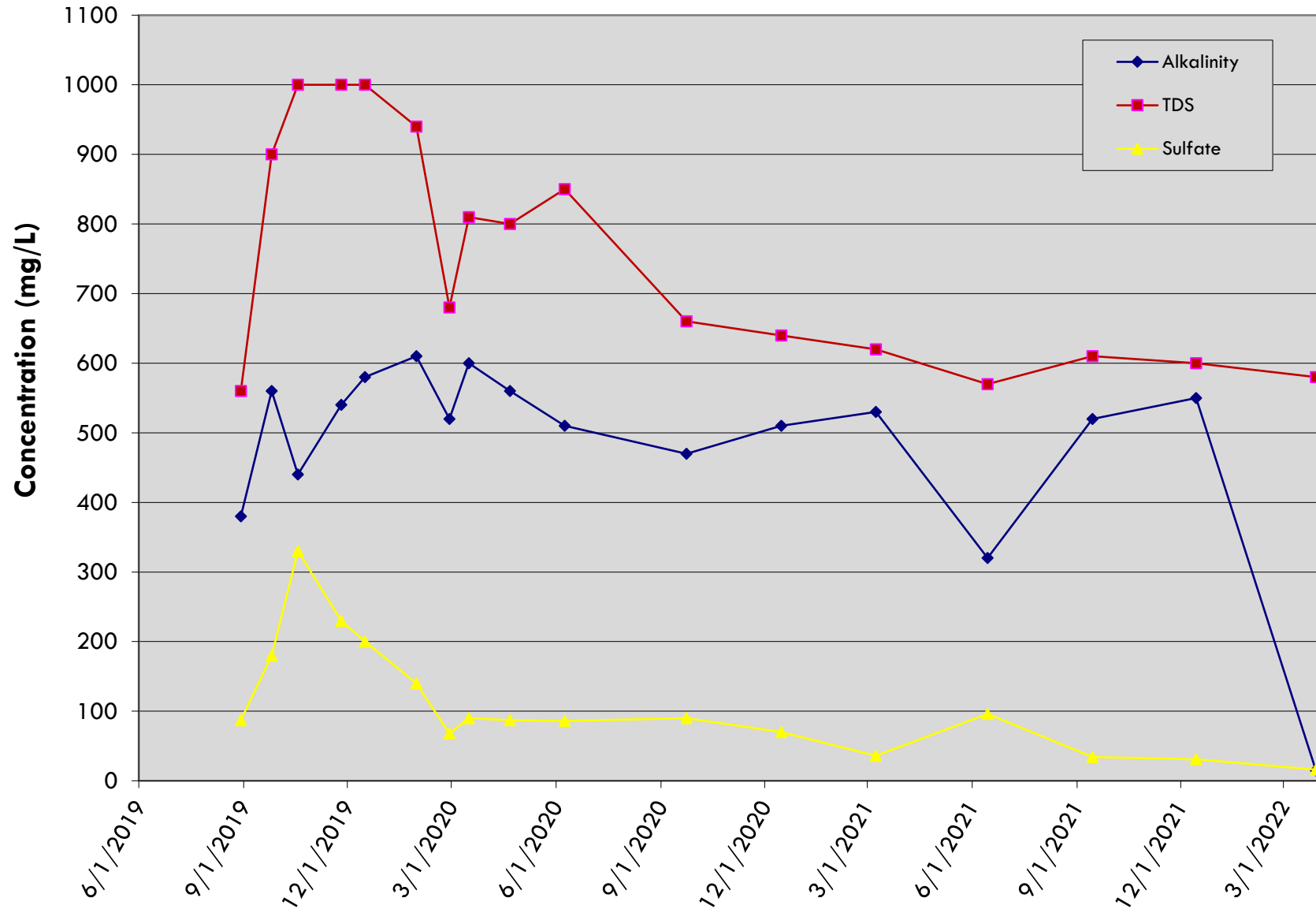
LDCS-7

LRI Landfill, Pierce County, Washington



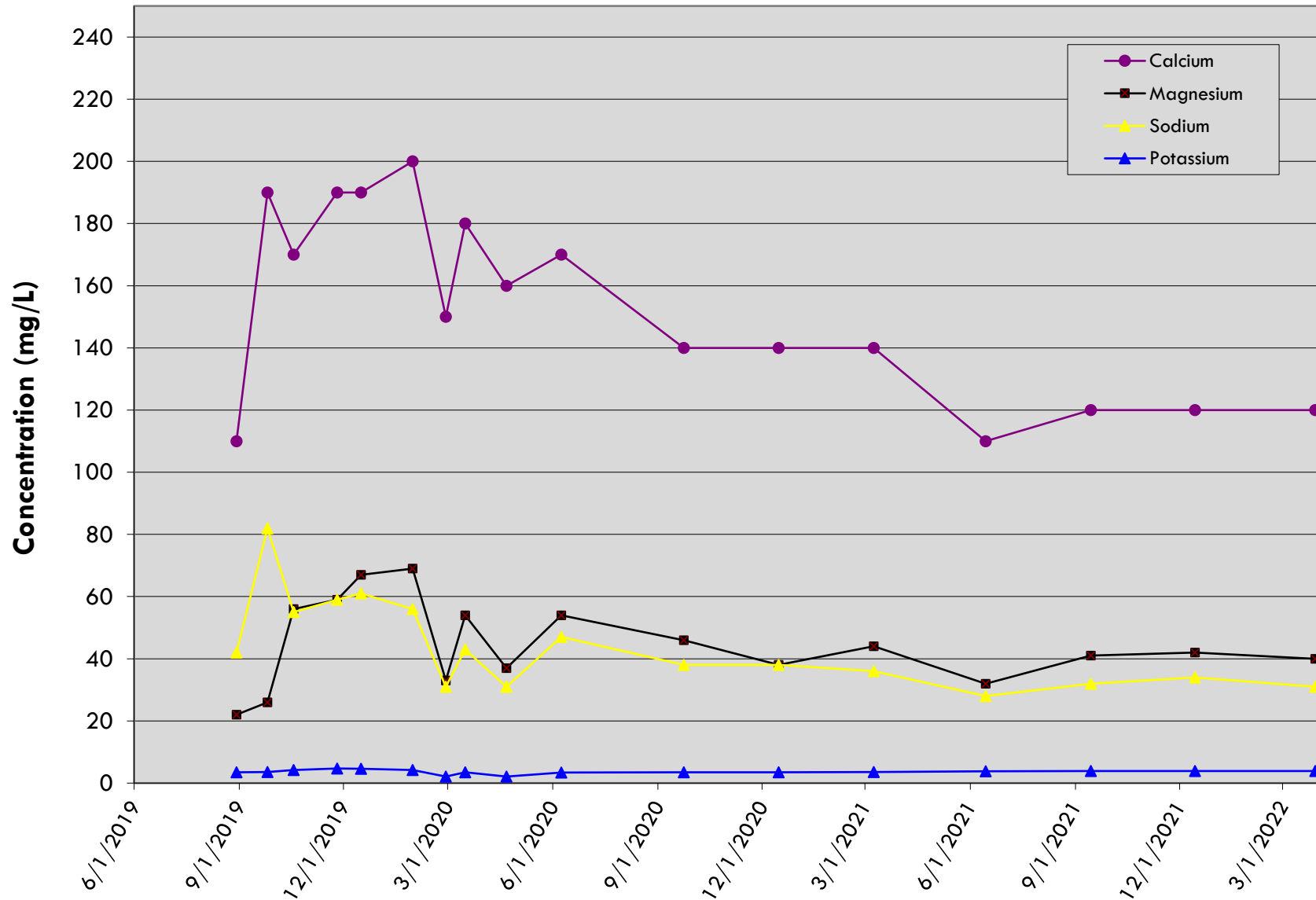
LDCS-7

LRI Landfill, Pierce County, Washington



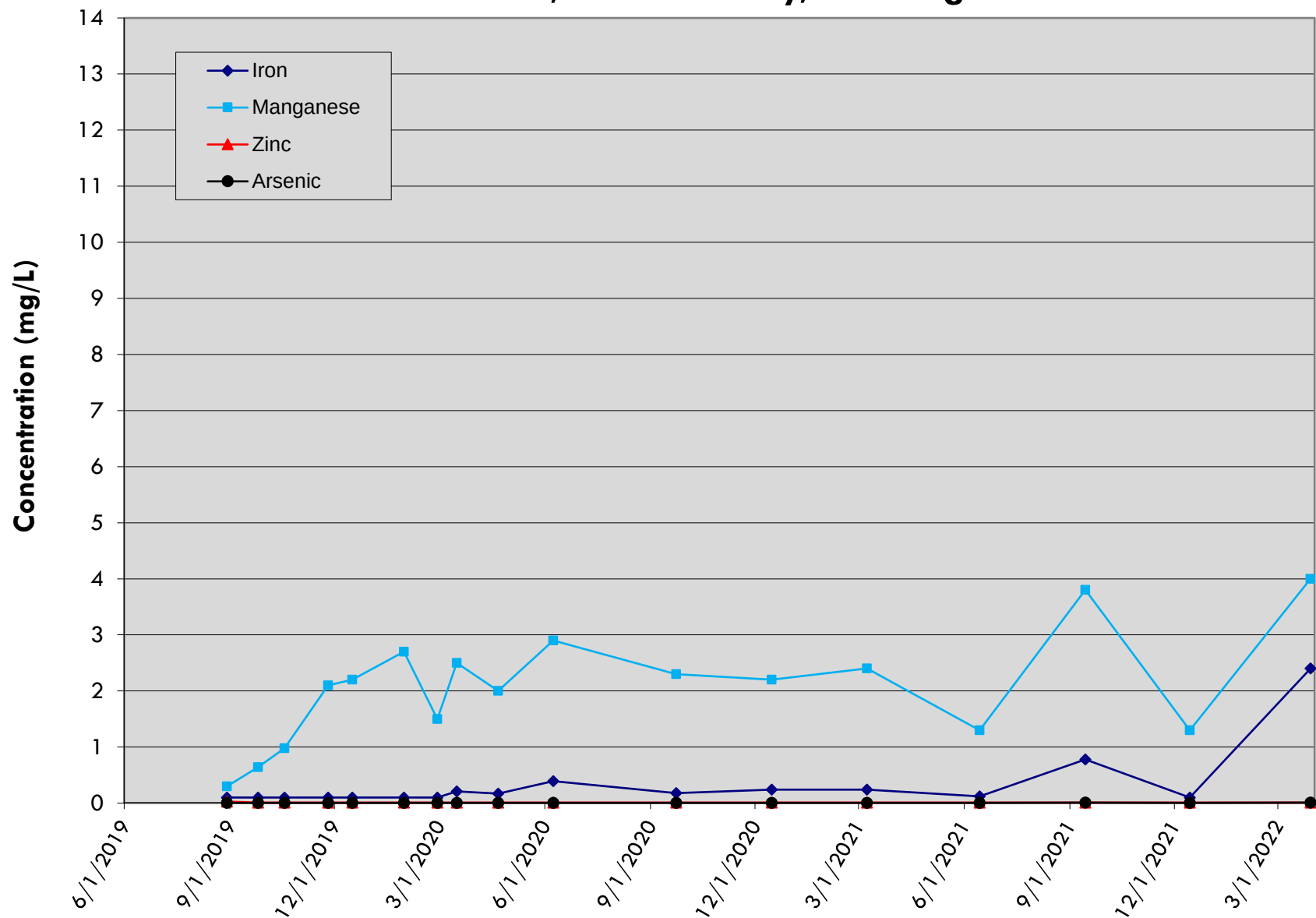
LDCS-7

LRI Landfill, Pierce County, Washington



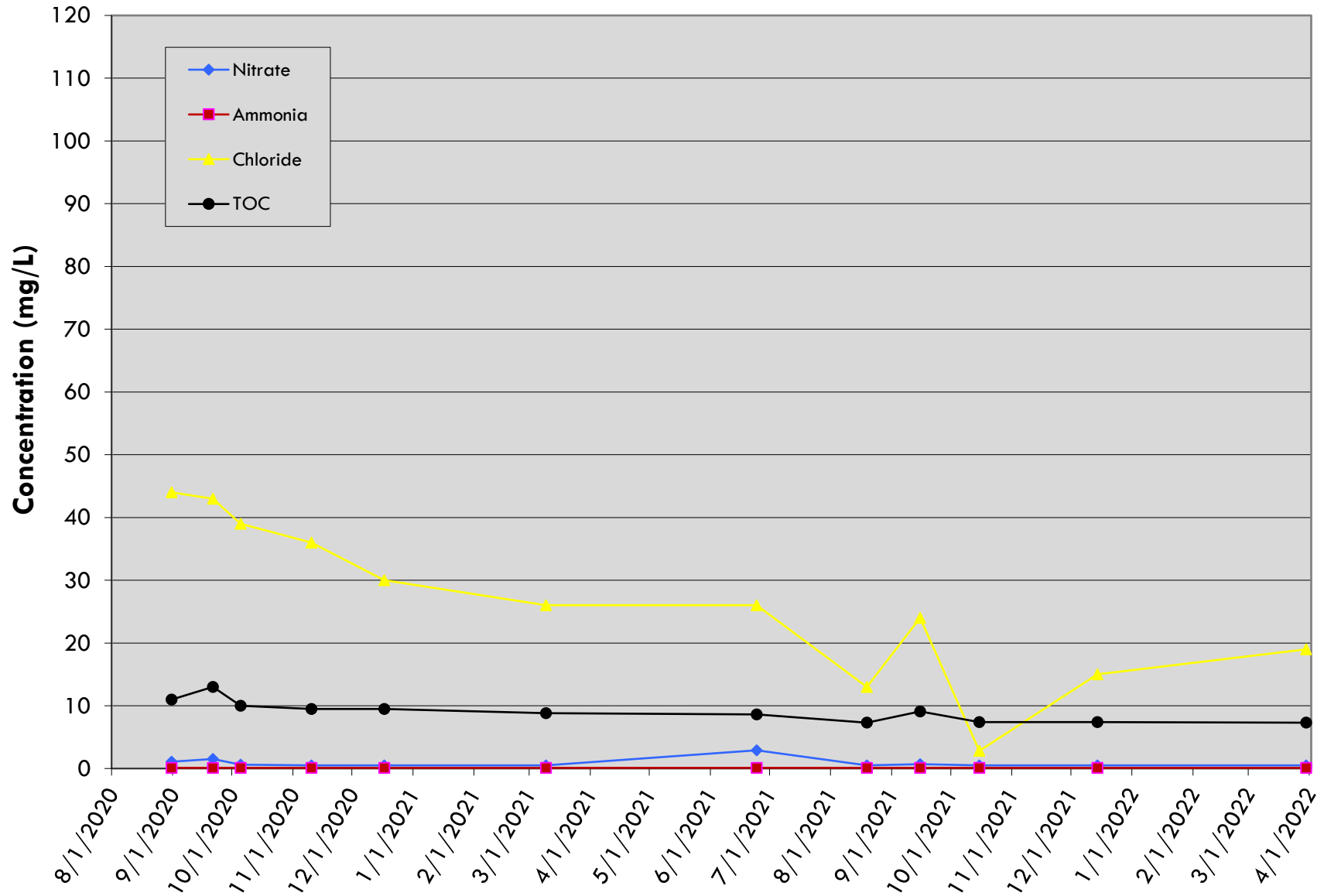
LDCS-7

LRI Landfill, Pierce County, Washington



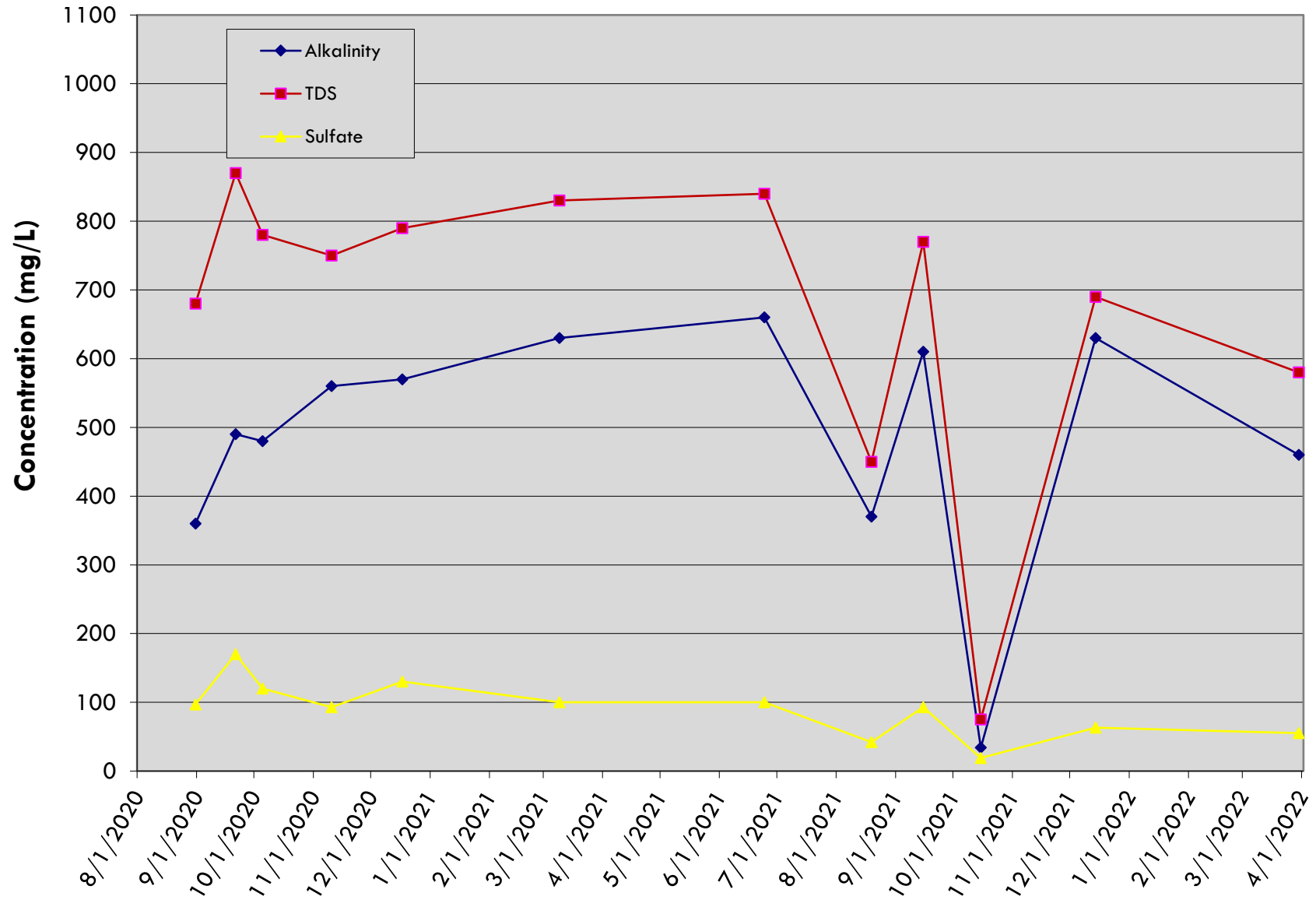
LDCS-8

LRI Landfill, Pierce County, Washington



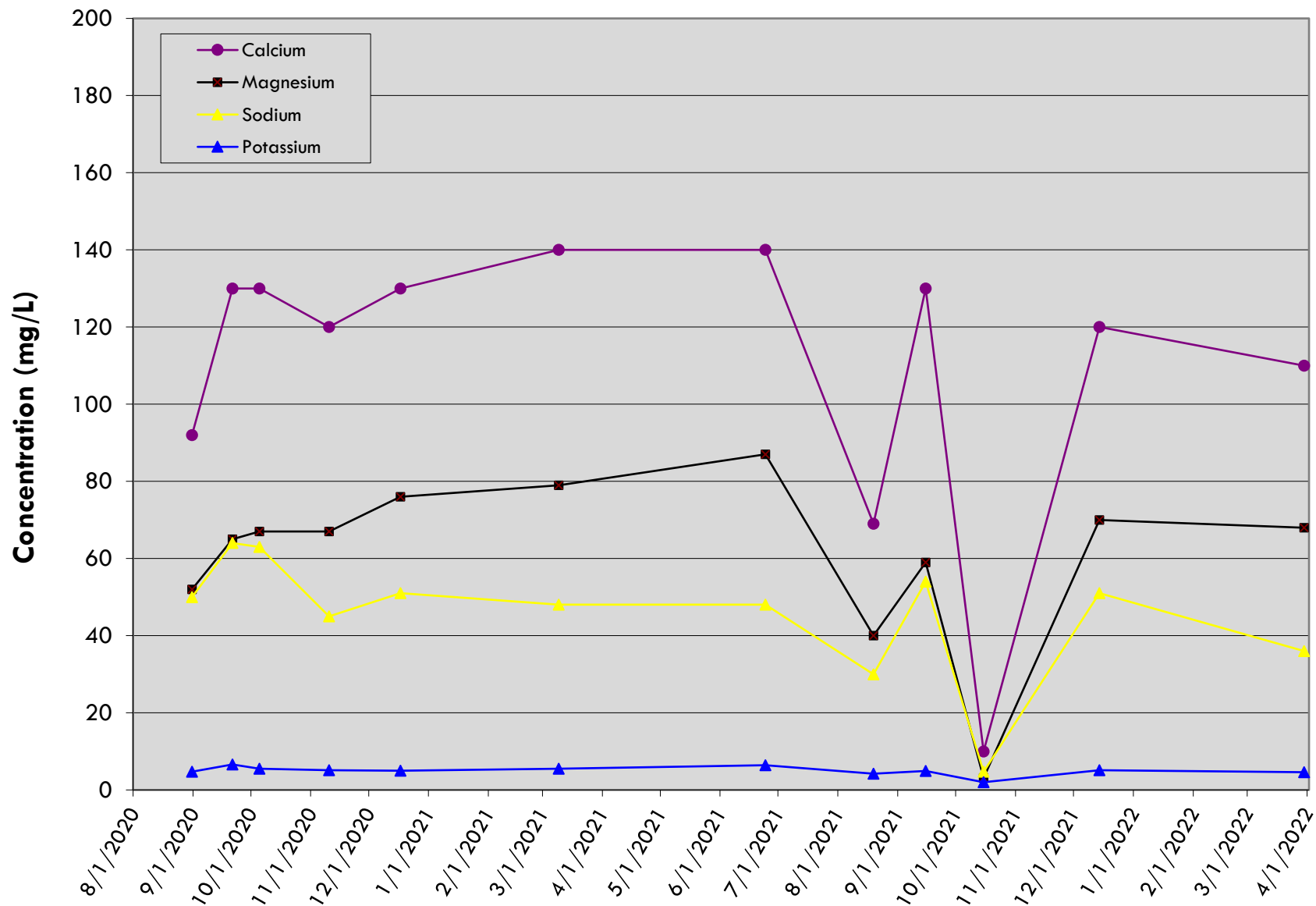
LDCS-8

LRI Landfill, Pierce County, Washington



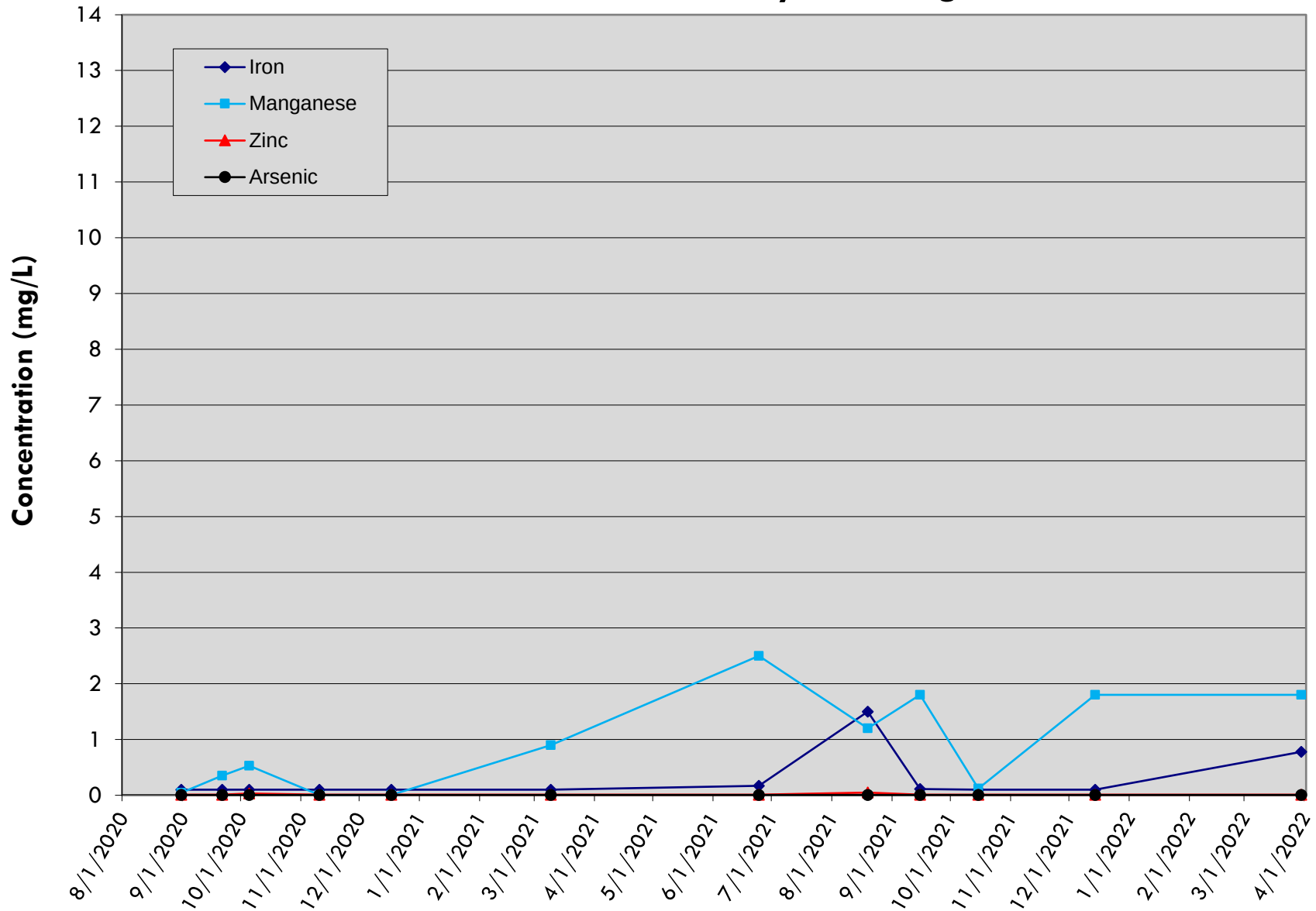
LDCS-8

LRI Landfill, Pierce County, Washington



LDCS-8

LRI Landfill, Pierce County, Washington





Attachment H

LDCS & Leachate Pumping Records and Conductivity Measurements

Summary of LDCS Volumes Pumped and Conductivity Data
First 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)^A	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)*
1/1/2022	0.00	7,730	396	340	726	--	788	3100	788	2,400	--	2,376	948	972	812	782	845	0	710	4,333	--
1/2/2022	1.44	8,320	392	190	754	--	787	4159	787	2,800	--	2,742	1,003	2,003	859	765	898	0	740	5,662	--
1/3/2022	0.47	8,280	394	0	760	--	785	3233	777	5,240	--	3,344	1,133	5,689	874	790	952	13,262	671	15,509	--
1/4/2022	0.18	7,720	402	0	732	--	782	2427	775	4,650	--	1,042	1,292	2,135	902	763	989	7,403	638	5,242	--
1/5/2022	0.18	8,270	410	0	735	--	781	4070	783	3,870	--	21,570	1,374	1,530	939	765	1,025	0	615	4,880	--
1/6/2022	1.46	8,580	413	0	749	--	780	2294	785	7,160	--	8,646	1,363	9,386	866	803	1,053	6,678	594	11,374	--
1/7/2022	0.95	9,400	418	0	754	--	778	1371	780	5,030	--	4,554	1,179	2,163	759	818	1,072	8,298	594	5,953	--
1/8/2022	0.00	7,970	425	0	720	--	776	4976	765	4,470	--	3,318	1,173	1,108	791	799	1,068	0	566	4,839	--
1/9/2022	0.00	8,520	420	0	731	--	775	2556	769	4,190	--	2,916	1,192	848	852	805	1,057	0	573	4,523	--
1/10/2022	0.00	7,950	407	0	741	--	773	3418	774	3,520	--	9,806	1,177	662	891	775	1,045	9,771	588	4,496	--
1/11/2022	0.67	8,950	400	0	750	--	773	1840	775	3,580	--	9,128	1,156	1,192	910	752	1,037	1,970	614	4,494	--
1/12/2022	1.37	8,060	403	0	753	--	773	4683	779	4,900	--	5,326	1,121	3,938	806	783	1,034	4,740	606	4,808	--
1/13/2022	0.10	9,040	411	0	750	--	772	3095	779	4,710	--	10,082	1,106	1,370	771	733	1,029	8,323	589	4,499	--
1/14/2022	0.22	5,080	420	0	730	--	772	2080	777	4,160	--	12,480	1,079	977	770	727	1,022	0	577	4,486	--
1/15/2022	0.00	0	432	0	742	--	771	4256	781	3,190	--	13,398	1,053	781	822	748	1,016	0	597	4,384	--
1/16/2022	0.10	0	445	0	747	--	770	3432	782	2,650	--	11,812	1,039	598	850	719	1,010	0	644	4,504	--
1/17/2022	0.00	26,040	453	0	752	--	768	2344	777	2,770	--	4,564	1,022	478	878	661	1,004	13,248	667	4,800	--
1/18/2022	0.05	9,460	452	0	744	--	769	4361	773	2,800	--	11,554	1,012	476	910	671	993	1,340	695	4,191	--
1/19/2022	0.10	9,000	456	0	727	--	752	4786	774	3,050	--	8,544	1,004	416	938	653	981	5,324	709	4,186	--
1/20/2022	0.10	7,760	455	0	738	--	764	2844	776	3,490	--	8,940	999	720	949	639	974	1,056	716	4,500	--
1/21/2022	0.10	7,940	448	0	725	--	756	1118	778	2,960	--	7,262	999	785	899	633	963	5,943	702	3,886	--
1/22/2022	0.00	8,420	435	0	739	--	739	3303	781	2,630	--	6,430	1,006	661	875	614	952	0	708	4,513	--
1/23/2022	0.00	7,780	426	0	749	--	746	3192	779	2,460	--	5,890	1,001	537	884	589	943	0	699	4,523	--
1/24/2022	0.00	8,830	420	0	749	--	759	3050	777	2,640	--	5,906	993	477	912	566	935	8,573	704	4,827	--
1/25/2022	0.00	7,830	417	0	736	--	766	2974	778	2,980	--	6,516	985	416	945	587	928	4,814	724	4,518	--
1/26/2022	0.00	8,160	413	0	735	--	767	3112	778	3,810	--	6,822	976	417	970	584	923	3,317	720	4,510	--
1/27/2022	0.00	8,450	409	0	725	--	765	3026	778	2,800	--	6,604	973	415	985	606	916	3,341	737	4,201	--
1/28/2022	0.00	8,090	406	0	732	--	763	2809	777	2,620	--	6,422	974	416	994	576	908	3,946	721	4,194	--
1/29/2022	0.00	8,080	403	0	738	--	762	1941	775	2,640	--	5,126	970	356	998	546	902	0	737	4,188	--
1/30/2022	0.20	8,740	401	0	743	--	763	1051	772	2,860	--	4,302	966	356	999	574	898	0	720	4,495	--
1/31/2022	0.00	7,870	403	0	730	--	763	2063	768	2,650	--	5,286	961	416	--	565	895	0	746	4,009	--
2/1/2022	0.00	7,850	407	0	726	--	764	2345	772	2,660	--	5,030	961	356	--	557	891	0	720	3,900	--
2/2/2022	0.00	8,040	410	0	731	--	763	1759	774	3,100	--	5,180	959	415	--	541	888	15,826	743	4,070	--
2/3/2022	0.00	7,830	411	0	733	--	763	1468	776	3,810	--	5,618	964	357	--	552	888	5,383	715	4,188	--
2/4/2022	0.10	7,890	411	0	734	--	763	1408	778	3,570	--	5,462	969	416	--	534	888	0	741	4,191	--
2/5/2022	0.05	7,000	383	0	730	--	763	1697	779	3,710	--	5,992	969	356	--	548	888	0	713	3,862	--
2/6/2022	0.10	7,980	339	0	737	--	765	1696	775	3,790	--	6,020	965	416	--	553	886	0	738	4,167	--
2/7/2022	0.00	4,670	330	0	736	--	765	1657	772	4,180	--	6,362	962	356	--	563	886	13,009	714	3,862	--
2/8/2022	0.00	4,460	342	0	724	--	430	1970	775	3,270	--	5,778	961	416	--	596	885	1,528	745	3,845	--
2/9/2022	0.00	1,650	362	0	732	598	479	1659	780	3,270	--	5,922	963	356	--	605	886	4,233	720	3,841	--
2/10/2022	0.00	0	386	0	740	0	661	1421	780	3,470	--	6,044	960	356	--	625	886	0	733	3,908	--
2/11/2022	0.00	0	409	220	743	0	729	1302	778	3,610	--	6,466	963	356	--	440	885	0	715	3,848	--
2/12/2022	0.00	0	429	680	746	0	755	1298	777	3,660	--	6,774	967	356	--	1	885	0	740	3,857	--
2/13/2022	0.00	0	446	660	748	0	766	1254	775	3,660	--	6,776	970	356	--	4	885	0	721	4,032	--
2/14/2022	0.00	250	462	670	751	3791	773	1213	771	4,580	--	7,068	976	416	--	1,802	895	15,762	747	4,469	--
2/15/2022	0.00	1,120	475	660	729	811	776	1936	773	3,770	--	6,940	976	598	--	1,464	899	6,748	721	3,839	--
2/16/2022	0.10	230	485	420	725	807	777	2053	776	3,490	--	6,862	976	537	--	864	713	1	760	3,834	--
2/17/2022	0.00	13,310	488	270	721	683	777	2335	780	3,500	--	7,570	968	477	--	871	827	4,897	724	3,546	--
2/18/2022	0.00	6,326	246	670	734	0	777	2079	781	3,590	--	8,848	967	418	--	876	872	0	738	3,845	--
2/19/2022	0.00	12,790	308	640	745	0	776	1906	779	3,800	--	9,336	968	416	--	858	889	0	716	3,866	--
2/20/2022	0.10	10,320	423	690	749	0	767	1795	776	3,530	--	9,038	969	417	--	850	895	0	734	3,941	--
2/21/2022	0.36	9,210	470	750	749	3859	755	1720	774	4,240	--	9,154	968	477	--	919	897	15,190	717	4,398	--
2/22/2022	0.06	8,240	488	700	724	0	759	1917	778	3,580	--	8,820	960	599	--	737	900	0	749	3,559	--
2/23/2022	0.00	8,210	478	630	710	0	768	1948	783	3,130	--	7,418	955	478	--	1,168	901	0	722	3,552	--
2/24/2022	0.00	8,180	466	690	726	1481	771	1533	785	3,370	--	8,112	949	418	--	834	896	6,390	753	3,556	--
2/25/2022	0.00	8,180	458	610	727	692	772	1328	787	3,050	--	7,194	948	417	--	812	887	2,029	730	3,850	--
2/26/2022	0.00	9,040	452	630	739	0	770	1227	785	3,170	--	6,640	951	417	--	744	882	0	726	3,859	--
2/27/2022	0.71	8,130	454	690	743	0	771	1190	782	3,700	--	6,504	955	620	--	716	880	0	720	4,494	--
2/28/2022	1.48	9,030	466	670	742	2292	772	1509	780	8,400	--	12,502	929	11,413	881	836	877	11,195	704	12,081	--

**Summary of LDCS Volumes Pumped and Conductivity Data
First 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)*
3/1/2022	0.00	9,110	469	620	728	824	774	2529	790	9,040	--	14,872	623	5,664	701	982	878	10,252	631	12,591	--
3/2/2022	0.44	9,880	470	790	729	806	773	2729	803	6,370	--	6,900	557	2,003	668	849	865	9,348	589	24,617	--
3/3/2022	0.37	10,000	470	700	730	735	769	2474	807	7,720	--	5,844	543	2,232	662	1,170	846	326	553	5,132	--
3/4/2022	0.22	9,200	468	690	733	809	766	2197	806	4,120	--	6,374	511	1,038	692	899	671	6,512	567	5,058	--
3/5/2022	0.01	9,150	468	700	724	0	765	2644	802	3,490	--	5,182	516	846	738	835	768	0	583	4,187	--
3/6/2022	0.00	9,120	465	690	712	0	765	3261	800	3,230	--	4,860	498	722	774	817	797	0	641	4,168	--
3/7/2022	0.00	9,110	460	660	717	2286	765	3315	806	3,380	--	5,578	603	659	798	821	807	8,231	666	4,169	--
3/8/2022	0.00	9,140	455	660	736	802	765	2938	808	3,810	--	6,412	754	598	838	824	815	4,842	671	4,477	--
3/9/2022	0.17	10,010	456	660	739	809	749	2636	792	3,210	--	4,236	840	539	866	868	830	3,530	675	4,103	--
3/10/2022	0.00	9,110	458	660	723	784	744	2398	796	4,220	--	7,318	869	585	878	826	827	3,419	703	1,315	--
3/11/2022	0.00	9,180	458	660	730	761	757	2162	798	6,130	--	8,830	839	478	901	134	614	4,223	693	0	--
3/12/2022	0.00	10,060	459	720	739	0	761	2138	787	3,690	--	8,988	783	538	917	0	756	0	708	0	--
3/13/2022	0.03	8,400	462	680	735	0	764	1885	776	2,940	--	11,288	817	417	951	0	815	0	695	15,580	--
3/14/2022	0.05	8,330	466	660	720	2423	733	2549	774	5,640	--	11,954	816	1,410	977	3,229	841	9,819	735	4,102	--
3/15/2022	0.48	9,170	467	700	727	810	749	2399	773	6,930	--	15,276	705	3,245	835	1,081	848	6,118	689	4,332	--
3/16/2022	0.35	8,885	464	690	718	819	752	1045	778	6,570	--	15,961	574	2,998	746	1,149	868	2,163	627	4,227	--
3/17/2022	0.00	8,658	460	710	739	745	746	904	779	4,770	--	16,057	751	1,171	805	894	836	6,736	628	4,202	--
3/18/2022	0.01	9,058	463	710	746	867	760	613	765	3,980	--	14,350	667	908	844	1,239	830	0	628	4,499	--
3/19/2022	0.05	8,498	463	730	746	0	760	3195	765	5,247	--	12,336	667	828	844	1,014	830	0	628	4,510	--
3/20/2022	0.41	8,498	463	730	746	0	760	3195	765	5,247	--	12,336	667	828	844	1,014	830	0	628	4,510	--
3/21/2022	0.04	8,498	459	730	738	2370	765	3195	764	5,247	--	12,336	695	828	865	1,014	824	13,821	695	4,510	--
3/22/2022	0.09	8,765	455	730	716	742	765	3767	760	6,520	--	12,116	658	1,793	777	1,011	823	1,440	627	5,151	--
3/23/2022	0.00	8,768	453	600	744	816	771	827	745	5,670	--	8,504	584	1,231	814	1,092	822	5,259	711	4,204	--
3/24/2022	0.16	8,758	453	660	712	760	773	959	754	5,670	--	7,208	612	1,038	826	1,129	819	3,656	627	4,815	--
3/25/2022	0.00	8,995	454	710	740	813	777	1028	748	3,570	--	6,684	722	855	708	1,044	814	3,324	731	4,805	--
3/26/2022	0.00	9,313	454	710	740	0	777	1109	748	6,215	--	6,215	722	639	708	934	814	0	731	7,868	--
3/27/2022	0.00	9,313	454	710	740	0	777	1109	748	3,353	--	6,215	722	639	708	934	814	0	731	7,868	--
3/28/2022	0.00	9,313	461	720	735	2504	790	1109	744	3,353	--	6,215	775	639	757	934	818	14,425	646	7,868	--
3/29/2022	0.00	9,030	463	720	698	819	790	841	746	3,540	--	6,274	793	479	985	926	820	0	772	4,525	--
3/30/2022	0.00	8,320	463	700	711	804	761	671	767	3,140	--	5,300	686	477	861	1,082	832	6,790	656	4,459	--
3/31/2022	0.00	9,110	454	660	715	851	779	2584	757	2,750	--	4,590	847	416	993	822	829	0	709	4,349	--

^ = The flowmeter at LDCS-2B began functioning again on February 9, 2022

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

^^ = No conductivity data available for LDCS-5 between 1/31/22 and 2/27/22

-- Readings not available

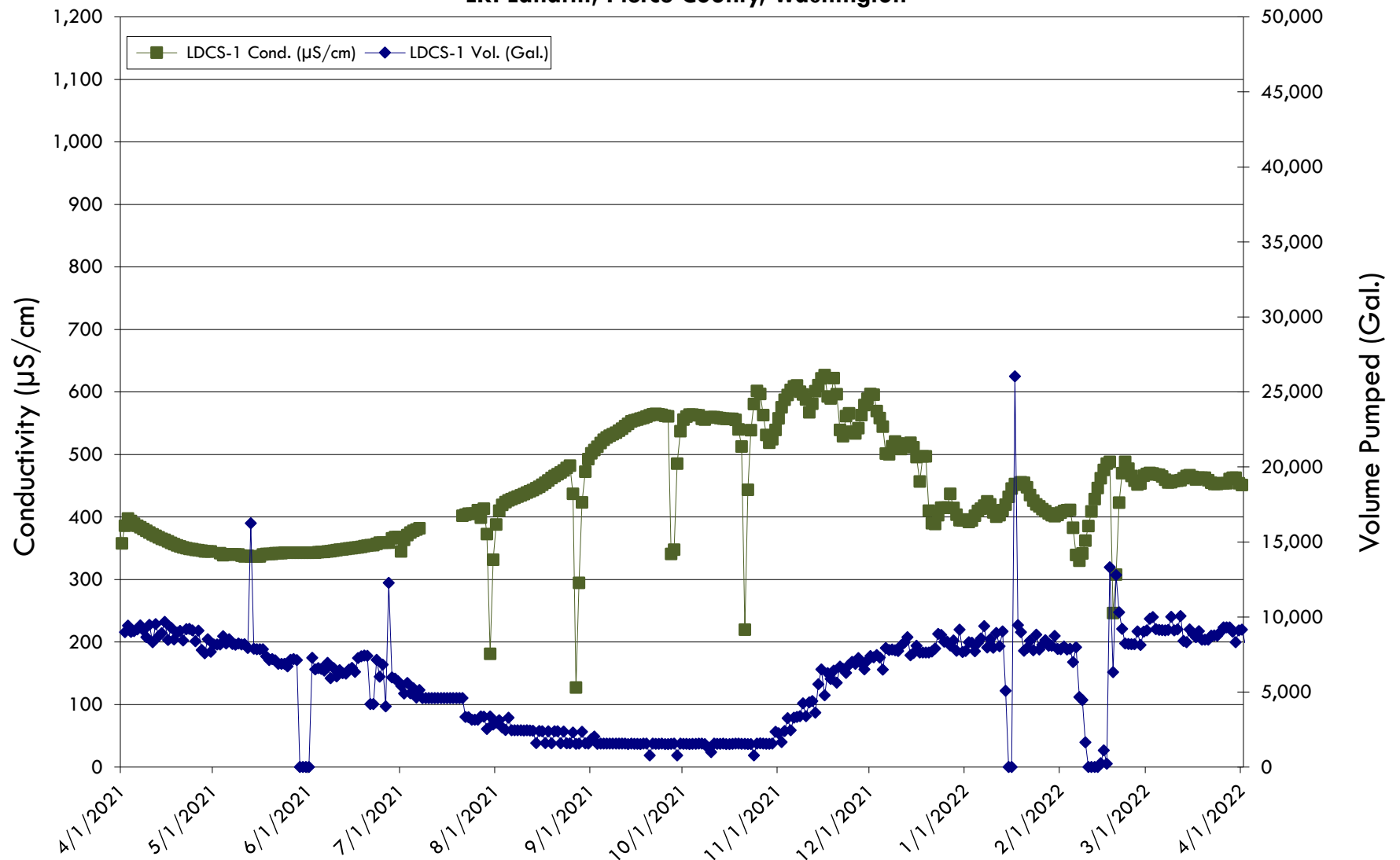
Summary of Leachate Volume and Depth Data
First Quarter 2022
LRI Landfill, Pierce County, Washington

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.)
1/1/2022	0	12.9	0	17.3	0	19.5	4,848	12.1	14,751	10.4	0	36.3	0	15.9	20,518	32.6	0	14.5	19,657	34.5
1/2/2022	0	13.0	0	19.1	0	20.7	7,872	13.8	20,359	8.8	3	37.6	0	16.5	28,013	32.6	0	19.0	26,438	34.9
1/3/2022	0	13.0	0	19.8	17,499	13.9	10,269	12.9	56	13.4	72	38.9	30,476	16.1	38,780	33.7	42,502	32.9	36,820	63.0
1/4/2022	1	13.0	21,521	12.8	0	15.9	7,622	11.6	19,934	10.5	4,064	39.9	0	15.6	32,351	34.5	37,596	32.5	32,506	64.5
1/5/2022	0	13.1	0	7.6	0	18.2	9,125	11.9	0	12.7	8,571	39.8	0	15.6	35,940	34.5	32,730	28.6	45,757	64.5
1/6/2022	0	14.0	0	9.7	0	19.5	118	21.2	0	16.2	9,215	39.7	26,528	21.6	38,025	38.2	39,826	33.2	58,291	75.2
1/7/2022	0	13.5	0	10.5	0	19.7	10,761	22.5	0	17.4	5,318	39.5	56	18.9	23,934	44.2	40,754	37.0	37,778	82.3
1/8/2022	0	13.0	0	11.6	0	19.0	9,870	17.8	0	18.2	3,875	39.8	0	15.8	18,220	46.2	0	36.8	28,174	83.2
1/9/2022	0	13.6	0	13.5	0	19.5	7,764	16.4	0	19.0	5,114	40.0	0	15.4	24,557	46.8	0	35.1	37,832	83.4
1/10/2022	7,762	11.7	0	14.8	0	20.7	7,058	16.1	12,885	15.3	2,232	40.9	35,320	17.3	19,359	47.7	73,227	34.0	30,982	83.6
1/11/2022	9,195	11.0	13,948	10.6	17,369	14.5	8,520	14.7	15,913	13.0	2,610	42.0	2,612	17.4	25,110	48.5	22,257	33.1	40,239	84.9
1/12/2022	978	12.2	0	7.6	909	16.4	9,827	12.4	728	16.3	8,707	41.8	10,420	21.8	44,231	49.7	27,502	31.4	69,048	88.1
1/13/2022	0	13.0	0	9.0	0	18.0	7,498	15.2	0	18.6	6,889	41.4	56	17.8	40,065	51.0	50,660	28.4	62,315	89.0
1/14/2022	0	13.0	0	10.7	0	18.0	1,743	19.9	0	19.3	1,773	31.8	19,508	18.4	46,659	50.9	47,387	24.3	70,530	88.8
1/15/2022	0	13.0	0	12.5	0	18.8	0	28.3	0	20.0	4	39.6	0	24.9	37,464	50.8	0	13.6	59,870	87.9
1/16/2022	0	13.5	0	13.9	0	19.0	0	32.2	0	20.1	0	41.3	0	25.4	36,403	51.2	0	11.9	54,606	87.6
1/17/2022	0	14.0	0	15.4	0	19.9	26,128	22.5	15,179	17.8	10,742	35.2	18,632	16.1	36,674	51.3	82,462	15.0	52,744	87.2
1/18/2022	0	14.0	0	16.1	0	20.0	0	20.5	2,118	22.9	15,324	40.0	0	15.4	55,297	49.7	6	18.5	81,623	85.8
1/19/2022	14,501	10.8	15,639	11.0	16,460	12.9	16,011	15.3	19,219	23.3	17,763	40.6	0	13.8	53,798	48.9	2	14.1	89,452	83.5
1/20/2022	2,287	11.7	0	7.9	874	13.4	1,845	16.0	4,272	26.0	17,558	40.6	30,016	14.3	60,170	47.9	31,671	15.7	89,848	82.2
1/21/2022	0	12.5	0	9.3	5,408	11.6	11,715	14.2	20,106	24.4	20,538	42.0	5,804	14.6	53,806	47.3	7	13.0	92,208	79.7
1/22/2022	0	13.0	6,949	9.8	2,709	10.1	6,819	9.7	19,570	17.7	18,778	40.6	0	14.8	38,603	47.5	0	11.5	92,891	77.4
1/23/2022	0	13.0	0	7.6	2,440	12.6	5,881	13.5	7,559	19.6	7,756	40.7	0	14.9	16,316	48.4	0	12.2	28,828	76.8
1/24/2022	10,516	10.9	0	9.4	4,301	11.0	9,794	12.6	627	20.7	16,879	40.4	0	15.1	38,658	47.8	43,321	11.8	65,921	75.8
1/25/2022	8,234	10.7	7,217	7.9	3,308	10.0	7,895	10.3	15,079	18.0	19,581	39.4	30,960	15.1	38,923	47.6	11,375	11.6	70,369	73.7
1/26/2022	4,944	11.0	0	6.4	3,526	9.4	8,349	10.5	15,068	15.3	20,001	37.2	6,556	15.3	37,559	47.0	7,711	11.5	71,076	70.7
1/27/2022	4,504	10.9	0	8.1	3,577	10.4	7,588	9.9	98	19.1	18,906	35.6	0	15.3	39,965	46.6	8,219	11.6	67,389	67.6
1/28/2022	3,476	11.0	0	9.7	3,556	9.8	7,242	9.7	14,100	18.3	20,842	33.6	0	15.0	39,978	46.3	10,909	11.5	74,582	62.4
1/29/2022	3,974	10.9	1,842	10.9	2,891	9.8	5,840	10.8	3,927	17.3	5,185	32.8	0	16.8	7,602	48.1	0	11.9	17,039	58.9
1/30/2022	5,125	10.9	6,729	8.3	3,146	11.4	6,338	14.3	9,091	17.3	10,811	33.3	0	16.3	21,764	48.6	0	12.3	38,066	59.0
1/31/2022	1,190	11.3	0	7.8	3,978	10.7	9,981	12.8	11,998	15.6	16,177	32.2	0	15.2	31,014	48.7	0	12.0	53,010	55.8
2/1/2022	3,291	11.1	0	9.6	3,569	10.4	8,362	11.0	12,202	14.9	18,532	30.8	22,132	15.3	34,327	48.8	22,176	11.6	57,494	49.9
2/2/2022	3,249	11.0	6,956	9.3	3,263	10.1	7,628	9.8	285	17.0	14,874	28.6	22,132	14.9	27,968	48.8	22,176	11.7	45,111	40.1
2/3/2022	3,005	11.0	0	7.4	3,506	10.2	7,134	9.6	10,669	16.5	20,064	26.9	22,132	14.5	34,853	48.7	8,260	11.6	58,166	28.8
2/4/2022	3,214	11.0	0	9.3	3,682	10.4	7,751	10.2	19,157	14.3	18,546	24.5	8,060	15.1	41,689	47.9	8,440	11.6	19,644	12.1
2/5/2022	2,072	11.2	0	10.6	3,174	9.9	6,925	9.5	21,049	10.8	19,205	20.6	8,060	14.6	41,386	46.9	8,440	11.6	15,884	11.1
2/6/2022	4,915	10.8	7,509	8.5	3,563	10.1	7,989	9.9	23,285	10.2	16,638	18.5	8,060	15.1	6,893	48.2	8,440	11.8	17,300	12.9
2/7/2022	1,283	11.3	0	8.1	3,354	10.1	6,909	9.5	21,078	8.1	20,207	15.7	8,060	14.3	56,221	46.3	8,440	11.6	20,925	12.4
2/8/2022	2,288	11.1	0	9.6	3,640	9.6	7,396	9.5	5,850	17.1	10,972	13.2	0	15.2	80,758	42.9	9,575	11.5	15,608	10.7
2/9/2022	2,418	11.2	6,883	9.4	3,652	9.6	6,840	9.5	26,211	20.2	23,209	11.1	17,352	13.9	78,662	40.8	7,473	11.5	15,863	10.6
2/10/2022	3,235	11.0	0	7.7	3,170	9.8	7,929	10.7	19,259	17.1	838	11.2	7,159	14.6	65,488	39.9	6,834	11.6	15,247	11.5
2/11/2022	2,575	11.1	0	9.5	3,576	9.5	6,778	9.7	18,564	25.0	17,776	13.8	7,159	14.6	12,206	35.6	6,834	11.5	15,531	10.8
2/12/2022	2,616	11.2	6,832	10.5	3,638	9.5	10,234	9.7	49,468	11.6	19,275	11.4	7,159	14.3	6	52.5	6,834	11.4	15,310	10.7
2/13/2022	3,607	11.1	0	7.6	3,523	9.9	7,365	10.0	38,756	10.3	3	12.0	7,159	15.2	4	53.5	6,834	11.7	15,798	12.3
2/14/2022	2,286	11.5	0	9.2	3,342	10.0	8,245	10.7	30,420	6.1	11,382	13.2	7,159	15.6	41,267	52.2	6,834	11.5	7,438	18.2
2/15/2022	1,201	11.5	0	10.6	931	13.4	8,478	9.9	3,264	15.0	2,585	12.7	13,596	14.0	68,477	50.4	11,597	11.5	25	30.8
2/16/2022	0	12.0	0	12.0	0	17.3	6,993	9.8	25,128	18.3	17,834	13.0	7,160	14.9	66,860	48.8	7,858	11.4	40,323	30.4
2/17/2022	20	6.8	0	13.5	0	18.0	9,712	9.6	1,543	21.6	7,433	13.1	10,880	13.9	30,548	50.1	5,502	11.4	40,690	15.1
2/18/2022	0	5.8	0	15.0	0	18.6	7,167	9.9	22,937	20.7	24,670	12.6	7,367	14.3	66,145	47.1	7,148	11.5	15,984	10.4
2/19/2022	0	13.0	0	16.5	0	19.4	4,631	10.7	26,398	14.4	3,267	11.6	7,367	16.1	39,237	46.5	7,148	11.6	13,097	11.5
2/20/2022	0	13.0	0	17.5	0	20.0	9,277	13.4	16,313	14.7	8,068	13.3	7,367	15.5	30,548	46.5	7,148	11.8	16,985	14.1
2/21/2022	0	13.0	0	18.9	0	20.0	6,974	13.2	12,571	15.8	5,294	13.8	7,367	15.6	24,385	46.5	7,148	11.9	18,651	16.9
2/22/2022	6,574	11.1	19,310	12.2	15,247	13.8	7,228	15.1	11,721	15.1	8,216	14.1	7,367	14.9	26,035	46.5	7,148	11.9	18,401	16.2
2/23/2022	0	12.5	0	9.2	0	16.4	8,869	14.5	12,684	14.1	11,741	13.9	8,024	15.2	28,889	46.4	6,343	12.0	16,139	14.8
2/24/2022	0	13.0	0	10.4	0	18.0	6,423	13.1	0	17.2	2,330	13.9	8,024	17.5	19,967	46.2	6,343	12.1	15,205	16.6
2/25/2022	0	13.0	0	12.2	0	18.6	9,440	13.2	0	18.8	14,993	13.4	9,107	16.0	41,148	45.2	8,584	11.8	19,938	14.6
2/26/2022	0	13.1	0	13.7	0	19.2	8,176	10.8	0	19.5	6,002	13.1	9,107	15.5	43,016	44.2	8,584	11.5	16,239	12.9
2/27/2022	0	13.5	0	15.2	0	19.8	7,324	11.0	0	20.0	11,772	13.0	9,107	15.7	34,184	43.7	8,584	12.1	20,497	14.4
2/28/2022	0	14.0	0	16.4	0	20.0	0	23.6	0	20.2	9,526	13.1	9,107	15.5	32,708	44.6	8,584	20.6	22,029	51.8

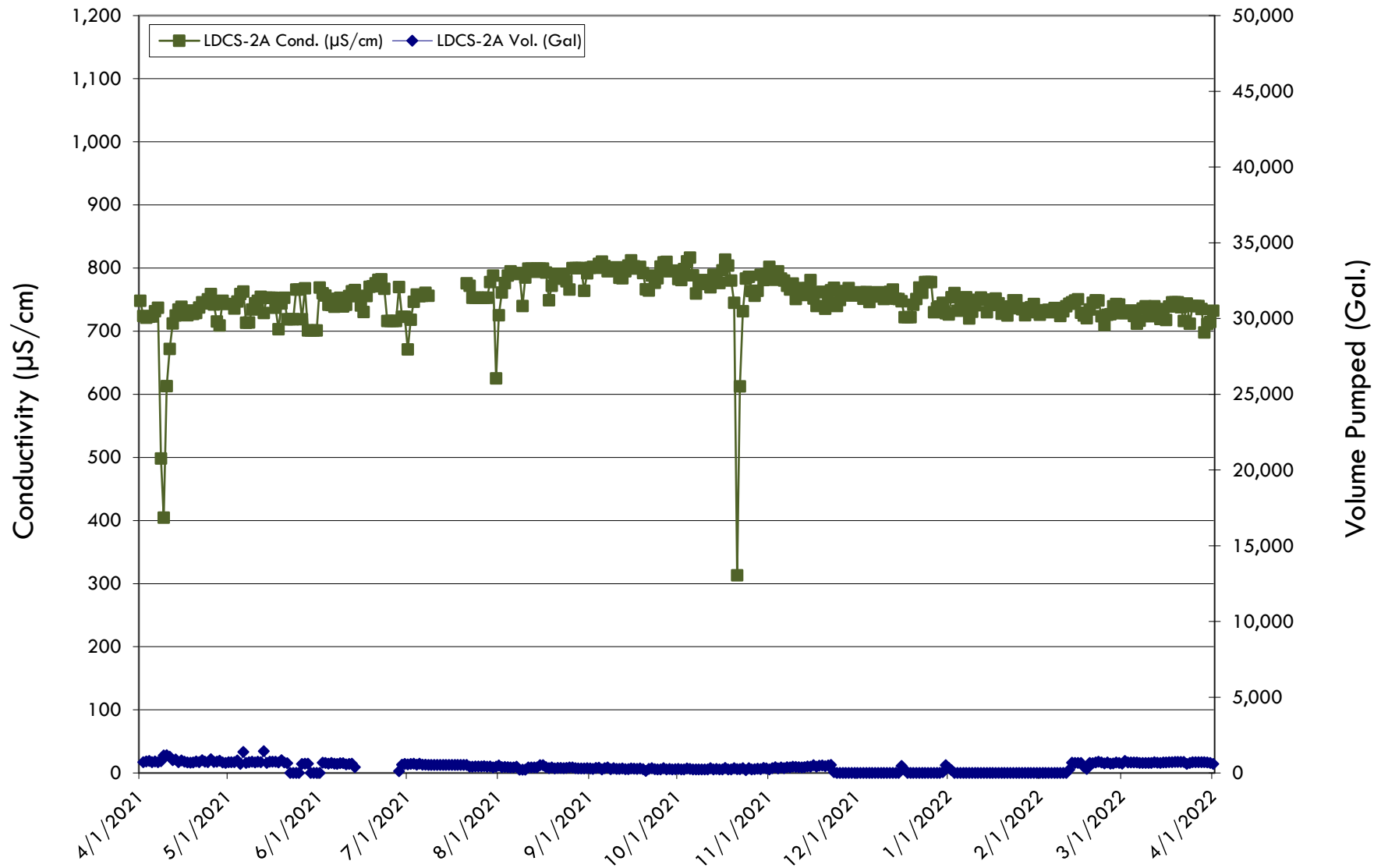
Summary of Leachate Volume and Depth Data
First Quarter 2022
LRI Landfill, Pierce County, Washington

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.)
3/1/2022	0	14.0	0	19.2	0	20.6	13,242	31.7	8,613	21.0	8,370	15.0	0	22.6	19,658	53.2	33,448	34.4	5,553	97.4
3/2/2022	0	14.1	0	18.9	0	21.9	10,630	29.6	13,208	20.3	12,357	15.0	0	18.7	30,030	52.3	22,264	34.6	20,747	98.1
3/3/2022	0	14.1	19,857	19.9	17,108	24.0	7,588	24.9	501	18.3	0	14.0	25,840	15.7	27,848	54.5	32,936	32.9	19,661	99.8
3/4/2022	0	14.3	0	8.2	0	17.3	11,040	28.1	0	20.3	0	17.0	0	19.8	30,311	56.1	24,217	31.8	21,959	100.6
3/5/2022	0	14.3	0	8.2	0	17.3	7,125	28.1	0	20.3	1	17.0	0	19.8	18,315	56.1	0	31.8	13,309	100.6
3/6/2022	0	14.3	0	8.2	0	17.3	6,501	28.1	0	20.3	7,573	17.0	0	19.8	24,882	56.1	0	31.8	18,435	100.6
3/7/2022	0	14.3	0	13.5	0	19.3	1,431	18.6	17,499	21.1	19,982	21.0	0	14.9	46,436	57.5	71,409	18.5	33,705	101.5
3/8/2022	0	14.6	0	15.4	0	20.0	16,999	28.9	5,647	12.8	16,409	16.0	31,244	25.2	61,253	56.9	5	21.9	40,256	100.7
3/9/2022	9,393	14.7	10,134	16.4	14,348	20.2	4,372	11.3	7,421	21.1	21,988	14.0	0	7.5	59,251	56.5	46,679	12.0	33,579	100.3
3/10/2022	0	13.3	0	11.2	0	16.1	10,211	25.5	0	19.9	4,783	11.0	28,020	14.1	92,064	55.7	4,521	14.2	50,556	92.5
3/11/2022	0	14.0	0	11.2	6,497	13.0	3,539	10.9	21,652	20.5	0	15.0	0	16.4	88,005	55.4	9	14.2	55,719	90.2
3/12/2022	0	14.0	0	11.2	1,135	13.0	0	10.9	4,765	20.5	6	15.0	0	16.4	10,095	55.4	0	14.2	7,673	90.2
3/13/2022	0	14.0	0	11.2	3,658	13.0	6,795	10.9	2,578	20.5	2,633	15.0	0	16.4	16,194	55.4	0	14.2	15,716	90.2
3/14/2022	0	14.5	0	17.3	0	16.6	20,677	24.2	5,957	19.9	16,522	19.9	25,344	20.0	52,085	54.6	26,034	16.9	51,212	89.7
3/15/2022	0	14.5	0	14.7	0	18.8	3,049	8.9	398	18.9	15,700	18.0	13,720	11.8	49,171	54.2	9	23.4	43,469	89.2
3/16/2022	0	14.5	0	19.7	0	19.0	6	26.5	0	20.2	15,631	16.0	0	13.1	48,324	54.2	42,805	15.9	42,503	89.4
3/17/2022	0	14.9	0	21.9	0	19.8	14,718	10.0	8	20.7	15,433	15.0	0	11.1	47,995	53.7	33,041	8.4	41,082	88.5
3/18/2022	0	15.0	0	24.6	0	19.9	6	27.2	0	20.9	0	18.0	0	23.8	97,679	50.6	0	8.4	66,323	85.6
3/19/2022	0	15.0	0	24.6	0	19.9	0	27.2	0	20.9	0	18.0	0	23.8	45,800	50.6	0	8.4	32,348	85.6
3/20/2022	0	15.0	0	24.6	0	19.9	0	27.2	0	20.9	0	18.0	0	23.8	45,800	50.6	0	8.4	32,348	85.6
3/21/2022	0	15.1	23,934	12.1	0	18.7	24,122	26.4	19,164	18.2	30,484	18.0	39,196	22.8	45,800	50.2	22,938	19.9	32,348	84.5
3/22/2022	0	15.2	0	13.5	0	19.1	13,522	9.8	5,216	19.1	15,361	16.0	0	11.2	49,444	49.9	36,048	9.4	42,055	83.8
3/23/2022	0	15.4	0	15.6	0	19.9	2	27.1	12	20.7	24,083	10.0	15,700	23.8	86,573	47.7	2	16.7	59,911	80.9
3/24/2022	0	15.3	0	16.6	1	19.3	16,300	7.8	26,948	13.5	4	14.0	15,540	11.9	79,003	45.2	23,171	11.9	63,873	80.1
3/25/2022	0	15.0	0	18.0	14,514	7.5	8	27.2	8	21.5	1	17.0	9,852	13.9	98,131	44.8	10	14.6	82,625	77.4
3/26/2022	0	15.0	0	18.0	0	7.5	0	27.2	0	21.5	0	17.0	0	13.9	24,201	43.9	0	14.6	11,386	77.4
3/27/2022	0	15.0	0	18.0	0	7.5	0	27.2	0	21.5	0	17.0	0	13.9	24,201	43.9	0	14.6	11,386	77.4
3/28/2022	22,973	14.5	17,043	12.4	3,923	19.2	15,298	30.8	11,900	21.0	21,963	19.0	18,536	18.9	24,201	43.3	17,239	18.4	11,386	80.5
3/29/2022	0	14.5	6	14.0	5	19.2	21,290	0.0	0	21.1	19,757	16.0	0	13.2	49,301	43.1	6	20.6	44,157	79.0
3/30/2022	0	14.7	0	15.5	0	19.5	12,349	27.5	4,330	15.0	17,260	19.0	14,164	22.6	64,023	39.8	33,305	8.4	63,148	76.4
3/31/2022	0	14.6	0	17.1	0	19.8	2,630	9.9	5,924	20.2	19,114	16.0	15,184	12.9	55,476	38.8	33	16.2	68,445	75.0

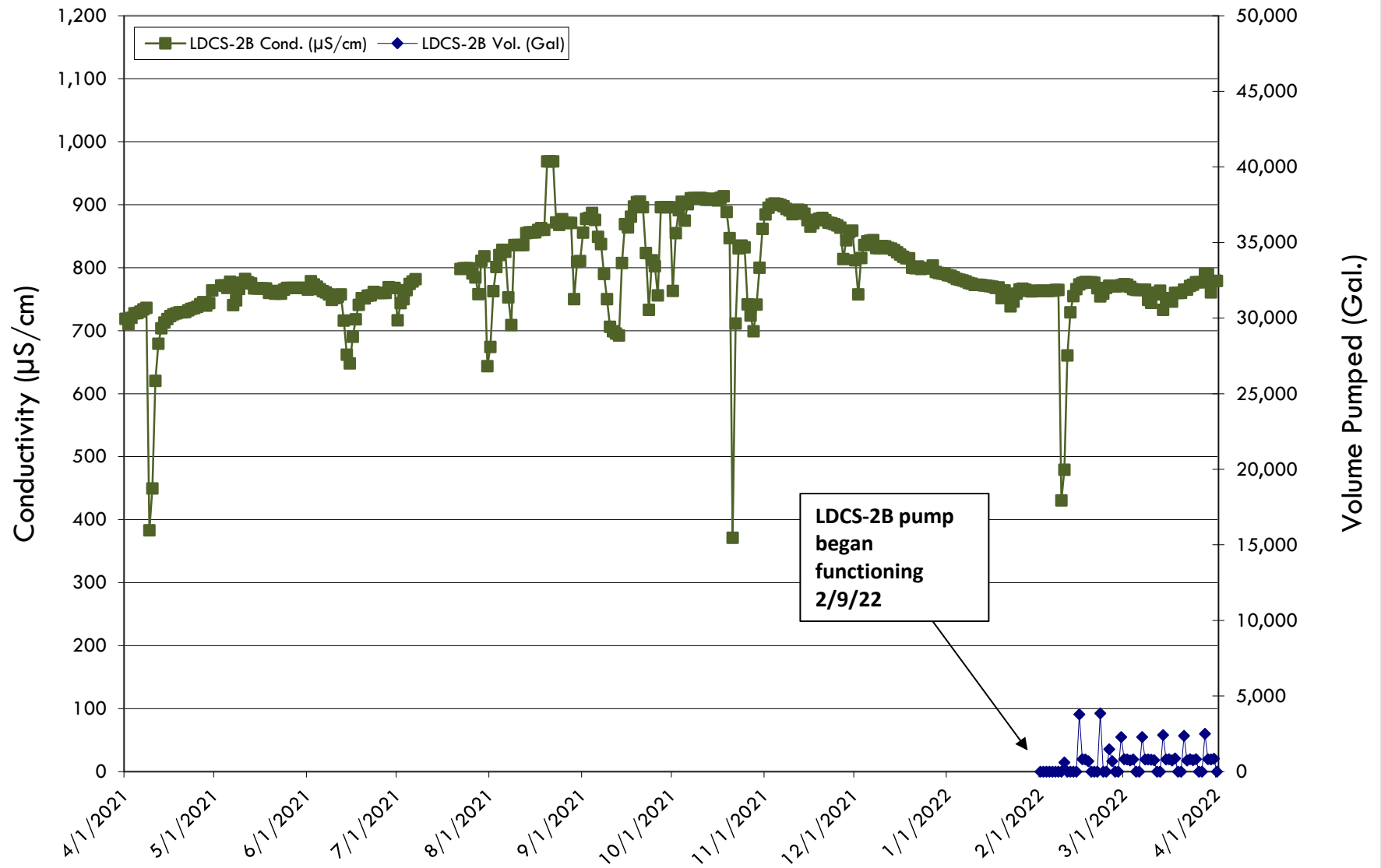
LDCS-1 (DailyTotals)
Conductivity vs Volume Pumped
First Quarter 2022
LRI Landfill, Pierce County, Washington



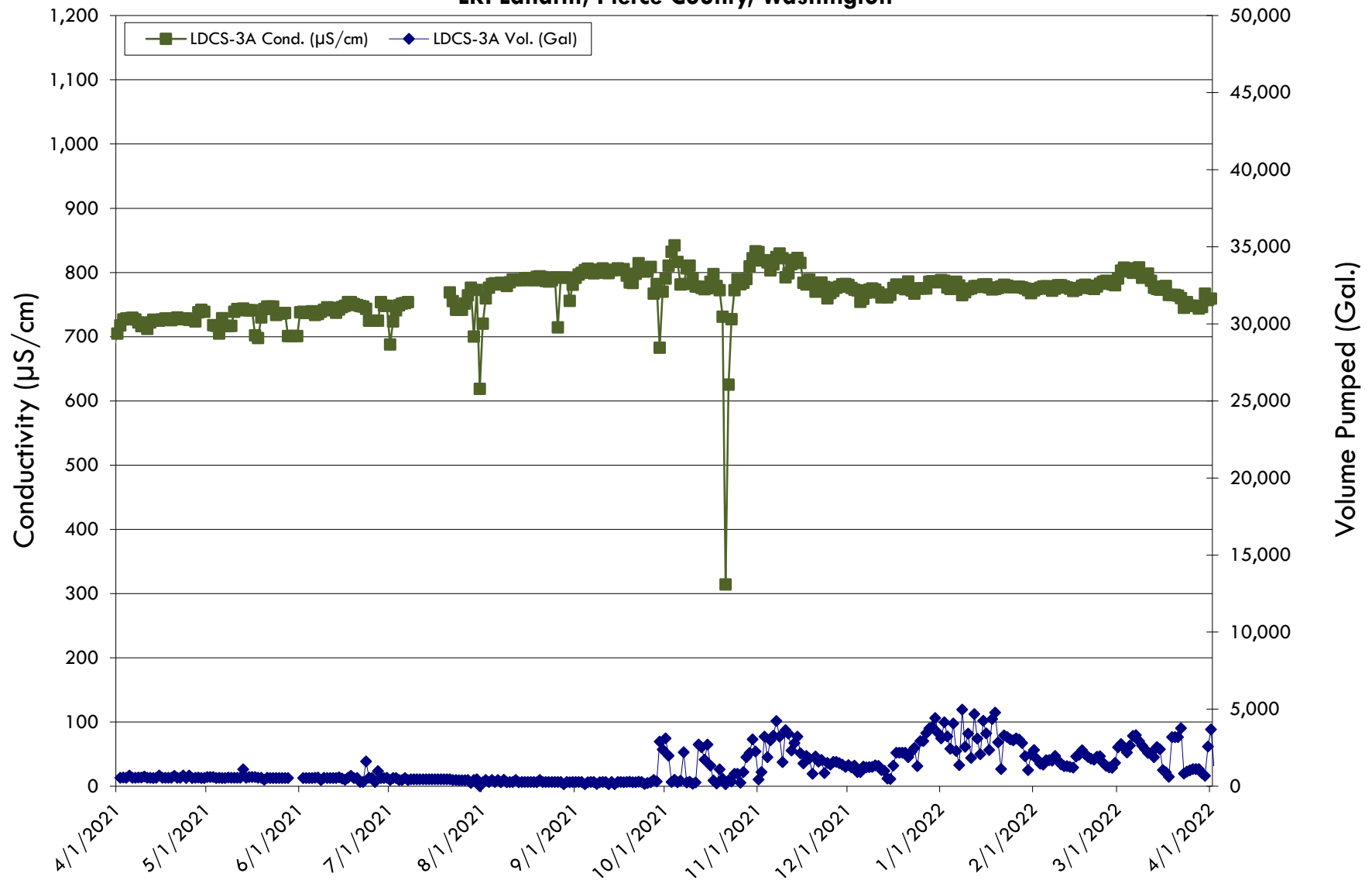
LDCS-2A (Daily Totals)
Conductivity vs Volume Pumped
First Quarter 2022
LRI Landfill, Pierce County, Washington



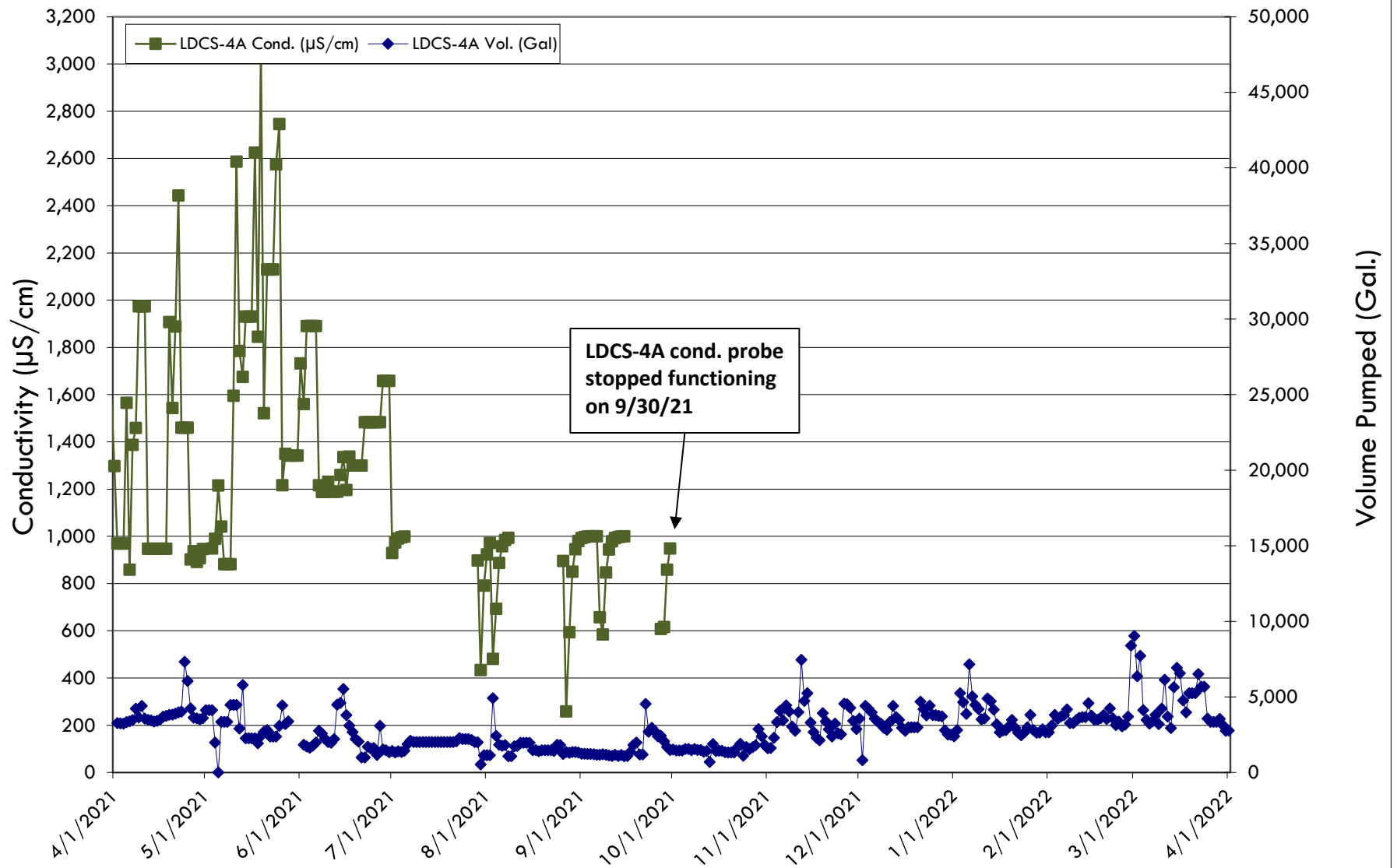
LDCS-2B (Daily Totals)
Conductivity vs Volume Pumped
First Quarter 2022
LRI Landfill, Pierce County, Washington



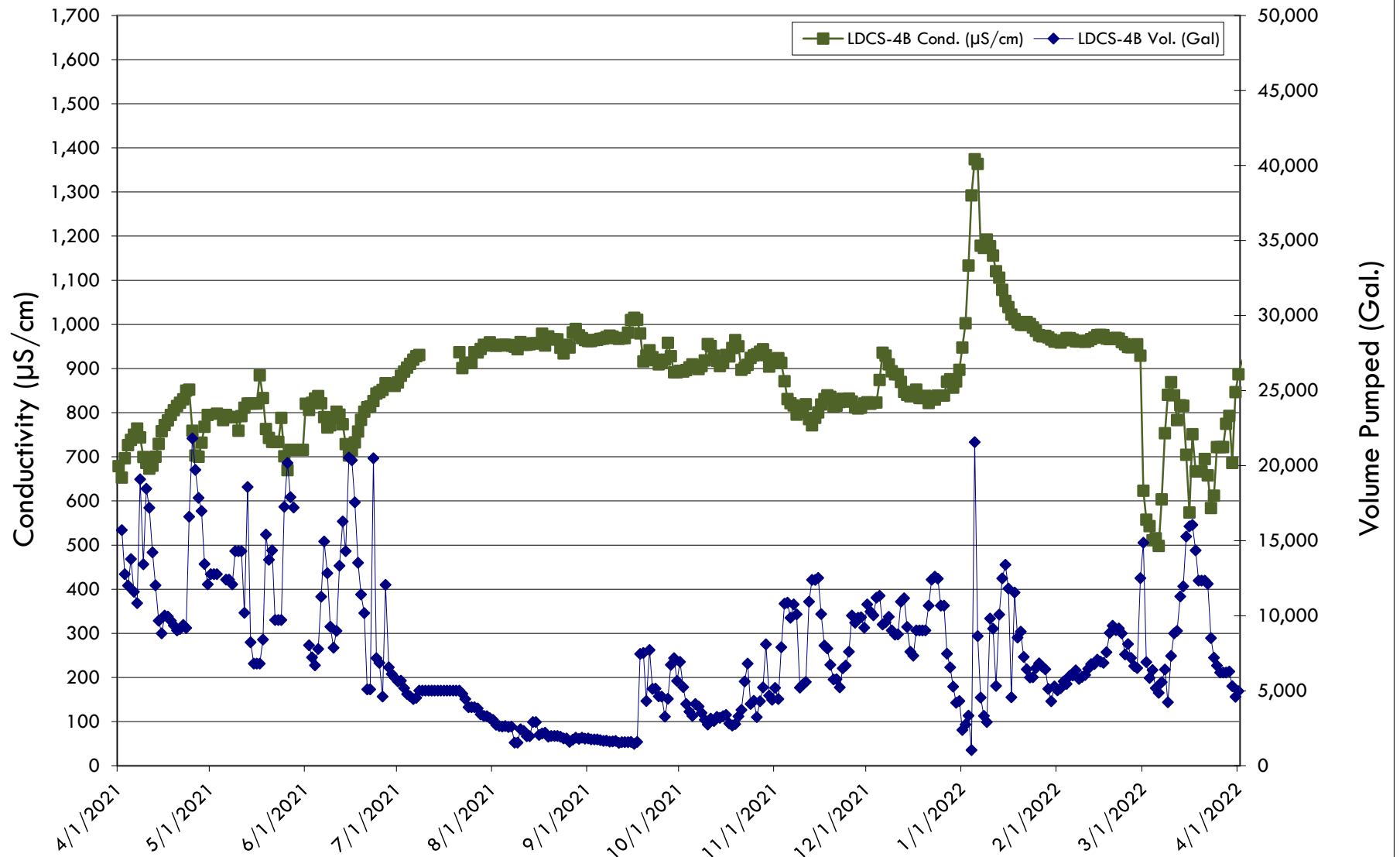
LDCS-3A (Daily Totals)
Conductivity vs Volume Pumped
First Quarter 2022
LRI Landfill, Pierce County, Washington



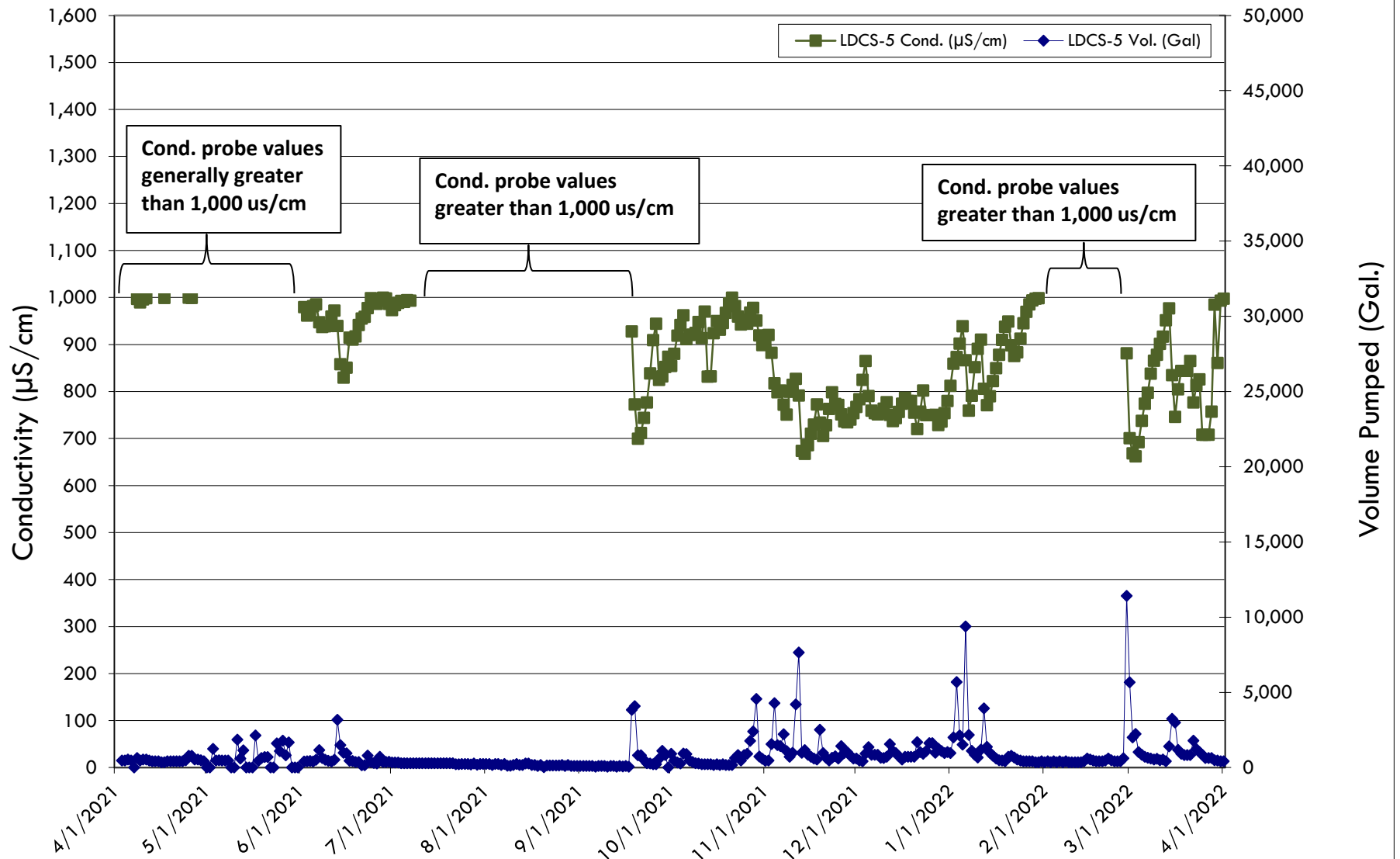
LDCS-4A (Daily Totals)
Conductivity vs Volume Pumped
First Quarter 2022
LRI Landfill, Pierce County, Washington



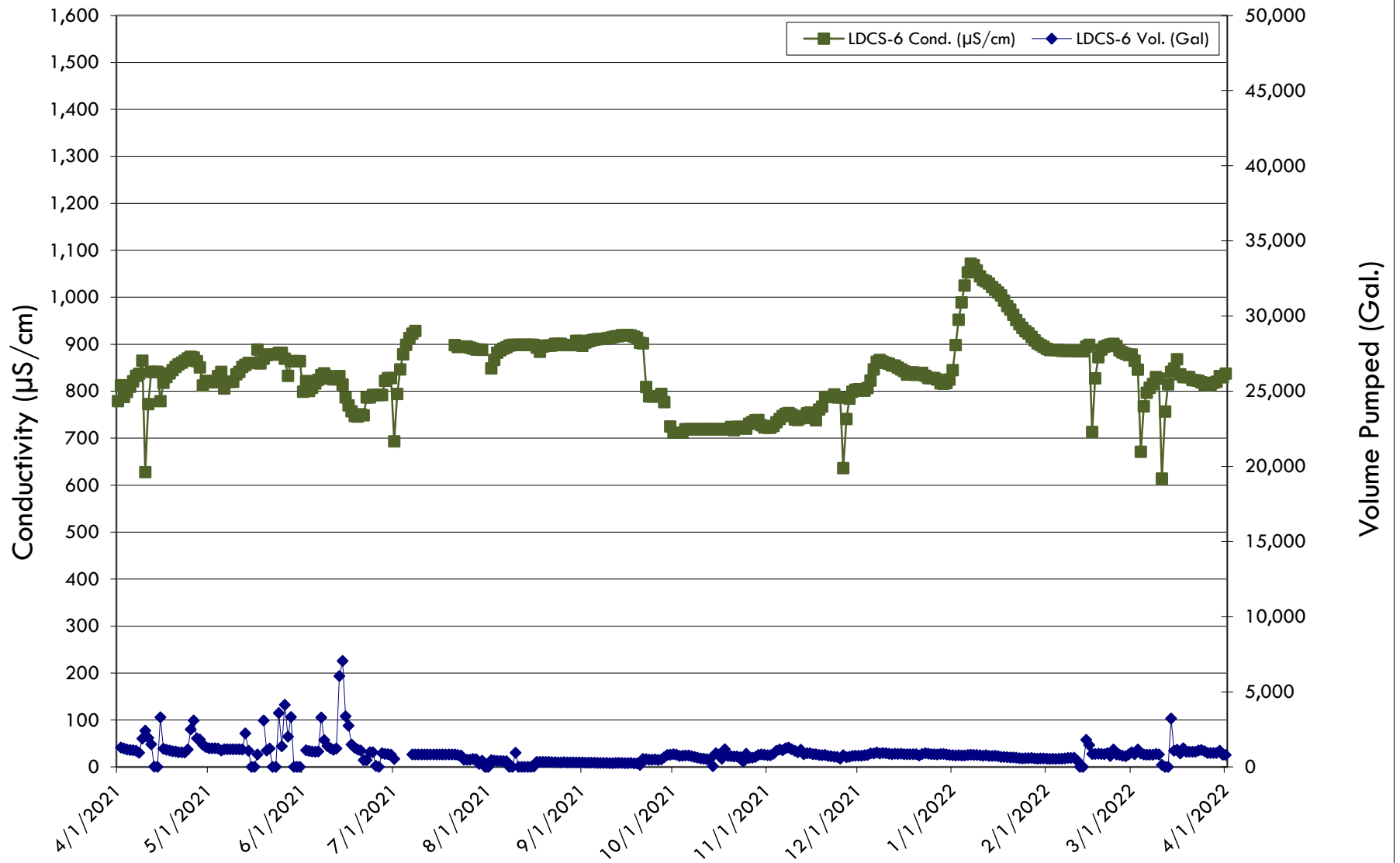
LDCS-4B (Daily Totals)
Conductivity vs Volume Pumped
First Quarter 2022
LRI Landfill, Pierce County, Washington



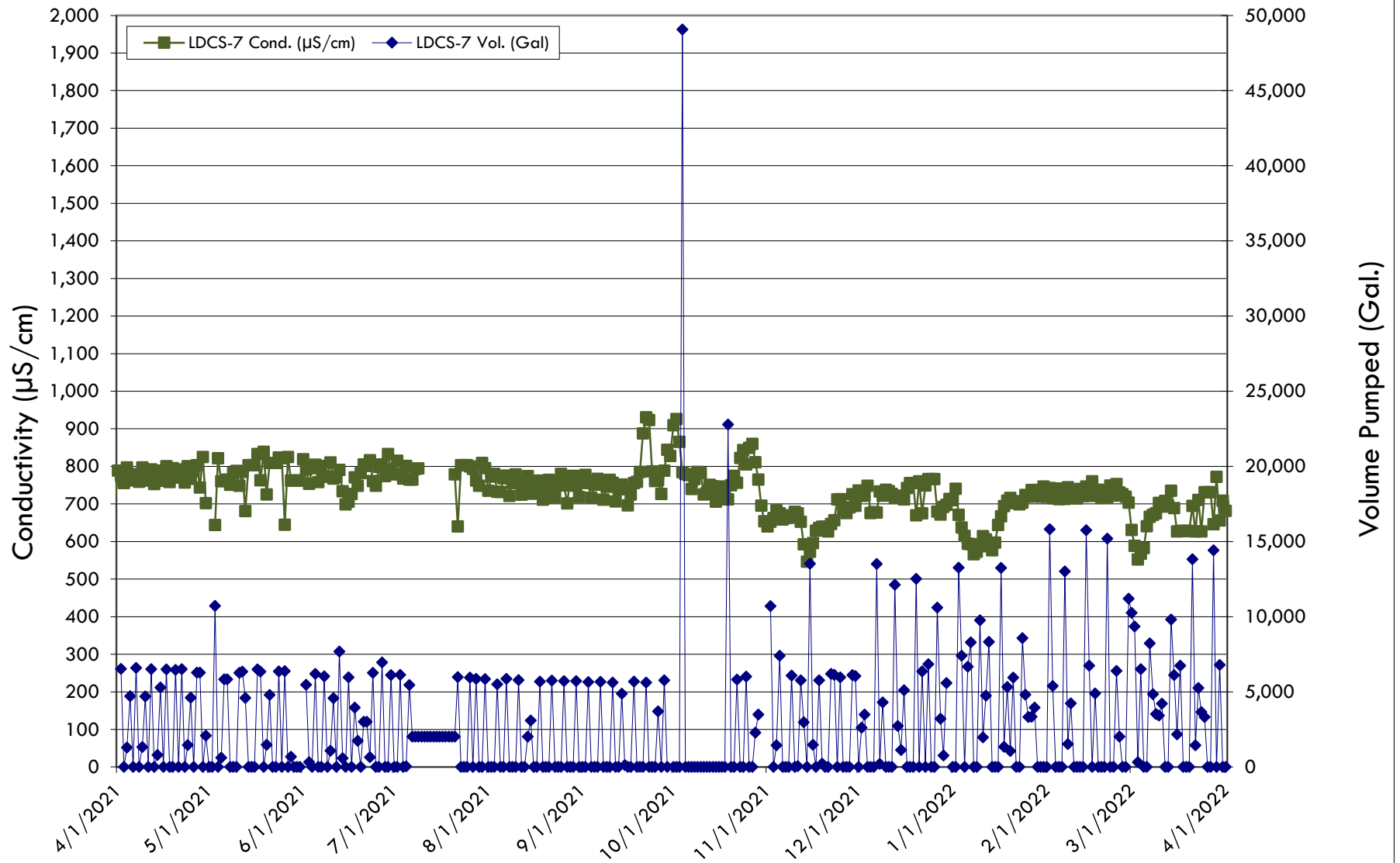
LDCS-5 (Daily Totals)
Conductivity vs Volume Pumped
First Quarter 2022
LRI Landfill, Pierce County, Washington



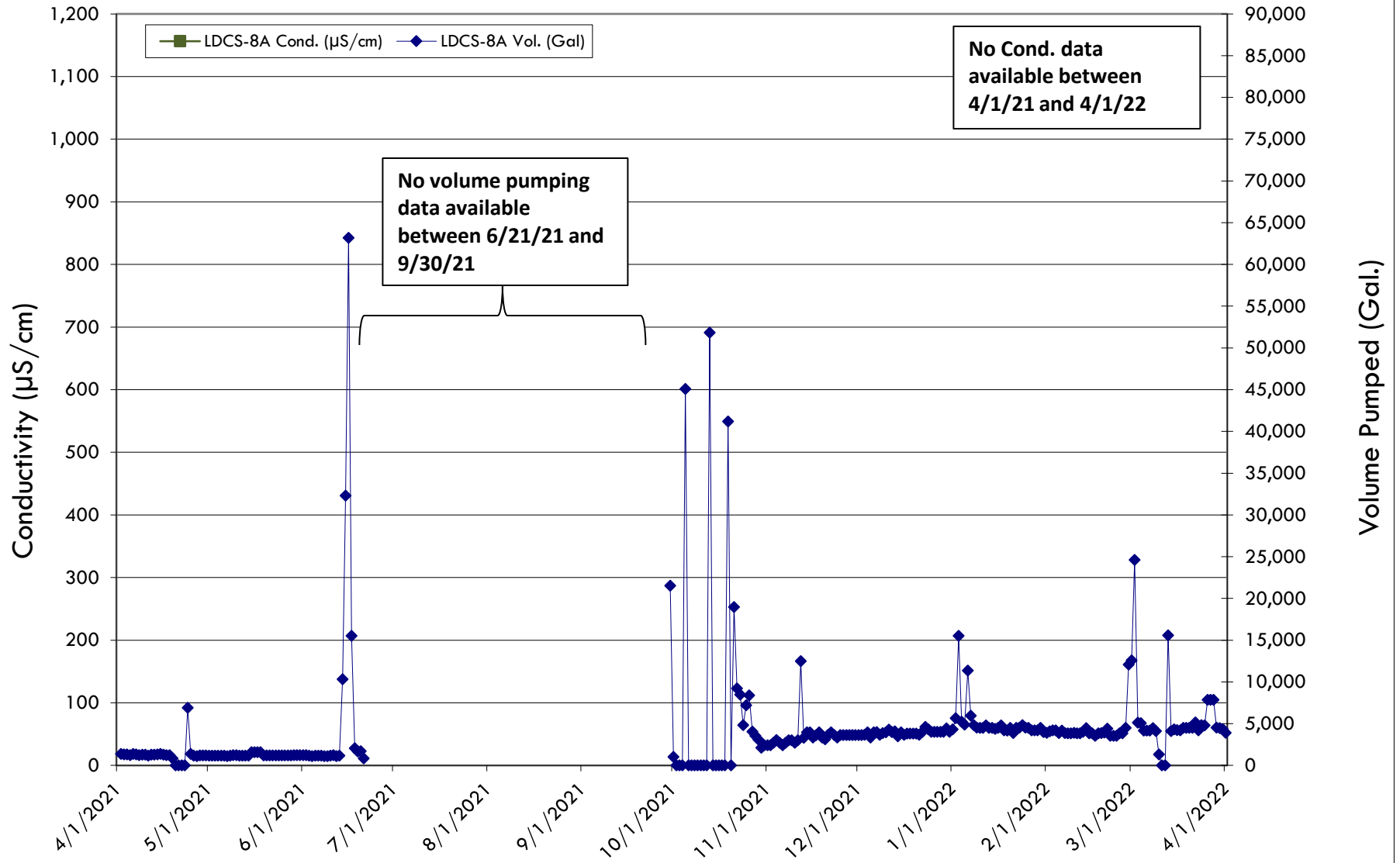
LDCS-6 (Daily Totals)
Conductivity vs Volume Pumped
First Quarter 2022
LRI Landfill, Pierce County, Washington



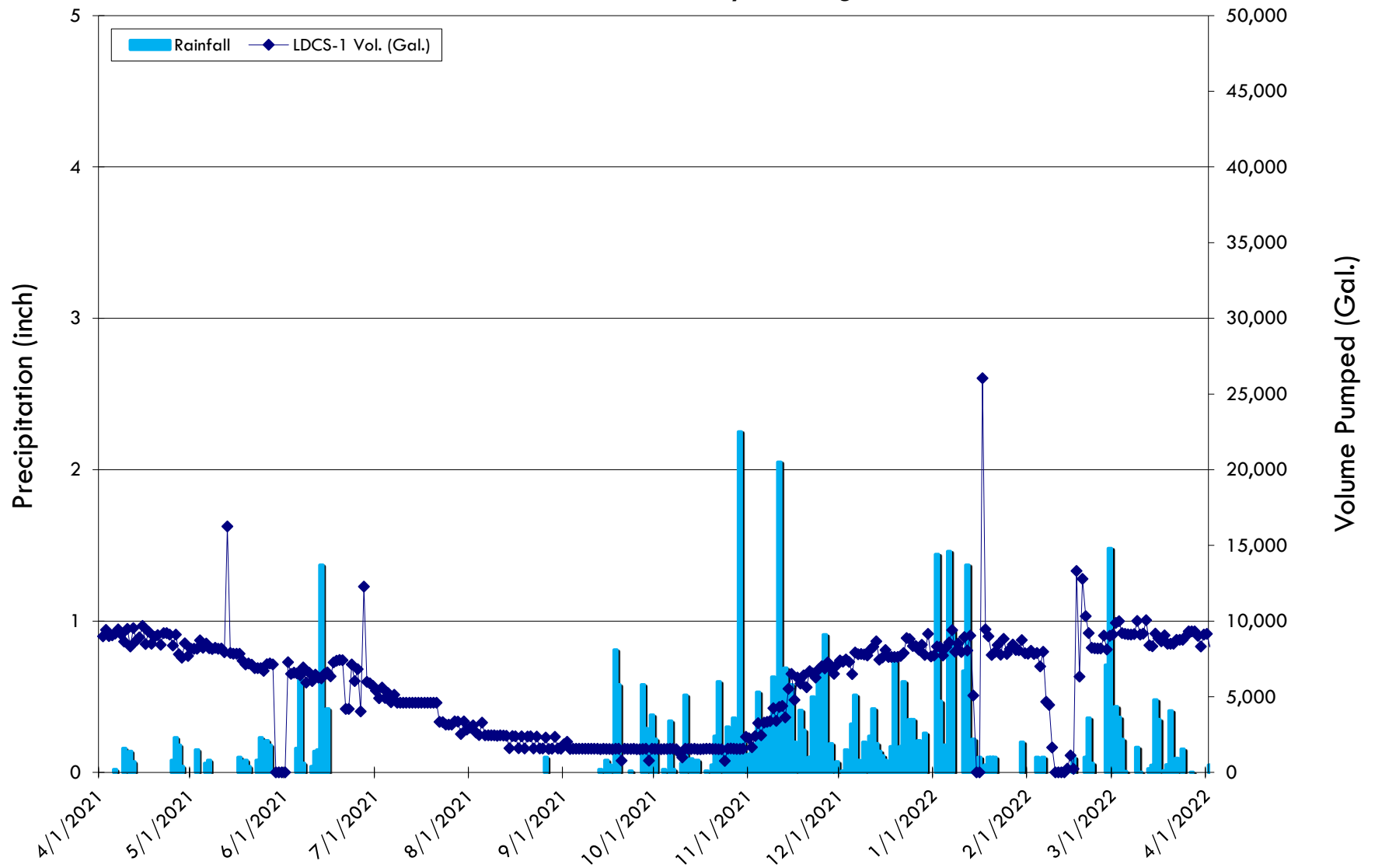
LDCS-7 (Daily Totals)
Conductivity vs Volume Pumped
First Quarter 2022
LRI Landfill, Pierce County, Washington



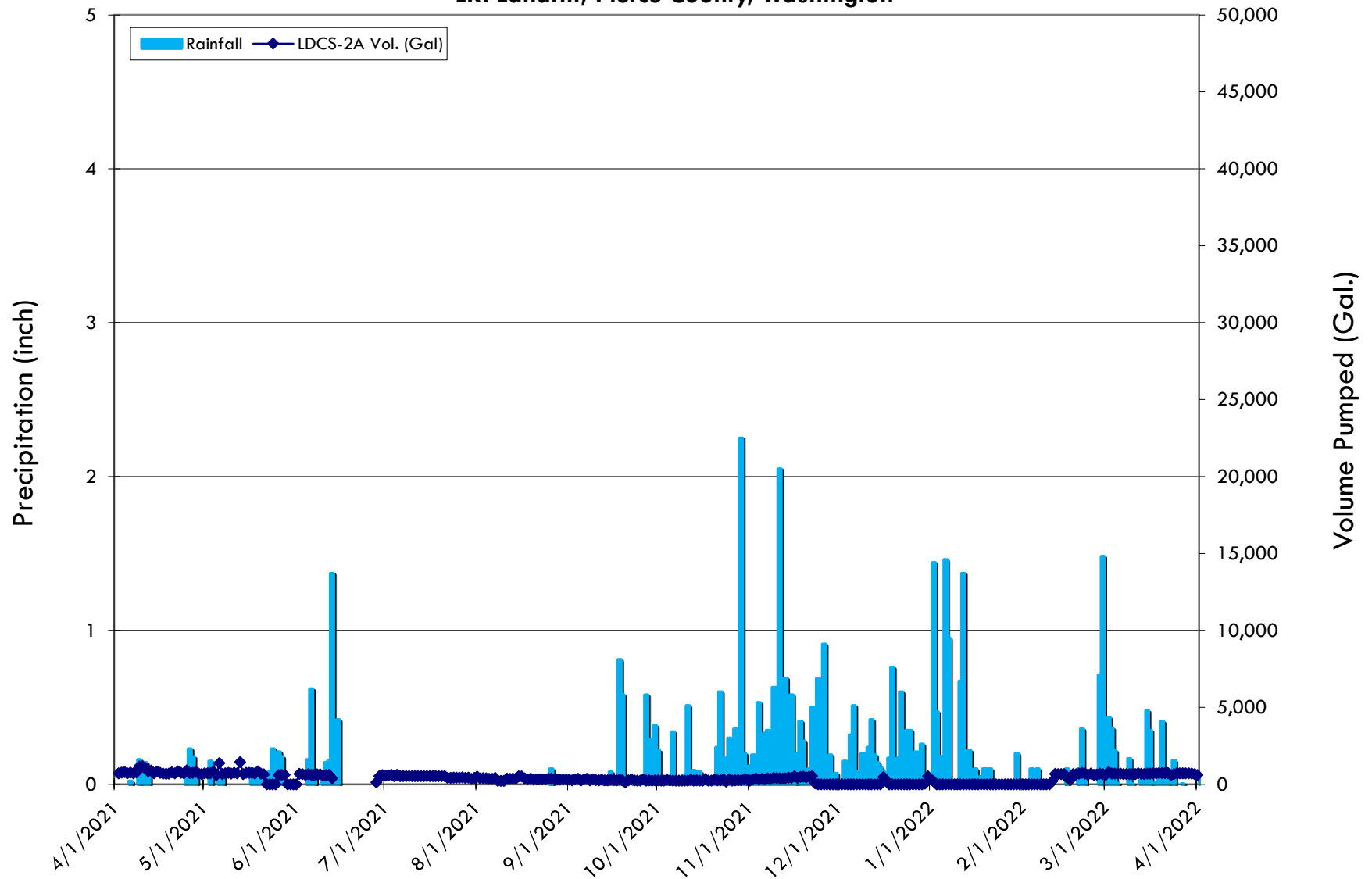
LDCS-8 (Daily Totals)
Conductivity vs Volume Pumped
First Quarter 2022
LRI Landfill, Pierce County, Washington



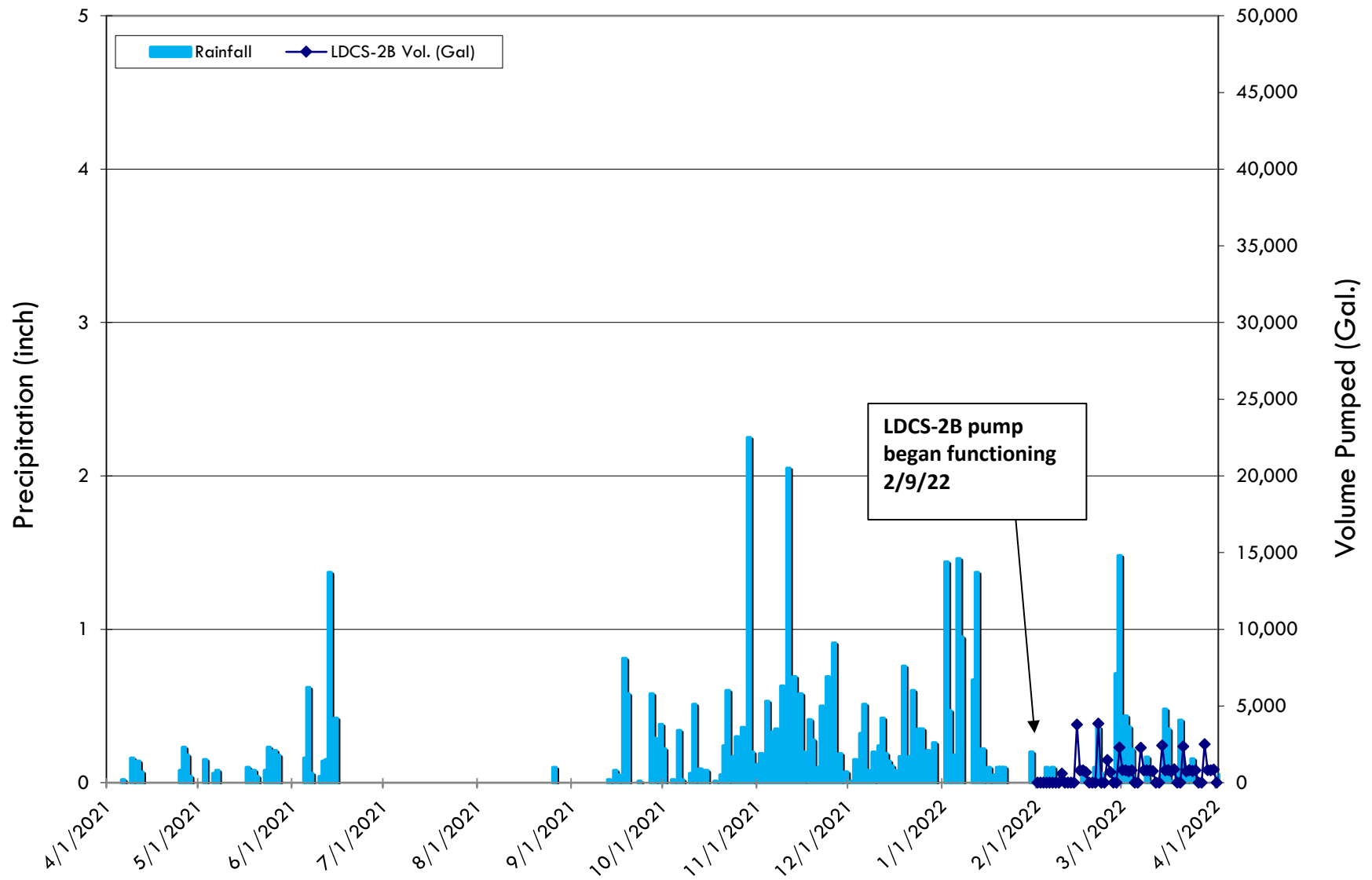
**LDCS-1 (Daily Totals)
Volume Pumped vs Precipitation
First Quarter 2022
LRI Landfill, Pierce County, Washington**



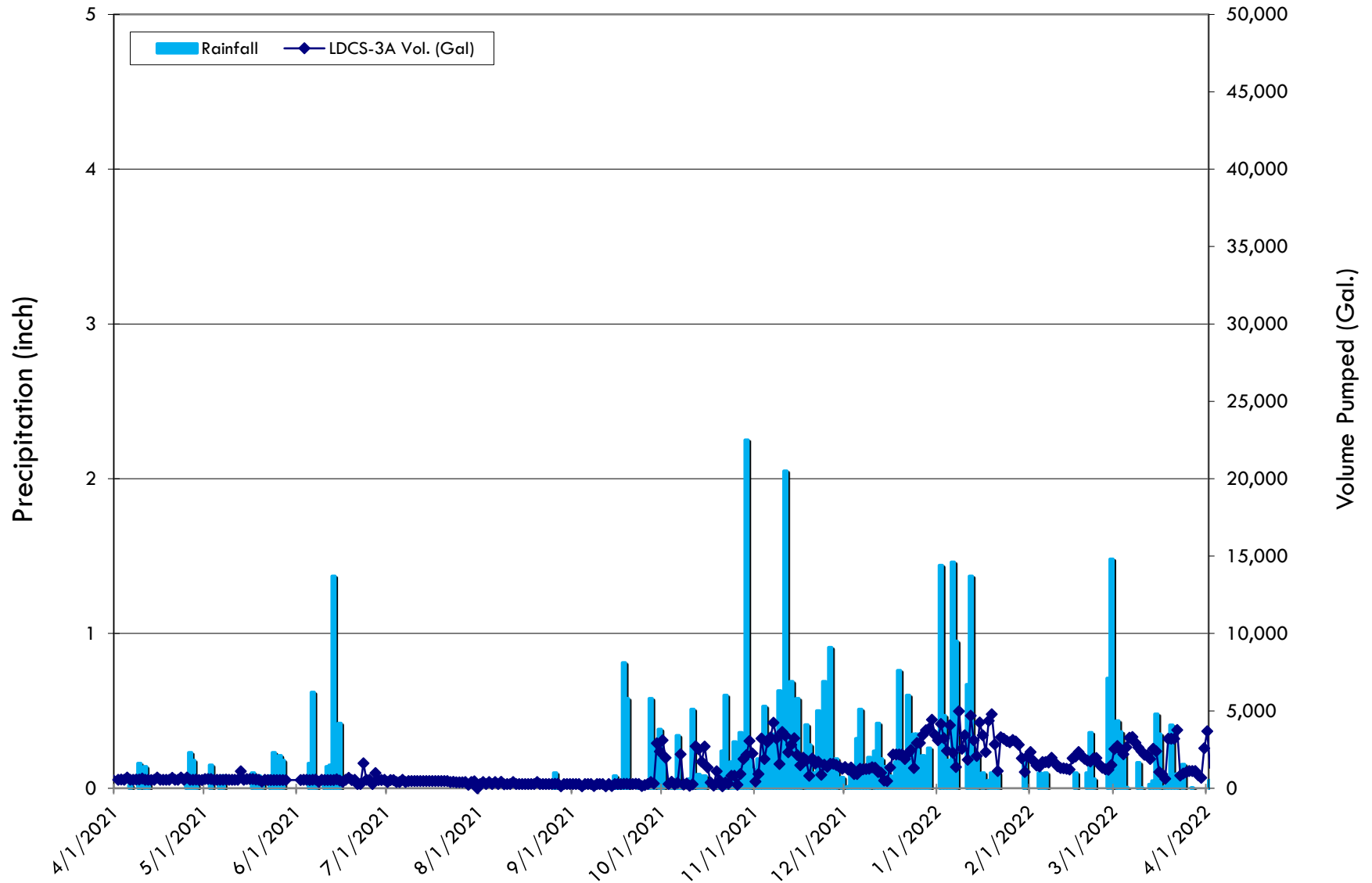
LDCS-2A (Daily Totals)
Volume Pumped vs Precipitation
First Quarter 2022
LRI Landfill, Pierce County, Washington



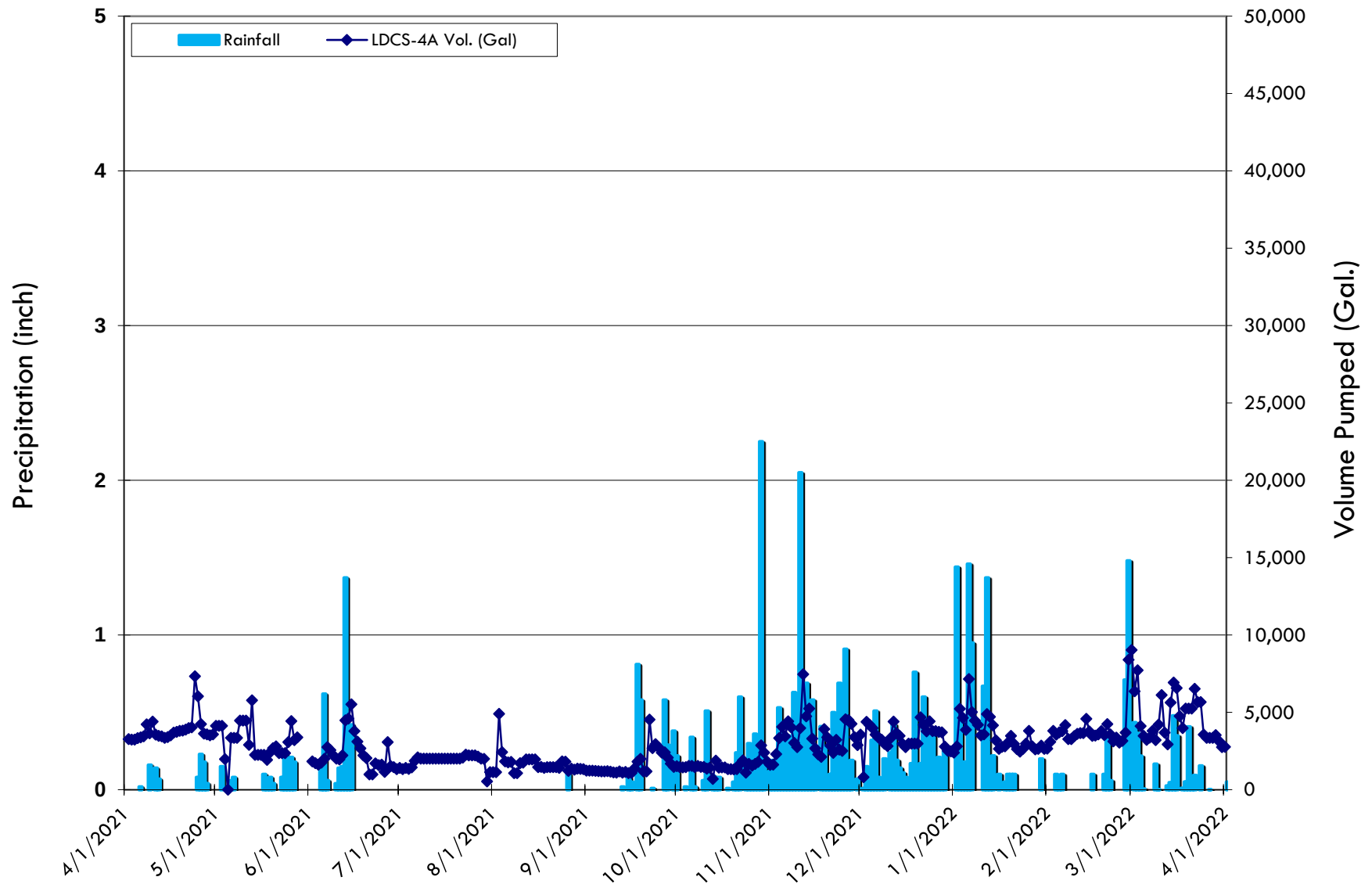
**LDCS-2B (Daily Totals)
Volume Pumped vs Precipitation
First Quarter 2022
LRI Landfill, Pierce County, Washington**



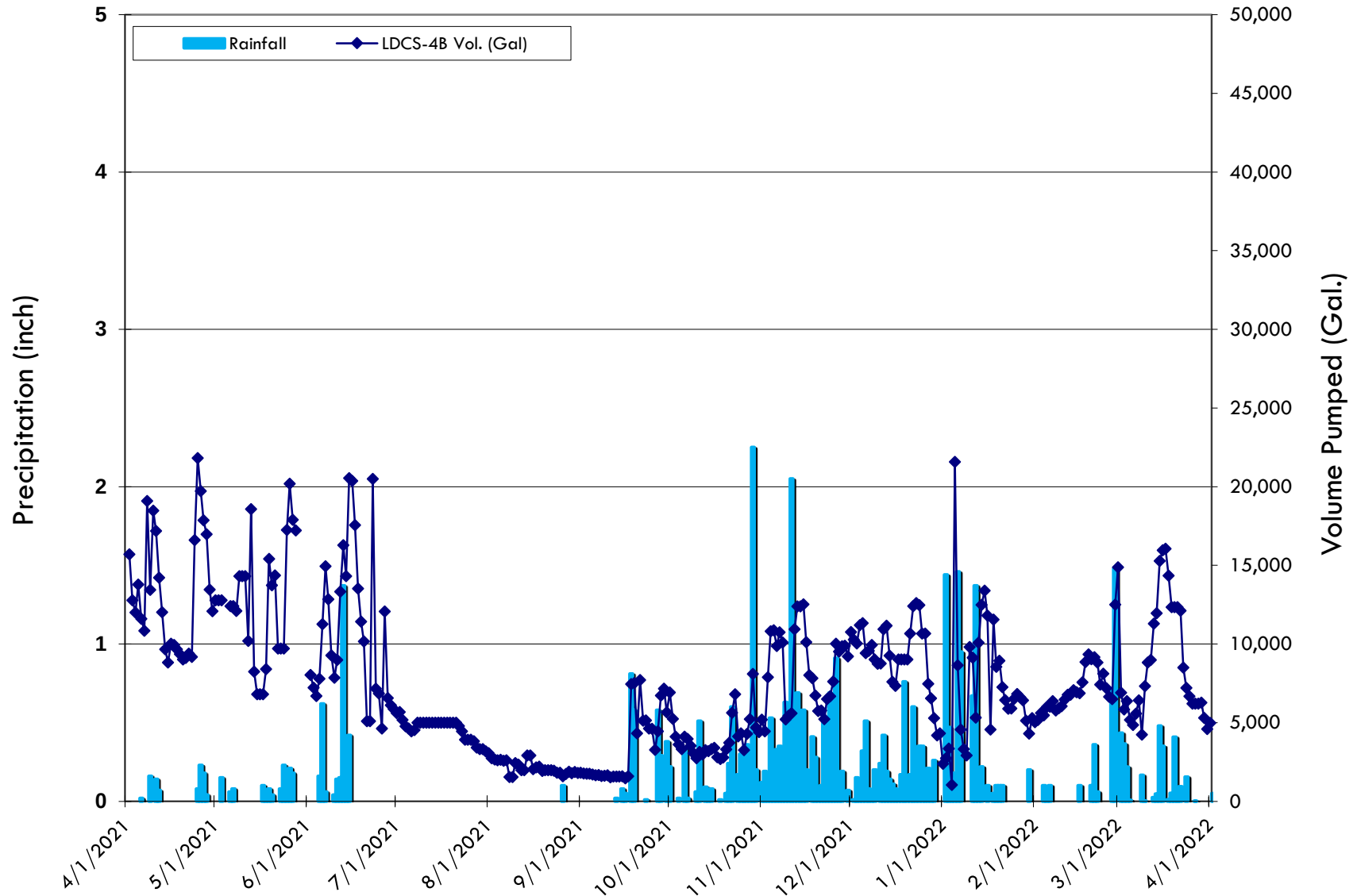
**LDCS-3A (Daily Totals)
Volume Pumped vs Precipitation
First Quarter 2022
LRI Landfill, Pierce County, Washington**



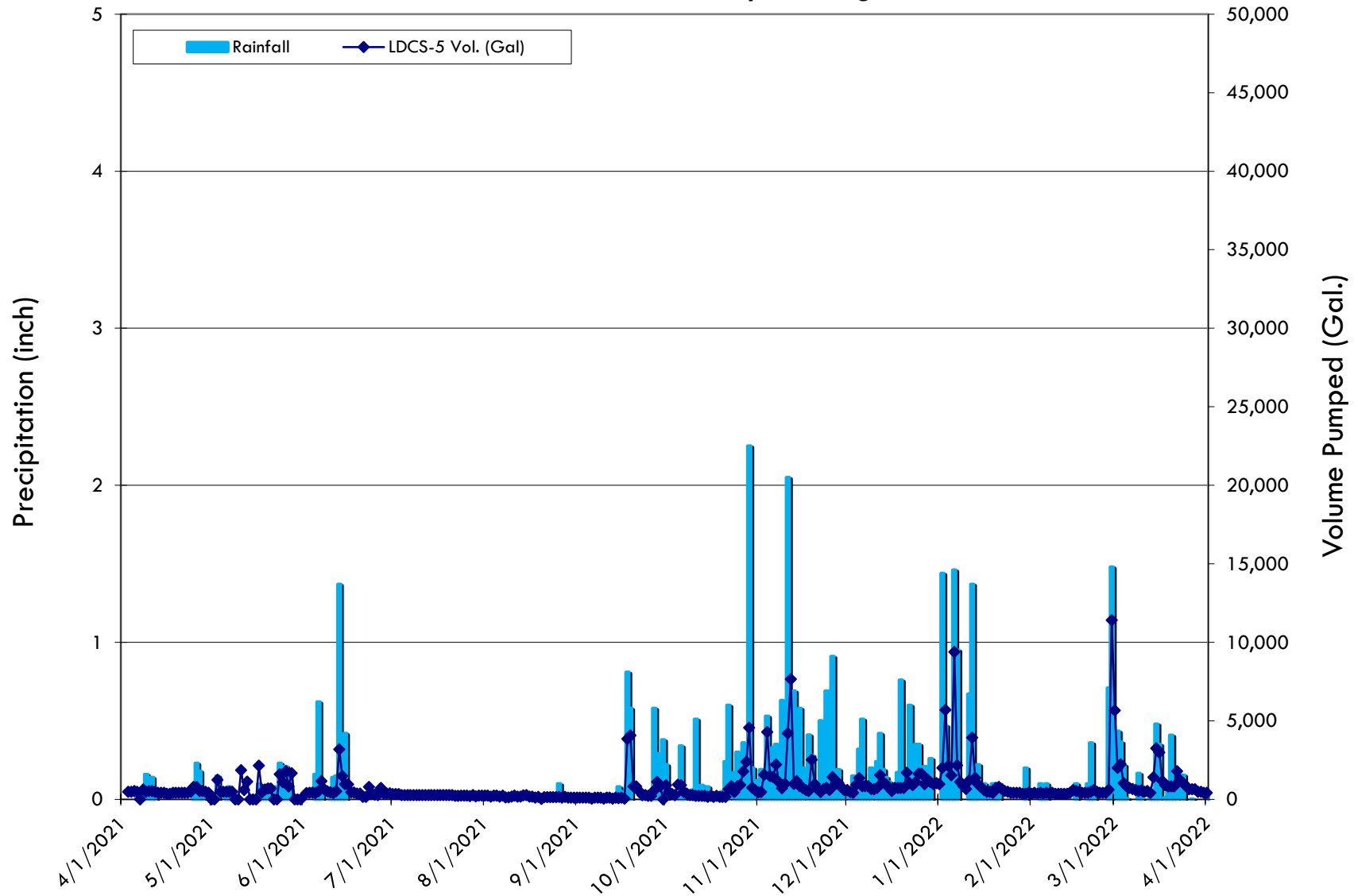
LDCS-4A (Daily Totals)
Volume Pumped vs Precipitation
First Quarter 2022
LRI Landfill, Pierce County, Washington



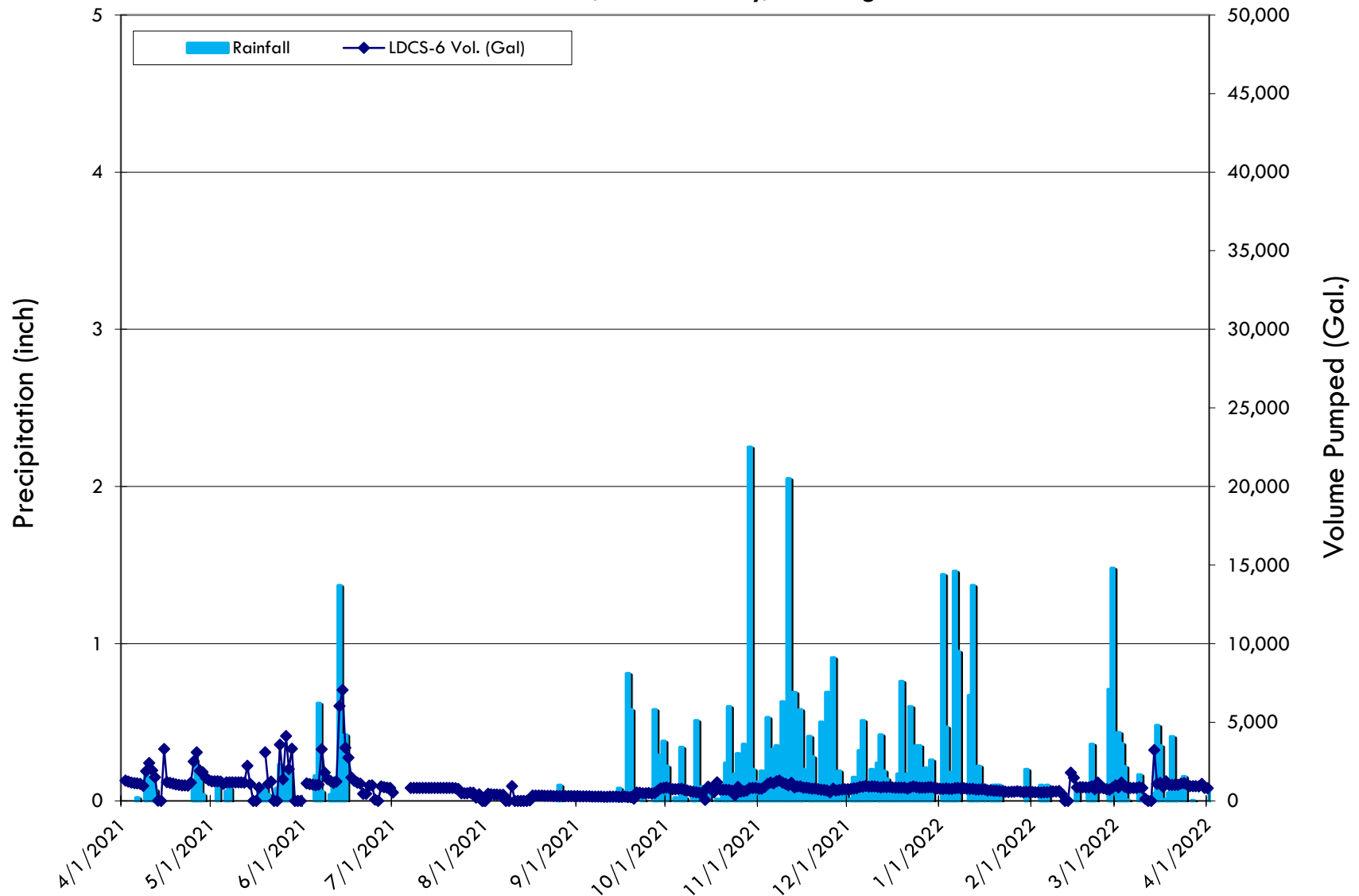
LDCS-4B (Daily Totals)
Volume Pumped vs Precipitation
First Quarter 2022
LRI Landfill, Pierce County, Washington



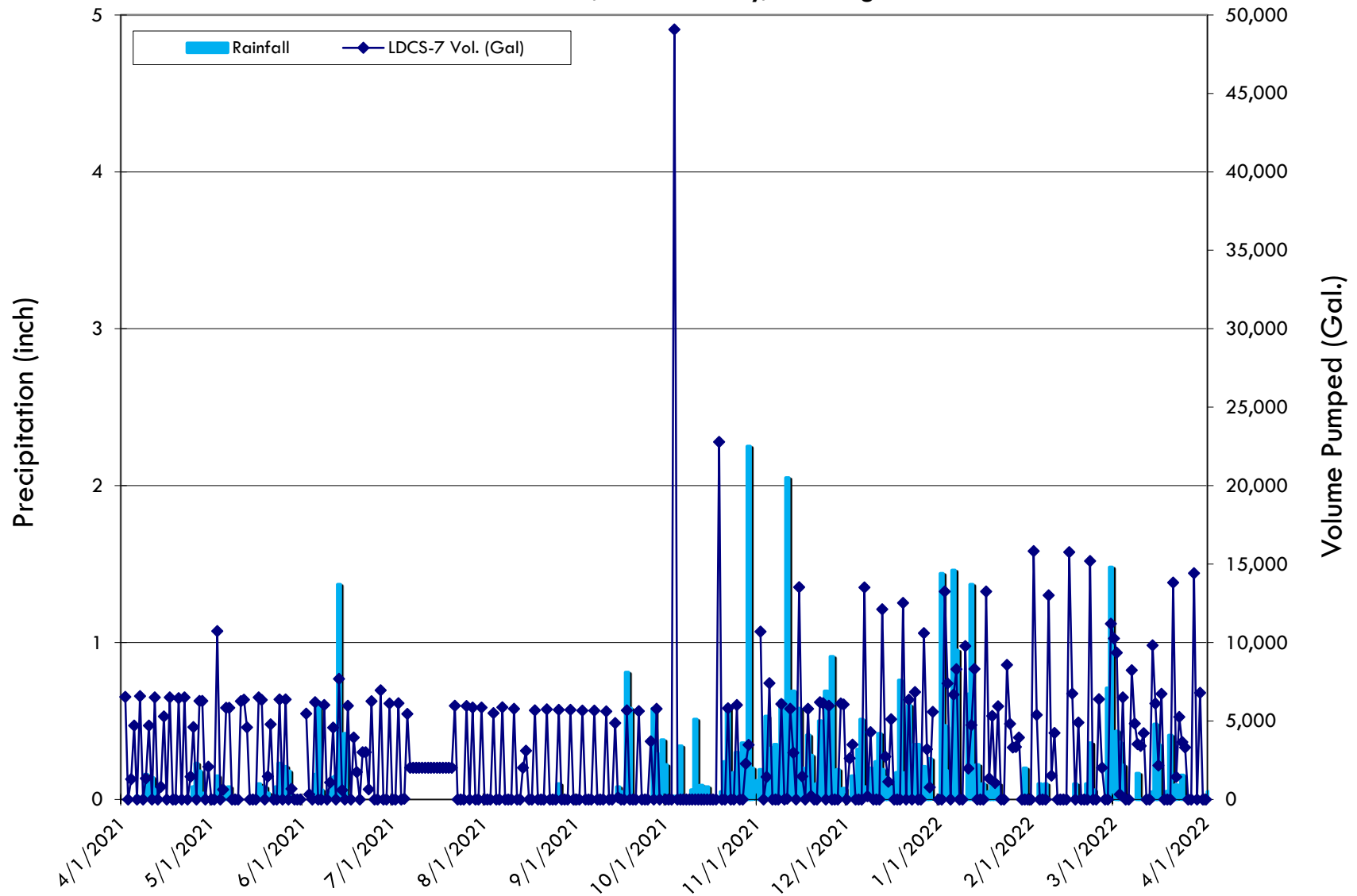
LDCS-5 (Daily Totals)
Volume Pumped vs Precipitation
First Quarter 2022
LRI Landfill, Pierce County, Washington



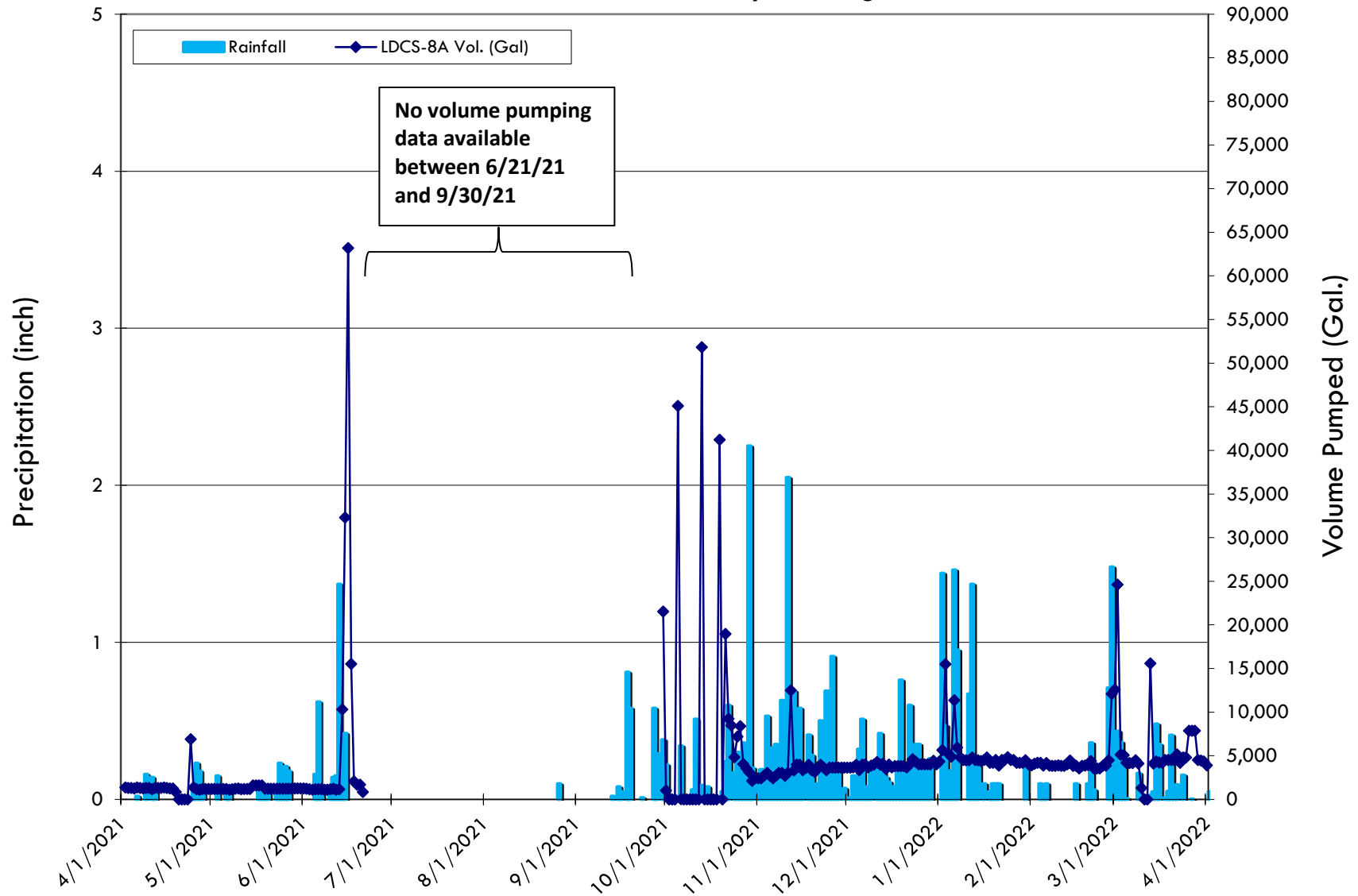
LDCS-6 (Daily Totals)
Volume Pumped vs Precipitation
First Quarter 2022
LRI Landfill, Pierce County, Washington



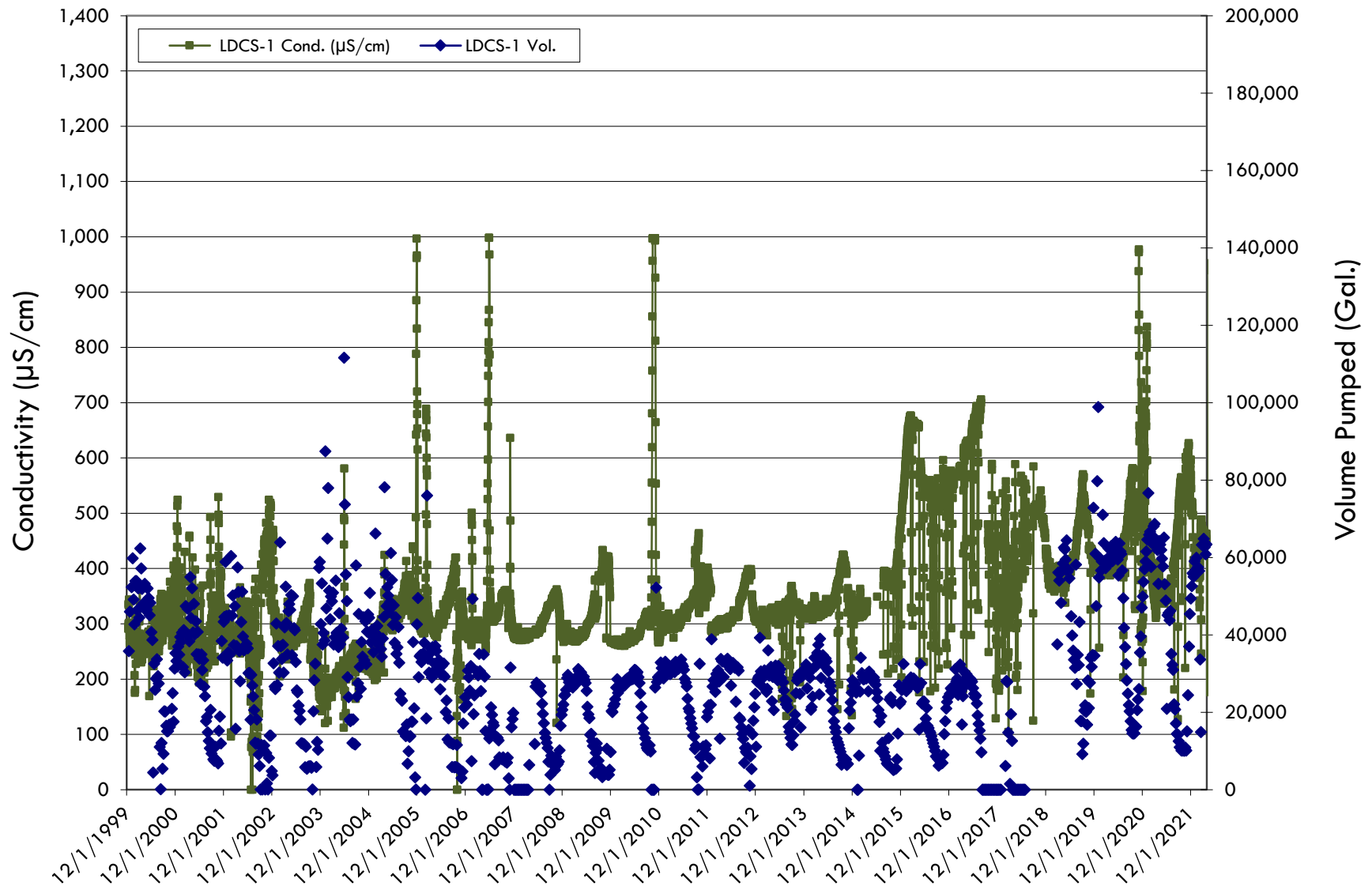
LDCS-7 (Daily Totals)
Volume Pumped vs Precipitation
First Quarter 2022
LRI Landfill, Pierce County, Washington



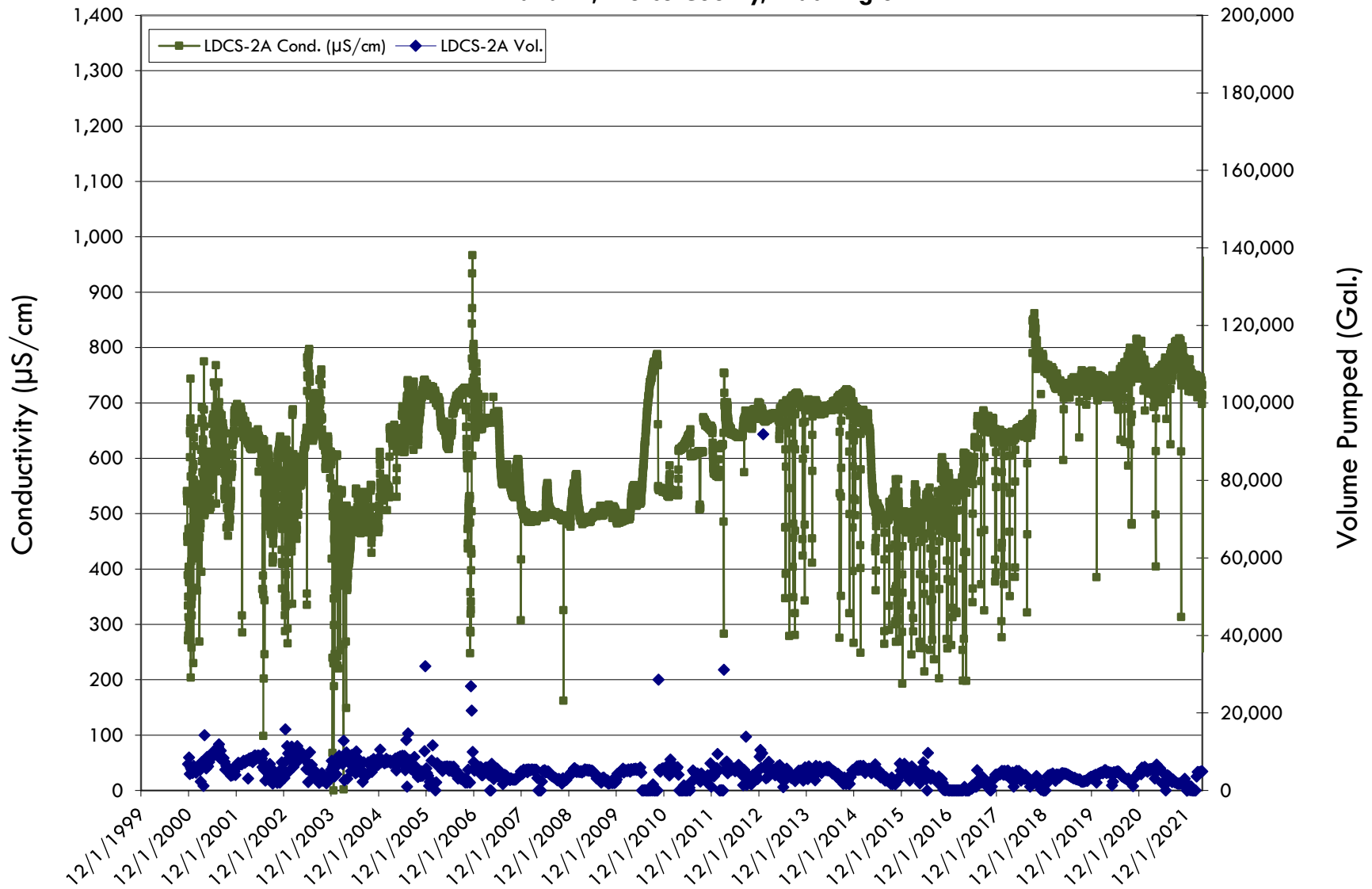
**LDCS-8A (Daily Totals)
Volume Pumped vs Precipitation
First Quarter 2022
LRI Landfill, Pierce County, Washington**



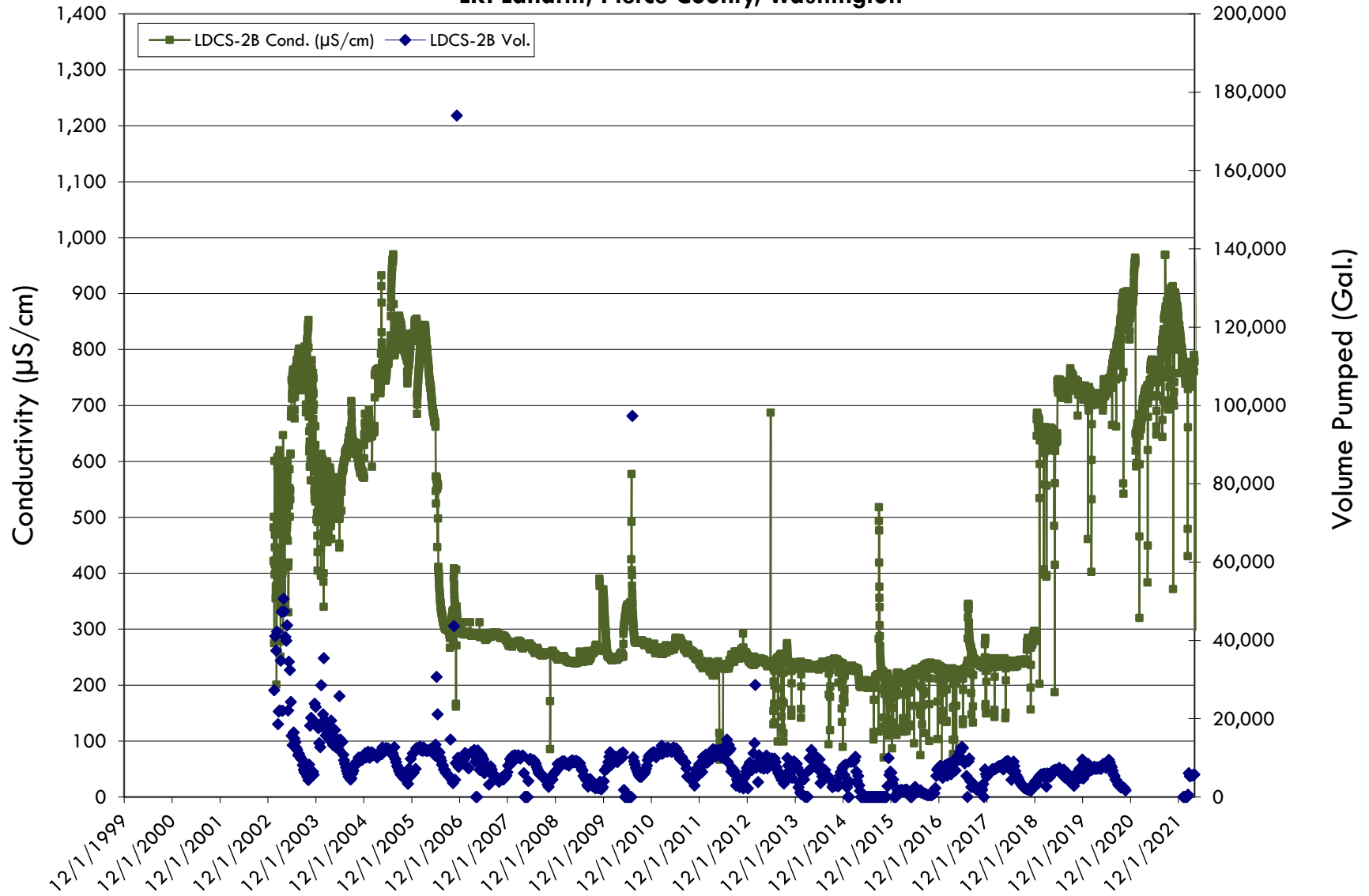
LDCS-1
Daily Conductivity vs Weekly Volume Pumped
First Quarter 2022
LRI Landfill, Pierce County, Washington



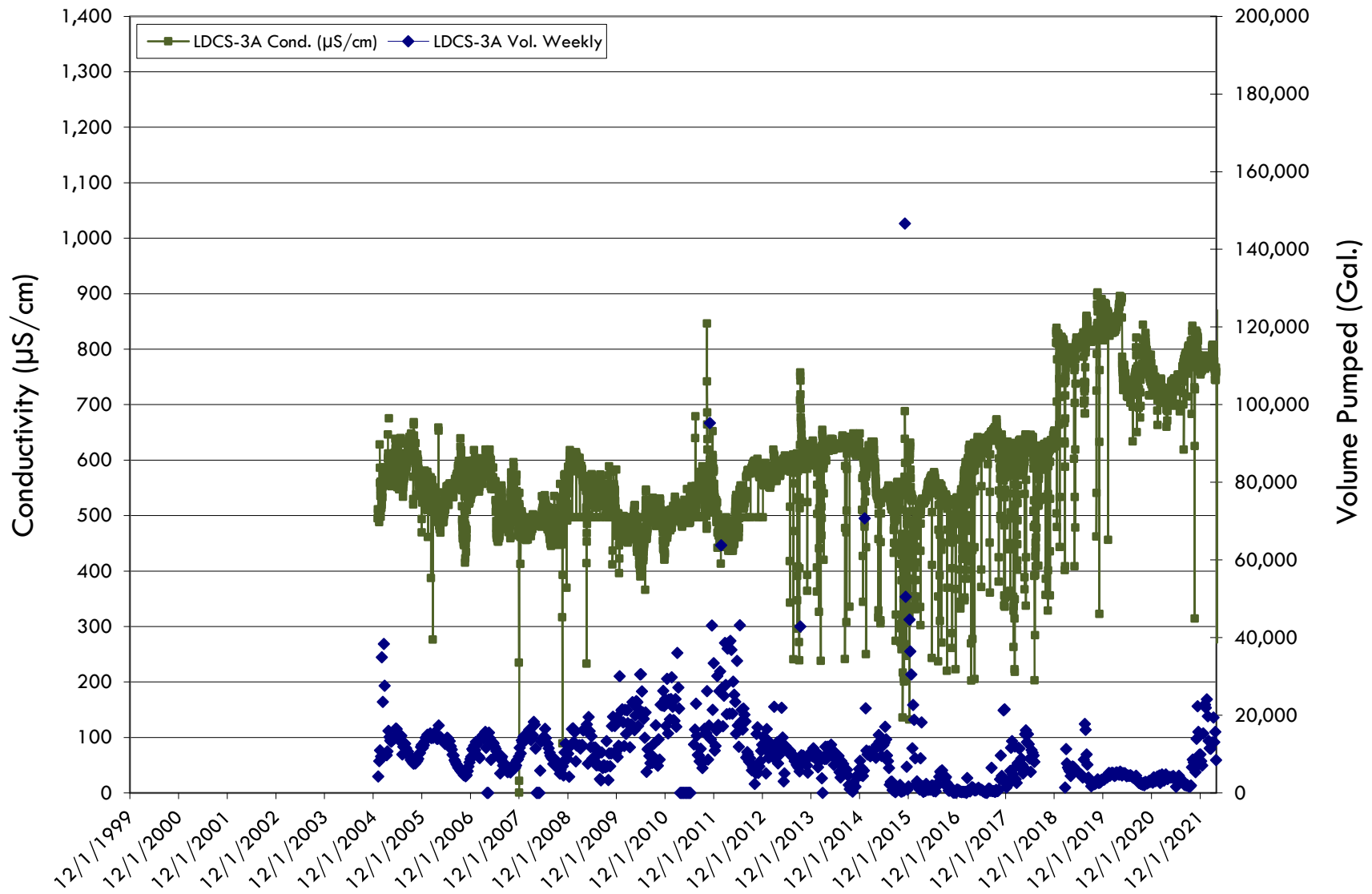
LDCS-2A
Daily Conductivity vs Weekly Volume Pumped
First Quarter 2022
LRI Landfill, Pierce County, Washington



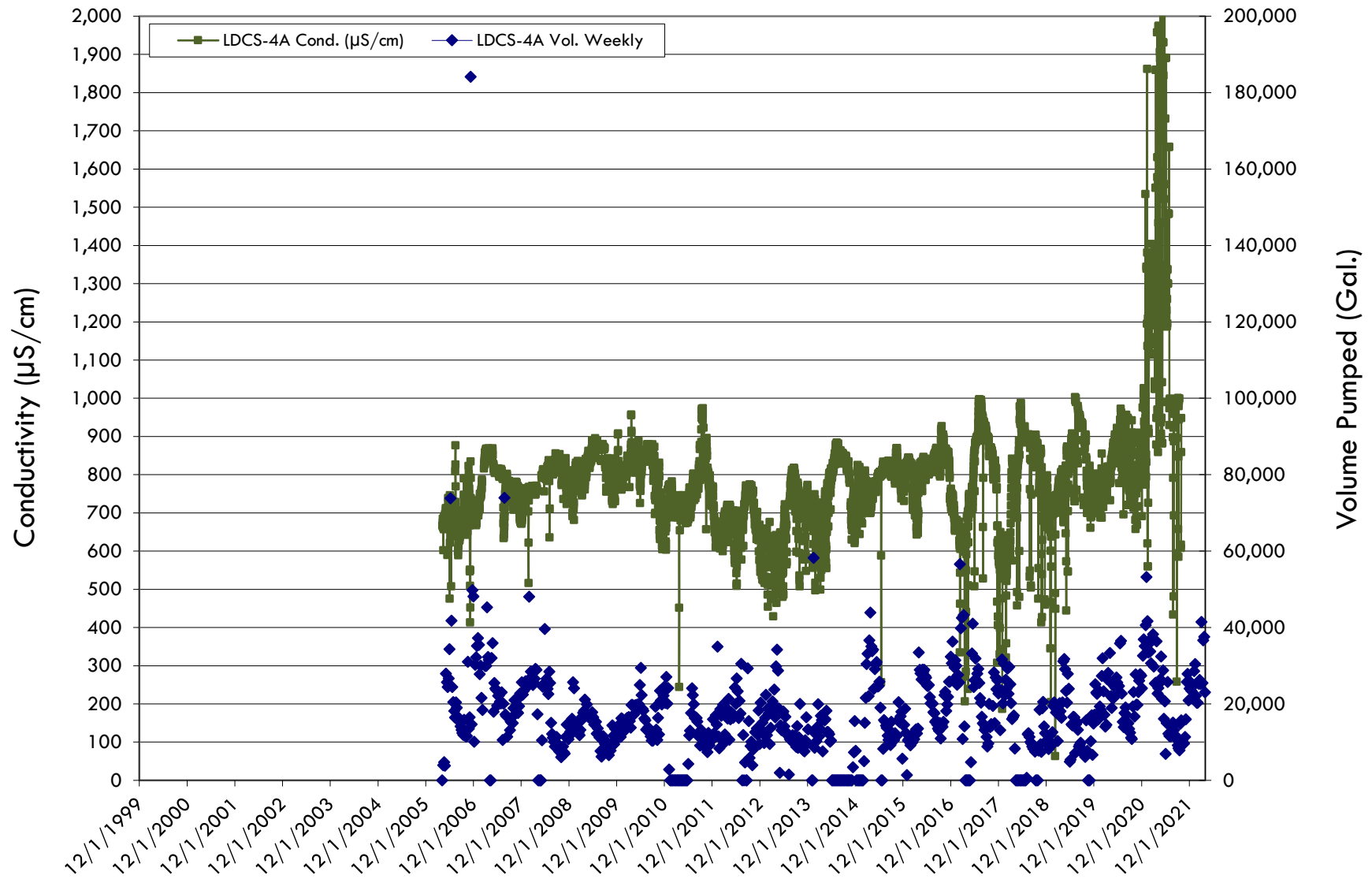
LDCS-2B
Daily Conductivity vs Weekly Volume Pumped
First Quarter 2022
LRI Landfill, Pierce County, Washington



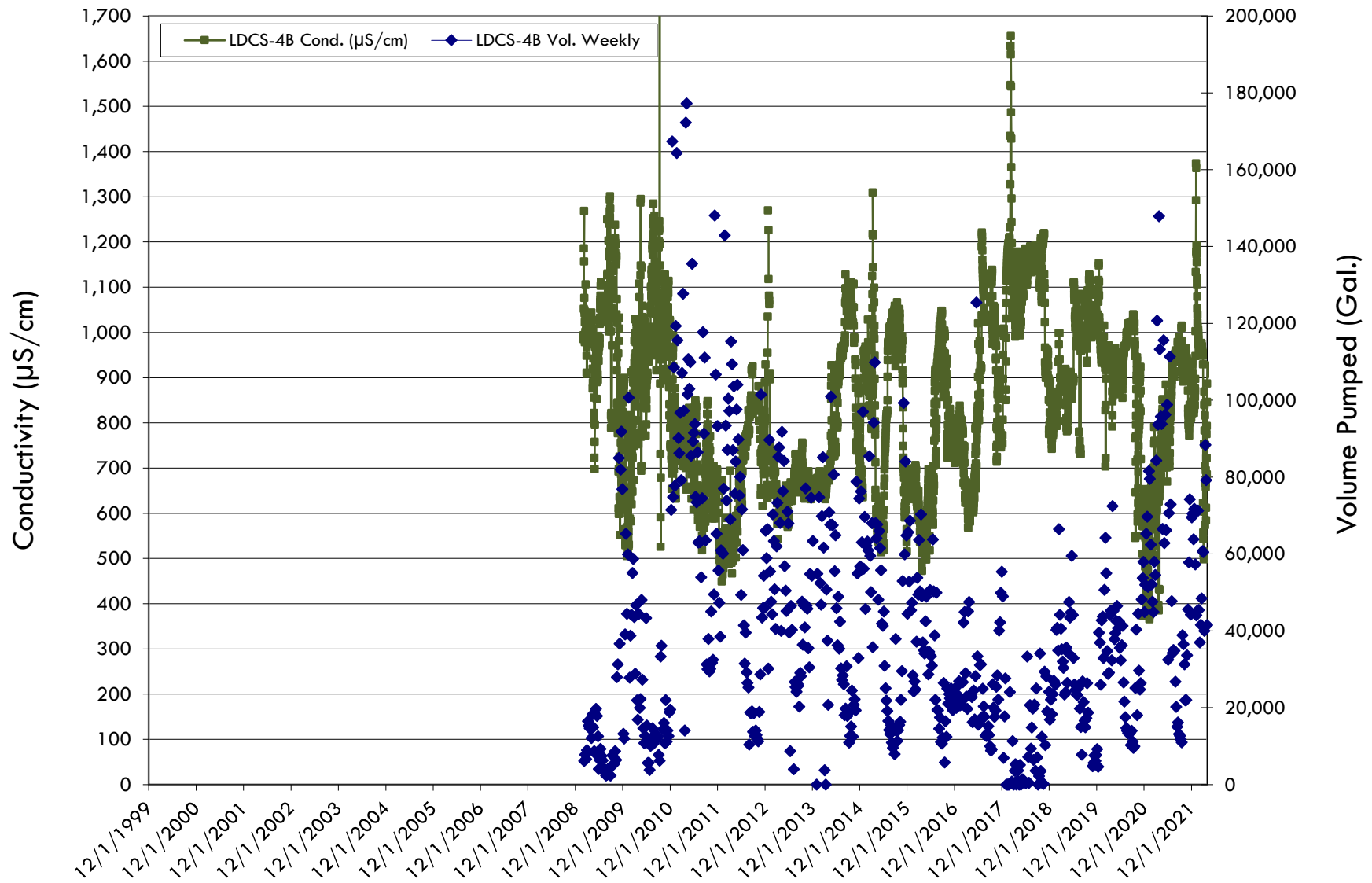
LDCS-3A
Daily Conductivity vs Weekly Volume Pumped
First Quarter 2022
LRI Landfill, Pierce County, Washington



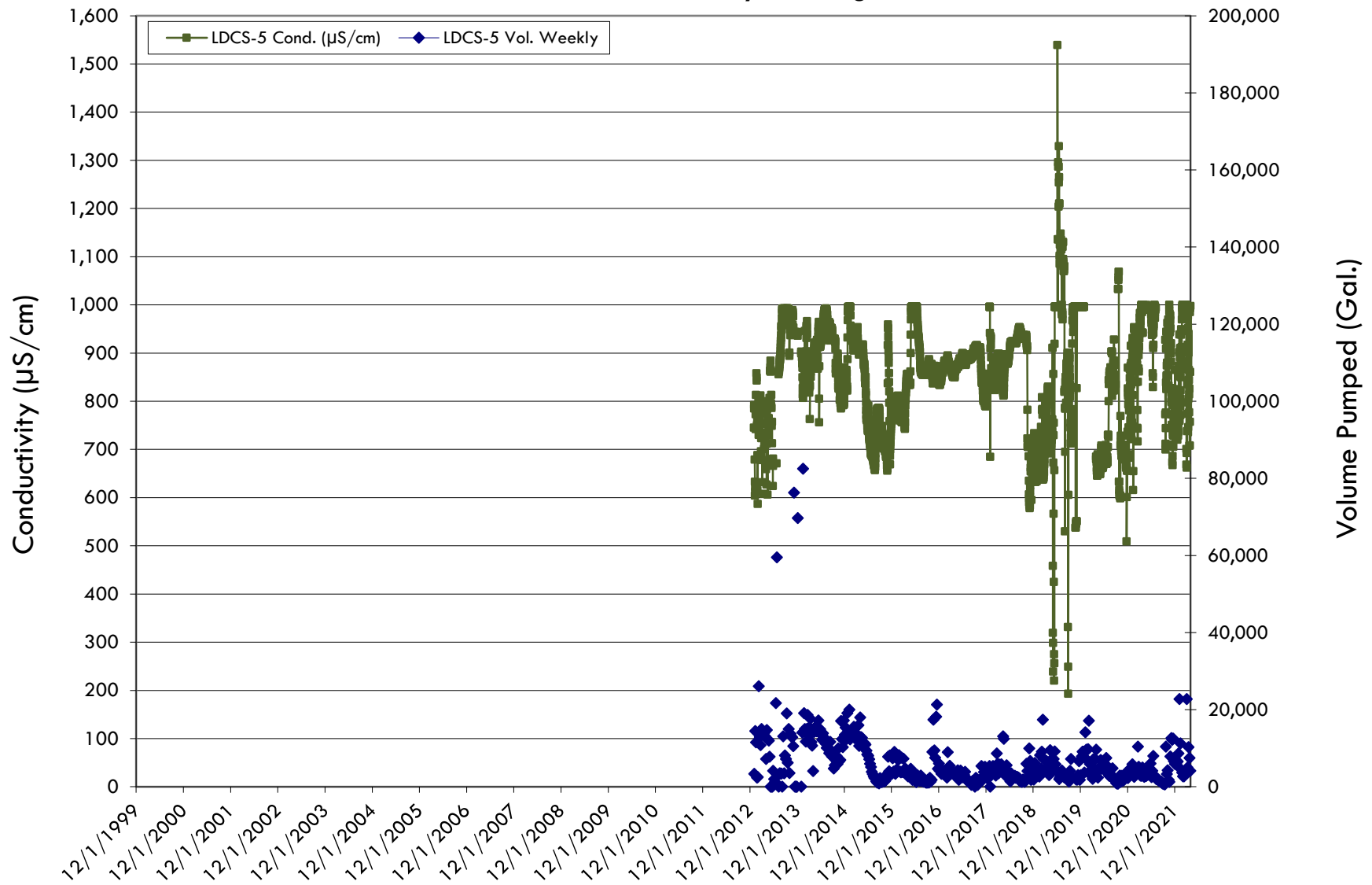
LDCS-4A
Daily Conductivity vs Weekly Volume Pumped
First Quarter 2022
LRI Landfill, Pierce County, Washington



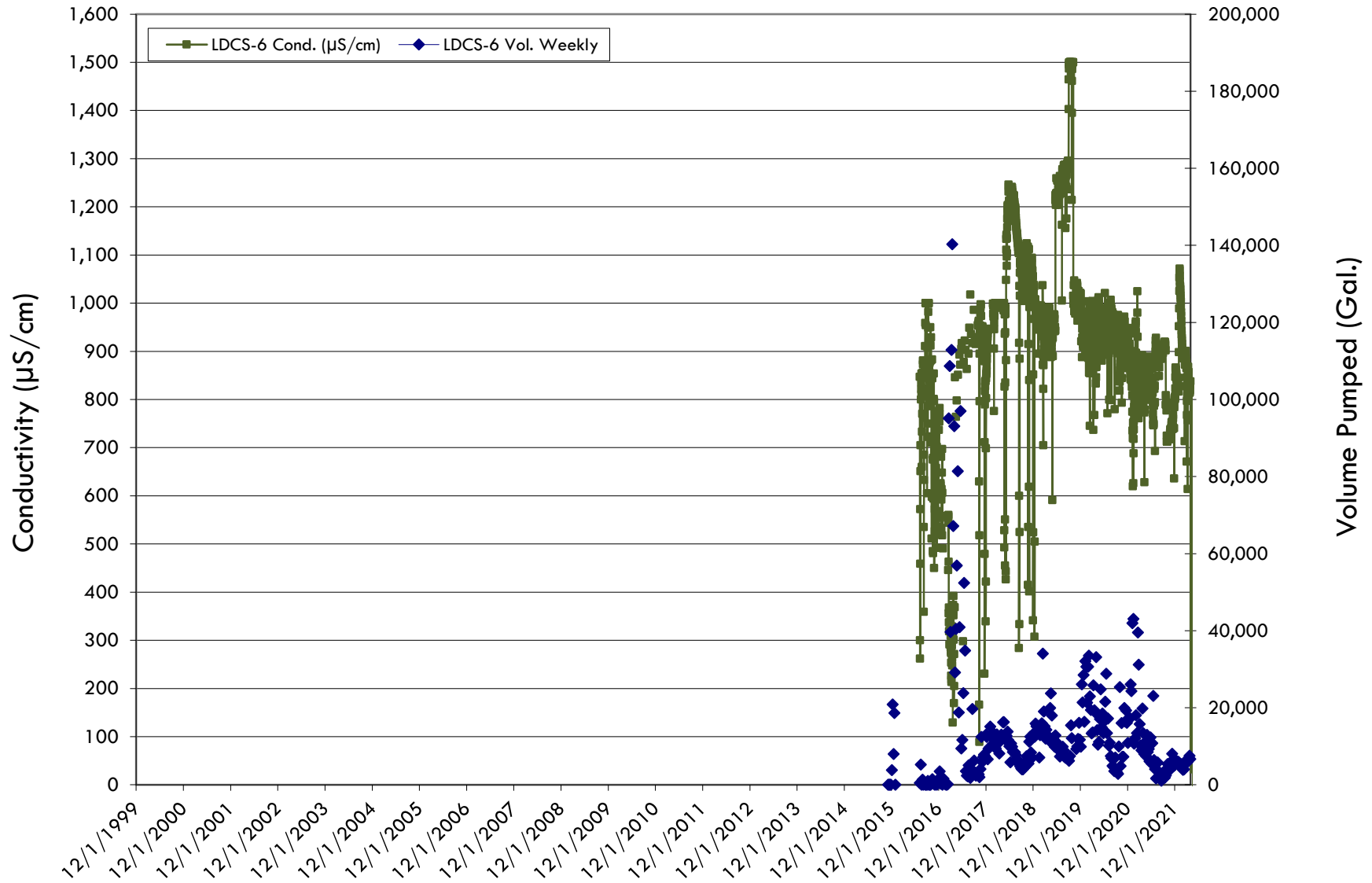
LDCS-4B
Daily Conductivity vs Weekly Volume Pumped
First Quarter 2022
LRI Landfill, Pierce County, Washington



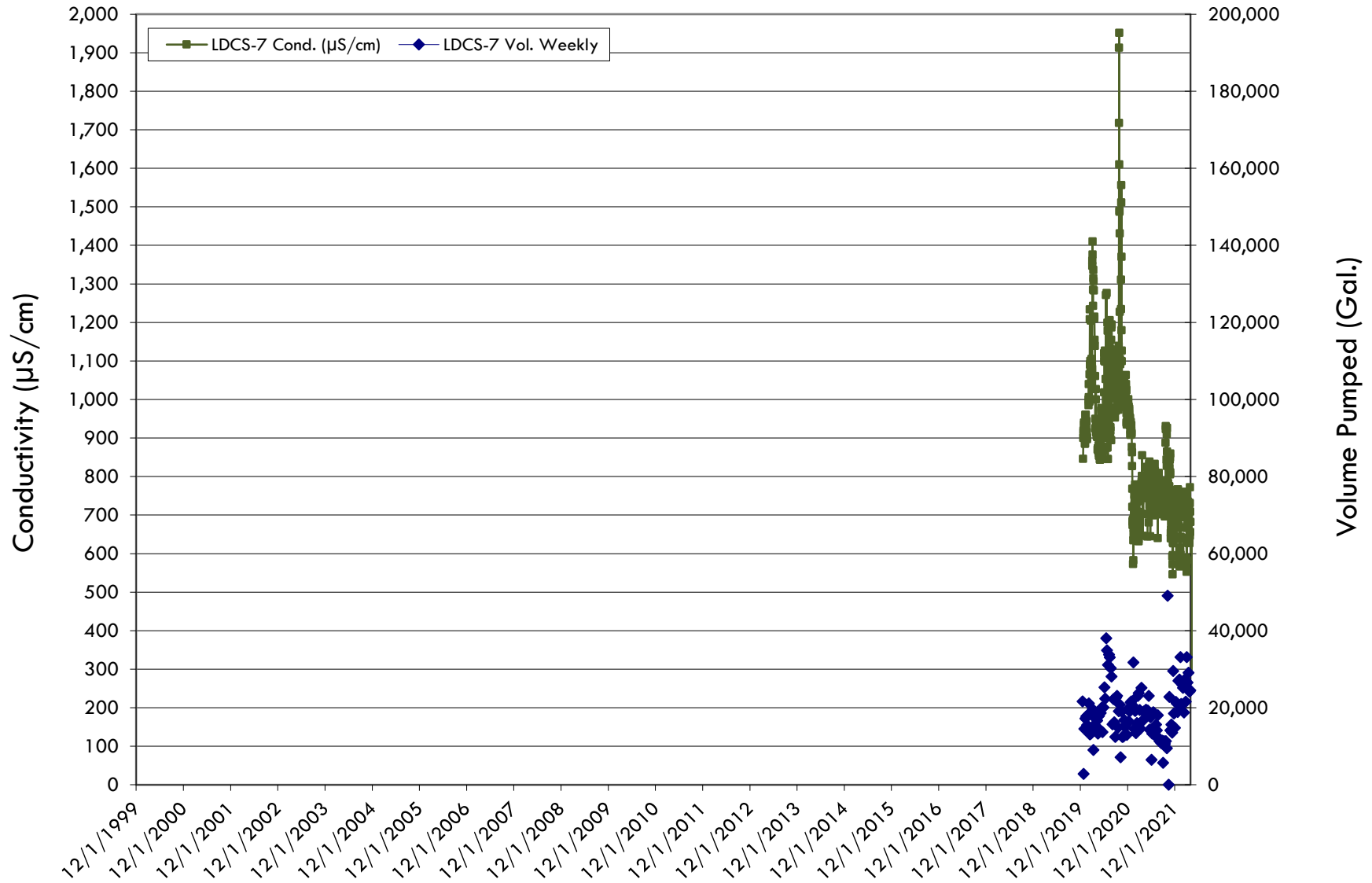
LDCS-5
Daily Conductivity vs Weekly Volume Pumped
First Quarter 2022
LRI Landfill, Pierce County, Washington



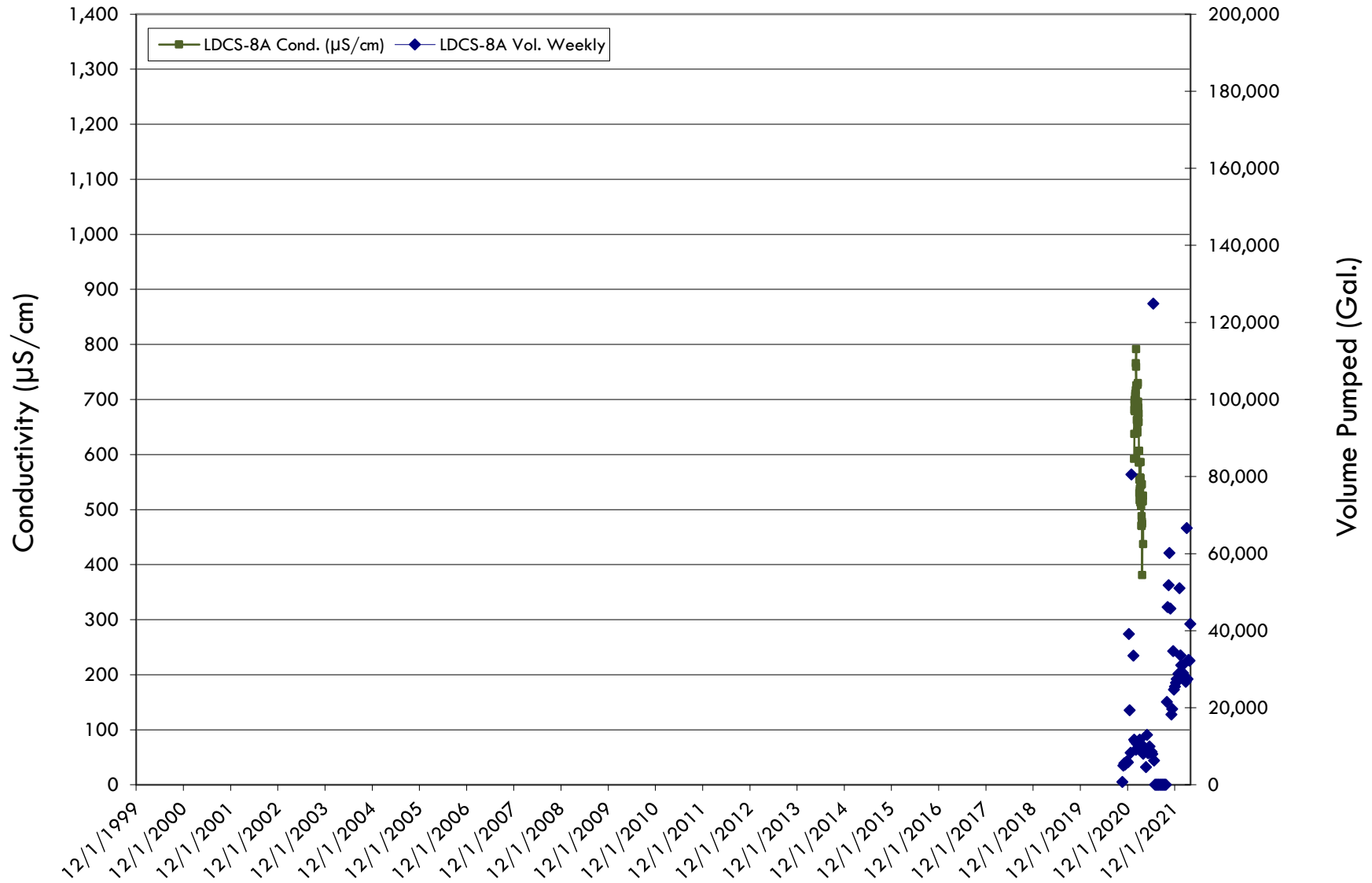
LDCS-6
Daily Conductivity vs Weekly Volume Pumped
First Quarter 2022
LRI Landfill, Pierce County, Washington



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



LDCS-8A
Daily Conductivity vs Weekly Volume Pumped
First 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: 01/01/2022 - 01/31/2022

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
		C8-1	C8-1	C8-2	C8-2
1-Sa	1/1/22	C	C		
2-Su	1/2/22	1.5	M		
2-M	1/3/22	1.3	M		
2-T	1/4/22	3.3	M		
2-W	1/5/22	2.1	M	14	M
2-Th	1/6/22	0.7	M		
2-F	1/7/22	1.5	M		
2-Sa	1/8/22	0.5	M		
3-Su	1/9/22	3.5	M		
3-M	1/10/22	7.0	M		
3-T	1/11/22	3.2	M	12	M
3-W	1/12/22	8.0	M		
4-Su	1/16/22	C	C		
4-W	1/19/22			8	M
5-Su	1/23/22	C	C	C	C
6-Su	1/30/22	C	C	C	C
Minimum			M		M
			BM: >= 6.5 (RO)		BM: >= 6.5 (RO)
Maximum		8	M	14	M
		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.

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

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

2/15/2022 6:35:29 AM

Signature

Date



Permit Number: WAR002603

Permittee: LRI 304th Street Landfill

Facility County: Pierce

Receiving Waterbody: NEWB 2

Monitoring Period: 02/01/2022 - 02/28/2022

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
		C8-1	C8-1	C8-2	C8-2
1-W	2/2/22	C	C	C	C
2-T	2/8/22	C	C	C	C
3-M	2/14/22	0.80	M	C	C
4-M	2/21/22	4.5	M		
4-W	2/23/22			16	M
5-M	2/28/22	3.9	M	146	M
Minimum			M		M
			BM: >= 6.5 (RO)		BM: >= 6.5 (RO)
Maximum		4.5	M	146	M
		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.

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

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

3/14/2022 5:02:04 PM

Signature

Date



Permit Number: WAR002603

Permittee: LRI 304th Street Landfill

Facility County: Pierce

Receiving Waterbody: NEWB 2

Monitoring Period: 03/01/2022 - 03/31/2022

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
		C8-1	C8-1	C8-2	C8-2
1-T	3/1/22	1.3	M		
1-W	3/2/22	1.9	M	C	C
1-Th	3/3/22	1.0	M		
2-M	3/7/22	0.6	M		
2-T	3/8/22	1.0	M	C	C
2-Th	3/10/22	2.2	M		
2-F	3/11/22	1.3	M		
3-M	3/14/22	0.7	M	12	M
3-T	3/15/22	0.7	M		
3-W	3/16/22	1.5	M		
3-F	3/18/22	1.1	M		
4-Su	3/20/22			C	C
4-M	3/21/22	0.7	M		
4-T	3/22/22	0.6	M		
5-M	3/28/22	0.8	M	C	C
Minimum			M		M
			BM: >= 6.5 (RO)		BM: >= 6.5 (RO)
Maximum		2.2	M	12	M
		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.

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

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

4/13/2022 7:11:13 PM

Signature

Date



Permit Number: WAR002557

Permittee: Pierce County Recycling - 304th Street L

Facility County: Pierce

Receiving Waterbody:

Monitoring Period: 01/01/2022 - 03/31/2022

Outfall: SWPO - Discharge from SW pond

Version: 1

	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
Week	Point	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
3-T	1/11/22	3.0	6.98	No	2.1	J 5.3	2.6	B 2.0	B 0.50	B 9.7	B 24	B 9.7
Minimum			6.98									
			BM: >= 5.0 (RO)									
Average		3			2.1	J 5.3						
		BM: <= 25			BM: <= 14	BM: <= 117						
Maximum			6.98									
			BM: <= 9.0 (RO)									
Month 1 Average							2.6	B 2.0	B 0.50	B 9.7	B 24	B 9.7
							<= 37	<= 27	<= 4.9	<= 16	<= 71	<= 14
Month 2 Average							2.6	B 2.0	B 0.50	B 9.7	B 24	B 9.7
							<= 37	<= 27	<= 4.9	<= 16	<= 71	<= 14
Month 3 Average							2.6	B 2.0	B 0.50	B 9.7	B 24	B 9.7
							<= 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

Signature

4/13/2022 7:10:02 PM

Date



		Phenol Micrograms/L (ug/L) Quarterly Grab	Zinc Total Micrograms/L (ug/L) Quarterly Grab	pH Standard Units Quarterly Grab
Week	Monitoring Point	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
3-T	1/11/22	J 2.0	J 5.3	6.98
Minimum				6.98
				>= 6.0 (RO)
Average				
Maximum				6.98
				<= 9.0 (RO)
Month 1 Average	J 2.0	J 5.3		
	<= 15	<= 110		
Month 2 Average	J 2.0	J 5.3		
	<= 15	<= 110		
Month 3 Average	J 2.0	J 5.3		
	<= 15	<= 110		

Attachment J
Landfill Gas Monitoring Data

Landfill Gas Control System

SCS Engineers

04221001.04

January-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 (% by vol.)	CH ₄ (% by vol.)	CO ₂ (% by vol.)	O ₂ (% by vol.)	Balance (N ₂ & H ₂ O) (% by vol.)		(ft)	(%)	

Normal Operating Range:

(min)		-	0.3	0.3	-			20.0
(max)		0.32	5.0	5.0	20.3			90.0

Perimeter Gas Probes

GP-1	1/13/2022	9:23	0.1	--	0.0	0.4	21.1	78.5	16.0	0.0	0.0	
GP-2	1/13/2022	9:42	-0.2	--	5.9	14.2	1.3	78.6	15.0	0.0	0.0	
GP-3	1/13/2022	9:51	0.3	--	0.0	0.8	20.9	78.3	13.5	8.6	100.0	
GP-4	1/13/2022	9:59	0.1	--	0.0	2.0	16.4	81.6	9.3	0.0	0.0	
GP-9	1/13/2022	10:08	0.0	--	0.0	0.3	21.2	78.5	10.1	0.0	0.0	
GP-10	1/13/2022	9:11	-0.3	--	2.7	18.1	9.9	69.3				
GP-10P	1/13/2022	9:08	0.3	13.1	7.2	26.2	2.6	64.0				Note 5
GP-11	1/13/2022	8:09	0.1	--	0.0	2.1	19.9	78.0				
GP-12	1/13/2022	8:02	-9.0	--	0.0	0.2	21.3	78.5				
GP-13	1/13/2022	7:16	-0.5	--	0.0	2.4	17.7	79.9				
GP-14	1/13/2022	10:42	0.1	--	0.0	0.2	21.1	78.7	15.2	0.0	0.0	
GP-15	1/13/2022	10:27	0.1	--	0.0	0.3	21.2	78.5	15.2	0.0	0.0	
GP-16	1/13/2022	10:16	0.1	--	0.0	0.9	20.9	78.2	18.1	10.8	71.7	

	Beginning	Ending	Average	Starting Date:	1/13/2022
Weather:	Rain	Sunny	Sunny	Starting Time:	7:16
Temperature, T (deg F):	42	43	42.5	Finishing Date:	1/13/2022
Wind Speed (mph):	8	11	9.5	Finishing Time:	10:42
Wind Direction:	202.5	202.5	202.5	Monitored by:	R. Martinez
Barometric Pressure, P (in Hg):	30.22	30.38	30.30	Instruments:	GEM 2000
24hr Baro.Trend (rising / falling / steady / unsteady)	Rising			Calibration Date:	1/13/2022

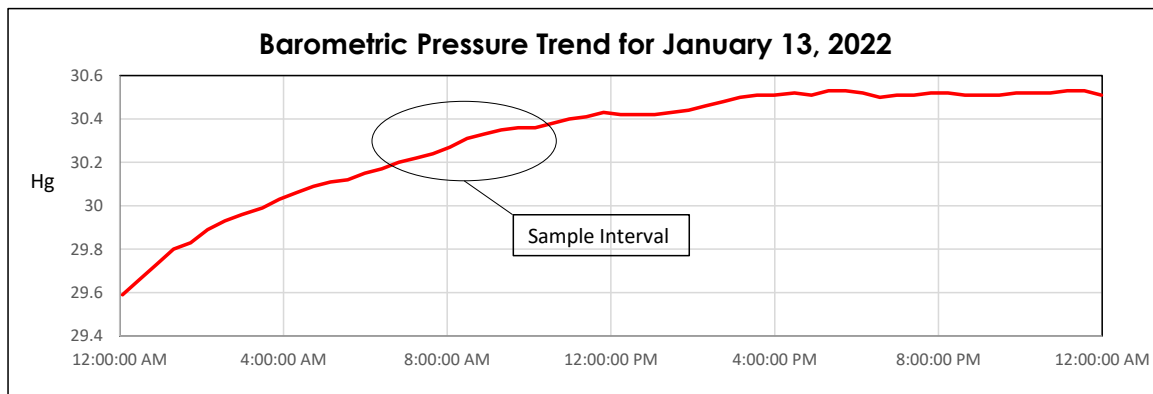
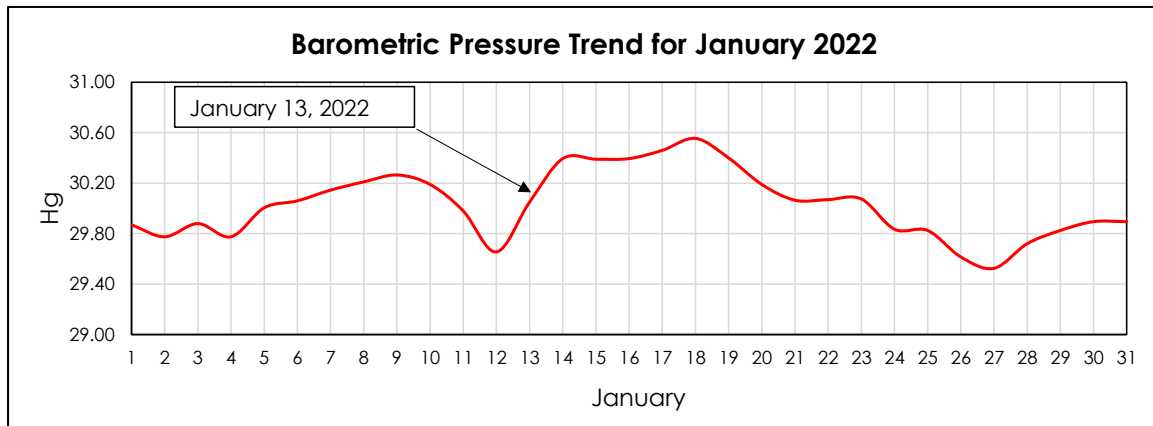
Headings:

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.

Barometric Pressure Trend - January 2022

LRI 304th Landfill, Washington



Monthly Data Source: Wunderground.com (Puyallup)

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

Data Source: <https://www.wunderground.com/dashboard/pws/KWAPUYAL102/table/2022-01-13/2022-01-13/monthly>

Daily Data Source: Wunderground.com (Puyallup)

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

Data Source: <https://www.wunderground.com/dashboard/pws/KWAPUYAL102/table/2022-01-13/2022-01-13/daily>

LRI Landfill

04222001.04

February-22

Normal Operating Range:

Perimeter Gas Probes

GP-1	2/24/2022	7:33	0.1	--	0.0	0.3	21.6	78.0	16.3	0.0	0.0	
GP-2	2/24/2022	7:42	0.1	--	0.8	2.3	18.0	78.9	15.4	0.0	0.0	
GP-3	2/24/2022	7:49	-1.3	--	0.0	0.2	21.8	77.9	7.3	2.4	48.8	
GP-4	2/24/2022	7:56	0.1	--	0.0	0.4	21.0	78.6	10.1	0.3	5.2	
GP-9	2/24/2022	8:04	0.1	--	0.0	0.3	21.4	78.2	11.3	0.0	0.0	
GP-10	2/24/2022	7:20	0.1	--	0.0	1.2	20.5	78.3				
GP-10P	2/24/2022	7:23	0.1	--	2.3	5.7	18.1	73.9				Note 5
GP-11	2/24/2022	7:12	0.1	--	0.0	0.0	21.6	78.4				
GP-12	2/24/2022	7:05	0.1	--	0.0	0.0	21.4	78.6				
GP-13	2/24/2022	6:53	0.0	--	0.0	0.1	20.7	79.2				
GP-14	2/24/2022	8:35	0.1	--	0.0	0.1	21.9	77.9	11.4	0.0	0.0	
GP-15	2/24/2022	8:26	0.1	--	0.0	0.1	21.9	77.9	13.6	0.0	0.0	
GP-16	2/24/2022	8:11	0.1	--	0.0	0.4	21.5	78.0	19.8	12.5	83.1	

		Beginning	Ending	Average	Starting Date:	2/24/2022
Weather:		Cloudy	Cloudy	Cloudy	Starting Time:	6:53
Temperature, T (deg F):		29	30	29.5	Finishing Date:	2/24/2022
Wind Speed (mph):		0	0	0	Finishing Time:	8:35
Wind Direction:		0	0	0	Monitored by:	R. Martinez
Barometric Pressure, P (in Hg):		29.85	29.90	29.88	Instruments:	GEM 2000
24hr Baro.Trend (rising / falling / steady / unsteady)		Rising			Calibration Date:	2/24/2022

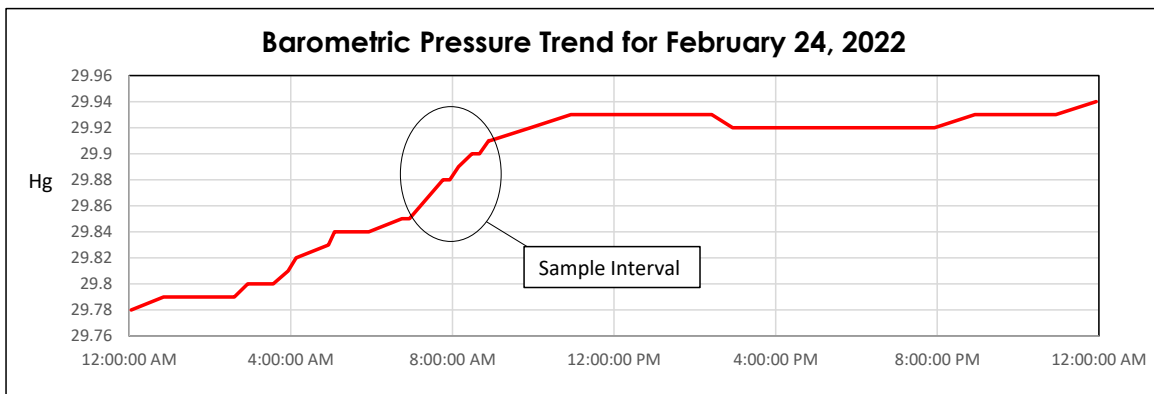
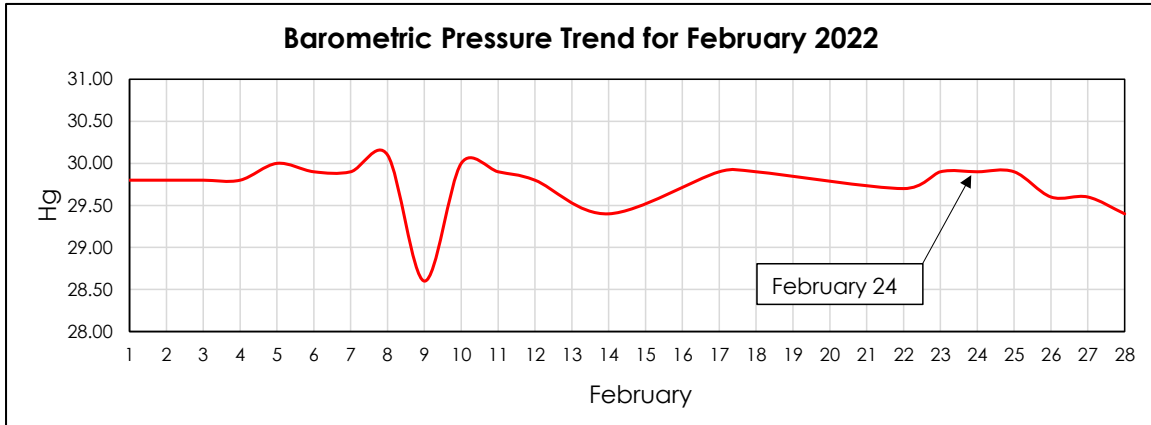
Headings:

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.

Barometric Pressure Trend - February 2022

LRI 304th Landfill, Washington



Monthly Data Source: Wunderground.com (Puyallup)

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

Data Source:

<https://www.wunderground.com/history/monthly/us/wa/bremerton/KPWT/date/2022-2>

Daily Data Source: Wunderground.com (Puyallup)

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

Data Source:

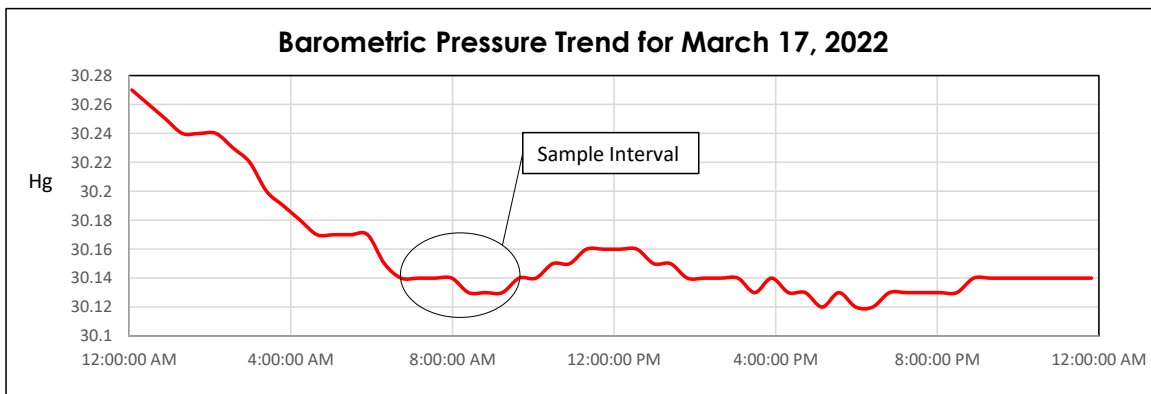
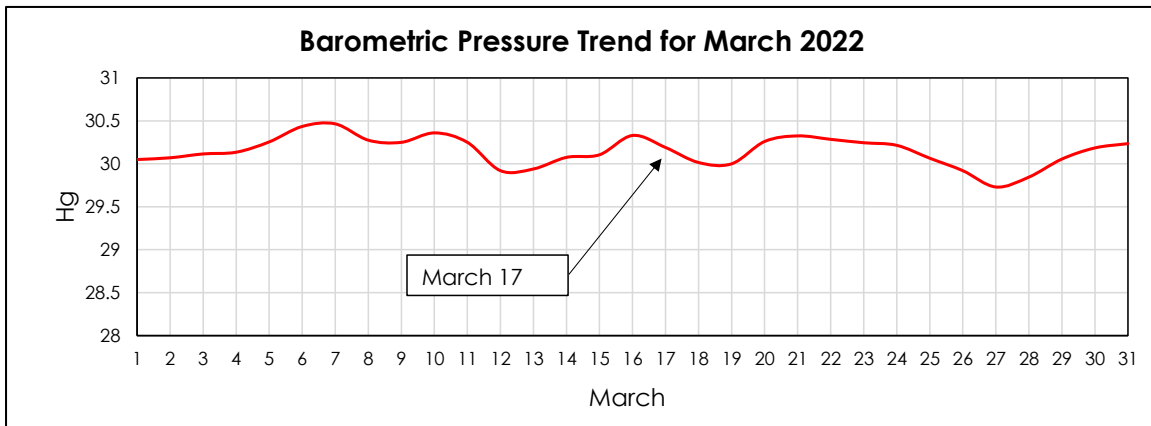
<https://www.wunderground.com/history/daily/us/wa/bremerton/KPWT/date/2022-2-24>

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 Rage:																																																																																																							
(min)			-		0.3	0.3	-				20.0																																																																																												
(max)			0.12		5.0	5.0	20.3				90.0																																																																																												
Perimeter Gas Probes																																																																																																							
GP-1	3/17/2022	7:33	0.05	--	0.0	1.1	20.0	78.0	16.3	0.0	0.0																																																																																												
GP-2	3/17/2022	7:42	0.07	--	0.0	0.4	21.1	78.9	15.4	0.0	0.0																																																																																												
GP-3	3/17/2022	7:49	0.09	--	0.0	0.1	21.2	77.9	7.6	2.7	53.6																																																																																												
GP-4	3/17/2022	7:56	0.09	--	0.0	0.1	21.3	78.6	9.5	0.0	0.0																																																																																												
GP-9	3/17/2022	8:04	0.09	--	0.0	0.1	21.3	78.2	10.2	0.0	0.0																																																																																												
GP-10	3/17/2022	7:20	0.10	--	0.0	2.3	17.1	78.3																																																																																															
GP-10P	3/17/2022	7:23	0.06	--	0.5	0.1	21.3	73.9				<i>Note 5</i>																																																																																											
GP-11	3/17/2022	7:12	0.02	--	0.0	0.4	21.2	78.4																																																																																															
GP-12	3/17/2022	7:05	0.10	--	0.0	0.3	20.8	78.6																																																																																															
GP-13	3/17/2022	6:53	0.08	--	0.0	0.5	20.3	79.2																																																																																															
GP-14	3/17/2022	8:35	0.12	--	0.0	0.5	21.0	77.9	10.4	0.0	0.0																																																																																												
GP-15	3/17/2022	8:26	0.11	--	0.0	0.4	21.1	77.9	12.4	0.0	0.0																																																																																												
GP-16	3/17/2022	8:11	0.11	--	0.0	0.2	21.0	78.0	18.7	11.4	75.9																																																																																												
<table><tr><td colspan="4"></td><td>Beginning</td><td>Ending</td><td>Average</td><td colspan="2">Starting Date:</td><td>3/17/2022</td><td colspan="3"></td></tr><tr><td colspan="4">Weather:</td><td>Cloudy</td><td>Cloudy</td><td>Cloudy</td><td colspan="2">Starting Time:</td><td>6:53</td><td colspan="3"></td></tr><tr><td colspan="4">Temperature, T (deg F):</td><td>38</td><td>43</td><td>40.5</td><td colspan="2">Finishing Date:</td><td>3/17/2022</td><td colspan="3"></td></tr><tr><td colspan="4">Wind Speed (mph):</td><td>0</td><td>0</td><td>0</td><td colspan="2">Finishing Time:</td><td>8:35</td><td colspan="3"></td></tr><tr><td colspan="4">Wind Direction:</td><td>0</td><td>0</td><td>0</td><td colspan="2">Monitored by:</td><td>R. Martinez</td><td colspan="3"></td></tr><tr><td colspan="4">Barometric Pressure, P (in Hg):</td><td>30.14</td><td>30.13</td><td>30.14</td><td colspan="2">Instruments:</td><td>GEM 2000</td><td colspan="3"></td></tr><tr><td colspan="4">24hr Baro.Trend (rising / falling / steady / unsteady)</td><td colspan="3">Falling</td><td colspan="2">Calibration Date:</td><td>3/17/2022</td><td colspan="3"></td></tr></table>																	Beginning	Ending	Average	Starting Date:		3/17/2022				Weather:				Cloudy	Cloudy	Cloudy	Starting Time:		6:53				Temperature, T (deg F):				38	43	40.5	Finishing Date:		3/17/2022				Wind Speed (mph):				0	0	0	Finishing Time:		8:35				Wind Direction:				0	0	0	Monitored by:		R. Martinez				Barometric Pressure, P (in Hg):				30.14	30.13	30.14	Instruments:		GEM 2000				24hr Baro.Trend (rising / falling / steady / unsteady)				Falling			Calibration Date:		3/17/2022			
				Beginning	Ending	Average	Starting Date:		3/17/2022																																																																																														
Weather:				Cloudy	Cloudy	Cloudy	Starting Time:		6:53																																																																																														
Temperature, T (deg F):				38	43	40.5	Finishing Date:		3/17/2022																																																																																														
Wind Speed (mph):				0	0	0	Finishing Time:		8:35																																																																																														
Wind Direction:				0	0	0	Monitored by:		R. Martinez																																																																																														
Barometric Pressure, P (in Hg):				30.14	30.13	30.14	Instruments:		GEM 2000																																																																																														
24hr Baro.Trend (rising / falling / steady / unsteady)				Falling			Calibration Date:		3/17/2022																																																																																														

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.

Barometric Pressure Trend - March 2022

LRI 304th Landfill, Washington



Monthly Data Source: Wunderground.com (Puyallup)

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

Data Source:

<https://www.wunderground.com/dashboard/pws/KWAPUYAL102/table/2022-03-17/2022-03-17/monthly>

Daily Data Source: Wunderground.com (Puyallup)

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

Data Source:

<https://www.wunderground.com/dashboard/pws/KWAPUYAL102/table/2022-03-17/2022-03-17/daily>

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

Date: 1/13/22

Weather Conditions: Sunny

Instrument: Micromer FID

Measured By: R. Montanez

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**.

8.4

☐

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

0.7

☐

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

☒

Pay/Scale Booth – interior of building.



Signature

March 18, 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 February 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 18 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 January 24, 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 January 28, 2022 through February 11, 2022 to observe drilling and installation of 18 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-311	VW-10	831.82	PVC	BKM-517	70	71	52
WE-312	VW-12	844.45	PVC	BKM-515	70	72	52
WE-313	VW-15	834.72	PVC	BKM-518	70	72	52
WE-314	VW-16	832.76	PVC	BKM-519	70	71	52
WE-315	VW-14	849.65	PVC	BKM-527	130	121	102
WE-316	VW-11	852.29	PVC	BKM-525	70	71	52
WE-317	VW-09	849.58	PVC	BKM-516	70	72	52
WE-318	VW-05	848.71	PVC	BKM-523	130	130	112
WE-319	VW-04	853.21	PVC	BKM-521	70	73	52
WE-320	VW-08	856.04	PVC	BKM-520	70	71	52
WE-321	VW-03	857.33	PVC	BKM-522	70	72	52
WE-322	VW-02	860.41	PVC	BKM-524	70	74	52
WE-323	VW-07	859.54	PVC	BKM-526	130	131.5	112
WE-324	VW-13	851.62	PVC	BKM-528	70	71	52

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-325	TW-01	745.61	HDPE	BKM-532	40	42	22
WE-327	TW-03	696.71	HDPE	BKM-531	30	32	12
WE-328	TW-04	695.07	HDPE	BKM-530	25	26	7
WE-329	TW-05	692.04	HDPE	BKM-529	25	26	7

Notes:

1. Designed well location with drawing identification number TW-02 was not installed.
2. 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.
3. 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 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-315 (VW-14):** The boring location was moved 30 feet north from the original surveyed location due drilling conditions. A saturated soil layer was encountered from 28 feet to 38 feet below ground surface (bgs) which resulted in borehole collapse and the formation of a large void. The relocated boring was completed to 121 feet-bgs, resulting in a clearance of 79.3 feet from the operations layer. The boring was stopped short of the 130 foot design depth because saturated waste conditions were encountered at 121 feet bgs and the borehole was not able to be advanced beyond that depth. Correspondingly, the length of perforated pipe well screen was reduced by 9.0 feet to match depth of the borehole.

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,



Ruben Martinez-Barrientos, EIT
Staff Professional
SCS Engineers



Travis Berndahl, EIT
Staff Professional
SCS Engineers



Kevin Lakey, PE, LHG,
Project Director
SCS Engineers

RMB/TAB

cc: George Duvendack, LRI
Olivier Moi, LRI
Kevin Green, LRI
Kevin Lakey, SCS
Ruben Martinez-Barrientos, SCS

Attachments:

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

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

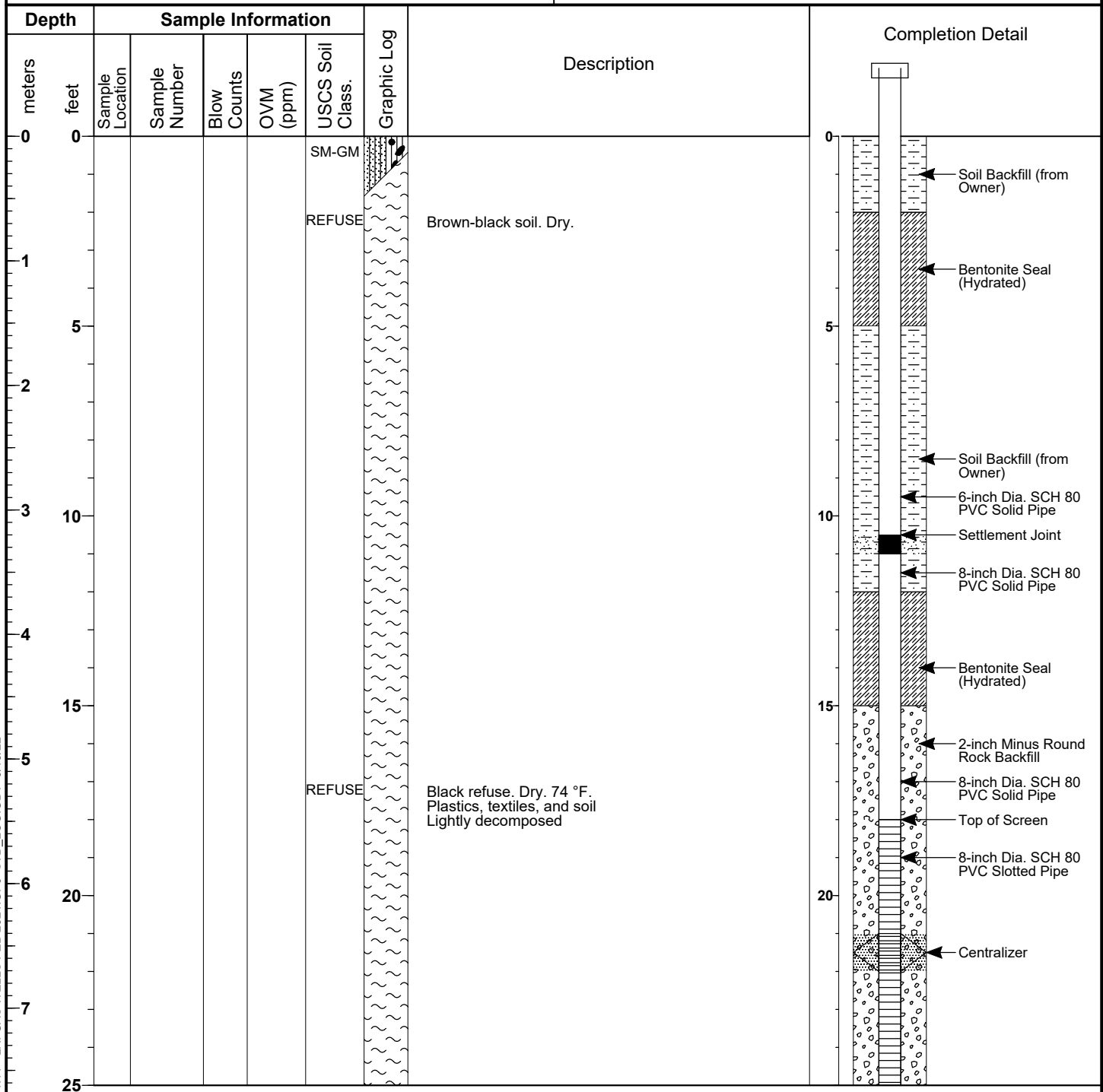
BORING NUMBER: WE-311

Page 1 of 3

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

JOB NUMBER: 04222001.11

REMARKS:
Start Card BKM-517. Drawing ID: VW-10. 5 ft-bgs stickup.



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

Drilling Method: **IMT AF-250**

Logged By: **R. Martinez**

Date Started: **1/28/22**

Date Ended: **1/28/22**

Boring Diameter: **36-inch**

Well Diameter: **8-inch**

Time Started: **08:20**

Time Ended: **09:57**

Total Depth: **71.0 ft.**

STANDARD_LOG_04222001.11 - LRI GAS WELLS FEB 2021.GPJ STD_LOG.GDT 3/15/22

BORING NUMBER: WE-311

Page 2 of 3

JOB NUMBER: 04222001.11[illegible]

STANDARD_LOG 04222001.11 - LRI GAS WELLS FEB 2021.GPJ STD_LOG.GDT 3/15/22

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

BORING NUMBER: WE-311

Page 3 of 3

LRI Landfill, Gas Wells, February 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.			
55	17								55
18	60					REFUSE		Black. Moist. 93 °F. Plastics, textiles, and soil Lightly Decomposed	
19	65					REFUSE		Black. Moist. 96 °F. Plastics, textiles, and soil Lightly Decomposed	
20	70					REFUSE		Black. Moist. 96 °F. Plastics, textiles, and soil Lightly Decomposed	2-inch Minus Round Rock Backfill
21	75					REFUSE		Black. Moist. 98 °F. Plastics, textiles, and soil Moderately Decomposed	8-inch Dia. SCH 80 PVC Slotted Pipe
22	80					REFUSE		End of boring at 71'	Cap (Soc) 16oz Non woven Geotextile
23	85								

STANDARD_LOG 04222001.11 - LRI GAS WELLS FEB 2021.GPJ STD_LOG.GDT 3/15/22

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

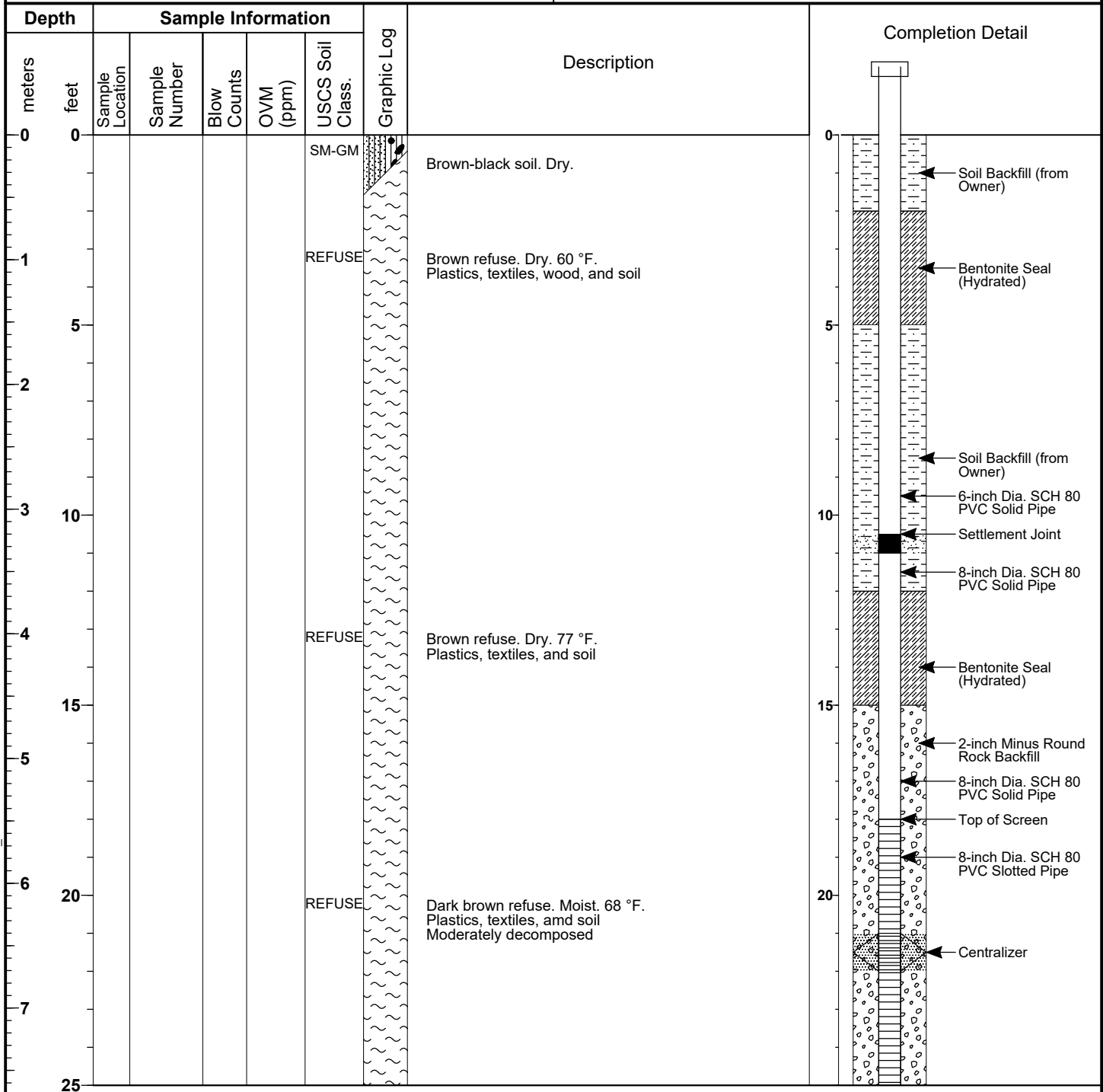
BORING NUMBER: WE-312

Page 1 of 3

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

JOB NUMBER: 04222001.11

REMARKS:
Start Card BKM-515. Drawing ID: VW-12. 5 ft-bgs stickup.



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

Drilling Method: **IMT AF-250**

Logged By: **R. Martinez**

Date Started: **2/2/22**

Date Ended: **2/2/22**

Boring Diameter: **36-inch**

Well Diameter: **8-inch**

Time Started: **10:12**

Time Ended: **11:52**

Total Depth: **72.0 ft.**

STANDARD_LOG_04222001.11 - LRI GAS WELLS FEB 2021.GPJ STD_LOG.GDT 3/15/22

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

BORING NUMBER: WE-312

Page 2 of 3

LRI Landfill, Gas Wells, February 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.			
25									25
8									
9	30								30
10									
35									35
11						REFUSE		Black refuse. Moist. 76 °F. Plastics, textiles, and soil Moderately decomposed	2-inch Minus Round Rock Backfill
12	40								8-inch Dia. SCH 80 PVC Slotted Pipe
13									
45									45
14									
15	50					REFUSE		Black refuse. Moist. 77 °F. Plastics, textiles, and soil Moderately decomposed	
16									Centralizer
55									

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

BORING NUMBER: WE-312

Page 3 of 3

LRI Landfill, Gas Wells, February 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.			
55	17								55
18	60								60
19	65								65
20	70					REFUSE		Black refuse. Moist. 85 °F. Plastics, textiles, and soil. Some leachate. Moderately decomposed	2-inch Minus Round Rock Backfill
21	75								8-inch Dia. SCH 80 PVC Slotted Pipe
22	80					REFUSE		Black refuse. Moist. 72 °F. Plastics, textiles, and soil. Moderately decomposed. End of boring at 72'	Cap (Soc)
23	85								16oz Non woven Geotextile
24									
25									
85									

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

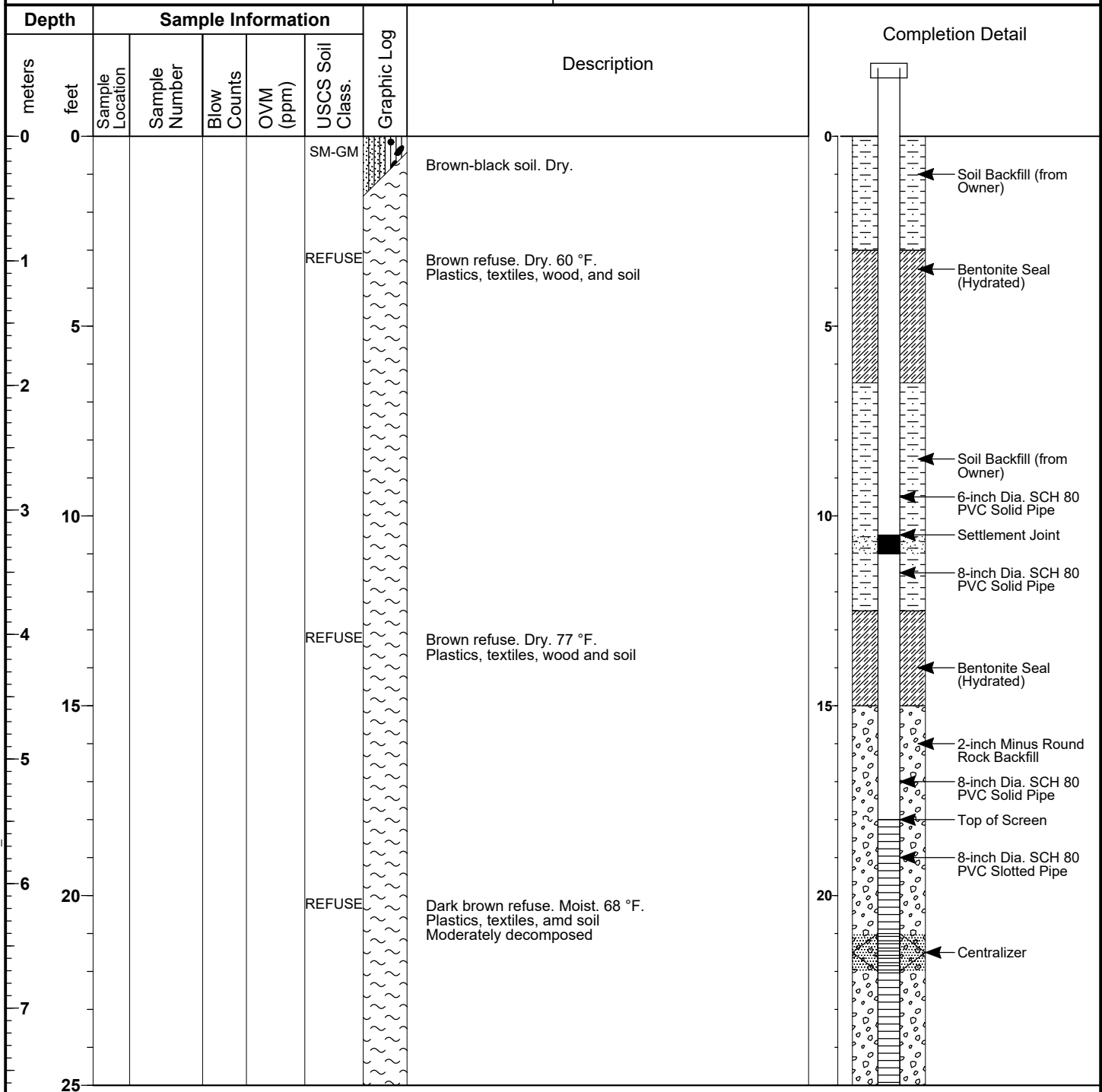
BORING NUMBER: WE-313

Page 1 of 3

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

JOB NUMBER: 04222001.11

REMARKS:
Start Card BKM-518. Drawing ID: VW-15. 5 ft-bgs stickup.



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

Drilling Method: **IMT AF-250**

Logged By: **R. Martinez**

Date Started: **1/31/22**

Date Ended: **1/31/22**

Boring Diameter: **36-inch**

Well Diameter: **8-inch**

Time Started: **10:12**

Time Ended: **14:40**

Total Depth: **72.0 ft.**

STANDARD_LOG_04222001.11 - LRI GAS WELLS FEB 2021.GPJ STD_LOG.GDT 3/15/22

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

BORING NUMBER: WE-313

Page 2 of 3

LRI Landfill, Gas Wells, February 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.			
25									25
8									
9	30								30
10									
35									35
11						REFUSE		Black refuse. Moist. 76 °F. Plastics, textiles, and soil Moderately decomposed	2-inch Minus Round Rock Backfill
12	40								8-inch Dia. SCH 80 PVC Slotted Pipe
13									
45									45
14									
15	50					REFUSE		Black refuse. Moist. 77 °F. Plastics, textiles, and soil Moderately decomposed	
16									Centralizer
55									

STANDARD_LOG 04222001.11 - LRI GAS WELLS FEB 2021.GPJ STD_LOG.GDT 3/15/22

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

BORING NUMBER: WE-313

Page 3 of 3

LRI Landfill, Gas Wells, February 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.			
17	55								
18	60								
19	65								
20	70					REFUSE		Black refuse. Moist. 85 °F. Plastics, textiles, and soil. Some leachate. Moderately decomposed	2-inch Minus Round Rock Backfill 8-inch Dia. SCH 80 PVC Slotted Pipe Cap (Soc) 16oz Non woven Geotextile
22	75					REFUSE		Black refuse. Moist. 89 °F. Plastics, textiles, and soil. Moderately decomposed. End of boring at 72'	
23	80								
24	85								

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

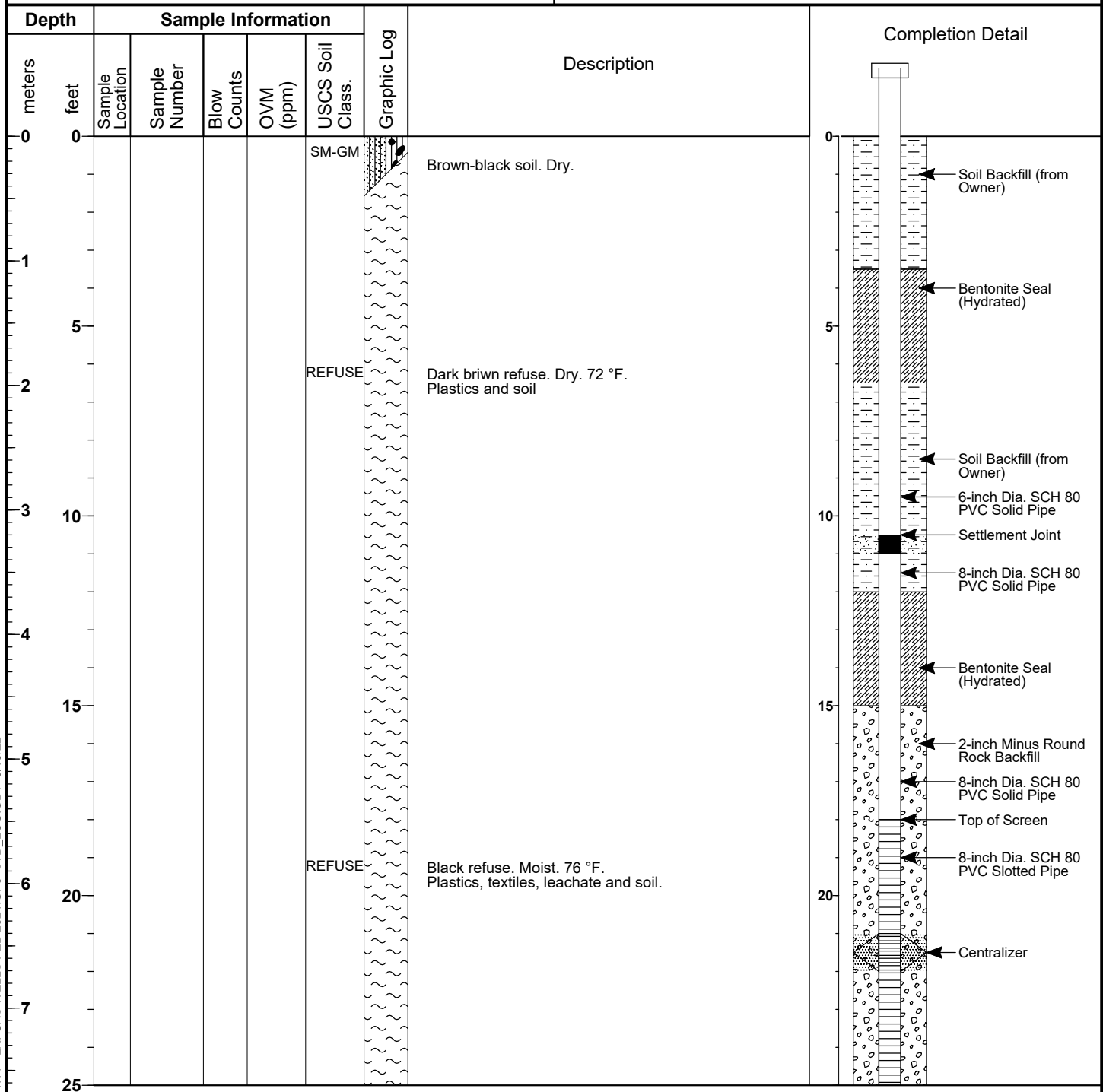
BORING NUMBER: WE-314

Page 1 of 3

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

JOB NUMBER: 04222001.11

REMARKS:
Start Card BKM-519. Drawing ID: VW-16. 5 ft-bgs stickup.



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

Drilling Method: **IMT AF-250**

Logged By: **R. Martinez**

Date Started: **1/31/22**

Date Ended: **1/31/22**

Boring Diameter: **36-inch**

Well Diameter: **8-inch**

Time Started: **08:00**

Time Ended: **08:00**

Total Depth: **71.0 ft.**

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

BORING NUMBER: WE-314

Page 2 of 3

LRI Landfill, Gas Wells, February 2022

JOB NUMBER: 04222001.11

STANDARD_LOG_04222001.11 - LRI GAS WELLS FEB 2021.GPJ STD_LOG.GDT 3/15/22

Depth		Sample Information					Graphic Log	Description	Completion Detail
meters	feet	Sample Location	Sample Number	Blow Counts	OVM (ppm)	USCS Soil Class.			
25									25
8									
9	30								30
10									
35									35
11									
12	40					REFUSE		Black refuse. Moist. 79 °F. Plastics, textiles, leachate and soil Heavily decomposed	40
13									
45									45
14									
15	50								50
16									
55						REFUSE		Black refuse. Moist. 68 °F. Plastics, textiles, leachate and soil Heavily decomposed	55

2-inch Minus Round Rock Backfill

8-inch Dia. SCH 80 PVC Slotted Pipe

Centralizer

BORING NUMBER: WE-314

Page 3 of 3

JOB NUMBER: 04222001.11

[illegible]

STANDARD_LOG 04222001.11 - LRI GAS WELLS FEB 2021.GPJ STD_LOG.GDT 3/15/22

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

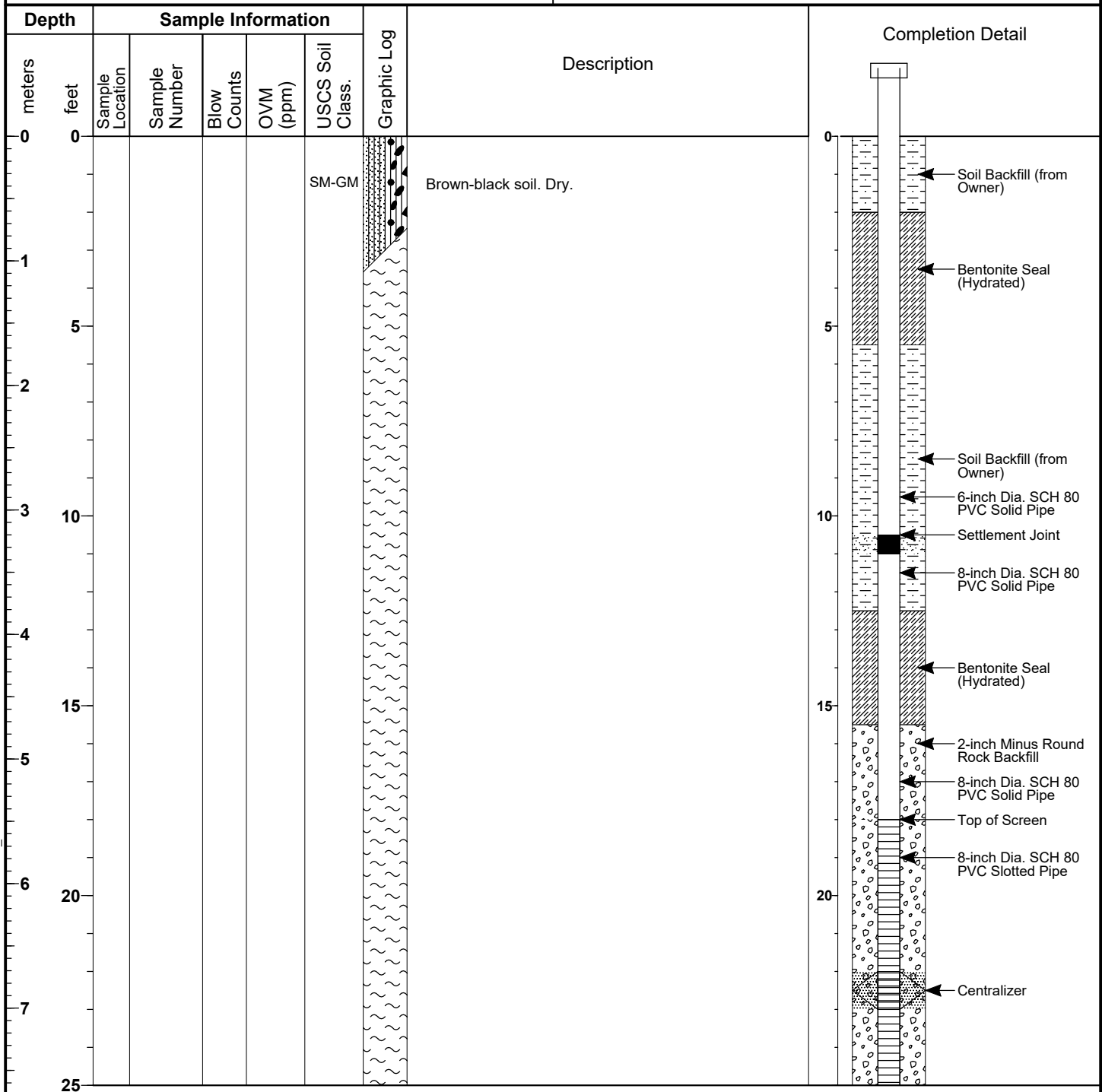
BORING NUMBER: WE-315

Page 1 of 5

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

JOB NUMBER: 04222001.11

REMARKS:
Start Card BKM-527. Drawing ID: VW-14. 5 ft-bgs stickup.



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

Drilling Method: **IMT AF-250**

Logged By: **R. Martinez**

Date Started: **2/8/22**

Date Ended: **2/8/22**

Boring Diameter: **36-inch**

Well Diameter: **8-inch**

Time Started: **10:10**

Time Ended: **14:32**

Total Depth: **121.0 ft.**

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

BORING NUMBER: WE-315

Page 2 of 5

LRI Landfill, Gas Wells, February 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.			
25	82.5								
8									
9	30					REFUSE		Black refuse. Moist. 82 °F. Plastics, textiles and soil Lightly decomposed	
10									
35									
11									2-inch Minus Round Rock Backfill
12	40								8-inch Dia. SCH 80 PVC Slotted Pipe
13									
45									
14									
15	50								
16									Centralizer
55									

STANDARD_LOG 04222001.11 - LRI GAS WELLS FEB 2021.GPJ STD_LOG.GDT 3/15/22

BORING NUMBER: WE-315

Page 3 of 5

JOB NUMBER: 04222001.11

[illegible]

STANDARD_LOG 04222001.11 - LRI GAS WELLS FEB 2021.GPJ STD_LOG.GDT 3/15/22

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

BORING NUMBER: WE-315

Page 4 of 5

LRI Landfill, Gas Wells, February 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.			
26	85								85
27	90								90
28									
29	95					REFUSE		Black refuse. Moist. 104 °F. Plastics, textiles, and soil Moderately decomposed	95
30									
31	100								100
32	105					REFUSE		Black refuse. Wet. 115 °F. Plastics, textiles, soil, and leachate Moderately decomposed	105
33									
34	110								110
35	115								115

STANDARD_LOG 04222001.11 - LRI GAS WELLS FEB 2021.GPJ STD_LOG.GDT 3/15/22

2-inch Minus Round Rock Backfill

8-inch Dia. SCH 80 PVC Slotted Pipe

Centralizer

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

BORING NUMBER: WE-315

Page 5 of 5

LRI Landfill, Gas Wells, February 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.			
115						REFUSE		Black refuse. Wet. 111 °F. Plastics, textiles, soil, and leachate Moderately decomposed	115
36									
120									2-inch Minus Round Rock Backfill
37						REFUSE		Black refuse. Wet. 115 °F. Plastics, textiles, soil, and leachate Moderately decomposed	
38									8-inch Dia. SCH 80 PVC Slotted Pipe
125									
39									Cap (Soc)
130									16oz Non woven Geotextile
40									
41									
135									
42									
140									
43									
44									
145									

STANDARD_LOG_04222001.11 - LRI GAS WELLS FEB 2021.GPJ STD_LOG.GDT 3/15/22

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

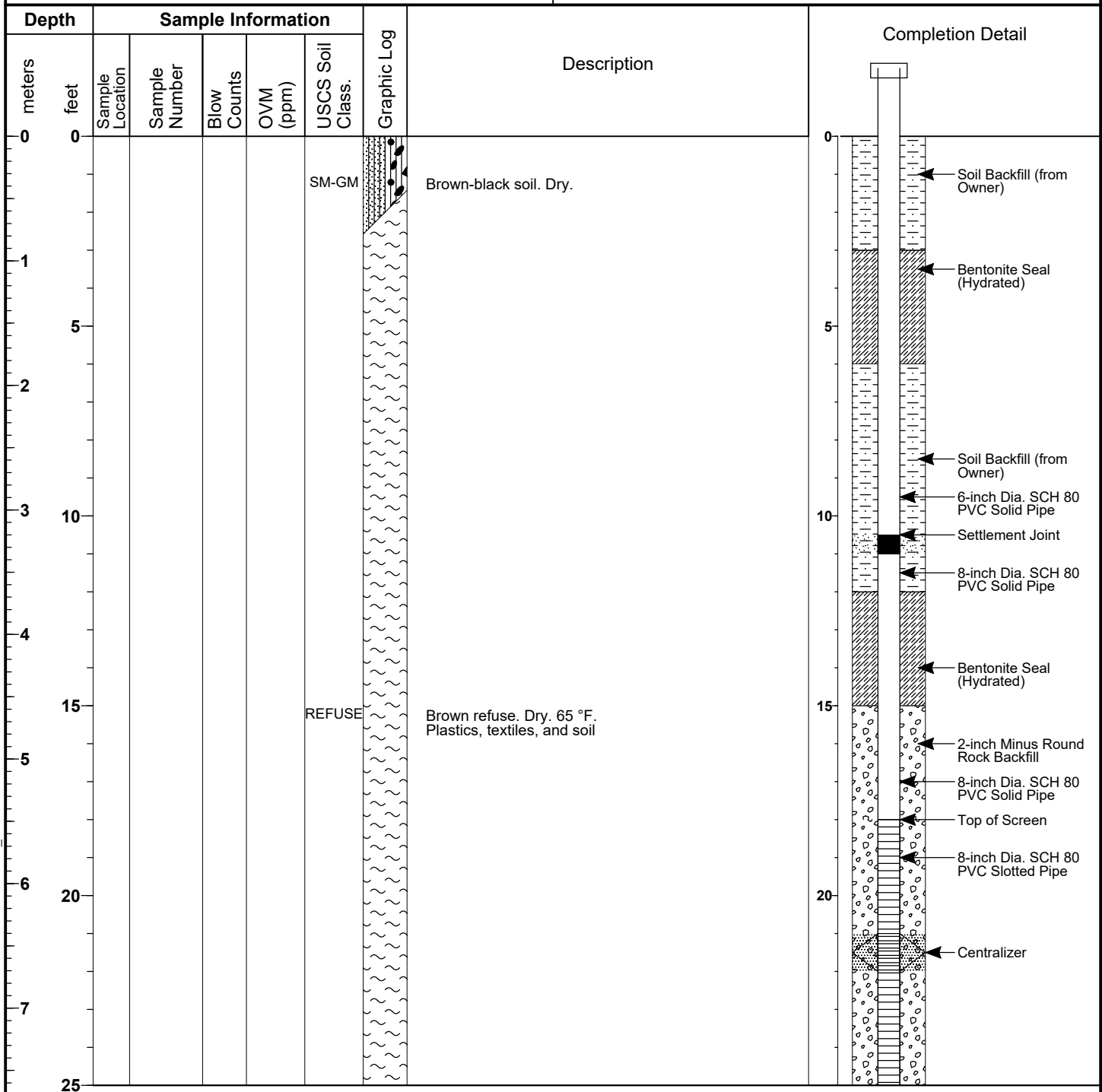
BORING NUMBER: WE-316

Page 1 of 3

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

JOB NUMBER: 04222001.11

REMARKS:
Start Card BKM-525. Drawing ID: VW-11. 5 ft-bgs stickup.



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

Drilling Method: **IMT AF-250**

Logged By: **R. Martinez**

Date Started: **2/4/22**

Date Ended: **2/4/22**

Boring Diameter: **36-inch**

Well Diameter: **8-inch**

Time Started: **09:14**

Time Ended: **10:28**

Total Depth: **71.0 ft.**

STANDARD_LOG_04222001.11 - LRI GAS WELLS FEB 2021.GPJ STD_LOG.GDT 3/15/22

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

BORING NUMBER: WE-316

Page 2 of 3

LRI Landfill, Gas Wells, February 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.			
25	8								25
9	30					REFUSE		Black refuse. Moist. 77 °F. Plastics, textiles, and soil. Lightly decomposed	
10	35					REFUSE		Black refuse. Moist. 82 °F. Plastics, textiles, and soil. Lightly decomposed	2-inch Minus Round Rock Backfill
11	40								8-inch Dia. SCH 80 PVC Slotted Pipe
12	45								
13	50					REFUSE		Black refuse. Moist. 94 °F. Plastics, textiles, and soil. Moderately decomposed	
14									
15									
16									Centralizer
55									

STANDARD_LOG_04222001.11 - LRI GAS WELLS FEB 2021.GPJ STD_LOG.GDT 3/15/22

BORING NUMBER: WE-316

Page 3 of 3

JOB NUMBER: 04222001.11[illegible]

STANDARD_LOG 04222001.11 - LRI GAS WELLS FEB 2021.GPJ STD_LOG.GDT 3/15/22

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

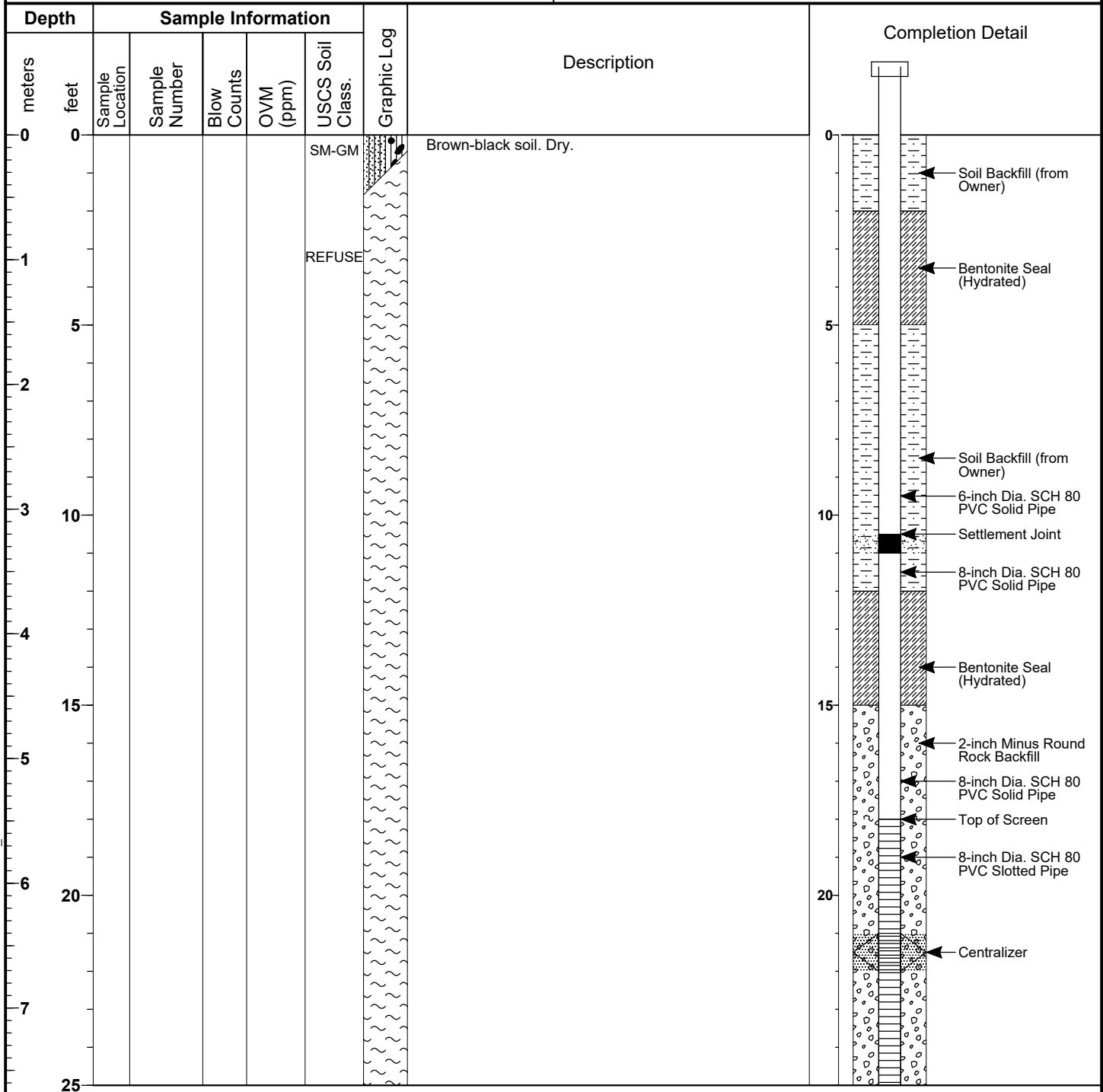
BORING NUMBER: WE-317

Page 1 of 3

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

JOB NUMBER: 04222001.11

REMARKS:
Start Card BKM-516. Drawing ID: VW-09. 5 ft-bgs stickup.



STANDARD_LOG_04222001.11 - LRI GAS WELLS FEB 2021.GPJ STD_LOG.GDT 3/15/22

Drilling Company: **DBM Contractors, Inc.**
Drilling Method: **IMT AF-250**
Logged By: **R. Martinez**

Date Started: **1/28/22**
Date Ended: **1/28/22**
Boring Diameter: **36-inch**
Well Diameter: **8-inch**
Time Started: **11:52**
Time Ended: **00:28**
Total Depth: **72.0 ft.**

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

BORING NUMBER: WE-317

Page 2 of 3

LRI Landfill, Gas Wells, February 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.			
25									25
8									
9	30					REFUSE		Brown refuse. Moist. 75 °F. Plastics, textiles, and soil Lightly decomposed	
10									
35									35
11									2-inch Minus Round Rock Backfill
12	40					REFUSE		Brown refuse. Moist. 84 °F. Plastics, textiles, and soil Lightly Decomposed	8-inch Dia. SCH 80 PVC Slotted Pipe
13									
45									45
14									
15	50					REFUSE		Brown. Moist. 87 °F. Plastics, textiles, wood, and soil Lightly Decomposed	
16									Centralizer
55									

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

BORING NUMBER: WE-317

Page 3 of 3

LRI Landfill, Gas Wells, February 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.			
55									55
17									
18									
60						REFUSE		Brown. Moist. 86 °F. Plastics, textiles, wood, and soil Lightly Decomposed	60
19									
60						REFUSE		Black. Moist. 99 °F. Plastics, textiles, and soil Lightly Decomposed	
19									
65						REFUSE		Black. Moist. 94 °F. Plastics, textiles, and soil Lightly Decomposed	65
20									2-inch Minus Round Rock Backfill
21									8-inch Dia. SCH 80 PVC Slotted Pipe
70									Cap (Soc)
22						REFUSE		Black. Moist. 101 °F. Plastics, textiles, and soil Lightly Decomposed	16oz Non woven Geotextile
23									
75									
24									
80									
25									
85									

STANDARD_LOG 04222001.11 - LRI GAS WELLS FEB 2021.GPJ STD_LOG.GDT 3/15/22

Page 1 of 5

REMARKS:
Start Card BKM-523. Drawing ID: VW-05. 5 ft-bgs stickup.

Depth		Sample Information					Graphic Log	Description	Completion Detail	
meters	feet	Sample Location	Sample Number	Blow Counts	OM (ppm)	USCS Soil Class.				
0	0					SM-GM		Brown-black soil. Dry.	0	
1	5					REFUSE		Brown refuse. Dry. 76 °F. Plastics, textiles, and soil Not decomposed	5	
2	10								10	
3	15								15	
4	20					REFUSE		Brown refuse. Dry. 89 °F. Plastics, textiles, and soil Lightly decomposed	20	
5	25								25	

Total Depth: **130.0 ft.**

BORING NUMBER: WE-318

Page 2 of 5

JOB NUMBER: 04222001.11

[illegible]

STANDARD_LOG 04222001.11 - LRI GAS WELLS FEB 2021.GPJ STD_LOG.GDT 3/15/22

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

BORING NUMBER: WE-318

Page 3 of 5

LRI Landfill, Gas Wells, February 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.			
55	17								55
18	60								60
19	65					REFUSE		Dark brown refuse. Moist. 97 °F. Plastics, textiles, and soil Moderately decomposed	65
20	70								70
21	75								75
22	80					REFUSE		Dark brown refuse. Moist. 98 °F. Plastics, textiles, and soil Moderately decomposed	80
23									
24									
25									
85									85

2-inch Minus Round Rock Backfill

8-inch Dia. SCH 80 PVC Slotted Pipe

Centralizer

BORING NUMBER: WE-318

Page 4 of 5

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.					
26	85					REFUSE		Brown refuse. Dry. 105 °F. Plastics, textiles, and soil Moderately decomposed	85	 2-inch Minus Round Rock Backfill 8-inch Dia. SCH 80 PVC Slotted Pipe Centralizer	
27	90										
28						REFUSE		Black refuse. Moist. 106 °F. Plastics, textiles, and soil Moderately decomposed			
29	95										
30	100								100		
31						REFUSE		Black refuse. Moist. 108 °F. Plastics, textiles, and soil Moderately decomposed			
32	105										
33	110										
34						REFUSE		Black refuse. Moist. 105 °F. Plastics, textiles, and soil Moderately decomposed	110		
35	115										

STANDARD_LOG 04222001.11 - LRI GAS WELLS FEB 2021.GPJ STD_LOG.GDT 3/15/22

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

BORING NUMBER: WE-318

Page 5 of 5

LRI Landfill, Gas Wells, February 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.			
115									115
36									
120									120
37						REFUSE		Black refuse. Moist. 113 °F. Plastics, textiles, and soil Lightly decomposed	2-inch Minus Round Rock Backfill
38									
125									125
39									
130						REFUSE		Black refuse. Moist. 113 °F. Plastics, textiles, and soil Moderately decomposed End of boring at 130'	8-inch Dia. SCH 80 PVC Slotted Pipe 16oz Non woven Geotextile Cap (Soc)
40									
41									135
42									
140									140
43									
44									
145									

STANDARD_LOG_04222001.11 - LRI GAS WELLS FEB 2021.GPJ STD_LOG.GDT 3/15/22

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

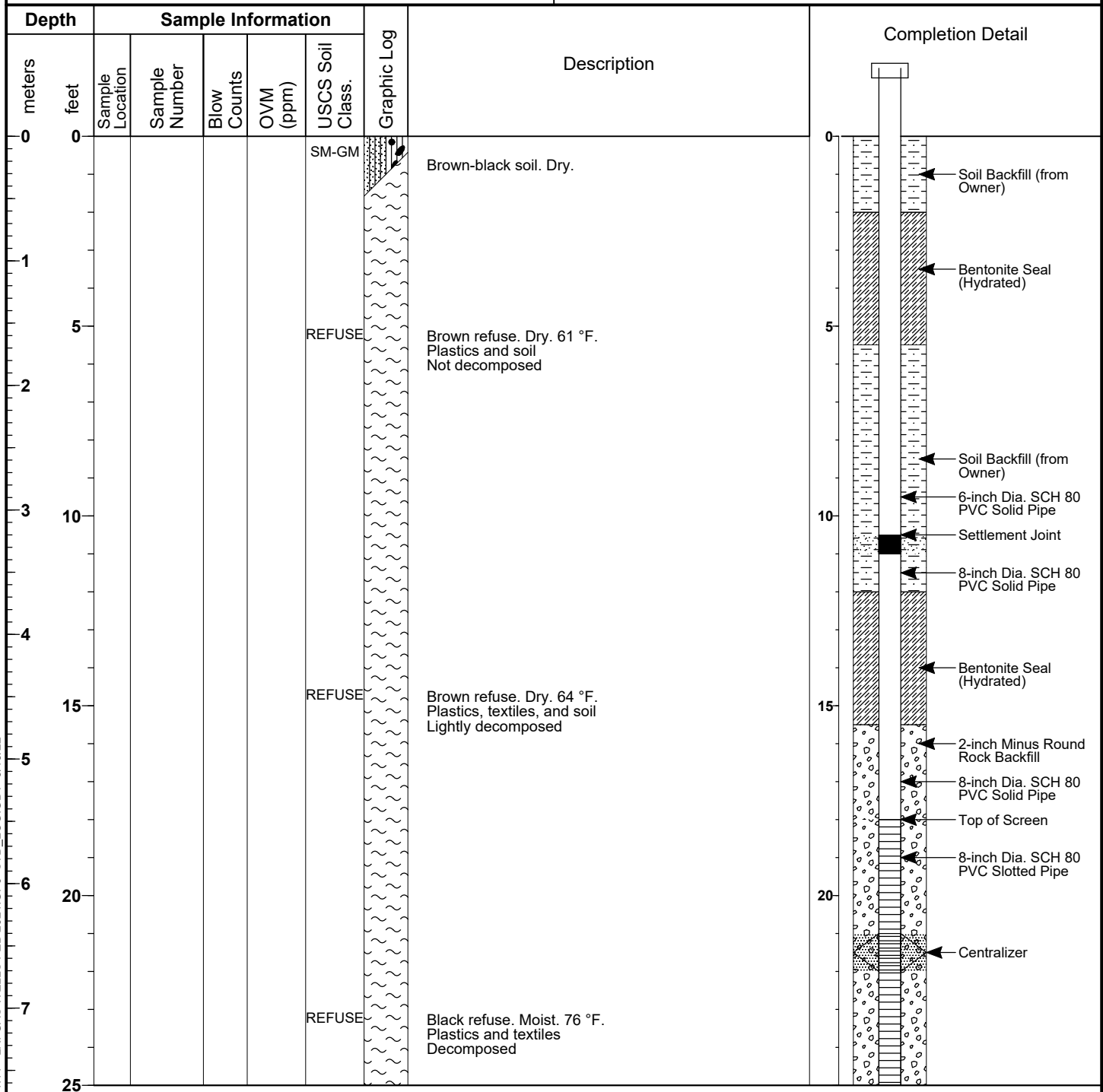
BORING NUMBER: WE-319

Page 1 of 3

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

JOB NUMBER: 04222001.11

REMARKS:
Start Card BKM-521. Drawing ID: VW-04. 5 ft-bgs stickup.



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

Drilling Method: **IMT AF-250**

Logged By: **R. Martinez**

Date Started: **2/2/22**

Date Ended: **2/2/22**

Boring Diameter: **36-inch**

Well Diameter: **8-inch**

Time Started: **10:12**

Time Ended: **11:52**

Total Depth: **73.0 ft.**

STANDARD_LOG_04222001.11 - LRI GAS WELLS FEB 2021.GPJ STD_LOG.GDT 3/15/22

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

BORING NUMBER: WE-319

Page 2 of 3

LRI Landfill, Gas Wells, February 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.			
25	8								25
9	30								30
10						REFUSE		Black. Moist. 84 °F. Plastics, textiles, and wood Decomposed	
11	35								35
12	40								40
13	45								45
14	50					REFUSE		Black refuse. Wet. 90 °F. Plastics and textiles Decomposed	50
15									
16									
55									

2-inch Minus Round
Rock Backfill

8-inch Dia. SCH 80
PVC Slotted Pipe

Centralizer

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

BORING NUMBER: WE-319

Page 3 of 3

LRI Landfill, Gas Wells, February 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.			
55	17								55
18	60					REFUSE		Black refuse. Saturated. 101 °F. Plastics and textiles Decomposed	
19	65					REFUSE		Black refuse. Saturated. Plastics, textiles and soil Decomposed	
20	70					REFUSE			2-inch Minus Round Rock Backfill
21	75					REFUSE			8-inch Dia. SCH 80 PVC Slotted Pipe
22	80					REFUSE			Cap (Soc)
23	85					REFUSE		Black refuse. Saturated. 102 °F. Plastics and textiles Decomposed End of boring at 73'.	16oz Non woven Geotextile

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

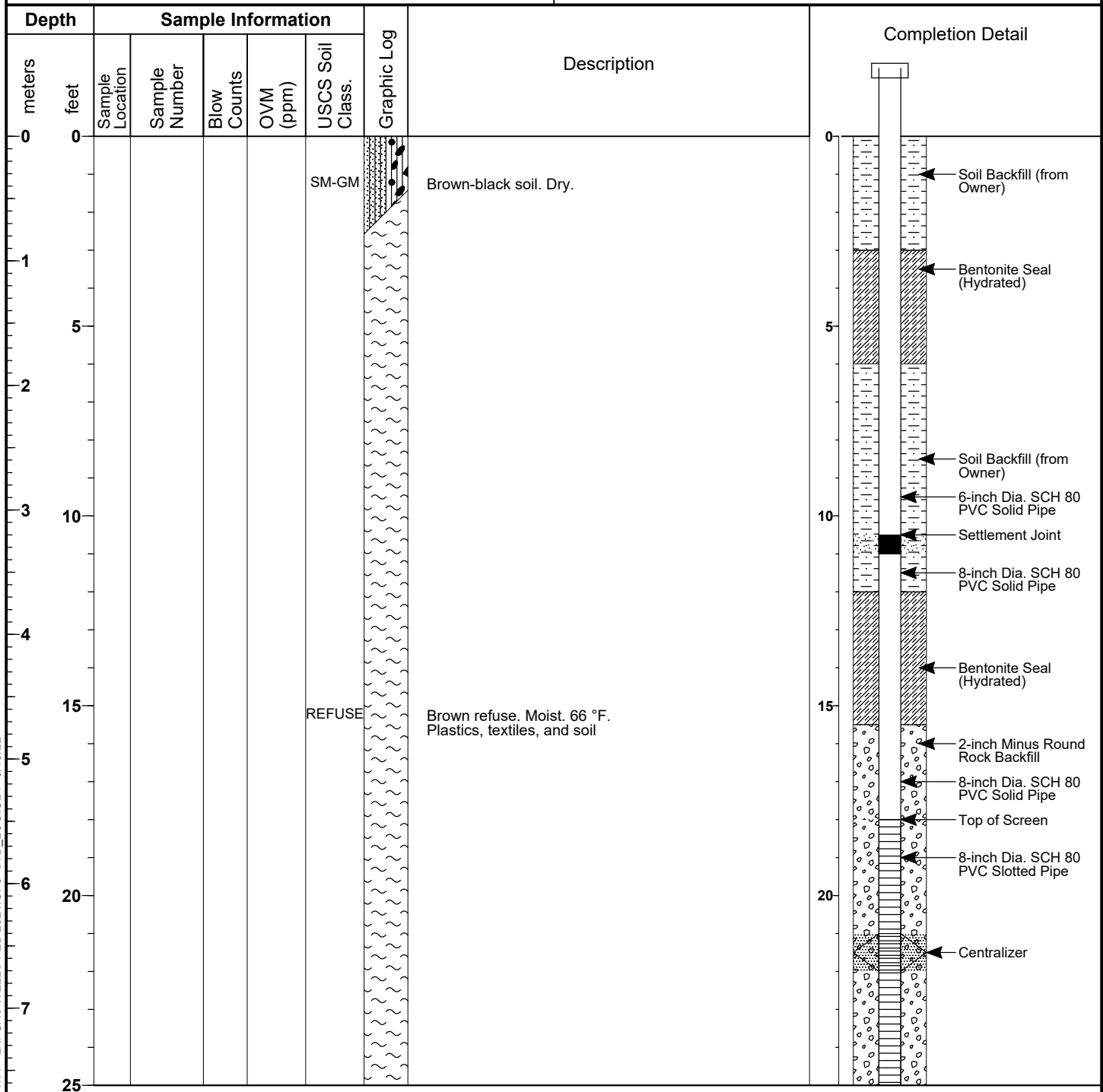
BORING NUMBER: WE-320

Page 1 of 3

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

JOB NUMBER: 04222001.11

REMARKS:
Start Card BKM-520. Drawing ID: VW-520. 5 ft-bgs stickup.



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

Drilling Method: **IMT AF-250**

Logged By: **R. Martinez**

Date Started: **2/1/22**

Date Ended: **2/1/22**

Boring Diameter: **36-inch**

Well Diameter: **8-inch**

Time Started: **07:25**

Time Ended: **11:30**

Total Depth: **71.0 ft.**

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

BORING NUMBER: WE-320

Page 2 of 3

LRI Landfill, Gas Wells, February 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.			
25									25
8						REFUSE		Black refuse. Moist. 68 °F. Plastics, textiles, and soil. Heavy smoke Moderately decomposed	
9	30								30
10									
35									35
11									2-inch Minus Round Rock Backfill
12	40								8-inch Dia. SCH 80 PVC Slotted Pipe
13									
45						REFUSE		Black refuse. Moist. 68 °F. Plastics, textiles, and soil. Heavy smoke Moderately decomposed	45
14									
15	50								
16									Centralizer
55									

STANDARD_LOG 04222001.11 - LRI GAS WELLS FEB 2021.GPJ STD_LOG.GDT 3/15/22

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

BORING NUMBER: WE-320

Page 3 of 3

LRI Landfill, Gas Wells, February 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.			
55	17					REFUSE		Black refuse. Moist. 77 °F. Plastics, textiles, and soil Moderately decomposed	55
18	60								60
19	65								65
20	70								70
21	75								75
22	80					REFUSE		Black. Moist. 98 °F. Plastics, textiles, and soil. Heavy fumes Moderately Decomposed End of boring at 71'	80
23									
24									
25									
85									

2-inch Minus Round Rock Backfill

8-inch Dia. SCH 80 PVC Slotted Pipe

Cap (Soc)

16oz Non woven Geotextile

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

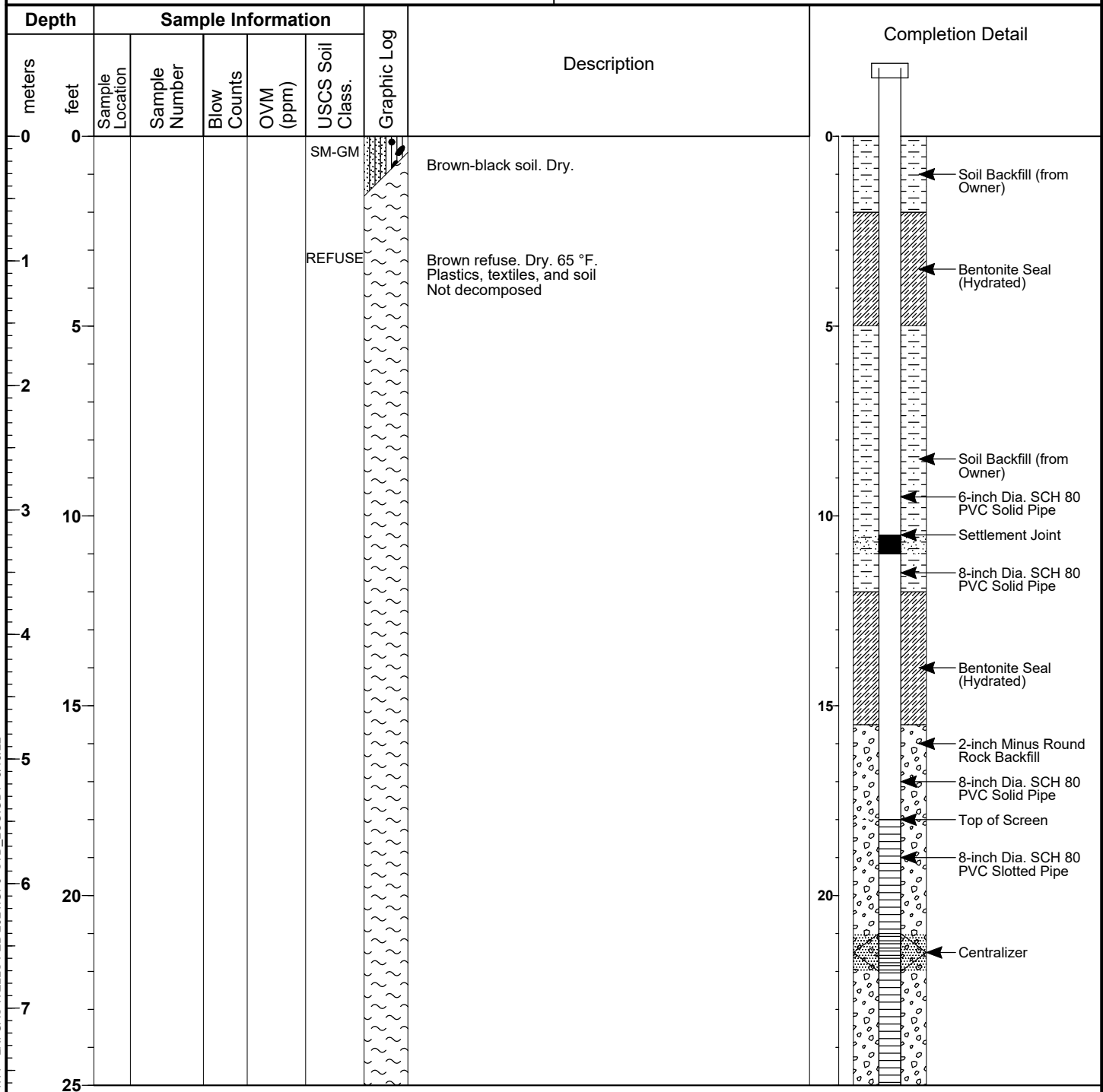
BORING NUMBER: WE-321

Page 1 of 3

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

JOB NUMBER: 04222001.11

REMARKS:
Start Card BKM-522. Drawing ID: VW-03. 5 ft-bgs stickup.



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

Drilling Method: **IMT AF-250**

Logged By: **R. Martinez**

Date Started: **2/2/22**

Date Ended: **2/2/22**

Boring Diameter: **36-inch**

Well Diameter: **8-inch**

Time Started: **07:35**

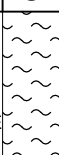
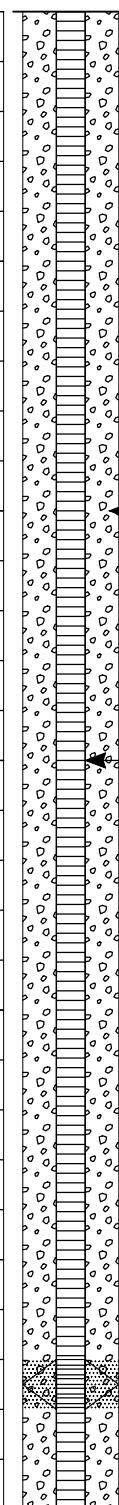
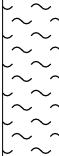
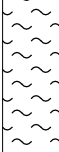
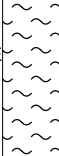
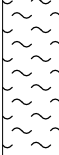
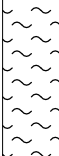
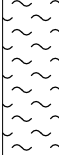
Time Ended: **09:14**

Total Depth: **72.0 ft.**

BORING NUMBER: WE-321

Page 2 of 3

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.					
8	25					REFUSE		Black refuse. Dry. 68 °F. Plastics, textiles, and soil Not decomposed	25		
9	30										
10	35										
11	40					REFUSE		Dark brown refuse. Moist. 77 °F. Plastics, textiles, amd soil Lightly decomposed	40		
12	45										
13	50										
14	55										

STANDARD_LOG 04222001.11 - LRI GAS WELLS FEB 2021.GPJ STD_LOG.GDT 3/15/22

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

BORING NUMBER: WE-321

Page 3 of 3

LRI Landfill, Gas Wells, February 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.			
55	17								55
									2-inch Minus Round Rock Backfill
18	60					REFUSE		Dark brown refuse. Moist. 77 °F. Plastics, textiles, and soil Moderately decomposed	8-inch Dia. SCH 80 PVC Slotted Pipe
19									
20	65								65
21	70					REFUSE		Black refuse. Moist. 81 °F. Plastics, textiles, and soil Moderately decomposed	Cap (Soc)
22									16oz Non woven Geotextile
23	75					REFUSE		Black refuse. Moist. 85 °F. Plastics, textiles, and soil Moderately decomposed End of boring at 72'	
24	80								
25									
85									

STANDARD_LOG 04222001.11 - LRI GAS WELLS FEB 2021.GPJ STD_LOG.GDT 3/15/22

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

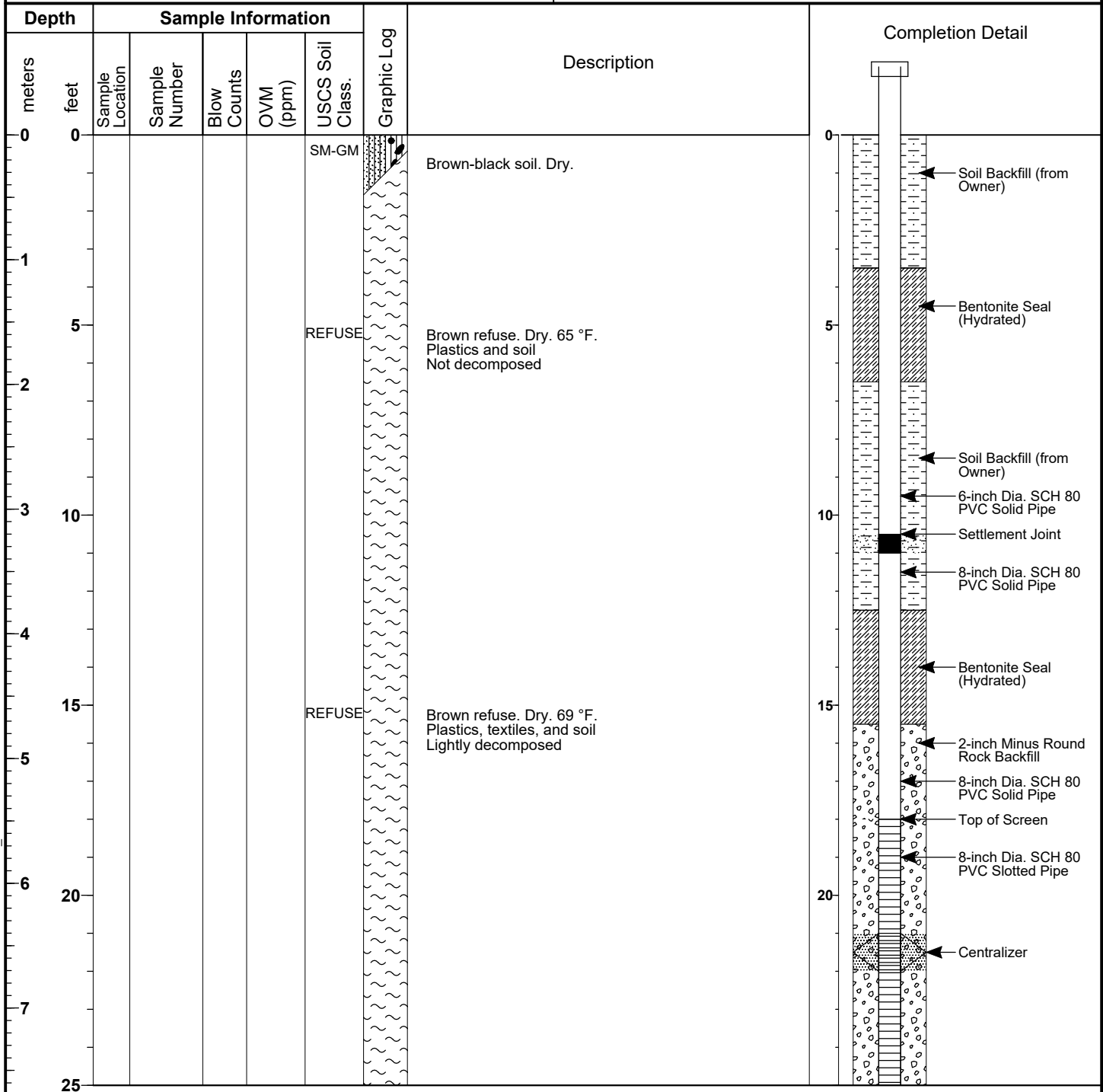
BORING NUMBER: WE-322

Page 1 of 3

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

JOB NUMBER: 04222001.11

REMARKS:
Start Card BKM-524. Drawing ID: 524. 5 ft-bgs stickup.



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

Drilling Method: **IMT AF-250**

Logged By: **R. Martinez**

Date Started: **2/4/22**

Date Ended: **2/4/22**

Boring Diameter: **36-inch**

Well Diameter: **8-inch**

Time Started: **07:12**

Time Ended: **11:52**

Total Depth: **74.0 ft.**

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

BORING NUMBER: WE-322

Page 2 of 3

LRI Landfill, Gas Wells, February 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.			
8	25					REFUSE		Black refuse. Moist. 93 °F. Plastics, textiles, wood and soil Moderately decomposed	25
9	30								
10	35								
11	40								2-inch Minus Round Rock Backfill
12	45								
13	50					REFUSE		Dark brown. Moist. 80 °F. Plastics, textiles, wood and soil Moderately decomposed	8-inch Dia. SCH 80 PVC Slotted Pipe
14	55								
15									
16									Centralizer
55									

STANDARD_LOG 04222001.11 - LRI GAS WELLS FEB 2021.GPJ STD_LOG.GDT 3/15/22

BORING NUMBER: WE-322

Page 3 of 3

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.	2-inch Minus Round Rock Backfill			8-inch Dia. SCH 80 PVC Slotted Pipe	Cap (Soc)
55	17										
18	60										
19	65					REFUSE		Black refuse. Moist. 90 °F. Plastics, textiles, and soil Decomposed			
20	70										
21	75										
22	80										
23	85					REFUSE		Black refuse. Saturated. 91 °F. Plastics, textiles, and soil Decomposed			

STANDARD_LOG 04222001.11 - LRI GAS WELLS FEB 2021.GPJ STD_LOG.GDT 3/15/22

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

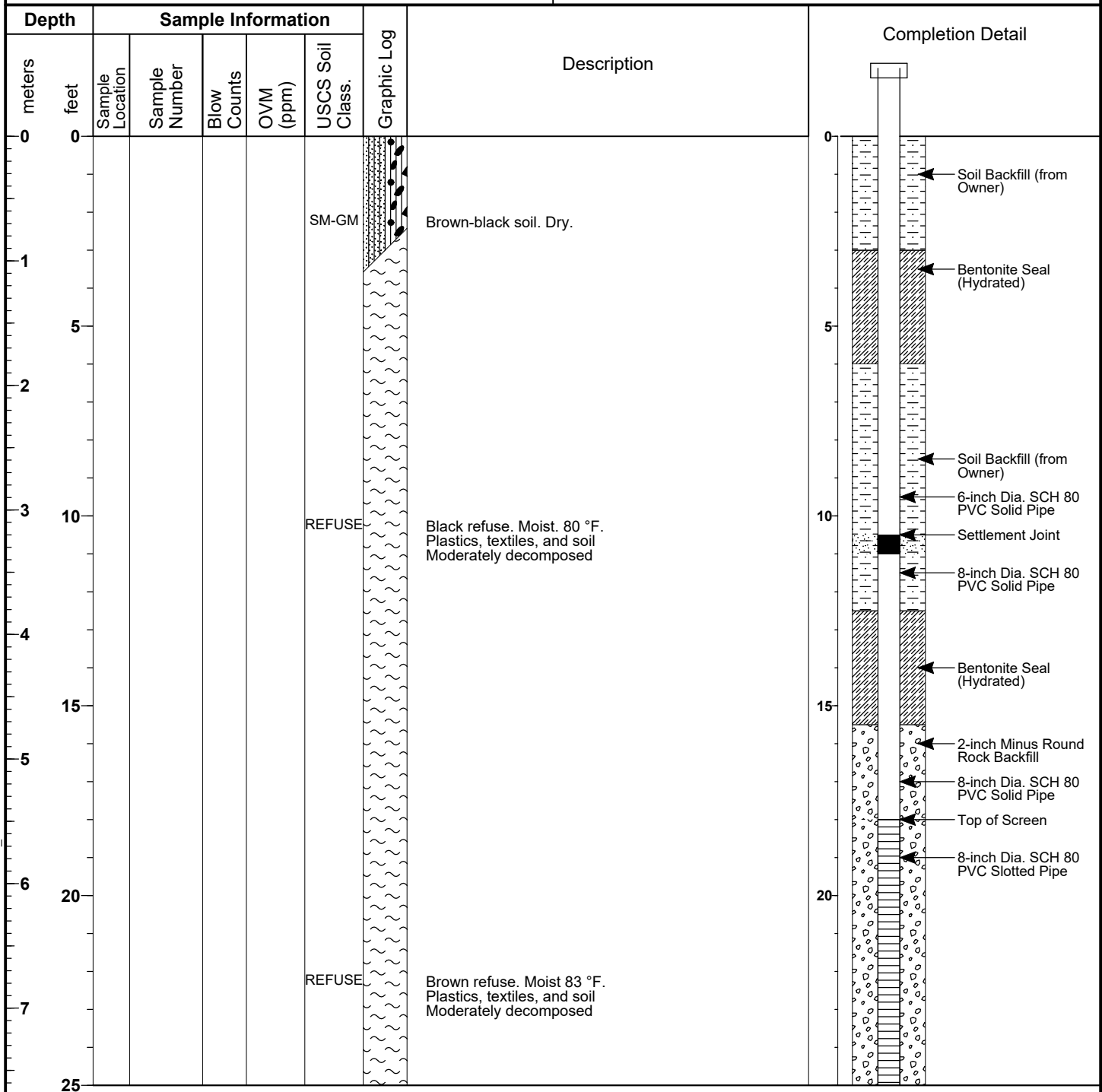
BORING NUMBER: WE-323

Page 1 of 5

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

JOB NUMBER: 04222001.11

REMARKS:
Start Card BKM-526. Drawing ID: VW-07. 5 ft-bgs stickup.



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

Drilling Method: **IMT AF-250**

Logged By: **R. Martinez**

Date Started: **2/7/22**

Date Ended: **2/7/22**

Boring Diameter: **36-inch**

Well Diameter: **8-inch**

Time Started: **07:30**

Time Ended: **13:15**

Total Depth: **131.5 ft.**

STANDARD_LOG_04222001.11 - LRI GAS WELLS FEB 2021.GPJ STD_LOG.GDT 3/15/22

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

BORING NUMBER: WE-323

Page 2 of 5

LRI Landfill, Gas Wells, February 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.			
25	8								25
9	30								30
10									
35									35
11									
40									40
12									
45									45
14									
50									50
16									
55									

REFUSE

Black refuse. Moist. 87 °F.
Plastics, textiles, and soil
Moderately decomposed

Centralizer

2-inch Minus Round
Rock Backfill

8-inch Dia. SCH 80
PVC Slotted Pipe

Centralizer

STANDARD_LOG_04222001.11 - LRI GAS WELLS FEB 2021.GPJ STD_LOG.GDT 3/15/22

BORING NUMBER: WE-323

Page 3 of 5

JOB NUMBER: 04222001.11

Depth		Sample Information						Description	Completion Detail	
meters	feet	Sample Location	Sample Number	Blow Counts	OVM (ppm)	USCS Soil Class.	Graphic Log			
	55					REFUSE	[Pattern]	Black refuse. Moist. 102 °F. Plastics, textiles, and soil Moderately decomposed		
17							[Pattern]			
18	60						[Pattern]			
19							[Pattern]			
20	65						[Pattern]			← 2-inch Minus Round Rock Backfill
21	70					REFUSE	[Pattern]	Black refuse. Moist. 104 °F. Plastics, textiles, and soil Moderately decomposed		← 8-inch Dia. SCH 80 PVC Slotted Pipe
22							[Pattern]			
23	75						[Pattern]			
24	80						[Pattern]			
25							[Pattern]			← Centralizer
	85						[Pattern]			

STANDARD_LOG 04222001.11 - LRI GAS WELLS FEB 2021.GPJ STD_LOG.GDT 3/15/22

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

BORING NUMBER: WE-323

Page 4 of 5

LRI Landfill, Gas Wells, February 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.			
26	85								85
						REFUSE		Black refuse. Moist. 100 °F. Plastics, textiles, and soil Moderately decomposed	
27									
	90								90
28									
29	95								95
									2-inch Minus Round Rock Backfill
30									
	100								100
31									8-inch Dia. SCH 80 PVC Slotted Pipe
						REFUSE		Black refuse. Moist. 110 °F. Plastics, textiles, and soil Moderately decomposed	
32	105								105
33									
	110					REFUSE		Found leachate	
34									
									Centralizer
35	115								
						REFUSE		Black refuse. Wet. 112 °F. Plastics, textiles, soil and leachate Decomposed	

STANDARD_LOG 04222001.11 - LRI GAS WELLS FEB 2021.GPJ STD_LOG.GDT 3/15/22

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

BORING NUMBER: WE-323

Page 5 of 5

LRI Landfill, Gas Wells, February 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.			
115									115
36									
120						REFUSE		Black refuse. Wet. 107 °F. Plastics, textiles, soil and leachate Decomposed	2-inch Minus Round Rock Backfill
37									
38									
125									8-inch Dia. SCH 80 PVC Slotted Pipe
39									
130									16oz Non woven Geotextile Cap (Soc)
40						REFUSE		Black refuse. Wet. 112 °F. Plastics, textiles, soil and less leachate Decomposed End of boring at 131.5'	
41									
135									
42									
140									
43									
44									
145									

STANDARD_LOG_04222001.11 - LRI GAS WELLS FEB 2021.GPJ STD_LOG.GDT 3/15/22

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

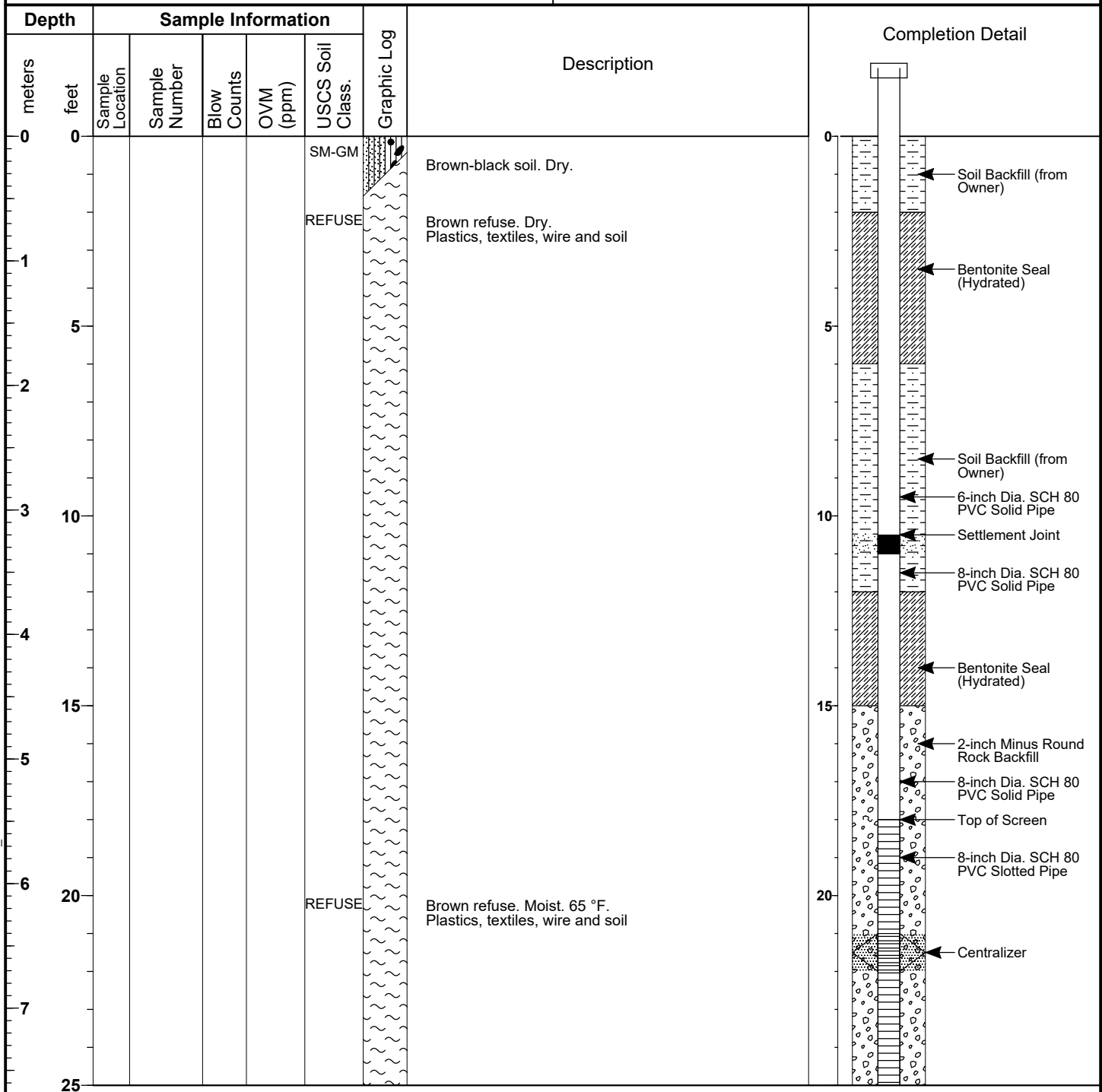
BORING NUMBER: WE-324

Page 1 of 3

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

JOB NUMBER: 04222001.11

REMARKS:
Start Card BKM-528. Drawing ID: VW-13. 5 ft-bgs stickup.



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

Drilling Method: **IMT AF-250**

Logged By: **R. Martinez**

Date Started: **2/9/22**

Date Ended: **2/9/22**

Boring Diameter: **36-inch**

Well Diameter: **8-inch**

Time Started: **08:45**

Time Ended: **10:42**

Total Depth: **71.0 ft.**

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

BORING NUMBER: WE-324

Page 2 of 3

LRI Landfill, Gas Wells, February 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.			
25									25
8						REFUSE		Brown refuse. Moist. 77 °F. Plastics, textiles, wire and soil	
9	30					REFUSE		Brown. Moist. 76 °F. Textiles and soil	
10									
35									35
11									2-inch Minus Round Rock Backfill
12	40								8-inch Dia. SCH 80 PVC Slotted Pipe
13						REFUSE		Dark brown. Moist. Plastics, textiles, and soil	
45									
14									
15	50								
16						REFUSE		Dark brown. Moist. Plastics, textiles, and soil	Centralizer
55									

STANDARD_LOG 04222001.11 - LRI GAS WELLS FEB 2021.GPJ STD_LOG.GDT 3/15/22

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

BORING NUMBER: WE-324

Page 3 of 3

LRI Landfill, Gas Wells, February 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.				
55	17								55	
60									60	
65						REFUSE		Dark brown. Moist. 98 °F. Plastics, textiles, and soil Moderately Decomposed	65	2-inch Minus Round Rock Backfill
70									70	8-inch Dia. SCH 80 PVC Slotted Pipe
75										Cap (Soc)
80						REFUSE		Dark brown. Moist. 102 °F. Plastics, textiles, and soil Moderately Decomposed		16oz Non woven Geotextile
85								End of boring at 71'		

STANDARD_LOG 04222001.11 - LRI GAS WELLS FEB 2021.GPJ STD_LOG.GDT 3/15/22

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

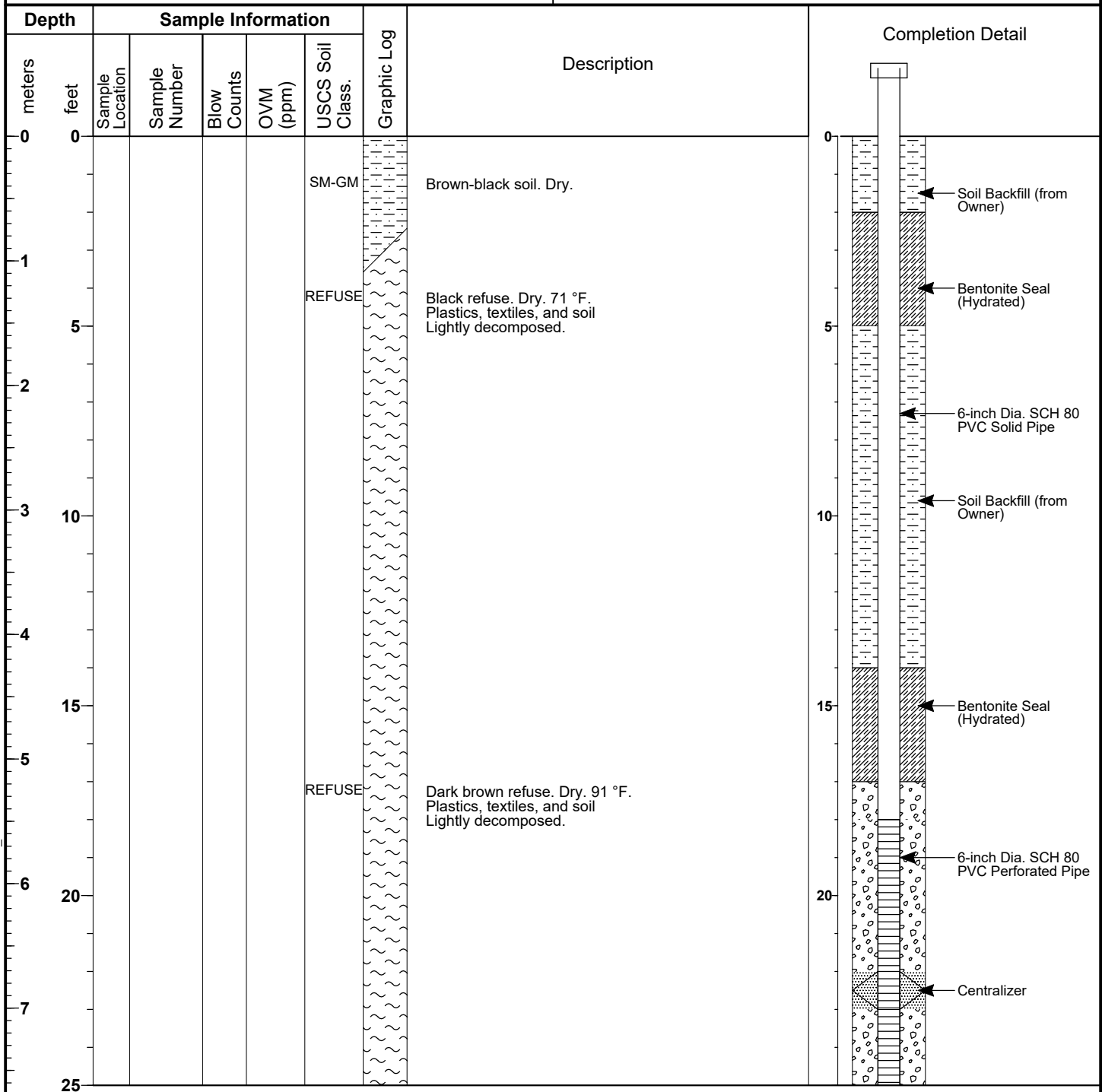
BORING NUMBER: WE-325

Page 1 of 2

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

JOB NUMBER: 04222001.11

REMARKS:
Start Card BKM-532. Drawing ID: TW-01. 5 ft-bgs stickup.



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

Drilling Method: **IMT AF-250**

Logged By: **R. Martinez**

Date Started: **2/11/22**

Date Ended: **2/11/22**

Boring Diameter: **36-inch**

Well Diameter: **8-inch**

Time Started: **09:48**

Time Ended: **10:48**

Total Depth: **42.0 ft.**

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

BORING NUMBER: WE-325

Page 2 of 2

LRI Landfill, Gas Wells, February 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.			
8	25					REFUSE		Brown refuse. Moist. 96 °F. Plastics, textiles, and soil. Rope/fishnet Lightly decomposed.	
9	30								6-inch Dia. SCH 80 PVC Perforated Pipe
10	35					REFUSE		Brown refuse. Moist. 98 °F. Plastics, textiles, wood, and soil Lightly decomposed.	2-inch Minus Round Rock Backfill
11	40								Cap (Soc)
12	45					REFUSE		Black refuse. Wet. 98 °F. Plastics, textiles, and soil Lightly decomposed. End of boring at 42'.	16oz Non woven Geotextile
13	50								
14	55								

STANDARD_LOG_04222001.11 - LRI GAS WELLS FEB 2021.GPJ STD_LOG.GDT 3/15/22

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

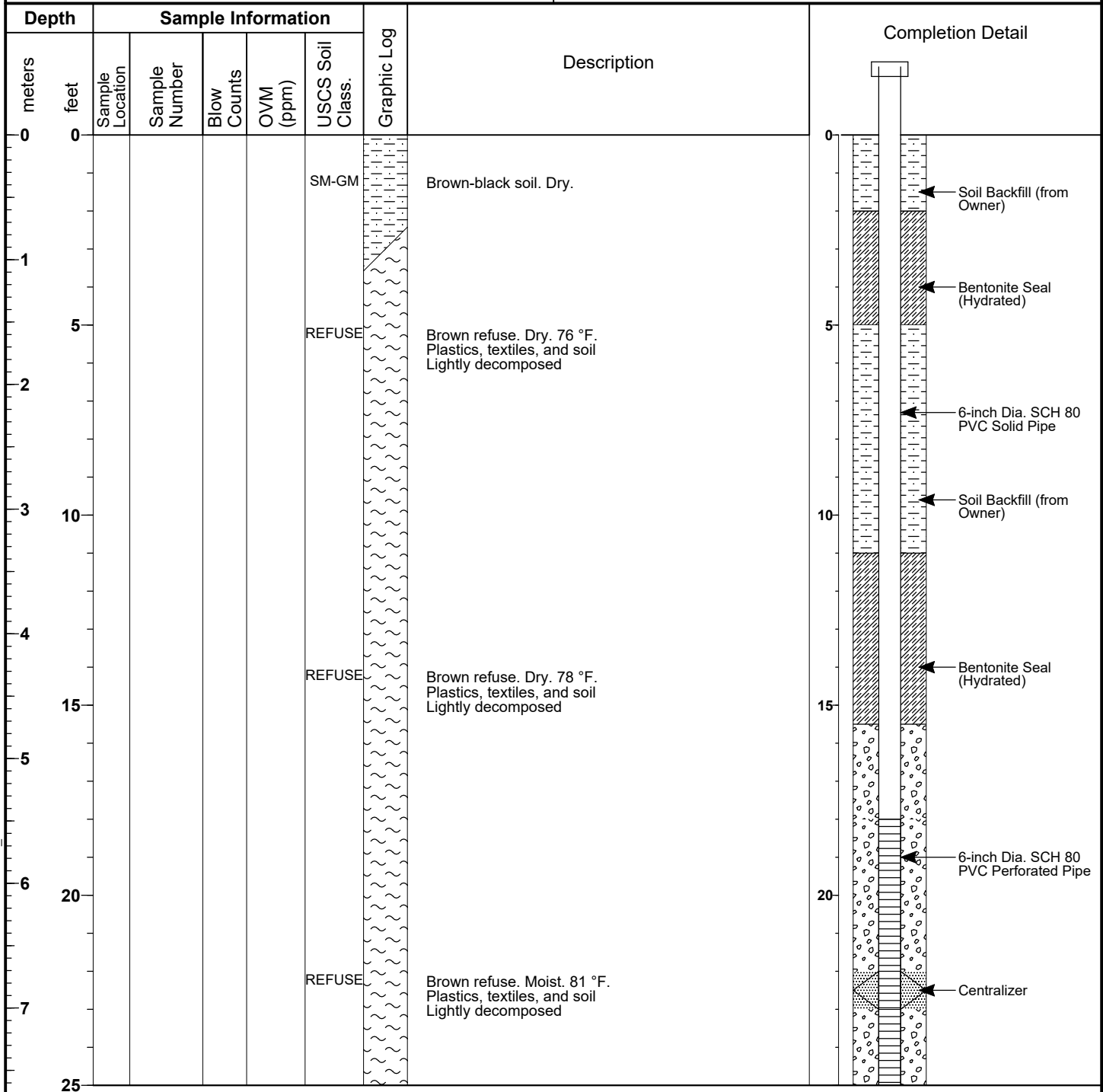
BORING NUMBER: WE-327

Page 1 of 2

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

JOB NUMBER: 04222001.11

REMARKS:
Start Card BKM-531. Drawing ID: TW-03. 5 ft-bgs stickup.



STANDARD_LOG_04222001.11 - LRI GAS WELLS FEB 2021.GPJ STD_LOG.GDT 3/15/22

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

Drilling Method: **IMT AF-250**

Logged By: **R. Martinez**

Date Started: **2/10/22**

Date Ended: **2/10/22**

Boring Diameter: **36-inch**

Well Diameter: **8-inch**

Time Started: **12:12**

Time Ended: **12:42**

Total Depth: **32.0 ft.**

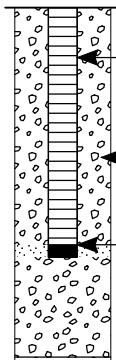
2405 140th Avenue NE, Suite 107
Bellevue, Washington 98005-1877

BORING NUMBER: WE-327

Page 2 of 2

LRI Landfill, Gas Wells, February 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.			
8	25								
						REFUSE		Black refuse. Dry. 71 °F. Plastics, textiles, and soil Moderately decomposed	 6-inch Dia. SCH 80 PVC Perforated Pipe 2-inch Minus Round Rock Backfill Cap (Soc) 16oz Non woven Geotextile
	30					REFUSE		Black refuse. Dry. 71 °F. Plastics, textiles, and soil Moderately decomposed End of boring at 32'.	
	35								
11									
	40								
12									
	45								
13									
	50								
14									
	55								

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

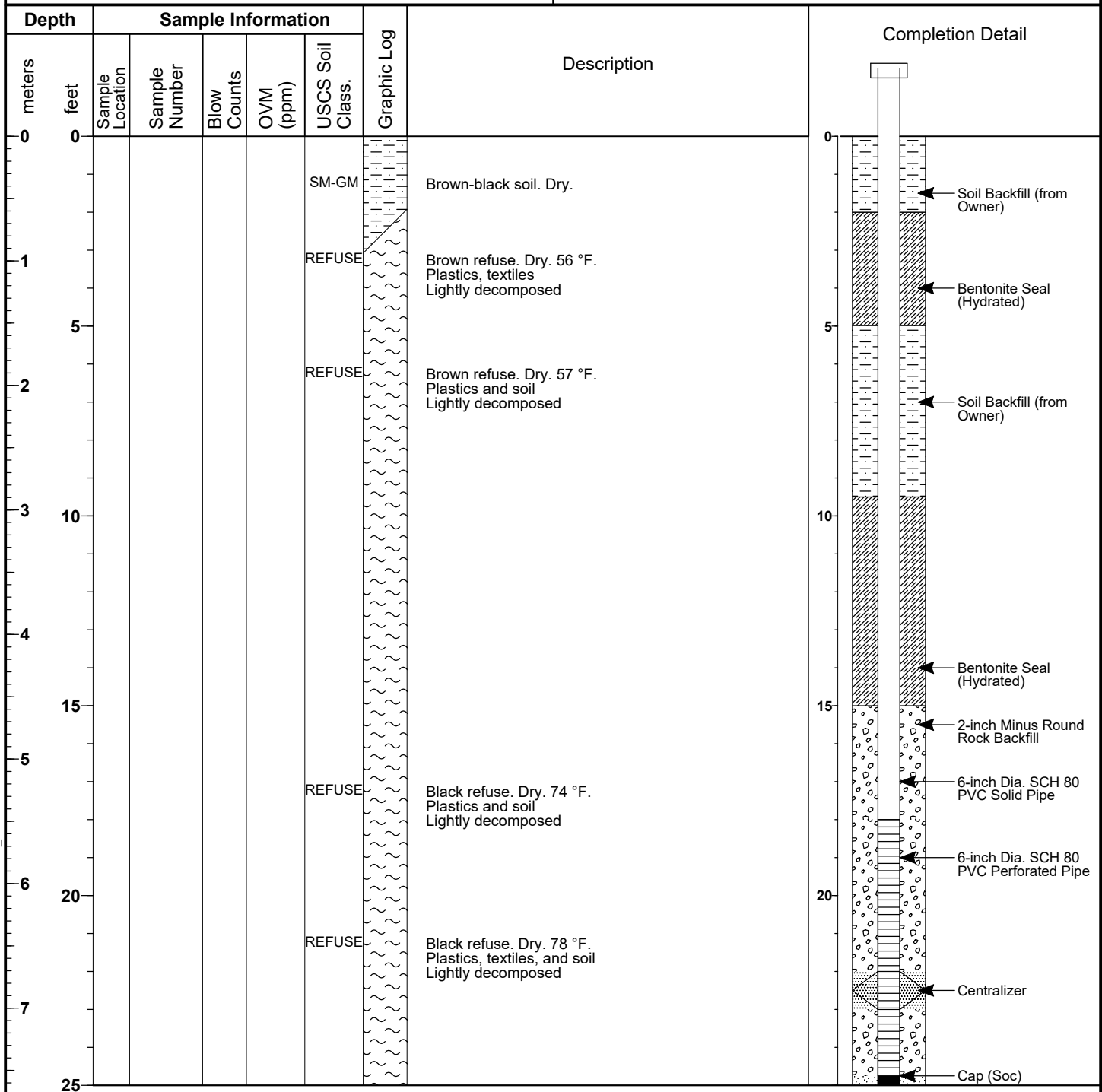
BORING NUMBER: WE-328

Page 1 of 2

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

JOB NUMBER: 04222001.11

REMARKS:
Start Card BKM-530. Drawing ID: TW-04. 5 ft-bgs stickup.



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

Drilling Method: **IMT AF-250**

Logged By: **R. Martinez**

Date Started: **2/10/22**

Date Ended: **2/10/22**

Boring Diameter: **36-inch**

Well Diameter: **8-inch**

Time Started: **11:03**

Time Ended: **11:26**

Total Depth: **26.0 ft.**

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

BORING NUMBER: WE-328

Page 2 of 2

LRI Landfill, Gas Wells, February 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.			
8	25					REFUSE		Black refuse. Dry. 79 °F. Plastics, textiles, and soil Moderately decomposed End of boring at 26'.	 16oz Non woven Geotextile 6-inch Dia. SCH 80 PVC Perforated Pipe
9	30								
10									
11	35								
12	40								
13									
14	45								
15	50								
16									
55									

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

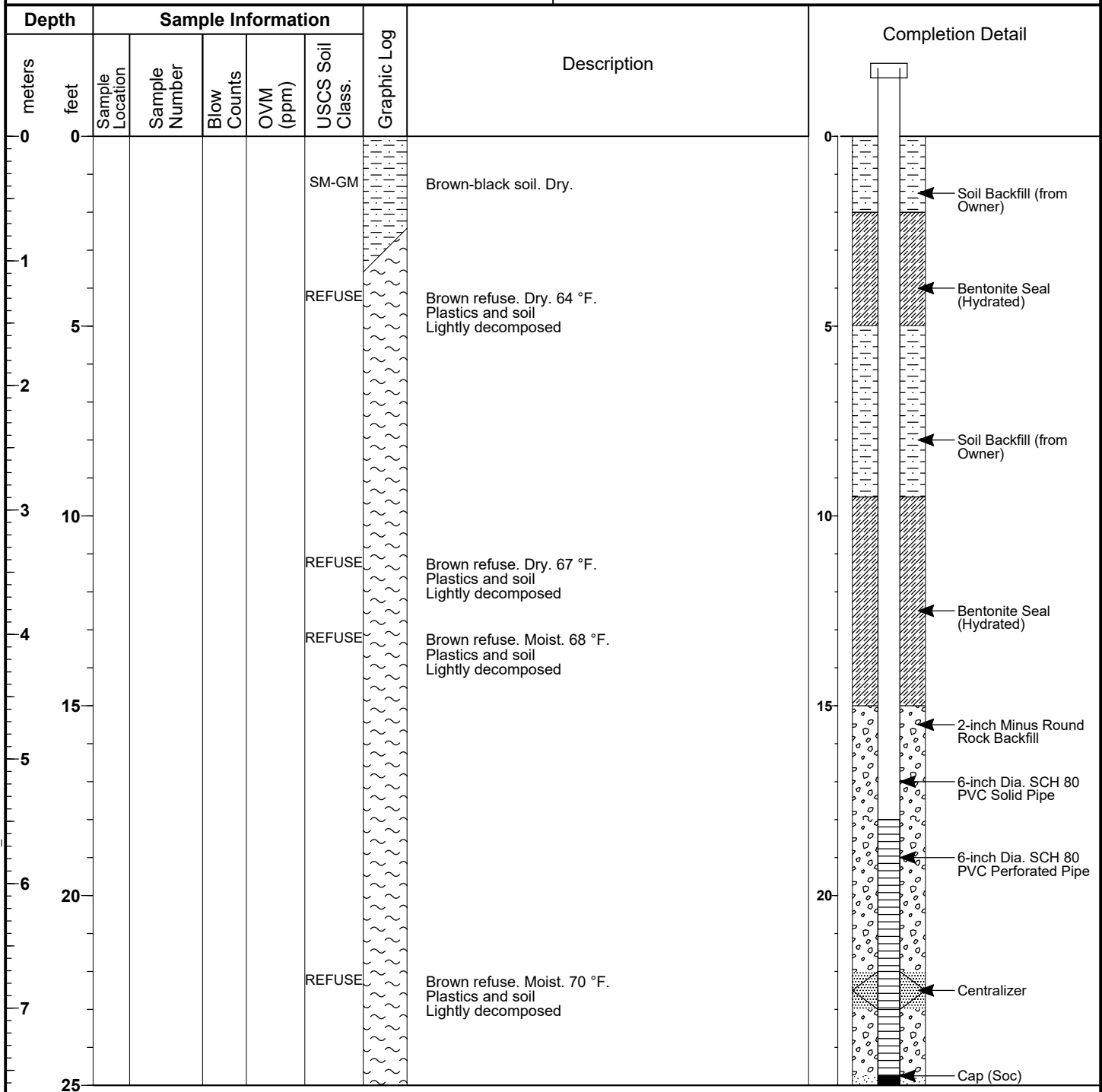
BORING NUMBER: WE-329

Page 1 of 2

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

JOB NUMBER: 04222001.11

REMARKS:
Start Card BKM-529 Drawing ID: TW-05. 5 ft-bgs stickup.



STANDARD_LOG_04222001.11 - LRI GAS WELLS FEB 2021.GPJ STD_LOG.GDT 3/15/22

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

Drilling Method: **IMT AF-250**

Logged By: **R. Martinez**

Date Started: **2/10/22**

Date Ended: **2/10/22**

Boring Diameter: **36-inch**

Well Diameter: **8-inch**

Time Started: **09:34**

Time Ended: **09:57**

Total Depth: **26.0 ft.**

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

BORING NUMBER: WE-329

Page 2 of 2

LRI Landfill, Gas Wells, February 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.				
25						REFUSE		Black refuse. Moist. 68 °F. Plastics, textiles, and soil Lightly decomposed End of boring at 26'.	25	 16oz Non woven Geotextile 6-inch Dia. SCH 80 PVC Perforated Pipe
8										
9	30									
10										
35										
11										
12	40									
13										
45										
14										
15	50									
16										
55										