

Prepared for: Legacy Site Services LLC

Arkema Quarter 4, 2022, Groundwater Monitoring Report

Arkema Inc. Facility, Portland, Oregon

February 2023

Project No.: 0629640

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February 2023

Arkema Quarter 4, 2022, Groundwater Monitoring Report

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Acronyms and Abbreviations

Name	Description
μg/L	Micrograms per liter
Arkema	Arkema Inc.
cis-1,2-DCE	cis-1,2-Dichloroethene
COC	Contaminant of concern
ERM	ERM-West, Inc.
GEE	Groundwater Extraction Enhancement
GMWP	Groundwater Monitoring Work Plan
GWBW	Groundwater barrier wall
GWET	Groundwater extraction and treatment
GW SCM	Groundwater source control measures
LSS	Legacy Site Services, LLC
ODEQ	Oregon Department of Environmental Quality
PCE	Tetrachloroethene
QA/QC	Quality assurance / quality control
QAPP	Quality Assurance Project Plan
Report	Quarter 4, 2022, Groundwater Monitoring Report
SEE	System Effectiveness Evaluation
Site	Former Arkema Portland Plant at 6400 NW Front Avenue, Portland, Oregon
TCE	Trichloroethene
VOC	Volatile organic compound

1. INTRODUCTION

ERM-West, Inc. (ERM) has prepared this Quarter 4, 2022, Groundwater Monitoring Report (Report) on behalf of Legacy Site Services, LLC (LSS), agent for Arkema Inc. (Arkema). This Report summarizes the groundwater sampling results for the Quarter 4, 2022, groundwater monitoring at the former Arkema Portland Plant at 6400 NW Front Avenue, Portland, Oregon (the Site). Implementation of the quarterly groundwater monitoring is in accordance with the Oregon Department of Environmental Quality (ODEQ) 31 May 2019 review of the *Draft Groundwater Extraction and Treatment System Effectiveness Evaluation Report* (ODEQ 2019) and the subsequent meeting held on 2 July 2019. In their review, the ODEQ requested the development of an analytical monitoring program for groundwater contaminants of concern (COCs). Subsequent to that letter, LSS, ERM, and the ODEQ held a meeting on 2 July 2019, during which ERM and LSS agreed to commence groundwater monitoring.

Following the ODEQ 19 July 2021 review of the *2021 Groundwater Extraction and Treatment System Effectiveness Evaluation Report* (ODEQ 2021; ERM 2021), the current monitoring program is focused on areas of potential migration of volatile organic compounds (VOCs), perchlorate, and chloride around or below the groundwater barrier wall (GWBW) in the Shallow, Intermediate, and Deep hydrogeological zones.

Details of the previous Quarter 2, 2022, groundwater monitoring event are described in the *Arkema Quarter 2, 2022, Groundwater Monitoring Report* (ERM 2022a).

Following the August 2022 email correspondence with the ODEQ, the Quarter 3, 2022, groundwater monitoring event was excluded from the 2022 groundwater monitoring scope due to construction of the Groundwater Extraction Enhancement (GEE) system onsite.

1.1 Objectives

The objective of this groundwater monitoring program is to evaluate changes to groundwater conditions for groundwater COCs in the vicinity of the groundwater source control measures (GW SCM) consisting of the GWBW and the groundwater extraction and treatment (GWET) system.

This Report provides the field procedures, groundwater level data, and analytical results from the Quarter 4, 2022, groundwater monitoring event.

1.2 Background

The Site's operational and remedial history was documented in the *Revised Upland Feasibility Study Work Plan* (ERM 2017). Installation and construction of the GW SCM was completed in December 2013 and the GWET system was started in May 2014. Construction of the GEE system started in July 2022 and the system was started in November 2022. The GW SCM and GWET system, including the newly constructed GEE system, are described in Section 1.2.2.

1.2.1 Site Description

The Site is located at 6400 NW Front Avenue in the Northwest Industrial Area of Portland, Oregon. The facility is bounded by Front Avenue on the north and west, the Willamette River on the east, and an asphalt roofing manufacturer on the south. The Site lies on the southwest bank of the lower Willamette River between river mile 6.9 and river mile 7.6, immediately upstream of the Burlington Northern Santa Fe Railroad Bridge. The property is adjacent to the Portland Harbor Superfund site.

1.2.2 Groundwater Source Control Measures

The current GW SCM at the Site consists of the following primary components:

- The GWBW to physically separate the affected upland portions and in-water portions of the Site;
- A series of extraction wells, including seven extraction trenches, designed to provide hydraulic capture to minimize flow of groundwater containing unacceptable concentrations of COCs around, over, and under the GWBW; and
- Management/treatment of extracted groundwater through a GWET system with treated effluent discharged to the Willamette River under a National Pollutant Discharge Elimination System permit.

Prior to construction of the GEE system, hydraulic capture consisted of 13 groundwater recovery wells screened in the Shallow Zone and 9 recovery wells screened in the Intermediate Zone. Following the construction and implementation of the GEE system, the current GW SCM includes 4 pre-existing recovery wells and 7 groundwater extraction trenches installed in 2022. The extraction trenches contain 14 extraction wells designed to increase the amount of water extracted from the subsurface. Hydraulic gradients across the GWBW are evaluated through data collected from a network of 36 piezometers used to monitor the groundwater elevation in the Shallow, Intermediate, and Deep Zones. These hydraulic gradients are used to evaluate hydraulic capture performance in the vicinity of the GWBW. The GW SCM are described in the *Revised Final Performance Monitoring Plan—Groundwater Source Control Measure* (ERM 2015) and the GEE system is described in further detail in the *Final Design Report* (ERM 2022b).

ERM evaluated the GW SCM performance by utilizing data from the piezometers to calculate hydraulic gradients; these data are presented in monthly progress reports and GWET System Effectiveness Evaluation (SEE) reports (ERM 2018, 2020, 2021, 2022c).

To further evaluate performance of the GW SCM, ERM assesses groundwater conditions, including COCs, in the vicinity of the GWBW. ERM collects COC data on a quarterly basis and assesses groundwater conditions in the area of the GWBW on an annual basis. The annual assessment is included in the Annual SEE Report.

On 22 May 2022, the GW SCM was temporarily shut down and operated intermittently while the new GEE system was installed to process water from the construction project. Discharge to the river from the GWET system resumed on 27 November 2022.

2. FIELD PROCEDURES

ERM collected groundwater elevation data from 114 well locations on 4 November 2022 and samples from 29 well locations between 7 and 10 November 2022. The locations of all monitoring wells and piezometers are presented on Figure 1. A summary of groundwater level and sampling locations and analyses are displayed in Table 1.

ERM performed field sampling in accordance with the procedures outlined in the GMWP and addenda. These procedures cover well purging, field parameter collection, analytical requirements, and quality assurance / quality control (QA/QC) protocols.

Groundwater monitoring fieldwork included collecting groundwater level measurements, water quality parameters, and groundwater samples for laboratory analysis.

2.1 Groundwater Level Measurements

As shown in Table 1, ERM collected groundwater elevation data on 4 November 2022 from 114 well locations out of 121 planned well locations using a combination of transducer and manual measurements. Manual measurements were measured to the nearest 0.01 foot using a water level indicator in accordance with the GMWP. For locations with functioning transducers, transducer data were used for reporting in lieu of collecting manual measurements. Locations unable to be measured included well locations under water due to seasonal rainfall or in need of repair.

2.2 Groundwater Sample Collection Procedures

ERM collected groundwater samples from 29 well locations, including 8 monitoring wells and 21 piezometers (Table 1). Sample collection procedures pertaining to the 29 well locations under ERM's monitoring program are included below.

All wells and piezometers were sampled with a bladder or peristaltic pump using low-flow techniques and sample collection procedures as described in the GMWP. Field water quality measurements (i.e., temperature, pH, specific conductivity, dissolved oxygen, oxygen-reduction potential) were collected with calibrated field water quality meters. Turbidity was collected utilizing 3-way valves and Hach turbidimeters. ERM recorded field notes taken during sampling in field logs; field forms are provided as Appendix A.

After well-purging criteria were satisfied, ERM disconnected the in-line flow cell and collected groundwater samples in the appropriate containers for the analyses as shown in Table 1. For VOCs, low-level analyses were performed if historical results were non-detect by standard methods.

After sampling, ERM removed the pump and associated tubing from the well, discarded disposable tubing, and decontaminated reusable equipment as described in the GMWP.

2.3 Sample Shipping and Investigation-Derived Waste

After sample collection, ERM labeled samples with the required data and entered the data into the chain-of-custody record to facilitate proper tracking and control. Samples were delivered under chain-of-custody to the Eurofins Beaverton Service Center and then shipped to their respective Eurofins laboratory in sealed containers, accompanied by the chain-of-custody record.

Investigation-derived waste generated during the groundwater monitoring included groundwater purged from monitoring wells, personal protective equipment, and disposable sampling equipment.

Decontamination fluids and purge water were contained in 5-gallon buckets and then processed in the

GWET system. Disposable sampling equipment and used personal protective equipment were disposed of as non-hazardous solid waste.

2.4 Quality Assurance and Quality Control and Data Validation

As described in the GMWP, the analyses were performed in accordance with the Quality Assurance Project Plan (QAPP) and the 2009 and 2011 QAPP addenda, as described in the GMWP.

ERM collected field QA/QC samples in accordance with the QAPP and associated addenda (listed below). QA/QC samples—including trip blanks, field duplicates, and rinsate samples—were collected, controlled, and shipped in the same manner as normal field samples.

- Trip blanks were included in each cooler that contained VOC samples.
- Field duplicate samples were collected for every 20 samples.
- Rinsate blank samples were collected for every 20 samples to verify efficacy of bladder pump decontamination.

ERM completed data validation after receiving the laboratory analytical reports. Appendix B includes laboratory analytical reports and Appendix C includes data validation memos. QA/QC issues during the Quarter 4, 2022, groundwater monitoring event included samples analyzed by Eurofins lab outside of hold time and detected concentrations of select VOCs in lab method blanks and collected rinsate blanks. Associated sample analyte results were qualified during data validation and additional details regarding any QA/QC issues are included in the data validation memos. Based on the results of the data validation, the qualified data are acceptable for decision making and meet the overall objectives of the monitoring program. These data will be utilized in the annual statistical evaluation to be included in the SEE report to be submitted in Quarter 1, 2023.

There were no deviations outside of the ODEQ-approved GMWP and modified scope during the Quarter 4, 2022, groundwater sampling event.

3. GROUNDWATER MONITORING RESULTS

3.1 Groundwater Elevations

On 4 November 2022, ERM manually measured depth to groundwater to the nearest 0.01 foot in 62 wells at the Site using an electronic water level indicator.

For the additional 52 wells with functioning transducers, ERM collected transducer groundwater elevation data on 4 November 2022 to calculate an average groundwater elevation for each location, which was then used for developing potentiometric surface maps. To calculate average groundwater elevation, ERM used transducer data recorded in the respective Shallow Zone, Intermediate Zone, and Deep Zone aquifer wells during the time period that manual water level measurements were collected. Table 2 presents groundwater elevations and the time period used for averaging transducer groundwater elevation data.

Groundwater beneath the Site occurs in five zones: Shallow Zone, Shallow-Intermediate Silt Zone, Intermediate Zone, Deep Zone, and Gravel/Basalt Zone. Potentiometric surface maps for the Shallow, Intermediate, and Deep Zones are presented on Figures 2 through 4, respectively.

The generalized flow direction indicated by the potentiometric surface maps show overall groundwater flow toward the GWBW. A potentiometric separation is noticeable exterior to the GWBW, indicating the GWBW is functioning by impeding groundwater flow. The Deep Zone potentiometric map also indicates flow toward the GWBW. River elevations from the Willamette River (river mile 12.8) gauge are shown on the potentiometric surface maps in an inset (Figures 2 through 4) and depict stage movement during November 2022.

3.2 Groundwater Sampling Results

From 7 to 10 November 2022, ERM personnel completed groundwater sampling at 29 monitoring well and piezometer locations in accordance with the performance monitoring scope and the ODEQ-approved program. Results from the groundwater sampling and analyses of the well locations included in ERM's monitoring program are presented in further detail below.

3.2.1 Field Parameter Results

ERM measured and recorded field parameters during well purging. Table 3 presents the results of the field parameter measurements.

Fifteen monitoring locations did not stabilize for turbidity during the Quarter 4, 2022, groundwater monitoring event. Given the nature of analytes included in the monitoring program scope, primary indicator parameters (dissolved oxygen, oxidation-reduction potential, specific conductance, and pH) consistent with ASTM International Standard D6771 (2018) as well as temperature were stabilized.

3.2.2 Analytical Results

Tables 4 and 5 present analytical results from the Quarter 4, 2022, groundwater monitoring event specific to ERM's groundwater monitoring program. Appendix B presents laboratory analytical reports and Appendix C presents data validation memos. A discussion of select COCs is provided in the subsequent sections and figures are presented in this Report based on historical analytical results that were presented previously in the *Sitewide Groundwater Monitoring Report—August 2009 Monitoring Event* (ERM 2010). Appendix D includes previous groundwater monitoring data, beginning in October 2019, from well locations associated with the reduced scope groundwater monitoring program. Appendix E

includes historical groundwater data associated with the Site prior to implementation of the groundwater monitoring program in October 2019.

3.2.2.1 VOCs

Table 4 presents the results for VOCs. Results for the Shallow, Intermediate, and Deep Zones are presented on the figures for chlorobenzene, 1,2-dichlorobenzene, tetrachloroethene (PCE), trichloroethene (TCE), cis-1,2-dichloroethene (cis-1,2-DCE), and vinyl chloride, as described below.

The results for chlorobenzene in the Shallow, Intermediate, and Deep Zones are presented on Figures 5 through 7, respectively. Chlorobenzene was detected in 9 out of 31 primary and duplicate samples. The highest detected concentration of chlorobenzene was 26,000 micrograms per liter (µg/L) at Deep Zone piezometer PA-30d.

The results for 1,2-dichlorobenzene in the Shallow, Intermediate, and Deep Zones are presented on Figures 8 through 10, respectively. 1,2-Dichlorobenzene was detected in 5 out of 31 primary and duplicate samples. The highest detected concentration of 1,2-dichlorobenzene was 0.22 µg/L at Intermediate Zone piezometer PA-32i.

The results for PCE, TCE, and their de-chlorination daughter-products cis-1,2-DCE and vinyl chloride, in the Shallow, Intermediate, and Deep Zones, are presented on Figures 11 through 13, respectively. A summary of highest detected concentrations is as follows below.

- PCE was detected in 9 of 31 primary and duplicate samples. The highest detected concentration of PCE was 16 μg/L at Shallow Zone monitoring well MWA-63.
- TCE was detected in 9 of 31 primary and duplicate samples. The highest detected concentration of TCE was 5.5 µg/L at Shallow Zone monitoring well MWA-63.
- cis-1,2-DCE was detected in 9 of 31 primary and duplicate samples. The highest detected concentration of cis-1,2-DCE was 17 µg/L at Deep Zone monitoring well PA-19d.
- Vinyl chloride was detected in 3 of 31 primary and duplicate samples. The highest detected concentration of vinyl chloride was 0.31 μg/L at Intermediate Zone monitoring well PA-32i.

3.2.2.2 Perchlorate

Table 5 presents the results for perchlorate. Perchlorate results for the Shallow, Intermediate, and Deep Zones are presented on Figures 14 through 16, respectively. Perchlorate was detected in 6 out of 31 primary and duplicate samples. The highest detected concentration of perchlorate was 97,000 μ g/L at Deep Zone monitoring well MWA-31i(d).

3.2.2.3 Chloride

Table 5 presents the results for chloride. Chloride results for the Shallow, Intermediate, and Deep Zones are presented on Figures 17 through 19, respectively. Chloride was detected in 31 out of 31 primary and duplicate samples. The highest detected concentration of chloride was 32,000 milligrams per liter at Deep Zone piezometer PA-24d.

4. **RECOMMENDATIONS**

Following the Quarter 4, 2022, groundwater monitoring event, no changes are recommended to the GMWP at this time. Any proposed changes in scope will be included in the Annual SEE Report submitted March 2023.

5. REFERENCES

- ERM (ERM-West, Inc.). 2010. Sitewide Groundwater Monitoring Report—August 2009 Monitoring Event. Arkema Inc. Facility, Portland, Oregon. February 2010.
- ERM. 2015. Revised Final Performance Monitoring Plan—Groundwater Source Control Measure. Arkema Inc. Facility, Portland, Oregon. July 2015.
- ERM. 2017. Revised Upland Feasibility Study Work Plan. Arkema Inc. Facility, Portland, Oregon. November 2017.
- ERM. 2018. *Draft GWET System Effectiveness Evaluation*. Arkema Inc. Facility, Portland, Oregon. September 2018.
- ERM. 2019. *Arkema Quarterly Groundwater Monitoring Work Plan*. Arkema Inc. Facility, Portland, Oregon. October 2019.
- ERM. 2020. GWET System Effectiveness Evaluation. Arkema Inc. Facility, Portland, Oregon. April 2020.
- ERM. 2021. GWET System Effectiveness Evaluation. Arkema Inc. Facility, Portland, Oregon. April 2021.
- ERM. 2022a. *Arkema Quarter 2, 2022, Groundwater Monitoring Report.* Arkema Inc. Facility, Portland, Oregon. June 2022.
- ERM. 2022b. Final Design Report. Arkema Inc. Facility, Portland, Oregon. July 2022.
- ERM. 2022c. GWET System Effectiveness Evaluation. Arkema Inc. Facility, Portland, Oregon. April 2022.
- ODEQ (Oregon Department of Environmental Quality). 2019. *Draft GWET System Effectiveness Evaluation Report. DEQ Review.*
- ODEQ. 2021. 2021 GWET System Effectiveness Evaluation Report. DEQ Review.

TABLES

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Table 1 Groundwater Sampling Matrix Arkema Quarter 4, 2022, Groundwater Monitoring Report Arkema Inc. Facility Portland, Oregon

Portiand, Ore	•	Analyte	Volatile Organic Compounds	Volatile Organic Compounds	Chloride	Perchlorate	
		Analytical Method	8260C	8260C_LL ¹	300	314	
	Aquifer	Groundwater Level					
Location ID	Classification	Measurement					Comments
MWA-02	Shallow	X*					
MWA-15r	Shallow	X					
MWA-18	Shallow	X					
MWA-19	Shallow	X*					
MWA-20	Shallow	X					
MWA-22	Shallow	X					
MWA-24	Shallow	X					
MWA-29	Shallow	X					
MWA-33 MWA-40	Shallow	X					
MWA-41	Shallow Shallow	X		X	 X	 X	
MWA-42	Shallow	X					
MWA-43	Shallow	X					
MWA-46	Shallow	X					
MWA-47	Shallow	X*					
MWA-61	Shallow	X					
MWA-63	Shallow	X	Х		Х	Х	
MWA-69	Shallow	X*					
MWA-71	Shallow	X					
MWA-72	Shallow	X					
MWA-73	Shallow	X					
MWA-82	Shallow	X		Х	Х	Х	
PA-03	Shallow	X*		X	Х	Х	
PA-04	Shallow	X*		Х	Х	Х	
PA-05	Shallow	X*					
PA-06	Shallow	X*					
PA-07 PA-08	Shallow Shallow	X* X*		X	X	 X	
PA-09	Shallow	X*		X	X	X	
PA-28	Shallow	X*					
PA-31	Shallow	X		X	Х	Х	
PA-33	Shallow	X					
PA-35	Shallow	X					
PA-36	Shallow	X					
PA-38	Shallow	X					
PA-41 PA-42	Shallow Shallow	X					
PA-42 PA-43	Shallow	X					
RP-02-31	Shallow	X					
RP-10-30	Shallow	X					
RW-05	Shallow	X*					
RW-07	Shallow	X					
RW-08	Shallow	X					
RW-10	Shallow	X					
RW-12	Shallow	X					
RW-14	Shallow	X*					
RW-15	Shallow	X					
RW-17	Shallow	X*					
RW-18	Shallow	X*					
RW-20	Shallow	X					
RW-22	Shallow	X*					
RW-23	Shallow	X*					
RW-25	Shallow	X*					
MWA-07(i)	Intermediate	X					

Table 1 **Groundwater Sampling Matrix** Arkema Quarter 4, 2022, Groundwater Monitoring Report Arkema Inc. Facility Portland, Oregon

i ortiana, ore	-3-···						T
		Analyte	Volatile Organic Compounds	Volatile Organic Compounds	Chloride	Perchlorate	
		Analytical Method	8260C	8260C_LL ¹	300	314	
	Aquifer	Groundwater Level					1
Location ID	Classification	Measurement					Comments
MWA-08i	Intermediate	X*					Comments
MWA-16i	Intermediate	X					
MWA-34i	Intermediate	X*					
MWA-49i	Intermediate	X					
MWA-53i	Intermediate	X					
MWA-54i	Intermediate	X					
MWA-66i	Intermediate	X*					
MWA-70i	Intermediate	X					
MWA-74i	Intermediate	X					
MWA-75i	Intermediate	X					
MWA-81i	Intermediate	X		X	Х	Х	
PA-10i	Intermediate	X*		X	Х	Х	
PA-11i	Intermediate	X*					
PA-12i	Intermediate	X*					
PA-13i	Intermediate	X*					
PA-14i	Intermediate	X*					
PA-15i	Intermediate	X*		X	Х	Х	
PA-16i	Intermediate	X*		X	Х	Х	
PA-17iR	Intermediate	X*		X	Х	X	
PA-29i	Intermediate	X*					
PA-32i	Intermediate	X		X	X	X	
PA-34i	Intermediate	X					
PA-37i	Intermediate	X					
PA-39i	Intermediate	X					
PA-40i	Intermediate	X					
PA-44i	Intermediate	X		X	X	Х	
RW-06i	Intermediate	X*					
RW-09i	Intermediate	X					
RW-11i	Intermediate	X					
RW-13i	Intermediate	X					
RW-16i	Intermediate	X					
RW-19i	Intermediate	X					
RW-21i	Intermediate	Х					
RW-24i	Intermediate	Х					
RW-26i	Intermediate	X					
MWA-11i(d)	Deep	X		X	X	X	
MWA-12i(d)	Deep	X					
MWA-12i(d)		X	X		X	X	
i i	Deep	X	X		X	X	
MWA-56d	Deep						
MWA-58d	Deep	X*	X		Х	Х	
PA-18d	Deep	X*	 X			 X	
PA-19d	Deep	X* X*			X	X	
PA-20d PA-21d	Deep	X*	X		X	X	
PA-210 PA-22d	Deep Deep	X*	X		X	X	
PA-22d PA-23d	Deep	X*	X		X	X	
PA-230 PA-24d	Deep	X*	X		X	X	
PA-24d PA-25d	Deep	X*		X	X	X	
PA-26d	Deep	X*		X	X	X	
PA-27d	Deep	X*	X		X	X	
PA-30d	Deep	X*	X		X	X	
MWA-76g	Gravel	X					
MWA-77g	Gravel	X					
1414471-119	Giavei	_ ^					1

NTU = nephelometric turbidity unit

^{* =} indicates locations where groundwater level measured with transducer

1 = low level test

Table 2 Groundwater Elevation Results Arkema Quarter 4, 2022, Groundwater Monitoring Report Arkema Inc. Facility Portland, Oregon

				Top of Casing Elevation (ft		Groundwate Elevation (f
Well ID	Date	Time	Aquifer Unit	NAVD88)	Depth to Water (ft)	NAVD88)
MWA-02*	11/4/2022	*	Shallow	36.20		8.57
MWA-15r	11/4/2022	8:52:00 AM	Shallow	36.06	21.40	14.66
MWA-18	11/4/2022	9:16:00 AM	Shallow	39.43	30.75	8.68
MWA-19*	11/4/2022	*	Shallow	38.26		8.73
MWA-20	11/4/2022	9:01:00 AM	Shallow	40.95	24.81	16.14
MWA-22	11/4/2022	8:45:00 AM	Shallow	36.59	20.40	16.19
MWA-24	11/4/2022	10:10:00 AM	Shallow	37.58	20.85	16.73
MWA-29	11/4/2022	9:29:00 AM	Shallow	44.42	34.84	9.58
MWA-33	11/4/2022	10:06:00 AM	Shallow	37.26	17.51	19.75
MWA-40	11/4/2022	10:15:00 AM	Shallow	36.96	17.20	19.76
MWA-41	11/4/2022	10:01:00 AM	Shallow	45.14	32.49	12.65
MWA-42	11/4/2022	8:53:00 AM	Shallow	37.24	20.95	16.29
MWA-43	11/4/2022	9:50:00 AM	Shallow	44.53	34.22	10.31
MWA-46	11/4/2022	9:11:00 AM	Shallow	36.67	28.00	8.67
MWA-47**	11/4/2022	9:25:00 AM	Shallow	39.02	30.33	8.69
MWA-61	11/4/2022	8:32:00 AM	Shallow	36.21	27.65	8.56
MWA-63	11/4/2022	9:29:00 AM	Shallow	36.29	27.27	9.02
MWA-69*	11/4/2022	*	Shallow	33.73		8.61
MWA-71	11/4/2022	9:02:00 AM	Shallow	34.82	6.03	28.79
MWA-72	11/4/2022	9:19:00 AM	Shallow	34.16	5.38	28.78
MWA-73	11/4/2022	9:54:00 AM	Shallow	36.01	7.42	28.59
MWA-82	11/4/2022	10:03:00 AM	Shallow	37.74	22.54	15.20
PA-03*	11/4/2022	*	Shallow	37.10		24.65
PA-04*	11/4/2022	*	Shallow	36.67		25.03
PA-05*	11/4/2022	*	Shallow	37.22		11.07
PA-06*	11/4/2022	*	Shallow	38.03		15.33
PA-07*	11/4/2022	*	Shallow	39.30		11.43
PA-08*	11/4/2022	*	Shallow	40.47		13.76
PA-09*	11/4/2022	*	Shallow	40.24		12.13
PA-28*	11/4/2022	*	Shallow	38.58		16.29
PA-31	11/4/2022	9:34:00 AM	Shallow	36.25	11.15	25.10
PA-33	11/4/2022	9:37:00 AM	Shallow	36.29	14.02	22.27
PA-35	11/4/2022		Shallow	35.91	NM	NM
PA-36	11/4/2022	8:12:00 AM	Shallow	36.90	21.42	15.48
PA-38	11/4/2022	9:43:00 AM	Shallow	42.93	27.49	15.44
PA-41	11/4/2022		Shallow	40.26	NM	NM
PA-42	11/4/2022	9:47:00 AM	Shallow	40.60	26.75	13.85
PA-43	11/4/2022	9:55:00 AM	Shallow	40.41	26.40	14.01
RP-02-31	11/4/2022	8:46:00 AM	Shallow	42.49	32.30	10.19
RP-10-30	11/4/2022	8:53:00 AM	Shallow	37.47	9.85	27.62
RW-05**	11/4/2022	10:34:00 AM	Shallow	34.80	12.64	22.16
RW-07	11/4/2022	11:00:00 AM	Shallow	33.98	18.60	15.38
RW-08	11/4/2022	10:54:00 AM	Shallow	34.21	18.50	15.71
RW-10	11/4/2022	10:57:00 AM	Shallow	34.33	13.22	21.11
RW-12	11/4/2022	10:45:00 AM	Shallow	35.58	19.25	16.33
RW-14*	11/4/2022	*	Shallow	36.08		16.15
RW-15	11/4/2022	10:38:00 AM	Shallow	35.81	19.70	16.11
RW-17*	11/4/2022	*	Shallow	36.55		19.89
RW-18**	11/4/2022	10:32:00 AM	Shallow	36.51	21.00	15.51
RW-20	11/4/2022	10:26:00 AM	Shallow	37.07	22.10	14.97
RW-22*	11/4/2022	*	Shallow	38.02		14.69
RW-23*	11/4/2022	*	Shallow	33.63		15.42
RW-25*	11/4/2022	*	Shallow	38.06		13.52
EW-1*	11/4/2022	*	Shallow/Intermediate	33.84		15.16
EW-2*	11/4/2022		Shallow/Intermediate	34.20	NM	NM
EW-3*	11/4/2022	*	Shallow/Intermediate	34.43		15.22
EW-4*	11/4/2022	*	Shallow/Intermediate	34.61		15.18
EW-5*	11/4/2022	*	Shallow/Intermediate	35.03		14.84
EW-6*	11/4/2022	*	Shallow/Intermediate	35.43		14.87
EW-7*	11/4/2022	*	Shallow/Intermediate	35.24		16.14
EW-8*	11/4/2022	*	Shallow/Intermediate	35.07		16.07
EW-9*	11/4/2022	*	Shallow/Intermediate	36.77		15.84
EW-10*	11/4/2022	*	Shallow/Intermediate	36.35		16.03
EW-11*	11/4/2022	*	Shallow/Intermediate	37.38		8.02
EW-12*	11/4/2022		Shallow/Intermediate	38.24	NM	NM
EW-13*	11/4/2022	*	Shallow/Intermediate	39.79		13.07
EW-14*	11/4/2022	*	Shallow/Intermediate	40.03		17.57
MWA-07(i)	11/4/2022	9:52:00 AM	Intermediate	36.24	8.01	28.23
MWA-08i*	11/4/2022	*	Intermediate	36.25		9.09
50.	11/4/2022	11:26:00 AM	Intermediate	36.58	28.45	8.13

Table 2 **Groundwater Elevation Results** Arkema Quarter 4, 2022, Groundwater Monitoring Report Arkema Inc. Facility Portland, Oregon

				Top of Casing		Groundwater
				Elevation (ft		Elevation (ft
Well ID	Date	Time	Aquifer Unit	NAVD88)	Depth to Water (ft)	NAVD88)
MWA-34i*	11/4/2022	*	Intermediate	38.02		9.03
MWA-49i	11/4/2022	9:13:00 AM	Intermediate	36.68	27.78	8.90
MWA-53i	11/4/2022	9:28:00 AM	Intermediate	44.63	35.80	8.83
MWA-54i	11/4/2022	8:57:00 AM	Intermediate	37.35	23.70	13.65
MWA-66i*	11/4/2022	*	Intermediate	33.35		8.88
MWA-70i	11/4/2022	10:10:00 AM	Intermediate	37.62	19.95	17.67
MWA-74i	11/4/2022	9:00:00 AM	Intermediate	34.72	11.81	22.91
MWA-75i	11/4/2022	9:16:00 AM	Intermediate	34.09	4.55	29.54
MWA-81i	11/4/2022		Intermediate	44.62	NM	NM
PA-10i*	11/4/2022	*	Intermediate	36.67		13.62
PA-11i*	11/4/2022	*	Intermediate	37.63		13.14
PA-12i*	11/4/2022	*	Intermediate	38.03		16.18
PA-13i*	11/4/2022	*	Intermediate	38.48		12.76
PA-14i*	11/4/2022	*	Intermediate	39.30		12.91
PA-15i*	11/4/2022	*	Intermediate	40.62		12.32
PA-16i*	11/4/2022	*	Intermediate	40.30		10.38
PA-17iR*	11/4/2022	*	Intermediate	37.59		12.01
PA-29i*	11/4/2022	*	Intermediate	39.18		8.90
PA-32i	11/4/2022	9:36:00 AM	Intermediate	36.28	22.61	13.67
PA-34i	11/4/2022	9:40:00 AM	Intermediate	36.02	22.48	13.54
PA-37i	11/4/2022	8:21:00 AM	Intermediate	36.54	19.52	17.02
PA-39i	11/4/2022	*	Intermediate	40.11	NM	NM
PA-40i	11/4/2022	9:40:00 AM	Intermediate	41.47	28.94	12.53
PA-44i	11/4/2022	9:53:00 AM	Intermediate	40.36	28.43	11.93
RW-06i**	11/4/2022	10:40:00 AM	Intermediate	35.59	21.86	13.73
RW-09i	11/4/2022	10:51:00 AM	Intermediate	33.73	19.67	14.06
RW-11i	11/4/2022	11:04:00 AM	Intermediate	34.77	21.15	13.62
RW-13i	11/4/2022	10:42:00 AM	Intermediate	36.09	20.50	15.59
RW-16i	11/4/2022	10:40:00 AM	Intermediate	35.77	20.90	14.87
RW-19i	11/4/2022	10:35:00 AM	Intermediate	36.56	23.90	12.66
RW-21i	11/4/2022	10:23:00 AM	Intermediate	37.38	24.20	13.18
RW-24i	11/4/2022	10:47:00 AM	Intermediate	34.03	20.39	13.64
RW-26i	11/4/2022		Intermediate	38.10	NM	NM
MWA-11i(d)	11/4/2022	8:46:00 AM	Deep	36.49	23.52	12.97
MWA-12i(d)	11/4/2022	9:50:00 AM	Deep	35.86	10.65	25.21
MWA-31i(d)	11/4/2022	11:33:00 AM	Deep	38.36	30.89	7.47
MWA-56d	11/4/2022	9:08:00 AM	Deep	36.68	28.10	8.58
MWA-58d*	11/4/2022	*	Deep	37.97		8.82
PA-18d*	11/4/2022	*	Deep	36.55		12.22
PA-19d*	11/4/2022	*	Deep	36.65		8.22
PA-20d**	11/4/2022	23:23:00 PM	Deep	37.91	25.70	12.21
PA-21d*	11/4/2022	*	Deep	34.36		8.53
PA-22d*	11/4/2022	*	Deep	38.75		10.72
PA-23d*	11/4/2022	*	Deep	39.31		10.81
PA-24d*	11/4/2022	*	Deep	39.06		8.21
PA-25d*	11/4/2022	*	Deep	40.44		10.82
PA-26d*	11/4/2022	*	Deep	40.33		11.10
PA-27d*	11/4/2022	*	Deep	37.10		11.19
PA-30d*	11/4/2022	*	Deep	37.34		11.41
MWA-76g	11/4/2022	9:15:00 AM	Gravel	34.96	11.24	23.72
MWA-77g	11/4/2022	8:57:00 AM	Gravel	34.03	2.01	32.02

NM = Not measured

ft = feet

NAVD 88 = North American Vertical Datum 1988

Manual measurement data collected in field with tablet.

Transducer data was averaged between 7:16 AM and 9:56 PM for the groundwater elevation value.

^{*=} wells with transducers; transducer data were used to obtain groundwater elevation
**= wells with malfunctioning or down transducers, water levels collected manually

Table 3
Field Parameters Measured in Groundwater
Arkema Quarter 4, 2022, Groundwater Monitoring Report
Arkema Inc. Facility
Portland, Oregon

			Analyte	рН	Temperature	Specific Conductivity	Oxidation- Reduction Potential	Dissolved Oxygen	Turbidity
			Method	Field Measure	Field Measure	Field Measure	Field Measure	Field Measure	Field Measure
			Unit	SU	deg C	uS/cm	mV	mg/L	NTU
Location ID	Sample Date	Aquifer Classification	Sample ID						
MWA-41	11/7/2022	Shallow	MWA-41-110722	6.84	11.3	486.9	47.3	1.17	15.13
MWA-63	11/9/2022	Shallow	MWA-63-110922	6.92	11.6	687	83.9	4.89	4.65
MWA-82	11/7/2022	Shallow	MWA-82-110722	9.96	12.9	480.7	22.7	1.17	45.95
PA-03	11/8/2022	Shallow	PA-03-110822	10.5	14.6	953	-174.9	0.94	57.94
PA-04	11/9/2022	Shallow	PA-04-110922	10.15	12.8	687	-25.2	1.12	60.25
PA-08	11/7/2022	Shallow	PA-08-110722	6.99	12.1	4476	-68.1	1.2	50.72
PA-09	11/8/2022	Shallow	PA-09-110822	7.26	13.5	856	70.2	1.08	48.32
PA-31	11/8/2022	Shallow	PA-31-110822	9.61	13.5	799	-53.5	1.1	20.86
MWA-81i	11/7/2022	Intermediate	MWA-81I-110722	6.05	11.2	2785	42.9	1.3	6.93
PA-10i	11/9/2022	Intermediate	PA-10I-110922	7.38	12.8	948	-137.8	1	9.72
PA-15i	11/7/2022	Intermediate	PA-15I-110722	6.98	12.8	4063	-142.8	0.98	20.53
PA-16i	11/8/2022	Intermediate	PA-16I-110822	6.82	11.9	583	83.3	1.63	18.79
PA-17iR	11/8/2022	Intermediate	PA-17IR-110822	7.88	13.7	534	-126.1	1.2	6.05
PA-32i	11/8/2022	Intermediate	PA-32I-110822	7.64	12.6	1221	-164.9	0.81	7.99
PA-44i	11/7/2022	Intermediate	PA-44I-110722	8.72	12.3	756	92.7	8.19	8.16
MWA-11i(d)	11/10/2022	Deep	MWA-11I(D)-111022	6.54	18.7	5428	-96.5	0.9	1.33
MWA-31i(d)	11/10/2022	Deep	MWA-31I(D)-111022	6.64	14.9	57043	64.1	1.16	15.75
MWA-56d	11/9/2022	Deep	MWA-56D-110922	6.48	11.7	44524	116.9	1.41	2.75
MWA-58d	11/9/2022	Deep	MWA-58D-110922	6.53	11.4	54702	92.7	1.27	4.79
PA-19d	11/10/2022	Deep	PA-19D-111022	7.42	14	2301	-30.4	3.4	15.22
PA-20d	11/10/2022	Deep	PA-20D-111022	6.7	13.9	5565	-67.9	1.97	3.26
PA-21d	11/10/2022	Deep	PA-21D-111022	6.29	12.3	3401	-26.4	1.9	2.03
PA-22d	11/9/2022	Deep	PA-22D-110922	6.97	10	19274	69.7	1.78	1.42
PA-23d	11/10/2022	Deep	PA-23D-111022	6.58	9.8	5814	-44.1	2.5	5.89
PA-24d	11/10/2022	Deep	PA-24D-111022	6.65	11.5	81248	-71.7	3.27	5.83
PA-25d	11/7/2022	Deep	PA-25D-110722	7.22	11.8	616	-114.6	2.39	5.21
PA-26d	11/8/2022	Deep	PA-26D-110822	6.97	11.8	159.8	-40.6	1.68	49.71
PA-27d	11/8/2022	Deep	PA-27D-110822	6.9	11.3	4712	-72.9	1.74	35.09
PA-30d	11/10/2022	Deep	PA-30D-111022	7.71	16.3	3667	-171.3	0.91	16.74

uS/cm = microSiemens per centimeter deg C = degrees Celsius mg/L = milligrams per liter mV = millivolts NTU = nephelometric turbidity units

pH units = pH units

Table 4
Volatile Organic Compounds Results
Arkema Quarter 4, 2022, Groundwater Monitoring Report
Arkema Inc. Facility
Portland, Oregon

				Analyte Unit	T 1,1,1,2-Tetrachloroethane	P51,1,1-Trichloroethane	E 1.1.2,2-Tetrachloroethane	E 1,1,2-Trichloroethane	된 1,1-Dichloroethane	Dati,1-Dichloroethene	돌1,1-Dichloropropene	E 1,2,3-Trichlorobenzene	5 1,2,3-Trichloropropane	T 1,2,4-Trichlorobenzene
	FSWP SHS	SC (shaded va	lues indicate results	above the value shown)	NE	11	0.4	1.6	47	710	NE	NE	NE	0.076
Location ID	Sample Date	Sample Type	Aquifer Classification	Sample ID										
MWA-41	11/7/2022	N	Shallow	MWA-41-110722	< 0.038 U	< 0.025 U	< 0.056 U	< 0.070 U	0.096 j	< 0.035 U	< 0.084 U	< 0.15 U	< 0.050 U	< 0.17 U
MWA-63	11/9/2022	N	Shallow	MWA-63-110922	< 0.18 U	< 0.39 U	< 0.52 U	< 0.24 U	< 0.22 U	< 0.28 U	< 0.29 U	< 0.43 U	< 0.41 U	< 0.33 U
MWA-82	11/7/2022	N	Shallow	MWA-82-110722	< 0.038 U	< 0.025 U	< 0.056 U	< 0.070 U	< 0.025 U	< 0.035 U	< 0.084 U	< 0.15 U	< 0.050 U	< 0.17 U
PA-03	11/8/2022	N	Shallow	PA-03-110822	< 0.038 U	< 0.025 U	< 0.056 U	< 0.070 U	0.14 j	< 0.035 U	< 0.084 U	< 0.15 U	< 0.050 U	< 0.17 U
PA-04	11/9/2022	N	Shallow	PA-04-110922	< 0.038 U	0.035 j	< 0.056 U	< 0.070 U	0.25	0.19 j	< 0.084 U	< 0.15 U	< 0.050 U	< 0.17 U
PA-08	11/7/2022	N	Shallow	PA-08-110722	< 0.038 U	< 0.025 U	< 0.056 U	< 0.070 U	0.22	0.071 i	< 0.084 U	< 0.15 U	< 0.050 U	< 0.17 U
PA-09	11/8/2022	N	Shallow	PA-09-110822	< 0.038 U	0.045 j	< 0.056 U	< 0.070 U	0.15 j	< 0.035 U	< 0.084 U	< 0.15 U	< 0.050 U	< 0.17 U
PA-31	11/8/2022	N	Shallow	PA-31-110822	< 0.038 U	0.34	< 0.056 U	< 0.070 U	0.36	1.5	< 0.084 U	< 0.15 U	< 0.050 U	< 0.17 U
PA-31	11/8/2022	FD	Shallow	DUP-01-110822	< 0.038 U	0.34	< 0.056 U	< 0.070 U	0.35	1.6	< 0.084 U	< 0.15 U	< 0.050 U	< 0.17 U
MWA-81i	11/7/2022	N	Intermediate	MWA-81I-110722	< 0.038 U	< 0.025 U	< 0.056 U	< 0.070 U	0.35	< 0.035 U	< 0.084 U	< 0.15 U	< 0.050 U	< 0.17 U
PA-10i	11/9/2022	N	Intermediate	PA-10I-110922	< 0.038 U	< 0.025 U	< 0.056 U	< 0.070 U	< 0.025 U	0.20	< 0.084 U	< 0.15 U	< 0.050 U	< 0.17 U
PA-15i	11/7/2022	N	Intermediate	PA-15I-110722	< 0.038 U	< 0.025 U	< 0.056 U	< 0.070 U	0.36	< 0.035 U	< 0.084 U	< 0.15 U	< 0.050 U	< 0.17 U
PA-16i	11/8/2022	N	Intermediate	PA-16I-110822	< 0.038 U	< 0.025 U	< 0.056 U	< 0.070 U	0.033 i	< 0.035 U	< 0.084 U	< 0.15 U	< 0.050 U	< 0.17 U
PA-17iR	11/8/2022	N	Intermediate	PA-17IR-110822	< 0.38 U	< 0.25 U	< 0.56 U	< 0.70 U	< 0.25 U	< 0.35 U	< 0.84 U	< 1.5 U	< 0.50 U	< 1.7 U
PA-32i	11/8/2022	N	Intermediate	PA-32I-110822	< 0.038 U	< 0.025 U	< 0.056 U	< 0.070 U	< 0.025 U	0.090 J+	< 0.084 U	< 0.15 U	< 0.050 U	< 0.17 U
PA-44i	11/7/2022	N	Intermediate	PA-44I-110722	< 0.038 U	< 0.025 U	< 0.056 U	< 0.070 U	< 0.025 U	< 0.035 U	< 0.084 U	< 0.15 U	< 0.050 U	< 0.17 U
MWA-11i(d)	11/10/2022	N	Deep	MWA-11I(D)-111022	< 0.038 U	< 0.025 U	< 0.056 U	< 0.070 U	0.058 i	< 0.035 U	< 0.084 U	< 0.15 U	< 0.050 U	< 0.17 U
MWA-31i(d)	11/10/2022	N	Deep	MWA-31I(D)-111022	< 0.18 U	< 0.39 U	< 0.52 U	< 0.24 U	< 0.22 U	< 0.28 U	< 0.29 U	< 0.43 U	< 0.41 U	< 0.33 U
MWA-56d	11/9/2022	N	Deep	MWA-56D-110922	< 0.18 U	< 0.39 U	< 0.52 U	< 0.24 U	< 0.22 U	< 0.28 U	< 0.29 U	< 0.43 U	< 0.41 U	< 0.33 U
MWA-58d	11/9/2022	N	Deep	MWA-58D-110922	< 0.18 UJ	< 0.39 UJ	< 0.52 UJ	< 0.24 UJ	< 0.22 UJ	< 0.28 UJ	< 0.29 UJ	< 0.43 UJ	< 0.41 UJ	< 0.33 UJ
MWA-58d	11/9/2022	FD	Deep	DUP-02-110922	< 0.18 UJ	< 0.39 UJ	< 0.52 UJ	< 0.24 UJ	< 0.22 UJ	< 0.28 UJ	< 0.29 UJ	< 0.43 UJ	< 0.41 UJ	< 0.33 UJ
PA-19d	11/10/2022	N	Deep	PA-19D-111022	< 3.6 U	< 7.8 U	< 10 U	< 4.8 U	< 4.4 U	< 5.6 U	< 5.8 U	< 8.6 U	< 8.2 U	< 6.6 U
PA-20d	11/10/2022	N	Deep	PA-20D-111022	< 0.18 U	< 0.39 U	< 0.52 U	< 0.24 U	0.64 i	< 0.28 U	< 0.29 U	< 2.0 U	< 0.41 U	< 1.0 U
PA-21d	11/10/2022	N	Deep	PA-21D-111022	< 18 U	< 39 U	< 52 U	< 24 U	< 22 U	< 28 U	< 29 U	< 43 U	< 41 U	< 33 U
PA-22d	11/9/2022	N	Deep	PA-22D-110922	< 0.18 U	< 0.39 U	< 0.52 U	< 0.24 U	< 0.22 U	< 0.28 U	< 0.29 U	< 0.43 U	< 0.41 U	< 0.33 U
PA-23d	11/10/2022	N	Deep	PA-23D-111022	< 0.18 U	< 0.39 U	< 0.52 U	< 0.24 U	< 0.22 U	< 0.28 U	< 0.29 U	< 0.43 U	< 0.41 U	< 0.33 U
PA-24d	11/10/2022	N	Deep	PA-24D-111022	< 0.18 U	< 0.39 U	< 0.52 U	< 0.24 U	< 0.22 U	< 0.28 U	< 0.29 U	< 0.43 U	< 0.41 U	< 0.33 U
PA-25d	11/7/2022	N	Deep	PA-25D-110722	< 0.038 U	< 0.025 U	< 0.056 U	< 0.070 U	< 0.025 U	< 0.035 U	< 0.084 U	< 0.15 U	< 0.050 U	< 0.17 U
PA-26d	11/8/2022	N	Deep	PA-26D-110822	< 0.038 U	< 0.025 U	< 0.056 U	< 0.070 U	< 0.025 U	< 0.035 U	< 0.084 U	< 0.15 U	< 0.050 U	< 0.17 U
PA-27d	11/8/2022	N	Deep	PA-27D-110822	< 0.18 U	< 0.39 UJ	< 0.52 U	< 0.24 U	0.32 i	< 0.28 U	< 0.29 U	< 0.43 U	< 0.41 U	0.56 J
PA-30d	11/10/2022	N	Deep	PA-30D-111022	< 36 U	< 78 U	< 100 U	< 48 U	< 44 U	< 56 U	< 58 U	< 86 U	< 82 U	< 66 U
			7-7-		. 23 0			0 0		. 50 0	. 50 0	. 50 0		

Bolded values indicate concentrations above the Method Detection Limit.

Shaded values indicate concentrations above the FSWP SHSC.

< = Compound not detected. Method Detection Limit shown.

μg/L = micrograms per liter

FD = Field Duplicate Sample

FSWP SHSC = Feasibility Study Work Plan Indirect Exposure Pathway Selected Hot Spot Criteria

N = Normal Environmental Sample

NE = Not Established

SW8260C analyses performed by TestAmerica - Seattle, WA of Seattle.

Qualifiers - Organic:

j = The analyte was positively identified below the RDL; associated numerical value is the approximate concentration of the analyte in the sample.

J- = The concentration of the sample is considered to be biased low, as the associated QC results are outside the lower control limits.

J+= The concentration of the sample is considered to be biased high, as the associated QC exceed the upper control limits.

U = Analyte was analyzed for, but not detected above, the limit displayed.

U = Analyte was analyzed for, but not detected above, the limit displayed.

UJ = Analyte was analyzed for, but not detected. The detection limit is a quantitative estimate.

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Table 4
Volatile Organic Compounds Results
Arkema Quarter 4, 2022, Groundwater Monitoring Report
Arkema Inc. Facility
Portland, Oregon

				Analyte Unit	도 다음 1,2,4-Trimethylbenzene	हूँ 1,2-Dibromo-3-chloropropane	र्वे 1,2-Dichlorobenzene	र्के 1,2-Dichloroethane	हि 1,2-Dichloropropane	[전] 1,3,5-Trimethylbenzene	전 1,3-Dichlorobenzene	হি 1,3-Dichloropropane	© 1,4-Dichlorobenzene	전 2.2-Dichloropropane
	FSWP SHS	_ `		above the value shown)	NE	NE	14	3.7	1.5	NE	10	NE	15	NE
Location ID	Sample Date	Sample Type	Aquifer Classification	Sample ID										
MWA-41	11/7/2022	N	Shallow	MWA-41-110722	< 0.20 U	< 0.17 U	< 0.038 U	< 0.043 U	< 0.060 U	< 0.15 U	< 0.050 U	< 0.025 U	< 0.050 U	< 0.060 U
MWA-63	11/9/2022	N	Shallow	MWA-63-110922	< 0.61 U	< 0.57 U	< 0.46 U	< 0.42 U	< 0.18 U	< 0.55 U	< 0.48 U	< 0.35 U	< 0.46 U	< 0.32 U
MWA-82	11/7/2022	N	Shallow	MWA-82-110722	< 0.20 U	< 0.17 U	0.051 j	< 0.043 U	< 0.060 U	< 0.15 U	< 0.050 U	< 0.025 U	< 0.050 U	< 0.060 U
PA-03	11/8/2022	N	Shallow	PA-03-110822	< 0.20 U	< 0.17 U	< 0.038 U	< 0.043 U	< 0.060 U	< 0.15 U	< 0.050 U	< 0.025 U	< 0.050 U	< 0.060 U
PA-04	11/9/2022	N	Shallow	PA-04-110922	< 0.20 U	< 0.17 U	< 0.038 U	< 0.043 U	< 0.060 U	< 0.15 U	< 0.050 U	< 0.025 U	< 0.050 U	< 0.060 U
PA-08	11/7/2022	N	Shallow	PA-08-110722	< 0.20 U	< 0.17 U	0.061 j	< 0.043 U	< 0.060 U	< 0.15 U	< 0.050 U	< 0.025 U	< 0.050 U	< 0.060 U
PA-09	11/8/2022	N	Shallow	PA-09-110822	< 0.20 U	< 0.17 U	0.063 j	< 0.043 U	< 0.060 U	< 0.15 U	< 0.050 U	< 0.025 U	< 0.050 U	< 0.060 U
PA-31	11/8/2022	N	Shallow	PA-31-110822	< 0.20 U	< 0.17 U	< 0.038 U	< 0.043 U	< 0.060 U	< 0.15 U	< 0.050 U	< 0.025 U	< 0.050 U	< 0.060 U
PA-31	11/8/2022	FD	Shallow	DUP-01-110822	< 0.20 U	< 0.17 U	< 0.038 U	< 0.043 U	< 0.060 U	< 0.15 U	< 0.050 U	< 0.025 U	< 0.050 U	< 0.060 U
MWA-81i	11/7/2022	N	Intermediate	MWA-81I-110722	< 0.20 U	< 0.17 U	< 0.038 U	< 0.043 U	< 0.060 U	< 0.15 U	< 0.050 U	< 0.025 U	< 0.050 U	< 0.060 U
PA-10i	11/9/2022	N	Intermediate	PA-10I-110922	< 0.20 U	< 0.17 U	0.15 j	< 0.043 U	< 0.060 U	< 0.15 U	< 0.050 U	< 0.025 U	< 0.050 U	< 0.060 U
PA-15i	11/7/2022	N	Intermediate	PA-15I-110722	< 0.20 U	< 0.17 U	< 0.038 U	< 0.043 U	0.068 j	< 0.15 U	< 0.050 U	< 0.025 U	< 0.050 U	< 0.060 U
PA-16i	11/8/2022	N	Intermediate	PA-16I-110822	< 0.20 U	< 0.17 U	< 0.038 U	< 0.043 U	< 0.060 U	< 0.15 U	< 0.050 U	< 0.025 U	< 0.050 U	< 0.060 U
PA-17iR	11/8/2022	N	Intermediate	PA-17IR-110822	< 2.0 U	< 1.7 U	< 0.38 U	< 0.43 U	< 0.60 U	< 1.5 U	< 0.50 U	< 0.25 U	< 0.50 U	< 0.60 U
PA-32i	11/8/2022	N	Intermediate	PA-32I-110822	< 0.20 U	< 0.17 U	0.22 j	< 0.043 U	< 0.060 U	< 0.15 U	< 0.050 U	< 0.025 U	< 0.050 U	< 0.060 U
PA-44i	11/7/2022	N	Intermediate	PA-44I-110722	< 0.20 U	< 0.17 U	< 0.038 U	< 0.043 U	< 0.060 U	< 0.15 U	< 0.050 U	< 0.025 U	< 0.050 U	< 0.060 U
MWA-11i(d)	11/10/2022	N	Deep	MWA-11I(D)-111022	< 0.20 U	< 0.17 U	< 0.038 U	< 0.043 U	< 0.060 U	< 0.15 U	< 0.050 U	< 0.025 U	< 0.050 U	< 0.060 U
MWA-31i(d)	11/10/2022	N	Deep	MWA-31I(D)-111022	< 0.61 U	< 0.57 U	< 0.46 U	< 0.42 U	< 0.18 U	< 0.55 U	< 0.48 U	< 0.35 U	< 0.46 U	< 0.32 U
MWA-56d	11/9/2022	N	Deep	MWA-56D-110922	< 0.61 U	< 0.57 U	< 0.46 U	< 0.42 U	< 0.18 U	< 0.55 U	< 0.48 U	< 0.35 U	< 0.46 U	< 0.32 U
MWA-58d	11/9/2022	N	Deep	MWA-58D-110922	< 0.61 UJ	< 0.57 UJ	< 0.46 UJ	< 0.42 UJ	< 0.18 UJ	< 0.55 UJ	< 0.48 UJ	< 0.35 UJ	< 0.46 UJ	< 0.32 UJ
MWA-58d	11/9/2022	FD	Deep	DUP-02-110922	< 0.61 UJ	< 0.57 UJ	< 0.46 UJ	< 0.42 UJ	< 0.18 UJ	< 0.55 UJ	< 0.48 UJ	< 0.35 UJ	< 0.46 UJ	< 0.32 UJ
PA-19d	11/10/2022	N	Deep	PA-19D-111022	< 12 U	< 11 U	< 9.2 U	< 8.4 U	< 3.6 U	< 11 U	< 9.6 U	< 7.0 U	< 9.2 U	< 6.4 U
PA-20d	11/10/2022	N	Deep	PA-20D-111022	< 0.61 U	< 0.57 U	< 0.46 U	0.54 j	< 0.18 U	< 0.55 U	< 0.48 U	< 0.35 U	< 0.46 U	< 0.32 U
PA-21d	11/10/2022	N	Deep	PA-21D-111022	< 61 U	< 57 U	< 46 U	< 42 U	< 18 U	< 55 U	< 48 U	< 35 U	< 46 U	< 32 U
PA-22d	11/9/2022	N	Deep	PA-22D-110922	< 0.61 U	< 0.57 U	< 0.46 U	< 0.42 U	< 0.18 U	< 0.55 U	< 0.48 U	< 0.35 U	< 0.46 U	< 0.32 U
PA-23d	11/10/2022	N	Deep	PA-23D-111022	< 0.61 U	< 0.57 U	< 0.46 U	< 0.42 U	< 0.18 U	< 0.55 U	< 0.48 U	< 0.35 U	< 0.46 U	< 0.32 U
PA-24d	11/10/2022	N	Deep	PA-24D-111022	< 0.61 U	< 0.57 U	< 0.46 U	1.6	< 0.18 U	< 0.55 U	< 0.48 U	< 0.35 U	< 0.46 U	< 0.32 U
PA-25d	11/7/2022	N	Deep	PA-25D-110722	< 0.20 U	< 0.17 U	< 0.038 U	< 0.043 U	< 0.060 U	< 0.15 U	< 0.050 U	< 0.025 U	< 0.050 U	< 0.060 U
PA-26d	11/8/2022	N	Deep	PA-26D-110822	< 0.20 U	< 0.17 U	< 0.038 U	< 0.043 U	< 0.060 U	< 0.15 U	< 0.050 U	< 0.025 U	< 0.050 U	< 0.060 U
PA-27d	11/8/2022	N	Deep	PA-27D-110822	< 0.61 U	< 0.57 U	< 0.46 U	< 0.42 U	< 0.18 U	< 0.55 U	< 0.48 UJ	< 0.35 U	< 0.46 U	< 0.32 U
PA-30d	11/10/2022	N	Deep	PA-30D-111022	< 120 U	< 110 U	< 92 U	< 84 U	< 36 U	< 110 U	< 96 U	< 70 U	< 92 U	< 64 U
					1 120 0	, , , , , ,		, , , , ,	, , , ,	7 0	, , , ,	1,00		, , , ,

Bolded values indicate concentrations above the Method Detection Limit.

Shaded values indicate concentrations above the FSWP SHSC.

< = Compound not detected. Method Detection Limit shown.

μg/L = micrograms per liter

FD = Field Duplicate Sample

FSWP SHSC = Feasibility Study Work Plan Indirect Exposure Pathway Selected Hot Spot Criteria

N = Normal Environmental Sample

NE = Not Established

SW8260C analyses performed by TestAmerica - Seattle, WA of Seattle.

Qualifiers - Organic:

j = The analyte was positively identified below the RDL; associated numerical value is the approximate concentration of the analyte in the sample.

J- = The concentration of the sample is considered to be biased low, as the associated QC results are outside the lower control limits.

J+ = The concentration of the sample is considered to be biased high, as the associated QC exceed the upper control limits.

U = Analyte was analyzed for, but not detected above, the limit displayed.

U = Analyte was analyzed for, but not detected above, the limit displayed.

UJ = Analyte was analyzed for, but not detected. The detection limit is a quantitative estimate.

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Table 4
Volatile Organic Compounds Results
Arkema Quarter 4, 2022, Groundwater Monitoring Report
Arkema Inc. Facility
Portland, Oregon

Location ID Sample Date Type Classification Sample ID	/A-41 /A-63			Únit	φ - kg/L	hã/r 4-Ch 0	드 구 4-1sopropyltoluene	E 4-Methyl-2-pentanone	лд/г Лобт	репzene Лбт	표 Bromobenzer	전 Bromodichloromethane	Бтотобогт Т	कि Promomethane न
MWA-41 11/7/2022 N Shallow MWA-41-110722 < 2.5 U < 0.12 U < 0.15 U < 0.15 U < 3.1 U < 0.030 U < 0.038 U < 0.060 U	/A-41 /A-63			above the value shown)	14,000	NE	NE	NE	1,500	1.4	NE	1.7	14	150
MWA-63 11/9/2022 N Shallow MWA-63-110922 < 4.7 U < 0.38 U < 0.28 U < 2.5 U < 0.12 U < 0.43 U < 0.24 U < 0.43 U < 0.29 U < 0.15 U < 0.030 U <	/A-63	Type Type	Classification	·										
MWA-82													< 0.16 U	< 0.13 U
PA-03		11/9/2022 N	Shallow				< 0.28 U	< 2.5 UJ	< 3.2 UJ	< 0.24 U	< 0.43 U		< 0.51 U	< 0.21 U
PA-04 11/9/2022 N Shallow PA-04-110922 < 2.5 U < 0.12 U < 0.15 U < 1.7 U < 3.1 U < 0.030 U < 0.038 U < 0.060 U	A-82	11/7/2022 N	Shallow	MWA-82-110722	< 2.5 U	< 0.12 U	< 0.15 U	< 1.7 U	< 3.1 U	< 0.030 U	< 0.038 U	< 0.060 U	< 0.16 U	< 0.13 U
PA-08 11/7/2022 N Shallow PA-08-110722 <2.5 U <0.12 U <0.15 U <1.7 U <3.1 U <0.030 U <0.038 U <0.060 U					< 2.5 U	< 0.12 U	< 0.15 U	< 1.7 U	< 3.1 U	0.053 j		< 0.060 U	< 0.16 U	< 0.13 U
PA-09					< 2.5 U	< 0.12 U	< 0.15 U	< 1.7 U	< 3.1 U	< 0.030 U	< 0.038 U	< 0.060 U	< 0.16 U	< 0.13 U
PA-31 11/8/2022 N Shallow PA-31-110822 < 2.5 U < 0.12 U < 0.15 U < 1.7 U < 3.1 U < 0.030 U < 0.038 U < 0.060 U	1-08	11/7/2022 N	Shallow	PA-08-110722	< 2.5 U	< 0.12 U	< 0.15 U	< 1.7 U	< 3.1 U	< 0.030 U	< 0.038 U	< 0.060 U	< 0.16 U	< 0.13 U
PA-31	1-09	11/8/2022 N	Shallow	PA-09-110822	< 2.5 U	< 0.12 U	< 0.15 U		< 3.1 U	< 0.030 U	< 0.038 U	< 0.060 U	< 0.16 U	< 0.13 U
MWA-81i 11/7/2022 N Intermediate MWA-81i-110722 < 0.12 U < 0.15 U < 1.7 U < 3.1 U < 0.030 U < 0.060 U PA-10i 11/9/2022 N Intermediate PA-10i-110922 < 2.5 U	t-31	11/8/2022 N	Shallow		< 2.5 U	< 0.12 U	< 0.15 U	< 1.7 U	< 3.1 U	< 0.030 U	< 0.038 U	< 0.060 U	< 0.16 U	< 0.13 U
PA-10i 11/8/2022 N Intermediate PA-10i-110922 <2.5 U <0.12 U <0.15 U <1.7 U <3.1 U 0.055 j <0.038 U <0.060 U			Shallow			< 0.12 U				< 0.030 U	< 0.038 U		< 0.16 U	< 0.13 U
PA-15i 11/7/2022 N Intermediate PA-15i-110722 < 2.5 U < 0.12 U < 0.15 U < 1.7 U < 3.1 U 0.038 j < 0.038 U < 0.060 U	A-81i	11/7/2022 N	Intermediate	MWA-81I-110722	< 2.5 U	< 0.12 U	< 0.15 U	< 1.7 U	< 3.1 U	< 0.030 U	< 0.038 U	< 0.060 U	< 0.16 U	< 0.13 U
PA-16 11/8/2022 N Intermediate PA-16 -110822 < 2.5 U < 0.12 U < 0.15 U < 1.7 U < 3.1 U 0.071 j < 0.038 U < 0.060 U	10i	11/9/2022 N	Intermediate	PA-10I-110922	< 2.5 U	< 0.12 U	< 0.15 U	< 1.7 U	< 3.1 U	0.055 j	< 0.038 U	< 0.060 U	< 0.16 U	< 0.13 U
PA-17iR 11/8/2022 N Intermediate PA-17iR-110822 <25 U <1.2 U <1.5 U <1.7 U 37 J+ <0.30 U <0.38 U <0.060 U	15i	11/7/2022 N	Intermediate	PA-15I-110722	< 2.5 U	< 0.12 U	< 0.15 U	< 1.7 U	< 3.1 U	0.038 j	< 0.038 U	< 0.060 U	< 0.16 U	< 0.13 U
PA-32i 11/8/2022 N Intermediate PA-32i-110822 < 2.5 U < 0.12 U < 0.15 U < 1.7 U < 3.1 U 0.043 j < 0.038 U < 0.060 U	16i	11/8/2022 N	Intermediate	PA-16I-110822	< 2.5 U	< 0.12 U	< 0.15 U	< 1.7 U	< 3.1 U	0.071 j	< 0.038 U	< 0.060 U	< 0.16 U	< 0.13 U
PA-44i 11/7/2022 N Intermediate PA-44i-110722 < 2.5 U < 0.12 U < 0.15 U < 1.7 U < 3.1 U < 0.030 U < 0.038 U < 0.060 U	-17iR	11/8/2022 N	Intermediate	PA-17IR-110822	< 25 U	< 1.2 U	< 1.5 U	< 17 U	37 J+	< 0.30 U	< 0.38 U	< 0.60 U	< 1.6 U	< 1.3 U
MWA-11i(d) 11/10/2022 N Deep MWA-11i(D)-111022 < 0.12 U < 0.15 U < 1.7 U < 3.1 U < 0.030 U < 0.080 U < 0.060 U MWA-31i(d) 11/10/2022 N Deep MWA-31i(D)-111022 < 4.7 U		11/8/2022 N	Intermediate	PA-32I-110822		< 0.12 U	< 0.15 U	< 1.7 U	< 3.1 U	0.043 j	< 0.038 U	< 0.060 U	< 0.16 U	< 0.13 U
MWA-31I(d) 11/10/2022 N Deep MWA-31I(D)-111022 < 4.7 U < 0.38 U < 0.28 U < 2.5 U < 3.2 U 0.25 J < 0.43 U < 0.29 U MWA-56d 11/9/2022 N Deep MWA-56D-110922 < 4.7 U < 0.38 U < 0.28 U < 2.5 UJ < 3.2 UJ < 0.24 U < 0.43 U 0.55 J	-44i	11/7/2022 N	Intermediate	PA-44I-110722	< 2.5 U	< 0.12 U	< 0.15 U	< 1.7 U	< 3.1 U	< 0.030 U	< 0.038 U	< 0.060 U	< 0.16 U	< 0.13 U
MWA-56d 11/9/2022 N Deep MWA-56D-110922 < 4.7 U < 0.38 U < 0.28 U < 2.5 UJ < 3.2 UJ < 0.24 U < 0.43 U 0.55 j						< 0.12 U	< 0.15 U				< 0.038 U		< 0.16 U	< 0.13 U
			Deep			< 0.38 U	< 0.28 U		< 3.2 U	0.25 J	< 0.43 U	< 0.29 U	< 0.51 U	< 0.21 U
					< 4.7 U	< 0.38 U	< 0.28 U	< 2.5 UJ	< 3.2 UJ	< 0.24 U	< 0.43 U	0.55 j	< 0.51 U	< 0.21 U
MWA-58d 11/9/2022 N Deep MWA-58D-110922 < 4.7 W < 0.38 W < 0.28 W < 2.5 W < 3.2 W < 0.24 W < 0.43 W 0.62 J			Deep									0.62 J	< 0.51 UJ	< 1.0 U
MWA-58d 11/9/2022 FD Deep DUP-02-110922 < 4.7 W < 0.38 W < 0.28 W < 2.5 W < 3.2 W < 0.24 W < 0.43 W 0.62 J			Deep							< 0.24 UJ	< 0.43 UJ	0.62 J	< 0.51 UJ	< 0.21 UJ
PA-19d 11/10/2022 N Deep PA-19D-111022 < 94 U < 7.6 U < 5.6 U < 50 U < 64 U 17j < 8.6 U < 5.8 U													< 10 U	< 4.2 U
PA-20d 11/10/2022 N Deep PA-20D-111022 < 4.7 U < 0.38 U < 0.28 U < 2.5 U < 15 U < 0.24 U < 0.43 U < 0.29 U													< 0.51 U	< 0.21 U
PA-21d 11/10/2022 N Deep PA-21D-111022 < 470 U < 38 U < 28 U < 250 U < 320 U < 24 U < 43 U < 29 U													< 51 U	< 21 U
PA-22d 11/9/2022 N Deep PA-22D-110922 < 4.7 U < 0.38 U < 0.28 U < 2.5 UJ < 3.2 UJ < 0.24 U < 0.43 U < 0.29 U													< 0.51 U	< 0.21 U
PA-23d 11/10/2022 N Deep PA-23D-111022 < 4.7 U < 0.38 U < 0.28 U < 2.5 U < 3.2 U < 0.24 U < 0.43 U < 0.29 U													< 0.51 U	< 0.21 U
PA-24d 11/10/2022 N Deep PA-24D-111022 < 4.7 U < 0.38 U < 0.28 U < 2.5 U < 3.2 U < 0.24 U < 0.43 U < 0.29 U													< 0.51 U	< 0.21 U
PA-25d 11/7/2022 N Deep PA-25D-110722 <2.5 U <0.12 U <0.15 U <1.7 U <3.1 U <0.030 U <0.038 U <0.060 U													< 0.16 U	< 0.13 U
PA-26d 11/8/2022 N Deep PA-26D-110822 < 2.5 U < 0.12 U < 0.15 U < 1.7 U < 3.1 U < 0.030 U < 0.038 U < 0.060 U													< 0.16 U	< 0.13 U
PA-27d 11/8/2022 N Deep PA-27D-110822 < 4.7 U < 0.38 U < 0.28 U < 2.5 W 3.5 J < 0.24 U < 0.43 U < 0.29 U													< 0.51 U	< 0.21 U
PA-30d 11/10/2022 N Deep PA-30D-111022 < 940 U < 76 U < 56 U < 500 U < 640 U < 48 U < 86 U < 58 U	004	11/10/2022 N	Deep	PA-30D-111022	< 940 U	< 76 U	< 56 U	< 500 U	< 640 U	< 48 U	< 86 U	< 58 U	< 100 U	< 42 U

Bolded values indicate concentrations above the Method Detection Limit.

Shaded values indicate concentrations above the FSWP SHSC.

< = Compound not detected. Method Detection Limit shown.

μg/L = micrograms per liter

FD = Field Duplicate Sample

FSWP SHSC = Feasibility Study Work Plan Indirect Exposure Pathway Selected Hot Spot Criteria

N = Normal Environmental Sample

NE = Not Established

SW8260C analyses performed by TestAmerica - Seattle, WA of Seattle.

Qualifiers - Organic:

j = The analyte was positively identified below the RDL; associated numerical value is the approximate concentration of the analyte in the sample.

J- = The concentration of the sample is considered to be biased low, as the associated QC results are outside the lower control limits.

J+ = The concentration of the sample is considered to be biased high, as the associated QC exceed the upper control limits.

U = Analyte was analyzed for, but not detected above, the limit displayed.

U = Analyte was analyzed for, but not detected above, the limit displayed.

UJ = Analyte was analyzed for, but not detected. The detection limit is a quantitative estimate.

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Table 4
Volatile Organic Compounds Results
Arkema Quarter 4, 2022, Groundwater Monitoring Report
Arkema Inc. Facility
Portland, Oregon

				Analyte Unit	हि Carbon disulfide	T/64	7/6r Chlorobenzene	ра Сhlorobromomethane	J/Bd Chloroethane	hg/lr Chlor of or The or of or	드hloromethane 기술	Scis-1,2-Dichloroethene	Scis-1,3-Dichloropropene	년 Dibromochloromethane
	FSWP SHS	SC (shaded va	lues indicate results	above the value shown)	0.92	0.16	64	NE	NE	28	NE	590	NE	1.3
Location ID	Sample Date	Sample Type	Aquifer Classification	Sample ID										
MWA-41	11/7/2022	N	Shallow	MWA-41-110722	< 0.083 U	< 0.025 U	< 0.060 U	< 0.050 U	< 0.096 UJ	< 0.030 U	< 0.14 UJ	< 0.055 U	< 0.090 U	< 0.055 U
MWA-63	11/9/2022	N	Shallow	MWA-63-110922	< 0.53 UJ	< 0.30 U	< 0.44 U	< 0.29 U	< 0.35 UJ	95	< 0.28 UJ	5.3	< 0.42 U	< 0.43 U
MWA-82	11/7/2022	N	Shallow	MWA-82-110722	< 0.083 U	< 0.025 U	< 0.060 U	< 0.050 U	< 0.096 UJ	0.58	0.26 J	< 0.055 U	< 0.090 U	< 0.055 U
PA-03	11/8/2022	N	Shallow	PA-03-110822	< 0.083 U	< 0.025 U	< 0.060 U	< 0.050 U	< 0.096 UJ	0.042 j	0.20 J	< 0.055 U	< 0.090 U	< 0.055 U
PA-04	11/9/2022	N	Shallow	PA-04-110922	< 0.083 U	< 0.025 U	< 0.060 U	< 0.050 U	< 0.096 U	0.11	< 0.14 U	< 0.055 U	< 0.090 U	< 0.055 U
PA-08	11/7/2022	N	Shallow	PA-08-110722	< 0.083 U	< 0.025 U	< 0.060 U	< 0.050 U	< 0.096 UJ	0.032 j	0.15 J	0.30	< 0.090 U	< 0.055 U
PA-09	11/8/2022	N	Shallow	PA-09-110822	< 0.083 U	< 0.025 U	< 0.060 U	< 0.050 U	< 0.096 UJ	0.087 j	0.19 J	< 0.055 U	< 0.090 U	< 0.055 U
PA-31	11/8/2022	N	Shallow	PA-31-110822	< 0.083 U	< 0.025 U	< 0.060 U	< 0.050 U	< 0.096 UJ	0.055 j	< 0.14 UJ	< 0.055 U	< 0.090 U	< 0.055 U
PA-31	11/8/2022	FD	Shallow	DUP-01-110822	< 0.083 U	< 0.025 U	< 0.060 U	< 0.050 U	< 0.096 UJ	0.054 j	0.17 J	< 0.055 U	< 0.090 U	< 0.055 U
MWA-81i	11/7/2022	N	Intermediate	MWA-81I-110722	< 0.083 U	< 0.025 U	< 0.060 U	< 0.050 U	< 0.096 UJ	< 0.030 U	< 0.14 UJ	< 0.055 U	< 0.090 U	< 0.055 U
PA-10i	11/9/2022	N	Intermediate	PA-10I-110922	< 0.083 U	< 0.025 U	1.5	< 0.050 U	< 0.096 U	< 0.030 U	0.19 J+	0.48	< 0.090 U	< 0.055 U
PA-15i	11/7/2022	N	Intermediate	PA-15I-110722	< 0.083 U	< 0.025 U	0.29	< 0.050 U	< 0.096 UJ	< 0.030 U	< 0.14 UJ	0.16 j	< 0.090 U	< 0.055 U
PA-16i	11/8/2022	N	Intermediate	PA-16I-110822	< 0.083 U	< 0.025 U	< 0.060 U	< 0.050 U	< 0.096 UJ	< 0.030 U	< 0.14 UJ	< 0.055 U	< 0.090 U	< 0.055 U
PA-17iR	11/8/2022	N	Intermediate	PA-17IR-110822	< 0.83 U	< 0.25 U	< 0.60 U	< 0.50 U	< 0.96 U	< 0.30 U	< 1.4 U	0.78 j	< 0.90 U	< 0.55 U
PA-32i	11/8/2022	N	Intermediate	PA-32I-110822	< 0.083 U	< 0.025 U	0.28	< 0.050 U	0.57 J	< 0.030 U	< 0.14 UJ	0.087 j	< 0.090 U	< 0.055 U
PA-44i	11/7/2022	N	Intermediate	PA-44I-110722	< 0.083 U	< 0.025 U	< 0.060 U	< 0.050 U	< 0.096 UJ	< 0.030 U	< 0.14 UJ	< 0.055 U	< 0.090 U	< 0.055 U
MWA-11i(d)	11/10/2022	N	Deep	MWA-11I(D)-111022	< 0.083 U	< 0.025 U	1.1	< 0.050 U	< 0.096 U	< 0.030 U	< 0.14 U	0.14 j	< 0.090 U	< 0.055 U
MWA-31i(d)	11/10/2022	N	Deep	MWA-31I(D)-111022	< 0.53 U	< 0.30 U	0.55 J	< 0.29 U	< 0.35 U	87 J	< 0.28 U	< 0.35 U	< 0.42 U	< 0.43 U
MWA-56d	11/9/2022	N	Deep	MWA-56D-110922	< 0.53 UJ	< 0.30 U	< 0.44 U	< 0.29 U	< 0.35 UJ	130	< 0.28 UJ	< 0.35 U	< 0.42 U	< 0.43 U
MWA-58d	11/9/2022	N	Deep	MWA-58D-110922	< 0.53 UJ	< 0.30 UJ	< 0.44 UJ	< 0.29 UJ	< 0.35 UJ	88 J	< 0.28 UJ	< 0.35 UJ	< 0.42 UJ	< 0.43 UJ
MWA-58d	11/9/2022	FD	Deep	DUP-02-110922	< 0.53 UJ	< 0.30 UJ	< 0.44 UJ	< 0.29 UJ	< 0.35 UJ	90 J	< 0.28 UJ	< 0.35 UJ	< 0.42 UJ	< 0.43 UJ
PA-19d	11/10/2022	N	Deep	PA-19D-111022	< 11 U	< 6.0 U	2,500	< 5.8 U	< 7.0 U	< 5.2 U	< 5.6 U	17 j	< 8.4 U	< 8.6 U
PA-20d	11/10/2022	N	Deep	PA-20D-111022	< 0.53 U	< 0.30 U	9.3	< 0.29 U	< 0.35 U	0.83	< 0.28 U	< 0.35 U	< 0.42 U	< 0.43 U
PA-21d	11/10/2022	N	Deep	PA-21D-111022	< 53 U	< 30 U	15,000	< 29 U	< 35 U	26	< 28 U	< 35 U	< 42 U	< 43 U
PA-22d	11/9/2022	N	Deep	PA-22D-110922	< 0.53 UJ	< 0.30 U	< 0.44 U	< 0.29 U	< 0.35 UJ	14	< 0.28 UJ	< 0.35 U	< 0.42 U	< 0.43 U
PA-23d	11/10/2022	N	Deep	PA-23D-111022	< 0.53 U	< 0.30 U	< 0.44 U	< 0.29 U	< 0.35 U	< 0.26 U	< 0.28 U	< 0.35 U	< 0.42 U	< 0.43 U
PA-24d	11/10/2022	N	Deep	PA-24D-111022	< 0.53 U	< 0.30 U	< 0.44 U	< 0.29 U	< 0.35 U	< 0.26 U	< 0.28 U	< 0.35 U	< 0.42 U	< 0.43 U
PA-25d	11/7/2022	N	Deep	PA-25D-110722	< 0.083 U	< 0.025 U	< 0.060 U	< 0.050 U	< 0.096 UJ	< 0.030 U	< 0.14 UJ	< 0.055 U	< 0.090 U	< 0.055 U
PA-26d	11/8/2022	N	Deep	PA-26D-110822	< 0.083 U	< 0.025 U	< 0.060 U	< 0.050 U	< 0.096 UJ	< 0.030 U	< 0.14 UJ	< 0.055 U	< 0.090 U	< 0.055 U
PA-27d	11/8/2022	N	Deep	PA-27D-110822	< 0.53 UJ	< 0.30 U	< 0.44 U	< 0.29 U	< 0.35 UJ	< 0.26 U	< 0.28 UJ	0.85 j	< 0.42 U	< 0.43 U
PA-30d	11/10/2022	N	Deep	PA-30D-111022	< 110 U	< 60 U	26,000	< 58 U	< 70 U	< 52 U	< 56 U	< 70 U	< 84 U	< 86 U

Bolded values indicate concentrations above the Method Detection Limit.

Shaded values indicate concentrations above the FSWP SHSC.

< = Compound not detected. Method Detection Limit shown.

μg/L = micrograms per liter

FD = Field Duplicate Sample

FSWP SHSC = Feasibility Study Work Plan Indirect Exposure Pathway Selected Hot Spot Criteria

N = Normal Environmental Sample

NE = Not Established

SW8260C analyses performed by TestAmerica - Seattle, WA of Seattle.

Qualifiers - Organic:

j = The analyte was positively identified below the RDL; associated numerical value is the approximate concentration of the analyte in the sample.

J- = The concentration of the sample is considered to be biased low, as the associated QC results are outside the lower control limits.

J+ = The concentration of the sample is considered to be biased high, as the associated QC exceed the upper control limits.

U = Analyte was analyzed for, but not detected above, the limit displayed.

U = Analyte was analyzed for, but not detected above, the limit displayed.

UJ = Analyte was analyzed for, but not detected. The detection limit is a quantitative estimate.

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Table 4
Volatile Organic Compounds Results
Arkema Quarter 4, 2022, Groundwater Monitoring Report
Arkema Inc. Facility
Portland, Oregon

				Analyte Unit	7 Dibromomethane	Dichlorodifluoromethane (Freon 712)	S Ethylbenzene	Ethylene dibromide	Pa Hexachlorobutadiene	E Isopropyl berzene (Cumene)	m,p-Xylenes ∏m,p-Xylenes	∑ Methyl tert-butyl ether	Methylene chloride	Naphthalene
	FSWP SHS	SC (shaded va	lues indicate results	above the value shown)	NE NE	NE NE	7.3	NE NE	0.01	NE	1.8	NE NE	59	12
Location ID	Sample Date	Sample Type	Aquifer Classification	Sample ID	145	INC	7.0	142	0.01	145	1.0	145	- 55	12
MWA-41	11/7/2022	N	Shallow	MWA-41-110722	< 0.062 U	< 0.13 U	< 0.030 U	< 0.025 U	< 0.067 U	< 0.19 U	< 0.12 U	< 0.070 U	< 1.2 U	< 0.22 U
MWA-63	11/9/2022	N	Shallow	MWA-63-110922	< 0.34 U	< 0.53 UJ	< 0.50 U	< 0.40 U	< 0.79 U	< 0.44 U	< 0.53 U	< 0.44 U	< 1.4 U	< 0.93 U
MWA-82	11/7/2022	N	Shallow	MWA-82-110722	< 0.062 U	< 0.13 U	< 0.030 U	< 0.025 U	< 0.067 U	< 0.19 U	< 0.12 U	< 0.070 U	< 1.2 U	< 0.22 U
PA-03	11/8/2022	N	Shallow	PA-03-110822	< 0.062 U	< 0.13 U	< 0.030 U	< 0.025 U	< 0.067 U	< 0.19 U	< 0.12 U	< 0.070 U	< 1.2 U	< 0.22 U
PA-04	11/9/2022	N	Shallow	PA-04-110922	< 0.062 U	< 0.13 U	< 0.030 U	< 0.025 U	< 0.067 U	< 0.19 U	< 0.12 U	< 0.070 U	< 1.2 U	< 0.22 U
PA-08	11/7/2022	N	Shallow	PA-08-110722	< 0.062 U	< 0.13 U	< 0.030 U	< 0.025 U	< 0.067 U	< 0.19 U	< 0.12 U	< 0.070 U	< 1.2 U	< 0.22 U
PA-09	11/8/2022	N	Shallow	PA-09-110822	< 0.062 U	< 0.13 U	< 0.030 U	< 0.025 U	< 0.067 U	< 0.19 U	< 0.12 U	< 0.070 U	< 1.2 U	< 0.22 U
PA-31	11/8/2022	N	Shallow	PA-31-110822	< 0.062 U	< 0.13 U	< 0.030 U	< 0.025 U	< 0.067 U	< 0.19 U	< 0.12 U	< 0.070 U	< 1.2 U	< 0.22 U
PA-31	11/8/2022	FD	Shallow	DUP-01-110822	< 0.062 U	< 0.13 U	< 0.030 U	< 0.025 U	< 0.067 U	< 0.19 U	< 0.12 U	< 0.070 U	< 1.2 U	< 0.22 U
MWA-81i	11/7/2022	N	Intermediate	MWA-81I-110722	< 0.062 U	< 0.13 U	< 0.030 U	< 0.025 U	< 0.067 U	< 0.19 U	< 0.12 U	< 0.070 U	< 1.2 U	< 0.22 U
PA-10i	11/9/2022	N	Intermediate	PA-10I-110922	< 0.062 U	< 0.13 U	< 0.030 U	< 0.025 U	< 0.067 U	< 0.19 U	< 0.12 U	< 0.070 U	< 1.2 U	< 0.22 U
PA-15i	11/7/2022	N	Intermediate	PA-10I-110922 PA-15I-110722	< 0.062 U	< 0.13 U	< 0.030 U	< 0.025 U	< 0.067 U	< 0.19 U	< 0.12 U	< 0.070 U	< 1.2 U	< 0.22 U
PA-16i	11/8/2022	N N		PA-15I-110722 PA-16I-110822	< 0.062 U	< 0.13 U	< 0.030 U	< 0.025 U	< 0.067 U	< 0.19 U	< 0.12 U	< 0.070 U	< 1.2 U	< 0.22 U
PA-16I PA-17IR	11/8/2022	N N	Intermediate Intermediate	PA-16I-110822 PA-17IR-110822	< 0.62 U	< 1.3 U	< 0.030 U	< 0.025 U	< 0.67 U	< 1.9 U	< 1.2 U	< 0.070 U	< 1.2 U	< 0.22 U
PA-17IR PA-32i	11/8/2022	N N		PA-17IK-110622 PA-32I-110822	< 0.02 U	< 0.13 U	< 0.030 U	< 0.25 U	< 0.67 U	< 0.19 U	< 0.12 U	< 0.70 U	< 1.2 U	< 0.22 U
PA-321 PA-44i	11/7/2022	N	Intermediate Intermediate	PA-32I-110622 PA-44I-110722	< 0.062 U	< 0.13 U	< 0.030 U	< 0.025 U	< 0.067 U	< 0.19 U	< 0.12 U	< 0.070 U	< 1.2 U	< 0.22 U
MWA-11i(d)	11/10/2022	N N		MWA-11I(D)-111022										
MWA-111(d)	11/10/2022	N N	Deep	MWA-111(D)-111022 MWA-311(D)-111022	< 0.062 U	< 0.13 U	< 0.030 U	< 0.025 U	< 0.067 U	< 0.19 U	< 0.12 U	< 0.070 U < 0.44 U	< 1.2 U	< 0.22 U < 0.93 U
		N N	Deep		< 0.34 U	< 0.53 U	< 0.50 U	< 0.40 U	< 0.79 U < 0.79 U	< 0.44 U < 0.44 U	< 0.53 U	< 0.44 U < 0.44 U	2.0 J	< 0.93 U < 0.93 U
MWA-56d MWA-58d	11/9/2022 11/9/2022	N N	Deep	MWA-56D-110922 MWA-58D-110922	< 0.34 U < 0.34 UJ	< 0.53 UJ	< 0.50 U < 0.50 UJ	< 0.40 U	< 0.79 U < 0.79 UJ	< 0.44 U < 0.44 UJ	< 0.53 U < 0.53 UJ	< 0.44 UJ	< 1.4 U < 1.4 UJ	< 0.93 UJ
		FD	Deep			< 0.53 UJ		< 0.40 UJ						
MWA-58d	11/9/2022		Deep	DUP-02-110922	< 0.34 UJ	< 0.53 UJ	< 0.50 UJ	< 0.40 UJ	< 0.79 UJ	< 0.44 UJ	< 0.53 UJ	< 0.44 UJ	< 1.4 UJ	< 0.93 UJ
PA-19d	11/10/2022	N	Deep	PA-19D-111022	< 6.8 U	< 11 U	< 10 U	< 8.0 U	< 16 U	< 8.8 U	< 11 U	< 8.8 U	< 29 U	< 19 U
PA-20d	11/10/2022	N	Deep	PA-20D-111022	< 0.34 U	< 0.53 U	< 0.50 U	< 0.40 U	< 0.79 U	< 0.44 U	< 0.53 U	< 0.44 U	< 1.4 U	< 0.93 U
PA-21d	11/10/2022	N	Deep	PA-21D-111022	< 34 U	< 53 U	< 50 U	< 40 U	< 79 U	< 44 U	< 53 U	< 44 U	< 140 U	< 93 U
PA-22d	11/9/2022	N	Deep	PA-22D-110922	< 0.34 U	< 0.53 UJ	< 0.50 U	< 0.40 U	< 0.79 U	< 0.44 U	< 0.53 U	< 0.44 U	< 1.4 U	< 0.93 U
PA-23d	11/10/2022	N	Deep	PA-23D-111022	< 0.34 U	< 0.53 U	< 0.50 U	< 0.40 U	< 0.79 U	< 0.44 U	< 0.53 U	< 0.44 U	< 1.4 U	< 0.93 U
PA-24d	11/10/2022	N	Deep	PA-24D-111022	< 0.34 U	< 0.53 U	< 0.50 U	< 0.40 U	< 0.79 U	< 0.44 U	< 0.53 U	< 0.44 U	< 1.4 U	< 0.93 U
PA-25d	11/7/2022	N	Deep	PA-25D-110722	< 0.062 U	< 0.13 U	< 0.030 U	< 0.025 U	< 0.067 U	< 0.19 U	< 0.12 U	< 0.070 U	< 1.2 U	< 0.22 U
PA-26d	11/8/2022	N	Deep	PA-26D-110822	< 0.062 U	< 0.13 U	< 0.030 U	< 0.025 U	< 0.067 U	< 0.19 U	< 0.12 U	< 0.070 U	< 1.2 U	< 0.22 U
PA-27d	11/8/2022	N	Deep	PA-27D-110822	< 0.34 U	< 0.53 UJ	< 0.50 U	< 0.40 U	< 0.79 U	< 0.44 U	< 0.53 U	< 0.44 UJ	< 1.4 UJ	< 0.93 U
PA-30d	11/10/2022	N	Deep	PA-30D-111022	< 68 U	< 110 U	< 100 U	< 80 U	< 160 U	< 88 U	< 110 U	< 88 U	< 290 U	< 190 U

Bolded values indicate concentrations above the Method Detection Limit.

Shaded values indicate concentrations above the FSWP SHSC.

< = Compound not detected. Method Detection Limit shown.

μg/L = micrograms per liter

FD = Field Duplicate Sample

FSWP SHSC = Feasibility Study Work Plan Indirect Exposure Pathway Selected Hot Spot Criteria

N = Normal Environmental Sample

NE = Not Established

SW8260C analyses performed by TestAmerica - Seattle, WA of Seattle.

Qualifiers - Organic:

j = The analyte was positively identified below the RDL; associated numerical value is the approximate concentration of the analyte in the sample.

J = The concentration of the sample is considered to be biased low, as the associated QC results are outside the lower control limits.

J+= The concentration of the sample is considered to be biased high, as the associated QC

exceed the upper control limits.

U = Analyte was analyzed for, but not detected above, the limit displayed.

U = Analyte was analyzed for, but not detected above, the limit displayed.

UJ = Analyte was analyzed for, but not detected. The detection limit is a quantitative estimate.

Table 4
Volatile Organic Compounds Results
Arkema Quarter 4, 2022, Groundwater Monitoring Report
Arkema Inc. Facility
Portland, Oregon

				Analyte Unit	л-Витуlbenzene	N-Propylbenzene	o-Chlorotoluene (2- T chlorotoluene)	o-Xylene John	Sec-Butylbenzene	hg/r scyrene	र्वे tert-Butylbenzene	Тетrachloroethene	e ueno lo Lucio de Lu	र्षे trans-1,2-Dichloroethene
	FSWP SHS	SC (shaded va	lues indicate results	above the value shown)	NE	NE	NE	13	NE	NE	NE	0.33	9.8	1,000
Location ID	Sample Date	Sample Type	Aquifer Classification	Sample ID										
MWA-41	11/7/2022	N	Shallow	MWA-41-110722	< 0.23 U	< 0.091 U	< 0.12 U	< 0.15 U	< 0.17 U	< 0.19 U	< 0.26 U	< 0.084 U	< 0.050 U	< 0.033 U
MWA-63	11/9/2022	N	Shallow	MWA-63-110922	< 0.44 U	< 0.50 U	< 0.51 U	< 0.39 U	< 0.49 U	< 0.53 U	< 0.58 U	16	< 0.39 U	< 0.39 U
MWA-82	11/7/2022	N	Shallow	MWA-82-110722	< 0.23 U	< 0.091 U	< 0.12 U	< 0.15 U	< 0.17 U	< 0.19 U	< 0.26 U	0.39	< 0.050 U	< 0.033 U
PA-03	11/8/2022	N	Shallow	PA-03-110822	< 0.23 U	< 0.091 U	< 0.12 U	< 0.15 U	< 0.17 U	< 0.19 U	< 0.26 U	0.085 j	0.16 j	< 0.033 U
PA-04	11/9/2022	N	Shallow	PA-04-110922	< 0.23 U	< 0.091 U	< 0.12 U	< 0.15 U	< 0.17 U	< 0.19 U	< 0.26 U	0.16 j	< 0.050 U	< 0.033 U
PA-08	11/7/2022	N	Shallow	PA-08-110722	< 0.23 U	< 0.091 U	< 0.12 U	< 0.15 U	< 0.17 U	< 0.19 U	< 0.26 U	0.27	< 0.050 U	< 0.033 U
PA-09	11/8/2022	N	Shallow	PA-09-110822	< 0.23 U	< 0.091 U	< 0.12 U	< 0.15 U	< 0.17 U	< 0.19 U	< 0.26 U	0.39	< 0.050 U	< 0.033 U
PA-31	11/8/2022	N	Shallow	PA-31-110822	< 0.23 U	< 0.091 U	< 0.12 U	< 0.15 U	< 0.17 U	< 0.19 U	< 0.26 U	0.20 i	< 0.050 U	< 0.033 U
PA-31	11/8/2022	FD	Shallow	DUP-01-110822	< 0.23 U	< 0.091 U	< 0.12 U	< 0.15 U	< 0.17 U	< 0.19 U	< 0.26 U	0.19 i	< 0.050 U	< 0.033 U
MWA-81i	11/7/2022	N	Intermediate	MWA-81I-110722	< 0.23 U	< 0.091 U	< 0.12 U	< 0.15 U	< 0.17 U	< 0.19 U	< 0.26 U	< 0.084 U	< 0.050 U	< 0.033 U
PA-10i	11/9/2022	N	Intermediate	PA-10I-110922	< 0.23 U	< 0.091 U	< 0.12 U	< 0.15 U	< 0.17 U	< 0.19 U	< 0.26 U	< 0.084 U	< 0.050 U	0.060 i
PA-15i	11/7/2022	N	Intermediate	PA-15I-110722	< 0.23 U	< 0.091 U	< 0.12 U	< 0.15 U	< 0.17 U	< 0.19 U	< 0.26 U	< 0.084 U	0.055 i	< 0.033 U
PA-16i	11/8/2022	N	Intermediate	PA-16I-110822	< 0.23 U	< 0.091 U	< 0.12 U	< 0.15 U	< 0.17 U	< 0.19 U	< 0.26 U	< 0.084 U	< 0.050 U	< 0.033 U
PA-17iR	11/8/2022	N	Intermediate	PA-17IR-110822	< 2.3 U	< 0.91 U	< 1.2 U	< 1.5 U	< 1.7 U	< 1.9 U	< 2.6 U	< 0.84 U	< 0.50 U	< 0.33 U
PA-32i	11/8/2022	N	Intermediate	PA-32I-110822	< 0.23 U	< 0.091 U	< 0.12 U	< 0.15 U	< 0.17 U	< 0.19 U	< 0.26 U	< 0.084 U	0.059 j	< 0.033 U
PA-44i	11/7/2022	N	Intermediate	PA-44I-110722	< 0.23 U	< 0.091 U	< 0.12 U	< 0.15 U	< 0.17 U	< 0.19 U	< 0.26 U	< 0.084 U	< 0.050 U	< 0.033 U
MWA-11i(d)	11/10/2022	N	Deep	MWA-11I(D)-111022	< 0.23 U	< 0.091 U	< 0.12 U	< 0.15 U	< 0.17 U	< 0.19 U	< 0.26 U	< 0.084 U	< 0.050 U	< 0.033 U
MWA-31i(d)	11/10/2022	N	Deep	MWA-31I(D)-111022	< 0.44 U	< 0.50 U	< 0.51 U	< 0.39 U	< 0.49 U	< 0.53 U	< 0.58 U	0.80 J	< 0.39 U	< 0.39 U
MWA-56d	11/9/2022	N	Deep	MWA-56D-110922	< 0.44 U	< 0.50 U	< 0.51 U	< 0.39 U	< 0.49 U	< 0.53 U	< 0.58 U	< 0.41 U	< 0.39 U	< 0.39 U
MWA-58d	11/9/2022	N	Deep	MWA-58D-110922	< 0.44 UJ	< 0.50 UJ	< 0.51 UJ	< 0.39 UJ	< 0.49 UJ	< 0.53 UJ	< 0.58 UJ	< 0.41 UJ	< 0.39 UJ	< 0.39 UJ
MWA-58d	11/9/2022	FD	Deep	DUP-02-110922	< 0.44 UJ	< 0.50 UJ	< 0.51 UJ	< 0.39 UJ	< 0.49 UJ	< 0.53 UJ	< 0.58 UJ	< 0.41 UJ	< 0.39 UJ	< 0.39 UJ
PA-19d	11/10/2022	N	Deep	PA-19D-111022	< 8.8 U	< 10 U	< 10 U	< 7.8 U	< 9.8 U	< 11 U	< 12 U	< 8.2 U	< 7.8 U	< 7.8 U
PA-20d	11/10/2022	N	Deep	PA-20D-111022	< 0.44 U	< 0.50 U	< 0.51 U	< 0.39 U	< 0.49 U	< 0.53 U	< 0.58 U	< 0.41 U	< 0.39 U	< 0.39 U
PA-21d	11/10/2022	N	Deep	PA-21D-111022	< 44 U	< 50 U	< 51 U	< 39 U	< 49 U	< 53 U	< 58 U	< 41 U	< 39 U	< 39 U
PA-22d	11/9/2022	N	Deep	PA-22D-110922	< 0.44 U	< 0.50 U	< 0.51 U	< 0.39 U	< 0.49 U	< 0.53 U	< 0.58 U	< 0.41 U	< 0.39 U	< 0.39 U
PA-23d	11/10/2022	N	Deep	PA-23D-111022	< 0.44 U	< 0.50 U	< 0.51 U	0.39 j	< 0.49 U	< 0.53 U	< 0.58 U	< 0.41 U	< 0.39 U	< 0.39 U
PA-24d	11/10/2022	N	Deep	PA-24D-111022	< 0.44 U	< 0.50 U	< 0.51 U	< 0.39 U	< 0.49 U	< 0.53 U	< 0.58 U	< 0.41 U	< 0.39 U	< 0.39 U
PA-25d	11/7/2022	N	Deep	PA-25D-110722	< 0.23 U	< 0.091 U	< 0.12 U	< 0.15 U	< 0.17 U	< 0.19 U	< 0.26 U	< 0.084 U	0.059 j	< 0.033 U
PA-26d	11/8/2022	N	Deep	PA-26D-110822	< 0.23 U	< 0.091 U	< 0.12 U	< 0.15 U	< 0.17 U	< 0.19 U	< 0.26 U	< 0.084 U	0.059 j	< 0.033 U
PA-27d	11/8/2022	N	Deep	PA-27D-110822	< 0.44 U	< 0.50 U	< 0.51 U	< 0.39 U	< 0.49 U	< 0.53 U	< 0.58 U	< 0.41 U	< 0.39 U	< 0.39 U
PA-30d	11/10/2022	N	Deep	PA-30D-111022	< 88 U	< 100 U	< 100 U	< 78 U	< 98 U	< 110 U	< 120 U	< 82 U	< 78 U	< 78 U
					\ 00 U	1000	1 100 0	1700	1 00 0	11100	1200	~ UL U	1700	1700

Bolded values indicate concentrations above the Method Detection Limit.

Shaded values indicate concentrations above the FSWP SHSC.

< = Compound not detected. Method Detection Limit shown.

μg/L = micrograms per liter

FD = Field Duplicate Sample

FSWP SHSC = Feasibility Study Work Plan Indirect Exposure Pathway Selected Hot Spot Criteria

N = Normal Environmental Sample

NE = Not Established

SW8260C analyses performed by TestAmerica - Seattle, WA of Seattle.

Qualifiers - Organic:

j = The analyte was positively identified below the RDL; associated numerical value is the approximate concentration of the analyte in the sample.

J- = The concentration of the sample is considered to be biased low, as the associated QC results are outside the lower control limits.

J+ = The concentration of the sample is considered to be biased high, as the associated QC exceed the upper control limits.

U = Analyte was analyzed for, but not detected above, the limit displayed.

U = Analyte was analyzed for, but not detected above, the limit displayed.

UJ = Analyte was analyzed for, but not detected. The detection limit is a quantitative estimate.

Table 4
Volatile Organic Compounds Results
Arkema Quarter 4, 2022, Groundwater Monitoring Report
Arkema Inc. Facility
Portland, Oregon

	FSWP SHS	SC (shaded va	dues indicate results	Analyte Unit above the value shown)	교원 파일 trans-1,3-Dichloropropene	د آر آر Trichloroethene	Trichlorofluoromethane (Freon	Vinyl chloride 1904 1904 1904
Location ID	Sample Date	Sample	Aquifer	Sample ID				0.2.
	·	Type	Classification	·				
MWA-41	11/7/2022	N	Shallow	MWA-41-110722	< 0.092 U	< 0.066 U	< 0.12 U	< 0.013 U
MWA-63	11/9/2022	N	Shallow	MWA-63-110922	< 0.41 U	5.5	< 0.36 U	< 0.22 U
MWA-82	11/7/2022	N	Shallow	MWA-82-110722	< 0.092 U	0.13 j	< 0.12 U	< 0.013 U
PA-03	11/8/2022	N	Shallow	PA-03-110822	< 0.092 U	< 0.066 U	< 0.12 U	< 0.013 U
PA-04	11/9/2022	N	Shallow	PA-04-110922	< 0.092 U	0.086 j	< 0.12 U	< 0.013 U
PA-08	11/7/2022	N	Shallow	PA-08-110722	< 0.092 U	0.24	< 0.12 U	< 0.013 U
PA-09	11/8/2022	N	Shallow	PA-09-110822	< 0.092 U	0.16 j	< 0.12 U	< 0.013 U
PA-31	11/8/2022	N	Shallow	PA-31-110822	< 0.092 U	0.068 j	0.27 j	< 0.013 U
PA-31	11/8/2022	FD	Shallow	DUP-01-110822	< 0.092 U	0.075 j	0.28 j	< 0.013 U
MWA-81i	11/7/2022	N	Intermediate	MWA-81I-110722	< 0.092 U	< 0.066 U	< 0.12 U	< 0.013 U
PA-10i	11/9/2022	N	Intermediate	PA-10I-110922	< 0.092 U	< 0.066 U	< 0.12 U	0.25
PA-15i	11/7/2022	N	Intermediate	PA-15I-110722	< 0.092 U	0.18 j	< 0.12 U	< 0.013 U
PA-16i	11/8/2022	N	Intermediate	PA-16I-110822	< 0.092 U	< 0.066 U	< 0.12 U	< 0.013 U
PA-17iR	11/8/2022	N	Intermediate	PA-17IR-110822	< 0.92 U	2.6	< 1.2 U	0.15 j
PA-32i	11/8/2022	N	Intermediate	PA-32I-110822	< 0.092 U	< 0.066 U	< 0.12 U	0.31 J+
PA-44i	11/7/2022	N	Intermediate	PA-44I-110722	< 0.092 U	< 0.066 U	< 0.12 U	< 0.013 U
MWA-11i(d)	11/10/2022	N	Deep	MWA-11I(D)-111022	< 0.092 U	< 0.066 U	< 0.12 U	< 0.013 U
MWA-31i(d)	11/10/2022	N	Deep	MWA-31I(D)-111022	< 0.41 U	< 0.26 U	< 0.36 U	< 0.22 U
MWA-56d	11/9/2022	N	Deep	MWA-56D-110922	< 0.41 U	< 0.26 U	< 0.36 U	< 0.22 U
MWA-58d	11/9/2022	N	Deep	MWA-58D-110922	< 0.41 UJ	< 0.26 UJ	< 0.36 UJ	< 0.22 UJ
MWA-58d	11/9/2022	FD	Deep	DUP-02-110922	< 0.41 UJ	< 0.26 UJ	< 0.36 UJ	< 0.22 UJ
PA-19d	11/10/2022	N	Deep	PA-19D-111022	< 8.2 U	< 5.2 U	< 7.2 U	< 4.4 U
PA-20d	11/10/2022	N	Deep	PA-20D-111022	< 0.41 U	< 0.26 U	< 0.36 U	< 0.22 U
PA-21d	11/10/2022	N	Deep	PA-21D-111022	< 41 U	< 26 U	< 36 U	< 22 U
PA-22d	11/9/2022	N	Deep	PA-22D-110922	< 0.41 U	< 0.26 U	< 0.36 U	< 0.22 U
PA-23d	11/10/2022	N	Deep	PA-23D-111022	< 0.41 U	< 0.26 U	< 0.36 U	< 0.22 U
PA-24d	11/10/2022	N	Deep	PA-24D-111022	< 0.41 U	< 0.26 U	< 0.36 U	< 0.22 U
PA-25d	11/7/2022	N	Deep	PA-25D-110722	< 0.092 U	< 0.066 U	< 0.12 U	< 0.013 U
PA-26d	11/8/2022	Ν	Deep	PA-26D-110822	< 0.092 U	< 0.066 U	< 0.12 U	< 0.013 U
PA-27d	11/8/2022	N	Deep	PA-27D-110822	< 0.41 U	< 0.26 U	< 0.36 U	< 0.22 U
PA-30d	11/10/2022	N	Deep	PA-30D-111022	< 82 U	< 52 U	< 72 U	< 44 U

Bolded values indicate concentrations above the Method Detection Limit.

Shaded values indicate concentrations above the FSWP SHSC.

< = Compound not detected. Method Detection Limit shown.

μg/L = micrograms per liter

FD = Field Duplicate Sample

FSWP SHSC = Feasibility Study Work Plan Indirect Exposure Pathway Selected Hot Spot Criteria

N = Normal Environmental Sample

NE = Not Established

SW8260C analyses performed by TestAmerica - Seattle, WA of Seattle.

Qualifiers - Organic:

j = The analyte was positively identified below the RDL; associated numerical value is the approximate concentration of the analyte in the sample.

J- = The concentration of the sample is considered to be biased low, as the associated QC results are outside the lower control limits.

J+ = The concentration of the sample is considered to be biased high, as the associated QC

exceed the upper control limits.

U = Analyte was analyzed for, but not detected above, the limit displayed.

U = Analyte was analyzed for, but not detected above, the limit displayed.

UJ = Analyte was analyzed for, but not detected. The detection limit is a quantitative estimate.

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Table 5
Additional Compounds Results
Arkema Quarter 4, 2022, Groundwater Monitoring Report
Arkema Inc. Facility
Portland, Oregon

		Chloride	Perchlorate			
		mg/L	μg/L			
	FSWP SHSC (sh	230	1,800			
Location ID	Sample Date	Sample Aquifer Type Classification		Sample ID		
MWA-41	11/7/2022	N	Shallow	MWA-41-110722	21	< 2.0 U
MWA-63	11/9/2022	N	Shallow	MWA-63-110922	33	< 2.0 U
MWA-82	11/7/2022	N	Shallow	MWA-82-110722	9.0	120
PA-03	11/8/2022	N	Shallow	PA-03-110822	6.2	< 4.0 U
PA-04	11/9/2022	N	Shallow	PA-04-110922	4.6	< 4.0 U
PA-08	11/7/2022	N	Shallow	PA-08-110722	770	< 10 U
PA-09	11/8/2022	N	Shallow	PA-09-110822	68	< 10 U
PA-31	11/8/2022	N	Shallow	PA-31-110822	5.9	< 4.0 U
PA-31	11/8/2022	FD	Shallow	DUP-01-110822	5.9	< 4.0 U
MWA-81i	11/7/2022	N	Intermediate	MWA-81I-110722	610	< 10 U
PA-10i	11/9/2022	N	Intermediate	PA-10I-110922	45	< 10 U
PA-15i	11/7/2022	N	Intermediate	PA-15I-110722	850	< 10 U
PA-16i	11/8/2022	N	Intermediate	PA-16I-110822	270	< 4.0 U
PA-17iR	11/8/2022	N	Intermediate	PA-17IR-110822	13	< 10 U
PA-32i	11/8/2022	N	Intermediate	PA-32I-110822	75 J-	< 20 U
PA-44i	11/7/2022	N	Intermediate	PA-44I-110722	75	< 2.0 U
MWA-11i(d)	11/10/2022	N	Deep	MWA-11I(D)-111022	1,600	< 40 U
MWA-31i(d)	11/10/2022	N	Deep	MWA-31I(D)-111022	19,000	97,000
MWA-56d	11/9/2022	N	Deep	MWA-56D-110922	15,000	12,000
MWA-58d	11/9/2022	N	Deep	MWA-58D-110922	19,000	49,000
MWA-58d	11/9/2022	FD	Deep	DUP-02-110922	19,000	45,000
PA-19d	11/10/2022	N	Deep	PA-19D-111022	280	< 20 U
PA-20d	11/10/2022	N	Deep	PA-20D-111022	1,000	< 20 U
PA-21d	11/10/2022	N	Deep	PA-21D-111022	290	< 100 U
PA-22d	11/9/2022	N	Deep	PA-22D-110922	6,000	17,000
PA-23d	11/10/2022	N	Deep	PA-23D-111022	6,900	< 200 U
PA-24d	11/10/2022	N	Deep	PA-24D-111022	32,000	< 200 U
PA-25d	11/7/2022	N	Deep	PA-25D-110722	34	< 2.0 U
PA-26d	11/8/2022	N	Deep	PA-26D-110822	6.5	< 2.0 U
PA-27d	11/8/2022	N	Deep	PA-27D-110822	960	< 10 U
PA-30d	11/10/2022	N	Deep	PA-30D-111022	270	< 20 U

< = compound not detected; reportable detection limit shown

Empty cells = not analyzed

 μ g/L = micrograms per liter

mg/L = milligrams per liter

Bolded values indicate concentrations above the Reportable Detection Limit.

Shaded values indicate concentrations above the standard.

FD = Field Duplicate Sample

N = Normal Environmental Sample

E300 analyses performed by TestAmerica - Seattle, WA of Seattle.

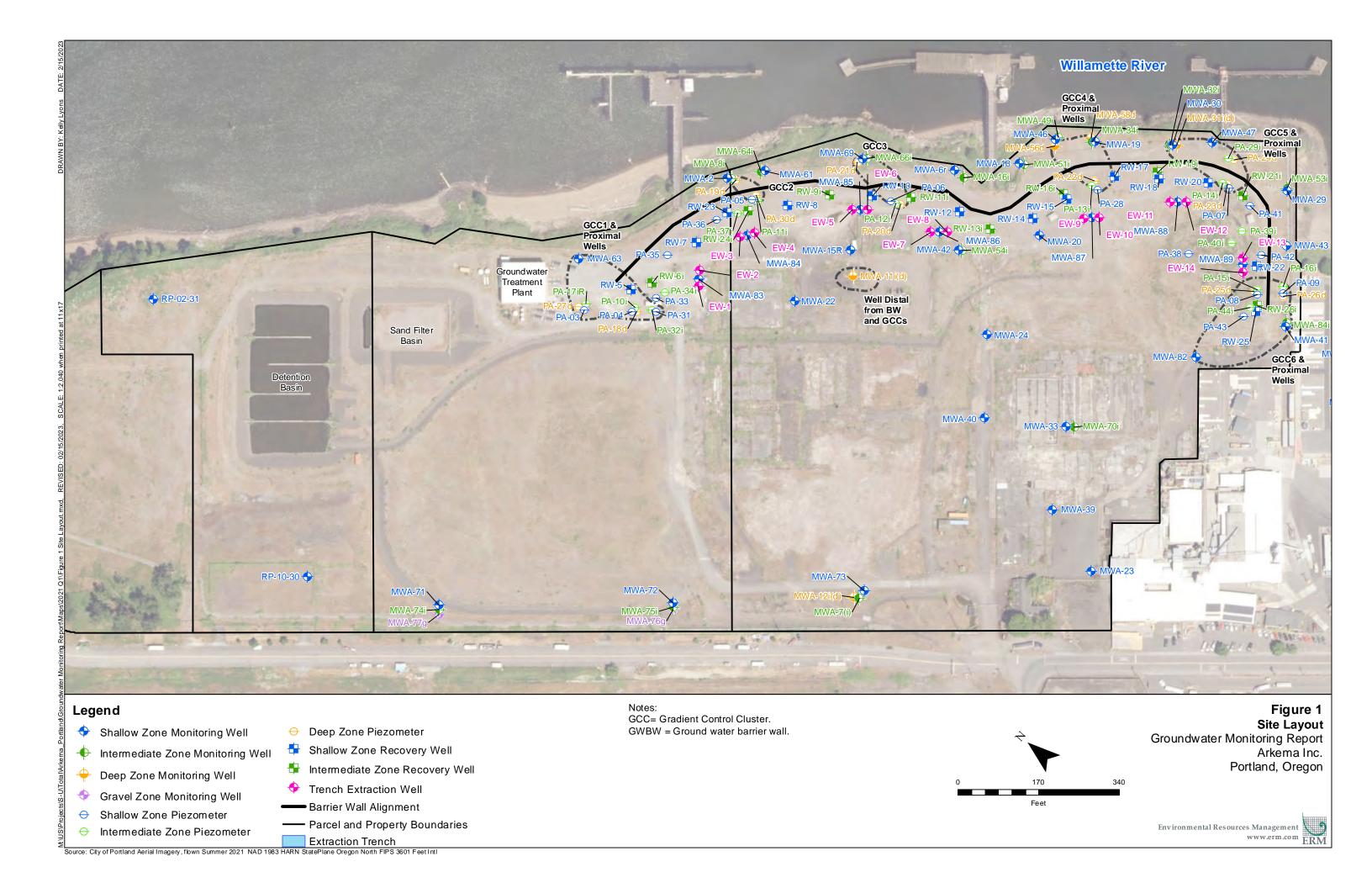
E314.0 analyses performed by TestAmerica - Sacramento, CA of West Sacramento.

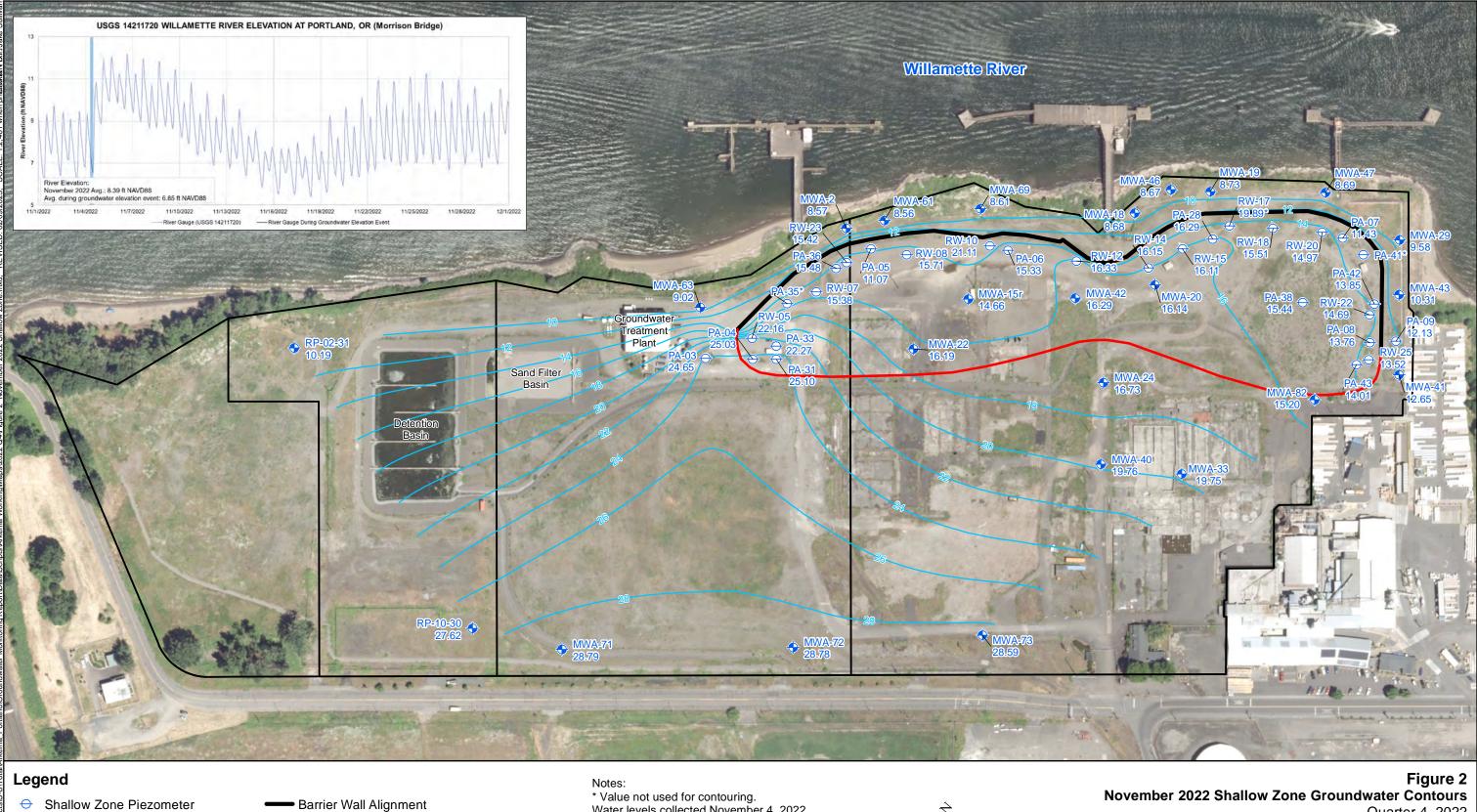
Qualifiers - Organic:

J-= The concentration of the sample is considered to be biased low, as the associated

U = Analyte was analyzed for, but not detected above, the limit displayed.

FIGURES





Shallow Zone Piezometer

Shallow Zone Monitoring Well Active Recovery Well;

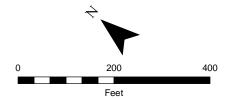
Not Used During Contouring

27.70 Groundwater Elevation (ft NAVD88)

Shallow Zone Groundwater Contours (ft NAVD88) Dashed where Inferred

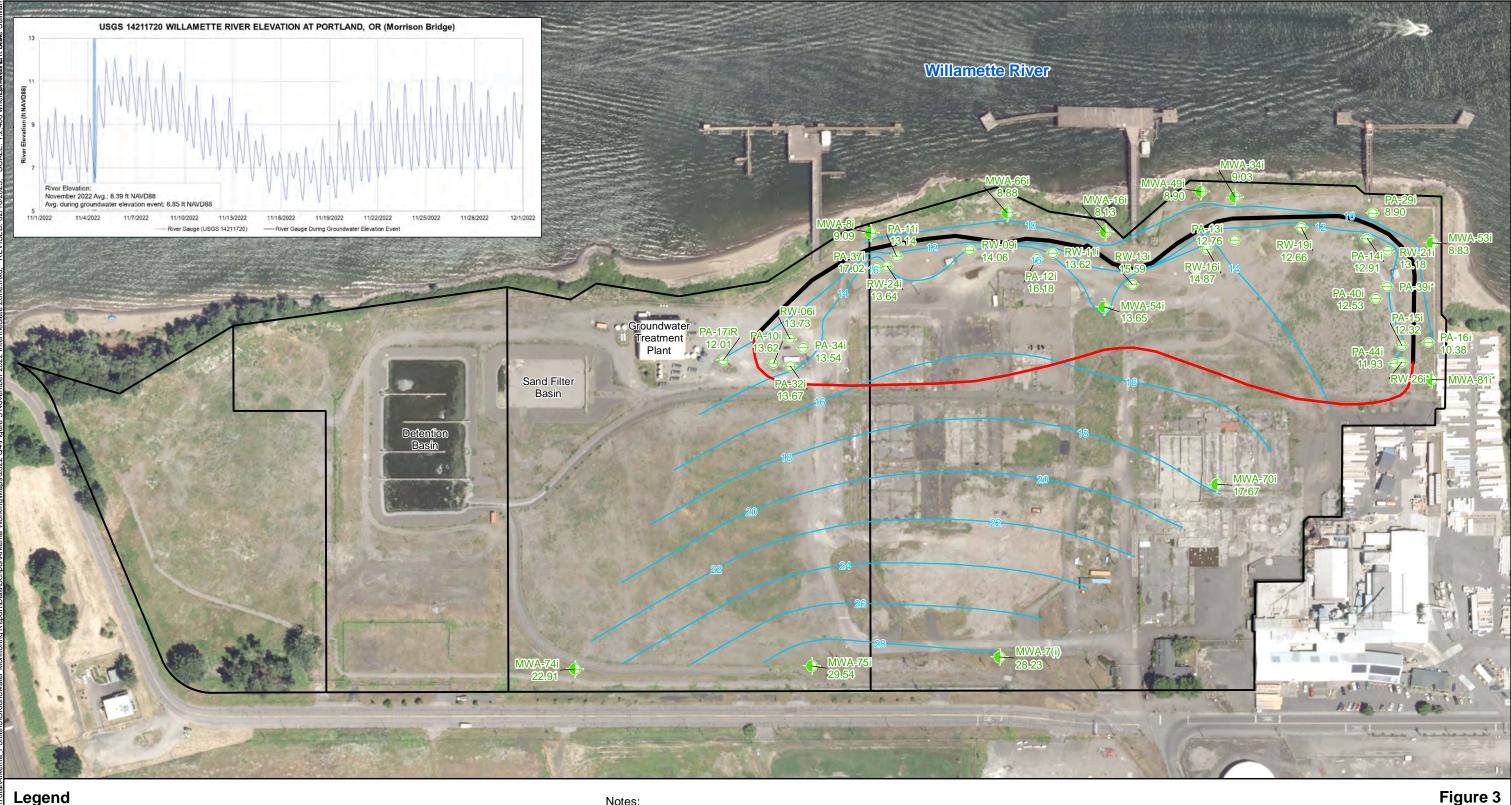
Target Capture Zone
NAD 1983 StatePlane Oregon North FIPS 3601 Feet Intl

Water levels collected November 4, 2022. ft NAVD88: feet North American Vertical Datum of 1988. Aerial Photo: City of Portland, Summer 2017.



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Legend

→ Intermediate Zone Piezometer

Barrier Wall Alignment

Intermediate Zone Monitoring Well

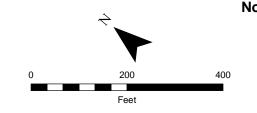
27.70 Groundwater Elevation (ft NAVD88)

Intermediate Zone Groundwater Contours (ft NAVD88) Dashed where Inferred

Target Capture Zone

Notes:

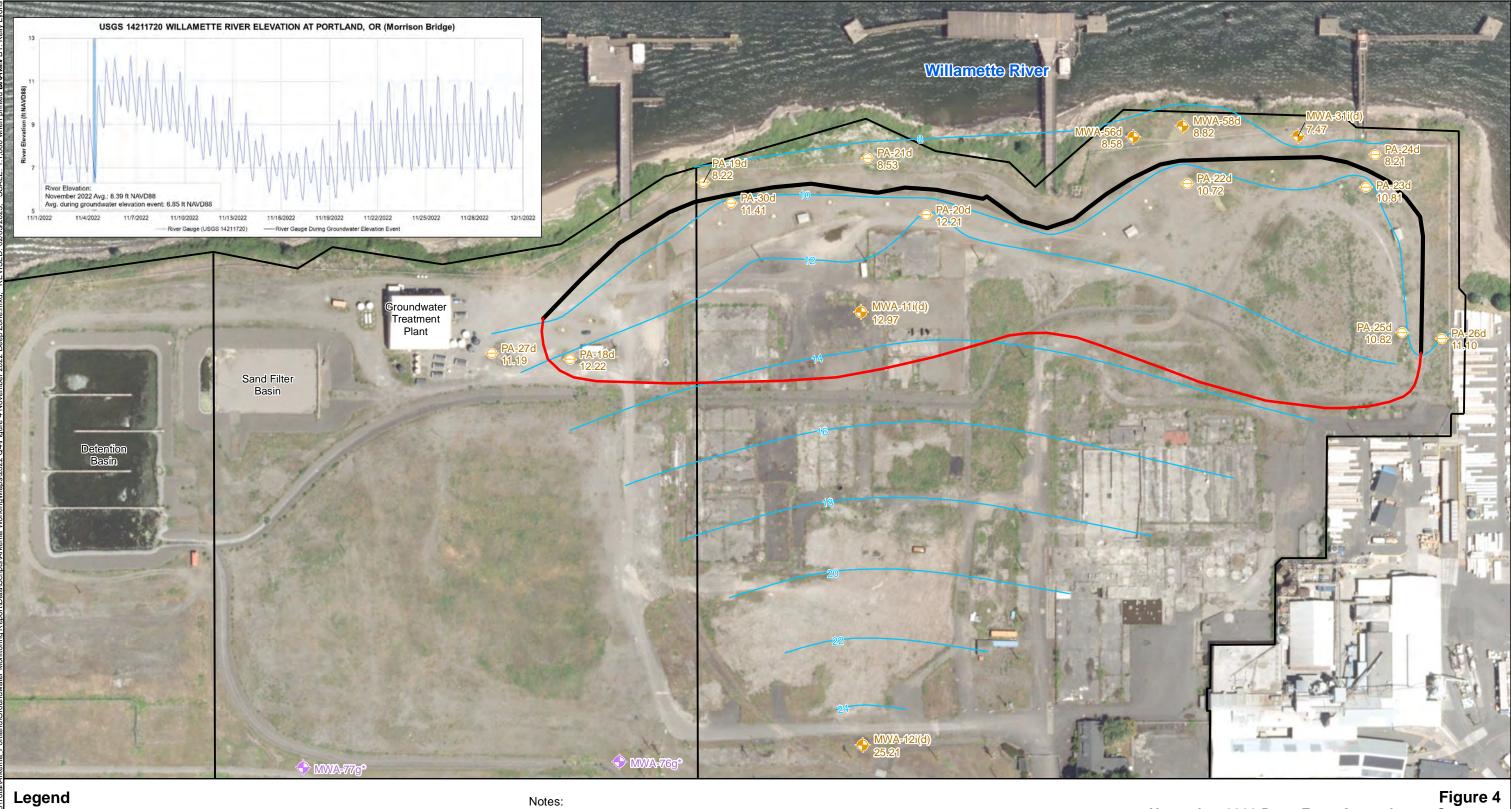
* Value not used for contouring. Water levels collected November 4, 2022. ft NAVD88: feet North American Vertical Datum of 1988. Aerial Photo: City of Portland, Summer 2017.



November 2022 Intermediate Zone Groundwater Contours

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Oeep Zone Piezometer

Deep Zone Monitoring Well

Gravel Zone Monitoring Well

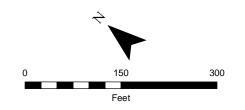
27.70 Groundwater Elevation (ft NAVD88)

Deep Zone Groundwater Contours (ft NAVD88) Dashed where Inferred

* Value not used for contouring.
Gravel zone wells not used in contouring.
Water levels collected November 4, 2022. ft NAVD88: feet North American Vertical Datum of 1988. Aerial Photo: City of Portland, Summer 2017.

Target Capture Zone

Barrier Wall Alignment



November 2022 Deep Zone Groundwater Contours

Quarter 4, 2022 Groundwater Monitoring Report Arkema Inc. Portland, Oregon

Environmental Resources Management www.erm.com



> 6,400 ug/L

Target Capture Zone

>= 640 - 6,400 ug/L Barrier Wall Alignment

>= 64 - < 640 ug/L</p>
Parcel and Property Boundaries

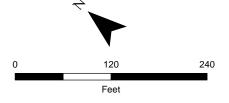
< 64 ug/L

Not Detected

Not Sampled

Shallow Zone Groundwater Contours (ft NAVD88) November 2022

Samples Collected 07 November - 10 November, 2022
All results in micrograms per liter (ug/L)
Screening Criteria for Chlorobenzene = 64 ug/L
See Table 4 for definition of qualifiers ND: Non-Detect



Chlorobenzene Groundwater Concentrations Shallow Zone

Quarter 4, 2022 Groundwater Monitoring Report Arkema Inc. Portland, Oregon





> 6,400 ug/L

 Target Capture Zone >= 640 - 6,400 ug/L Barrier Wall Alignment

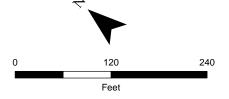
>= 64 - < 640 ug/L</p>
Parcel and Property Boundaries

< 64 ug/L

Not Sampled

Not Detected

Intermediate Zone Groundwater Contours (ft NAVD88) November 2022 Samples Collected 07 November - 10 November, 2022
All results in micrograms per liter (ug/L)
Screening Criteria for Chlorobenzene = 64 ug/L
See Table 4 for definition of qualifiers ND: Non-Detect



Chlorobenzene Groundwater Concentrations Intermediate Zone

Quarter 4, 2022 Groundwater Monitoring Report Arkema Inc. Portland, Oregon

Environmental Resources Management www.erm.com





> 6,400 ug/L

>= 640 - 6,400 ug/L

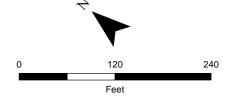
>= 64 - < 640 ug/L

< 64 ug/L

Not Detected

Target Capture Zone

Samples Collected 07 November - 10 November, 2022
All results in micrograms per liter (ug/L)
Screening Criteria for Chlorobenzene = 64 ug/L
See Table 4 for definition of qualifiers ND: Non-Detect



Chlorobenzene Groundwater Concentrations Deep Zone

Quarter 4, 2022 Groundwater Monitoring Report Arkema Inc. Portland, Oregon



Barrier Wall Alignment

—— Parcel and Property Boundaries

Deep Zone Groundwater Contours (ft NAVD88) November 2022



> 1,400 ug/L

Target Capture Zone

>= 140 - 1,400 ug/L Barrier Wall Alignment

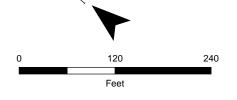
>= 14 - < 140 ug/L —— Parcel and Property Boundaries < 14 ug/L</p>

Shallow Zone Groundwater Contours (ft NAVD88) November 2022

Not Detected

Not Sampled

Samples Collected 07 November - 10 November, 2022
All results in micrograms per liter (ug/L)
Screening Criteria for 1,2-Dichlorobenzene = 14 ug/L
See Table 4 for definition of qualifiers ND: Non-Detect



1,2-Dichlorobenzene Groundwater Concentrations **Shallow Zone**

Quarter 4, 2022 Groundwater Monitoring Report Arkema Inc. Portland, Oregon





> 1,400 ug/L

Target Capture Zone

>= 140 - 1,400 ug/L Barrier Wall Alignment

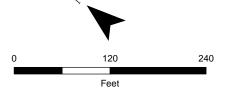
>= 14 - < 140 ug/L —— Parcel and Property Boundaries

< 14 ug/L</p>

Not Detected

Not Sampled

Intermediate Zone Groundwater Contours (ft NAVD88) November 2022 Samples Collected 07 November - 10 November, 2022
All results in micrograms per liter (ug/L)
Screening Criteria for 1,2-Dichlorobenzene = 14 ug/L
See Table 4 for definition of qualifiers ND: Non-Detect



1,2-Dichlorobenzene Groundwater Concentrations Intermediate Zone

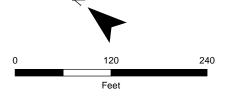
Quarter 4, 2022 Groundwater Monitoring Report Arkema Inc. Portland, Oregon





- > 1,400 ug/L
- >= 140 1,400 ug/L
- >= 14 < 140 ug/L
- < 14 ug/L</p>
- Not Detected
- Target Capture Zone

Samples Collected 07 November - 10 November, 2022
All results in micrograms per liter (ug/L)
Screening Criteria for 1,2-Dichlorobenzene = 14 ug/L
See Table 4 for definition of qualifiers ND: Non-Detect



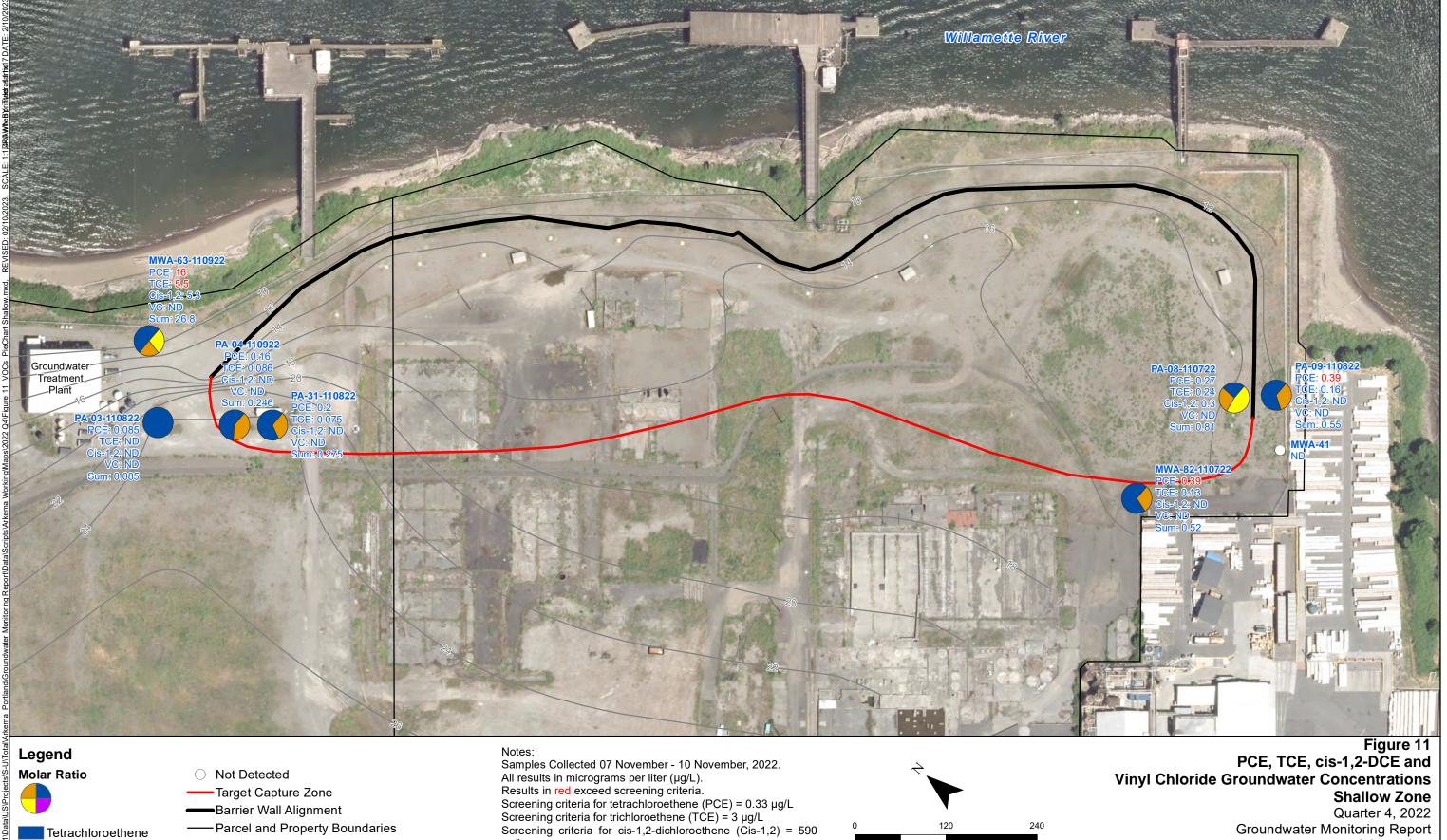
1,2-Dichlorobenzene Groundwater Concentrations Deep Zone

Quarter 4, 2022 Groundwater Monitoring Report Arkema Inc. Portland, Oregon



—— Parcel and Property Boundaries

Deep Zone Groundwater Contours (ft NAVD88) November 2022



Tetrachloroethene Trichloroethene cis-1,2-Dichloroethene

Vinyl chloride

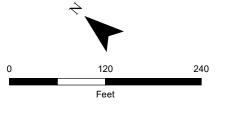
Target Capture Zone

Barrier Wall Alignment

——Parcel and Property Boundaries

Shallow Zone Groundwater Contours (ft NAVD88) November 2022

Screening criteria for vinyl chloride (VC) = $0.24 \mu g/L$. ND: Non-Detect



Shallow Zone

Quarter 4, 2022 Groundwater Monitoring Report Arkema Inc. Portland, Oregon

Environmental Resources Management





Molar Ratio Tetrachloroethene

Vinyl chloride

Trichloroethene cis-1,2-Dichloroethene Not Detected

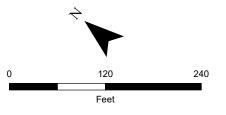
Target Capture Zone

Barrier Wall Alignment

——Parcel and Property Boundaries Intermediate Zone Groundwater Contours (ft NAVD88) November Samples Collected 07 November - 10 November, 2022.

All results in micrograms per liter (µg/L).
Results in red exceed screening criteria.
Screening criteria for tetrachloroethene (PCE) = 0.33 µg/L
Screening criteria for trichloroethene (TCE) = 3 µg/L
Screening criteria for cis-1,2-dichloroethene (Cis-1,2) = 590

Screening criteria for vinyl chloride (VC) = $0.24 \mu g/L$. ND: Non-Detect



Vinyl Chloride Groundwater Concentrations Intermediate Zone

Quarter 4, 2022 **Groundwater Monitoring Report** Arkema Inc. Portland, Oregon

Environmental Resources Management



2022



Molar Ratio Tetrachloroethene Trichloroethene

Vinyl chloride

cis-1,2-Dichloroethene

Not Detected

Target Capture Zone

Barrier Wall Alignment

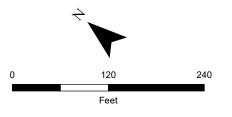
----Parcel and Property Boundaries

Deep Zone Groundwater Contours (ft NAVD88) November 2022

Samples Collected 07 November - 10 November, 2022.

All results in micrograms per liter (µg/L).
Results in red exceed screening criteria.
Screening criteria for tetrachloroethene (PCE) = 0.33 µg/L
Screening criteria for trichloroethene (TCE) = 3 µg/L
Screening criteria for cis-1,2-dichloroethene (Cis-1,2) = 590

Screening criteria for vinyl chloride (VC) = $0.24 \mu g/L$. ND: Non-Detect



PCE, TCE, cis-1,2-DCE and **Vinyl Chloride Groundwater Concentrations Deep Zone** Quarter 4, 2022

Groundwater Monitoring Report Arkema Inc. Portland, Oregon

Environmental Resources Management



> 180,000 ug/L

Target Capture Zone

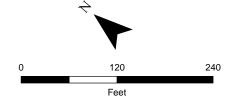
< 1,800 ug/L

>= 1,800 - < 18,000 ug/L —— Parcel and Property Boundaries Shallow Zone Groundwater Contours (ft NAVD88) November 2022

Not Detected

Not Sampled

Notes:
Samples Collected 07 November - 10 November, 2022
All results in micrograms per liter (ug/L)
Screening Criteria for Perchlorate = 1,800 ug/L
See Table 5 for definition of qualifiers
ND: Non-Detect



Perchlorate Groundwater Concentrations Shallow Zone

Quarter 4, 2022 Groundwater Monitoring Report Arkema Inc. Portland, Oregon





> 180,000 ug/L

Target Capture Zone

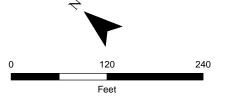
>= 1,800 - < 18,000 ug/L —— Parcel and Property Boundaries

< 1,800 ug/L

Not Detected

Not Sampled

Samples Collected 07 November - 10 November, 2022
All results in micrograms per liter (ug/L)
Screening Criteria for Perchlorate = 1,800 ug/L
See Table 5 for definition of qualifiers ND: Non-Detect



Perchlorate Groundwater Concentrations Intermediate Zone

Quarter 4, 2022 Groundwater Monitoring Report Arkema Inc. Portland, Oregon

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Intermediate Zone Groundwater

Contours (ft NAVD88) November 2022



> 180,000 ug/L

---- Barrier Wall Alignment

>= 18,000 - 180,000 ug/L —— Parcel and Property Boundaries

>= 1,800 - < 18,000 ug/L

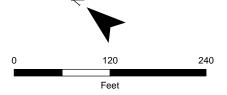
Deep Zone Groundwater Contours (ft NAVD88) November 2022

< 1,800 ug/L</p>

Not Detected

Target Capture Zone

Notes:
Samples Collected 07 November - 10 November, 2022
All results in micrograms per liter (ug/L)
Screening Criteria for Perchlorate = 1,800 ug/L
See Table 5 for definition of qualifiers
ND: Non-Detect



Perchlorate Groundwater Concentrations Deep Zone

Quarter 4, 2022 Groundwater Monitoring Report Arkema Inc. Portland, Oregon





> 23,000 mg/L

Target Capture Zone

>= 230 - < 2,300 mg/L</p>
Parcel and Property Boundaries

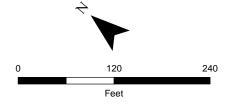
< 230 mg/L</p>

Shallow Zone Groundwater Contours (ft NAVD88) November 2022

Not Detected

Not Sampled

Samples Collected 07 November - 10 November, 2022
All results in milligrams per liter (mg/L)
Screening Criteria for Chloride = 230 mg/L
See Table 5 for definition of qualifiers



Chloride Groundwater Concentrations Shallow Zone

Quarter 4, 2022 Groundwater Monitoring Report Arkema Inc. Portland, Oregon

Environmental Resources Management www.erm.com





> 23,000 mg/L

Target Capture Zone

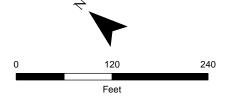
>= 230 - < 2,300 mg/L</p>
Parcel and Property Boundaries

< 230 mg/L</p>

Not Detected

Not Sampled

Samples Collected 07 November - 10 November, 2022
All results in milligrams per liter (mg/L)
Screening Criteria for Chloride = 230 mg/L
See Table 5 for definition of qualifiers



Chloride Groundwater Concentrations Intermediate Zone

Quarter 4, 2022 Groundwater Monitoring Report Arkema Inc. Portland, Oregon



Intermediate Zone Groundwater

Contours (ft NAVD88) November 2022



> 23,000 mg/L

---- Barrier Wall Alignment

>= 2,300 - 23,000 mg/L —— Parcel and Property Boundaries

>= 230 - < 2,300 mg/L

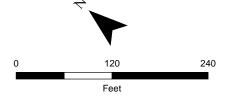
Deep Zone Groundwater Contours (ft NAVD88) November 2022

< 230 mg/L</p>

Not Detected

Target Capture Zone

Notes:
Samples Collected 07 November - 10 November, 2022
All results in milligrams per liter (mg/L)
Screening Criteria for Chloride = 230 mg/L
See Table 5 for definition of qualifiers



Chloride Groundwater Concentrations Deep Zone Quarter 4, 2022

Groundwater Monitoring Report Arkema Inc. Portland, Oregon



APPENDIX A FIELD FORMS



Well ID: MWA-11I(D) **Well Permit No:**

Date: 2022/11/10 Cool cloudy

Site ID	Purge Method / Pump Intake Depth	Reference Elevation	•
ARKEMA-PORTLAND	Low_Flow / 48 (ft)	36.49 (ft)	
Site Address	Purge Equipment	Depth to Water / Free Pro	oduct
, Portland, US-OR	NA	22.82 (ft) / None	
Project Number	Sample Equipment	Total Well Depth	
0629640	NA	(ft)	
Project Name	Average Purge Rate	Well Diameter / Well Scre	een Interval
20221104-GWMonitor	160 (mL/min)	(in) / - ()	
Sampler	Volume of Water in Well / Total Volum	ne Purged Well Construction	
scott terranova	() / 3.84 (I)	-	

Time	DTW (ft)	Flow Rate (mL/min)	Purge Volume (I)	Temperature (C) ±3%	pH ±0.2pH units	Specific Conductivity (uS/cm) ±10%	Total Conductivity (NA)	Dissolved Oxygen (mg/L) ±10%	ORP (mV) ±10 mV	Turbidity (NTU) ±10%	Total Dissolved Solids(NA)	Comments
12:38	23	160		18.2	8.73	1211	NM	2.53	-15.6	6.53	NM	
12:41	23.05			18.5	7.74	1436	NM	1.21	-49.8	2.78	NM	
12:44	23.05			18.5	7.3	1659	NM	1.07	-97.9	2.05	NM	
12:47	23.05			18.6	7.06	2070	NM	1.04	-86.7	1.79	NM	
12:50	23.05			18.7	6.64	4274	NM	0.97	-86.6	1.43	NM	
12:53	23.05			18.6	6.55	4964	NM	0.94	-92.8	1.78	NM	
12:56				18.5	6.55	5285	NM	0.92	-93.7	1.27	NM	
12:59	23.05		3.84	18.7	6.54	5428	NM	0.9	-96.5	1.33	NM	

Sample ID(s): MWA-11i(d)-111022	Additional Comments	SAMPLER NAME AND SIGNATURE	Date Time
	2 pump		
Analysis:		ST GC	11/10/2022 21:01
		Towards, November 10, 1813 SEP PM	



Well ID: MWA-41 **Well Permit No:**

Date: 2022/11/07 Cool cloudy

				-		
Site ID	Purge Method / Pump Intake Depth	urge Method / Pump Intake Depth Reference Elevation				
ARKEMA-PORTLAND	Low_Flow / 37 (ft)	w_Flow / 37 (ft) 45.14 (ft)				
Site Address	Purge Equipment	De	epth to Water / Free Prod	luct		
, Portland, US-OR	NA	31.	.85 (ft) / None			
Project Number	Sample Equipment	To	otal Well Depth			
0629640	NA	(ft))			
Project Name	Average Purge Rate	W	ell Diameter / Well Scree	n Interval		
20221104-GWMonitor	160 (mL/min)	(ir	n) / - ()			
Sampler	Volume of Water in Well / Total Volume	me Purged W	ell Construction			
scott terranova	() / 2.4 (l)					

Time	DTW (ft)	Flow Rate (mL/min)	Purge Volume (I)	Temperature (C) ±3%	pH ±0.2pH units	Specific Conductivity (uS/cm) ±10%	Total Conductivity (NA)	Dissolved Oxygen (mg/L) ±10%	ORP (mV) ±10 mV	Turbidity (NTU) ±10%	Total Dissolved Solids(NA)	Comments
11:59	31.85	160		11.1	6.9	631	NM	1.99	6.8	15.94	NM	
12:02	31.85			11.2	6.87	526	NM	1.4	31.8	17.68	NM	
12:05	31.85			11.4	6.85	497.9	NM	1.22	39.9	16.43	NM	
12:08	31.85			11.5	6.84	490.3	NM	1.2	44.9	19.65	NM	
12:11	31.85		2.4	11.3	6.84	486.9	NM	1.17	47.3	15.13	NM	

Sample ID(s): MWA-41-110722	Additional Comments	SAMPLER NAME AND SIGNATURE	Date Time
WWA-41-110722	2 pump		
Analysis:		ST	11/07/2022 20:13
		ST MONTH AND STATE OF THE	20.10



Well ID: MWA-56D **Well Permit No:**

Date: 2022/11/09 Cool clear

Site ID	Purge Method / Pump Intake Depth	Reference Elevation	on
ARKEMA-PORTLAND	Low_Flow / 58 (ft)	37.97 (ft)	
Site Address	Purge Equipment	Depth to Water / Fi	ree Product
, Portland, US-OR	NA .	25.9 (ft) / None	
Project Number	Sample Equipment	Total Well Depth	
0629640	NA	(ft)	
Project Name	Average Purge Rate	Well Diameter / We	ell Screen Interval
20221104-GWMonitor	160 (mL/min)	(in) / - ()	
Sampler	Volume of Water in Well / Total Volume	me Purged Well Construction	
scott terranova	() / 2.4 (l)		

Time	DTW (ft)	Flow Rate (mL/min)	Purge Volume (I)	Temperature (C) ±3%	pH ±0.2pH units	Specific Conductivity (uS/cm) ±10%	Total Conductivity (NA)	Dissolved Oxygen (mg/L) ±10%	ORP (mV) ±10 mV	Turbidity (NTU) ±10%	Total Dissolved Solids(NA)	Comments
09:21	26.26	160		11.5	6.44	39862	NM	2.98	121.3	3.9	NM	
09:24	26.26			11.5	6.46	44029	NM	1.77	119.7	3.21	NM	
09:27	26.26			11.3	6.47	44573	NM	1.5	118.7	2.23	NM	
09:30	26.26			11.6	6.48	44379	NM	1.46	117.5	2.18	NM	
09:33	26.26		2.4	11.7	6.48	44524	NM	1.41	116.9	2.75	NM	

Sample ID(s):	Additional Comments	SAMPLER NAME AND SIGNATURE	Date Time
MWA-56d-110922	2 pump	27	
Analysis:		ST £2	11/09/2022 17:35
		Simula, Novibre 19, 100 1010 are	4



Well ID: MWA-58D **Well Permit No:**

Date: 2022/11/09 Cool clear

Site ID	Purge Method / Pump Intake Depth	Reference Elevation			
ARKEMA-PORTLAND	Low_Flow / 58 (ft)	37.97 (ft)			
Site Address	Purge Equipment	Depth to Water / Free Pro	duct		
, Portland, US-OR	NA NA	27.9 (ft) / None			
Project Number	Sample Equipment	Total Well Depth			
0629640	NA NA	(ft)			
Project Name	Average Purge Rate	Well Diameter / Well Scre	en Interval		
20221104-GWMonitor	160 (mL/min)	(in) / - ()			
Sampler	Volume of Water in Well / Total Volume Purged	Well Construction			
scott terranova	() / 2.4 (l)				

Time	DTW (ft)	Flow Rate (mL/min)	Purge Volume (I)	Temperature (C) ±3%	pH ±0.2pH units	Specific Conductivity (uS/cm) ±10%	Total Conductivity (NA)	Dissolved Oxygen (mg/L) ±10%	ORP (mV) ±10 mV	Turbidity (NTU) ±10%	Total Dissolved Solids(NA)	Comments
10:09	28	160		11.1	6.5	52429	NM	2.5	107.9	2.57	NM	
10:12	28.05			11.5	6.52	54320	NM	1.51	101.3	5.66	NM	
10:15	28.05			11.4	6.53	54600	NM	1.36	97.7	4.72	NM	
10:18	28.05			11.3	6.53	54814	NM	1.28	96.4	5.92	NM	
10:21	28.05		2.4	11.4	6.53	54702	NM	1.27	92.7	4.79	NM	

Sample ID(s): DUP-02-110922,MWA-58d-110922	Additional Comments	SAMPLER NAME AND SIGN	NATURE	Date Time
Analysis:	2 pump	ST	J.Z.	11/09/2022 18:25



Well ID: MWA-63 **Well Permit No:**

Date: 2022/11/09 Cool clear

Site ID	Purge Method / Pump Intake Depth	Refer	rence Elevation	
ARKEMA-PORTLAND	Low_Flow / 28 (ft)	36.29	(ft)	
Site Address	Purge Equipment	Depti	h to Water / Free Prod	uct
, Portland, US-OR	NA	25.86 ((ft) / None	
Project Number	Sample Equipment	Total	l Well Depth	
0629640	NA	(ft)	-	
Project Name	Average Purge Rate	Well	Diameter / Well Scree	n Interval
20221104-GWMonitor	160 (mL/min)	(in) /	- ()	
Sampler	Volume of Water in Well / Total Volume	ne Purged Well	Construction	
scott terranova	() / 2.4 (l)	-		

Time	DTW (ft)	Flow Rate (mL/min)	Purge Volume (I)	Temperature (C) ±3%	pH ±0.2pH units	Specific Conductivity (uS/cm) ±10%	Total Conductivity (NA)	Dissolved Oxygen (mg/L) ±10%	ORP (mV) ±10 mV	Turbidity (NTU) ±10%	Total Dissolved Solids(NA)	Comments
06:20	26.05	160		11.3	7.05	841	NM	5.41	53.8	8.61	NM	
06:23	26.1			11.4	6.96	745	NM	5.07	72.8	6.99	NM	
06:26	26.12			11.8	6.94	705	NM	4.97	78.3	6.46	NM	
06:29	26.15			11.6	6.93	693	NM	4.91	80.1	4.92	NM	
06:32	26.17		2.4	11.6	6.92	687	NM	4.89	83.9	4.65	NM	

Sample ID(s): MWA-63-110922	Additional Comments	SAMPLER NAME AND SIGNATURE	Date Time
WWA-03-110922	Peri pump		
Analysis:		ST ST	11/09/2022 14:35
		St. Marrier, No. and Print, St.	11.00



Well ID: MWA-81I **Well Permit No:**

Date: 2022/11/07 Cool cloudy

Site ID	Purge Method / Pump Intake Depth	Reference I	Elevation
ARKEMA-PORTLAND	Low_Flow / 48 (ft)	44.62 (ft)	
Site Address	Purge Equipment	Depth to Wa	ater / Free Product
, Portland, US-OR	NA	32.55 (ft) / Nor	ne
Project Number	Sample Equipment	Total Well I	Depth
0629640	NA	(ft)	
Project Name	Average Purge Rate	Well Diame	ter / Well Screen Interval
20221104-GWMonitor	160 (mL/min)	(in) / - ()	
Sampler	Volume of Water in Well / Total Volume	me Purged Well Consti	ruction
scott terranova	() / 2.4 (I)		

Time	DTW (ft)	Flow Rate (mL/min)	Purge Volume (I)	Temperature (C) ±3%	pH ±0.2pH units	Specific Conductivity (uS/cm) ±10%	Total Conductivity (NA)	Dissolved Oxygen (mg/L) ±10%	ORP (mV) ±10 mV	Turbidity (NTU) ±10%	Total Dissolved Solids(NA)	Comments
11:30	32.55	160		10.1	6.38	1943	NM	3.66	33	12.45	NM	
11:33	32.55			10.6	6.14	2459	NM	1.86	53.8	9.35	NM	
11:36	32.55			11	6.06	2676	NM	1.44	49.1	7.35	NM	
11:39	33.55			11.1	6.03	2790	NM	1.33	46.4	6.86	NM	
11:42	32.55		2.4	11.2	6.05	2785	NM	1.3	42.9	6.93	NM	

Sample ID(s): MWA-81i-110722	Additional Comments	SAMPLER NAME AND SIGNATURE	Date Time
WWA-011-110722	2 pump		
Analysis:		ST #2	11/07/2022 19:49
		Sense, Navador III 2011 1-30 et	



Well ID: MWA-82 **Well Permit No:**

Date: 2022/11/07 Cool cloudy

				_
Site ID	Purge Method / Pump Intake Depth		Reference Elevation	
ARKEMA-PORTLAND	Low_Flow / 27 (ft)		37.74 (ft)	
Site Address	Purge Equipment		Depth to Water / Free Proc	luct
, Portland, US-OR	NA	2	22.4 (ft) / None	
Project Number	Sample Equipment		Total Well Depth	
0629640	NA		(ft)	
Project Name	Average Purge Rate	'	Well Diameter / Well Scree	n Interval
20221104-GWMonitor	160 (mL/min)		(in) / - ()	
Sampler	Volume of Water in Well / Total Volume	ne Purged	Well Construction	
scott terranova	() / 2.4 (l)			

Time	DTW (ft)	Flow Rate (mL/min)	Purge Volume (I)	Temperature (C) ±3%	pH ±0.2pH units	Specific Conductivity (uS/cm) ±10%	Total Conductivity (NA)	Dissolved Oxygen (mg/L) ±10%	ORP (mV) ±10 mV	Turbidity (NTU) ±10%	Total Dissolved Solids(NA)	Comments
06:59	22.4	160		12.2	9.95	453.9	NM	1.99	35.1	48.86	NM	
07:02	22.4			13.1	9.98	473.6	NM	1.57	28.4	47.62	NM	
07:05	22.4			12.8	9.99	480.9	NM	1.3	25.2	48.43	NM	
07:08	22.4			12.7	9.97	477.4	NM	1.25	23.5	48.42	NM	
07:11	22.4		2.4	12.9	9.96	480.7	NM	1.17	22.7	45.95	NM	

Sample ID(s): MWA-82-110722	Additional Comments	SAMPLER NAME AND SIGNATURE	Date Time
WWA-02-110722	2 pump		
Analysis:		ST	11/07/2022 15:12
		Thomas, because of 200 for an	



Well ID: PA-19D **Well Permit No:** Date: 2022/11/10 Cool cloudy

			_
Site ID	Purge Method / Pump Intake Depth	Reference Elevation	
ARKEMA-PORTLAND	Low_Flow / 46 (ft)	36.65 (ft)	
Site Address	Purge Equipment	Depth to Water / Free Pro	duct
, Portland, US-OR	NA .	27.45 (ft) / None	
Project Number	Sample Equipment	Total Well Depth	
0629640	NA	(ft)	
Project Name	Average Purge Rate	Well Diameter / Well Scre	en Interval
20221104-GWMonitor	100 (mL/min)	(in) / - ()	
Sampler	Volume of Water in Well / Total Volume	e Purged Well Construction	
scott terranova	() / 1.5 (l)		

Time	DTW (ft)	Flow Rate (mL/min)	Purge Volume (I)	Temperature (C) ±3%	pH ±0.2pH units	Specific Conductivity (uS/cm) ±10%	Total Conductivity (NA)	Dissolved Oxygen (mg/L) ±10%	ORP (mV) ±10 mV	Turbidity (NTU) ±10%	Total Dissolved Solids(NA)	Comments
10:46	29.28	100		13.9	7.26	2532	NM	3.26	-72.9	19.1	NM	
10:49	31.5			14	7.33	2412	NM	3.64	-60.8	15.1	NM	
10:52	32.1			13.8	7.39	2336	NM	3.58	-38.7	16.75	NM	
10:55	32.6			13.8	7.41	2293	NM	3.49	-35.6	17.95	NM	
10:58	32.92		1.5	14	7.42	2301	NM	3.4	-30.4	15.22	NM	

Sample ID(s): PA-19d-111022	Additional Comments	SAMPLER NAME AND SIGNATURE	Date Time
	1 pump	000	44/40/2022
Analysis:		ST	11/10/2022 19:00
		Warring Assessed No. 1912 THE ME	



Well ID: PA-20D **Well Permit No:**

Date: 2022/11/10 Cool cloudy

Site ID	Purge Method / Pump Intake Depth	Reference Elevation	
ARKEMA-PORTLAND	Low_Flow / 60 (ft)	37.91 (ft)	
Site Address	Purge Equipment	Depth to Water / Fre	e Product
, Portland, US-OR	NA NA	25.3 (ft) / None	
Project Number	Sample Equipment	Total Well Depth	
0629640	NA	(ft)	
Project Name	Average Purge Rate	Well Diameter / Well	Screen Interval
20221104-GWMonitor	100 (mL/min)	(in) / - ()	
Sampler	Volume of Water in Well / Total Volume	me Purged Well Construction	
scott terranova	() / 1.5 (l)	-	

Time	DTW (ft)	Flow Rate (mL/min)	Purge Volume (I)	Temperature (C) ±3%	pH ±0.2pH units	Specific Conductivity (uS/cm) ±10%	Total Conductivity (NA)	Dissolved Oxygen (mg/L) ±10%	ORP (mV) ±10 mV	Turbidity (NTU) ±10%	Total Dissolved Solids(NA)	Comments
09:13	27.55	100		14.3	6.74	6974	NM	2.61	-64.8	6.05	NM	
09:16	28.4			14.3	6.71	6005	NM	2.1	-66.1	8.87	NM	
09:19	28.63			14.1	6.71	5771	NM	2.07	-66.7	7.53	NM	
09:22	28.75			14	6.7	5745	NM	2.01	-67.8	4.42	NM	
09:25	28.81		1.5	13.9	6.7	5565	NM	1.97	-67.9	3.26	NM	

Sample ID(s): PA-20d-111022	Additional Comments	SAMPLER N	AME AND SIGNATURE	Date Time
PA-200-111022	1 pump		010	
Analysis:		ST	42	11/10/2022 17:27
			27 Transition, Name Hotel, 2013 10t 27 and	



Well ID: PA-21D **Well Permit No:**

Date: 2022/11/10 Cool cloudy

Site ID	Purge Method / Pump Intake Depth		Reference Elevation	
ARKEMA-PORTLAND	Low_Flow / 54 (ft)		34.36 (ft)	
Site Address	Purge Equipment	ge Equipment Depth to Water / Free Product		luct
, Portland, US-OR	NA	2	24.6 (ft) / None	
Project Number	Sample Equipment		Total Well Depth	
0629640	NA		(ft)	
Project Name	Average Purge Rate	,	Well Diameter / Well Scree	n Interval
20221104-GWMonitor	100 (mL/min)		(in) / - ()	
Sampler	Volume of Water in Well / Total Volur	me Purged	Well Construction	
scott terranova	() / 1.5 (l)			

Time	DTW (ft)	Flow Rate (mL/min)	Purge Volume (I)	Temperature (C) ±3%	pH ±0.2pH units	Specific Conductivity (uS/cm) ±10%	Total Conductivity (NA)	Dissolved Oxygen (mg/L) ±10%	ORP (mV) ±10 mV	Turbidity (NTU) ±10%	Total Dissolved Solids(NA)	Comments
10:00	25.8	100		12.8	6.43	3518	NM	2.38	-61.3	5.72	NM	
10:03	26.7			12.6	6.35	3477	NM	1.85	-36.1	3.24	NM	
10:06	27.2			12.5	6.32	3427	NM	1.79	-30.9	2.83	NM	
10:09	27.45			12.4	6.3	3410	NM	1.92	-28.9	2.33	NM	
10:12	27.62		1.5	12.3	6.29	3401	NM	1.9	-26.4	2.03	NM	

Sample ID(s): PA-21d-111022	Additional Comments	SAMPLER NAME AND SIGNATURE	Date Time
PA-210-111022	1 pump	2/	
Analysis:		ST	11/10/2022 18:14
		27 Secolog, Statement, 15, 1011 1/17 405	



Well ID: PA-22D **Well Permit No:**

Date: 2022/11/09 Cool clear

Site ID	Purge Method / Pump Intake Depth	Reference Elevation	
ARKEMA-PORTLAND	Low_Flow / 60 (ft)	38.75 (ft)	
Site Address	Purge Equipment	Depth to Water / Free Pro	oduct
, Portland, US-OR	NA	26.28 (ft) / None	
Project Number	Sample Equipment	Total Well Depth	
0629640	NA .	(ft)	
Project Name	Average Purge Rate	Well Diameter / Well Scr	een Interval
20221104-GWMonitor	100 (mL/min)	(in) / - ()	
Sampler	Volume of Water in Well / Total Volume	ne Purged Well Construction	
scott terranova	() / 1.5 (I)		

Time	DTW (ft)	Flow Rate (mL/min)	Purge Volume (I)	Temperature (C) ±3%	pH ±0.2pH units	Specific Conductivity (uS/cm) ±10%	Total Conductivity (NA)	Dissolved Oxygen (mg/L) ±10%	ORP (mV) ±10 mV	Turbidity (NTU) ±10%	Total Dissolved Solids(NA)	Comments
08:30	26.3	100		10.9	6.93	16172	NM	2.92	65.9	2.85	NM	
08:33	26.4			10.3	6.94	17865	NM	1.87	66.3	2.97	NM	
08:36	26.44			10.1	6.95	18759	NM	1.75	67.8	1.99	NM	
08:39	26.46			10	6.96	19104	NM	1.84	68.8	1.78	NM	
08:42	26.47		1.5	10	6.97	19274	NM	1.78	69.7	1.42	NM	

Sample ID(s): PA-22d-110922	Additional Comments	SAMPLER NAME AND SIGNATURE	Date Time
	1 pump	2/-2	44/00/0000
Analysis:		ST	11/09/2022 16:52
		Technology Streetile (S), 1513 Mt Si Mt	



Well ID: PA-23D **Well Permit No:**

Date: 2022/11/10 Cool cloudy

			_		
Site ID	Purge Method / Pump Intake Depth	Reference Elevation			
ARKEMA-PORTLAND	Low_Flow / 80 (ft)	Flow / 80 (ft) 39.31 (ft)			
Site Address	Purge Equipment	Depth to Water / Free Pr	oduct		
, Portland, US-OR	NA .	28.07 (ft) / None			
Project Number	Sample Equipment	Total Well Depth			
0629640	NA	(ft)			
Project Name	Average Purge Rate	Well Diameter / Well Scr	een Interval		
20221104-GWMonitor	100 (mL/min)	(in) / - ()			
Sampler	Volume of Water in Well / Total Volume	me Purged Well Construction			
scott terranova	() / 1.5 (I)	-			

Time	DTW (ft)	Flow Rate (mL/min)	Purge Volume (I)	Temperature (C) ±3%	pH ±0.2pH units	Specific Conductivity (uS/cm) ±10%	Total Conductivity (NA)	Dissolved Oxygen (mg/L) ±10%	ORP (mV) ±10 mV	Turbidity (NTU) ±10%	Total Dissolved Solids(NA)	Comments
06:36	28.5	100		10.2	6.78	6614	NM	2.97	-61.8	7.32	NM	
06:39	28.54			10	6.65	5880	NM	2.61	-48.4	6.9	NM	
06:42	28.56			9.9	6.61	5782	NM	2.59	-48.1	6.14	NM	
06:45	28.56			9.8	6.57	5803	NM	2.54	-46.9	6.08	NM	
06:48	28.56		1.5	9.8	6.58	5814	NM	2.5	-44.1	5.89	NM	

Sample ID(s): PA-23d-111022	Additional Comments	SAMPLER NAME AND S	Date Time	
	Peri pump		01-	44/40/0000
Analysis:		ST	Throates, November 10, 100 to the	11/10/2022 14:57



Well ID: PA-24D **Well Permit No:**

Date: 2022/11/10 Cool cloudy

Site ID	Purge Method / Pump Intake Depth		Reference Elevation	
ARKEMA-PORTLAND	Low_Flow / 80 (ft)		39.06 (ft)	
Site Address	Purge Equipment		Depth to Water / Free Prod	luct
, Portland, US-OR	NA		29.75 (ft) / None	
Project Number	Sample Equipment		Total Well Depth	
0629640	NA		(ft)	
Project Name	Average Purge Rate		Well Diameter / Well Scree	n Interval
20221104-GWMonitor	100 (mL/min)		(in) / - ()	
Sampler	Volume of Water in Well / Total Volume	ne Purged	Well Construction	
scott terranova	() / 1.5 (l)	-		

Time	DTW (ft)	Flow Rate (mL/min)	Purge Volume (I)	Temperature (C) ±3%	pH ±0.2pH units	Specific Conductivity (uS/cm) ±10%	Total Conductivity (NA)	Dissolved Oxygen (mg/L) ±10%	ORP (mV) ±10 mV	Turbidity (NTU) ±10%	Total Dissolved Solids(NA)	Comments
07:34	31.9	100		11.8	6.58	79904	NM	4.48	-62.9	11.43	NM	
07:37	32.25			11.5	6.62	80543	NM	4	-62.9	9.01	NM	
07:40	32.5			11.3	6.63	80372	NM	3.37	-63.7	7.89	NM	
07:43	32.65			11.4	6.64	80533	NM	3.31	-66.9	7.23	NM	
07:46	32.72		1.5	11.5	6.65	81248	NM	3.27	-71.7	5.83	NM	

Sample ID(s): PA-24d-111022	Additional Comments	SAMPLER NAME AND SIGNATURE	Date Time
PA-240-111022	1 pump, RB-02-111022 taken before purging		
Analysis:		ST	11/10/2022 15:49
		No contract to 100 C of the	13.49



Well ID: PA-25D **Well Permit No:**

Date: 2022/11/07 Cool cloudy

Site ID	Purge Method / Pump Intake Depth		Reference Elevation	
ARKEMA-PORTLAND	Low_Flow / 80 (ft)		40.44 (ft)	
Site Address	Purge Equipment		Depth to Water / Free Proc	luct
, Portland, US-OR	NA		25.1 (ft) / None	
Project Number	Sample Equipment		Total Well Depth	
0629640	NA		(ft)	
Project Name	Average Purge Rate		Well Diameter / Well Scree	n Interval
20221104-GWMonitor	100 (mL/min)		(in) / - ()	
Sampler	Volume of Water in Well / Total Volume	ne Purged	Well Construction	
scott terranova	() / 2.4 (I)	_		

Time	DTW (ft)	Flow Rate (mL/min)	Purge Volume (I)	Temperature (C) ±3%	pH ±0.2pH units	Specific Conductivity (uS/cm) ±10%	Total Conductivity (NA)	Dissolved Oxygen (mg/L) ±10%	ORP (mV) ±10 mV	Turbidity (NTU) ±10%	Total Dissolved Solids(NA)	Comments
10:23	30.05	100		12.8	7.22	784	NM	2.52	-121.7	6.6	NM	
10:26	30.75			12.6	7.22	667	NM	2.26	-122.7	6.3	NM	
10:29	31.6			12.1	7.22	632	NM	2.29	-119.8	5.79	NM	
10:32	31.95			11.9	7.22	622	NM	2.34	-117.3	5.88	NM	
10:35	32.1		2.4	11.8	7.22	616	NM	2.39	-114.6	5.21	NM	

Sample ID(s): PA-25d-110722	Additional Comments	SAMPLER NAME AND SIGNATURE	Date Time
PA-250-110722	1 pump	2/	
Analysis:		ST	11/07/2022 18:39
		27 20 manua, November 17 (20) 103 103	10.00



Well ID: PA-26D **Well Permit No:**

Date: 2022/11/08 Cool cloudy

			-	-		
Site ID	Purge Method / Pump Intake Depth	F	Reference Elevation			
ARKEMA-PORTLAND	Low_Flow / 80 (ft)		40.33 (ft)			
Site Address	Purge Equipment	1	Depth to Water / Free Proc	luct		
, Portland, US-OR	NA	2	27.67 (ft) / None			
Project Number	Sample Equipment	7	Total Well Depth			
0629640	NA		(ft)			
Project Name	Average Purge Rate	1	Well Diameter / Well Scree	n Interval		
20221104-GWMonitor	160 (mL/min)		(in) / - ()			
Sampler	Volume of Water in Well / Total Volume	ne Purged \	Well Construction			
scott terranova	() / 2.88 (I)	_				

Time	DTW (ft)	Flow Rate (mL/min)	Purge Volume (I)	Temperature (C) ±3%	pH ±0.2pH units	Specific Conductivity (uS/cm) ±10%	Total Conductivity (NA)	Dissolved Oxygen (mg/L) ±10%	ORP (mV) ±10 mV	Turbidity (NTU) ±10%	Total Dissolved Solids(NA)	Comments
07:54	29.05	160		11.5	7.02	194.9	NM	3.03	-46.9	100.13	NM	
07:57	29.08			11.8	6.94	163.3	NM	1.56	-64.8	80.75	NM	
08:00	29.1			11.8	6.94	155.8	NM	1.82	-53.6	61.81	NM	
08:03	29.1			11.5	6.93	153.4	NM	1.85	-46.6	40.86	NM	
08:06	29.1			11.6	6.94	159.1	NM	1.77	-42.7	50.84	NM	
08:09	29.1		2.88	11.8	6.97	159.8	NM	1.68	-40.6	49.71	NM	

Sample ID(s):	Additional Comments	SAMPLER NAME AND SIGNATURE	Date Time
PA-26d-110822	Peri pump	,	
Analysis:		ST Standard	11/08/2022 16:12



Well ID: PA-30D **Well Permit No:**

Date: 2022/11/10 Cool cloudy

			_
Site ID	Purge Method / Pump Intake Depth	Reference Elevation	•
ARKEMA-PORTLAND	Low_Flow / 49 (ft)	37.34 (ft)	
Site Address	Purge Equipment	Depth to Water / Free Pro	oduct
, Portland, US-OR	NA	25.1 (ft) / None	
Project Number	Sample Equipment	Total Well Depth	
0629640	NA	(ft)	
Project Name	Average Purge Rate	Well Diameter / Well Scre	en Interval
20221104-GWMonitor	100 (mL/min)	(in) / - ()	
Sampler	Volume of Water in Well / Total Volur	me Purged Well Construction	
scott terranova	() / 1.5 (l)		

Time	DTW (ft)	Flow Rate (mL/min)	Purge Volume (I)	Temperature (C) ±3%	pH ±0.2pH units	Specific Conductivity (uS/cm) ±10%	Total Conductivity (NA)	Dissolved Oxygen (mg/L) ±10%	ORP (mV) ±10 mV	Turbidity (NTU) ±10%	Total Dissolved Solids(NA)	Comments
11:56	25.3	100		15.6	7.53	2703	NM	1.77	-113.4	6.07	NM	
11:59	25.35			15.9	7.6	3040	NM	1.05	-157.8	10.84	NM	
12:02	25.35			16.2	7.66	3360	NM	1.01	-163.7	14.85	NM	
12:05	25.35			16.2	7.68	3546	NM	0.94	-169.6	18.7	NM	
12:08	25.35		1.5	16.3	7.71	3667	NM	0.91	-171.3	16.74	NM	

Sample ID(s): PA-30d-111022	Additional Comments	SAMPLER NAME AND SIGNATURE	Date Time
	1 pump	21	
Analysis:		ST	11/10/2022 20:11
		Name Assessed St. 2011 12 To Per	



Well ID: PA-32I **Well Permit No:**

Date: 2022/11/08 Cool cloudy

Site ID	Purge Method / Pump Intake Depth	Pump Intake Depth Reference Elevation			
ARKEMA-PORTLAND	Low_Flow / 38 (ft)		36.28 (ft)		
Site Address	Purge Equipment		Depth to Water / Free Proc	luct	
, Portland, US-OR	NA	2	21.68 (ft) / None		
Project Number	Sample Equipment		Total Well Depth		
0629640	NA		(ft)		
Project Name	Average Purge Rate		Well Diameter / Well Scree	n Interval	
20221104-GWMonitor	160 (mL/min)		(in) / - ()		
Sampler	Volume of Water in Well / Total Volume	ne Purged	Well Construction		
scott terranova	() / 2.4 (l)	-			

Time	DTW (ft)	Flow Rate (mL/min)	Purge Volume (I)	Temperature (C) ±3%	pH ±0.2pH units	Specific Conductivity (uS/cm) ±10%	Total Conductivity (NA)	Dissolved Oxygen (mg/L) ±10%	ORP (mV) ±10 mV	Turbidity (NTU) ±10%	Total Dissolved Solids(NA)	Comments
09:45	21.7	160		11.9	7.61	1257	NM	1.59	-112.7	26.12	NM	
09:48	21.7			12.1	7.6	1252	NM	0.93	-141.8	14.81	NM	
09:51	21.7			12.5	7.61	1244	NM	0.89	-158.8	10.93	NM	
09:54	21.7			12.6	7.63	1231	NM	0.85	-162.7	11.57	NM	
09:57	21.7		2.4	12.6	7.64	1221	NM	0.81	-164.9	7.99	NM	

Sample ID(s): PA-32i-110822	Additional Comments	SAMPLER NAME AND SIGNATURE	Date Time
PA-32I-110822	2 pump		
Analysis:		ST	11/08/2022 17:59
		Thanks, Name of 2, 201 201 de	



Well ID: PA-03 **Well Permit No:**

Date: 2022/11/08 Cool clear

Site ID	Purge Method / Pump Intake Depth	Reference Elevat	tion
ARKEMA-PORTLAND	Low_Flow / 24 (ft)	37.1 (ft)	
Site Address	Purge Equipment	Depth to Water /	Free Product
, Portland, US-OR	NA	10.05 (ft) / None	
Project Number	Sample Equipment	Total Well Depth	
0629640	NA	(ft)	
Project Name	Average Purge Rate	Well Diameter / V	Well Screen Interval
20221104-GWMonitor	160 (mL/min)	(in) / - ()	
Sampler	Volume of Water in Well / Total Volume	ne Purged Well Constructio	on
scott terranova	() / 2.4 (l)	_	

Time	DTW (ft)	Flow Rate (mL/min)	Purge Volume (I)	Temperature (C) ±3%	pH ±0.2pH units	Specific Conductivity (uS/cm) ±10%	Total Conductivity (NA)	Dissolved Oxygen (mg/L) ±10%	ORP (mV) ±10 mV	Turbidity (NTU) ±10%	Total Dissolved Solids(NA)	Comments
10:48	11.4	160		14.6	10.5	934	NM	1.86	-121.8	68.23	NM	
10:51	11.47			14.5	10.52	945	NM	1.34	-143.9	89.75	NM	
10:54	11.5			14.5	10.51	954	NM	0.98	-169.6	70.64	NM	
10:57	11.5			14.5	10.51	953	NM	0.94	-171.2	68.54	NM	
11:00	11.5		2.4	14.6	10.5	953	NM	0.94	-174.9	57.94	NM	

Sample ID(s): PA-03-110822	Additional Comments	SAMPLER NAME AND S	Date Time	
PA-03-110622	Peri pump			
Analysis:		ST	5	11/08/2022 19:02
			ST Securities 10, 2011 7 57 Mar	



Well ID: PA-04 **Well Permit No:**

Date: 2022/11/09 Cool clear

			-	
Site ID	Purge Method / Pump Intake Depth		erence Elevation	
ARKEMA-PORTLAND	Low_Flow / 26 (ft)	36.6	57 (ft)	
Site Address	Purge Equipment	Dep	oth to Water / Free Prod	luct
, Portland, US-OR	NA	9.68	(ft) / None	
Project Number	Sample Equipment	Tota	al Well Depth	
0629640	NA	(ft)		
Project Name	Average Purge Rate	Wel	II Diameter / Well Scree	n Interval
20221104-GWMonitor	160 (mL/min)	(in)	/ - ()	
Sampler	Volume of Water in Well / Total Volu	me Purged Wel	II Construction	
scott terranova	() / 2.4 (l)			

Time	DTW (ft)	Flow Rate (mL/min)	Purge Volume (I)	Temperature (C) ±3%	pH ±0.2pH units	Specific Conductivity (uS/cm) ±10%	Total Conductivity (NA)	Dissolved Oxygen (mg/L) ±10%	ORP (mV) ±10 mV	Turbidity (NTU) ±10%	Total Dissolved Solids(NA)	Comments
07:10	10.02	160		12.9	10.17	681	NM	1.65	-9.3	100.86	NM	
07:13	10.05			12.8	10.16	687	NM	1.28	-19.8	60.79	NM	
07:16	10.05			12.7	10.15	685	NM	1.2	-21.9	58.52	NM	
07:19	10.05			12.9	10.15	684	NM	1.16	-23.6	59.31	NM	
07:22	10.05		2.4	12.8	10.15	687	NM	1.12	-25.2	60.25	NM	

Sample ID(s): PA-04-110922	Additional Comments	SAMPLER NAME AND SIGNATURE	Date Time
PA-04-110922	Peri pump		
Analysis:		ST	11/09/2022 15:25
		State of the state	.0.20



Well ID: PA-08 **Well Permit No:**

Date: 2022/11/07 Cool cloudy

			-
Site ID	Purge Method / Pump Intake Depth	Reference Elevation	
ARKEMA-PORTLAND	Low_Flow / 29 (ft)	40.47 (ft)	
Site Address	Purge Equipment	Depth to Water / Free Pro	duct
, Portland, US-OR	NA	26.38 (ft) / None	
Project Number	Sample Equipment	Total Well Depth	
0629640	NA	(ft)	
Project Name	Average Purge Rate	Well Diameter / Well Scre	en Interval
20221104-GWMonitor	160 (mL/min)	(in) / - ()	
Sampler	Volume of Water in Well / Total Volume	e Purged Well Construction	
scott terranova	() / 2.4 (l)		

Time	DTW (ft)	Flow Rate (mL/min)	Purge Volume (I)	Temperature (C) ±3%	pH ±0.2pH units	Specific Conductivity (uS/cm) ±10%	Total Conductivity (NA)	Dissolved Oxygen (mg/L) ±10%	ORP (mV) ±10 mV	Turbidity (NTU) ±10%	Total Dissolved Solids(NA)	Comments
09:39	26.41	160		12	6.88	5187	NM	2.2	-66.3	50.22	NM	
09:42	26.41			11.9	6.89	5287	NM	1.47	-69.2	49.72	NM	
09:45	26.41			11.9	6.91	4958	NM	1.33	-68.8	51.3	NM	
09:48	26.41			12	6.94	4786	NM	1.27	-68.1	51.2	NM	
09:51	26.41		2.4	12.1	6.99	4476	NM	1.2	-68.1	50.72	NM	

Sample ID(s): PA-08-110722	Additional Comments	SAMPLER NAME AND SIGNATURE	Date Time
PA-08-110722	Peri pump		
Analysis:		ST	11/07/2022 18:15
		ST Streeting, Name and ST, 2013 St St St St	



Well ID: PA-09 **Well Permit No:**

Date: 2022/11/08 Cool cloudy

				•
Site ID	Purge Method / Pump Intake Depth	R	eference Elevation	
ARKEMA-PORTLAND	Low_Flow / 29 (ft)	40	0.24 (ft)	
Site Address	Purge Equipment	D	epth to Water / Free Prod	luct
, Portland, US-OR	NA	27.	7.54 (ft) / None	
Project Number	Sample Equipment	To	otal Well Depth	
0629640	NA	(ft	t)	
Project Name	Average Purge Rate	W	Vell Diameter / Well Scree	n Interval
20221104-GWMonitor	160 (mL/min)	(i)	in) / - ()	
Sampler	Volume of Water in Well / Total Volume	ne Purged W	Vell Construction	
scott terranova	() / 2.4 (l)	-		

Time	e DTW (ft)	Flow Rate (mL/min)	Purge Volume (I)	Temperature (C) ±3%	pH ±0.2pH units	Specific Conductivity (uS/cm) ±10%	Total Conductivity (NA)	Dissolved Oxygen (mg/L) ±10%	ORP (mV) ±10 mV	Turbidity (NTU) ±10%	Total Dissolved Solids(NA)	Comments
07:2	4 27.57	160		13	7.35	781	NM	1.94	68.7	45.67	NM	
07:2	7 27.57			13.3	7.29	842	NM	1.39	69.3	47.69	NM	
07:3	0 27.57			13.3	7.28	847	NM	1.2	69.6	48.75	NM	
07:3	3 27.57			13.5	7.27	854	NM	1.15	69.9	47.94	NM	
07:3	6 27.57		2.4	13.5	7.26	856	NM	1.08	70.2	48.32	NM	

Sample ID(s): PA-09-110822	Additional Comments	SAMPLER NAME AND SIGNATURE	Date Time
PA-09-110622	Peri pump		
Analysis:		ST 42	11/08/2022 15:38
		V Seeding, Named to 13, 500 O' H AND	10.00



Well ID: PA-10I **Well Permit No:**

Date: 2022/11/09 Cool clear

Site ID	Purge Method / Pump Intake Depth	Reference Elevation	
ARKEMA-PORTLAND	Low_Flow / 35 (ft)	36.67 (ft)	
Site Address	Purge Equipment	Depth to Water / Free Pr	oduct
, Portland, US-OR	NA	21.95 (ft) / None	
Project Number	Sample Equipment	Total Well Depth	
0629640	NA	(ft)	
Project Name	Average Purge Rate	Well Diameter / Well Scr	een Interval
20221104-GWMonitor	160 (mL/min)	(in) / - ()	
Sampler	Volume of Water in Well / Total Volume	me Purged Well Construction	
scott terranova	() / 2.4 (l)		

Time	DTW (ft)	Flow Rate (mL/min)	Purge Volume (I)	Temperature (C) ±3%	pH ±0.2pH units	Specific Conductivity (uS/cm) ±10%	Total Conductivity (NA)	Dissolved Oxygen (mg/L) ±10%	ORP (mV) ±10 mV	Turbidity (NTU) ±10%	Total Dissolved Solids(NA)	Comments
07:37	22.08	160		12.2	7.64	936	NM	1.91	-68.3	88.58	NM	
07:40	22.15			12.6	7.53	938	NM	1.32	-117.8	35.69	NM	
07:43	22.15			12.9	7.47	945	NM	1.15	-134.3	26.43	NM	
07:46	22.15			12.8	7.41	950	NM	1.08	-137.6	14.67	NM	
07:49	22.15		2.4	12.8	7.38	948	NM	1	-137.8	9.72	NM	

Sample ID(s): PA-10i-110922	Additional Comments	SAMPLER NAME AND SIGNATURE	Date Time
PA-10I-110922	Peri pump	,	
Analysis:		ST	11/09/2022 15:51
		State of the state	10.01



Well ID: PA-16I **Well Permit No:**

Date: 2022/11/08 Cool cloudy

Site ID	Purge Method / Pump Intake Depth		Reference Elevation	
ARKEMA-PORTLAND	Low_Flow / 43 (ft)		40.3 (ft)	
Site Address	Purge Equipment		Depth to Water / Free Prod	duct
, Portland, US-OR	NA		28.17 (ft) / None	
Project Number	Sample Equipment		Total Well Depth	
0629640	NA		(ft)	
Project Name	Average Purge Rate		Well Diameter / Well Scree	en Interval
20221104-GWMonitor	160 (mL/min)		(in) / - ()	
Sampler	Volume of Water in Well / Total Volume	ne Purged	Well Construction	
scott terranova	() / 2.4 (l)	-		

Time	DTW (ft)	Flow Rate (mL/min)	Purge Volume (I)	Temperature (C) ±3%	pH ±0.2pH units	Specific Conductivity (uS/cm) ±10%	Total Conductivity (NA)	Dissolved Oxygen (mg/L) ±10%	ORP (mV) ±10 mV	Turbidity (NTU) ±10%	Total Dissolved Solids(NA)	Comments
06:50	28.42	160		11.7	6.92	470.5	NM	2.72	78.9	15.85	NM	
06:53	28.42			12	6.86	499.5	NM	2.03	86.1	18.75	NM	
06:56	28.42			11.9	6.84	567	NM	1.76	87.5	18.36	NM	
06:59	28.42			12	6.84	578	NM	1.67	86.8	16.28	NM	
07:02	28.42		2.4	11.9	6.82	583	NM	1.63	83.3	18.79	NM	

Sample ID(s): PA-16i-110822	Additional Comments	SAMPLER NAME AND SIGNATURE	Date Time
PA-10I-110822	Peri pump		
Analysis:		ST	11/08/2022 15:04
		State State of Line (14 of 14 of	10.01



Well ID: PA-17IR **Well Permit No:**

Date: 2022/11/08 Cool clear

Site ID	Purge Method / Pump Intake Depth	Reference Elevation
ARKEMA-PORTLAND	Low_Flow / 40 (ft)	37.59 (ft)
Site Address	Purge Equipment	Depth to Water / Free Product
, Portland, US-OR	NA NA	24.6 (ft) / None
Project Number	Sample Equipment	Total Well Depth
0629640	NA .	(ft)
Project Name	Average Purge Rate	Well Diameter / Well Screen Interval
20221104-GWMonitor	160 (mL/min)	(in) / - (ft)
Sampler	Volume of Water in Well / Total Volume Purged	Well Construction
scott terranova	() / 2.4 (l)	

Time	DTW (ft)	Flow Rate (mL/min)	Purge Volume (I)	Temperature (C) ±3%	pH ±0.2pH units	Specific Conductivity (uS/cm) ±10%	Total Conductivity (NA)	Dissolved Oxygen (mg/L) ±10%	ORP (mV) ±10 mV	Turbidity (NTU) ±10%	Total Dissolved Solids(NA)	Comments
11:14	25.45	160		13.3	8.04	592	NM	2.28	-114.7	8.03	NM	
11:17	25.63			13.4	8.01	593	NM	1.62	-124.3	6.79	NM	
11:20	25.68			13.5	7.96	576	NM	1.35	-124.8	7.48	NM	
11:23	25.72			13.7	7.92	544	NM	1.29	-126.1	6.23	NM	
11:26	25.75		2.4	13.7	7.88	534	NM	1.2	-126.1	6.05	NM	

Sample ID(s): PA-17iR-110822	Additional Comments	SAMPLER NAME AND SIGNATUR	E Date Time
FA-1/1R-110022	Peri pump		
Analysis:		ST	11/08/2022 19:29
		V Name, Name of Street Ave. 2017 June 201	10.20



Well ID: PA-27D **Well Permit No:**

Date: 2022/11/08 Cool clear

Site ID	Purge Method / Pump Intake Depth Reference Elevation				
ARKEMA-PORTLAND	Low_Flow / 46 (ft)	37.1 (f	37.1 (ft)		
Site Address	Purge Equipment	Depth	Depth to Water / Free Product		
, Portland, US-OR	NA	24.58 (24.58 (ft) / None		
Project Number	Sample Equipment	Total	Total Well Depth		
0629640	NA	(ft)	-		
Project Name	Average Purge Rate	Well I	Well Diameter / Well Screen Interval		
20221104-GWMonitor	160 (mL/min)	(in) /	- ()		
Sampler	Volume of Water in Well / Total Volume	ne Purged Well (Well Construction		
scott terranova	() / 2.4 (l)				

Time	DTW (ft)	Flow Rate (mL/min)	Purge Volume (I)	Temperature (C) ±3%	pH ±0.2pH units	Specific Conductivity (uS/cm) ±10%	Total Conductivity (NA)	Dissolved Oxygen (mg/L) ±10%	ORP (mV) ±10 mV	Turbidity (NTU) ±10%	Total Dissolved Solids(NA)	Comments
11:49	25.75	160		11.9	6.98	4351	NM	3.36	-75.8	37.76	NM	
11:52	25.78			11.5	6.94	4549	NM	2.53	-75.5	42.47	NM	
11:55	25.8			11.4	6.92	4640	NM	1.88	-74.5	38.67	NM	
11:58	25.8			11.4	6.91	4702	NM	1.81	-73.8	38.53	NM	
12:01	25.8		2.4	11.3	6.9	4712	NM	1.74	-72.9	35.09	NM	

Sample ID(s): PA-27d-110822	Additional Comments	SAMPLER NAME AND SIGNA	ATURE	Date Time
PA-27U-110022	Peri pump)	
Analysis:		ST	47	11/08/2022 20:03
		Noon to	Number 18, 1011 to 11 Per	



Well ID: PA-31 **Well Permit No:**

Date: 2022/11/08 Cool cloudy

				-
Site ID	Purge Method / Pump Intake Depth		Reference Elevation	
ARKEMA-PORTLAND	Low_Flow / 22 (ft)	;	36.25 (ft)	
Site Address	Purge Equipment		Depth to Water / Free Proc	luct
, Portland, US-OR	NA	g	9.4 (ft) / None	
Project Number	Sample Equipment		Total Well Depth	
0629640	NA		(ft)	
Project Name	Average Purge Rate	,	Well Diameter / Well Scree	n Interval
20221104-GWMonitor	160 (mL/min)		(in) / - ()	
Sampler	Volume of Water in Well / Total Volume	me Purged	Well Construction	
scott terranova	() / 2.4 (l)			

Time	DTW (ft)	Flow Rate (mL/min)	Purge Volume (I)	Temperature (C) ±3%	pH ±0.2pH units	Specific Conductivity (uS/cm) ±10%	Total Conductivity (NA)	Dissolved Oxygen (mg/L) ±10%	ORP (mV) ±10 mV	Turbidity (NTU) ±10%	Total Dissolved Solids(NA)	Comments
09:02	9.55	160		13	9.62	715	NM	2.17	-35.4	28.66	NM	
09:05	9.58			13.1	9.62	779	NM	1.46	-43.9	18.84	NM	
09:08	9.6			13.1	9.61	791	NM	1.24	-48.9	20.73	NM	
09:11	9.6			13.3	9.61	797	NM	1.15	-51.1	25.99	NM	
09:14	9.6		2.4	13.5	9.61	799	NM	1.1	-53.5	20.86	NM	

Sample ID(s): DUP-01-110822,PA-31-110822	Additional Comments	SAMPLER NAME AND SIGNATURE	Date Time
	2 pump, RB-01-110822 taken before purging		
Analysis:		ST	11/08/2022 17:18
		Towards, Named St. 2012 ST 400	17.10



Well ID: PA-44I **Well Permit No:**

Date: 2022/11/07 Cool cloudy

				_	
Site ID	Purge Method / Pump Intake Depth		Reference Elevation		
ARKEMA-PORTLAND	Low_Flow / 43 (ft)		40.36 (ft)		
Site Address	Purge Equipment	urge Equipment Depth to Water / Free Product			
, Portland, US-OR	NA	2	27.43 (ft) / None		
Project Number	Sample Equipment		Total Well Depth		
0629640	NA		(ft)		
Project Name	Average Purge Rate		Well Diameter / Well Scree	en Interval	
20221104-GWMonitor	160 (mL/min)		(in) / - ()		
Sampler	Volume of Water in Well / Total Volume	ne Purged	Well Construction		
scott terranova	() / 2.4 (l)				

Time	DTW (ft)	Flow Rate (mL/min)	Purge Volume (I)	Temperature (C) ±3%	pH ±0.2pH units	Specific Conductivity (uS/cm) ±10%	Total Conductivity (NA)	Dissolved Oxygen (mg/L) ±10%	ORP (mV) ±10 mV	Turbidity (NTU) ±10%	Total Dissolved Solids(NA)	Comments
07:47	27.43	160		12.6	8.77	741	NM	8.35	84.4	9.75	NM	
07:50	27.43			12.7	8.69	754	NM	8.25	88.4	10.02	NM	
07:53	27.43			12.5	8.73	758	NM	8.24	90.2	7.69	NM	
07:56	27.43			12.3	8.73	760	NM	8.21	91.3	7.46	NM	
07:59	27.42		2.4	12.3	8.72	756	NM	8.19	92.7	8.16	NM	

Sample ID(s): PA-44i-110722	Additional Comments	SAMPLER NAME AND SIGNATURE	Date Time
PA-44I-110722	2 pump		
Analysis:		ST	11/07/2022 16:01
		Window, Navadar Cl. 201 St. St.	



Well ID: PA-15I **Well Permit No:**

Date: 2022/11/07 Cool cloudy

				-	
Site ID	Purge Method / Pump Intake Depth	Ref	ference Elevation		
ARKEMA-PORTLAND	Low_Flow / 43 (ft)	40.62 (ft)			
Site Address	Purge Equipment	Dep	Depth to Water / Free Product		
, Portland, US-OR	NA	27.4	6 (ft) / None		
Project Number	Sample Equipment	Tot	tal Well Depth		
0629640	NA	(ft)	-		
Project Name	Average Purge Rate	We	II Diameter / Well Scree	n Interval	
20221104-GWMonitor	160 (mL/min)	(in)) / - ()		
Sampler	Volume of Water in Well / Total Volume	ne Purged We	II Construction		
scott terranova	() / 3 (l)	_			

Time	DTW (ft)	Flow Rate (mL/min)	Purge Volume (I)	Temperature (C) ±3%	pH ±0.2pH units	Specific Conductivity (uS/cm) ±10%	Total Conductivity (NA)	Dissolved Oxygen (mg/L) ±10%	ORP (mV) ±10 mV	Turbidity (NTU) ±10%	Total Dissolved Solids(NA)	Comments
09:07	28	100		12.8	7.02	3852	NM	1.71	-142.6	33.92	NM	
09:10	28.06			12.8	6.98	4000	NM	1.17	-142.7	25.75	NM	
09:13	28.12			12.8	6.98	4045	NM	1.05	-142.9	20.83	NM	
09:16	28.16			12.5	6.98	4074	NM	1	-142.5	22.72	NM	
09:19	28.17		3	12.8	6.98	4063	NM	0.98	-142.8	20.53	NM	

Sample ID(s): PA-15i-110722	Additional Comments	SAMPLER NAME AND SIGNATURE	Date Time
PA-15I-110/22	1 pump	2/	
Analysis:		ST 45 Z	11/07/2022 17:21
		Name of the contract of the co	



Well ID: MWA-31I(D) **Well Permit No:**

Date: 2022/11/10 Cool cloudy

Site ID	Purge Method / Pump Intake Depth	F	Reference Elevation		
ARKEMA-PORTLAND	Low_Flow / 57 (ft)	w_Flow / 57 (ft) 38.36 (ft)			
Site Address	Purge Equipment	rige Equipment Depth to Water / Free Product			
, Portland, US-OR	NA	20	0.8 (ft) / None		
Project Number	Sample Equipment	Т	Total Well Depth		
0629640	NA	(f	ft)		
Project Name	Average Purge Rate	V	Vell Diameter / Well Scree	n Interval	
20221104-GWMonitor	160 (mL/min)	((in) / - ()		
Sampler	Volume of Water in Well / Total Volume	ne Purged V	Well Construction		
scott terranova	() / 2.88 (I)				

Time	DTW (ft)	Flow Rate (mL/min)	Purge Volume (I)	Temperature (C) ±3%	pH ±0.2pH units	Specific Conductivity (uS/cm) ±10%	Total Conductivity (NA)	Dissolved Oxygen (mg/L) ±10%	ORP (mV) ±10 mV	Turbidity (NTU) ±10%	Total Dissolved Solids(NA)	Comments
08:16	28.9	160		14.2	6.95	41682	NM	3.46	-8.4	43.31	NM	
08:19	28.9			14.5	6.72	52814	NM	1.61	42.8	26.74	NM	
08:22	28.9			14.8	6.68	55184	NM	1.32	51.8	23.54	NM	
08:25	28.9			14.7	6.65	56271	NM	1.27	58.9	24.96	NM	
08:28	28.9			14.7	6.65	56783	NM	1.19	62.3	20.86	NM	
08:31	28.9		2.88	14.9	6.64	57043	NM	1.16	64.1	15.75	NM	

Sample ID(s): MWA-31i(d)-111022	Additional Comments	SAMPLER NA	SAMPLER NAME AND SIGNATURE			
MVVA-311(d)-111022	2 pump					
Analysis:		ST	47	11/10/2022 16:35		
			Through Naveller 1), FEET 00 TH Gar			

APPENDIX B LABORATORY ANALYTICAL REPORTS

www.erm.com Version: 1.0 Project No.: 0629640 Client: Retia USA LLC February 2023

ANALYTICAL REPORT

PREPARED FOR

Attn: Sarah Seekins ERM-West 1050 SW 6th Avenue Suite 1650 Portland, Oregon 97204

Generated 12/13/2022 1:29:16 PM

JOB DESCRIPTION

Arkema - Q4 2022 Groundwater Event

JOB NUMBER

580-119876-1

Eurofins Seattle 5755 8th Street East Tacoma WA 98424



Eurofins Seattle

Job Notes

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The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing Northwest, LLC Project Manager.

Authorization

Generated 12/13/2022 1:29:16 PM

Authorized for release by Sheri Cruz, Project Manager I Sheri.Cruz@et.eurofinsus.com (253)922-2310

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Project/Site: Arkema - Q4 2022 Groundwater Event

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Case Narrative

Client: ERM-West Job ID: 580-119876-1

Project/Site: Arkema - Q4 2022 Groundwater Event

Job ID: 580-119876-1

Laboratory: Eurofins Seattle

Narrative

Job Narrative 580-119876-1

Comments

No additional comments.

Receipt

The samples were received on 11/9/2022 3:05 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 3.0° C.

GC/MS VOA

Method 8260D: The continuing calibration verification (CCV) associated with batch 580-409568 recovered above the upper control limit for Carbon disulfide, Acetone, Vinyl chloride, Dichlorodifluoromethane and Bromomethane. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The associated samples are impacted: TB-110722 (580-119876-1), MWA-82-110722 (580-119876-2), PA-44i-110722 (580-119876-3), PA-15i-110722 (580-119876-4), PA-08-110722 (580-119876-5), PA-25d-110722 (580-119876-6), MWA-81i-110722 (580-119876-7), MWA-41-110722 (580-119876-8), PA-16i-110822 (580-119876-9), PA-09-110822 (580-119876-10), PA-26d-110822 (580-119876-11), RB-01-110822 (580-119876-12), PA-31-110822 (580-119876-13), Dup-01-110822 (580-119876-14), PA-32i-110822 (580-119876-15), PA-03-110822 (580-119876-16) and (CCVIS 580-409568/3).

Method 8260D: The CCV for analytical batch 580-409568 recovered outside control limits for the following analyte(s): Chloromethane and Chloroethane have been identified as a poor performing analyte when analyzed using this method; therefore, re-extraction/re-analysis was not performed. These results have been reported and qualified.

Method 8260D: The method blank for analytical batch 580-409568 contained Bromoform, 1,2-Dibromo-3-Chloropropane and Chlorodibromomethane above the method detection limit. This target analyte concentration was less than half the reporting limit (1/2RL); therefore, re-extraction and re-analysis of samples was not performed.

Method 8260D: The laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) for analytical batch 580-409568 recovered outside control limits for the following analytes: Dichlorodifluoromethane. These analytes were biased high in the LCS and were not detected in the associated samples: therefore, the data have been reported.

Method 8260D: The laboratory control sample and/or the laboratory control sample duplicate (LCS/LCSD) for analytical batch 580-409568 recovered outside control limits for the following analyte(s): Chloromethane and Chloroethane. Chloromethane and Chloroethane have been identified as a poor performing analyte when analyzed using this method; therefore, re-extraction/re-analysis was not performed. These results have been reported and qualified.

Method 8260D: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for analytical batch 580-409568 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method 8260D: The continuing calibration verification (CCV) associated with batch 580-409881 recovered above the upper control limit for Carbon disulfide, Dichlorodifluoromethane, Acetone, Chloromethane, Chloroethane and Bromomethane. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The associated samples are impacted: PA-17iR-110822 (580-119876-17) and (CCVIS 580-409881/3).

Method 8260D: The CCV for analytical batch 580-409881 recovered outside control limits for the following analyte(s): Chloroethane have been identified as a poor performing analyte when analyzed using this method; therefore, re-extraction/re-analysis was not performed. These results have been reported and qualified.

Method 8260D: The method blank for analytical batch 580-409881 contained 1,2-Dibromo-3-Chloropropane, Chlorodibromomethane and Hexachlorobutadiene above the method detection limit. This target analyte concentration was less than half the reporting limit (1/2RL); therefore, re-extraction and re-analysis of samples was not performed.

Method 8260D: The laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) for analytical batch 580-409881

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Case Narrative

Client: ERM-West Job ID: 580-119876-1

Project/Site: Arkema - Q4 2022 Groundwater Event

Job ID: 580-119876-1 (Continued)

Laboratory: Eurofins Seattle (Continued)

recovered outside control limits for the following analytes: Dichlorodifluoromethane, Chloroethane and Acetone. These analytes were biased high in the LCS and were not detected in the associated samples; therefore, the data have been reported.

Method 8260D: The laboratory control sample duplicate (LCSD) for analytical batch 580-409881 recovered outside control limits for the following analyte(s): Chloroethane. Chloroethane has been identified as a poor performing analyte when analyzed using this method; therefore, re-extraction/re-analysis was not performed. These results have been reported and qualified.

Method 8260D: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for analytical batch 580-409881 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method 8260D: The [QC] associated with 580-410498 is compliant under 8260D criteria for Carbon tetrachloride. The software does not display the data to the whole number as is listed in the method (i.e. limit of 20%). When applying the evaluation to a whole number, the QC passes the criteria.

Method 8260D: The CCV for analytical batch 580-410498 recovered outside control limits for the following analytes: 4-Methyl-2-pentanone (MIBK), Chloromethane, Acetone, Dichlorofluoromethane, Chloroethane, and Carbon disulfide. 4-Methyl-2-pentanone (MIBK), Chloromethane, Acetone, Dichlorofluoromethane, Chloroethane, and Carbon disulfide have been identified as poor performing analytes when analyzed using this method; therefore, re-extraction/re-analysis was not performed. These results have been reported and qualified.

Method 8260D: The continuing calibration verification (CCV) associated with batch 580-410498 recovered above the upper control limit for cis-1,3-Dichloropropene and trans-1,3-Dichloropropene. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The associated samples are impacted: PA-27d-110822 (580-119876-18) and (CCVIS 580-410498/3).

Method 8260D: The method blank for analytical batch 580-410498 contained 1,2,4-Trichlorobenzene, 1,2,3-Trichlorobenzene, Napthalene and trans-1,2-Dichloroethene above the method detection limit. This target analyte concentration was less than the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples was not performed.

Method 8260D: The laboratory control sample (LCS) and / or laboratory control sample duplicate (LCSD) for analytical batch 580-410498 recovered outside control limits for the following analytes: 1,3-Dichloropropane, cis-1,3-Dichloropropene and trans-1,3-Dichloropropene. These analytes were biased high in the LCS and were not detected in the associated samples; therefore, the data have been reported.

Method 8260D: The following samples are being reported with QC failures: 1,2,4-Trichlorobenzene, Methylene Chloride, 1,3-Dichlorobenzene, 1,1,1-Trichloroethane, and Methyl tert-butyl ether failed low in the CCVIS. Additionally, 1,3-Dichlorobenzene and Methylene Chloride failed low in the LCS/LCSD. Re-analysis was beyond analytical holding time, therefore both sets of data are being reported. PA-27d-110822 (580-119876-18), (CCVIS 580-410498/3), (LCS 580-410498/6) and (LCSD 580-410498/7)

Method 8260D: The RPD of the laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) for analytical batch 580-410498 recovered outside control limits for the following analytes: 1,2,4-Trichlorobenzene.

Method 8260D: Methylene Chloride failed low in the CCVIS. Sample was re-analyzed beyond analytical holding time due to low failures for Methylene Chloride. No more sample volume remains, therefore both sets of data are being reported. PA-27d-110822 (580-119876-18) and (CCVIS 580-412244/4)

Method 8260D: The following sample was diluted to bring the concentration of target analytes within the calibration range: PA-17iR-110822 (580-119876-17). Elevated reporting limits (RLs) are provided.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

General Chemistry

Method 300.0: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for analytical batch 580-412063 were outside control limits for one or more analytes, see QC Sample Results for detail. Sample matrix interference is suspected because the associated laboratory control sample / laboratory control sample duplicate (LCS/LCSD) recovery is within acceptance limits.

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Eurofins Seattle 12/13/2022

Case Narrative

Client: ERM-West Job ID: 580-119876-1

Project/Site: Arkema - Q4 2022 Groundwater Event

Job ID: 580-119876-1 (Continued)

Laboratory: Eurofins Seattle (Continued)

Method 314.0: Due to the nature of the matrix and/or the high conductivity measurement for the following samples, and in order to protect instrumentation, the following samples in analytical batch 320-633392 were diluted. Elevated reporting limits (RLs) are provided. MWA-82-110722 (580-119876-2), PA-15i-110722 (580-119876-4), PA-08-110722 (580-119876-5), MWA-81i-110722 (580-119876-7), PA-16i-110822 (580-119876-9), PA-09-110822 (580-119876-10), PA-31-110822 (580-119876-13), Dup-01-110822 (580-119876-14), PA-32i-110822 (580-119876-15), PA-32i-110822 (580-119876-15[MS]), PA-32i-110822 (580-119876-15) and PA-17iR-110822 (580-119876-17)

Method 314.0: The following samples in analytical batch 320-635026 were diluted due to the nature of the sample matrix and to protect instrumentation: PA-03-110822 (580-119876-16) and PA-27d-110822 (580-119876-18). Elevated reporting limits (RLs) are provided.

Method 314.0: The middle bracket continuing calibration blank (CCB) was not injected by the auto-sampler in analytical batch 320-635026 . However, the initial calibration blank (ICB), the method blank (MB), and the closing bracket CCB, were all non-detect for the analyte of interest - demonstrating that the instrument was in control. All other quality control injections in the analysis were well-within quality control limits. The data is being reported with this narration. There is no adverse impact on the data. PA-03-110822 (580-119876-16), PA-27d-110822 (580-119876-18), (CCB 320-635026/28), (CCV 320-635026/15), (CCV 320-635026/27), (ICB 320-635026/2), (ICV 320-635026/1), (INF 320-635026/3), (LCS 320-635026/6), (MB 320-635026/5) and (MRL 320-635026/4).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

VOA Prep

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

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Definitions/Glossary

Client: ERM-West Job ID: 580-119876-1

Project/Site: Arkema - Q4 2022 Groundwater Event

Qualifiers

G			

Qualifier	Qualifier Description
*_	LCS and/or LCSD is outside acceptance limits, low biased.
*+	LCS and/or LCSD is outside acceptance limits, high biased.
*1	LCS/LCSD RPD exceeds control limits.
В	Compound was found in the blank and sample.
F1	MS and/or MSD recovery exceeds control limits.
Н	Sample was prepped or analyzed beyond the specified holding time
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

HPLC/IC

J Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

General Chemistry

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.

J Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid

DER Duplicate Error Ratio (normalized absolute difference)

Dil Fac Dilution Factor

DL Detection Limit (DoD/DOE)

DL, RA, RE, IN Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample

DLC Decision Level Concentration (Radiochemistry)

EDL Estimated Detection Limit (Dioxin)

LOD Limit of Detection (DoD/DOE)

LOQ Limit of Quantitation (DoD/DOE)

MCL EPA recommended "Maximum Contaminant Level"

MDA Minimum Detectable Activity (Radiochemistry)

MDC Minimum Detectable Concentration (Radiochemistry)

MDL Method Detection Limit
ML Minimum Level (Dioxin)
MPN Most Probable Number
MQL Method Quantitation Limit

NC Not Calculated

ND Not Detected at the reporting limit (or MDL or EDL if shown)

NEG Negative / Absent
POS Positive / Present

PQL Practical Quantitation Limit

PRES Presumptive QC Quality Control

RER Relative Error Ratio (Radiochemistry)

RL Reporting Limit or Requested Limit (Radiochemistry)

RPD Relative Percent Difference, a measure of the relative difference between two points

TEF Toxicity Equivalent Factor (Dioxin)
TEQ Toxicity Equivalent Quotient (Dioxin)

TNTC Too Numerous To Count

Eurofins Seattle

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Client: ERM-West Job ID: 580-119876-1

Project/Site: Arkema - Q4 2022 Groundwater Event

Client Sample ID: TB-110722

Lab Sample ID: 580-119876-1 Date Collected: 11/07/22 00:01

Matrix: Water

Date Received: 11/09/22 15:05

Analyte	Result	Qualifier	RL	MDL		D	Prepared	Analyzed	Dil Fa
Dichlorodifluoromethane	ND	*+	0.40	0.13	ug/L			11/10/22 18:10	
Chloromethane	ND	*+	0.50	0.14	ug/L			11/10/22 18:10	
Vinyl chloride	ND		0.020	0.013	ug/L			11/10/22 18:10	
Bromomethane	ND		0.50	0.13	ug/L			11/10/22 18:10	
Chloroethane	ND	*+	0.50	0.096	ug/L			11/10/22 18:10	
Carbon disulfide	ND		0.30	0.083	ug/L			11/10/22 18:10	
Trichlorofluoromethane	ND		0.50	0.12				11/10/22 18:10	
1,1-Dichloroethene	ND		0.20	0.035	-			11/10/22 18:10	
Acetone	ND		10		ug/L			11/10/22 18:10	
Methylene Chloride	ND		5.0		ug/L			11/10/22 18:10	
Methyl tert-butyl ether	ND		0.30	0.070	-			11/10/22 18:10	
2-Butanone (MEK)	ND		10		ug/L			11/10/22 18:10	
trans-1,2-Dichloroethene	ND		0.20	0.033				11/10/22 18:10	
1,1-Dichloroethane	ND		0.20	0.025	•			11/10/22 18:10	
2,2-Dichloropropane	ND		0.50	0.060	•			11/10/22 18:10	
cis-1,2-Dichloroethene	ND		0.20	0.055				11/10/22 18:10	
Chlorobromomethane	ND		0.20	0.050	•			11/10/22 18:10	
Chloroform	ND		0.20	0.030	•			11/10/22 18:10	
1,1,1-Trichloroethane	ND		0.20	0.025				11/10/22 18:10	
Carbon tetrachloride	ND		0.20	0.025	-			11/10/22 18:10	
1,1-Dichloropropene	ND.		0.20	0.023	_			11/10/22 18:10	
Benzene	ND		0.20	0.030				11/10/22 18:10	
1,2-Dichloroethane	ND		0.20	0.030	_			11/10/22 18:10	
Trichloroethene	ND ND		0.20	0.043	•			11/10/22 18:10	
1,2-Dichloropropane	ND		0.20	0.060				11/10/22 18:10	
4-Methyl-2-pentanone (MIBK)	ND		10		ug/L			11/10/22 18:10	
Dibromomethane	ND ND		0.20	0.062	•			11/10/22 18:10	
Dichlorobromomethane									
	ND ND		0.20	0.060	•			11/10/22 18:10	
cis-1,3-Dichloropropene	ND ND		0.20 0.20	0.090	•			11/10/22 18:10	
Toluene				0.050				11/10/22 18:10	
trans-1,3-Dichloropropene	ND		0.20	0.092	-			11/10/22 18:10	
1,1,2-Trichloroethane	ND		0.20	0.070	-			11/10/22 18:10	
Tetrachloroethene	ND		0.24	0.084				11/10/22 18:10	
1,3-Dichloropropane	ND		0.20	0.025	-			11/10/22 18:10	
Chlorodibromomethane	ND		0.20	0.055	-			11/10/22 18:10	
Ethylene Dibromide	ND		0.10	0.025				11/10/22 18:10	
Chlorobenzene	ND		0.20	0.060				11/10/22 18:10	
1,1,1,2-Tetrachloroethane	ND		0.30	0.038	-			11/10/22 18:10	
Ethylbenzene	ND		0.20	0.030				11/10/22 18:10	
m-Xylene & p-Xylene	ND		0.50		ug/L			11/10/22 18:10	
o-Xylene	ND		0.50		ug/L			11/10/22 18:10	
Styrene	ND		1.0	0.19				11/10/22 18:10	
Bromoform	ND		0.50		ug/L			11/10/22 18:10	
Isopropylbenzene	ND		1.0		ug/L			11/10/22 18:10	
Bromobenzene	ND		0.20	0.038				11/10/22 18:10	
1,1,2,2-Tetrachloroethane	ND		0.20	0.056	-			11/10/22 18:10	
1,2,3-Trichloropropane	ND		0.20	0.050	ug/L			11/10/22 18:10	
N-Propylbenzene	ND		0.30	0.091	ug/L			11/10/22 18:10	

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Client: ERM-West Job ID: 580-119876-1

Project/Site: Arkema - Q4 2022 Groundwater Event

Client Sample ID: TB-110722

Date Collected: 11/07/22 00:01 Date Received: 11/09/22 15:05

1,2,3-Trichlorobenzene

Lab Sample ID: 580-119876-1

11/10/22 18:10

Matrix: Water

Analyte	Result Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Chlorotoluene	ND -	0.30	0.12	ug/L			11/10/22 18:10	1
1,3,5-Trimethylbenzene	ND	0.50	0.15	ug/L			11/10/22 18:10	1
tert-Butylbenzene	ND	0.50	0.26	ug/L			11/10/22 18:10	1
1,2,4-Trimethylbenzene	ND	0.50	0.20	ug/L			11/10/22 18:10	1
sec-Butylbenzene	ND	1.0	0.17	ug/L			11/10/22 18:10	1
4-Isopropyltoluene	ND	0.50	0.15	ug/L			11/10/22 18:10	1
1,3-Dichlorobenzene	ND	0.30	0.050	ug/L			11/10/22 18:10	1
1,4-Dichlorobenzene	ND	0.30	0.050	ug/L			11/10/22 18:10	1
n-Butylbenzene	ND	1.0	0.23	ug/L			11/10/22 18:10	1
1,2-Dichlorobenzene	ND	0.30	0.038	ug/L			11/10/22 18:10	1
1,2-Dibromo-3-Chloropropane	0.19 JB	2.0	0.17	ug/L			11/10/22 18:10	1
1,2,4-Trichlorobenzene	ND	0.50	0.17	ug/L			11/10/22 18:10	1
Hexachlorobutadiene	ND	0.50	0.067	ug/L			11/10/22 18:10	1
Naphthalene	ND	1.0	0.22	ug/L			11/10/22 18:10	1

Surrogate	%Recovery Qu	ualifier Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	99	80 - 120		11/10/22 18:10	1
Dibromofluoromethane (Surr)	107	80 - 120		11/10/22 18:10	1
4-Bromofluorobenzene (Surr)	94	80 - 120		11/10/22 18:10	1
1,2-Dichloroethane-d4 (Surr)	111	80 - 120		11/10/22 18:10	1

0.50

0.15 ug/L

ND

Client: ERM-West Job ID: 580-119876-1

Project/Site: Arkema - Q4 2022 Groundwater Event

Client Sample ID: MWA-82-110722

Date Collected: 11/07/22 07:12 Date Received: 11/09/22 15:05 Lab Sample ID: 580-119876-2

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dichlorodifluoromethane	ND	*+	0.40	0.13	ug/L		<u> </u>	11/10/22 19:48	
Chloromethane	0.26	J *+	0.50	0.14	ug/L			11/10/22 19:48	1
Vinyl chloride	ND		0.020	0.013	-			11/10/22 19:48	1
Bromomethane	ND		0.50	0.13				11/10/22 19:48	1
Chloroethane	ND	*+	0.50	0.096				11/10/22 19:48	1
Carbon disulfide	ND		0.30	0.083	-			11/10/22 19:48	1
Trichlorofluoromethane	ND		0.50	0.12	.			11/10/22 19:48	
1,1-Dichloroethene	ND		0.20	0.035	-			11/10/22 19:48	1
Acetone	ND		10		ug/L			11/10/22 19:48	
Methylene Chloride	ND		5.0		ug/L			11/10/22 19:48	,
Methyl tert-butyl ether	ND		0.30	0.070	-			11/10/22 19:48	
2-Butanone (MEK)	ND		10		ug/L			11/10/22 19:48	
trans-1,2-Dichloroethene	ND		0.20	0.033				11/10/22 19:48	
1,1-Dichloroethane	ND		0.20	0.025	-			11/10/22 19:48	,
2,2-Dichloropropane	ND		0.50	0.060	-			11/10/22 19:48	1
cis-1,2-Dichloroethene	ND		0.20	0.055				11/10/22 19:48	',
Chlorobromomethane	ND		0.20	0.050	-			11/10/22 19:48	
Chloroform	0.58		0.20	0.030	-			11/10/22 19:48	
1,1,1-Trichloroethane	ND		0.20	0.025				11/10/22 19:48	
Carbon tetrachloride	ND ND		0.20	0.025	-			11/10/22 19:48	
	ND ND		0.20	0.023	-			11/10/22 19:48	
1,1-Dichloropropene	ND		0.20	0.030				11/10/22 19:48	
Benzene	ND ND		0.20		-				,
1,2-Dichloroethane				0.043	•			11/10/22 19:48	
Trichloroethene	0.13	. <mark>J</mark>	0.20	0.066				11/10/22 19:48	
1,2-Dichloropropane	ND		0.20	0.060	-			11/10/22 19:48	
4-Methyl-2-pentanone (MIBK)	ND		10		ug/L			11/10/22 19:48	•
Dibromomethane	ND		0.20	0.062				11/10/22 19:48	
Dichlorobromomethane	ND		0.20	0.060	•			11/10/22 19:48	
cis-1,3-Dichloropropene	ND		0.20	0.090	-			11/10/22 19:48	•
Toluene	ND		0.20	0.050				11/10/22 19:48	
trans-1,3-Dichloropropene	ND		0.20	0.092	-			11/10/22 19:48	ĺ
1,1,2-Trichloroethane	ND		0.20	0.070	-			11/10/22 19:48	•
Tetrachloroethene	0.39		0.24	0.084				11/10/22 19:48	
1,3-Dichloropropane	ND		0.20	0.025	-			11/10/22 19:48	•
Chlorodibromomethane	ND		0.20	0.055	-			11/10/22 19:48	•
Ethylene Dibromide	ND		0.10	0.025				11/10/22 19:48	
Chlorobenzene	ND		0.20	0.060				11/10/22 19:48	•
1,1,1,2-Tetrachloroethane	ND		0.30	0.038	•			11/10/22 19:48	•
Ethylbenzene	ND		0.20	0.030				11/10/22 19:48	
m-Xylene & p-Xylene	ND		0.50		ug/L			11/10/22 19:48	•
o-Xylene	ND		0.50	0.15	ug/L			11/10/22 19:48	•
Styrene	ND		1.0	0.19	ug/L			11/10/22 19:48	
Bromoform	ND		0.50	0.16	ug/L			11/10/22 19:48	
Isopropylbenzene	ND		1.0	0.19	ug/L			11/10/22 19:48	•
Bromobenzene	ND		0.20	0.038	ug/L			11/10/22 19:48	
1,1,2,2-Tetrachloroethane	ND		0.20	0.056	ug/L			11/10/22 19:48	
1,2,3-Trichloropropane	ND		0.20	0.050	ug/L			11/10/22 19:48	•
N-Propylbenzene	ND		0.30	0.091	ug/L			11/10/22 19:48	
2-Chlorotoluene	ND		0.50		ug/L			11/10/22 19:48	1

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Client: ERM-West Job ID: 580-119876-1

Project/Site: Arkema - Q4 2022 Groundwater Event

Client Sample ID: MWA-82-110722

Method: EPA 314.0 - Perchlorate (IC)

Date Collected: 11/07/22 07:12 Date Received: 11/09/22 15:05 Lab Sample ID: 580-119876-2

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Chlorotoluene	ND		0.30	0.12	ug/L			11/10/22 19:48	1
1,3,5-Trimethylbenzene	ND		0.50	0.15	ug/L			11/10/22 19:48	1
tert-Butylbenzene	ND		0.50	0.26	ug/L			11/10/22 19:48	1
1,2,4-Trimethylbenzene	ND		0.50	0.20	ug/L			11/10/22 19:48	1
sec-Butylbenzene	ND		1.0	0.17	ug/L			11/10/22 19:48	1
4-Isopropyltoluene	ND		0.50	0.15	ug/L			11/10/22 19:48	1
1,3-Dichlorobenzene	ND		0.30	0.050	ug/L			11/10/22 19:48	1
1,4-Dichlorobenzene	ND		0.30	0.050	ug/L			11/10/22 19:48	1
n-Butylbenzene	ND		1.0	0.23	ug/L			11/10/22 19:48	1
1,2-Dichlorobenzene	0.051	J	0.30	0.038	ug/L			11/10/22 19:48	1
1,2-Dibromo-3-Chloropropane	ND		2.0	0.17	ug/L			11/10/22 19:48	1
1,2,4-Trichlorobenzene	ND		0.50	0.17	ug/L			11/10/22 19:48	1
Hexachlorobutadiene	ND		0.50	0.067	ug/L			11/10/22 19:48	1
Naphthalene	ND		1.0	0.22	ug/L			11/10/22 19:48	1
1,2,3-Trichlorobenzene	ND		0.50	0.15	ug/L			11/10/22 19:48	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	97		80 - 120			-		11/10/22 19:48	1
Dibromofluoromethane (Surr)	108		80 - 120					11/10/22 19:48	1
4-Bromofluorobenzene (Surr)	93		80 - 120					11/10/22 19:48	1
1,2-Dichloroethane-d4 (Surr)	119		80 - 120					11/10/22 19:48	1

Analyte Perchlorate	Result 120	Qualifier	RL 8.0	MDL 4.0	Unit ug/L	<u>D</u>	Prepared	Analyzed 11/16/22 14:04	Dil Fac
General Chemistry Analyte Chloride (MCAWW 300.0)	Result 9.0	Qualifier	RL 1.5	MDL 0.43	Unit mg/L	<u>D</u> _	Prepared	Analyzed 11/30/22 23:12	Dil Fac

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Client: ERM-West Job ID: 580-119876-1

Project/Site: Arkema - Q4 2022 Groundwater Event

Client Sample ID: PA-44i-110722

Date Received: 11/09/22 15:05

Lab Sample ID: 580-119876-3 Date Collected: 11/07/22 08:00

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dichlorodifluoromethane	ND	*+	0.40	0.13	ug/L			11/10/22 23:31	1
Chloromethane	ND	*+	0.50	0.14	ug/L			11/10/22 23:31	1
Vinyl chloride	ND		0.020	0.013	ug/L			11/10/22 23:31	1
Bromomethane	ND		0.50	0.13	ug/L			11/10/22 23:31	1
Chloroethane	ND	*+	0.50	0.096	ug/L			11/10/22 23:31	1
Carbon disulfide	ND		0.30	0.083	ug/L			11/10/22 23:31	1
Trichlorofluoromethane	ND		0.50	0.12	ug/L			11/10/22 23:31	1
1,1-Dichloroethene	ND		0.20	0.035	ug/L			11/10/22 23:31	1
Acetone	ND		10	3.1	ug/L			11/10/22 23:31	1
Methylene Chloride	ND		5.0	1.2	ug/L			11/10/22 23:31	1
Methyl tert-butyl ether	ND		0.30	0.070	ug/L			11/10/22 23:31	1
2-Butanone (MEK)	ND		10		ug/L			11/10/22 23:31	1
trans-1,2-Dichloroethene	ND		0.20	0.033				11/10/22 23:31	1
1,1-Dichloroethane	ND		0.20	0.025	-			11/10/22 23:31	1
2,2-Dichloropropane	ND		0.50	0.060	-			11/10/22 23:31	1
cis-1,2-Dichloroethene	ND		0.20	0.055				11/10/22 23:31	1
Chlorobromomethane	ND		0.20	0.050	-			11/10/22 23:31	1
Chloroform	ND		0.20	0.030	-			11/10/22 23:31	1
1,1,1-Trichloroethane	ND		0.20	0.025				11/10/22 23:31	1
Carbon tetrachloride	ND		0.20	0.025	-			11/10/22 23:31	1
1,1-Dichloropropene	ND		0.20	0.084	-			11/10/22 23:31	1
Benzene	ND		0.20	0.030				11/10/22 23:31	
1,2-Dichloroethane	ND		0.20	0.043	-			11/10/22 23:31	1
Trichloroethene	ND		0.20	0.066	-			11/10/22 23:31	1
1,2-Dichloropropane	ND		0.20	0.060	-			11/10/22 23:31	
4-Methyl-2-pentanone (MIBK)	ND		10		ug/L			11/10/22 23:31	1
Dibromomethane	ND		0.20	0.062	-			11/10/22 23:31	1
Dichlorobromomethane	ND		0.20	0.060				11/10/22 23:31	·
cis-1,3-Dichloropropene	ND		0.20	0.090	-			11/10/22 23:31	1
Toluene	ND		0.20	0.050	-			11/10/22 23:31	1
trans-1,3-Dichloropropene	ND		0.20	0.092				11/10/22 23:31	· · · · · · · 1
1,1,2-Trichloroethane	ND		0.20	0.070	-			11/10/22 23:31	1
Tetrachloroethene	ND		0.24	0.084	-			11/10/22 23:31	1
1,3-Dichloropropane	ND		0.20	0.025				11/10/22 23:31	1
Chlorodibromomethane	ND		0.20	0.025				11/10/22 23:31	1
Ethylene Dibromide	ND		0.10	0.025	_			11/10/22 23:31	1
Chlorobenzene	ND		0.20	0.060				11/10/22 23:31	1
1,1,1,2-Tetrachloroethane	ND		0.20	0.038				11/10/22 23:31	1
Ethylbenzene	ND		0.20	0.030	-			11/10/22 23:31	1
m-Xylene & p-Xylene	ND ND		0.50		ug/L			11/10/22 23:31	
o-Xylene	ND		0.50		ug/L			11/10/22 23:31	1
Styrene	ND ND		1.0	0.13	-			11/10/22 23:31	1
Bromoform	ND ND		0.50 1.0		ug/L			11/10/22 23:31 11/10/22 23:31	1 1
Isopropylbenzene Bromobenzene	ND ND		0.20		ug/L			11/10/22 23:31	1 1
1,1,2,2-Tetrachloroethane				0.038					
	ND		0.20	0.056	•			11/10/22 23:31	1
1,2,3-Trichloropropane	ND		0.20	0.050	-			11/10/22 23:31	1
N-Propylbenzene 2-Chlorotoluene	ND ND		0.30	0.091	ug/L ug/L			11/10/22 23:31 11/10/22 23:31	1

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Client: ERM-West Job ID: 580-119876-1

Project/Site: Arkema - Q4 2022 Groundwater Event

Client Sample ID: PA-44i-110722

Date Collected: 11/07/22 08:00 Date Received: 11/09/22 15:05 Lab Sample ID: 580-119876-3

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Chlorotoluene	ND		0.30	0.12	ug/L			11/10/22 23:31	1
1,3,5-Trimethylbenzene	ND		0.50	0.15	ug/L			11/10/22 23:31	1
tert-Butylbenzene	ND		0.50	0.26	ug/L			11/10/22 23:31	1
1,2,4-Trimethylbenzene	ND		0.50	0.20	ug/L			11/10/22 23:31	1
sec-Butylbenzene	ND		1.0	0.17	ug/L			11/10/22 23:31	1
4-Isopropyltoluene	ND		0.50	0.15	ug/L			11/10/22 23:31	1
1,3-Dichlorobenzene	ND		0.30	0.050	ug/L			11/10/22 23:31	1
1,4-Dichlorobenzene	ND		0.30	0.050	ug/L			11/10/22 23:31	1
n-Butylbenzene	ND		1.0	0.23	ug/L			11/10/22 23:31	1
1,2-Dichlorobenzene	ND		0.30	0.038	ug/L			11/10/22 23:31	1
1,2-Dibromo-3-Chloropropane	ND		2.0	0.17	ug/L			11/10/22 23:31	1
1,2,4-Trichlorobenzene	ND		0.50	0.17	ug/L			11/10/22 23:31	1
Hexachlorobutadiene	ND		0.50	0.067	ug/L			11/10/22 23:31	1
Naphthalene	ND		1.0	0.22	ug/L			11/10/22 23:31	1
1,2,3-Trichlorobenzene	ND		0.50	0.15	ug/L			11/10/22 23:31	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	95		80 - 120			-		11/10/22 23:31	1
Dibromofluoromethane (Surr)	111		80 - 120					11/10/22 23:31	1
4-Bromofluorobenzene (Surr)	94		80 - 120					11/10/22 23:31	1
1,2-Dichloroethane-d4 (Surr)	118		80 - 120					11/10/22 23:31	1
- Method: EPA 314.0 - Perch	lorate (IC)								
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		4.0	2.0	ug/L			11/16/22 14:23	1
General Chemistry									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (MCAWW 300.0)	75		1.5	0.43	mg/L			11/30/22 23:24	1

12/13/2022

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Client: ERM-West Job ID: 580-119876-1

Project/Site: Arkema - Q4 2022 Groundwater Event

Client Sample ID: PA-15i-110722

Date Received: 11/09/22 15:05

Date Collected: 11/07/22 09:20

Lab Sample ID: 580-119876-4 **Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dichlorodifluoromethane	ND	*+	0.40	0.13	ug/L			11/10/22 23:55	
Chloromethane	ND	*+	0.50	0.14	ug/L			11/10/22 23:55	•
Vinyl chloride	ND		0.020	0.013	ug/L			11/10/22 23:55	•
Bromomethane	ND		0.50	0.13	ug/L			11/10/22 23:55	
Chloroethane	ND	*+	0.50	0.096	ug/L			11/10/22 23:55	•
Carbon disulfide	ND		0.30	0.083	ug/L			11/10/22 23:55	,
Trichlorofluoromethane	ND		0.50	0.12	ug/L			11/10/22 23:55	
1,1-Dichloroethene	ND		0.20	0.035	ug/L			11/10/22 23:55	
Acetone	ND		10	3.1	ug/L			11/10/22 23:55	
Methylene Chloride	ND		5.0		ug/L			11/10/22 23:55	
Methyl tert-butyl ether	ND		0.30	0.070	-			11/10/22 23:55	,
2-Butanone (MEK)	ND		10		ug/L			11/10/22 23:55	,
trans-1,2-Dichloroethene	ND		0.20	0.033				11/10/22 23:55	
1,1-Dichloroethane	0.36		0.20	0.025	-			11/10/22 23:55	
2,2-Dichloropropane	ND		0.50	0.060	-			11/10/22 23:55	
cis-1,2-Dichloroethene	0.16		0.20	0.055				11/10/22 23:55	
Chlorobromomethane	ND		0.20	0.050	-			11/10/22 23:55	
Chloroform	ND		0.20	0.030	-			11/10/22 23:55	
1.1.1-Trichloroethane	ND		0.20	0.025				11/10/22 23:55	
Carbon tetrachloride	ND		0.20	0.025	-			11/10/22 23:55	
1,1-Dichloropropene	ND		0.20	0.084	_			11/10/22 23:55	
Benzene	0.038	<mark>.</mark>	0.20	0.030				11/10/22 23:55	,
1,2-Dichloroethane	ND	3	0.20	0.043	-			11/10/22 23:55	,
Trichloroethene	0.18		0.20	0.043	-			11/10/22 23:55	,
	0.16		0.20	0.060	-			11/10/22 23:55	,
1,2-Dichloropropane		J	10						,
4-Methyl-2-pentanone (MIBK) Dibromomethane	ND ND		0.20	0.062	ug/L			11/10/22 23:55 11/10/22 23:55	
Dichlorobromomethane	ND		0.20	0.060	-			11/10/22 23:55	
cis-1,3-Dichloropropene	ND		0.20 0.20	0.090	-			11/10/22 23:55	
Toluene	0.055			0.050				11/10/22 23:55	
trans-1,3-Dichloropropene	ND		0.20	0.092	-			11/10/22 23:55	
1,1,2-Trichloroethane	ND		0.20	0.070	-			11/10/22 23:55	•
Tetrachloroethene	ND		0.24	0.084				11/10/22 23:55	
1,3-Dichloropropane	ND		0.20	0.025	-			11/10/22 23:55	•
Chlorodibromomethane	ND		0.20	0.055	-			11/10/22 23:55	•
Ethylene Dibromide	ND		0.10	0.025				11/10/22 23:55	
Chlorobenzene	0.29		0.20	0.060				11/10/22 23:55	,
1,1,1,2-Tetrachloroethane	ND		0.30	0.038	-			11/10/22 23:55	•
Ethylbenzene	ND		0.20	0.030				11/10/22 23:55	
m-Xylene & p-Xylene	ND		0.50		ug/L			11/10/22 23:55	•
o-Xylene	ND		0.50		ug/L			11/10/22 23:55	•
Styrene	ND		1.0		ug/L			11/10/22 23:55	
Bromoform	ND		0.50		ug/L			11/10/22 23:55	•
Isopropylbenzene	ND		1.0		ug/L			11/10/22 23:55	
Bromobenzene	ND		0.20	0.038				11/10/22 23:55	
1,1,2,2-Tetrachloroethane	ND		0.20	0.056				11/10/22 23:55	
1,2,3-Trichloropropane	ND		0.20	0.050	ug/L			11/10/22 23:55	•
N-Propylbenzene	ND		0.30	0.091	ug/L			11/10/22 23:55	•

Eurofins Seattle

Client: ERM-West Job ID: 580-119876-1

Project/Site: Arkema - Q4 2022 Groundwater Event

Client Sample ID: PA-15i-110722

Date Collected: 11/07/22 09:20 Date Received: 11/09/22 15:05

Lab Sample ID: 580-119876-4

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Chlorotoluene	MD		0.30	0.12	ug/L			11/10/22 23:55	1
1,3,5-Trimethylbenzene	ND		0.50	0.15	ug/L			11/10/22 23:55	1
tert-Butylbenzene	ND		0.50	0.26	ug/L			11/10/22 23:55	1
1,2,4-Trimethylbenzene	ND		0.50	0.20	ug/L			11/10/22 23:55	1
sec-Butylbenzene	ND		1.0	0.17	ug/L			11/10/22 23:55	1
4-Isopropyltoluene	ND		0.50	0.15	ug/L			11/10/22 23:55	1
1,3-Dichlorobenzene	ND		0.30	0.050	ug/L			11/10/22 23:55	1
1,4-Dichlorobenzene	ND		0.30	0.050	ug/L			11/10/22 23:55	1
n-Butylbenzene	ND		1.0	0.23	ug/L			11/10/22 23:55	1
1,2-Dichlorobenzene	ND		0.30	0.038	ug/L			11/10/22 23:55	1
1,2-Dibromo-3-Chloropropane	ND		2.0	0.17	ug/L			11/10/22 23:55	1
1,2,4-Trichlorobenzene	ND		0.50	0.17	ug/L			11/10/22 23:55	1
Hexachlorobutadiene	ND		0.50	0.067	ug/L			11/10/22 23:55	1
Naphthalene	ND		1.0	0.22	ug/L			11/10/22 23:55	1
1,2,3-Trichlorobenzene	ND		0.50	0.15	ug/L			11/10/22 23:55	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	94		80 - 120					11/10/22 23:55	1
Dibromofluoromethane (Surr)	112		80 - 120					11/10/22 23:55	1
4-Bromofluorobenzene (Surr)	95		80 - 120					11/10/22 23:55	1
1,2-Dichloroethane-d4 (Surr)	120		80 - 120					11/10/22 23:55	1
Method: EPA 314.0 - Perch	lorate (IC)								
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		20	10	ug/L			11/16/22 14:42	5
General Chemistry									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (MCAWW 300.0)	850		150	43	mg/L			11/30/22 23:35	100

Client: ERM-West Job ID: 580-119876-1

Project/Site: Arkema - Q4 2022 Groundwater Event

Client Sample ID: PA-08-110722

Lab Sample ID: 580-119876-5 Date Collected: 11/07/22 09:52

Matrix: Water

Date Received: 11/09/22 15:05

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Dichlorodifluoromethane	ND	*+	0.40	0.13	ug/L		-	11/11/22 00:20	
Chloromethane	0.15	J *+	0.50	0.14	ug/L			11/11/22 00:20	
Vinyl chloride	ND		0.020	0.013	ug/L			11/11/22 00:20	
Bromomethane	ND		0.50	0.13	ug/L			11/11/22 00:20	
Chloroethane	ND	*+	0.50	0.096	_			11/11/22 00:20	
Carbon disulfide	ND		0.30	0.083	•			11/11/22 00:20	
Trichlorofluoromethane	ND		0.50	0.12				11/11/22 00:20	
1,1-Dichloroethene	0.071	J	0.20	0.035	-			11/11/22 00:20	
Acetone	ND		10		ug/L			11/11/22 00:20	
Methylene Chloride	ND		5.0		ug/L			11/11/22 00:20	
Methyl tert-butyl ether	ND		0.30	0.070	-			11/11/22 00:20	
2-Butanone (MEK)	ND		10		ug/L			11/11/22 00:20	
trans-1,2-Dichloroethene	ND		0.20	0.033				11/11/22 00:20	
1,1-Dichloroethane	0.22		0.20	0.025	-			11/11/22 00:20	
2,2-Dichloropropane	ND.		0.50	0.060	-			11/11/22 00:20	
cis-1,2-Dichloroethene	0.30		0.20	0.055				11/11/22 00:20	
Chlorobromomethane	ND		0.20	0.050	•			11/11/22 00:20	
Chloroform	0.032	1	0.20	0.030	_			11/11/22 00:20	
1,1,1-Trichloroethane	ND		0.20	0.025				11/11/22 00:20	· · · · ·
Carbon tetrachloride	ND ND		0.20	0.025	_			11/11/22 00:20	
1,1-Dichloropropene	ND ND		0.20	0.023	•			11/11/22 00:20	
Benzene	ND		0.20	0.030				11/11/22 00:20	· · · · · · .
1,2-Dichloroethane	ND ND		0.20	0.030	-			11/11/22 00:20	
,			0.20	0.043	•			11/11/22 00:20	
Trichloroethene	0.24 ND		0.20	0.060				11/11/22 00:20	<i>.</i>
1,2-Dichloropropane	ND ND				_				
4-Methyl-2-pentanone (MIBK) Dibromomethane	ND ND		10 0.20		ug/L			11/11/22 00:20	
Dibromomethane				0.062				11/11/22 00:20	
	ND ND		0.20	0.060	_			11/11/22 00:20	
cis-1,3-Dichloropropene	ND ND		0.20 0.20	0.090 0.050	-			11/11/22 00:20	
Toluene								11/11/22 00:20	
trans-1,3-Dichloropropene	ND		0.20	0.092	-			11/11/22 00:20	
1,1,2-Trichloroethane	ND		0.20	0.070	-			11/11/22 00:20	•
Tetrachloroethene	0.27		0.24	0.084				11/11/22 00:20	
1,3-Dichloropropane	ND		0.20	0.025	U			11/11/22 00:20	•
Chlorodibromomethane	ND		0.20	0.055	-			11/11/22 00:20	•
Ethylene Dibromide	ND		0.10	0.025				11/11/22 00:20	
Chlorobenzene	ND		0.20	0.060				11/11/22 00:20	•
1,1,1,2-Tetrachloroethane	ND		0.30	0.038	-			11/11/22 00:20	•
Ethylbenzene	ND		0.20	0.030				11/11/22 00:20	
m-Xylene & p-Xylene	ND		0.50		ug/L			11/11/22 00:20	•
o-Xylene	ND		0.50		ug/L			11/11/22 00:20	•
Styrene	ND		1.0		ug/L			11/11/22 00:20	
Bromoform	ND		0.50		ug/L			11/11/22 00:20	•
Isopropylbenzene	ND		1.0		ug/L			11/11/22 00:20	•
Bromobenzene	ND		0.20	0.038	ug/L			11/11/22 00:20	
1,1,2,2-Tetrachloroethane	ND		0.20	0.056	ug/L			11/11/22 00:20	
1,2,3-Trichloropropane	ND		0.20	0.050	ug/L			11/11/22 00:20	
N-Propylbenzene	ND		0.30	0.091	ug/L			11/11/22 00:20	
2-Chlorotoluene	ND		0.50	0.12	ug/L			11/11/22 00:20	

Eurofins Seattle

Client: ERM-West Job ID: 580-119876-1

Project/Site: Arkema - Q4 2022 Groundwater Event

Client Sample ID: PA-08-110722

Date Collected: 11/07/22 09:52 Date Received: 11/09/22 15:05

Lab Sample ID: 580-119876-5

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Chlorotoluene	ND		0.30	0.12	ug/L			11/11/22 00:20	1
1,3,5-Trimethylbenzene	ND		0.50	0.15	ug/L			11/11/22 00:20	1
tert-Butylbenzene	ND		0.50	0.26	ug/L			11/11/22 00:20	1
1,2,4-Trimethylbenzene	ND		0.50	0.20	ug/L			11/11/22 00:20	1
sec-Butylbenzene	ND		1.0	0.17	ug/L			11/11/22 00:20	1
4-Isopropyltoluene	ND		0.50	0.15	ug/L			11/11/22 00:20	1
1,3-Dichlorobenzene	ND		0.30	0.050	ug/L			11/11/22 00:20	1
1,4-Dichlorobenzene	ND		0.30	0.050	ug/L			11/11/22 00:20	1
n-Butylbenzene	ND		1.0	0.23	ug/L			11/11/22 00:20	1
1,2-Dichlorobenzene	0.061	J	0.30	0.038	ug/L			11/11/22 00:20	1
1,2-Dibromo-3-Chloropropane	ND		2.0	0.17	ug/L			11/11/22 00:20	1
1,2,4-Trichlorobenzene	ND		0.50	0.17	ug/L			11/11/22 00:20	1
Hexachlorobutadiene	ND		0.50	0.067	ug/L			11/11/22 00:20	1
Naphthalene	ND		1.0	0.22	ug/L			11/11/22 00:20	1
1,2,3-Trichlorobenzene	ND		0.50	0.15	ug/L			11/11/22 00:20	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	93		80 - 120			-		11/11/22 00:20	1
Dibromofluoromethane (Surr)	113		80 - 120					11/11/22 00:20	1
4-Bromofluorobenzene (Surr)	96		80 - 120					11/11/22 00:20	1
1,2-Dichloroethane-d4 (Surr)	120		80 - 120					11/11/22 00:20	1
Method: EPA 314.0 - Perch	lorate (IC)								
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		20	10	ug/L			11/16/22 15:01	5
General Chemistry									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (MCAWW 300.0)	770		150	43	mg/L			12/01/22 00:22	100

Client: ERM-West Job ID: 580-119876-1

Project/Site: Arkema - Q4 2022 Groundwater Event

Client Sample ID: PA-25d-110722

Date Collected: 11/07/22 10:36

Date Received: 11/09/22 15:05

Lab Sample ID: 580-119876-6

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Dichlorodifluoromethane	ND	*+	0.40	0.13	ug/L			11/10/22 20:13	
Chloromethane	ND	*+	0.50	0.14	ug/L			11/10/22 20:13	
Vinyl chloride	ND		0.020	0.013	ug/L			11/10/22 20:13	
Bromomethane	ND		0.50	0.13	ug/L			11/10/22 20:13	
Chloroethane	ND	*+	0.50	0.096	ug/L			11/10/22 20:13	•
Carbon disulfide	ND		0.30	0.083	ug/L			11/10/22 20:13	
Trichlorofluoromethane	ND		0.50	0.12	ug/L			11/10/22 20:13	
1,1-Dichloroethene	ND		0.20	0.035	ug/L			11/10/22 20:13	
Acetone	ND		10	3.1	ug/L			11/10/22 20:13	
Methylene Chloride	ND		5.0	1.2	ug/L			11/10/22 20:13	
Methyl tert-butyl ether	ND		0.30	0.070	ug/L			11/10/22 20:13	
2-Butanone (MEK)	ND		10		ug/L			11/10/22 20:13	
trans-1,2-Dichloroethene	ND		0.20	0.033				11/10/22 20:13	
1,1-Dichloroethane	ND		0.20	0.025	-			11/10/22 20:13	
2,2-Dichloropropane	ND		0.50	0.060	-			11/10/22 20:13	
cis-1,2-Dichloroethene	ND		0.20	0.055				11/10/22 20:13	
Chlorobromomethane	ND		0.20	0.050	-			11/10/22 20:13	
Chloroform	ND		0.20	0.030	•			11/10/22 20:13	
1,1,1-Trichloroethane	ND		0.20	0.025				11/10/22 20:13	
Carbon tetrachloride	ND		0.20	0.025	-			11/10/22 20:13	
1,1-Dichloropropene	ND		0.20	0.084	-			11/10/22 20:13	
Benzene	ND		0.20	0.030				11/10/22 20:13	
1,2-Dichloroethane	ND		0.20	0.043	-			11/10/22 20:13	
Trichloroethene	ND		0.20	0.066	-			11/10/22 20:13	
1,2-Dichloropropane	ND		0.20	0.060				11/10/22 20:13	
4-Methyl-2-pentanone (MIBK)	ND		10		ug/L			11/10/22 20:13	
Dibromomethane	ND		0.20	0.062	-			11/10/22 20:13	
Dichlorobromomethane	ND		0.20	0.060				11/10/22 20:13	
cis-1,3-Dichloropropene	ND		0.20	0.090	-			11/10/22 20:13	
Toluene	0.059	1	0.20	0.050	-			11/10/22 20:13	
trans-1,3-Dichloropropene	ND	•	0.20	0.092				11/10/22 20:13	
1,1,2-Trichloroethane	ND		0.20	0.032	-			11/10/22 20:13	
Tetrachloroethene	ND		0.24	0.076	-			11/10/22 20:13	
1,3-Dichloropropane	ND		0.24	0.025				11/10/22 20:13	
Chlorodibromomethane	ND		0.20	0.025	-			11/10/22 20:13	
Ethylene Dibromide	ND		0.20	0.035	-			11/10/22 20:13	
Chlorobenzene	ND		0.10	0.023				11/10/22 20:13	
1,1,1,2-Tetrachloroethane	ND ND		0.20	0.000				11/10/22 20:13	
Ethylbenzene	ND ND		0.30	0.030	-			11/10/22 20:13	
m-Xylene & p-Xylene	ND		0.50		ug/L			11/10/22 20:13	
o-Xylene	ND ND		0.50 1.0		ug/L			11/10/22 20:13 11/10/22 20:13	
Styrene					ug/L				
Bromoform	ND		0.50		ug/L			11/10/22 20:13	
Isopropylbenzene	ND ND		1.0		ug/L			11/10/22 20:13	
Bromobenzene			0.20	0.038				11/10/22 20:13	
1,1,2,2-Tetrachloroethane	ND		0.20	0.056	-			11/10/22 20:13	
1,2,3-Trichloropropane	ND		0.20	0.050	-			11/10/22 20:13	,
N-Propylbenzene 2-Chlorotoluene	ND ND		0.30	0.091	ug/L ug/L			11/10/22 20:13 11/10/22 20:13	

Eurofins Seattle

Client: ERM-West Job ID: 580-119876-1

Project/Site: Arkema - Q4 2022 Groundwater Event

Client Sample ID: PA-25d-110722

Date Collected: 11/07/22 10:36 Date Received: 11/09/22 15:05

Analyte

General Chemistry

Chloride (MCAWW 300.0)

Lab Sample ID: 580-119876-6

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Chlorotoluene	ND		0.30	0.12	ug/L			11/10/22 20:13	1
1,3,5-Trimethylbenzene	ND		0.50	0.15	ug/L			11/10/22 20:13	1
tert-Butylbenzene	ND		0.50	0.26	ug/L			11/10/22 20:13	1
1,2,4-Trimethylbenzene	ND		0.50	0.20	ug/L			11/10/22 20:13	1
sec-Butylbenzene	ND		1.0	0.17	ug/L			11/10/22 20:13	1
4-Isopropyltoluene	ND		0.50	0.15	ug/L			11/10/22 20:13	1
1,3-Dichlorobenzene	ND		0.30	0.050	ug/L			11/10/22 20:13	1
1,4-Dichlorobenzene	ND		0.30	0.050	ug/L			11/10/22 20:13	1
n-Butylbenzene	ND		1.0	0.23	ug/L			11/10/22 20:13	1
1,2-Dichlorobenzene	ND		0.30	0.038	ug/L			11/10/22 20:13	1
1,2-Dibromo-3-Chloropropane	ND		2.0	0.17	ug/L			11/10/22 20:13	1
1,2,4-Trichlorobenzene	ND		0.50	0.17	ug/L			11/10/22 20:13	1
Hexachlorobutadiene	ND		0.50	0.067	ug/L			11/10/22 20:13	1
Naphthalene	ND		1.0	0.22	ug/L			11/10/22 20:13	1
1,2,3-Trichlorobenzene	ND		0.50	0.15	ug/L			11/10/22 20:13	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	95		80 - 120			-		11/10/22 20:13	1
Dibromofluoromethane (Surr)	109		80 - 120					11/10/22 20:13	1
4-Bromofluorobenzene (Surr)	95		80 - 120					11/10/22 20:13	1
1,2-Dichloroethane-d4 (Surr)	117		80 - 120					11/10/22 20:13	1
Method: EPA 314.0 - Perch	orate (IC)								
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		4.0	2.0	ug/L			11/16/22 15:20	1

RL

1.5

MDL Unit

0.43 mg/L

D

Prepared

Analyzed

12/01/22 00:34

Dil Fac

34

Result Qualifier

Eurofins Seattle

Client: ERM-West Job ID: 580-119876-1

Project/Site: Arkema - Q4 2022 Groundwater Event

Client Sample ID: MWA-81i-110722

Date Collected: 11/07/22 11:43 Date Received: 11/09/22 15:05 Lab Sample ID: 580-119876-7

Matrix: Water

Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dichlorodifluoromethane	ND	*+	0.40	0.13	ug/L			11/10/22 20:38	1
Chloromethane	ND	*+	0.50	0.14	ug/L			11/10/22 20:38	1
Vinyl chloride	ND		0.020	0.013	ug/L			11/10/22 20:38	1
Bromomethane	ND		0.50	0.13	ug/L			11/10/22 20:38	1
Chloroethane	ND	*+	0.50	0.096	ug/L			11/10/22 20:38	1
Carbon disulfide	ND		0.30	0.083	ug/L			11/10/22 20:38	1
Trichlorofluoromethane	ND		0.50	0.12	ug/L			11/10/22 20:38	1
1,1-Dichloroethene	ND		0.20	0.035	ug/L			11/10/22 20:38	1
Acetone	ND		10	3.1	ug/L			11/10/22 20:38	1
Methylene Chloride	ND		5.0	1.2	ug/L			11/10/22 20:38	1
Methyl tert-butyl ether	ND		0.30	0.070	-			11/10/22 20:38	1
2-Butanone (MEK)	ND		10		ug/L			11/10/22 20:38	1
trans-1,2-Dichloroethene	ND		0.20	0.033				11/10/22 20:38	1
1,1-Dichloroethane	0.35		0.20	0.025	-			11/10/22 20:38	1
2,2-Dichloropropane	ND		0.50	0.060	-			11/10/22 20:38	1
cis-1,2-Dichloroethene	ND		0.20	0.055				11/10/22 20:38	
Chlorobromomethane	ND		0.20	0.050	-			11/10/22 20:38	1
Chloroform	ND		0.20	0.030	-			11/10/22 20:38	1
1,1,1-Trichloroethane	ND		0.20	0.025				11/10/22 20:38	· 1
Carbon tetrachloride	ND		0.20	0.025	-			11/10/22 20:38	1
1,1-Dichloropropene	ND ND		0.20	0.023	-			11/10/22 20:38	1
Benzene	ND		0.20	0.030				11/10/22 20:38	
1,2-Dichloroethane	ND ND		0.20	0.030	-			11/10/22 20:38	
	ND ND		0.20		-				1
Trichloroethene				0.066				11/10/22 20:38	
1,2-Dichloropropane	ND		0.20	0.060				11/10/22 20:38	1
4-Methyl-2-pentanone (MIBK)	ND		10		ug/L			11/10/22 20:38	1
Dibromomethane	ND		0.20	0.062				11/10/22 20:38	
Dichlorobromomethane	ND		0.20	0.060	-			11/10/22 20:38	1
cis-1,3-Dichloropropene	ND		0.20	0.090	-			11/10/22 20:38	1
Toluene	ND		0.20	0.050				11/10/22 20:38	
trans-1,3-Dichloropropene	ND		0.20	0.092	-			11/10/22 20:38	1
1,1,2-Trichloroethane	ND		0.20	0.070	-			11/10/22 20:38	1
Tetrachloroethene	ND		0.24	0.084				11/10/22 20:38	1
1,3-Dichloropropane	ND		0.20	0.025	-			11/10/22 20:38	1
Chlorodibromomethane	ND		0.20	0.055	-			11/10/22 20:38	1
Ethylene Dibromide	ND		0.10	0.025				11/10/22 20:38	1
Chlorobenzene	ND		0.20	0.060	•			11/10/22 20:38	1
1,1,1,2-Tetrachloroethane	ND		0.30	0.038	ug/L			11/10/22 20:38	1
Ethylbenzene	ND		0.20	0.030	ug/L			11/10/22 20:38	1
m-Xylene & p-Xylene	ND		0.50	0.12	ug/L			11/10/22 20:38	1
o-Xylene	ND		0.50	0.15	ug/L			11/10/22 20:38	1
Styrene	ND		1.0	0.19	ug/L			11/10/22 20:38	1
Bromoform	ND		0.50	0.16	ug/L			11/10/22 20:38	1
Isopropylbenzene	ND		1.0	0.19	ug/L			11/10/22 20:38	1
Bromobenzene	ND		0.20	0.038	-			11/10/22 20:38	1
1,1,2,2-Tetrachloroethane	ND		0.20	0.056				11/10/22 20:38	1
1,2,3-Trichloropropane	ND		0.20	0.050	-			11/10/22 20:38	1
N-Propylbenzene	ND		0.30	0.091	-			11/10/22 20:38	1
2-Chlorotoluene	ND		0.50		ug/L			11/10/22 20:38	· · · · · · · 1

Eurofins Seattle

Client: ERM-West Job ID: 580-119876-1

Project/Site: Arkema - Q4 2022 Groundwater Event

Client Sample ID: MWA-81i-110722

Date Collected: 11/07/22 11:43 Date Received: 11/09/22 15:05

Analyte

Chloride (MCAWW 300.0)

Lab Sample ID: 580-119876-7

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Chlorotoluene	ND		0.30	0.12	ug/L			11/10/22 20:38	1
1,3,5-Trimethylbenzene	ND		0.50	0.15	ug/L			11/10/22 20:38	1
tert-Butylbenzene	ND		0.50	0.26	ug/L			11/10/22 20:38	1
1,2,4-Trimethylbenzene	ND		0.50	0.20	ug/L			11/10/22 20:38	1
sec-Butylbenzene	ND		1.0	0.17	ug/L			11/10/22 20:38	1
4-Isopropyltoluene	ND		0.50	0.15	ug/L			11/10/22 20:38	1
1,3-Dichlorobenzene	ND		0.30	0.050	ug/L			11/10/22 20:38	1
1,4-Dichlorobenzene	ND		0.30	0.050	ug/L			11/10/22 20:38	1
n-Butylbenzene	ND		1.0	0.23	ug/L			11/10/22 20:38	1
1,2-Dichlorobenzene	ND		0.30	0.038	ug/L			11/10/22 20:38	1
1,2-Dibromo-3-Chloropropane	ND		2.0	0.17	ug/L			11/10/22 20:38	1
1,2,4-Trichlorobenzene	ND		0.50	0.17	ug/L			11/10/22 20:38	1
Hexachlorobutadiene	ND		0.50	0.067	ug/L			11/10/22 20:38	1
Naphthalene	ND		1.0	0.22	ug/L			11/10/22 20:38	1
1,2,3-Trichlorobenzene	ND		0.50	0.15	ug/L			11/10/22 20:38	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	99		80 - 120			-		11/10/22 20:38	1
Dibromofluoromethane (Surr)	110		80 - 120					11/10/22 20:38	1
4-Bromofluorobenzene (Surr)	92		80 - 120					11/10/22 20:38	1
1,2-Dichloroethane-d4 (Surr)	117		80 - 120					11/10/22 20:38	1
Method: EPA 314.0 - Perchl	lorate (IC)								
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		20	10	ug/L			11/16/22 15:39	5

RL

150

MDL Unit

43 mg/L

Prepared

Analyzed

12/01/22 00:46

Dil Fac

100

Result Qualifier

610

Client: ERM-West Job ID: 580-119876-1

Project/Site: Arkema - Q4 2022 Groundwater Event

Client Sample ID: MWA-41-110722

Date Collected: 11/07/22 12:12 Date Received: 11/09/22 15:05 Lab Sample ID: 580-119876-8

Matrix: Water

Method: SW846 8260D - Volatile	Organic Compounds by GC/MS

Analyte		Qualifier	RL _	MDL		D	Prepared	Analyzed	Dil Fac
Dichlorodifluoromethane	ND	*+	0.40	0.13	ug/L			11/10/22 21:02	1
Chloromethane	ND	*+	0.50	0.14	ug/L			11/10/22 21:02	1
Vinyl chloride	ND		0.020	0.013	ug/L			11/10/22 21:02	1
Bromomethane	ND		0.50	0.13	ug/L			11/10/22 21:02	1
Chloroethane	ND	*+	0.50	0.096	ug/L			11/10/22 21:02	1
Carbon disulfide	ND		0.30	0.083	ug/L			11/10/22 21:02	1
Trichlorofluoromethane	ND		0.50	0.12	ug/L			11/10/22 21:02	1
1,1-Dichloroethene	ND		0.20	0.035	ug/L			11/10/22 21:02	1
Acetone	ND		10		ug/L			11/10/22 21:02	1
Methylene Chloride	ND		5.0		ug/L			11/10/22 21:02	1
Methyl tert-butyl ether	ND		0.30	0.070				11/10/22 21:02	1
2-Butanone (MEK)	ND		10		ug/L			11/10/22 21:02	1
trans-1,2-Dichloroethene	ND		0.20	0.033				11/10/22 21:02	1
1,1-Dichloroethane	0.096	4	0.20	0.025	_			11/10/22 21:02	1
2,2-Dichloropropane	ND	-	0.50	0.060	_			11/10/22 21:02	1
cis-1,2-Dichloroethene	ND		0.20	0.055				11/10/22 21:02	· · · · · · 1
Chlorobromomethane	ND ND		0.20	0.050	•			11/10/22 21:02	1
Chloroform	ND		0.20	0.030	•			11/10/22 21:02	1
1,1,1-Trichloroethane	ND		0.20	0.025				11/10/22 21:02	
Carbon tetrachloride	ND ND		0.20	0.025	U			11/10/22 21:02	1
	ND ND		0.20		•				1
1,1-Dichloropropene				0.084				11/10/22 21:02	
Benzene	ND		0.20	0.030	-			11/10/22 21:02	1
1,2-Dichloroethane	ND		0.20	0.043	•			11/10/22 21:02	1
Trichloroethene	ND		0.20	0.066	-			11/10/22 21:02	
1,2-Dichloropropane	ND		0.20	0.060	-			11/10/22 21:02	1
4-Methyl-2-pentanone (MIBK)	ND		10		ug/L			11/10/22 21:02	1
Dibromomethane	ND		0.20	0.062				11/10/22 21:02	1
Dichlorobromomethane	ND		0.20	0.060	-			11/10/22 21:02	1
cis-1,3-Dichloropropene	ND		0.20	0.090	•			11/10/22 21:02	1
Toluene	ND		0.20	0.050				11/10/22 21:02	1
trans-1,3-Dichloropropene	ND		0.20	0.092	_			11/10/22 21:02	1
1,1,2-Trichloroethane	ND		0.20	0.070	ug/L			11/10/22 21:02	1
Tetrachloroethene	ND		0.24	0.084				11/10/22 21:02	1
1,3-Dichloropropane	ND		0.20	0.025	-			11/10/22 21:02	1
Chlorodibromomethane	ND		0.20	0.055	ug/L			11/10/22 21:02	1
Ethylene Dibromide	ND		0.10	0.025	ug/L			11/10/22 21:02	1
Chlorobenzene	ND		0.20	0.060	ug/L			11/10/22 21:02	1
1,1,1,2-Tetrachloroethane	ND		0.30	0.038	ug/L			11/10/22 21:02	1
Ethylbenzene	ND		0.20	0.030	ug/L			11/10/22 21:02	1
m-Xylene & p-Xylene	ND		0.50	0.12	ug/L			11/10/22 21:02	1
o-Xylene	ND		0.50	0.15	ug/L			11/10/22 21:02	1
Styrene	ND		1.0	0.19	ug/L			11/10/22 21:02	1
Bromoform	ND		0.50	0.16	ug/L			11/10/22 21:02	1
Isopropylbenzene	ND		1.0		ug/L			11/10/22 21:02	1
Bromobenzene	ND		0.20	0.038	_			11/10/22 21:02	1
1,1,2,2-Tetrachloroethane	ND		0.20	0.056				11/10/22 21:02	1
1,2,3-Trichloropropane	ND		0.20	0.050	_			11/10/22 21:02	1
N-Propylbenzene	ND		0.30	0.091	-			11/10/22 21:02	1
2-Chlorotoluene	ND		0.50		ug/L			11/10/22 21:02	· · · · · · 1

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Client: ERM-West Job ID: 580-119876-1

Project/Site: Arkema - Q4 2022 Groundwater Event

Client Sample ID: MWA-41-110722

Date Collected: 11/07/22 12:12 Date Received: 11/09/22 15:05 Lab Sample ID: 580-119876-8

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Chlorotoluene	ND		0.30	0.12	ug/L			11/10/22 21:02	1
1,3,5-Trimethylbenzene	ND		0.50	0.15	ug/L			11/10/22 21:02	1
tert-Butylbenzene	ND		0.50	0.26	ug/L			11/10/22 21:02	1
1,2,4-Trimethylbenzene	ND		0.50	0.20	ug/L			11/10/22 21:02	1
sec-Butylbenzene	ND		1.0	0.17	ug/L			11/10/22 21:02	1
4-Isopropyltoluene	ND		0.50	0.15	ug/L			11/10/22 21:02	1
1,3-Dichlorobenzene	ND		0.30	0.050	ug/L			11/10/22 21:02	1
1,4-Dichlorobenzene	ND		0.30	0.050	ug/L			11/10/22 21:02	1
n-Butylbenzene	ND		1.0	0.23	ug/L			11/10/22 21:02	1
1,2-Dichlorobenzene	ND		0.30	0.038	ug/L			11/10/22 21:02	1
1,2-Dibromo-3-Chloropropane	ND		2.0	0.17	ug/L			11/10/22 21:02	1
1,2,4-Trichlorobenzene	ND		0.50	0.17	ug/L			11/10/22 21:02	1
Hexachlorobutadiene	ND		0.50	0.067	ug/L			11/10/22 21:02	1
Naphthalene	ND		1.0	0.22	ug/L			11/10/22 21:02	1
1,2,3-Trichlorobenzene	ND		0.50	0.15	ug/L			11/10/22 21:02	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	103		80 - 120			-		11/10/22 21:02	1
Dibromofluoromethane (Surr)	105		80 - 120					11/10/22 21:02	1
4-Bromofluorobenzene (Surr)	88		80 - 120					11/10/22 21:02	1
1,2-Dichloroethane-d4 (Surr)	113		80 - 120					11/10/22 21:02	1
Method: EPA 314.0 - Perch	lorate (IC)								
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		4.0	2.0	ug/L			11/16/22 15:58	1
General Chemistry									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (MCAWW 300.0)	21		1.5	0.43	mg/L			12/01/22 00:57	

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Client: ERM-West Job ID: 580-119876-1

Project/Site: Arkema - Q4 2022 Groundwater Event

Client Sample ID: PA-16i-110822

Date Collected: 11/08/22 07:03 Date Received: 11/09/22 15:05 Lab Sample ID: 580-119876-9

Matrix: Water

Analyte		Qualifier	RL _		Unit	D	Prepared	Analyzed	Dil Fac
Dichlorodifluoromethane	ND	*+	0.40	0.13	ug/L			11/11/22 00:44	1
Chloromethane	ND	*+	0.50	0.14	ug/L			11/11/22 00:44	1
Vinyl chloride	ND		0.020	0.013	ug/L			11/11/22 00:44	1
Bromomethane	ND		0.50	0.13	ug/L			11/11/22 00:44	1
Chloroethane	ND	*+	0.50	0.096	ug/L			11/11/22 00:44	1
Carbon disulfide	ND		0.30	0.083	ug/L			11/11/22 00:44	1
Trichlorofluoromethane	ND		0.50	0.12	ug/L			11/11/22 00:44	1
1,1-Dichloroethene	ND		0.20	0.035	ug/L			11/11/22 00:44	1
Acetone	ND		10	3.1	ug/L			11/11/22 00:44	1
Methylene Chloride	ND		5.0	1.2	ug/L			11/11/22 00:44	1
Methyl tert-butyl ether	ND		0.30	0.070	ug/L			11/11/22 00:44	1
2-Butanone (MEK)	ND		10	2.5	ug/L			11/11/22 00:44	1
trans-1,2-Dichloroethene	ND		0.20	0.033	ug/L			11/11/22 00:44	1
1,1-Dichloroethane	0.033	J	0.20	0.025	-			11/11/22 00:44	1
2,2-Dichloropropane	ND		0.50	0.060	-			11/11/22 00:44	1
cis-1,2-Dichloroethene	ND		0.20	0.055				11/11/22 00:44	1
Chlorobromomethane	ND		0.20	0.050	-			11/11/22 00:44	1
Chloroform	ND		0.20	0.030	ug/L			11/11/22 00:44	1
1,1,1-Trichloroethane	ND		0.20	0.025				11/11/22 00:44	1
Carbon tetrachloride	ND		0.20	0.025	-			11/11/22 00:44	1
1,1-Dichloropropene	ND		0.20	0.084	_			11/11/22 00:44	1
Benzene	0.071	J	0.20	0.030				11/11/22 00:44	1
1,2-Dichloroethane	ND	_	0.20	0.043	-			11/11/22 00:44	1
Trichloroethene	ND		0.20	0.066	-			11/11/22 00:44	1
1,2-Dichloropropane	ND		0.20	0.060				11/11/22 00:44	1
4-Methyl-2-pentanone (MIBK)	ND		10		ug/L			11/11/22 00:44	1
Dibromomethane	ND		0.20	0.062	-			11/11/22 00:44	1
Dichlorobromomethane	ND		0.20	0.060				11/11/22 00:44	1
cis-1,3-Dichloropropene	ND		0.20	0.090	•			11/11/22 00:44	1
Toluene	ND		0.20	0.050	-			11/11/22 00:44	1
trans-1,3-Dichloropropene	ND		0.20	0.092				11/11/22 00:44	1
1,1,2-Trichloroethane	ND		0.20	0.070	-			11/11/22 00:44	1
Tetrachloroethene	ND		0.24	0.084	-			11/11/22 00:44	1
1,3-Dichloropropane	ND		0.20	0.025				11/11/22 00:44	1
Chlorodibromomethane	ND		0.20	0.055	-			11/11/22 00:44	1
Ethylene Dibromide	ND		0.10	0.025	-			11/11/22 00:44	1
Chlorobenzene	ND		0.20	0.060				11/11/22 00:44	1
1,1,1,2-Tetrachloroethane	ND		0.30	0.038				11/11/22 00:44	1
Ethylbenzene	ND		0.20	0.030	-			11/11/22 00:44	1
m-Xylene & p-Xylene	ND		0.50		ug/L			11/11/22 00:44	· · · · · · · · 1
o-Xylene	ND		0.50		ug/L			11/11/22 00:44	1
Styrene	ND		1.0		ug/L			11/11/22 00:44	1
Bromoform	ND		0.50		ug/L			11/11/22 00:44	· · · · · · · · · · · · · · · · · · ·
Isopropylbenzene	ND		1.0		ug/L			11/11/22 00:44	1
Bromobenzene	ND		0.20	0.038	-			11/11/22 00:44	1
1,1,2,2-Tetrachloroethane	ND		0.20	0.056				11/11/22 00:44	
1,2,3-Trichloropropane	ND ND		0.20	0.050	-			11/11/22 00:44	1
			0.20		_				
N-Propylbenzene	ND			0.091				11/11/22 00:44	1 1
2-Chlorotoluene	ND		0.50	0.12	ug/L			11/11/22 00:44	

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Client: ERM-West Job ID: 580-119876-1

Project/Site: Arkema - Q4 2022 Groundwater Event

Client Sample ID: PA-16i-110822

Date Collected: 11/08/22 07:03 Date Received: 11/09/22 15:05 Lab Sample ID: 580-119876-9

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Chlorotoluene	ND		0.30	0.12	ug/L			11/11/22 00:44	1
1,3,5-Trimethylbenzene	ND		0.50	0.15	ug/L			11/11/22 00:44	1
tert-Butylbenzene	ND		0.50	0.26	ug/L			11/11/22 00:44	1
1,2,4-Trimethylbenzene	ND		0.50	0.20	ug/L			11/11/22 00:44	1
sec-Butylbenzene	ND		1.0	0.17	ug/L			11/11/22 00:44	1
4-Isopropyltoluene	ND		0.50	0.15	ug/L			11/11/22 00:44	1
1,3-Dichlorobenzene	ND		0.30	0.050	ug/L			11/11/22 00:44	1
1,4-Dichlorobenzene	ND		0.30	0.050	ug/L			11/11/22 00:44	1
n-Butylbenzene	ND		1.0	0.23	ug/L			11/11/22 00:44	1
1,2-Dichlorobenzene	ND		0.30	0.038	ug/L			11/11/22 00:44	1
1,2-Dibromo-3-Chloropropane	ND		2.0	0.17	ug/L			11/11/22 00:44	1
1,2,4-Trichlorobenzene	ND		0.50	0.17	ug/L			11/11/22 00:44	1
Hexachlorobutadiene	ND		0.50	0.067	ug/L			11/11/22 00:44	1
Naphthalene	ND		1.0	0.22	ug/L			11/11/22 00:44	1
1,2,3-Trichlorobenzene	ND		0.50	0.15	ug/L			11/11/22 00:44	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	93		80 - 120			-		11/11/22 00:44	1
Dibromofluoromethane (Surr)	110		80 - 120					11/11/22 00:44	1
4-Bromofluorobenzene (Surr)	94		80 - 120					11/11/22 00:44	1
1,2-Dichloroethane-d4 (Surr)	118		80 - 120					11/11/22 00:44	1
Method: EPA 314.0 - Perch	lorate (IC)								
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		8.0	4.0	ug/L			11/16/22 16:17	2
General Chemistry									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (MCAWW 300.0)	270		15	4.3	mg/L			12/01/22 01:09	10

Client: ERM-West Job ID: 580-119876-1

Project/Site: Arkema - Q4 2022 Groundwater Event

Client Sample ID: PA-09-110822

Date Received: 11/09/22 15:05

1,1,2,2-Tetrachloroethane

1,2,3-Trichloropropane

N-Propylbenzene

2-Chlorotoluene

Lab Sample ID: 580-119876-10 Date Collected: 11/08/22 07:37

Matrix: Water

Method: SW846 8260D - Volatile Organic Compounds by GC/MS Dil Fac Analyte Result Qualifier **MDL** Unit D Prepared Analyzed Dichlorodifluoromethane ND 0.40 0.13 ug/L 11/10/22 21:27 0.50 Chloromethane 0.19 J*+ 0.14 ug/L 11/10/22 21:27 Vinyl chloride ND 0.020 0.013 ug/L 11/10/22 21:27 ND 0.13 ug/L Bromomethane 0.50 11/10/22 21:27 Chloroethane ND 0.50 0.096 ug/L 11/10/22 21:27 Carbon disulfide ND 0.30 0.083 ug/L 11/10/22 21:27 Trichlorofluoromethane ND 0.50 0.12 ug/L 11/10/22 21:27 1.1-Dichloroethene ND 0.20 0.035 ug/L 11/10/22 21:27 Acetone ND 10 3.1 ug/L 11/10/22 21:27 Methylene Chloride ND 5.0 1.2 ug/L 11/10/22 21:27 Methyl tert-butyl ether ND 0.30 0.070 ug/L 11/10/22 21:27 2-Butanone (MEK) ND 10 2.5 ug/L 11/10/22 21:27 1 trans-1,2-Dichloroethene ND 0.20 0.033 ug/L 11/10/22 21:27 0.20 0.025 ug/L 11/10/22 21:27 1,1-Dichloroethane 0.15 J 0.060 ug/L ND 0.50 11/10/22 21:27 2,2-Dichloropropane ND 0.055 cis-1,2-Dichloroethene 0.20 ug/L 11/10/22 21:27 Chlorobromomethane ND 0.20 0.050 ug/L 11/10/22 21:27 0.20 0.030 ug/L 11/10/22 21:27 Chloroform 0.087 0.20 0.025 ug/L 11/10/22 21:27 1,1,1-Trichloroethane 0.045 Carbon tetrachloride ND 0.20 0.025 ug/L 11/10/22 21:27 ND 0.20 0.084 ug/L 11/10/22 21:27 1,1-Dichloropropene Benzene ND 0.20 0.030 ug/L 11/10/22 21:27 1,2-Dichloroethane ND 0.20 0.043 ug/L 11/10/22 21:27 **Trichloroethene** 0.16 0.20 0.066 ug/L 11/10/22 21:27 1,2-Dichloropropane ND 0.20 0.060 ug/L 11/10/22 21:27 4-Methyl-2-pentanone (MIBK) ND 10 1.7 ug/L 11/10/22 21:27 Dibromomethane ND 0.20 0.062 ug/L 11/10/22 21:27 Dichlorobromomethane 0.060 ug/L ND 0.20 11/10/22 21:27 0.090 ug/L cis-1,3-Dichloropropene ND 0.20 11/10/22 21:27 ND 0.20 0.050 ug/L Toluene 11/10/22 21:27 trans-1,3-Dichloropropene ND 0.20 0.092 ug/L 11/10/22 21:27 1,1,2-Trichloroethane ND 0.20 0.070 ug/L 11/10/22 21:27 0.39 0.24 0.084 ug/L 11/10/22 21:27 **Tetrachloroethene** 1,3-Dichloropropane ND 0.20 0.025 ug/L 11/10/22 21:27 Chlorodibromomethane ND 0.20 0.055 ug/L 11/10/22 21:27 Ethylene Dibromide ND 0.10 0.025 ug/L 11/10/22 21:27 0.060 ug/L Chlorobenzene ND 0.20 11/10/22 21:27 1,1,1,2-Tetrachloroethane ND 0.30 0.038 ug/L 11/10/22 21:27 Ethylbenzene ND 0.20 0.030 ug/L 11/10/22 21:27 m-Xylene & p-Xylene ND 0.50 0.12 ug/L 11/10/22 21:27 o-Xylene ND 0.50 0.15 ug/L 11/10/22 21:27 Styrene ND 1.0 0.19 ug/L 11/10/22 21:27 ND Bromoform 0.50 0.16 ug/L 11/10/22 21:27 Isopropylbenzene 0.19 ug/L ND 1.0 11/10/22 21:27 ND Bromobenzene 0.20 0.038 ug/L 11/10/22 21:27

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12/13/2022

11/10/22 21:27

11/10/22 21:27

11/10/22 21:27

11/10/22 21:27

0.20

0.20

0.30

0.50

0.056 ug/L

0.050 ug/L

0.091 ug/L

0.12 ug/L

ND

ND

ND

ND

Client: ERM-West Job ID: 580-119876-1

Project/Site: Arkema - Q4 2022 Groundwater Event

Client Sample ID: PA-09-110822

Date Received: 11/09/22 15:05

Lab Sample ID: 580-119876-10 Date Collected: 11/08/22 07:37

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Chlorotoluene	ND		0.30	0.12	ug/L			11/10/22 21:27	1
1,3,5-Trimethylbenzene	ND		0.50	0.15	ug/L			11/10/22 21:27	1
tert-Butylbenzene	ND		0.50	0.26	ug/L			11/10/22 21:27	1
1,2,4-Trimethylbenzene	ND		0.50	0.20	ug/L			11/10/22 21:27	1
sec-Butylbenzene	ND		1.0	0.17	ug/L			11/10/22 21:27	1
4-Isopropyltoluene	ND		0.50	0.15	ug/L			11/10/22 21:27	1
1,3-Dichlorobenzene	ND		0.30	0.050	ug/L			11/10/22 21:27	1
1,4-Dichlorobenzene	ND		0.30	0.050	ug/L			11/10/22 21:27	1
n-Butylbenzene	ND		1.0	0.23	ug/L			11/10/22 21:27	1
1,2-Dichlorobenzene	0.063	J	0.30	0.038	ug/L			11/10/22 21:27	1
1,2-Dibromo-3-Chloropropane	ND		2.0	0.17	ug/L			11/10/22 21:27	1
1,2,4-Trichlorobenzene	ND		0.50	0.17	ug/L			11/10/22 21:27	1
Hexachlorobutadiene	ND		0.50	0.067	ug/L			11/10/22 21:27	1
Naphthalene	ND		1.0	0.22	ug/L			11/10/22 21:27	1
1,2,3-Trichlorobenzene	ND		0.50	0.15	ug/L			11/10/22 21:27	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	95	-	80 - 120			-		11/10/22 21:27	1
Dibromofluoromethane (Surr)	111		80 - 120					11/10/22 21:27	1
4-Bromofluorobenzene (Surr)	94		80 - 120					11/10/22 21:27	1
1,2-Dichloroethane-d4 (Surr)	117		80 - 120					11/10/22 21:27	1
Method: EPA 314.0 - Perch	lorate (IC)								
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		20	10	ug/L			11/16/22 17:14	5
General Chemistry									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (MCAWW 300.0)	68		15	4.3	mg/L			12/01/22 01:21	10

Client: ERM-West Job ID: 580-119876-1

Project/Site: Arkema - Q4 2022 Groundwater Event

Client Sample ID: PA-26d-110822

Date Received: 11/09/22 15:05

Lab Sample ID: 580-119876-11 Date Collected: 11/08/22 08:10

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dichlorodifluoromethane	ND	*+	0.40	0.13	ug/L			11/10/22 21:52	1
Chloromethane	ND	*+	0.50	0.14	ug/L			11/10/22 21:52	1
Vinyl chloride	ND		0.020	0.013	ug/L			11/10/22 21:52	1
Bromomethane	ND		0.50	0.13	ug/L			11/10/22 21:52	1
Chloroethane	ND	*+	0.50	0.096	ug/L			11/10/22 21:52	1
Carbon disulfide	ND		0.30	0.083	ug/L			11/10/22 21:52	1
Trichlorofluoromethane	ND		0.50	0.12	ug/L			11/10/22 21:52	1
1,1-Dichloroethene	ND		0.20	0.035	ug/L			11/10/22 21:52	1
Acetone	ND		10	3.1	ug/L			11/10/22 21:52	1
Methylene Chloride	ND		5.0	1.2	ug/L			11/10/22 21:52	1
Methyl tert-butyl ether	ND		0.30	0.070	ug/L			11/10/22 21:52	1
2-Butanone (MEK)	ND		10		ug/L			11/10/22 21:52	1
trans-1,2-Dichloroethene	ND		0.20	0.033				11/10/22 21:52	1
1,1-Dichloroethane	ND		0.20	0.025	-			11/10/22 21:52	1
2,2-Dichloropropane	ND		0.50	0.060	-			11/10/22 21:52	1
cis-1,2-Dichloroethene	ND		0.20	0.055				11/10/22 21:52	1
Chlorobromomethane	ND		0.20	0.050	-			11/10/22 21:52	1
Chloroform	ND		0.20	0.030	-			11/10/22 21:52	1
1.1.1-Trichloroethane	ND		0.20	0.025				11/10/22 21:52	1
Carbon tetrachloride	ND		0.20	0.025	-			11/10/22 21:52	1
1,1-Dichloropropene	ND		0.20	0.084	-			11/10/22 21:52	1
Benzene	ND		0.20	0.030				11/10/22 21:52	1
1,2-Dichloroethane	ND		0.20	0.043	-			11/10/22 21:52	1
Trichloroethene	ND		0.20	0.066	-			11/10/22 21:52	1
1,2-Dichloropropane	ND		0.20	0.060				11/10/22 21:52	· · · · · · · · · · · · · · · · · · ·
4-Methyl-2-pentanone (MIBK)	ND		10		ug/L			11/10/22 21:52	1
Dibromomethane	ND		0.20	0.062	-			11/10/22 21:52	1
Dichlorobromomethane	ND		0.20	0.060				11/10/22 21:52	· · · · · · · · · · · · · · · · · · ·
cis-1,3-Dichloropropene	ND		0.20	0.090	-			11/10/22 21:52	1
Toluene	0.059		0.20	0.050	-			11/10/22 21:52	1
trans-1,3-Dichloropropene	ND		0.20	0.092				11/10/22 21:52	· · · · · · · · · · · · · · · · · · ·
1,1,2-Trichloroethane	ND		0.20	0.032	-			11/10/22 21:52	1
Tetrachloroethene	ND		0.24	0.084	-			11/10/22 21:52	1
1,3-Dichloropropane	ND		0.20	0.025				11/10/22 21:52	
Chlorodibromomethane	ND		0.20	0.025	-			11/10/22 21:52	1
Ethylene Dibromide	ND		0.20	0.035	-			11/10/22 21:52	1
Chlorobenzene	ND		0.20	0.023				11/10/22 21:52	
1,1,1,2-Tetrachloroethane	ND ND		0.20	0.038				11/10/22 21:52	
Ethylbenzene	ND ND		0.30	0.030	-			11/10/22 21:52	1
									1
m-Xylene & p-Xylene	ND		0.50		ug/L			11/10/22 21:52	1
o-Xylene	ND		0.50		ug/L			11/10/22 21:52	1
Styrene	ND		1.0		ug/L			11/10/22 21:52	1
Bromoform	ND		0.50		ug/L			11/10/22 21:52	1
Isopropylbenzene	ND		1.0		ug/L			11/10/22 21:52	1
Bromobenzene	ND		0.20	0.038				11/10/22 21:52	1
1,1,2,2-Tetrachloroethane	ND		0.20	0.056	-			11/10/22 21:52	1
1,2,3-Trichloropropane	ND		0.20	0.050	-			11/10/22 21:52	1
N-Propylbenzene	ND		0.30	0.091	ug/L			11/10/22 21:52	1

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Client: ERM-West Job ID: 580-119876-1

Project/Site: Arkema - Q4 2022 Groundwater Event

Client Sample ID: PA-26d-110822

Date Received: 11/09/22 15:05

Lab Sample ID: 580-119876-11 Date Collected: 11/08/22 08:10

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Chlorotoluene	ND		0.30	0.12	ug/L			11/10/22 21:52	1
1,3,5-Trimethylbenzene	ND		0.50	0.15	ug/L			11/10/22 21:52	1
tert-Butylbenzene	ND		0.50	0.26	ug/L			11/10/22 21:52	1
1,2,4-Trimethylbenzene	ND		0.50	0.20	ug/L			11/10/22 21:52	1
sec-Butylbenzene	ND		1.0	0.17	ug/L			11/10/22 21:52	1
4-Isopropyltoluene	ND		0.50	0.15	ug/L			11/10/22 21:52	1
1,3-Dichlorobenzene	ND		0.30	0.050	ug/L			11/10/22 21:52	1
1,4-Dichlorobenzene	ND		0.30	0.050	ug/L			11/10/22 21:52	1
n-Butylbenzene	ND		1.0	0.23	ug/L			11/10/22 21:52	1
1,2-Dichlorobenzene	ND		0.30	0.038	ug/L			11/10/22 21:52	1
1,2-Dibromo-3-Chloropropane	ND		2.0	0.17	ug/L			11/10/22 21:52	1
1,2,4-Trichlorobenzene	ND		0.50	0.17	ug/L			11/10/22 21:52	1
Hexachlorobutadiene	ND		0.50	0.067	ug/L			11/10/22 21:52	1
Naphthalene	ND		1.0	0.22	ug/L			11/10/22 21:52	1
1,2,3-Trichlorobenzene	ND		0.50	0.15	ug/L			11/10/22 21:52	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	101		80 - 120			-		11/10/22 21:52	1
Dibromofluoromethane (Surr)	107		80 - 120					11/10/22 21:52	1
4-Bromofluorobenzene (Surr)	90		80 - 120					11/10/22 21:52	1
1,2-Dichloroethane-d4 (Surr)	113		80 - 120					11/10/22 21:52	1
Method: EPA 314.0 - Perch	lorate (IC)								
Analyte	• •	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac

Chloride (MCAWW 300.0)	6.5		1.5	0.43	mg/L			12/01/22 01:32	1	
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac	
General Chemistry										
Perchlorate	ND		4.0	2.0	ug/L			11/16/22 17:33	1	

Client: ERM-West Job ID: 580-119876-1

Project/Site: Arkema - Q4 2022 Groundwater Event

Client Sample ID: RB-01-110822

Lab Sample ID: 580-119876-12

Date Collected: 11/08/22 08:40 **Matrix: Water** Date Received: 11/09/22 15:05

Analyte		Qualifier	RL	MDL		D	Prepared	Analyzed	Dil Fa
Dichlorodifluoromethane	ND	*+	0.40	0.13	ug/L			11/10/22 22:16	
Chloromethane	0.15	J *+	0.50	0.14	ug/L			11/10/22 22:16	
Vinyl chloride	ND		0.020	0.013	ug/L			11/10/22 22:16	
Bromomethane	ND		0.50	0.13	ug/L			11/10/22 22:16	
Chloroethane	ND	*+	0.50	0.096	ug/L			11/10/22 22:16	
Carbon disulfide	ND		0.30	0.083	ug/L			11/10/22 22:16	
Trichlorofluoromethane	ND		0.50	0.12	ug/L			11/10/22 22:16	
1,1-Dichloroethene	ND		0.20	0.035	ug/L			11/10/22 22:16	
Acetone	ND		10	3.1	ug/L			11/10/22 22:16	
Methylene Chloride	ND		5.0	1.2	ug/L			11/10/22 22:16	
Methyl tert-butyl ether	ND		0.30	0.070	ug/L			11/10/22 22:16	
2-Butanone (MEK)	ND		10	2.5	ug/L			11/10/22 22:16	
trans-1,2-Dichloroethene	ND		0.20	0.033	ug/L			11/10/22 22:16	
1,1-Dichloroethane	ND		0.20	0.025	-			11/10/22 22:16	
2,2-Dichloropropane	ND		0.50	0.060	ug/L			11/10/22 22:16	
cis-1,2-Dichloroethene	ND		0.20	0.055				11/10/22 22:16	
Chlorobromomethane	ND		0.20	0.050	-			11/10/22 22:16	
Chloroform	ND		0.20	0.030	-			11/10/22 22:16	
1,1,1-Trichloroethane	ND		0.20	0.025				11/10/22 22:16	
Carbon tetrachloride	ND		0.20	0.025	-			11/10/22 22:16	
1,1-Dichloropropene	ND		0.20	0.084	ug/L			11/10/22 22:16	
Benzene	ND		0.20	0.030				11/10/22 22:16	
1,2-Dichloroethane	ND		0.20	0.043	•			11/10/22 22:16	
Trichloroethene	ND		0.20	0.066	Ū			11/10/22 22:16	
1,2-Dichloropropane	ND		0.20	0.060				11/10/22 22:16	
4-Methyl-2-pentanone (MIBK)	ND		10		ug/L			11/10/22 22:16	
Dibromomethane	ND		0.20	0.062	-			11/10/22 22:16	
Dichlorobromomethane	ND		0.20	0.060				11/10/22 22:16	
cis-1,3-Dichloropropene	ND		0.20	0.090	-			11/10/22 22:16	
Toluene	ND		0.20	0.050	-			11/10/22 22:16	
trans-1,3-Dichloropropene	ND		0.20	0.092				11/10/22 22:16	
1,1,2-Trichloroethane	ND		0.20	0.070	-			11/10/22 22:16	
Tetrachloroethene	ND		0.24	0.084	_			11/10/22 22:16	
1,3-Dichloropropane	ND		0.20	0.025				11/10/22 22:16	
Chlorodibromomethane	ND		0.20	0.055	-			11/10/22 22:16	
Ethylene Dibromide	ND		0.10	0.025	-			11/10/22 22:16	
Chlorobenzene	0.15		0.20	0.060				11/10/22 22:16	
1,1,1,2-Tetrachloroethane	ND	3	0.30	0.038				11/10/22 22:16	
Ethylbenzene	ND		0.20	0.030	-			11/10/22 22:16	
m-Xylene & p-Xylene	ND		0.50		ug/L			11/10/22 22:16	
o-Xylene	ND		0.50		ug/L			11/10/22 22:16	
Styrene	ND		1.0		ug/L			11/10/22 22:16	
Bromoform	ND		0.50		ug/L			11/10/22 22:16	
Isopropylbenzene	ND ND		1.0		ug/L ug/L			11/10/22 22:16	
Bromobenzene	ND ND		0.20	0.19	-			11/10/22 22:16	
	ND		0.20						
1,1,2,2-Tetrachloroethane	ND ND		0.20	0.056 0.050	-			11/10/22 22:16	
1,2,3-Trichloropropane					_			11/10/22 22:16	
N-Propylbenzene 2-Chlorotoluene	ND ND		0.30	0.091	ug/L ug/L			11/10/22 22:16 11/10/22 22:16	

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Client: ERM-West Job ID: 580-119876-1

Project/Site: Arkema - Q4 2022 Groundwater Event

Client Sample ID: RB-01-110822

Date Collected: 11/08/22 08:40 Date Received: 11/09/22 15:05

General Chemistry

Chloride (MCAWW 300.0)

Analyte

Lab Sample ID: 580-119876-12

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Chlorotoluene	ND		0.30	0.12	ug/L			11/10/22 22:16	1
1,3,5-Trimethylbenzene	ND		0.50	0.15	ug/L			11/10/22 22:16	1
tert-Butylbenzene	ND		0.50	0.26	ug/L			11/10/22 22:16	1
1,2,4-Trimethylbenzene	ND		0.50	0.20	ug/L			11/10/22 22:16	1
sec-Butylbenzene	ND		1.0	0.17	ug/L			11/10/22 22:16	1
4-Isopropyltoluene	ND		0.50	0.15	ug/L			11/10/22 22:16	1
1,3-Dichlorobenzene	ND		0.30	0.050	ug/L			11/10/22 22:16	1
1,4-Dichlorobenzene	ND		0.30	0.050	ug/L			11/10/22 22:16	1
n-Butylbenzene	ND		1.0	0.23	ug/L			11/10/22 22:16	1
1,2-Dichlorobenzene	ND		0.30	0.038	ug/L			11/10/22 22:16	1
1,2-Dibromo-3-Chloropropane	ND		2.0	0.17	ug/L			11/10/22 22:16	1
1,2,4-Trichlorobenzene	ND		0.50	0.17	ug/L			11/10/22 22:16	1
Hexachlorobutadiene	ND		0.50	0.067	ug/L			11/10/22 22:16	1
Naphthalene	ND		1.0	0.22	ug/L			11/10/22 22:16	1
1,2,3-Trichlorobenzene	ND		0.50	0.15	ug/L			11/10/22 22:16	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	98		80 - 120					11/10/22 22:16	1
Dibromofluoromethane (Surr)	107		80 - 120					11/10/22 22:16	1
4-Bromofluorobenzene (Surr)	90		80 - 120					11/10/22 22:16	1
1,2-Dichloroethane-d4 (Surr)	117		80 - 120					11/10/22 22:16	1
Method: EPA 314.0 - Perchl	orate (IC)								
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		4.0	2.0	ug/L			11/16/22 17:52	1

RL

1.5

MDL Unit

0.43 mg/L

Prepared

Result Qualifier

0.61 J

12/13/2022

Dil Fac

Analyzed

12/01/22 01:44

Job ID: 580-119876-1 Client: ERM-West

Project/Site: Arkema - Q4 2022 Groundwater Event

Client Sample ID: PA-31-110822

Date Received: 11/09/22 15:05

2-Chlorotoluene

Lab Sample ID: 580-119876-13 Date Collected: 11/08/22 09:15

Matrix: Water

Analyte		Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Dichlorodifluoromethane	ND	*+	0.40	0.13	ug/L			11/10/22 22:41	1
Chloromethane	ND	*+	0.50	0.14	ug/L			11/10/22 22:41	1
Vinyl chloride	ND		0.020	0.013	ug/L			11/10/22 22:41	1
Bromomethane	ND		0.50	0.13	ug/L			11/10/22 22:41	1
Chloroethane	ND	*+	0.50	0.096	ug/L			11/10/22 22:41	1
Carbon disulfide	ND		0.30	0.083	ug/L			11/10/22 22:41	1
Trichlorofluoromethane	0.27	J	0.50	0.12	ug/L			11/10/22 22:41	1
1,1-Dichloroethene	1.5		0.20	0.035	ug/L			11/10/22 22:41	1
Acetone	ND		10	3.1	ug/L			11/10/22 22:41	•
Methylene Chloride	ND		5.0	1.2	ug/L			11/10/22 22:41	
Methyl tert-butyl ether	ND		0.30	0.070	ug/L			11/10/22 22:41	•
2-Butanone (MEK)	ND		10	2.5	ug/L			11/10/22 22:41	•
trans-1,2-Dichloroethene	ND		0.20	0.033	ug/L			11/10/22 22:41	1
1,1-Dichloroethane	0.36		0.20	0.025	ug/L			11/10/22 22:41	1
2,2-Dichloropropane	ND		0.50	0.060	ug/L			11/10/22 22:41	1
cis-1,2-Dichloroethene	ND		0.20	0.055	ug/L			11/10/22 22:41	1
Chlorobromomethane	ND		0.20	0.050	ug/L			11/10/22 22:41	1
Chloroform	0.055	J	0.20	0.030	ug/L			11/10/22 22:41	1
1,1,1-Trichloroethane	0.34		0.20	0.025	ug/L			11/10/22 22:41	1
Carbon tetrachloride	ND		0.20	0.025	ug/L			11/10/22 22:41	1
1,1-Dichloropropene	ND		0.20	0.084	ug/L			11/10/22 22:41	1
Benzene	ND		0.20	0.030	ug/L			11/10/22 22:41	1
1,2-Dichloroethane	ND		0.20	0.043	ug/L			11/10/22 22:41	1
Trichloroethene	0.068	J	0.20	0.066	ug/L			11/10/22 22:41	1
1,2-Dichloropropane	ND		0.20	0.060	ug/L			11/10/22 22:41	1
4-Methyl-2-pentanone (MIBK)	ND		10	1.7	ug/L			11/10/22 22:41	1
Dibromomethane	ND		0.20	0.062	ug/L			11/10/22 22:41	1
Dichlorobromomethane	ND		0.20	0.060	-			11/10/22 22:41	•
cis-1,3-Dichloropropene	ND		0.20	0.090	-			11/10/22 22:41	•
Toluene	ND		0.20	0.050	ug/L			11/10/22 22:41	1
trans-1,3-Dichloropropene	ND		0.20	0.092	-			11/10/22 22:41	•
1,1,2-Trichloroethane	ND		0.20	0.070	ug/L			11/10/22 22:41	1
Tetrachloroethene	0.20	J	0.24	0.084				11/10/22 22:41	1
1,3-Dichloropropane	ND		0.20	0.025	-			11/10/22 22:41	1
Chlorodibromomethane	ND		0.20	0.055	-			11/10/22 22:41	1
Ethylene Dibromide	ND		0.10	0.025				11/10/22 22:41	1
Chlorobenzene	ND		0.20	0.060				11/10/22 22:41	1
1,1,1,2-Tetrachloroethane	ND		0.30	0.038	ug/L			11/10/22 22:41	1
Ethylbenzene	ND		0.20	0.030				11/10/22 22:41	1
m-Xylene & p-Xylene	ND		0.50	0.12	ug/L			11/10/22 22:41	1
o-Xylene	ND		0.50	0.15	ug/L			11/10/22 22:41	1
Styrene	ND		1.0	0.19	ug/L			11/10/22 22:41	1
Bromoform	ND		0.50	0.16	ug/L			11/10/22 22:41	
Isopropylbenzene	ND		1.0	0.19	ug/L			11/10/22 22:41	•
Bromobenzene	ND		0.20	0.038	ug/L			11/10/22 22:41	
1,1,2,2-Tetrachloroethane	ND		0.20	0.056	ug/L			11/10/22 22:41	
1,2,3-Trichloropropane	ND		0.20	0.050	ug/L			11/10/22 22:41	
N-Propylbenzene	ND		0.30	0.091	ug/L			11/10/22 22:41	
0.011	N.D.		0.50					44/40/00 00 44	

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12/13/2022

11/10/22 22:41

0.50

0.12 ug/L

ND

Client: ERM-West Job ID: 580-119876-1

Project/Site: Arkema - Q4 2022 Groundwater Event

Client Sample ID: PA-31-110822

Lab Sample ID: 580-119876-13 Date Collected: 11/08/22 09:15

Matrix: Water

Date Received: 11/09/22 15:05

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Chlorotoluene	ND		0.30	0.12	ug/L			11/10/22 22:41	1
1,3,5-Trimethylbenzene	ND		0.50	0.15	ug/L			11/10/22 22:41	1
tert-Butylbenzene	ND		0.50	0.26	ug/L			11/10/22 22:41	1
1,2,4-Trimethylbenzene	ND		0.50	0.20	ug/L			11/10/22 22:41	1
sec-Butylbenzene	ND		1.0	0.17	ug/L			11/10/22 22:41	1
4-Isopropyltoluene	ND		0.50	0.15	ug/L			11/10/22 22:41	1
1,3-Dichlorobenzene	ND		0.30	0.050	ug/L			11/10/22 22:41	1
1,4-Dichlorobenzene	ND		0.30	0.050	ug/L			11/10/22 22:41	1
n-Butylbenzene	ND		1.0	0.23	ug/L			11/10/22 22:41	1
1,2-Dichlorobenzene	ND		0.30	0.038	ug/L			11/10/22 22:41	1
1,2-Dibromo-3-Chloropropane	ND		2.0	0.17	ug/L			11/10/22 22:41	1
1,2,4-Trichlorobenzene	ND		0.50	0.17	ug/L			11/10/22 22:41	1
Hexachlorobutadiene	ND		0.50	0.067	ug/L			11/10/22 22:41	1
Naphthalene	ND		1.0	0.22	ug/L			11/10/22 22:41	1
1,2,3-Trichlorobenzene	ND		0.50	0.15	ug/L			11/10/22 22:41	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	95		80 - 120			-		11/10/22 22:41	1
Dibromofluoromethane (Surr)	111		80 - 120					11/10/22 22:41	1
4-Bromofluorobenzene (Surr)	95		80 - 120					11/10/22 22:41	1
1,2-Dichloroethane-d4 (Surr)	119		80 - 120					11/10/22 22:41	1
Method: EPA 314.0 - Perch	lorate (IC)								
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		8.0	4.0	ug/L			11/16/22 18:11	2
General Chemistry									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (MCAWW 300.0)	5.9		1.5	0.43	mg/L			12/01/22 01:56	1

Client: ERM-West Job ID: 580-119876-1

Project/Site: Arkema - Q4 2022 Groundwater Event

Client Sample ID: Dup-01-110822

Lab Sample ID: 580-119876-14 Date Collected: 11/08/22 09:16

Matrix: Water

Date Received: 11/09/22 15:05 Method: SW846 8260D - Volatile Organic Compounds by GC/MS Dil Fac Analyte Result Qualifier **MDL** Unit D Prepared Analyzed Dichlorodifluoromethane ND 0.40 0.13 ug/L 11/11/22 01:09 0.50 Chloromethane 0.17 J*+ 0.14 ug/L 11/11/22 01:09 Vinyl chloride ND 0.020 0.013 ug/L 11/11/22 01:09 ND Bromomethane 0.50 0.13 ug/L 11/11/22 01:09 Chloroethane ND 0.50 0.096 ug/L 11/11/22 01:09 Carbon disulfide ND 0.30 0.083 ug/L 11/11/22 01:09 0.50 0.12 ug/L 11/11/22 01:09 **Trichlorofluoromethane** 0.28 0.20 0.035 ug/L 11/11/22 01:09 1,1-Dichloroethene 1.6 Acetone ND 10 3.1 ug/L 11/11/22 01:09 Methylene Chloride ND 5.0 1.2 ug/L 11/11/22 01:09 Methyl tert-butyl ether ND 0.30 0.070 ug/L 11/11/22 01:09 2-Butanone (MEK) ND 10 2.5 ug/L 11/11/22 01:09 1 trans-1,2-Dichloroethene ND 0.20 0.033 ug/L 11/11/22 01:09 0.35 0.20 0.025 ug/L 11/11/22 01:09 1,1-Dichloroethane ND 0.50 0.060 ug/L 2,2-Dichloropropane 11/11/22 01:09 cis-1,2-Dichloroethene ND 0.20 0.055 ug/L 11/11/22 01:09 Chlorobromomethane ND 0.20 0.050 ug/L 11/11/22 01:09 0.20 0.030 ug/L 11/11/22 01:09 Chloroform 0.054 0.20 0.025 ug/L 11/11/22 01:09 1,1,1-Trichloroethane 0.34 Carbon tetrachloride ND 0.20 0.025 ug/L 11/11/22 01:09 ND 0.20 0.084 ug/L 1,1-Dichloropropene 11/11/22 01:09 Benzene ND 0.20 0.030 ug/L 11/11/22 01:09 1,2-Dichloroethane ND 0.20 0.043 ug/L 11/11/22 01:09 **Trichloroethene** 0.075 0.20 0.066 ug/L 11/11/22 01:09 1,2-Dichloropropane ND 0.20 0.060 ug/L 11/11/22 01:09 4-Methyl-2-pentanone (MIBK) ND 10 1.7 ug/L 11/11/22 01:09 Dibromomethane ND 0.20 0.062 ug/L 11/11/22 01:09 Dichlorobromomethane 0.060 ug/L ND 0.20 11/11/22 01:09 0.090 ug/L cis-1,3-Dichloropropene ND 0.20 11/11/22 01:09 ND 0.20 0.050 ug/L Toluene 11/11/22 01:09 trans-1,3-Dichloropropene ND 0.20 0.092 ug/L 11/11/22 01:09 ND 0.20 0.070 ug/L 1.1.2-Trichloroethane 11/11/22 01:09 0.24 0.084 ug/L **Tetrachloroethene** 0.19 11/11/22 01:09 1,3-Dichloropropane ND 0.20 0.025 ug/L 11/11/22 01:09 Chlorodibromomethane ND 0.20 0.055 ug/L 11/11/22 01:09 Ethylene Dibromide ND 0.025 ug/L 11/11/22 01:09 0.10 Chlorobenzene ND 0.20 0.060 ug/L 11/11/22 01:09 1,1,1,2-Tetrachloroethane ND 0.30 0.038 ug/L 11/11/22 01:09 Ethylbenzene ND 0.20 0.030 ug/L 11/11/22 01:09 m-Xylene & p-Xylene ND 0.50 0.12 ug/L 11/11/22 01:09 o-Xylene ND 0.50 0.15 ug/L 11/11/22 01:09 Styrene ND 1.0 0.19 ug/L 11/11/22 01:09 Bromoform ND 0.50 0.16 ug/L 11/11/22 01:09 0.19 ug/L Isopropylbenzene ND 1.0 11/11/22 01:09 ND Bromobenzene 0.20 0.038 ug/L 11/11/22 01:09 1,1,2,2-Tetrachloroethane ND 0.20 0.056 ug/L 11/11/22 01:09 ND 0.050 ug/L 1,2,3-Trichloropropane 0.20 11/11/22 01:09 N-Propylbenzene ND 0.30 0.091 ug/L 11/11/22 01:09 0.12 ug/L 2-Chlorotoluene ND 0.50 11/11/22 01:09

Client: ERM-West Job ID: 580-119876-1

Project/Site: Arkema - Q4 2022 Groundwater Event

Client Sample ID: Dup-01-110822

Date Collected: 11/08/22 09:16

Lab Sample ID: 580-119876-14 Matrix: Water

Date Received: 11/09/22 15:05

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Chlorotoluene	ND		0.30	0.12	ug/L			11/11/22 01:09	1
1,3,5-Trimethylbenzene	ND		0.50	0.15	ug/L			11/11/22 01:09	1
tert-Butylbenzene	ND		0.50	0.26	ug/L			11/11/22 01:09	1
1,2,4-Trimethylbenzene	ND		0.50	0.20	ug/L			11/11/22 01:09	1
sec-Butylbenzene	ND		1.0	0.17	ug/L			11/11/22 01:09	1
4-Isopropyltoluene	ND		0.50	0.15	ug/L			11/11/22 01:09	1
1,3-Dichlorobenzene	ND		0.30	0.050	ug/L			11/11/22 01:09	1
1,4-Dichlorobenzene	ND		0.30	0.050	ug/L			11/11/22 01:09	1
n-Butylbenzene	ND		1.0	0.23	ug/L			11/11/22 01:09	1
1,2-Dichlorobenzene	ND		0.30	0.038	ug/L			11/11/22 01:09	1
1,2-Dibromo-3-Chloropropane	ND		2.0	0.17	ug/L			11/11/22 01:09	1
1,2,4-Trichlorobenzene	ND		0.50	0.17	ug/L			11/11/22 01:09	1
Hexachlorobutadiene	ND		0.50	0.067	ug/L			11/11/22 01:09	1
Naphthalene	ND		1.0	0.22	ug/L			11/11/22 01:09	1
1,2,3-Trichlorobenzene	ND		0.50	0.15	ug/L			11/11/22 01:09	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	94		80 - 120			·		11/11/22 01:09	1
Dibromofluoromethane (Surr)	111		80 - 120					11/11/22 01:09	1
4-Bromofluorobenzene (Surr)	95		80 - 120					11/11/22 01:09	1
1,2-Dichloroethane-d4 (Surr)	120		80 - 120					11/11/22 01:09	1
Method: EPA 314.0 - Perch	lorate (IC)								
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		8.0	4.0	ug/L			11/16/22 18:30	2
General Chemistry									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (MCAWW 300.0)	5.9		1.5	0.43	mg/L			12/01/22 02:07	

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5

7

9

10

12

Client: ERM-West Job ID: 580-119876-1

Project/Site: Arkema - Q4 2022 Groundwater Event

Client Sample ID: PA-32i-110822

Date Received: 11/09/22 15:05

Lab Sample ID: 580-119876-15 Date Collected: 11/08/22 09:58

Matrix: Water

Method: SW846 8260D - Volatile Organic Compounds by GC/MS Dil Fac Analyte Result Qualifier **MDL** Unit D Prepared Analyzed ND F1 *+ Dichlorodifluoromethane 0.40 0.13 ug/L 11/11/22 01:34 ND F1*+ 0.50 Chloromethane 0.14 ug/L 11/11/22 01:34 Bromomethane ND F1 0.50 0.13 ug/L 11/11/22 01:34 0.57 F1 *+ 0.50 0.096 ug/L Chloroethane 11/11/22 01:34 Carbon disulfide ND 0.30 0.083 ug/L 11/11/22 01:34 Trichlorofluoromethane ND F1 0.50 0.12 ug/L 11/11/22 01:34 0.20 0.035 ug/L 11/11/22 01:34 1,1-Dichloroethene 0.090 ND 11/11/22 01:34 Acetone 10 3.1 ug/L Methylene Chloride ND 5.0 1.2 ug/L 11/11/22 01:34 Methyl tert-butyl ether ND 0.30 0.070 ug/L 11/11/22 01:34 2-Butanone (MEK) ND 10 2.5 ug/L 11/11/22 01:34 trans-1.2-Dichloroethene ND 0.20 0.033 ua/L 11/11/22 01:34 1 1,1-Dichloroethane ND 0.20 0.025 ug/L 11/11/22 01:34 2,2-Dichloropropane ND 0.50 0.060 ug/L 11/11/22 01:34 0.20 0.055 ug/L cis-1,2-Dichloroethene 0.087 11/11/22 01:34 0.050 ug/L Chlorobromomethane ND 0.20 11/11/22 01:34 Chloroform ND 0.20 0.030 ug/L 11/11/22 01:34 1,1,1-Trichloroethane ND 0.20 0.025 ug/L 11/11/22 01:34 Carbon tetrachloride ND 0.20 0.025 ug/L 11/11/22 01:34 1,1-Dichloropropene ND 0.20 0.084 ug/L 11/11/22 01:34 **Benzene** 0.20 0.030 ug/L 11/11/22 01:34 0.043 J 1,2-Dichloroethane ND 0.20 0.043 ug/L 11/11/22 01:34 Trichloroethene ND 0.20 0.066 ug/L 11/11/22 01:34 1,2-Dichloropropane ND 0.20 0.060 ug/L 11/11/22 01:34 4-Methyl-2-pentanone (MIBK) ND 10 1.7 ug/L 11/11/22 01:34 0.062 ug/L Dibromomethane ND 0.20 11/11/22 01:34 Dichlorobromomethane ND 0.20 0.060 ug/L 11/11/22 01:34 cis-1,3-Dichloropropene ND 0.090 ug/L 0.20 11/11/22 01:34 **Toluene** 0.059 0.20 0.050 ug/L 11/11/22 01:34 ND 0.20 0.092 ug/L trans-1,3-Dichloropropene 11/11/22 01:34 1,1,2-Trichloroethane ND 0.20 0.070 ug/L 11/11/22 01:34 Tetrachloroethene ND 0.24 0.084 ug/L 11/11/22 01:34 1,3-Dichloropropane ND 0.20 0.025 ug/L 11/11/22 01:34 0.055 ug/L ND Chlorodibromomethane 0.20 11/11/22 01:34 Ethylene Dibromide ND 0.10 0.025 ug/L 11/11/22 01:34 0.20 0.060 ug/L 11/11/22 01:34 Chlorobenzene 0.28 1,1,1,2-Tetrachloroethane ND 0.30 0.038 ug/L 11/11/22 01:34 Ethylbenzene ND 0.20 0.030 ug/L 11/11/22 01:34 m-Xylene & p-Xylene ND 0.50 0.12 ug/L 11/11/22 01:34 o-Xylene ND 0.50 0.15 ug/L 11/11/22 01:34 Styrene ND 1.0 0.19 ug/L 11/11/22 01:34 Bromoform ND 0.50 0.16 ug/L 11/11/22 01:34 Isopropylbenzene ND 1.0 0.19 ug/L 11/11/22 01:34 0.20 0.038 ug/L Bromobenzene ND 11/11/22 01:34 ND 1,1,2,2-Tetrachloroethane 0.20 0.056 ug/L 11/11/22 01:34 1,2,3-Trichloropropane ND 0.20 0.050 ug/L 11/11/22 01:34 ND 0.091 ug/L N-Propylbenzene 0.30 11/11/22 01:34 2-Chlorotoluene ND 0.50 0.12 ug/L 11/11/22 01:34 4-Chlorotoluene ND 0.30 0.12 ug/L 11/11/22 01:34

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Client: ERM-West Job ID: 580-119876-1

Project/Site: Arkema - Q4 2022 Groundwater Event

Client Sample ID: PA-32i-110822

Lab Sample ID: 580-119876-15 Date Collected: 11/08/22 09:58

Matrix: Water

Date Received: 11/09/22 15:05

General Chemistry

Chloride (MCAWW 300.0)

Analyte

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3,5-Trimethylbenzene	ND		0.50	0.15	ug/L			11/11/22 01:34	1
tert-Butylbenzene	ND		0.50	0.26	ug/L			11/11/22 01:34	1
1,2,4-Trimethylbenzene	ND		0.50	0.20	ug/L			11/11/22 01:34	1
sec-Butylbenzene	ND		1.0	0.17	ug/L			11/11/22 01:34	1
4-Isopropyltoluene	ND		0.50	0.15	ug/L			11/11/22 01:34	1
1,3-Dichlorobenzene	ND		0.30	0.050	ug/L			11/11/22 01:34	1
1,4-Dichlorobenzene	ND		0.30	0.050	ug/L			11/11/22 01:34	1
n-Butylbenzene	ND		1.0	0.23	ug/L			11/11/22 01:34	1
1,2-Dichlorobenzene	0.22	J	0.30	0.038	ug/L			11/11/22 01:34	1
1,2-Dibromo-3-Chloropropane	ND		2.0	0.17	ug/L			11/11/22 01:34	1
1,2,4-Trichlorobenzene	ND		0.50	0.17	ug/L			11/11/22 01:34	1
Hexachlorobutadiene	ND		0.50	0.067				11/11/22 01:34	1
Naphthalene	ND		1.0	0.22	ug/L			11/11/22 01:34	1
1,2,3-Trichlorobenzene	ND		0.50	0.15	ug/L			11/11/22 01:34	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	93		80 - 120					11/11/22 01:34	
Dibromofluoromethane (Surr)	110		80 - 120					11/11/22 01:34	1
4-Bromofluorobenzene (Surr)	97		80 - 120					11/11/22 01:34	1
1,2-Dichloroethane-d4 (Surr)	119		80 - 120					11/11/22 01:34	
Method: SW846 8260D - Vo	olatile Organic	Compound	ds by GC/MS	- RA					
Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	0.31	F1	0.020	0.013	ug/L			11/14/22 19:44	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	98		80 - 120					11/14/22 19:44	1
Dibromofluoromethane (Surr)	111		80 - 120					11/14/22 19:44	1
4-Bromofluorobenzene (Surr)	96		80 - 120					11/14/22 19:44	1
1,2-Dichloroethane-d4 (Surr)	120		80 - 120					11/14/22 19:44	
	levete (IC)								
Method: EPA 314.0 - Perch	iorate (ic)								
Method: EPA 314.0 - Perch Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac

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12/13/2022

RL

1.5

MDL Unit

0.43 mg/L

Prepared

Analyzed

12/01/22 02:43

Result Qualifier

75 F1

Dil Fac

Client: ERM-West Job ID: 580-119876-1

Project/Site: Arkema - Q4 2022 Groundwater Event

Client Sample ID: PA-03-110822

Lab Sample ID: 580-119876-16 Date Collected: 11/08/22 11:01

Matrix: Water

Date Received: 11/09/22 15:05 Method: SW846 8260D - Volatile Organic Compounds by GC/MS Dil Fac Analyte Result Qualifier **MDL** Unit D Prepared Analyzed Dichlorodifluoromethane ND 0.40 0.13 ug/L 11/10/22 23:06 0.50 Chloromethane 0.20 J*+ 0.14 ug/L 11/10/22 23:06 Vinyl chloride ND 0.020 0.013 ug/L 11/10/22 23:06 ND 0.13 ug/L Bromomethane 0.50 11/10/22 23:06 Chloroethane ND 0.50 0.096 ug/L 11/10/22 23:06 Carbon disulfide ND 0.30 0.083 ug/L 11/10/22 23:06 Trichlorofluoromethane ND 0.50 0.12 ug/L 11/10/22 23:06 1.1-Dichloroethene ND 0.20 0.035 ug/L 11/10/22 23:06 Acetone ND 10 3.1 ug/L 11/10/22 23:06 Methylene Chloride ND 5.0 1.2 ug/L 11/10/22 23:06 Methyl tert-butyl ether ND 0.30 0.070 ug/L 11/10/22 23:06 2-Butanone (MEK) ND 10 2.5 ug/L 11/10/22 23:06 trans-1,2-Dichloroethene ND 0.20 0.033 ug/L 11/10/22 23:06 0.20 0.025 ug/L 11/10/22 23:06 1,1-Dichloroethane 0.14 J 0.060 ug/L ND 0.50 11/10/22 23:06 2,2-Dichloropropane ND 0.055 cis-1,2-Dichloroethene 0.20 ug/L 11/10/22 23:06 Chlorobromomethane ND 0.20 0.050 ug/L 11/10/22 23:06 0.20 0.030 ug/L 11/10/22 23:06 Chloroform 0.042 1.1.1-Trichloroethane ND 0.20 0.025 ug/L 11/10/22 23:06 Carbon tetrachloride ND 0.20 0.025 ug/L 11/10/22 23:06 ND 0.20 0.084 ug/L 11/10/22 23:06 1,1-Dichloropropene 0.053 0.20 0.030 ug/L 11/10/22 23:06 **Benzene** 1,2-Dichloroethane 0.20 0.043 ug/L ND 11/10/22 23:06 Trichloroethene ND 0.20 0.066 ug/L 11/10/22 23:06 1,2-Dichloropropane ND 0.20 0.060 ug/L 11/10/22 23:06 ND 4-Methyl-2-pentanone (MIBK) 10 1.7 ug/L 11/10/22 23:06 Dibromomethane ND 0.20 0.062 ug/L 11/10/22 23:06 Dichlorobromomethane ND 0.060 ug/L 0.20 11/10/22 23:06 0.090 ug/L cis-1,3-Dichloropropene ND 0.20 11/10/22 23:06 0.20 0.050 ug/L **Toluene** 0.16 J 11/10/22 23:06 trans-1,3-Dichloropropene ND 0.20 0.092 ug/L 11/10/22 23:06 1,1,2-Trichloroethane ND 0.20 0.070 ug/L 11/10/22 23:06 0.085 0.24 0.084 ug/L 11/10/22 23:06 **Tetrachloroethene** ND 1,3-Dichloropropane 0.20 0.025 ug/L 11/10/22 23:06 Chlorodibromomethane ND 0.20 0.055 ug/L 11/10/22 23:06 Ethylene Dibromide ND 0.10 0.025 ug/L 11/10/22 23:06 0.060 ug/L Chlorobenzene ND 0.20 11/10/22 23:06 1,1,1,2-Tetrachloroethane ND 0.30 0.038 ug/L 11/10/22 23:06 Ethylbenzene ND 0.20 0.030 ug/L 11/10/22 23:06 m-Xylene & p-Xylene ND 0.50 0.12 ug/L 11/10/22 23:06 o-Xylene ND 0.50 0.15 ug/L 11/10/22 23:06 Styrene ND 1.0 0.19 ug/L 11/10/22 23:06 ND Bromoform 0.50 0.16 ug/L 11/10/22 23:06 Isopropylbenzene 0.19 ug/L ND 1.0 11/10/22 23:06 ND Bromobenzene 0.20 0.038 ug/L 11/10/22 23:06 1,1,2,2-Tetrachloroethane ND 0.20 0.056 ug/L 11/10/22 23:06 ND 0.050 ug/L 1,2,3-Trichloropropane 0.20 11/10/22 23:06 N-Propylbenzene ND 0.30 0.091 ug/L 11/10/22 23:06 0.12 ug/L 2-Chlorotoluene ND 0.50 11/10/22 23:06

Client: ERM-West Job ID: 580-119876-1

Project/Site: Arkema - Q4 2022 Groundwater Event

Client Sample ID: PA-03-110822

Date Received: 11/09/22 15:05

Chloride (MCAWW 300.0)

Lab Sample ID: 580-119876-16 Date Collected: 11/08/22 11:01

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Chlorotoluene	ND		0.30	0.12	ug/L			11/10/22 23:06	1
1,3,5-Trimethylbenzene	ND		0.50	0.15	ug/L			11/10/22 23:06	1
tert-Butylbenzene	ND		0.50	0.26	ug/L			11/10/22 23:06	1
1,2,4-Trimethylbenzene	ND		0.50	0.20	ug/L			11/10/22 23:06	1
sec-Butylbenzene	ND		1.0	0.17	ug/L			11/10/22 23:06	1
4-Isopropyltoluene	ND		0.50	0.15	ug/L			11/10/22 23:06	1
1,3-Dichlorobenzene	ND		0.30	0.050	ug/L			11/10/22 23:06	1
1,4-Dichlorobenzene	ND		0.30	0.050	ug/L			11/10/22 23:06	1
n-Butylbenzene	ND		1.0	0.23	ug/L			11/10/22 23:06	1
1,2-Dichlorobenzene	ND		0.30	0.038	ug/L			11/10/22 23:06	1
1,2-Dibromo-3-Chloropropane	ND		2.0	0.17	ug/L			11/10/22 23:06	1
1,2,4-Trichlorobenzene	ND		0.50	0.17	ug/L			11/10/22 23:06	1
Hexachlorobutadiene	ND		0.50	0.067	ug/L			11/10/22 23:06	1
Naphthalene	ND		1.0	0.22	ug/L			11/10/22 23:06	1
1,2,3-Trichlorobenzene	ND		0.50	0.15	ug/L			11/10/22 23:06	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	96		80 - 120			•		11/10/22 23:06	1
Dibromofluoromethane (Surr)	111		80 - 120					11/10/22 23:06	1
4-Bromofluorobenzene (Surr)	93		80 - 120					11/10/22 23:06	1
1,2-Dichloroethane-d4 (Surr)	119		80 - 120					11/10/22 23:06	1
Method: EPA 314.0 - Perch	lorate (IC)								
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		8.0	4.0	ug/L			11/23/22 15:00	2
General Chemistry									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac

1.5

6.2

0.43 mg/L

12/13/2022

12/03/22 05:34

Client: ERM-West Job ID: 580-119876-1

Project/Site: Arkema - Q4 2022 Groundwater Event

Client Sample ID: PA-17iR-110822

Date Received: 11/09/22 15:05

Lab Sample ID: 580-119876-17 Date Collected: 11/08/22 11:27

Matrix: Water

Analyte		Qualifier	RL	MDL		<u>D</u> .	Prepared	Analyzed	Dil Fa
Dichlorodifluoromethane	ND	*+	4.0		ug/L			11/14/22 21:48	1
Chloromethane	ND		5.0	1.4	ug/L			11/14/22 21:48	1
Vinyl chloride	0.15	J	0.20	0.13	ug/L			11/14/22 21:48	1
Bromomethane	ND		5.0	1.3	ug/L			11/14/22 21:48	1
Chloroethane	ND	*+	5.0	0.96	ug/L			11/14/22 21:48	1
Carbon disulfide	ND		3.0	0.83	ug/L			11/14/22 21:48	1
Trichlorofluoromethane	ND		5.0	1.2	ug/L			11/14/22 21:48	1
1,1-Dichloroethene	ND		2.0	0.35	ug/L			11/14/22 21:48	1
Acetone	37	J *+	100	31	ug/L			11/14/22 21:48	1
Methylene Chloride	ND		50	12	ug/L			11/14/22 21:48	1
Methyl tert-butyl ether	ND		3.0	0.70	ug/L			11/14/22 21:48	1
2-Butanone (MEK)	ND		100		ug/L			11/14/22 21:48	1
trans-1,2-Dichloroethene	ND		2.0	0.33	ug/L			11/14/22 21:48	1
1,1-Dichloroethane	ND		2.0		ug/L			11/14/22 21:48	1
2,2-Dichloropropane	ND		5.0		ug/L			11/14/22 21:48	1
cis-1,2-Dichloroethene	0.78		2.0		ug/L			11/14/22 21:48	1
Chlorobromomethane	ND	-	2.0		ug/L			11/14/22 21:48	1
Chloroform	ND		2.0		ug/L			11/14/22 21:48	1
1,1,1-Trichloroethane	ND		2.0		ug/L			11/14/22 21:48	
Carbon tetrachloride	ND		2.0		ug/L			11/14/22 21:48	1
1,1-Dichloropropene	ND		2.0		ug/L			11/14/22 21:48	,
Benzene	ND		2.0		ug/L			11/14/22 21:48	 1
1,2-Dichloroethane	ND		2.0		ug/L			11/14/22 21:48	1
Trichloroethene	2.6		2.0		ug/L			11/14/22 21:48	1
1,2-Dichloropropane	ND		2.0		ug/L			11/14/22 21:48	
4-Methyl-2-pentanone (MIBK)	ND		100		ug/L			11/14/22 21:48	1
Dibromomethane	ND		2.0		ug/L			11/14/22 21:48	,
Dichlorobromomethane	ND		2.0		ug/L			11/14/22 21:48	
cis-1,3-Dichloropropene	ND		2.0		ug/L			11/14/22 21:48	,
Toluene	ND		2.0		ug/L			11/14/22 21:48	
trans-1,3-Dichloropropene	ND		2.0		ug/L			11/14/22 21:48	;
1,1,2-Trichloroethane	ND		2.0		ug/L ug/L			11/14/22 21:48	,
Tetrachloroethene	ND ND		2.4		ug/L ug/L			11/14/22 21:48	
	ND		2.4					11/14/22 21:48	1
1,3-Dichloropropane Chlorodibromomethane	ND ND		2.0		ug/L ug/L			11/14/22 21:48	1
					-				
Ethylene Dibromide	ND		1.0		ug/L			11/14/22 21:48	1
Chlorobenzene	ND		2.0		ug/L			11/14/22 21:48	1
1,1,1,2-Tetrachloroethane	ND		3.0		ug/L			11/14/22 21:48	1
Ethylbenzene	ND		2.0		ug/L			11/14/22 21:48	
m-Xylene & p-Xylene	ND		5.0		ug/L			11/14/22 21:48	1
o-Xylene	ND		5.0		ug/L			11/14/22 21:48	1
Styrene	ND		10		ug/L			11/14/22 21:48	
Bromoform	ND		5.0		ug/L			11/14/22 21:48	1
Isopropylbenzene	ND		10		ug/L			11/14/22 21:48	1
Bromobenzene	ND		2.0		ug/L			11/14/22 21:48	
1,1,2,2-Tetrachloroethane	ND		2.0		ug/L			11/14/22 21:48	1
1,2,3-Trichloropropane	ND		2.0	0.50	ug/L			11/14/22 21:48	1
N-Propylbenzene	ND		3.0	0.91	ug/L			11/14/22 21:48	1
2-Chlorotoluene	ND		5.0	1.2	ug/L			11/14/22 21:48	1

Client: ERM-West Job ID: 580-119876-1

Project/Site: Arkema - Q4 2022 Groundwater Event

Client Sample ID: PA-17iR-110822

Date Received: 11/09/22 15:05

Lab Sample ID: 580-119876-17 Date Collected: 11/08/22 11:27

Matrix: Water

Analyte	Result Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Chlorotoluene	ND ND	3.0	1.2	ug/L			11/14/22 21:48	10
1,3,5-Trimethylbenzene	ND	5.0	1.5	ug/L			11/14/22 21:48	10
tert-Butylbenzene	ND	5.0	2.6	ug/L			11/14/22 21:48	10
1,2,4-Trimethylbenzene	ND	5.0	2.0	ug/L			11/14/22 21:48	10
sec-Butylbenzene	ND	10	1.7	ug/L			11/14/22 21:48	10
4-Isopropyltoluene	ND	5.0	1.5	ug/L			11/14/22 21:48	10
1,3-Dichlorobenzene	ND	3.0	0.50	ug/L			11/14/22 21:48	10
1,4-Dichlorobenzene	ND	3.0	0.50	ug/L			11/14/22 21:48	10
n-Butylbenzene	ND	10	2.3	ug/L			11/14/22 21:48	10
1,2-Dichlorobenzene	ND	3.0	0.38	ug/L			11/14/22 21:48	10
1,2-Dibromo-3-Chloropropane	ND	20	1.7	ug/L			11/14/22 21:48	10
1,2,4-Trichlorobenzene	ND	5.0	1.7	ug/L			11/14/22 21:48	10
Hexachlorobutadiene	ND	5.0	0.67	ug/L			11/14/22 21:48	10
Naphthalene	ND	10	2.2	ug/L			11/14/22 21:48	10
1,2,3-Trichlorobenzene	ND	5.0	1.5	ug/L			11/14/22 21:48	10

Surrogate	%Recovery Qualifie	r Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	96	80 - 120		11/14/22 21:48	10
Dibromofluoromethane (Surr)	111	80 - 120		11/14/22 21:48	10
4-Bromofluorobenzene (Surr)	94	80 - 120		11/14/22 21:48	10
1,2-Dichloroethane-d4 (Surr)	119	80 - 120		11/14/22 21:48	10

Method: EPA 314.0 - Pe	erchlorate (IC)							
Analyte	Result Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND ND	20	10	ug/L			11/16/22 19:46	5

General Chemistry									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (MCAWW 300.0)	13		1.5	0.43	mg/L			12/03/22 05:46	1

Client: ERM-West Job ID: 580-119876-1

Project/Site: Arkema - Q4 2022 Groundwater Event

Client Sample ID: PA-27d-110822

Date Received: 11/09/22 15:05

Date Collected: 11/08/22 12:02

Lab Sample ID: 580-119876-18

Matrix: Water

Analyte	Result Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dichlorodifluoromethane	ND	1.0		ug/L			11/18/22 18:47	1
Chloromethane	ND	1.0	0.28	ug/L			11/18/22 18:47	1
Vinyl chloride	ND	1.0	0.22	ug/L			11/18/22 18:47	1
Bromomethane	ND	1.0	0.21	ug/L			11/18/22 18:47	1
Chloroethane	ND	1.0	0.35	ug/L			11/18/22 18:47	1
Trichlorofluoromethane	ND	1.0	0.36	ug/L			11/18/22 18:47	1
Carbon disulfide	ND	1.0	0.53	ug/L			11/18/22 18:47	1
1,1-Dichloroethene	ND	1.0	0.28	ug/L			11/18/22 18:47	1
Acetone	3.5 J	15	3.2	ug/L			11/18/22 18:47	1
Methylene Chloride	ND *-	3.0	1.4	ug/L			11/18/22 18:47	1
Methyl tert-butyl ether	ND	1.0		ug/L			11/18/22 18:47	1
trans-1,2-Dichloroethene	ND	1.0		ug/L			11/18/22 18:47	1
1,1-Dichloroethane	0.32 J	1.0		ug/L			11/18/22 18:47	1
2-Butanone (MEK)	ND	15		ug/L			11/18/22 18:47	1
2,2-Dichloropropane	ND	1.0		ug/L			11/18/22 18:47	1
cis-1,2-Dichloroethene	0.85 J	1.0		ug/L			11/18/22 18:47	1
Bromochloromethane	ND	1.0		ug/L			11/18/22 18:47	1
Chloroform	ND	1.0		ug/L			11/18/22 18:47	1
1,1,1-Trichloroethane	ND	1.0		ug/L			11/18/22 18:47	· · · · · · 1
Carbon tetrachloride	ND	1.0		ug/L			11/18/22 18:47	1
1,1-Dichloropropene	ND	1.0		ug/L			11/18/22 18:47	1
Benzene	ND	1.0		ug/L			11/18/22 18:47	· · · · · · · · · · · · · · · · · · ·
1,2-Dichloroethane	ND	1.0		ug/L			11/18/22 18:47	1
Trichloroethene	ND	1.0		ug/L			11/18/22 18:47	1
1,2-Dichloropropane	ND	1.0		ug/L ug/L			11/18/22 18:47	
• •	ND ND	5.0		ug/L ug/L			11/18/22 18:47	1
4-Methyl-2-pentanone (MIBK) Dibromomethane	ND ND	1.0		-			11/18/22 18:47	1
Bromodichloromethane				ug/L				[
	ND *	1.0		ug/L			11/18/22 18:47	1
cis-1,3-Dichloropropene	ND *+	1.0		ug/L			11/18/22 18:47	1
Toluene	ND	1.0		ug/L			11/18/22 18:47	
trans-1,3-Dichloropropene	ND *+	1.0		ug/L			11/18/22 18:47	1
1,1,2-Trichloroethane	ND	1.0		ug/L			11/18/22 18:47	1
Tetrachloroethene	ND	1.0		ug/L			11/18/22 18:47	
1,3-Dichloropropane	ND *+	1.0		ug/L			11/18/22 18:47	1
Dibromochloromethane	ND	1.0		ug/L			11/18/22 18:47	1
1,2-Dibromoethane	ND	1.0	0.40				11/18/22 18:47	1
Chlorobenzene	ND	1.0		ug/L			11/18/22 18:47	1
1,1,1,2-Tetrachloroethane	ND	1.0		ug/L			11/18/22 18:47	1
Ethylbenzene	ND	1.0		ug/L			11/18/22 18:47	1
m-Xylene & p-Xylene	ND	2.0		ug/L			11/18/22 18:47	1
o-Xylene	ND	1.0	0.39	ug/L			11/18/22 18:47	1
Styrene	ND	1.0	0.53	ug/L			11/18/22 18:47	1
Bromoform	ND	1.0	0.51	ug/L			11/18/22 18:47	1
Isopropylbenzene	ND	1.0		ug/L			11/18/22 18:47	1
Bromobenzene	ND	1.0	0.43	ug/L			11/18/22 18:47	1
1,1,2,2-Tetrachloroethane	ND	1.0	0.52	ug/L			11/18/22 18:47	1
1,2,3-Trichloropropane	ND	1.0	0.41	ug/L			11/18/22 18:47	1
N-Propylbenzene	ND	1.0	0.50	ug/L			11/18/22 18:47	1
2-Chlorotoluene	ND	1.0	0.51	ug/L			11/18/22 18:47	1

Eurofins Seattle

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Client: ERM-West Job ID: 580-119876-1

Project/Site: Arkema - Q4 2022 Groundwater Event

Client Sample ID: PA-27d-110822

Chloride (MCAWW 300.0)

Lab Sample ID: 580-119876-18

Date Collected: 11/08/22 12:02 **Matrix: Water** Date Received: 11/09/22 15:05

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
4-Chlorotoluene	ND		1.0	0.38	ug/L			11/18/22 18:47	
t-Butylbenzene	ND		2.0	0.58	ug/L			11/18/22 18:47	
1,2,4-Trimethylbenzene	ND		3.0	0.61	ug/L			11/18/22 18:47	
sec-Butylbenzene	ND		1.0	0.49	ug/L			11/18/22 18:47	
4-Isopropyltoluene	ND		1.0	0.28	ug/L			11/18/22 18:47	
1,3-Dichlorobenzene	ND	*_	1.0	0.48	ug/L			11/18/22 18:47	
1,4-Dichlorobenzene	ND		1.0	0.46	ug/L			11/18/22 18:47	
n-Butylbenzene	ND		1.0	0.44	ug/L			11/18/22 18:47	
1,2-Dichlorobenzene	ND		1.0	0.46	ug/L			11/18/22 18:47	
1,2-Dibromo-3-Chloropropane	ND		3.0	0.57	ug/L			11/18/22 18:47	
1,2,4-Trichlorobenzene	ND	*1	1.0	0.33	ug/L			11/18/22 18:47	
Hexachlorobutadiene	ND		3.0		ug/L			11/18/22 18:47	
Naphthalene	ND		3.0	0.93	ug/L			11/18/22 18:47	
1,2,3-Trichlorobenzene	ND		2.0		ug/L			11/18/22 18:47	
1,3,5-Trimethylbenzene	ND		1.0	0.55	ug/L			11/18/22 18:47	
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fa
Toluene-d8 (Surr)	83		80 - 120					11/18/22 18:47	
1,2-Dichloroethane-d4 (Surr)	96		80 - 120					11/18/22 18:47	
4-Bromofluorobenzene (Surr)	101		80 - 120					11/18/22 18:47	
Dibromofluoromethane (Surr)	101		80 - 120					11/18/22 18:47	
Method: SW846 8260D - Vo	olatile Organic	Compound	ds by GC/MS	- RA					
Analyte	Result	Qualifier	RL	MDI	Unit	D	Prepared		
Methylene Chloride						_		Analyzed	Dil Fa
Would be of the order	ND	Н	3.0	1.4	ug/L	<u>-</u>		Analyzed 12/07/22 21:02	
•	ND ND		3.0 1.0	1.4	ug/L ug/L	<u>=</u> .			Dil Fa
Methyl tert-butyl ether		Н		1.4 0.44	•	_ .		12/07/22 21:02	
Methyl tert-butyl ether 1,1,1-Trichloroethane	ND	H H	1.0	1.4 0.44 0.39	ug/L	<u>=</u> .		12/07/22 21:02 12/07/22 21:02	
Methyl tert-butyl ether 1,1,1-Trichloroethane 1,3-Dichlorobenzene	ND ND	H H H	1.0 1.0	1.4 0.44 0.39 0.48	ug/L ug/L	<u> </u>		12/07/22 21:02 12/07/22 21:02 12/07/22 21:02	
Methyl tert-butyl ether 1,1,1-Trichloroethane 1,3-Dichlorobenzene 1,2,4-Trichlorobenzene	ND ND ND	Н Н Ј Н	1.0 1.0 1.0	1.4 0.44 0.39 0.48	ug/L ug/L ug/L	 .	Prepared	12/07/22 21:02 12/07/22 21:02 12/07/22 21:02 12/07/22 21:02	
Methyl tert-butyl ether 1,1,1-Trichloroethane 1,3-Dichlorobenzene 1,2,4-Trichlorobenzene Surrogate	ND ND ND 0.56	Н Н Ј Н	1.0 1.0 1.0 1.0	1.4 0.44 0.39 0.48	ug/L ug/L ug/L	Z .		12/07/22 21:02 12/07/22 21:02 12/07/22 21:02 12/07/22 21:02 12/07/22 21:02	Dil Fa
Methyl tert-butyl ether 1,1,1-Trichloroethane 1,3-Dichlorobenzene 1,2,4-Trichlorobenzene Surrogate Toluene-d8 (Surr)	ND ND ND 0.56 %Recovery	Н Н Ј Н	1.0 1.0 1.0 1.0	1.4 0.44 0.39 0.48	ug/L ug/L ug/L	= . 		12/07/22 21:02 12/07/22 21:02 12/07/22 21:02 12/07/22 21:02 12/07/22 21:02 Analyzed	Dil Fa
Methyl tert-butyl ether 1,1,1-Trichloroethane 1,3-Dichlorobenzene 1,2,4-Trichlorobenzene Surrogate Toluene-d8 (Surr) 1,2-Dichloroethane-d4 (Surr)	ND ND ND 0.56 %Recovery	Н Н Ј Н	1.0 1.0 1.0 1.0 2 Limits 80 - 120	1.4 0.44 0.39 0.48	ug/L ug/L ug/L	<u>-</u>		12/07/22 21:02 12/07/22 21:02 12/07/22 21:02 12/07/22 21:02 12/07/22 21:02 Analyzed 12/07/22 21:02	Dil Fa
Methyl tert-butyl ether 1,1,1-Trichloroethane 1,3-Dichlorobenzene 1,2,4-Trichlorobenzene Surrogate Toluene-d8 (Surr) 1,2-Dichloroethane-d4 (Surr) 4-Bromofluorobenzene (Surr)	ND ND 0.56 %Recovery 108 80	Н Н Ј Н	1.0 1.0 1.0 1.0 2.0 1.0 1.0 80 - 120	1.4 0.44 0.39 0.48	ug/L ug/L ug/L	= .		12/07/22 21:02 12/07/22 21:02 12/07/22 21:02 12/07/22 21:02 12/07/22 21:02 Analyzed 12/07/22 21:02 12/07/22 21:02	Dil Fa
Methyl tert-butyl ether 1,1,1-Trichloroethane 1,3-Dichlorobenzene 1,2,4-Trichlorobenzene Surrogate Toluene-d8 (Surr) 1,2-Dichloroethane-d4 (Surr) 4-Bromofluorobenzene (Surr) Dibromofluoromethane (Surr)	ND ND 0.56 %Recovery 108 80 94 101	Н Н Ј Н	1.0 1.0 1.0 1.0 2.0 1.0 2.0 80 - 120 80 - 120 80 - 120	1.4 0.44 0.39 0.48	ug/L ug/L ug/L			12/07/22 21:02 12/07/22 21:02 12/07/22 21:02 12/07/22 21:02 12/07/22 21:02 Analyzed 12/07/22 21:02 12/07/22 21:02 12/07/22 21:02 12/07/22 21:02	Dil Fa
Methyl tert-butyl ether 1,1,1-Trichloroethane 1,3-Dichlorobenzene 1,2,4-Trichlorobenzene Surrogate Toluene-d8 (Surr) 1,2-Dichloroethane-d4 (Surr) 4-Bromofluorobenzene (Surr) Dibromofluoromethane (Surr) Method: EPA 314.0 - Perch	ND ND 0.56 **Recovery 108 80 94 101	Н Н Ј Н	1.0 1.0 1.0 1.0 2.0 1.0 2.0 80 - 120 80 - 120 80 - 120	1.4 0.44 0.39 0.48 0.33	ug/L ug/L ug/L ug/L			12/07/22 21:02 12/07/22 21:02 12/07/22 21:02 12/07/22 21:02 12/07/22 21:02 Analyzed 12/07/22 21:02 12/07/22 21:02 12/07/22 21:02 12/07/22 21:02	Dil Fa
Methyl tert-butyl ether 1,1,1-Trichloroethane 1,3-Dichlorobenzene 1,2,4-Trichlorobenzene Surrogate Toluene-d8 (Surr) 1,2-Dichloroethane-d4 (Surr) 4-Bromofluorobenzene (Surr) Dibromofluoromethane (Surr) Method: EPA 314.0 - Perch Analyte Perchlorate	ND ND 0.56 **Recovery 108 80 94 101	H H J H Qualifier	1.0 1.0 1.0 1.0 2 <i>Limits</i> 80 - 120 80 - 120 80 - 120	1.4 0.44 0.39 0.48 0.33	ug/L ug/L ug/L ug/L		Prepared	12/07/22 21:02 12/07/22 21:02 12/07/22 21:02 12/07/22 21:02 12/07/22 21:02 Analyzed 12/07/22 21:02 12/07/22 21:02 12/07/22 21:02 12/07/22 21:02	
Methyl tert-butyl ether 1,1,1-Trichloroethane 1,3-Dichlorobenzene 1,2,4-Trichlorobenzene Surrogate Toluene-d8 (Surr) 1,2-Dichloroethane-d4 (Surr) 4-Bromofluorobenzene (Surr) Dibromofluoromethane (Surr) Method: EPA 314.0 - Perch	ND ND 0.56 **Recovery 108 80 94 101 **Ilorate (IC) Result	H H J H Qualifier	1.0 1.0 1.0 1.0 Limits 80 - 120 80 - 120 80 - 120	1.4 0.44 0.39 0.48 0.33	ug/L ug/L ug/L ug/L		Prepared	12/07/22 21:02 12/07/22 21:02 12/07/22 21:02 12/07/22 21:02 12/07/22 21:02 12/07/22 21:02 12/07/22 21:02 12/07/22 21:02 12/07/22 21:02 12/07/22 21:02	Dil Fa

12/13/2022

100

12/03/22 05:58

150

960

43 mg/L

Client: ERM-West Job ID: 580-119876-1

Project/Site: Arkema - Q4 2022 Groundwater Event

Method: 8260D - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 580-409568/7

Matrix: Water

Analysis Batch: 409568

Client	Sample	ID: N	lethod	Blank	
	Pre	ер Ту	pe: To	tal/NA	

Analyte		MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dichlorodifluoromethane	ND	<u>Qualifier</u>	0.40		ug/L		Trepared	11/10/22 17:46	1
Chloromethane	ND		0.50		ug/L			11/10/22 17:46	1
Vinyl chloride	ND		0.020	0.013	-			11/10/22 17:46	1
Bromomethane	ND		0.50		ug/L			11/10/22 17:46	1
Chloroethane	ND		0.50	0.096	-			11/10/22 17:46	1
Carbon disulfide	ND		0.30	0.083	-			11/10/22 17:46	1
Trichlorofluoromethane	ND		0.50		ug/L			11/10/22 17:46	1
1,1-Dichloroethene	ND		0.20	0.035	-			11/10/22 17:46	1
Acetone	ND		10		ug/L			11/10/22 17:46	1
Methylene Chloride	ND		5.0		ug/L			11/10/22 17:46	1
Methyl tert-butyl ether	ND		0.30	0.070	-			11/10/22 17:46	1
2-Butanone (MEK)	ND		10		ug/L			11/10/22 17:46	1
trans-1,2-Dichloroethene	ND		0.20	0.033				11/10/22 17:46	·
1,1-Dichloroethane	ND		0.20	0.025	-			11/10/22 17:46	1
2,2-Dichloropropane	ND		0.50	0.060	-			11/10/22 17:46	1
cis-1,2-Dichloroethene	ND		0.20	0.055				11/10/22 17:46	· · · · · · · 1
Chlorobromomethane	ND		0.20	0.050	-			11/10/22 17:46	1
Chloroform	ND		0.20	0.030	-			11/10/22 17:46	1
1,1,1-Trichloroethane	ND		0.20	0.025				11/10/22 17:46	· · · · · · · · · · · · · · · · · · ·
Carbon tetrachloride	ND		0.20	0.025	-			11/10/22 17:46	1
1,1-Dichloropropene	ND		0.20	0.084	-			11/10/22 17:46	1
Benzene	ND		0.20	0.030	.			11/10/22 17:46	· · · · · · · · · · · · · · · · · · ·
1,2-Dichloroethane	ND		0.20	0.043	-			11/10/22 17:46	1
Trichloroethene	ND		0.20	0.066	•			11/10/22 17:46	1
1,2-Dichloropropane	ND		0.20	0.060	•			11/10/22 17:46	· · · · · · · · · · · · · · · · · · ·
4-Methyl-2-pentanone (MIBK)	ND		10		ug/L			11/10/22 17:46	1
Dibromomethane	ND		0.20	0.062	-			11/10/22 17:46	1
Dichlorobromomethane	ND		0.20	0.060				11/10/22 17:46	
cis-1,3-Dichloropropene	ND		0.20	0.090	•			11/10/22 17:46	1
Toluene	ND		0.20	0.050	-			11/10/22 17:46	1
trans-1,3-Dichloropropene	ND		0.20	0.092				11/10/22 17:46	· · · · · · · 1
1,1,2-Trichloroethane	ND		0.20	0.070	-			11/10/22 17:46	1
Tetrachloroethene	ND		0.24	0.084	-			11/10/22 17:46	1
1,3-Dichloropropane	ND		0.20	0.025				11/10/22 17:46	
Chlorodibromomethane	0.0715	Л	0.20	0.055	-			11/10/22 17:46	1
Ethylene Dibromide	ND	Ü	0.10	0.025	-			11/10/22 17:46	1
Chlorobenzene	ND		0.20	0.060				11/10/22 17:46	
1,1,1,2-Tetrachloroethane	ND		0.30	0.038	-			11/10/22 17:46	1
Ethylbenzene	ND		0.20	0.030	-			11/10/22 17:46	1
m-Xylene & p-Xylene	ND		0.50		ug/L			11/10/22 17:46	
o-Xylene	ND		0.50		ug/L			11/10/22 17:46	1
Styrene	ND		1.0		ug/L			11/10/22 17:46	1
Bromoform	0.211		0.50		ug/L			11/10/22 17:46	······່
Isopropylbenzene	0.211 ND	J	1.0		ug/L ug/L			11/10/22 17:46	1
Bromobenzene	ND ND		0.20	0.19	-			11/10/22 17:46	1
1,1,2,2-Tetrachloroethane	ND		0.20	0.056				11/10/22 17:46	
1,2,3-Trichloropropane	ND ND		0.20	0.050	-			11/10/22 17:46	1
N-Propylbenzene	ND ND		0.20	0.050	-			11/10/22 17:46	1

Client: ERM-West Job ID: 580-119876-1

Project/Site: Arkema - Q4 2022 Groundwater Event

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

115

Lab Sample ID: MB 580-409568/7

Matrix: Water

Analysis Batch: 409568

Client Sample ID: Method Blank

Prep Type: Total/NA

	MB	MB							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Chlorotoluene	ND		0.50	0.12	ug/L			11/10/22 17:46	1
4-Chlorotoluene	ND		0.30	0.12	ug/L			11/10/22 17:46	1
1,3,5-Trimethylbenzene	ND		0.50	0.15	ug/L			11/10/22 17:46	1
tert-Butylbenzene	ND		0.50	0.26	ug/L			11/10/22 17:46	1
1,2,4-Trimethylbenzene	ND		0.50	0.20	ug/L			11/10/22 17:46	1
sec-Butylbenzene	ND		1.0	0.17	ug/L			11/10/22 17:46	1
4-Isopropyltoluene	ND		0.50	0.15	ug/L			11/10/22 17:46	1
1,3-Dichlorobenzene	ND		0.30	0.050	ug/L			11/10/22 17:46	1
1,4-Dichlorobenzene	ND		0.30	0.050	ug/L			11/10/22 17:46	•
n-Butylbenzene	ND		1.0	0.23	ug/L			11/10/22 17:46	1
1,2-Dichlorobenzene	ND		0.30	0.038	ug/L			11/10/22 17:46	•
1,2-Dibromo-3-Chloropropane	0.196	J	2.0	0.17	ug/L			11/10/22 17:46	•
1,2,4-Trichlorobenzene	ND		0.50	0.17	ug/L			11/10/22 17:46	
Hexachlorobutadiene	ND		0.50	0.067	ug/L			11/10/22 17:46	1
Naphthalene	ND		1.0	0.22	ug/L			11/10/22 17:46	1
1,2,3-Trichlorobenzene	ND		0.50	0.15	ug/L			11/10/22 17:46	1

MB MB Surrogate %Recovery Qualifier Limits Prepared Dil Fac Analyzed Toluene-d8 (Surr) 98 80 - 120 11/10/22 17:46 Dibromofluoromethane (Surr) 107 80 - 120 11/10/22 17:46 4-Bromofluorobenzene (Surr) 95 80 - 120 11/10/22 17:46

80 - 120

Lab Sample ID: LCS 580-409568/4

Matrix: Water

Analysis Batch: 409568

1,2-Dichloroethane-d4 (Surr)

Client Sample	ID: Lab Control Sample
	Prep Type: Total/NA

11/10/22 17:46

	Spike	LCS	LCS				%Rec
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits
Dichlorodifluoromethane	5.00	8.50	*+	ug/L		170	20 - 150
Chloromethane	5.00	7.86	*+	ug/L		157	32 - 150
Vinyl chloride	5.00	6.97		ug/L		139	41 - 150
Bromomethane	5.00	7.28		ug/L		146	51 - 148
Chloroethane	5.00	7.52	*+	ug/L		150	54 - 140
Carbon disulfide	5.00	6.36		ug/L		127	54 - 142
Trichlorofluoromethane	5.00	6.37		ug/L		127	60 - 132
1,1-Dichloroethene	5.00	6.21		ug/L		124	60 - 129
Acetone	25.0	35.9		ug/L		144	49 - 150
Methylene Chloride	5.00	5.72		ug/L		114	40 - 142
Methyl tert-butyl ether	5.00	4.58		ug/L		92	61 - 131
2-Butanone (MEK)	25.0	25.0		ug/L		100	37 - 150
trans-1,2-Dichloroethene	5.00	5.44		ug/L		109	69 - 121
1,1-Dichloroethane	5.00	5.32		ug/L		106	74 - 120
2,2-Dichloropropane	5.00	4.94		ug/L		99	55 - 140
cis-1,2-Dichloroethene	5.00	5.29		ug/L		106	72 - 120
Chlorobromomethane	5.00	5.32		ug/L		106	79 - 121
Chloroform	5.00	5.41		ug/L		108	75 - 120
1,1,1-Trichloroethane	5.00	5.26		ug/L		105	70 - 121
Carbon tetrachloride	5.00	5.27		ug/L		105	66 - 130

Eurofins Seattle

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12/13/2022

Spike

Added

Client: ERM-West Job ID: 580-119876-1

LCS LCS

Result Qualifier

Unit

Project/Site: Arkema - Q4 2022 Groundwater Event

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 580-409568/4

Matrix: Water

Analyte

Analysis Batch: 409568

Client Sample ID: Lab Control Sample

Prep Type: Total/NA
%Rec

Limits

D %Rec

1,1-Dichloropropene	5.00	5.16	ug/L	103	72 - 125	
Benzene	5.00	5.46	ug/L	109	80 - 120	
1,2-Dichloroethane	5.00	5.22	ug/L	104	74 - 127	
Trichloroethene	5.00	5.11	ug/L	102	72 - 120	
1,2-Dichloropropane	5.00	5.25	ug/L	105	69 - 130	
4-Methyl-2-pentanone (MIBK)	25.0	24.6	ug/L	99	63 - 137	
Dibromomethane	5.00	5.27	ug/L	105	65 - 141	
Dichlorobromomethane	5.00	5.21	ug/L	104	74 - 131	
cis-1,3-Dichloropropene	5.00	4.76	ug/L	95	77 - 131	
Toluene	5.00	5.23	ug/L	105	80 - 126	
trans-1,3-Dichloropropene	5.00	4.82	ug/L	96	71 - 138	
1,1,2-Trichloroethane	5.00	5.14	ug/L	103	73 - 127	
Tetrachloroethene	5.00	4.91	ug/L	98	75 - 124	
1,3-Dichloropropane	5.00	5.22	ug/L	104	69 - 138	
Chlorodibromomethane	5.00	4.71	ug/L	94	62 - 141	
Ethylene Dibromide	5.00	5.31	ug/L	106	61 - 143	
Chlorobenzene	5.00	5.24	ug/L	105	74 - 123	
1,1,1,2-Tetrachloroethane	5.00	5.20	ug/L	104	69 - 127	
Ethylbenzene	5.00	5.61	ug/L	112	80 - 124	
m-Xylene & p-Xylene	5.00	5.47	ug/L	109	75 - 124	
o-Xylene	5.00	5.70	ug/L	114	71 - 124	
Styrene	5.00	5.66	ug/L	113	74 - 127	
Bromoform	5.00	4.28	ug/L	86	48 - 127	
Isopropylbenzene	5.00	5.80	ug/L	116	71 - 123	
Bromobenzene	5.00	4.86	ug/L	97	74 - 130	
1,1,2,2-Tetrachloroethane	5.00	5.31	ug/L	106	67 - 136	
1,2,3-Trichloropropane	5.00	5.41	ug/L	108	67 - 135	
N-Propylbenzene	5.00	5.46	ug/L	109	72 - 126	
2-Chlorotoluene	5.00	5.13	ug/L	103	73 - 120	
4-Chlorotoluene	5.00	5.24	ug/L	105	75 - 124	
1,3,5-Trimethylbenzene	5.00	5.56	ug/L	111	75 - 123	
tert-Butylbenzene	5.00	5.34	ug/L	107	70 - 129	
1,2,4-Trimethylbenzene	5.00	5.64	ug/L	113	71 - 127	
sec-Butylbenzene	5.00	5.73	ug/L	115	75 - 126	
4-Isopropyltoluene	5.00	5.80	ug/L	116	78 ₋ 125	
1,3-Dichlorobenzene	5.00	5.41	ug/L	108	72 - 125	
1,4-Dichlorobenzene	5.00	5.37	ug/L	107	71 - 129	
n-Butylbenzene	5.00	5.32	ug/L	106	69 - 127	
1,2-Dichlorobenzene	5.00	5.41	ug/L	108	72 - 129	

L	cs	LCS	

Surrogate	%Recovery Qualifier	Limits
Toluene-d8 (Surr)	100	80 - 120
Dibromofluoromethane (Surr)	103	80 - 120

1,2-Dibromo-3-Chloropropane

1,2,4-Trichlorobenzene

1,2,3-Trichlorobenzene

Hexachlorobutadiene

Naphthalene

Eurofins Seattle

87

107

102

98

114

55 - 135

60 - 130

63 - 130

54 - 137 60 - 136

5.00

5.00

5.00

5.00

5.00

4.37

5.34

5.12

4.91

5.69

ug/L

ug/L

ug/L

ug/L

ug/L

Client: ERM-West Job ID: 580-119876-1

Project/Site: Arkema - Q4 2022 Groundwater Event

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 580-409568/4

Matrix: Water

Analysis Batch: 409568

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

LCS LCS

	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	101		80 - 120
1,2-Dichloroethane-d4 (Surr)	101		80 - 120

Lab Sample ID: LCSD 580-409568/5 Client Sample ID: Lab Control Sample Dup

Matrix: Water

Analysis Batch: 409568

Prep	Type: Total/NA

	Spike	LCSD	LCSD				%Rec		RPD
Analyte	Added		Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Dichlorodifluoromethane	5.00	8.15	*+	ug/L		163	20 - 150	4	30
Chloromethane	5.00	7.51		ug/L		150	32 - 150	5	33
Vinyl chloride	5.00	6.63		ug/L		133	41 - 150	5	32
Bromomethane	5.00	6.97		ug/L		139	51 - 148	4	35
Chloroethane	5.00	7.26	*+	ug/L		145	54 - 140	4	33
Carbon disulfide	5.00	6.20		ug/L		124	54 - 142	2	34
Trichlorofluoromethane	5.00	6.08		ug/L		122	60 - 132	5	32
1,1-Dichloroethene	5.00	6.04		ug/L		121	60 - 129	3	29
Acetone	25.0	33.7		ug/L		135	49 - 150	6	24
Methylene Chloride	5.00	5.76		ug/L		115	40 - 142	1	25
Methyl tert-butyl ether	5.00	4.45		ug/L		89	61 - 131	3	27
2-Butanone (MEK)	25.0	24.5		ug/L		98	37 - 150	2	35
trans-1,2-Dichloroethene	5.00	5.45		ug/L		109	69 - 121	0	27
1,1-Dichloroethane	5.00	5.24		ug/L		105	74 - 120	2	26
2,2-Dichloropropane	5.00	4.82		ug/L		96	55 - 140	2	31
cis-1,2-Dichloroethene	5.00	5.24		ug/L		105	72 - 120	1	22
Chlorobromomethane	5.00	5.25		ug/L		105	79 - 121	1	20
Chloroform	5.00	5.30		ug/L		106	75 - 120	2	21
1,1,1-Trichloroethane	5.00	5.15		ug/L		103	70 - 121	2	24
Carbon tetrachloride	5.00	5.10		ug/L		102	66 - 130	3	24
1,1-Dichloropropene	5.00	5.03		ug/L		101	72 - 125	3	23
Benzene	5.00	5.38		ug/L		108	80 - 120	1	22
1,2-Dichloroethane	5.00	5.10		ug/L		102	74 - 127	2	21
Trichloroethene	5.00	4.95		ug/L		99	72 - 120	3	22
1,2-Dichloropropane	5.00	5.12		ug/L		102	69 - 130	3	22
4-Methyl-2-pentanone (MIBK)	25.0	23.9		ug/L		95	63 - 137	3	26
Dibromomethane	5.00	5.16		ug/L		103	65 - 141	2	22
Dichlorobromomethane	5.00	5.04		ug/L		101	74 - 131	3	21
cis-1,3-Dichloropropene	5.00	4.75		ug/L		95	77 - 131	0	24
Toluene	5.00	5.16		ug/L		103	80 - 126	1	20
trans-1,3-Dichloropropene	5.00	4.81		ug/L		96	71 - 138	0	26
1,1,2-Trichloroethane	5.00	4.99		ug/L		100	73 - 127	3	22
Tetrachloroethene	5.00	4.85		ug/L		97	75 - 124	1	20
1,3-Dichloropropane	5.00	5.12		ug/L		102	69 - 138	2	19
Chlorodibromomethane	5.00	4.60		ug/L		92	62 - 141	2	22
Ethylene Dibromide	5.00	5.26		ug/L		105	61 - 143	1	22
Chlorobenzene	5.00	5.21		ug/L		104	74 - 123	1	21
1,1,1,2-Tetrachloroethane	5.00	5.12		ug/L		102	69 - 127	2	22
Ethylbenzene	5.00	5.54		ug/L		111	80 - 124	1	22
m-Xylene & p-Xylene	5.00	5.38		ug/L		108	75 - 124	2	22

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Client: ERM-West Job ID: 580-119876-1

Project/Site: Arkema - Q4 2022 Groundwater Event

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCSD 580-409568/5

Matrix: Water

Analysis Batch: 409568

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

	Spike	LCSD	LCSD				%Rec		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
o-Xylene	5.00	5.60		ug/L		112	71 - 124	2	23
Styrene	5.00	5.61		ug/L		112	74 - 127	1	22
Bromoform	5.00	4.23		ug/L		85	48 - 127	1	23
Isopropylbenzene	5.00	5.69		ug/L		114	71 - 123	2	23
Bromobenzene	5.00	4.91		ug/L		98	74 - 130	1	23
1,1,2,2-Tetrachloroethane	5.00	5.37		ug/L		107	67 - 136	1	24
1,2,3-Trichloropropane	5.00	5.23		ug/L		105	67 - 135	3	25
N-Propylbenzene	5.00	5.51		ug/L		110	72 - 126	1	20
2-Chlorotoluene	5.00	5.18		ug/L		104	73 - 120	1	22
4-Chlorotoluene	5.00	5.33		ug/L		107	75 - 124	2	23
1,3,5-Trimethylbenzene	5.00	5.62		ug/L		112	75 - 123	1	23
tert-Butylbenzene	5.00	5.37		ug/L		107	70 - 129	0	24
1,2,4-Trimethylbenzene	5.00	5.74		ug/L		115	71 - 127	2	23
sec-Butylbenzene	5.00	5.79		ug/L		116	75 - 126	1	23
4-Isopropyltoluene	5.00	5.85		ug/L		117	78 - 125	1	24
1,3-Dichlorobenzene	5.00	5.45		ug/L		109	72 - 125	1	22
1,4-Dichlorobenzene	5.00	5.39		ug/L		108	71 - 129	0	22
n-Butylbenzene	5.00	5.35		ug/L		107	69 - 127	1	24
1,2-Dichlorobenzene	5.00	5.41		ug/L		108	72 - 129	0	22
1,2-Dibromo-3-Chloropropane	5.00	4.18		ug/L		84	55 - 135	4	29
1,2,4-Trichlorobenzene	5.00	5.29		ug/L		106	60 - 130	1	26
Hexachlorobutadiene	5.00	5.10		ug/L		102	63 - 130	0	26
Naphthalene	5.00	4.64		ug/L		93	54 - 137	6	28
1,2,3-Trichlorobenzene	5.00	5.49		ug/L		110	60 - 136	4	28

LCSD LCSD

Surrogate	%Recovery	Qualifier	Limits
Toluene-d8 (Surr)	101		80 - 120
Dibromofluoromethane (Surr)	101		80 - 120
4-Bromofluorobenzene (Surr)	101		80 - 120
1,2-Dichloroethane-d4 (Surr)	100		80 - 120

Lab Sample ID: 580-119876-15 MS

Matrix: Water

Analysis Batch: 409568

Client Sample ID: PA-32i-110822

Prep Type: Total/NA

•	Sample	Sample	Spike	MS	MS				%Rec
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits
Dichlorodifluoromethane	ND	F1 *+	5.00	8.36	F1	ug/L		167	20 - 150
Chloromethane	ND	F1 *+	5.00	8.08	F1	ug/L		162	32 - 150
Bromomethane	ND	F1	5.00	7.61	F1	ug/L		152	51 - 148
Chloroethane	0.57	F1 *+	5.00	8.78	F1	ug/L		164	54 - 140
Carbon disulfide	ND		5.00	6.80		ug/L		136	54 - 142
Trichlorofluoromethane	ND	F1	5.00	6.88	F1	ug/L		138	60 - 132
1,1-Dichloroethene	0.090	J F1	5.00	6.62	F1	ug/L		131	60 - 129
Acetone	ND		25.0	35.5		ug/L		142	49 - 150
Methylene Chloride	ND		5.00	6.12		ug/L		122	40 - 142
Methyl tert-butyl ether	ND		5.00	4.53		ug/L		91	61 - 131
2-Butanone (MEK)	ND		25.0	23.5		ug/L		94	37 - 150
trans-1,2-Dichloroethene	ND		5.00	5.99		ug/L		120	69 - 121

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Client: ERM-West Job ID: 580-119876-1

Project/Site: Arkema - Q4 2022 Groundwater Event

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: 580-119876-15 MS

Matrix: Water

Analysis Batch: 409568

Client Sample ID: PA-32i-110822

Prep Type: Total/NA

Analyte	•	Sample Qualifier	Spike Added		MS Qualifier	Unit	D	%Rec	%Rec Limits
1,1-Dichloroethane	ND		5.00	5.51		ug/L		110	74 - 120
2,2-Dichloropropane	ND		5.00	4.74		ug/L		95	55 - 140
cis-1,2-Dichloroethene	0.087	J	5.00	5.57		ug/L		110	72 - 120
Chlorobromomethane	ND		5.00	5.69		ug/L		114	79 - 121
Chloroform	ND		5.00	5.79		ug/L		116	75 - 120
1,1,1-Trichloroethane	ND		5.00	5.94		ug/L		119	70 - 121
Carbon tetrachloride	ND		5.00	6.16		ug/L		123	66 - 130
1,1-Dichloropropene	ND		5.00	5.55		ug/L		111	72 - 125
Benzene	0.043	J	5.00	5.96		ug/L		118	80 - 120
1,2-Dichloroethane	ND		5.00	5.53		ug/L		111	74 - 127
, Trichloroethene	ND		5.00	5.29		ug/L		106	72 - 120
1,2-Dichloropropane	ND		5.00	5.66		ug/L		113	69 - 130
4-Methyl-2-pentanone (MIBK)	ND		25.0	22.1		ug/L		89	63 - 137
Dibromomethane	ND		5.00	5.56		ug/L		111	65 - 141
Dichlorobromomethane	ND		5.00	5.44		ug/L		109	74 - 131
cis-1,3-Dichloropropene	ND		5.00	3.90		ug/L		78	77 - 131
Toluene	0.059	J	5.00	5.30		ug/L		105	80 - 126
trans-1,3-Dichloropropene	ND		5.00	4.21		ug/L		84	71 - 138
1,1,2-Trichloroethane	ND		5.00	4.97		ug/L		99	73 - 127
Tetrachloroethene	ND		5.00	4.99		ug/L		100	75 - 124
1,3-Dichloropropane	ND		5.00	5.06		ug/L		101	69 - 138
Chlorodibromomethane	ND		5.00	4.48		ug/L		90	62 - 141
Ethylene Dibromide	ND		5.00	5.18		ug/L		104	61 - 143
Chlorobenzene	0.28		5.00	5.68		ug/L		108	74 - 123
1,1,1,2-Tetrachloroethane	ND		5.00	5.23		ug/L		105	69 - 127
Ethylbenzene	ND		5.00	5.83		ug/L		117	80 - 124
m-Xylene & p-Xylene	ND		5.00	5.72		ug/L		114	75 - 124
o-Xylene	ND		5.00	6.12		ug/L		122	71 - 124
Styrene	ND		5.00	5.66		ug/L		113	74 - 127
Bromoform	ND		5.00	3.96		ug/L		79	48 - 127
Isopropylbenzene	ND	F1	5.00	6.09		ug/L		122	71 - 123
Bromobenzene	ND		5.00	4.72		ug/L		94	74 - 130
1,1,2,2-Tetrachloroethane	ND		5.00	5.31		ug/L		106	67 - 136
1,2,3-Trichloropropane	ND		5.00	4.87		ug/L		97	67 - 135
N-Propylbenzene	ND		5.00	5.51		ug/L		110	72 - 126
2-Chlorotoluene	ND		5.00	4.99		ug/L		100	73 - 120
4-Chlorotoluene	ND		5.00	5.18		ug/L		104	75 - 124
1,3,5-Trimethylbenzene	ND		5.00	5.45		ug/L		109	75 - 124 75 - 123
tert-Butylbenzene	ND ND		5.00	5.43		ug/L		109	70 - 129
1,2,4-Trimethylbenzene	ND.		5.00	5.57		ug/L		111	71 - 127
sec-Butylbenzene	ND ND		5.00	5.76		ug/L		115	71 - 127 75 - 126
4-Isopropyltoluene	ND ND		5.00	5.74		ug/L		115	73 - 120 78 - 125
1,3-Dichlorobenzene	ND		5.00	5.19		ug/L		104	70 - 125 72 - 125
1,4-Dichlorobenzene	ND ND		5.00	5.19				104	72 - 125 71 - 129
n-Butylbenzene	ND ND		5.00	5.21		ug/L		104	71 - 129 69 - 127
n-Butylbenzene 1,2-Dichlorobenzene						ug/L			
•	0.22	J	5.00	5.45		ug/L		105	72 ₋ 129
1,2-Dibromo-3-Chloropropane	ND		5.00	3.85		ug/L		77 04	55 - 135
1,2,4-Trichlorobenzene	ND ND		5.00	4.06 3.92		ug/L ug/L		81	60 - 130 63 - 130

Client: ERM-West Job ID: 580-119876-1

Project/Site: Arkema - Q4 2022 Groundwater Event

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

ND

ND

ND

Lab Sample ID: 580-119876-15 MS

Matrix: Water

1,2,3-Trichlorobenzene

Analysis Batch: 409568

MS MS %Rec Sample Sample Spike Analyte **Result Qualifier** Added Result Qualifier Unit %Rec Limits Naphthalene ND 5.00 3.56 ug/L 71 54 - 137

3.82

ug/L

5.00

MS MS Surrogate %Recovery Qualifier Limits Toluene-d8 (Surr) 95 80 - 120 Dibromofluoromethane (Surr) 103 80 - 120 4-Bromofluorobenzene (Surr) 103 80 - 120 1,2-Dichloroethane-d4 (Surr) 105 80 - 120

Lab Sample ID: 580-119876-15 MSD

Matrix: Water

1,3-Dichloropropane

Chlorodibromomethane

Analysis Batch: 409568

Analysis Batch: 400000	Sample	Sample	Spike	MSD	MSD				%Rec		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Dichlorodifluoromethane	ND	F1 *+	5.00	9.29	F1	ug/L		186	20 - 150	11	30
Chloromethane	ND	F1 *+	5.00	8.65	F1	ug/L		173	32 - 150	7	33
Bromomethane	ND	F1	5.00	7.96	F1	ug/L		159	51 - 148	5	35
Chloroethane	0.57	F1 *+	5.00	8.80	F1	ug/L		165	54 - 140	0	33
Carbon disulfide	ND		5.00	7.01		ug/L		140	54 - 142	3	34
Trichlorofluoromethane	ND	F1	5.00	6.97	F1	ug/L		139	60 - 132	1	32
1,1-Dichloroethene	0.090	J F1	5.00	6.74	F1	ug/L		133	60 - 129	2	29
Acetone	ND		25.0	37.3		ug/L		149	49 - 150	5	24
Methylene Chloride	ND		5.00	6.01		ug/L		120	40 - 142	2	25
Methyl tert-butyl ether	ND		5.00	4.63		ug/L		93	61 - 131	2	27
2-Butanone (MEK)	ND		25.0	23.9		ug/L		96	37 - 150	2	35
trans-1,2-Dichloroethene	ND		5.00	6.01		ug/L		120	69 - 121	0	27
1,1-Dichloroethane	ND		5.00	5.61		ug/L		112	74 - 120	2	26
2,2-Dichloropropane	ND		5.00	4.89		ug/L		98	55 - 140	3	31
cis-1,2-Dichloroethene	0.087	J	5.00	5.73		ug/L		113	72 - 120	3	22
Chlorobromomethane	ND		5.00	5.59		ug/L		112	79 - 121	2	20
Chloroform	ND		5.00	5.73		ug/L		115	75 - 120	1	21
1,1,1-Trichloroethane	ND		5.00	6.00		ug/L		120	70 - 121	1	24
Carbon tetrachloride	ND		5.00	6.13		ug/L		123	66 - 130	0	24
1,1-Dichloropropene	ND		5.00	5.60		ug/L		112	72 - 125	1	23
Benzene	0.043	J	5.00	5.88		ug/L		117	80 - 120	1	22
1,2-Dichloroethane	ND		5.00	5.45		ug/L		109	74 - 127	1	21
Trichloroethene	ND		5.00	5.32		ug/L		106	72 - 120	1	22
1,2-Dichloropropane	ND		5.00	5.60		ug/L		112	69 - 130	1	22
4-Methyl-2-pentanone (MIBK)	ND		25.0	22.2		ug/L		89	63 - 137	0	26
Dibromomethane	ND		5.00	5.55		ug/L		111	65 - 141	0	22
Dichlorobromomethane	ND		5.00	5.44		ug/L		109	74 - 131	0	21
cis-1,3-Dichloropropene	ND		5.00	4.06		ug/L		81	77 - 131	4	24
Toluene	0.059	J	5.00	5.32		ug/L		105	80 - 126	0	20
trans-1,3-Dichloropropene	ND		5.00	4.30		ug/L		86	71 - 138	2	26
1,1,2-Trichloroethane	ND		5.00	4.92		ug/L		98	73 - 127	1	22
Tetrachloroethene	ND		5.00	5.08		ug/L		102	75 - 124	2	20

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5.12

4.49

ug/L

ug/L

102

90

69 - 138

62 - 141

5.00

5.00

Client Sample ID: PA-32i-110822

60 - 136

Client Sample ID: PA-32i-110822

Prep Type: Total/NA

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Prep Type: Total/NA

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Job ID: 580-119876-1

Project/Site: Arkema - Q4 2022 Groundwater Event

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: 580-119876-15 MSD

Matrix: Water

Client: ERM-West

Analysis Batch: 409568

Client Sample ID: PA-32i-110822

Prep Type: Total/NA

	Sample	Sample	Spike	MSD	MSD				%Rec		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Ethylene Dibromide	ND		5.00	5.22		ug/L		104	61 - 143	1	22
Chlorobenzene	0.28		5.00	5.71		ug/L		109	74 - 123	1	21
1,1,1,2-Tetrachloroethane	ND		5.00	5.28		ug/L		106	69 - 127	1	22
Ethylbenzene	ND		5.00	5.92		ug/L		118	80 - 124	2	22
m-Xylene & p-Xylene	ND		5.00	5.80		ug/L		116	75 - 124	1	22
o-Xylene	ND		5.00	6.16		ug/L		123	71 - 124	1	23
Styrene	ND		5.00	5.72		ug/L		114	74 - 127	1	22
Bromoform	ND		5.00	3.97		ug/L		79	48 - 127	0	23
Isopropylbenzene	ND	F1	5.00	6.21	F1	ug/L		124	71 - 123	2	23
Bromobenzene	ND		5.00	4.87		ug/L		97	74 - 130	3	23
1,1,2,2-Tetrachloroethane	ND		5.00	5.28		ug/L		106	67 - 136	1	24
1,2,3-Trichloropropane	ND		5.00	5.09		ug/L		102	67 - 135	4	25
N-Propylbenzene	ND		5.00	5.71		ug/L		114	72 - 126	4	20
2-Chlorotoluene	ND		5.00	5.25		ug/L		105	73 - 120	5	22
4-Chlorotoluene	ND		5.00	5.37		ug/L		107	75 - 124	4	23
1,3,5-Trimethylbenzene	ND		5.00	5.65		ug/L		113	75 - 123	4	23
tert-Butylbenzene	ND		5.00	5.66		ug/L		113	70 - 129	4	24
1,2,4-Trimethylbenzene	ND		5.00	5.75		ug/L		115	71 - 127	3	23
sec-Butylbenzene	ND		5.00	5.94		ug/L		119	75 - 126	3	23
4-Isopropyltoluene	ND		5.00	5.97		ug/L		119	78 - 125	4	24
1,3-Dichlorobenzene	ND		5.00	5.35		ug/L		107	72 - 125	3	22
1,4-Dichlorobenzene	ND		5.00	5.29		ug/L		106	71 - 129	2	22
n-Butylbenzene	ND		5.00	5.36		ug/L		107	69 - 127	4	24
1,2-Dichlorobenzene	0.22	J	5.00	5.54		ug/L		106	72 - 129	2	22
1,2-Dibromo-3-Chloropropane	ND		5.00	3.92		ug/L		78	55 - 135	2	29
1,2,4-Trichlorobenzene	ND		5.00	4.28		ug/L		86	60 - 130	5	26
Hexachlorobutadiene	ND		5.00	4.07		ug/L		81	63 - 130	4	26
Naphthalene	ND		5.00	3.89		ug/L		78	54 - 137	9	28
1,2,3-Trichlorobenzene	ND		5.00	4.13		ug/L		83	60 - 136	8	28

MSD MSD

Surrogate	%Recovery	Qualifier	Limits
Toluene-d8 (Surr)	95		80 - 120
Dibromofluoromethane (Surr)	102		80 - 120
4-Bromofluorobenzene (Surr)	102		80 - 120
1,2-Dichloroethane-d4 (Surr)	104		80 - 120

Lab Sample ID: MB 580-409881/7

Matrix: Water

Analysis Batch: 409881

Client Sample ID: Method Blank Prep Type: Total/NA

	MB	MB							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dichlorodifluoromethane	ND		0.40	0.13	ug/L			11/14/22 14:01	1
Chloromethane	ND		0.50	0.14	ug/L			11/14/22 14:01	1
Vinyl chloride	ND		0.020	0.013	ug/L			11/14/22 14:01	1
Bromomethane	ND		0.50	0.13	ug/L			11/14/22 14:01	1
Chloroethane	ND		0.50	0.096	ug/L			11/14/22 14:01	1
Carbon disulfide	ND		0.30	0.083	ug/L			11/14/22 14:01	1
Trichlorofluoromethane	ND		0.50	0.12	ug/L			11/14/22 14:01	1

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12/13/2022

Client: ERM-West Job ID: 580-119876-1

Project/Site: Arkema - Q4 2022 Groundwater Event

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

MB MB

Lab Sample ID: MB 580-409881/7

Matrix: Water

Analysis Batch: 409881

Client Sample ID: Method Blank

Prep Type: Total/NA

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ed	Dil Fac	

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Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	ND		0.20	0.035	ug/L			11/14/22 14:01	1
Acetone	ND		10	3.1	ug/L			11/14/22 14:01	1
Methylene Chloride	ND		5.0	1.2	ug/L			11/14/22 14:01	1
Methyl tert-butyl ether	ND		0.30	0.070	ug/L			11/14/22 14:01	1
2-Butanone (MEK)	ND		10	2.5	ug/L			11/14/22 14:01	1
trans-1,2-Dichloroethene	ND		0.20	0.033	ug/L			11/14/22 14:01	1
1,1-Dichloroethane	ND		0.20	0.025	ug/L			11/14/22 14:01	1
2,2-Dichloropropane	ND		0.50	0.060	ug/L			11/14/22 14:01	1
cis-1,2-Dichloroethene	ND		0.20	0.055	ug/L			11/14/22 14:01	1
Chlorobromomethane	ND		0.20	0.050	ug/L			11/14/22 14:01	1
Chloroform	ND		0.20	0.030	ug/L			11/14/22 14:01	1
1,1,1-Trichloroethane	ND		0.20	0.025	ug/L			11/14/22 14:01	1
Carbon tetrachloride	ND		0.20	0.025	ug/L			11/14/22 14:01	1
1,1-Dichloropropene	ND		0.20	0.084	ug/L			11/14/22 14:01	1
Benzene	ND		0.20	0.030	ug/L			11/14/22 14:01	1
1,2-Dichloroethane	ND		0.20	0.043	ug/L			11/14/22 14:01	1
Trichloroethene	ND		0.20	0.066	ug/L			11/14/22 14:01	1
1,2-Dichloropropane	ND		0.20	0.060				11/14/22 14:01	1
4-Methyl-2-pentanone (MIBK)	ND		10		ug/L			11/14/22 14:01	1
Dibromomethane	ND		0.20	0.062	_			11/14/22 14:01	1
Dichlorobromomethane	ND		0.20	0.060				11/14/22 14:01	1
cis-1,3-Dichloropropene	ND		0.20	0.090	_			11/14/22 14:01	1
Toluene	ND		0.20	0.050	Ū			11/14/22 14:01	1
trans-1,3-Dichloropropene	ND		0.20	0.092				11/14/22 14:01	1
1,1,2-Trichloroethane	ND		0.20	0.070	-			11/14/22 14:01	1
Tetrachloroethene	ND		0.24	0.084	-			11/14/22 14:01	1
1,3-Dichloropropane	ND		0.20	0.025				11/14/22 14:01	1
Chlorodibromomethane	0.0736	J	0.20	0.055	-			11/14/22 14:01	1
Ethylene Dibromide	ND		0.10	0.025	-			11/14/22 14:01	1
Chlorobenzene	ND		0.20	0.060				11/14/22 14:01	1
1,1,1,2-Tetrachloroethane	ND		0.30	0.038	-			11/14/22 14:01	1
Ethylbenzene	ND		0.20	0.030	-			11/14/22 14:01	1
m-Xylene & p-Xylene	ND		0.50	0.12				11/14/22 14:01	1
o-Xylene	ND		0.50	0.15	-			11/14/22 14:01	1
Styrene	ND		1.0	0.19	-			11/14/22 14:01	1
Bromoform	ND		0.50	0.16				11/14/22 14:01	1
Isopropylbenzene	ND		1.0	0.19	_			11/14/22 14:01	1
Bromobenzene	ND		0.20	0.038	_			11/14/22 14:01	1
1,1,2,2-Tetrachloroethane	ND		0.20	0.056				11/14/22 14:01	1
1,2,3-Trichloropropane	ND		0.20	0.050				11/14/22 14:01	1
N-Propylbenzene	ND		0.30	0.091	-			11/14/22 14:01	1
2-Chlorotoluene	ND		0.50	0.12				11/14/22 14:01	1
4-Chlorotoluene	ND		0.30	0.12	-			11/14/22 14:01	1
1,3,5-Trimethylbenzene	ND		0.50	0.15	_			11/14/22 14:01	1
tert-Butylbenzene	ND		0.50	0.26				11/14/22 14:01	· · · · · · · · · · · · · · · · · · ·
1,2,4-Trimethylbenzene	ND		0.50	0.20				11/14/22 14:01	1
sec-Butylbenzene	ND		1.0	0.17	_			11/14/22 14:01	1
4-Isopropyltoluene	ND		0.50	0.15				11/14/22 14:01	· · · · · · · · · · · · · · · · · · ·
1,3-Dichlorobenzene	ND		0.30	0.050	-			11/14/22 14:01	1

Client: ERM-West Job ID: 580-119876-1

Project/Site: Arkema - Q4 2022 Groundwater Event

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 580-409881/7

Matrix: Water

Analysis Batch: 409881

Client Sample ID: Method Blank

Prep Type: Total/NA

	MB	MB							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dichlorobenzene	ND		0.30	0.050	ug/L			11/14/22 14:01	1
n-Butylbenzene	ND		1.0	0.23	ug/L			11/14/22 14:01	1
1,2-Dichlorobenzene	ND		0.30	0.038	ug/L			11/14/22 14:01	1
1,2-Dibromo-3-Chloropropane	0.199	J	2.0	0.17	ug/L			11/14/22 14:01	1
1,2,4-Trichlorobenzene	ND		0.50	0.17	ug/L			11/14/22 14:01	1
Hexachlorobutadiene	0.0729	J	0.50	0.067	ug/L			11/14/22 14:01	1
Naphthalene	ND		1.0	0.22	ug/L			11/14/22 14:01	1
1 2 3-Trichlorobenzene	ND		0.50	0.15	ua/l			11/14/22 14:01	1

 MB
 MB

 %Recovery
 Qualifier
 Limits
 Prepared
 Analyzed
 Dil Fac

 99
 80 - 120
 11/14/22 14:01
 1

 107
 80 - 120
 11/14/22 14:01
 1

 Toluene-d8 (Surr)
 99
 80 - 120
 11/14/22 14:01
 1

 Dibromofluoromethane (Surr)
 107
 80 - 120
 11/14/22 14:01
 1

 4-Bromofluorobenzene (Surr)
 95
 80 - 120
 11/14/22 14:01
 1

 1,2-Dichloroethane-d4 (Surr)
 111
 80 - 120
 11/14/22 14:01
 1

Lab Sample ID: LCS 580-409881/4

Matrix: Water

Surrogate

Analysis Batch: 409881

Client Sample ID: Lab Control Sample Prep Type: Total/NA

Spike LCS LCS %Rec Added Result Qualifier Limits **Analyte** Unit %Rec Dichlorodifluoromethane 5.00 7.77 ug/L 155 20 - 150 Chloromethane 5.00 7.21 ug/L 144 32 - 150Vinyl chloride 5.00 6.41 ug/L 128 41 - 150 Bromomethane 5.00 6.60 132 51 - 148 ug/L 5.00 Chloroethane 6.93 ug/L 139 54 - 140 5.00 Carbon disulfide 6.18 ug/L 124 54 - 142 5.00 Trichlorofluoromethane 6.18 ug/L 124 60 - 1325.00 1,1-Dichloroethene 5.95 ug/L 119 60 - 129 25.0 Acetone 37.3 ug/L 149 49 - 150 Methylene Chloride 5.00 5.48 ug/L 110 40 - 142 Methyl tert-butyl ether 5.00 4.86 97 61 - 131 ug/L 2-Butanone (MEK) 25.0 26.4 ug/L 106 37 - 1505.00 104 trans-1,2-Dichloroethene 5.21 ug/L 69 - 1211,1-Dichloroethane 5.00 5.23 ug/L 105 74 - 120 ug/L 5.00 5.28 106 55 - 140 2,2-Dichloropropane cis-1,2-Dichloroethene 5.00 5.11 ug/L 102 72 - 120 Chlorobromomethane 5.00 5.15 ug/L 103 79 - 121 5.00 106 75 - 120 Chloroform 5.31 ug/L 1.1.1-Trichloroethane 5.00 5.25 ug/L 105 70 - 121 Carbon tetrachloride 5.00 5.23 ug/L 105 66 - 130 1,1-Dichloropropene 5.00 5.25 ug/L 105 72 - 125 5.00 5.48 ug/L 110 80 - 120 Benzene 1,2-Dichloroethane 5.00 103 74 - 127 5.16 ug/L Trichloroethene 5.00 ug/L 103 72 - 1205.13 1,2-Dichloropropane 5.00 5.37 ug/L 107 69 - 130 4-Methyl-2-pentanone (MIBK) 25.0 27.0 ug/L 108 63 - 137Dibromomethane 5.00 5.07 ug/L 101 65 - 141ug/L Dichlorobromomethane 5.00 5.39 108 74 - 131

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Spike

Client: ERM-West Job ID: 580-119876-1

LCS LCS

Project/Site: Arkema - Q4 2022 Groundwater Event

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 580-409881/4

Matrix: Water

1,2,3-Trichloropropane

1,3,5-Trimethylbenzene

1,2,4-Trimethylbenzene

N-Propylbenzene

2-Chlorotoluene

4-Chlorotoluene

tert-Butylbenzene

sec-Butylbenzene

4-Isopropyltoluene

1,3-Dichlorobenzene

1,4-Dichlorobenzene

1,2-Dichlorobenzene

1,2,4-Trichlorobenzene

1,2,3-Trichlorobenzene

Hexachlorobutadiene

1,2-Dibromo-3-Chloropropane

n-Butylbenzene

Naphthalene

Analysis Batch: 409881

Client Sample ID: Lab Control Sample

%Rec

67 - 135

72 - 126

73 - 120

75 - 124

75 - 123

70 - 129

71 - 127

75 - 126

78 - 125

72 - 125

71 - 129

69 - 127

72 - 129

55 - 135

60 - 130

63 - 130

54 - 137

60 - 136

111

117

108

111

118

114

120

123

124

114

112

115

114

95

119

110

111

127

Prep Type: Total/NA

Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
cis-1,3-Dichloropropene	5.00	5.33		ug/L		107	77 - 131	
Toluene	5.00	5.47		ug/L		109	80 - 126	
trans-1,3-Dichloropropene	5.00	5.23		ug/L		105	71 - 138	
1,1,2-Trichloroethane	5.00	5.41		ug/L		108	73 - 127	
Tetrachloroethene	5.00	5.20		ug/L		104	75 - 124	
1,3-Dichloropropane	5.00	5.46		ug/L		109	69 - 138	
Chlorodibromomethane	5.00	4.95		ug/L		99	62 - 141	
Ethylene Dibromide	5.00	5.40		ug/L		108	61 - 143	
Chlorobenzene	5.00	5.35		ug/L		107	74 - 123	
1,1,1,2-Tetrachloroethane	5.00	5.41		ug/L		108	69 - 127	
Ethylbenzene	5.00	5.70		ug/L		114	80 - 124	
m-Xylene & p-Xylene	5.00	5.56		ug/L		111	75 - 124	
o-Xylene	5.00	5.75		ug/L		115	71 - 124	
Styrene	5.00	5.71		ug/L		114	74 - 127	
Bromoform	5.00	4.50		ug/L		90	48 - 127	
Isopropylbenzene	5.00	5.86		ug/L		117	71 - 123	
Bromobenzene	5.00	5.18		ug/L		104	74 - 130	
1,1,2,2-Tetrachloroethane	5.00	5.65		ug/L		113	67 - 136	

5.00

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5.56

5.85

5.41

5.54

5.88

5.71

5.98

6.13

6.18

5.71

5.58

5.73

5.71

4.75

5.94

5.51

5.56

6.35

ug/L

LCS LCS

Surrogate	%Recovery	Qualifier	Limits
Toluene-d8 (Surr)	103		80 - 120
Dibromofluoromethane (Surr)	99		80 - 120
4-Bromofluorobenzene (Surr)	97		80 - 120
1,2-Dichloroethane-d4 (Surr)	99		80 - 120

Client: ERM-West Job ID: 580-119876-1

Project/Site: Arkema - Q4 2022 Groundwater Event

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCSD 580-409881/5

Matrix: Water

Analysis Batch: 409881

Client Sample ID: Lab Control Sample Dup Prep Type: Total/NA

	Spike	LCSD	LCSD				%Rec		RPD
Analyte	Added		Qualifier	Unit	D	%Rec	Limits	RPD	Lir
Dichlorodifluoromethane	5.00	7.89	*+	ug/L		158	20 - 150	2	
Chloromethane	5.00	7.43		ug/L		149	32 - 150	3	
Vinyl chloride	5.00	6.64		ug/L		133	41 - 150	3	
Bromomethane	5.00	6.94		ug/L		139	51 - 148	5	
Chloroethane	5.00	7.25	*+	ug/L		145	54 - 140	5	
Carbon disulfide	5.00	6.62		ug/L		132	54 - 142	7	
Trichlorofluoromethane	5.00	6.38		ug/L		128	60 - 132	3	
1,1-Dichloroethene	5.00	6.28		ug/L		126	60 - 129	5	
Acetone	25.0	39.1	*+	ug/L		156	49 - 150	5	
Methylene Chloride	5.00	5.81		ug/L		116	40 - 142	6	
Methyl tert-butyl ether	5.00	4.98		ug/L		100	61 - 131	2	
2-Butanone (MEK)	25.0	26.9		ug/L		108	37 - 150	2	
trans-1,2-Dichloroethene	5.00	5.55		ug/L		111	69 - 121	6	
1,1-Dichloroethane	5.00	5.38		ug/L		108	74 - 120	3	
2,2-Dichloropropane	5.00	5.38		ug/L		108	55 - 140	2	
cis-1,2-Dichloroethene	5.00	5.37		ug/L		107	72 - 120	5	
Chlorobromomethane	5.00	5.33		ug/L		107	79 - 121	3	
Chloroform	5.00	5.44		ug/L		109	75 - 120	2	
1,1,1-Trichloroethane	5.00	5.40		ug/L		108	70 - 121	3	
Carbon tetrachloride	5.00	5.37		ug/L		107	66 - 130	3	
1,1-Dichloropropene	5.00	5.27		ug/L		105	72 - 125	0	
Benzene	5.00	5.49		ug/L		110	80 - 120	0	
1,2-Dichloroethane	5.00	5.32		ug/L		106	74 - 127	3	
Trichloroethene	5.00	5.10		ug/L		102	72 - 120	1	
1,2-Dichloropropane	5.00	5.24		ug/L		105	69 - 130	3	
4-Methyl-2-pentanone (MIBK)	25.0	26.6		ug/L		106	63 - 137	2	
Dibromomethane	5.00	5.30		ug/L		106	65 - 141	5	
Dichlorobromomethane	5.00	5.41		ug/L		108	74 - 131	0	
cis-1,3-Dichloropropene	5.00	5.21		ug/L		104	77 - 131	2	
Toluene	5.00	5.33		ug/L		107	80 - 126	3	
trans-1,3-Dichloropropene	5.00	5.29		ug/L		106	71 - 138	1	
1,1,2-Trichloroethane	5.00	5.34		ug/L		107	73 - 127	1	
Tetrachloroethene	5.00	5.03		ug/L		101	75 - 124	3	
1,3-Dichloropropane	5.00	5.36		ug/L		107	69 - 138	2	
Chlorodibromomethane	5.00	4.92		ug/L		98	62 - 141	1	
Ethylene Dibromide	5.00	5.52		ug/L		110	61 - 143	2	
Chlorobenzene	5.00	5.36		ug/L		107	74 - 123	0	
1,1,1,2-Tetrachloroethane	5.00	5.44		ug/L		109	69 - 127	0	
Ethylbenzene	5.00	5.69		ug/L		114	80 - 124	0	
m-Xylene & p-Xylene	5.00	5.51		ug/L		110	75 - 124	1	
p-Xylene	5.00	5.80		ug/L		116	71 - 124	1	
Styrene	5.00	5.79		ug/L ug/L		116	71 - 124 74 - 127	1	
Bromoform	5.00	4.63		ug/L ug/L		93	48 - 127	3	
Bromolomi Isopropylbenzene	5.00	5.91		ug/L ug/L		93 118	71 - 123	1	
Sopropylberizerie Bromobenzene	5.00	5.04		ug/L ug/L		101	71 - 123 74 - 130	3	
	5.00						67 - 136	1	
1,1,2,2-Tetrachloroethane		5.61 5.30		ug/L		112		3	
1,2,3-Trichloropropane N-Propylbenzene	5.00 5.00	5.39 5.62		ug/L ug/L		108 112	67 ₋ 135 72 ₋ 126	3 4	

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Client: ERM-West Job ID: 580-119876-1

Project/Site: Arkema - Q4 2022 Groundwater Event

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCSD 580-409881/5

Matrix: Water

Analysis Batch: 409881

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

	Spike	LCSD	LCSD				%Rec		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
2-Chlorotoluene	5.00	5.31		ug/L		106	73 - 120	2	22
4-Chlorotoluene	5.00	5.43		ug/L		109	75 - 124	2	23
1,3,5-Trimethylbenzene	5.00	5.72		ug/L		114	75 - 123	3	23
tert-Butylbenzene	5.00	5.49		ug/L		110	70 - 129	4	24
1,2,4-Trimethylbenzene	5.00	5.84		ug/L		117	71 - 127	2	23
sec-Butylbenzene	5.00	5.93		ug/L		119	75 - 126	3	23
4-Isopropyltoluene	5.00	6.01		ug/L		120	78 - 125	3	24
1,3-Dichlorobenzene	5.00	5.64		ug/L		113	72 - 125	1	22
1,4-Dichlorobenzene	5.00	5.55		ug/L		111	71 - 129	0	22
n-Butylbenzene	5.00	5.64		ug/L		113	69 - 127	2	24
1,2-Dichlorobenzene	5.00	5.64		ug/L		113	72 - 129	1	22
1,2-Dibromo-3-Chloropropane	5.00	4.87		ug/L		97	55 - 135	3	29
1,2,4-Trichlorobenzene	5.00	5.82		ug/L		116	60 - 130	2	26
Hexachlorobutadiene	5.00	5.39		ug/L		108	63 - 130	2	26
Naphthalene	5.00	5.33		ug/L		107	54 - 137	4	28
1,2,3-Trichlorobenzene	5.00	6.13		ug/L		123	60 - 136	4	28

LCSD LCSD

Surrogate	%Recovery	Qualifier	Limits
Toluene-d8 (Surr)	101		80 - 120
Dibromofluoromethane (Surr)	103		80 - 120
4-Bromofluorobenzene (Surr)	102		80 - 120
1,2-Dichloroethane-d4 (Surr)	102		80 - 120

Lab Sample ID: MB 580-410498/5

Matrix: Water

Analysis Batch: 410498

Client Sample ID: Method Blank

Prep Type: Total/NA

	MB	MB							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dichlorodifluoromethane	ND		1.0	0.53	ug/L			11/18/22 12:06	1
Chloromethane	ND		1.0	0.28	ug/L			11/18/22 12:06	1
Vinyl chloride	ND		1.0	0.22	ug/L			11/18/22 12:06	1
Bromomethane	ND		1.0	0.21	ug/L			11/18/22 12:06	1
Chloroethane	ND		1.0	0.35	ug/L			11/18/22 12:06	1
Trichlorofluoromethane	ND		1.0	0.36	ug/L			11/18/22 12:06	1
Carbon disulfide	ND		1.0	0.53	ug/L			11/18/22 12:06	1
1,1-Dichloroethene	ND		1.0	0.28	ug/L			11/18/22 12:06	1
Acetone	ND		15	3.2	ug/L			11/18/22 12:06	1
Methylene Chloride	ND		3.0	1.4	ug/L			11/18/22 12:06	1
Methyl tert-butyl ether	ND		1.0	0.44	ug/L			11/18/22 12:06	1
trans-1,2-Dichloroethene	0.428	J	1.0	0.39	ug/L			11/18/22 12:06	1
1,1-Dichloroethane	ND		1.0	0.22	ug/L			11/18/22 12:06	1
2-Butanone (MEK)	ND		15	4.7	ug/L			11/18/22 12:06	1
2,2-Dichloropropane	ND		1.0	0.32	ug/L			11/18/22 12:06	1
cis-1,2-Dichloroethene	ND		1.0	0.35	ug/L			11/18/22 12:06	1
Bromochloromethane	ND		1.0	0.29	ug/L			11/18/22 12:06	1
Chloroform	ND		1.0	0.26	ug/L			11/18/22 12:06	1
1,1,1-Trichloroethane	ND		1.0	0.39	ug/L			11/18/22 12:06	1
Carbon tetrachloride	ND		1.0	0.30	ug/L			11/18/22 12:06	1

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Client: ERM-West Job ID: 580-119876-1

Project/Site: Arkema - Q4 2022 Groundwater Event

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

MB MB

Lab Sample ID: MB 580-410498/5

Matrix: Water

Surrogate

Toluene-d8 (Surr)

1,2-Dichloroethane-d4 (Surr)

Analysis Batch: 410498

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	Result Qualifier	RL	MDL		D	Prepared	Analyzed	Dil Fac
1,1-Dichloropropene	ND	1.0	0.29	ug/L			11/18/22 12:06	1
Benzene	ND	1.0	0.24	ug/L			11/18/22 12:06	1
1,2-Dichloroethane	ND	1.0	0.42	ug/L			11/18/22 12:06	1
Trichloroethene	ND	1.0	0.26	ug/L			11/18/22 12:06	1
1,2-Dichloropropane	ND	1.0	0.18	ug/L			11/18/22 12:06	1
4-Methyl-2-pentanone (MIBK)	ND	5.0	2.5	ug/L			11/18/22 12:06	1
Dibromomethane	ND	1.0	0.34	ug/L			11/18/22 12:06	1
Bromodichloromethane	ND	1.0	0.29	ug/L			11/18/22 12:06	1
cis-1,3-Dichloropropene	ND	1.0	0.42	ug/L			11/18/22 12:06	1
Toluene	ND	1.0	0.39	ug/L			11/18/22 12:06	1
trans-1,3-Dichloropropene	ND	1.0	0.41	ug/L			11/18/22 12:06	1
1,1,2-Trichloroethane	ND	1.0	0.24	ug/L			11/18/22 12:06	1
Tetrachloroethene	ND	1.0	0.41	ug/L			11/18/22 12:06	1
1,3-Dichloropropane	ND	1.0	0.35	ug/L			11/18/22 12:06	1
Dibromochloromethane	ND	1.0	0.43	_			11/18/22 12:06	1
1,2-Dibromoethane	ND	1.0	0.40	ug/L			11/18/22 12:06	1
Chlorobenzene	ND	1.0	0.44	ug/L			11/18/22 12:06	1
1,1,1,2-Tetrachloroethane	ND	1.0	0.18	-			11/18/22 12:06	1
Ethylbenzene	ND	1.0	0.50	-			11/18/22 12:06	1
m-Xylene & p-Xylene	ND	2.0	0.53	ug/L			11/18/22 12:06	1
o-Xylene	ND	1.0	0.39	-			11/18/22 12:06	1
Styrene	ND	1.0	0.53	_			11/18/22 12:06	1
Bromoform	ND	1.0	0.51				11/18/22 12:06	1
Isopropylbenzene	ND	1.0	0.44	-			11/18/22 12:06	1
Bromobenzene	ND	1.0	0.43	_			11/18/22 12:06	1
1,1,2,2-Tetrachloroethane	ND	1.0	0.52				11/18/22 12:06	1
1,2,3-Trichloropropane	ND	1.0	0.41	_			11/18/22 12:06	1
N-Propylbenzene	ND	1.0	0.50	-			11/18/22 12:06	1
2-Chlorotoluene	ND	1.0	0.51				11/18/22 12:06	1
4-Chlorotoluene	ND	1.0	0.38	_			11/18/22 12:06	1
t-Butylbenzene	ND	2.0	0.58	-			11/18/22 12:06	1
1,2,4-Trimethylbenzene	ND	3.0	0.61				11/18/22 12:06	1
sec-Butylbenzene	ND	1.0	0.49	-			11/18/22 12:06	1
4-Isopropyltoluene	ND	1.0	0.28	-			11/18/22 12:06	1
1,3-Dichlorobenzene	ND	1.0	0.48				11/18/22 12:06	1
1,4-Dichlorobenzene	ND	1.0	0.46	-			11/18/22 12:06	1
n-Butylbenzene	ND	1.0	0.44	-			11/18/22 12:06	1
1,2-Dichlorobenzene	ND	1.0	0.46				11/18/22 12:06	1
1,2-Dibromo-3-Chloropropane	ND	3.0	0.57				11/18/22 12:06	1
1,2,4-Trichlorobenzene	0.397 J	1.0	0.33				11/18/22 12:06	1
Hexachlorobutadiene	ND	3.0	0.79				11/18/22 12:06	· · · · · · · · · · · · · · · · · · ·
Naphthalene	1.70 J	3.0	0.93				11/18/22 12:06	1
1,2,3-Trichlorobenzene	1.02 J	2.0	0.43	-			11/18/22 12:06	1
1,3,5-Trimethylbenzene	ND	1.0	0.55				11/18/22 12:06	·

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12/13/2022

Analyzed

11/18/22 12:06

11/18/22 12:06

Prepared

Limits

80 - 120

80 - 120

MB MB

%Recovery Qualifier

102

88

Client: ERM-West Job ID: 580-119876-1

Project/Site: Arkema - Q4 2022 Groundwater Event

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 580-410498/5

Matrix: Water

Analysis Batch: 410498

Client Sample ID: Method Blank

Prep Type: Total/NA

MB MB

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	88		80 - 120		11/18/22 12:06	1
Dibromofluoromethane (Surr)	87		80 - 120		11/18/22 12:06	1

Lab Sample ID: LCS 580-410498/6 Client Sample ID: Lab Control Sample **Matrix: Water**

Analysis Batch: 410498

Onone Gampio ib	Lab Control Campio
	Prep Type: Total/NA

%Rec

LCS LCS Spike Analyte Added Result Qualifier Unit %Rec Limits Dichlorodifluoromethane 10.0 7.36 ug/L 74 20 - 150 Chloromethane 10.0 7.21 ug/L 72 25 - 150Vinyl chloride 10.0 8.63 ug/L 86 31 - 150Bromomethane 10.0 10.7 ug/L 107 36 - 150 Chloroethane 10.0 8.07 ug/L 81 38 - 150 10.0 9.15 ug/L 91 45 - 148 10.0 7.67 ug/L 77 63 - 13486

Trichlorofluoromethane Carbon disulfide 1,1-Dichloroethene 10.0 8.60 70 - 129 ug/L 86 44 - 150 Acetone 50.0 42.9 ug/L 6.84 *-Methylene Chloride 10.0 ug/L 68 77 - 125Methyl tert-butyl ether 10.0 8.37 ug/L 84 72 - 120 trans-1,2-Dichloroethene 10.0 8.35 ug/L 83 75 - 120 1,1-Dichloroethane 10.0 8.64 86 80 - 120 ug/L 50.0 65 - 137 2-Butanone (MEK) 58.8 ug/L 118 2,2-Dichloropropane 10.0 7.72 ug/L 77 66 - 126 cis-1,2-Dichloroethene 10.0 83 76 - 120 8.27 ug/L Bromochloromethane 10.0 8.28 ug/L 83 78 - 120 Chloroform 10.0 8.86 ug/L 89 78 - 127 1,1,1-Trichloroethane 78 10.0 7.81 ug/L 74 - 130 77 72 - 129 Carbon tetrachloride 10.0 7.67 ug/L 74 - 120 1,1-Dichloropropene 10.0 9.47 ug/L 95 Benzene 10.0 10.6 ug/L 106 80 - 122 1,2-Dichloroethane 10.0 85 69 - 1268.50 ug/L Trichloroethene 10.0 10.7 ug/L 107 80 - 125 80 - 120 108 1,2-Dichloropropane 10.0 10.8 ug/L

4-Methyl-2-pentanone (MIBK) 50.0 39.6 ug/L 79 59 - 141 ug/L Dibromomethane 10.0 9.70 97 80 - 120 Bromodichloromethane 10.0 10.1 ug/L 101 75 - 124 cis-1,3-Dichloropropene 10.0 17.6 *+ ug/L 176 77 - 120 110 80 - 120 Toluene 10.0 11.0 ug/L trans-1,3-Dichloropropene 10.0 12.5 *+ ug/L 125 76 - 1221,1,2-Trichloroethane 10.0 11.6 ug/L 116 80 - 121 Tetrachloroethene 10.0 9.91 ug/L 99 76 - 125 123 79 - 120 1,3-Dichloropropane 10.0 12.3 *+ ug/L 108 Dibromochloromethane 10.0 10.8 ug/L 73 - 125 1.2-Dibromoethane 10.0 ug/L 117 79 - 126 11.7 Chlorobenzene 10.0 10.7 ug/L 107 80 - 120 1,1,1,2-Tetrachloroethane 10.0 9.25 ug/L 92 79 - 120 Ethylbenzene 10.0 10.1 ug/L 101 80 - 120ug/L m-Xylene & p-Xylene 10.0 9.79 98 80 - 120

Client: ERM-West Job ID: 580-119876-1

Project/Site: Arkema - Q4 2022 Groundwater Event

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 580-410498/6

Matrix: Water

Analysis Batch: 410498

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

	Spike	LCS	LCS			%Rec	
Analyte	Added	Result	Qualifier	Unit	D %Rec	Limits	
o-Xylene	10.0	9.33		ug/L	93	80 - 120	
Styrene	10.0	9.50		ug/L	95	76 - 122	
Bromoform	10.0	9.16		ug/L	92	56 - 139	
Isopropylbenzene	10.0	9.33		ug/L	93	80 - 123	
Bromobenzene	10.0	11.3		ug/L	113	80 - 120	
1,1,2,2-Tetrachloroethane	10.0	11.1		ug/L	111	74 - 124	
1,2,3-Trichloropropane	10.0	10.7		ug/L	107	76 - 124	
N-Propylbenzene	10.0	11.1		ug/L	111	80 - 122	
2-Chlorotoluene	10.0	11.1		ug/L	111	80 - 120	
4-Chlorotoluene	10.0	11.3		ug/L	113	73 - 129	
t-Butylbenzene	10.0	11.2		ug/L	112	75 - 123	
1,2,4-Trimethylbenzene	10.0	11.0		ug/L	110	80 - 120	
sec-Butylbenzene	10.0	11.2		ug/L	112	78 - 122	
4-Isopropyltoluene	10.0	11.2		ug/L	112	77 - 126	
1,3-Dichlorobenzene	10.0	7.40	*_	ug/L	74	77 - 127	
1,4-Dichlorobenzene	10.0	10.7		ug/L	107	80 - 120	
n-Butylbenzene	10.0	10.7		ug/L	107	57 - 133	
1,2-Dichlorobenzene	10.0	10.6		ug/L	106	80 - 120	
1,2-Dibromo-3-Chloropropane	10.0	9.05		ug/L	90	65 - 133	
1,2,4-Trichlorobenzene	10.0	6.43		ug/L	64	61 - 148	
Hexachlorobutadiene	10.0	8.79		ug/L	88	74 - 131	
Naphthalene	10.0	8.91		ug/L	89	63 - 150	
1,2,3-Trichlorobenzene	10.0	8.64		ug/L	86	65 - 150	
1,3,5-Trimethylbenzene	10.0	11.0		ug/L	110	80 - 122	

LCS LCS

Surrogate	%Recovery	Qualifier	Limits
Toluene-d8 (Surr)	107		80 - 120
1,2-Dichloroethane-d4 (Surr)	84		80 - 120
4-Bromofluorobenzene (Surr)	85		80 - 120
Dibromofluoromethane (Surr)	82		80 - 120

Lab Sample ID: LCSD 580-410498/7

Matrix: Water

Analysis Batch: 410498

Client Sample	ID:	Lab (Contro	ol San	nple	Dup
			Prep 1	vpe:	Tota	/NA

	Spike	LCSD	LCSD				%Rec		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Dichlorodifluoromethane	10.0	8.94		ug/L		89	20 - 150	19	33
Chloromethane	10.0	8.47		ug/L		85	25 - 150	16	26
Vinyl chloride	10.0	9.96		ug/L		100	31 - 150	14	26
Bromomethane	10.0	12.6		ug/L		126	36 - 150	16	33
Chloroethane	10.0	8.74		ug/L		87	38 - 150	8	28
Trichlorofluoromethane	10.0	10.3		ug/L		103	45 - 148	12	35
Carbon disulfide	10.0	8.99		ug/L		90	63 - 134	16	24
1,1-Dichloroethene	10.0	9.59		ug/L		96	70 - 129	11	23
Acetone	50.0	47.3		ug/L		95	44 - 150	10	33
Methylene Chloride	10.0	7.84		ug/L		78	77 - 125	14	18
Methyl tert-butyl ether	10.0	9.08		ug/L		91	72 - 120	8	18
trans-1,2-Dichloroethene	10.0	9.27		ug/L		93	75 - 120	10	21

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Client: ERM-West Job ID: 580-119876-1

Project/Site: Arkema - Q4 2022 Groundwater Event

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCSD 580-410498/7

Matrix: Water

Analysis Batch: 410498

1,2-Dibromo-3-Chloropropane

1,2,4-Trichlorobenzene

Hexachlorobutadiene

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Alialysis Balcii. 410450	Spike		LCSD				%Rec		RPD
Analyte	Added		Qualifier	Unit	D	%Rec	Limits	RPD	Limit
1,1-Dichloroethane	10.0	9.07		ug/L		91	80 - 120	5	15
2-Butanone (MEK)	50.0	52.6		ug/L		105	65 - 137	11	34
2,2-Dichloropropane	10.0	8.65		ug/L		86	66 - 126	11	22
cis-1,2-Dichloroethene	10.0	9.13		ug/L		91	76 - 120	10	20
Bromochloromethane	10.0	9.01		ug/L		90	78 - 120	8	13
Chloroform	10.0	9.58		ug/L		96	78 - 127	8	14
1,1,1-Trichloroethane	10.0	8.64		ug/L		86	74 - 130	10	19
Carbon tetrachloride	10.0	8.59		ug/L		86	72 - 129	11	19
1,1-Dichloropropene	10.0	9.28		ug/L		93	74 - 120	2	14
Benzene	10.0	10.4		ug/L		104	80 - 122	2	14
1,2-Dichloroethane	10.0	8.09		ug/L		81	69 - 126	5	11
Trichloroethene	10.0	10.6		ug/L		106	80 - 125	1	13
1,2-Dichloropropane	10.0	9.95		ug/L		100	80 - 120	8	14
4-Methyl-2-pentanone (MIBK)	50.0	36.4		ug/L		73	59 - 141	9	22
Dibromomethane	10.0	9.75		ug/L		98	80 - 120	1	11
Bromodichloromethane	10.0	9.84		ug/L		98	75 - 124	3	13
cis-1,3-Dichloropropene	10.0	12.5	*+	ug/L		125	77 - 120	35	35
Toluene	10.0	10.1		ug/L		101	80 - 120	8	13
trans-1,3-Dichloropropene	10.0	10.5		ug/L		105	76 - 122	17	20
1,1,2-Trichloroethane	10.0	10.3		ug/L		103	80 - 121	12	14
Tetrachloroethene	10.0	9.51		ug/L		95	76 - 125	4	13
1,3-Dichloropropane	10.0	10.6		ug/L		106	79 - 120	15	19
Dibromochloromethane	10.0	10.5		ug/L		105	73 - 125	3	13
1,2-Dibromoethane	10.0	10.8		ug/L		108	79 - 126	9	12
Chlorobenzene	10.0	10.5		ug/L		105	80 - 120	2	10
1,1,1,2-Tetrachloroethane	10.0	10.1		ug/L		101	79 - 120	9	16
Ethylbenzene	10.0	9.99		ug/L		100	80 - 120	1	14
m-Xylene & p-Xylene	10.0	9.76		ug/L		98	80 - 120	0	14
o-Xylene	10.0	9.88		ug/L		99	80 - 120	6	16
Styrene	10.0	9.57		ug/L		96	76 - 122	1	16
Bromoform	10.0	9.56		ug/L		96	56 - 139	4	21
Isopropylbenzene	10.0	10.0		ug/L		100	80 - 123	7	19
Bromobenzene	10.0	9.88		ug/L		99	80 - 120	13	24
1,1,2,2-Tetrachloroethane	10.0	9.70		ug/L		97	74 - 124	14	25
1,2,3-Trichloropropane	10.0	9.21		ug/L		92	76 - 124	15	26
N-Propylbenzene	10.0	9.61		ug/L		96	80 - 122	15	22
2-Chlorotoluene	10.0	10.1		ug/L		101	80 - 120	10	20
4-Chlorotoluene	10.0	9.69		ug/L		97	73 - 129	15	29
t-Butylbenzene	10.0	9.64		ug/L		96	75 - 123	15	21
1,2,4-Trimethylbenzene	10.0	10.1		ug/L		101	80 - 120	9	16
sec-Butylbenzene	10.0	10.1		ug/L		101	78 - 122	11	15
4-Isopropyltoluene	10.0	10.3		ug/L		103	77 - 126	8	20
1,3-Dichlorobenzene	10.0	8.74		ug/L		87	77 - 127	17	35
1,4-Dichlorobenzene	10.0	10.2		ug/L		102	80 - 120	4	17
n-Butylbenzene	10.0	10.2		ug/L ug/L		102	57 ₋ 133	5	14
1,2-Dichlorobenzene	10.0	10.2		ug/L ug/L		102	80 - 120	1	15
1,2-Dictioroperizerie	10.0	10.5		ug/L		105	00 - 120	'	15

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6

36

14

25

27

22

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10.0

10.0

10.0

9.57

10.1

9.23 *1

ug/L

ug/L

ug/L

96

92

101

65 - 133

61 - 148

74 - 131

12/13/2022

Client: ERM-West Job ID: 580-119876-1

Project/Site: Arkema - Q4 2022 Groundwater Event

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCSD 580-410498/7

Matrix: Water

Analysis Batch: 410498

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

	Spike	LCSD	LCSD				%Rec		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Naphthalene	10.0	10.8		ug/L		108	63 - 150	19	33
1,2,3-Trichlorobenzene	10.0	10.9		ug/L		109	65 - 150	23	33
1,3,5-Trimethylbenzene	10.0	9.96		ug/L		100	80 - 122	10	21

LCSD LCSD

Surrogate	%Recovery	Qualifier	Limits
Toluene-d8 (Surr)	105		80 - 120
1,2-Dichloroethane-d4 (Surr)	84		80 - 120
4-Bromofluorobenzene (Surr)	93		80 - 120
Dibromofluoromethane (Surr)	89		80 - 120

Client Sample ID: Method Blank

Prep Type: Total/NA

Matrix: Water

Analysis Batch: 412244

Lab Sample ID: MB 580-412244/6

MB MB

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methylene Chloride	ND		3.0	1.4	ug/L			12/07/22 18:12	1
Methyl tert-butyl ether	ND		1.0	0.44	ug/L			12/07/22 18:12	1
1,1,1-Trichloroethane	ND		1.0	0.39	ug/L			12/07/22 18:12	1
1,3-Dichlorobenzene	ND		1.0	0.48	ug/L			12/07/22 18:12	1
1,2,4-Trichlorobenzene	ND		1.0	0.33	ug/L			12/07/22 18:12	1

MB MB

Surrogate	%Recovery	Qualifier Limit	s	Prepared	Analyzed	Dil Fac	
Toluene-d8 (Surr)	106	80 - 1	20		12/07/22 18:12	1	
1,2-Dichloroethane-d4 (Surr)	85	80 - 1	20		12/07/22 18:12	1	
4-Bromofluorobenzene (Surr)	92	80 - 1	20		12/07/22 18:12	1	
Dibromofluoromethane (Surr)	103	80 - 1	20		12/07/22 18:12	1	

Lab Sample ID: LCS 580-412244/7

Matrix: Water

Analysis Batch: 412244

Client Sample ID: Lab Control Sample Prep Type: Total/NA

	Spike	LCS	LCS				%Rec	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Methylene Chloride	10.0	9.52		ug/L		95	77 - 125	
Methyl tert-butyl ether	10.0	8.51		ug/L		85	72 - 120	
1,1,1-Trichloroethane	10.0	9.82		ug/L		98	74 - 130	
1,3-Dichlorobenzene	10.0	10.7		ug/L		107	77 - 127	
1,2,4-Trichlorobenzene	10.0	9.10		ug/L		91	61 - 148	

LCS LCS

Surrogate	%Recovery	Qualifier	Limits
Toluene-d8 (Surr)	109		80 - 120
1,2-Dichloroethane-d4 (Surr)	87		80 - 120
4-Bromofluorobenzene (Surr)	94		80 - 120
Dibromofluoromethane (Surr)	106		80 - 120

Client: ERM-West Job ID: 580-119876-1

Project/Site: Arkema - Q4 2022 Groundwater Event

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCSD 580-412244/8

Matrix: Water

Analysis Batch: 412244

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

	Spike	LCSD	LCSD				%Rec		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Methylene Chloride	10.0	9.16		ug/L		92	77 - 125	4	18
Methyl tert-butyl ether	10.0	8.75		ug/L		88	72 - 120	3	18
1,1,1-Trichloroethane	10.0	9.77		ug/L		98	74 - 130	1	19
1,3-Dichlorobenzene	10.0	10.8		ug/L		108	77 - 127	1	35
1,2,4-Trichlorobenzene	10.0	9.62		ug/L		96	61 - 148	6	27

LCSD LCSD Surrogate %Recovery Qualifier Limits Toluene-d8 (Surr) 80 - 120 108 86 1,2-Dichloroethane-d4 (Surr) 80 - 120 4-Bromofluorobenzene (Surr) 93 80 - 120 106 80 - 120 Dibromofluoromethane (Surr)

Method: 8260D - Volatile Organic Compounds by GC/MS - RA

Lab Sample ID: 580-119876-15 MS

Client Sample ID: PA-32i-110822 **Matrix: Water Prep Type: Total/NA Analysis Batch: 409881**

Sample Sample Spike MS MS %Rec Analyte Result Qualifier Added Result Qualifier Unit %Rec Limits 0.31 F1 8.65 F1 Vinyl chloride - RA 5.00 167 41 - 150 ug/L

MS MS Surrogate %Recovery Qualifier Limits Toluene-d8 (Surr) - RA 98 80 - 120 Dibromofluoromethane (Surr) -101 80 - 120 RA 80 - 120 4-Bromofluorobenzene (Surr) -99 RA 80 - 120 1,2-Dichloroethane-d4 (Surr) -103 RA

Lab Sample ID: 580-119876-15 MSD Client Sample ID: PA-32i-110822 Prep Type: Total/NA

Matrix: Water

Analysis Batch: 409881

	Sample	Sample	Spike	MSD	MSD				%Rec		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Vinyl chloride - RA	0.31	F1	5.00	8.48	F1	ug/L		164	41 - 150	2	32

		MSD	MSD	
Su	ırrogate	%Recovery	Qualifier	Limits
Tol	luene-d8 (Surr) - RA	98		80 - 120
Dik RA	bromofluoromethane (Surr) - A	103		80 - 120
4-E RA	Bromofluorobenzene (Surr) - A	102		80 - 120
1,2 RA	2-Dichloroethane-d4 (Surr) - A	104		80 - 120

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Job ID: 580-119876-1

Prep Type: Total/NA

Prep Type: Total/NA

Prep Type: Total/NA

Prep Type: Total/NA

Client Sample ID: Method Blank

Client Sample ID: Lab Control Sample

Client Sample ID: Lab Control Sample

Client Sample ID: PA-32i-110822

Project/Site: Arkema - Q4 2022 Groundwater Event

method: 014.0 - 1 chemorate (10)	Method:	314.0 -	Perchlorate	(IC)
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Lab Sample ID: MB 320-633392/5

Matrix: Water

Analysis Batch: 633392

Client: ERM-West

MB MB

Result Qualifier RL **MDL** Unit Analyzed Dil Fac Analyte Prepared 4.0 Perchlorate ND 2.0 ug/L 11/16/22 13:26

Lab Sample ID: LCS 320-633392/6

Matrix: Water

Analysis Batch: 633392

Spike LCS LCS %Rec Added Result Qualifier D %Rec Limits Analyte Unit 49.9 85 - 115 Perchlorate 51.8 ug/L 104

Lab Sample ID: MRL 320-633392/4

Matrix: Water

Analysis Batch: 633392

Spike MRL MRL %Rec Added Result Qualifier Limits Analyte Unit %Rec Perchlorate 3.99 3.57 J 89 75 - 125 ug/L

Lab Sample ID: 580-119876-15 MS

Matrix: Water

Analysis Batch: 633392

Spike MS MS %Rec Sample Sample Analyte Result Qualifier Added Result Qualifier Unit %Rec Limits Perchlorate 499 80 - 120 ND 499 ug/L 100

Lab Sample ID: 580-119876-15 MSD

Matrix: Water

Analysis Batch: 633392

MSD MSD RPD Sample Sample Spike %Rec Result Qualifier Added Limits Analyte Result Qualifier Unit %Rec Limit Perchlorate ND 499 536 108 80 - 120 ug/L

Lab Sample ID: MB 320-635026/5

Matrix: Water

Analysis Batch: 635026

MB MB

MDL Unit Analyte Result Qualifier RL Dil Fac Prepared Analyzed 4.0 11/23/22 11:30 Perchlorate ND 2.0 ug/L

Lab Sample ID: LCS 320-635026/6

Matrix: Water

Analysis Batch: 635026

Spike LCS LCS %Rec Added Result Qualifier Limits Analyte Unit %Rec Perchlorate 49.9 52.4 ug/L 105 85 - 115

Lab Sample ID: MRL 320-635026/4

Matrix: Water

Analysis Batch: 635026

Spike MRL MRL %Rec Added Result Qualifier Analyte Unit %Rec Limits Perchlorate 3.99 75 - 125 3.77 ug/L 94

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Client Sample ID: PA-32i-110822 Prep Type: Total/NA

Client Sample ID: Method Blank

Prep Type: Total/NA

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Client: ERM-West Job ID: 580-119876-1

Project/Site: Arkema - Q4 2022 Groundwater Event

Method: 300.0	- Anions, I	lon Chroma	tography
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Lab Sample ID: MB 580-412063/38 Client Sample ID: Method Blank

Matrix: Water

Analysis Batch: 412063

MB MB

Analyzed Result Qualifier RL **MDL** Unit Dil Fac Analyte Prepared Chloride 1.5 0.43 mg/L 11/30/22 17:32 ND

Lab Sample ID: LCS 580-412063/32 **Client Sample ID: Lab Control Sample Matrix: Water** Prep Type: Total/NA

Analysis Batch: 412063

Spike LCS LCS %Rec Added Result Qualifier D %Rec Limits Analyte Unit Chloride 50.0 90 - 110 51.8 mg/L 104

Lab Sample ID: LCSD 580-412063/33 Client Sample ID: Lab Control Sample Dup Prep Type: Total/NA

Matrix: Water

Analysis Batch: 412063

Spike LCSD LCSD %Rec **RPD** Added Result Qualifier Limits RPD Analyte Unit %Rec Limit Chloride 50.0 51.7 103 90 - 110 mg/L

Lab Sample ID: 580-119876-15 MS Client Sample ID: PA-32i-110822 Prep Type: Total/NA

Matrix: Water

Analysis Batch: 412063

Spike MS MS %Rec Sample Sample Analyte Result Qualifier Added Result Qualifier Unit %Rec Limits Chloride 75 F1 50.0 117 F1 mg/L 85 90 - 110

Lab Sample ID: 580-119876-15 MSD Client Sample ID: PA-32i-110822 Prep Type: Total/NA

Matrix: Water

Analysis Batch: 412063

MSD MSD RPD Sample Sample Spike %Rec Analyte Result Qualifier Added Result Qualifier Limits Unit %Rec Limit Chloride 75 F1 50.0 117 F1 mg/L 85 90 - 110

Lab Sample ID: MB 580-412160/3 Client Sample ID: Method Blank Prep Type: Total/NA

Matrix: Water

Analysis Batch: 412160

MB MB

Result Qualifier **MDL** Unit Analyte RL Analyzed Dil Fac Prepared 0.43 mg/L 12/02/22 19:25 Chloride ND 1.5

Lab Sample ID: LCS 580-412160/4 **Client Sample ID: Lab Control Sample** Prep Type: Total/NA

Matrix: Water

Analysis Batch: 412160

Spike LCS LCS %Rec Added Analyte Result Qualifier Limits Unit %Rec Chloride 50.0 50.6 mg/L 101 90 - 110

Lab Sample ID: LCSD 580-412160/5 Client Sample ID: Lab Control Sample Dup Prep Type: Total/NA

Matrix: Water

Analysis Ratch: 412160

Alialysis Dalcii. 412100									
	Spike	LCSD	LCSD				%Rec		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Chloride	50.0	50.7		ma/l		101	90 - 110		15

Eurofins Seattle

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12/13/2022

Prep Type: Total/NA

Job ID: 580-119876-1

Project/Site: Arkema - Q4 2022 Groundwater Event

Client Sample ID: TB-110722

Lab Sample ID: 580-119876-1 Date Collected: 11/07/22 00:01

Matrix: Water

Date Received: 11/09/22 15:05

Client: ERM-West

	Batch	Batch		Dilution	Batch			Prepared
Prep Type	Туре	Method	Run	Factor	Number	Analyst	Lab	or Analyzed
Total/NA	Analysis	8260D		1	409568	K1K	EET SEA	11/10/22 18:10

Client Sample ID: MWA-82-110722

Lab Sample ID: 580-119876-2

Matrix: Water

Date Collected: 11/07/22 07:12 Date Received: 11/09/22 15:05

	Batch	Batch		Dilution	Batch			Prepared
Prep Type	Туре	Method	Run	Factor	Number	Analyst	Lab	or Analyzed
Total/NA	Analysis	8260D		1	409568	K1K	EET SEA	11/10/22 19:48
Total/NA	Analysis	314.0		2	633392	Y1S	EET SAC	11/16/22 14:04
Total/NA	Analysis	300.0		1	412063	JHR	EET SEA	11/30/22 23:12

Client Sample ID: PA-44i-110722

Lab Sample ID: 580-119876-3 Date Collected: 11/07/22 08:00

Matrix: Water

Date Received: 11/09/22 15:05

Date Received: 11/09/22 15:05

	Batch	Batch		Dilution	Batch			Prepared
Prep Type	Type	Method	Run	Factor	Number	Analyst	Lab	or Analyzed
Total/NA	Analysis	8260D			409568	K1K	EET SEA	11/10/22 23:31
Total/NA	Analysis	314.0		1	633392	Y1S	EET SAC	11/16/22 14:23
Total/NA	Analysis	300.0		1	412063	JHR	EET SEA	11/30/22 23:24

Client Sample ID: PA-15i-110722

Lab Sample ID: 580-119876-4 Date Collected: 11/07/22 09:20 **Matrix: Water**

Batch Dilution Batch Batch Prepared Method **Prep Type** Type Run Factor Number Analyst Lab or Analyzed 11/10/22 23:55 Total/NA Analysis 8260D 409568 K1K EET SEA Total/NA Analysis 314.0 11/16/22 14:42 5 633392 Y1S EET SAC Total/NA Analysis 300.0 100 412063 JHR **EET SEA** 11/30/22 23:35

Client Sample ID: PA-08-110722

Lab Sample ID: 580-119876-5 Date Collected: 11/07/22 09:52 **Matrix: Water**

Date Received: 11/09/22 15:05

	Batch	Batch		Dilution	Batch			Prepared
Prep Type	Type	Method	Run	Factor	Number	Analyst	Lab	or Analyzed
Total/NA	Analysis	8260D		1	409568	K1K	EET SEA	11/11/22 00:20
Total/NA	Analysis	314.0		5	633392	Y1S	EET SAC	11/16/22 15:01
Total/NA	Analysis	300.0		100	412063	JHR	EET SEA	12/01/22 00:22

Client Sample ID: PA-25d-110722

Lab Sample ID: 580-119876-6 Date Collected: 11/07/22 10:36 **Matrix: Water**

Date Received: 11/09/22 15:05

	Batch	Batch		Dilution	Batch			Prepared
Prep Type	Type	Method	Run	Factor	Number	Analyst	Lab	or Analyzed
Total/NA	Analysis	8260D			409568	K1K	EET SEA	11/10/22 20:13
Total/NA	Analysis	314.0		1	633392	Y1S	EET SAC	11/16/22 15:20

Eurofins Seattle

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12/13/2022

Project/Site: Arkema - Q4 2022 Groundwater Event

Client Sample ID: PA-25d-110722

Date Collected: 11/07/22 10:36 Date Received: 11/09/22 15:05

Client: ERM-West

Lab Sample ID: 580-119876-6

Matrix: Water

Batch Batch Dilution Batch Prepared Method **Factor** Number Analyst or Analyzed **Prep Type** Type Run Lab 12/01/22 00:34 Total/NA Analysis 300.0 412063 JHR EET SEA

Client Sample ID: MWA-81i-110722

Lab Sample ID: 580-119876-7

Matrix: Water

Date Collected: 11/07/22 11:43 Date Received: 11/09/22 15:05

	Batch	Batch		Dilution	Batch			Prepared
Prep Type	Туре	Method	Run	Factor	Number	Analyst	Lab	or Analyzed
Total/NA	Analysis	8260D		1	409568	K1K	EET SEA	11/10/22 20:38
Total/NA	Analysis	314.0		5	633392	Y1S	EET SAC	11/16/22 15:39
Total/NA	Analysis	300.0		100	412063	JHR	EET SEA	12/01/22 00:46

Client Sample ID: MWA-41-110722

Date Collected: 11/07/22 12:12 Date Received: 11/09/22 15:05

Lab Sample ID: 580-119876-8

Matrix: Water

Dilution Batch Batch Batch Prepared Method or Analyzed **Prep Type** Type Number Analyst Run **Factor** Lab 11/10/22 21:02 Total/NA Analysis 8260D 409568 K1K EET SEA Total/NA 11/16/22 15:58 Analysis 314.0 1 633392 Y1S **EET SAC** Total/NA Analysis 300.0 412063 JHR EET SEA 12/01/22 00:57 1

Client Sample ID: PA-16i-110822

Date Collected: 11/08/22 07:03

Date Received: 11/09/22 15:05

Lab Sample ID: 580-119876-9

Matrix: Water

	Batch	Batch		Dilution	Batch			Prepared
Prep Type	Type	Method	Run	Factor	Number	Analyst	Lab	or Analyzed
Total/NA	Analysis	8260D		1	409568	K1K	EET SEA	11/11/22 00:44
Total/NA	Analysis	314.0		2	633392	Y1S	EET SAC	11/16/22 16:17
Total/NA	Analysis	300.0		10	412063	JHR	EET SEA	12/01/22 01:09

Client Sample ID: PA-09-110822

Date Collected: 11/08/22 07:37

Date Received: 11/09/22 15:05

Lab Sample ID: 580-119876-10

Matrix: Water

	Batch	Batch		Dilution	Batch			Prepared
Prep Type	Type	Method	Run	Factor	Number	Analyst	Lab	or Analyzed
Total/NA	Analysis	8260D		1	409568	K1K	EET SEA	11/10/22 21:27
Total/NA	Analysis	314.0		5	633392	Y1S	EET SAC	11/16/22 17:14
Total/NA	Analysis	300.0		10	412063	JHR	EET SEA	12/01/22 01:21

Client Sample ID: PA-26d-110822

Date Collected: 11/08/22 08:10 Date Received: 11/09/22 15:05

Lab Sample ID: 580-119876-11

Matrix: Water

	Batch	Batch		Dilution	Batch			Prepared
Prep Type	Type	Method	Run	Factor	Number	Analyst	Lab	or Analyzed
Total/NA	Analysis	8260D			409568	K1K	EET SEA	11/10/22 21:52
Total/NA	Analysis	314.0		1	633392	Y1S	EET SAC	11/16/22 17:33

Eurofins Seattle

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Lab Sample ID: 580-119876-11

Matrix: Water

Date Collected: 11/08/22 08:10 Date Received: 11/09/22 15:05

Client: ERM-West

	Batch	Batch		Dilution	Batch			Prepared
Prep Type	Type	Method	Run	Factor	Number	Analyst	Lab	or Analyzed
Total/NA	Analysis	300.0		1	412063	JHR	EET SEA	12/01/22 01:32

Client Sample ID: RB-01-110822

Lab Sample ID: 580-119876-12

Matrix: Water

Date Collected: 11/08/22 08:40 Date Received: 11/09/22 15:05

	Batch	Batch		Dilution	Batch			Prepared
Prep Type	Type	Method	Run	Factor	Number	Analyst	Lab	or Analyzed
Total/NA	Analysis	8260D		1	409568	K1K	EET SEA	11/10/22 22:16
Total/NA	Analysis	314.0		1	633392	Y1S	EET SAC	11/16/22 17:52
Total/NA	Analysis	300.0		1	412063	JHR	EET SEA	12/01/22 01:44

Client Sample ID: PA-31-110822

Lab Sample ID: 580-119876-13

Matrix: Water

Date Collected: 11/08/22 09:15 Date Received: 11/09/22 15:05

	Batch	Batch		Dilution	Batch			Prepared
Prep Type	Type	Method	Run	Factor	Number	Analyst	Lab	or Analyzed
Total/NA	Analysis	8260D		1	409568	K1K	EET SEA	11/10/22 22:41
Total/NA	Analysis	314.0		2	633392	Y1S	EET SAC	11/16/22 18:11
Total/NA	Analysis	300.0		1	412063	JHR	EET SEA	12/01/22 01:56

Client Sample ID: Dup-01-110822

Lab Sample ID: 580-119876-14

Matrix: Water

Date Collected: 11/08/22 09:16 Date Received: 11/09/22 15:05

Γ	Batch	Batch		Dilution	Batch			Prepared
Prep Type	Type	Method	Run	Factor	Number	Analyst	Lab	or Analyzed
Total/NA	Analysis	8260D		1	409568	K1K	EET SEA	11/11/22 01:09
Total/NA	Analysis	314.0		2	633392	Y1S	EET SAC	11/16/22 18:30
Total/NA	Analysis	300.0		1	412063	JHR	EET SEA	12/01/22 02:07

Client Sample ID: PA-32i-110822

Lab Sample ID: 580-119876-15

Matrix: Water

Date Collected: 11/08/22 09:58 Date Received: 11/09/22 15:05

	Batch	Batch		Dilution	Batch			Prepared
Prep Type	Type	Method	Run	Factor	Number	Analyst	Lab	or Analyzed
Total/NA	Analysis	8260D		1	409568	K1K	EET SEA	11/11/22 01:34
Total/NA	Analysis	8260D	RA	1	409881	K1K	EET SEA	11/14/22 19:44
Total/NA	Analysis	314.0		10	633392	Y1S	EET SAC	11/16/22 18:49
Total/NA	Analysis	300.0		1	412063	JHR	EET SEA	12/01/22 02:43

Client Sample ID: PA-03-110822

Date Received: 11/09/22 15:05

Lab Sample ID: 580-119876-16 Date Collected: 11/08/22 11:01

Matrix: Water

Batch Dilution Batch Batch Prepared Prep Type Туре Method Run **Factor** Number Analyst or Analyzed Lab 11/10/22 23:06 Total/NA Analysis 8260D 409568 K1K EET SEA

Lab Chronicle

Client: ERM-West Job ID: 580-119876-1

Project/Site: Arkema - Q4 2022 Groundwater Event

Client Sample ID: PA-03-110822

Lab Sample ID: 580-119876-16 Date Collected: 11/08/22 11:01

Matrix: Water

Date Received: 11/09/22 15:05

	Batch	Batch		Dilution	Batch			Prepared
Prep Type	Туре	Method	Run	Factor	Number	Analyst	Lab	or Analyzed
Total/NA	Analysis	314.0		2	635026	AP1	EET SAC	11/23/22 15:00
Total/NA	Analysis	300.0		1	412160	JHR	EET SEA	12/03/22 05:34

Lab Sample ID: 580-119876-17 Client Sample ID: PA-17iR-110822

Date Collected: 11/08/22 11:27 **Matrix: Water**

Date Received: 11/09/22 15:05

	Batch	Batch		Dilution	Batch			Prepared
Prep Type	Type	Method	Run	Factor	Number	Analyst	Lab	or Analyzed
Total/NA	Analysis	8260D		10	409881	K1K	EET SEA	11/14/22 21:48
Total/NA	Analysis	314.0		5	633392	Y1S	EET SAC	11/16/22 19:46
Total/NA	Analysis	300.0		1	412160	JHR	EET SEA	12/03/22 05:46

Client Sample ID: PA-27d-110822 Lab Sample ID: 580-119876-18

Date Collected: 11/08/22 12:02 **Matrix: Water**

Date Received: 11/09/22 15:05

	Batch	Batch		Dilution	Batch			Prepared
Prep Type	Туре	Method	Run	Factor	Number	Analyst	Lab	or Analyzed
Total/NA	Analysis	8260D		1	410498	BNM	EET SEA	11/18/22 18:47
Total/NA	Analysis	8260D	RA	1	412244	BNM	EET SEA	12/07/22 21:02
Total/NA	Analysis	314.0		5	635026	AP1	EET SAC	11/23/22 15:18
Total/NA	Analysis	300.0		100	412160	JHR	EET SEA	12/03/22 05:58

Laboratory References:

EET SAC = Eurofins Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

EET SEA = Eurofins Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

Eurofins Seattle

Accreditation/Certification Summary

Client: ERM-West Job ID: 580-119876-1

Project/Site: Arkema - Q4 2022 Groundwater Event

Laboratory: Eurofins Seattle

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Oregon	NELAP	4167	07-08-23

Laboratory: Eurofins Sacramento

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date	
Oregon	NELAP	4040	01-29-23	

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Sample Summary

Client: ERM-West Job ID: 580-119876-1

Project/Site: Arkema - Q4 2022 Groundwater Event

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-119876-1	TB-110722	Water	11/07/22 00:01	11/09/22 15:05
580-119876-2	MWA-82-110722	Water	11/07/22 07:12	11/09/22 15:05
580-119876-3	PA-44i-110722	Water	11/07/22 08:00	11/09/22 15:05
580-119876-4	PA-15i-110722	Water	11/07/22 09:20	11/09/22 15:05
580-119876-5	PA-08-110722	Water	11/07/22 09:52	11/09/22 15:05
580-119876-6	PA-25d-110722	Water	11/07/22 10:36	11/09/22 15:05
580-119876-7	MWA-81i-110722	Water	11/07/22 11:43	11/09/22 15:05
580-119876-8	MWA-41-110722	Water	11/07/22 12:12	11/09/22 15:05
580-119876-9	PA-16i-110822	Water	11/08/22 07:03	11/09/22 15:05
580-119876-10	PA-09-110822	Water	11/08/22 07:37	11/09/22 15:05
580-119876-11	PA-26d-110822	Water	11/08/22 08:10	11/09/22 15:05
580-119876-12	RB-01-110822	Water	11/08/22 08:40	11/09/22 15:05
580-119876-13	PA-31-110822	Water	11/08/22 09:15	11/09/22 15:05
580-119876-14	Dup-01-110822	Water	11/08/22 09:16	11/09/22 15:05
580-119876-15	PA-32i-110822	Water	11/08/22 09:58	11/09/22 15:05
580-119876-16	PA-03-110822	Water	11/08/22 11:01	11/09/22 15:05
580-119876-17	PA-17iR-110822	Water	11/08/22 11:27	11/09/22 15:05
580-119876-18	PA-27d-110822	Water	11/08/22 12:02	11/09/22 15:05

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Phone (253) 922-2310 Fax (253) 922-5047														
Cliant Information	Sampler,	ľ	Terrenove		Lab PM: Cruz, Sheri L				Carrier Tra	Carrier Tracking No(s):		0 1	COC No:	
Client Contact: Avery Soblata, Andrew Gardner, and Sarah Seekins	Phone: 503	307-1	540		E-Mail: sheri.cruz@testamericainc.com	stamerica	inc.com					<u>a. </u>	20	+3
Company: ERM-West								Analysis	Requested	sted		7	Job #:	
Address: 1050 SW 6th Avenue Suite 1650	Due Date Requested:	:pe											Preservation Codes	des: M. Hovene
City. Portland State, Zip: OR, 97204	TAT Requested (d	(days): 15BD				81							B - NaOH C - Zn Acetate D - Nitric Acid E - NaHSO4	N - None O - AsNaO2 P - Na2SO3 G - Na2SO3
Phone:	Po #: PN 0629640.20	7											S - Amchiar H - Ascorbic Acid	
Errail: avery.soplata@erm.com, andrew.gardner@erm.com and sarah.seekins@erm.com	WO#:				(oN)								J - Ice J - DI Water K - EDTA	
Project Name: Arkema - Q4 2022 Groundwater event	Project #: 0629640				10 89,		əlttasi			(L-EUA	
She:	SSOW#:) GBN			a		251				
County of the stiff could be	o de C	Sample	Sample Type (C=comp,	Matrix (Wewter, Sasolid, Oswantooli,	NSM miohe	3260C LL - Sta	300.0_28D-Chl	feroldone9 Af E		v/5W		admuN latoT	Special	Special Instructions/Note:
	Name of the court			on Code:	X	1	12					X		
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PA-31-110822	-	5160		Water		×	イ	イ				n		
Dap- 01-110822		09160		Water		メ	メ	X				5		
JE8-327-110822		9560		Water		X	X	メ		×		15		
PA-03-110822		1011		Water		×	メ	ナ				5		
1		1127		Water		X	X	X				'n		
PA-27d-110822	7	1202	7	Water	^	X	X	×				5		
				Water										
				Water										
Possible Hazard Identification	1	1			Sam	ole Dispo	sal (A	fee may be	assessec	if sample	s are retaine	d longer	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)	4
Deliverable Requested: I, II, IV, Other (specify)	Poison B Unknown	-	Radiological		Speci	Return To Client al Instructions/QC	To Client	Requirem	Disposal By Lab	By Lab ise run at le	Return To Client Disposal By Lab Ardinva For Special Instructions/QC Requirements: please run at lowest dilution possible for No.	Intion possible I		2
Empty Kit Relinquished by:		Date:			Time:	1	1		We	Method of Shipment:	vent:			
Relinquished by: 8 ${\cal R}$	Dete/Time; 1/9	12	<u> </u>	Compage	4	Receive By	Q	1	\	Date	Date/7/179/17		1503	Comp
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Custody Seals Intact:

Empty Kit Relinquished by:

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TCL011-118-4WW

TTLOII-PST. VJ

TTL011-80-40

TTLO11-151-47

TECOII-EBB-AMW

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Arkema - Q4 2022 Groundwater event

1050 SW 6th Avenue Suite 1650

15/13/5055 Eurofins TestAmerica, Seattle

avery.soplata@erm.com, andrew.gardner@erm.com and

Avery Soplata, Andrew Gardner, and Sarah Seekins

Phone (253) 922-2310 Fax (253) 922-5047

Sample Identification

аакаћ, ѕеекіпѕ@етт. сотп

OH, 97204

ERM-West

Client Information

Tacoma, WA 98424

5755 8th Street East

:qiZ ,əlal2

Portland

TTLOII-!hh-VJ VAN

Deliverable Requested: I, II, III, IV, Other (specify)

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Custody Seat No.:

Ver: 01/16/2019

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H - Ascorbic Acid

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Special Instructions/Note:

(Appeds) zergo - Z

T - TSP Dodecahydrate

9-4 Hd - M

AADM - V

U - Acetone

PSZH-S

H - Na2S2O3

CO-Na25O3

SPOSEN - 4

SOBNEA - O

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Field Filtered Sample (Yes or No)
Parform MS/MSD (Yes or No)

Preservation Code:

X

LL - Standard VOA list-Seattle

VOA list-Seattle

moo.onisohemeteel@suno.herta

Cruz, Sheri L

Chain of Custody Record

Page 73 of 81

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Sample

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Due Date Requested:

EXOZ-202-3043

- See Tonsmein

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En/13 00

Special Instructions/OC Requirements: please run at lowest dilution possible for ND.

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

Setting To Client Disposal By Lab Archive For Month

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Analysis Requested

580-119876 Chain of Custody

Method of Shipment:

- Smitomo 🔆

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Chain of Custody Record

502/21/21 Eurofins TestAmerica, Seattle

	WA 98424	Tacoma,
	Street East	418 9929

253) 922-5047	23) 855-5310 Fax (S) auoud
	WA 98424	Tacoma,
	20,661 5321	1110 0070

	(יו /מי	5 CI G	smeA settO bas O	° (s)enuts	neqmeT	, ချသာ						Custody Seals Intact: Custody Seal No.:
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				N	٧	٧>	囟	tion Code:			> <	
Special instructions/Note:	Total Number o	MSIMSD	314 Perchlorate	300.0_28D-Chloride-Seattle	8260C_LL - Standard VOA	8260C regular level standard VOA list-Seattle	Field Filtered Sample (Yes or No)	XITISMI , when we'd) Special Modern wood (Manh general of the page)	Sample Type (C=comp, G=grab)	elqms2 emiT	elsO elgmsS	Sample identification
Other:	171 1 1 1			Je Se	ard V	8 8		······································		-	:#MOSS	ens
K - EDTA N - PH 4-5	i i i i i i i i i i i i i i i i i i i			#	OA R	nd or	I\$[Project #: 0629640	Project Name: Arkema - Q4 2022 Groundwater event
eol-1 AAN V seteWild I	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1				list-Seattle	VOA	9 07 N					ачегу. soplata@erm.com, andrew.gardner@erm.com and sarah.seekins@erm.com
G - Amehlor S - H2SO4 H - Ascerbic Acid T - TSP Dodecahydrate					•	st-Se	ľ۱			20	PN 0629640.20	Eusit
E - M#OH B - M#S2SO3 E - M#H2O4 C - M#S2SO3						atte	1 F				# Od	OR, 97204
SOBNEA - O BISIDA NIZ - O SANSA - Q bioA birith - O									_		ļ	Spiles Zipi:
A - HCL M - Hexane B - NaOH - M - None									ξ.	1281: 1281) betesupeR TAT	Ohy:
Preservation Codes:										:paj	Due Date Reques	1020 SW 6th Avenue Suite 1650
1cp #:		Pednested	sisylsnA	<u></u>			Ť					ERM-West
アナシブ			и	ainc.co	neuc	शह्माळी व			Fho	7-100	EQ.5	Avery Sopiała, Andrew Gardner, and Sarah Seekins Company:
bege: COC No:		Carrier Tracking No(s)				eu F	M9. Z, Sh	√. Cru	ONDA	13T T	T3. 2	Client Information

Chain of Custody Record

Chieff Information (Sub Contract Lab) Prov. Surveyer Chieff Information (Sub Contract Lab) Prov. Surveyer Sub-Electronian	Eurofins Seattle 5755 8th Street East Tacoma, WA 98424 Phone: 253-922-2310)	Chain o	of Custody Record	ody R	ecor				💸 eurofins	Environment Testing
Simple Dennification - Clerk Dick Dennification - Dennification - Dennification - Dennification - Dennification - De	ormation	Sampler.			Lab P. Cruz,	M: Sheri L		Carrier Tracking No(s):		COC No: 580-111736.1	
Charlest Environment Testing Northern Canadian Separate	Client Contact: Shipping/Receiving	Phone:			E-Mail Sheri	.Cruz@e	et.eurofinsus.com	State of Origin: Oregon		Page: Page 1 of 3	
Accoration Color Date Date Note: Color Date Date Date Date Date Date Date Color Date Date Date Color Date Date Date Color Date Date Date Color Date Date Date Color Date Date Color Date Date Date Date Color Date Date Date Date Color Date Date Date Date Date Date Date Date	Company: Eurofins Environment Testing Northern Ca					Accreditati NELAP -	ions Required (See note): - Oregon			Job #: 580-119876-1	
Valet Sacramento Valet Valet Valet	Address: 880 Riverside Parkway, ,	Due Date Request 12/1/2022	:pa;				`	Requested		Preservation Co	ides:
2000 2000	City. West Sacramento	TAT Requested (d	lays):							A - HCL B - NaOH C - Zn Acetate	N - None O - AsNaO2
Profest Prof	State, Zip: CA, 95605									D - Nitric Acid E - NaHSO4	P - Na2O4S Q - Na2SO3 R - Na2SO3
Finglet Harmer Fing	73-5600(Tel)	PO #:				(0				F - MeOH G - Amchlor	S - H2SO4 T - TSP Dodecahydrate
Project Hame Project Hame	Email:	WO #:							S.		U - Acetone V - MCAA
Sample Identification - Client ID (Lab ID) Sample Date Time G=Graph Water Type G=Graph G	Project Name: Arkerna - Q4 2022 Groundwater Event	Project #: 58016290							ienis)		W - pH 4-5 Y - Trizma Z - other (specify)
Sample Identification - Client ID (Lab ID) Sample Date Type Sample Identification - Client ID (Lab ID) Sample Date Seconds Type Servation Edge of Seconds Available of Seconds <t< th=""><th>Site:</th><th>SSOW#:</th><th></th><th></th><th></th><th>A) ds</th><th>91</th><th></th><th>noo lo</th><th></th><th></th></t<>	Site:	SSOW#:				A) ds	91		noo lo		
Sample Identification - Client ID (Lab ID) Sample Date Advisorment Type (G=comp. in Firstan ID) Sample Date Advisorment Type (G=comp. in Firstan ID) Advisorment in Eq.				Sample	Matrix (w=water	W/SW	niora		nber o		
MVA-82-110722 (580-119876-2) 117722 Preservation Code: X Preservation Code: X Y		Sample Date	Sample	Type (C=comp, G=grab)	S=solid, O=waste/oil, BT=Tissue, A=Air)	Perform	ned \0.4rs		nuM lato1		setrictions/Note.
MAVA-82-110722 (580-119876-2) 117722 O7:12 Pacific Pacific Pacific Water X Mater X PA-44:110722 (580-119876-3) Mater X PA-44:110722 (580-119876-4) Mater X Pacific		\bigvee	X	Preservati	on Code:	X			·V		istractions/note.
PA-44i-110722 (580-119876-3) 117722 Pacific Pacific Water X Pacific Pacific PA-15i-110722 (580-119876-4) 117722 Pacific Pacific Water X Pacific Pacific PA-08-110722 (580-119876-5) 117722 Pacific Pacific Water X Pacific Pacific PA-25d-110722 (580-119876-7) 117722 Pacific Pacific Water X Pacific Pacific PA-16i-110822 (580-119876-8) 117722 Pacific Pacific Water X Pacific Pacific PA-16i-110822 (580-119876-9) 11/18/22 Pacific Pacific Pacific X Pacific PA-09-110822 (580-119876-9) 11/18/22 Pacific Pacific Pacific X Pacific Pacific		11/7/22	07:12 Pacific		Water		×		-		
PA-15i-110722 (580-119876-4) 117722 09:20 Pacific Pacific Water X R PA-08-110722 (580-119876-5) 117722 Pacific Pacific Water X R PA-25d-110722 (580-119876-5) 117722 Pacific Pacific Water X R MWA-81i-110722 (580-119876-8) 117722 Pacific Pacific Water X R PA-16i-110822 (580-119876-9) 11/8/22 Pacific Pacific Water X R PA-09-110822 (580-119876-9) 11/8/22 Pacific Pacific X R R		11/7/22	08:00 Pacific		Water		×		-		
11/7/22 09:52 Pacific Pacific Water X 7) 11/7/22 Pacific P		11/7/22	09:20 Pacific		Water		×				
7) 117722 10:36 Water X 11:43 Water X 11:43 Water X 11:43 Water X 11:172 Pacific Pacific Water X 11:18/22 Pacific Water X 11:8/22 Pacifi	PA-08-110722 (580-119876-5)	11/7/22	09:52 Pacific		Water		×		~		
7) 11/722 11:43 Water X 11/722 Pacific Water X 11/722 Pacific Water X 11/8/22 Pacific Water X 11/8/22 Pacific Water X 11/8/22 O7:37 Water X	PA-25d-110722 (580-119876-6)	11/7/22	10:36 Pacific		Water		×				
3) 11/7/22 12:12 Water X	MWA-81i-110722 (580-119876-7)	11/7/22	11:43 Pacific		Water		×		-		
11/8/22 07:03 Water X 11/8/22 07:37 Water X	MWA-41-110722 (580-119876-8)	11/7/22	12:12 Pacific		Water		×		-		
11/8/22 07:37 Water x	PA-16i-110822 (580-119876-9)	11/8/22	07:03 Pacific		Water		×		-		
CHOCK	PA-09-110822 (580-119876-10)	11/8/22	07:37 Pacific		Water		×		-		

Possible Hazard Identification

Possible Hazard Identification		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)	samples are retained longer than 1 month)	
Unconfirmed		Return To Client Disposal By Lab	Lab Archive For Months	the
Deliverable Requested: I, II, III, IV, Other (specify)	Primary Deliverable Rank: 2	Requi		200
Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:	
Relinquished by:	DateTime: Company	Received by	DaterTime: Company	S S S S S S S S S S S S S S S S S S S
Relinquished by:	Date/fime: Coffipany	IV RECEIVABLE	Date/Time:	
Relinquished by:	Date/Time: Company	y Received by:	Date/Time: Company	_
Custody Seal No.: Ves A No	G2864	Cooler Temperature(s) °C and Other Remarks:	200	
		9 10 11 12	3 4 5 6 7 8	2

Chain of Custody Record

Tacoma, WA 98424 Phone: 253-922-2310		Cnain or	oi custoay Record	מ ע	200	.		SIII OINO **	Environment Teshing
Client Information (Sub Contract Lab)	Sampler:			Lab PM: Cruz, Sheri L	Sheri L		Carrier Tracking No(s):	COC No. 580-111736.2	1736.2
Client Contact: Shipping/Receiving	Phone:			E-Mail: Sheri	Jruz@et.	E-Mail: Sheri.Cruz@et.eurofinsus.com	State of Origin: Oregon	Page: Page 2 of 3	of 3
Company: Eurofins Environment Testing Northern Ca				₹ ∠	Accreditations Requir	Accreditations Required (See note): NELAP - Oregon		Job #:	0876-1
Address: 880 Riverside Parkway, ,	Due Date Requested: 12/1/2022	ed:					Analysis Requested	Preserv	on Code
City: West Sacramento	TAT Requested (days):	ays):						A - HCL B - NaOH	¢
State, Zip: CA, 95605								D - Nitric Acid E - NaHSO4	
Phone: 916-373-5600(Tel) 916-372-1059(Fax)	PO #:							F - MeO G - Amc	H K - Na2S203 Hor S - H2SO4 T - TSP Dodecahvdrate
Email:	:#OM			10.					Acid
Project Name: Arkema - Q4 2022 Groundwater Event	Project #: 58016290			1					W - pH 4-5 Y - Trizma
Site:	SSOW#:			June	SD (Y			of con	
		L	L	Г	W/S			D Jac	
		0		(W=water, S=solid, S=solid, Hill HILL S= S=Solid, HILL S=S	M moh			tal Numb	
Sample Identification - Client ID (Lab ID)	Sample Date	Time	G=grab) A-Air)		ы				Special Instructions/Note:
PA-26d-110822 (580-119876-11)	11/8/22	08:10	V	Water	×			-	
RB-01-110822 (580-119876-12)	11/8/22	08:40	>	Water	×			-	
PA-31-110822 (580-119876-13)	11/8/22	09:15 Pacific	>	Water	×			1	
Dup-01-110822 (580-119876-14)	11/8/22	09:16 Pacific	>	Water	×			-	
PA-32i-110822 (580-119876-15)	11/8/22	09:58 Pacific	>	Water	×			1	
PA-32i-110822 (580-119876-15MS)	11/8/22	09:58 Pacific	MS	Water	×			-	
PA-32i-110822 (580-119876-15MSD)	11/8/22	<u> </u>	MSD V	Water	×			-	
PA-03-110822 (580-119876-16)	11/8/22	11:01 Pacific	>	Water	×			-	
PA-17iR-110822 (580-119876-17)	11/8/22	11:27	>	Water	×			-	

attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to Eurofins Environment Testing Northwest, LLC. Possible Hazard Identification

	Possible Hazard Identification		S	Sample Disposal (A fee may be assessed if samples are retained longer than 1 mouth)	samples are retained longer than 1	month!
	Unconfirmed			Return To Client Disposal By Lah		monding Manda
	Deliverable Requested: I, II, III, IV, Other (specify)) Primary Deliverable Rank: 2	S	Redni		Months
	Empty Kit Relinquished by	Date:	Time:		Method of Shipment:	
	Relinquished by:	Date/Time:	Company	Received	Date/Time	Company
12/1	Relinquished by:	Date/Time: C C Co	Company	Received by	Date/Time:	Company
3/20	Relinquished by:	Date/Time: Co	Company	Received by:	Date/Time:	Company
)22	Custody Seals Intact: Custody Seal No.:	0698641		Cooler Temperature(s) °C and Other Remarks		
)			9 10 11 12	45678	2

Chain of Custody Record

Eurofins Seattle 5755 8th Street East Tacoma, WA 98424 Phone: 253-922-2310

💸 eurofins

Environment Testing

	Client Information (Sub Contract Lab)		Lab Pm: Cruz, Sheri L	Carner Tracking No(s):	COC No: 580-111736.3
	olen conad. Shipping/Receiving	Phone: E-Mai	E-Mail: Sheri.Cruz@et.eurofinsus.com	State of Origin: Oregon	Page: Page 3 of 3
	Company: Eurofins Environment Testing Northern Ca		(e):		Job #: 580_119876_1
	Address: 880 Riverside Parkway, ,	Due Date Requested: 12/1/2022	Analysis Requested		١Ř
	City: West Sacramento State, Zip: CA, 95605	TAT Requested (days):			A - HCL N. None B - NaOH O - AsNaO2 C - Zh Acetate P - Na2O4S D - Nitro-Gold O - Na2SO3 E - Nat-SO4
	Phone: 916-373-5600(Tel) 916-372-1059(Fax)	PO#.	(o _N		9
	Project Name:	wo#: Project#:			- ce
	Ankenia - Q4 2022 Groundwater Event Site:	\$8016290 \$SOW#:	SD (Yes		L - EUA Z - other (specify) Other:
Г	Sample Identification - Client ID (Lab ID)	Sample (wwwater, Type Seoid. Sample (C=comp, BTTISsue, Sample Date Time G=grab)	6 berdiria bleif M/SM rmohae 10 A Perchlore	otal Number of	Special Instructions/Note:
200		Preservation	X		operar manacronal des
16.7	PA-27d-110822 (580-119876-18)	11/8/22 12:02 Water	×	-	
7 of 8					
21					
	Note: Since laboratory accreditations are subject to change, Eurofins Environment Testing Northwest, LLC pla laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix accreditation status should be brought to Eurofins Environment Testing Northwest, LLC attention immediately.	it Testing Northwest, LLC places the ownership of method, analytove for analysis/tests/matrix being analyzed, the samples must be st. LLC attention immediately. If all requested accreditations are c	roes the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the being analyzed, the samples must be shipped back to the Eurofins Environment Testing Northwest, LLC laboratory or other instructions will be provided. Any changes to If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to Eurofins Environment Testing Northwest, LLC.	t laboratories. This sample shipment is: g Northwest, LLC laboratory or other ins attesting to said complicance to Eurofin.	forwarded under chain-of-custody. If the structions will be provided. Any changes to s Environment Testing Northwest, L.L.C.
	Possible Hazard Identification Unconfirmed		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)	assessed if samples are retaine	stained longer than 1 month)
	Deliverable Requested: I, II, III, IV, Other (specify)	Primary Deliverable Rank: 2	Requirem	במים בא במים	MOTHE
	Empty Kit Relinquished by	Date:	Time:	Method of Shipment:	
	Relinquished by:	Date/Time: Company Company	Received M. Referenced M. Referenced M.	Date/Time:	Company Company
3/20	Relinquished by:	Date/Time: Company	Received by:	Date/Time:	Company
22	Custody Seals No. Custody Seal No. Cust	869	Cooler Temperature(s) °C and Other Remarks	narks:	
)))	11 12	6 7 8 9	1 2 3 4 5

Client: ERM-West Job Number: 580-119876-1

Login Number: 119876 List Source: Eurofins Seattle

List Number: 1

Creator: O'Connell, Jason I

Creator: O Connell, Jason I		
Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>/ True</td> <td></td>	/ True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Client: ERM-West Job Number: 580-119876-1

Login Number: 119876
List Source: Eurofins Sacramento
List Number: 2
List Creation: 11/12/22 11:54 AM

Creator: Simmons, Jason C

orcator. Ominions, cason o		
Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>True</td> <td></td>	True	
The cooler's custody seal, if present, is intact.	True	1728692
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	2.5c
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
s the Field Sampler's name present on COC?	False	Received project as a subcontract.
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Client: ERM-West Job Number: 580-119876-1

Login Number: 119876
List Number: 3
List Source: Eurofins Sacramento
List Creation: 11/22/22 01:17 PM

Creator: Simmons, Jason C

Creator. Siminons, Jason C		
Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>True</td> <td></td>	True	
The cooler's custody seal, if present, is intact.	True	2072354
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	3.2c
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	False	Received project as a subcontract.
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Job:

Sacramento Sample Receiving Notes

Environment Testing TestAmerica



580-119876 Field Sheet

Tracking #: 10006466412

SO / PO / FO / SAT //2-Day / Ground / UPS / CDO / Courier GSO / OnTrac+Goldstreak / USPS / Other_

Use this form to record Sample Custody Seal, Cooler Custody Seal, Temperature & corrected Temperature & other observations. File in the job folder with the COC

The fit the job folder with the ooo.				
Therm. ID Corr. Factor:	(±/ \		°C	Notes:
, , ,				Notes.
Ice Wet Gel	_			
Cooler Custody Seal: 1728	090	2_		
Cooler ID:				
Temp Observed Correct From: Temp Blank Sam	ted:		_°C	
Opening/Processing The Shipment Cooler compromised/tampered with?	<u>Yes</u>	No D	NA D	
Cooler Temperature is acceptable?				
Frozen samples show signs of thaw?				
Initials: Date: // Date:	1			,
Unpacking/Labeling The Samples	<u>Yes</u>	No	<u>NA</u>	
COC is complete w/o discrepancies?	9			
Samples compromised/tampered with?	<u>_</u>	Ø D		
Containers are not broken or leaking?	Ø	ם		
Sample custody seal?	_		ø	* **
Sample containers have legible labels?	×		۵	5
Sample date/times are provided?	p/			4
Appropriate containers are used?	Z			The state of the s
Sample bottles are completely filled?	آهو آ			Trizma Lot #(s):
Sample preservatives verified?	٦		5 /	in the second se
Is the Field Sampler's name on COC?	_ 		př	
Samples require splitting/compositing?	۵		Ø.	76.
Samples w/o discrepancies?	D *		۵	
Zero headspace?*	۵		ø	Login Completion Yes No NA
Alkalinity has no headspace?	ם	۵	ø	Receipt Temperature on COC?
Perchlorate has headspace? (Methods 314, 331, 6850)	۵	۵	p2°	Samples received within hold time? /p □ □ NCM Filed?
Multiphasic samples are not present?	9			Log Release checked in TALS?
*Containers requiring zero headspace have no headspace	e, or bubble	e < 6 mn	n (1/4")	Initials: Date: // /D D
Initials: Date: ////	20			miliais. F) Date. 17:10 00

\\TACORP\CORP\QA\QA_FACILITIES\SACRAMENTO-QA\DOCUMENT-MANAGEMENT\FORMS\QA-812 SAMPLE RECEIVING NOTES.DOC

QA-812 MBB 05/10/2022



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12

ANALYTICAL REPORT

PREPARED FOR

Attn: Sarah Seekins ERM-West 1050 SW 6th Avenue Suite 1650 Portland, Oregon 97204

Generated 12/14/2022 3:12:08 PM

JOB DESCRIPTION

Arkema - Q4 2022 Groundwater Event

JOB NUMBER

580-119973-1

Eurofins Seattle 5755 8th Street East Tacoma WA 98424



Eurofins Seattle

Job Notes

This report is issued solely for the use of the person or company to whom it is addressed. Any use, copying or disclosure other than by the intended recipient is unauthorized. If you have received this report in error, please notify the sender and destroy this report immediately. This report shall not be reproduced except in full, without prior express written approval by the laboratory.

The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing Northwest, LLC Project Manager.

Authorization

Generated 12/14/2022 3:12:08 PM

Authorized for release by Sheri Cruz, Project Manager I Sheri.Cruz@et.eurofinsus.com (253)922-2310

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4 4

Project/Site: Arkema - Q4 2022 Groundwater Event

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Case Narrative

Client: ERM-West Job ID: 580-119973-1

Project/Site: Arkema - Q4 2022 Groundwater Event

Job ID: 580-119973-1

Laboratory: Eurofins Seattle

Narrative

Job Narrative 580-119973-1

Comments

No additional comments.

Receipt

The samples were received on 11/11/2022 11:35 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 1.3° C.

GC/MS VOA

Method 8260D: The continuing calibration verification (CCV) associated with batch 580-409881 recovered above the upper control limit for Carbon disulfide, Dichlorodifluoromethane, Acetone, Chloromethane, Chloroethane and Bromomethane. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The associated samples are impacted: PA-04-110922 (580-119973-3), PA-10i-110922 (580-119973-4), MWA-11i(d)-111022 (580-119973-17) and (CCVIS 580-409881/3).

Method 8260D: The CCV for analytical batch 580-409881 recovered outside control limits for the following analyte(s): Chloroethane have been identified as a poor performing analyte when analyzed using this method; therefore, re-extraction/re-analysis was not performed. These results have been reported and qualified.

Method 8260D: The method blank for analytical batch 580-409881 contained 1,2-Dibromo-3-Chloropropane, Chlorodibromomethane and Hexachlorobutadiene above the method detection limit. This target analyte concentration was less than half the reporting limit (1/2RL); therefore, re-extraction and re-analysis of samples was not performed.

Method 8260D: The laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) for analytical batch 580-409881 recovered outside control limits for the following analytes: Dichlorodifluoromethane, Chloroethane and Acetone. These analytes were biased high in the LCS and were not detected in the associated samples; therefore, the data have been reported.

Method 8260D: The laboratory control sample duplicate (LCSD) for analytical batch 580-409881 recovered outside control limits for the following analyte(s): Chloroethane. Chloroethane has been identified as a poor performing analyte when analyzed using this method; therefore, re-extraction/re-analysis was not performed. These results have been reported and qualified.

Method 8260D: The [QC] associated with 580-410498 is compliant under 8260D criteria for Carbon tetrachloride. The software does not display the data to the whole number as is listed in the method (i.e. limit of 20%). When applying the evaluation to a whole number, the QC passes the criteria.

Method 8260D: The CCV for analytical batch 580-410498 recovered outside control limits for the following analytes: 4-Methyl-2-pentanone (MIBK), Chloromethane, Acetone, Dichlorofluoromethane, Chloroethane, and Carbon disulfide. 4-Methyl-2-pentanone (MIBK), Chloromethane, Acetone, Dichlorofluoromethane, Chloroethane, and Carbon disulfide have been identified as poor performing analytes when analyzed using this method; therefore, re-extraction/re-analysis was not performed. These results have been reported and qualified.

Method 8260D: The continuing calibration verification (CCV) associated with batch 580-410498 recovered above the upper control limit for cis-1,3-Dichloropropene and trans-1,3-Dichloropropene. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The associated samples are impacted: MWA-63-110922 (580-119973-2), PA-22d-110922 (580-119973-5), MWA-56d-110922 (580-119973-6) and (CCVIS 580-410498/3).

Method 8260D: The method blank for analytical batch 580-410498 contained 1,2,4-Trichlorobenzene, 1,2,3-Trichlorobenzene, Napthalene and trans-1,2-Dichloroethene above the method detection limit. This target analyte concentration was less than the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples was not performed.

Method 8260D: The laboratory control sample (LCS) and / or laboratory control sample duplicate (LCSD) for analytical batch 580-410498 recovered outside control limits for the following analytes: 1,3-Dichloropropane, cis-1,3-Dichloropropene and trans-1,3-Dichloropropene. These analytes were biased high in the LCS and were not detected in the associated samples; therefore, the data have been reported.

Method 8260D: The RPD of the laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) for analytical batch

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Case Narrative

Client: ERM-West Job ID: 580-119973-1

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Laboratory: Eurofins Seattle (Continued)

580-410498 recovered outside control limits for the following analytes: 1,2,4-Trichlorobenzene.

Method 8260D: The following samples are being reported with QC failures: MWA-63-110922 (580-119973-2), PA-22d-110922 (580-119973-5), MWA-56d-110922 (580-119973-6), (CCVIS 580-410498/3), (LCS 580-410498/6) and (LCSD 580-410498/7). 1,2,4-Trichlorobenzene, Methylene Chloride, 1,3-Dichlorobenzene, 1,1,1-Trichloroethane, and Methyl tert-butyl ether failed low in the CCVIS. Additionally, 1,3-Dichlorobenzene and Methylene Chloride failed low in the LCS/LCSD. Re-analysis was beyond analytical holding time, therefore both sets of data are being reported.

Method 8260D: The continuing calibration verification (CCV) associated with batch 580-410922 recovered above the upper control limit for Dichlorodifluoromethane, Vinyl Chloride, Chloromethane, and Bromomethane. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The associated samples are impacted: PA-23d-111022 (580-119973-9), RB-02-111022 (580-119973-10), PA-24d-111022 (580-119973-11), MWA-31i(d)-111022 (580-119973-12), MWA-31i(d)-111022 (580-119973-12[MS]), MWA-31i(d)-111022 (580-119973-12[MSD]), PA-20d-111022 (580-119973-13), PA-21d-111022 (580-119973-14), PA-19d-111022 (580-119973-15), PA-30d-111022 (580-119973-16) and (CCVIS 580-410922/3).

Method 8260D: The method blank for analytical batch 580-410922 contained Acetone, 1,2,4-Trichlorobenzene, 1,2,3-Trichlorobenzene, Napthalene, 4-Methyl-2-pentanone (MIBK), 1,2-Dibromo-3-Chloropropane, 2-Butanone, and Hexachlorobutadiene above the method detection limit. This target analyte concentration was less than the reporting limit (RL); therefore, re-analysis of samples was not performed.

Method 8260D: The laboratory control sample (LCS) and / or laboratory control sample duplicate (LCSD) for analytical batch 580-410922 recovered outside control limits for the following analytes: Dichlorodifluoromethane. These analytes were biased high in the LCS and were not detected in the associated samples; therefore, the data have been reported.

Method 8260D: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for analytical batch 580-410922 were outside control limits for one or more analytes, see QC Sample Results for detail. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery is within acceptance limits.

Method 8260D: The matrix spike / matrix spike duplicate / sample duplicate (MS/MSD/DUP) precision for analytical batch 580-410922 was outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample / laboratory control sample duplicate (LCS/LCSD) precision was within acceptance limits.

Method 8260D: The laboratory control sample (LCS) and / or laboratory control sample duplicate (LCSD) for analytical batch 580-412244 recovered outside control limits for the following analytes: 2,2-Dichloropropane and Tetrachloroethene. This analyte was biased high in the LCS and were not detected in the associated samples; therefore, the data have been reported.

Method 8260D: The RPD of the laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) for analytical batch 580-412244 recovered outside control limits for the following analytes: Bromomethane.

Method 8260D: 1,2-Dichloroethane-d4 (Surr) recovery for the following sample was outside the upper control limit: PA-10i-110922 (580-119973-4). This sample did not contain any target analytes; therefore, re-extraction and/or re-analysis was not performed.

Method 8260D: Reanalysis of the following samples was performed outside of the analytical holding time due to failure of quality control parameters in the initial analysis. MWA-63-110922 (580-119973-2)

Method 8260D: Reanalysis of the following samples were performed outside of the analytical holding time due to low failures in QC on initial in hold run, both sets of data are being reported: PA-22d-110922 (580-119973-5) and MWA-56d-110922 (580-119973-6).

Method 8260D: The following samples were diluted to bring the concentration of target analytes within the calibration range: MWA-58d-110922 (580-119973-7) and Dup-02-110922 (580-119973-8). Elevated reporting limits (RLs) are provided.

Method 8260D: Analysis of the following samples was performed outside of the analytical holding time due to dilutions for Chloroform: MWA-58d-110922 (580-119973-7) and Dup-02-110922 (580-119973-8). Initial run was not analyzed within holding time.

Method 8260D: The following samples was diluted to bring the concentration of target analytes within the calibration range:

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Case Narrative

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Laboratory: Eurofins Seattle (Continued)

PA-21d-111022 (580-119973-14), PA-19d-111022 (580-119973-15) and PA-30d-111022 (580-119973-16). Elevated reporting limits (RLs) are provided.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

General Chemistry

Method 314.0: Due to the nature of the matrix and/or the high conductivity measurement for the following samples in analytical batch 320-633633, and to protect instrumentation, the samples were diluted. Elevated reporting limits (RLs) are provided. PA-04-110922 (580-119973-3), PA-10i-110922 (580-119973-4), PA-23d-111022 (580-119973-9), PA-24d-111022 (580-119973-11), PA-20d-111022 (580-119973-13), PA-21d-111022 (580-119973-14), PA-19d-111022 (580-119973-15), PA-30d-111022 (580-119973-16) and MWA-11i(d)-111022 (580-119973-17)

Method 314.0: The following samples in analytical batch 320-633633 were diluted to bring the concentration of target analytes within the calibration range: PA-22d-110922 (580-119973-5), MWA-58d-110922 (580-119973-7), MWA-31i(d)-111022 (580-119973-12], MWA-31i(d)-111022 (580-119973-12[MSD]). Elevated reporting limits (RLs) are provided.

Method 314.0: Due to the high concentration of perchlorate in the parent sample, the matrix spike / matrix spike duplicate (MS/MSD) for analytical batch 320-633633 was over the calibration range and could not be evaluated for precision and accuracy. The MS/MSD pair was "E" flagged and set as primary. The associated laboratory control sample (LCS) met acceptance criteria. Samples are being reported with this narration. MWA-31i(d)-111022 (580-119973-12[MS]) and MWA-31i(d)-111022 (580-119973-12[MSD])

Method 314.0: The following samples in analytical batch 320-633906 were diluted to bring the concentration of target analytes within the calibration range: MWA-56d-110922 (580-119973-6) and Dup-02-110922 (580-119973-8). Elevated reporting limits (RLs) are provided.

Method 314.0: Due to what appears to be a mis-injection of the parent sample, the sample and it's associated matrix spike/matrix spike duplicate (MS/MSD) pair, are being re-analyzed. The laboratory control sample (LCS) is well within control limits. All other quality control samples are well within control limits. Data is being reported from this analytical batch, 320-633906, without a MS/MSD pair. MWA-56d-110922 (580-119973-6) and Dup-02-110922 (580-119973-8)

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

VOA Prep

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

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Definitions/Glossary

Client: ERM-West Job ID: 580-119973-1

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Surrogate recovery exceeds control limits, high biased.

Qualifiers

G			

Qualifier	Qualifier Description
*_	LCS and/or LCSD is outside acceptance limits, low biased.
*+	LCS and/or LCSD is outside acceptance limits, high biased.
*1	LCS/LCSD RPD exceeds control limits.
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
В	Compound was found in the blank and sample.
E	Result exceeded calibration range.
F1	MS and/or MSD recovery exceeds control limits.
F2	MS/MSD RPD exceeds control limits
Н	Sample was prepped or analyzed beyond the specified holding time
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

HPLC/IC

S1+

Qualifier	Qualifier Description
E	Result exceeded calibration range.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)

	······································
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit

NC Not Calculated

ND Not Detected at the reporting limit (or MDL or EDL if shown)

NEG Negative / Absent POS Positive / Present

PQL Practical Quantitation Limit

PRES Presumptive
QC Quality Control

RER Relative Error Ratio (Radiochemistry)

RL Reporting Limit or Requested Limit (Radiochemistry)

RPD Relative Percent Difference, a measure of the relative difference between two points

TEF Toxicity Equivalent Factor (Dioxin)
TEQ Toxicity Equivalent Quotient (Dioxin)

TNTC Too Numerous To Count

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Project/Site: Arkema - Q4 2022 Groundwater Event

Client Sample ID: TB-110922

Lab Sample ID: 580-119973-1 Date Collected: 11/09/22 00:01

Matrix: Water

Date Received: 11/11/22 11:35

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Dichlorodifluoromethane	ND	*+	0.40	0.13	ug/L		•	11/14/22 16:27	
Chloromethane	ND		0.50	0.14	-			11/14/22 16:27	
Vinyl chloride	ND		0.020	0.013	-			11/14/22 16:27	
Bromomethane	ND		0.50	0.13				11/14/22 16:27	
Chloroethane	ND	*+	0.50	0.096	-			11/14/22 16:27	
Carbon disulfide	ND		0.30	0.083	_			11/14/22 16:27	
Trichlorofluoromethane	ND		0.50	0.12				11/14/22 16:27	
1.1-Dichloroethene	ND		0.20	0.035	-			11/14/22 16:27	
Acetone	ND	*+	10		ug/L			11/14/22 16:27	
Methylene Chloride	ND		5.0		ug/L			11/14/22 16:27	
Methyl tert-butyl ether	ND		0.30	0.070	-			11/14/22 16:27	
2-Butanone (MEK)	ND		10		ug/L			11/14/22 16:27	
trans-1,2-Dichloroethene	ND		0.20	0.033				11/14/22 16:27	
1.1-Dichloroethane	ND		0.20	0.025	-			11/14/22 16:27	
2,2-Dichloropropane	ND		0.50	0.060	Ū			11/14/22 16:27	
cis-1,2-Dichloroethene	ND		0.20	0.055				11/14/22 16:27	
Chlorobromomethane	ND		0.20	0.050	-			11/14/22 16:27	
Chloroform	ND		0.20	0.030	-			11/14/22 16:27	
1,1,1-Trichloroethane	ND		0.20	0.035				11/14/22 16:27	
Carbon tetrachloride	ND ND		0.20	0.025	-			11/14/22 16:27	
	ND ND				-				
1,1-Dichloropropene			0.20	0.084				11/14/22 16:27	
Benzene	ND		0.20	0.030	-			11/14/22 16:27	
1,2-Dichloroethane	ND		0.20	0.043	-			11/14/22 16:27	
Trichloroethene	ND		0.20	0.066				11/14/22 16:27	
1,2-Dichloropropane	ND		0.20	0.060	-			11/14/22 16:27	
4-Methyl-2-pentanone (MIBK)	ND		10		ug/L			11/14/22 16:27	
Dibromomethane	ND		0.20	0.062				11/14/22 16:27	
Dichlorobromomethane	ND		0.20	0.060	-			11/14/22 16:27	
cis-1,3-Dichloropropene	ND		0.20	0.090	-			11/14/22 16:27	
Toluene	ND		0.20	0.050				11/14/22 16:27	
trans-1,3-Dichloropropene	ND		0.20	0.092	-			11/14/22 16:27	
1,1,2-Trichloroethane	ND		0.20	0.070	-			11/14/22 16:27	
Tetrachloroethene	ND		0.24	0.084				11/14/22 16:27	
1,3-Dichloropropane	ND		0.20	0.025	-			11/14/22 16:27	
Chlorodibromomethane	ND		0.20	0.055	-			11/14/22 16:27	
Ethylene Dibromide	ND		0.10	0.025				11/14/22 16:27	
Chlorobenzene	ND		0.20	0.060	ug/L			11/14/22 16:27	
1,1,1,2-Tetrachloroethane	ND		0.30	0.038	-			11/14/22 16:27	
Ethylbenzene	ND		0.20	0.030	ug/L			11/14/22 16:27	
m-Xylene & p-Xylene	ND		0.50	0.12	ug/L			11/14/22 16:27	
o-Xylene	ND		0.50	0.15	ug/L			11/14/22 16:27	
Styrene	ND		1.0	0.19	ug/L			11/14/22 16:27	
Bromoform	ND		0.50	0.16	ug/L			11/14/22 16:27	
Isopropylbenzene	ND		1.0	0.19	ug/L			11/14/22 16:27	
Bromobenzene	ND		0.20	0.038	-			11/14/22 16:27	
1,1,2,2-Tetrachloroethane	ND		0.20	0.056				11/14/22 16:27	
1,2,3-Trichloropropane	ND		0.20	0.050	-			11/14/22 16:27	
N-Propylbenzene	ND		0.30	0.091	_			11/14/22 16:27	
2-Chlorotoluene	ND		0.50		ug/L			11/14/22 16:27	

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Client: ERM-West Job ID: 580-119973-1

Project/Site: Arkema - Q4 2022 Groundwater Event

Client Sample ID: TB-110922

Lab Sample ID: 580-119973-1

Matrix: Water

11/14/22 16:27

11/14/22 16:27

Date Collected: 11/09/22 00:01 Date Received: 11/11/22 11:35

4-Bromofluorobenzene (Surr)

1,2-Dichloroethane-d4 (Surr)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Chlorotoluene	ND		0.30	0.12	ug/L			11/14/22 16:27	1
1,3,5-Trimethylbenzene	ND		0.50	0.15	ug/L			11/14/22 16:27	1
tert-Butylbenzene	ND		0.50	0.26	ug/L			11/14/22 16:27	1
1,2,4-Trimethylbenzene	ND		0.50	0.20	ug/L			11/14/22 16:27	1
sec-Butylbenzene	ND		1.0	0.17	ug/L			11/14/22 16:27	1
4-Isopropyltoluene	ND		0.50	0.15	ug/L			11/14/22 16:27	1
1,3-Dichlorobenzene	ND		0.30	0.050	ug/L			11/14/22 16:27	1
1,4-Dichlorobenzene	ND		0.30	0.050	ug/L			11/14/22 16:27	1
n-Butylbenzene	ND		1.0	0.23	ug/L			11/14/22 16:27	1
1,2-Dichlorobenzene	ND		0.30	0.038	ug/L			11/14/22 16:27	1
1,2-Dibromo-3-Chloropropane	ND		2.0	0.17	ug/L			11/14/22 16:27	1
1,2,4-Trichlorobenzene	ND		0.50	0.17	ug/L			11/14/22 16:27	1
Hexachlorobutadiene	ND		0.50	0.067	ug/L			11/14/22 16:27	1
Naphthalene	ND		1.0	0.22	ug/L			11/14/22 16:27	1
1,2,3-Trichlorobenzene	ND		0.50	0.15	ug/L			11/14/22 16:27	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	103		80 - 120			•		11/14/22 16:27	1
Dibromofluoromethane (Surr)	106		80 - 120					11/14/22 16:27	1

80 - 120

80 - 120

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Client: ERM-West Job ID: 580-119973-1

Project/Site: Arkema - Q4 2022 Groundwater Event

Client Sample ID: MWA-63-110922

Date Collected: 11/09/22 06:33 Date Received: 11/11/22 11:35 Lab Sample ID: 580-119973-2

Matrix: Water

Analyte	Result	Qualifier	RL	MDL		D	Prepared	Analyzed	Dil Fa
Dichlorodifluoromethane	ND		1.0	0.53	ug/L			11/18/22 21:14	
Chloromethane	ND		1.0	0.28	ug/L			11/18/22 21:14	
Vinyl chloride	ND		1.0	0.22	ug/L			11/18/22 21:14	
Bromomethane	ND		1.0	0.21	ug/L			11/18/22 21:14	
Chloroethane	ND		1.0	0.35	ug/L			11/18/22 21:14	
Trichlorofluoromethane	ND		1.0	0.36	ug/L			11/18/22 21:14	
Carbon disulfide	ND		1.0	0.53	ug/L			11/18/22 21:14	
1,1-Dichloroethene	ND		1.0	0.28	ug/L			11/18/22 21:14	
Acetone	ND		15	3.2	ug/L			11/18/22 21:14	
Methylene Chloride	ND	*_	3.0	1.4	ug/L			11/18/22 21:14	
Methyl tert-butyl ether	ND		1.0	0.44	ug/L			11/18/22 21:14	
trans-1,2-Dichloroethene	ND		1.0	0.39	-			11/18/22 21:14	
1,1-Dichloroethane	ND		1.0	0.22				11/18/22 21:14	
2-Butanone (MEK)	ND		15		ug/L			11/18/22 21:14	
2,2-Dichloropropane	ND		1.0	0.32	-			11/18/22 21:14	
cis-1,2-Dichloroethene	5.3		1.0	0.35				11/18/22 21:14	
Bromochloromethane	ND		1.0		ug/L			11/18/22 21:14	
Chloroform	95		1.0		ug/L			11/18/22 21:14	
1,1,1-Trichloroethane	ND		1.0	0.39				11/18/22 21:14	
Carbon tetrachloride	ND		1.0	0.30	-			11/18/22 21:14	
1,1-Dichloropropene	ND		1.0	0.29	_			11/18/22 21:14	
Benzene	ND		1.0	0.24				11/18/22 21:14	
1,2-Dichloroethane	ND		1.0	0.42	_			11/18/22 21:14	
Trichloroethene	5.5		1.0	0.26	-			11/18/22 21:14	
1,2-Dichloropropane	ND		1.0	0.18	-			11/18/22 21:14	
4-Methyl-2-pentanone (MIBK)	ND		5.0		ug/L			11/18/22 21:14	
Dibromomethane	ND		1.0		ug/L			11/18/22 21:14	
Bromodichloromethane	ND		1.0	0.29				11/18/22 21:14	
cis-1,3-Dichloropropene	ND	*+	1.0	0.42	-			11/18/22 21:14	
Toluene	ND		1.0	0.39	-			11/18/22 21:14	
trans-1,3-Dichloropropene	ND	*+	1.0	0.41				11/18/22 21:14	
1,1,2-Trichloroethane	ND	·	1.0	0.24	-			11/18/22 21:14	
Tetrachloroethene	16		1.0	0.41	_			11/18/22 21:14	
1,3-Dichloropropane	ND	*+	1.0	0.35				11/18/22 21:14	
Dibromochloromethane	ND	·	1.0	0.43	_			11/18/22 21:14	
1,2-Dibromoethane	ND		1.0	0.40	•			11/18/22 21:14	
Chlorobenzene	ND		1.0		ug/L			11/18/22 21:14	
1,1,1,2-Tetrachloroethane	ND		1.0		ug/L			11/18/22 21:14	
Ethylbenzene	ND		1.0		ug/L			11/18/22 21:14	
m-Xylene & p-Xylene	ND		2.0		ug/L			11/18/22 21:14	
o-Xylene	ND		1.0		ug/L			11/18/22 21:14	
Styrene	ND		1.0		ug/L			11/18/22 21:14	
Bromoform					ug/L			11/18/22 21:14	
Isopropylbenzene	ND ND		1.0 1.0		ug/L ug/L			11/18/22 21:14	
Bromobenzene	ND ND		1.0		-			11/18/22 21:14	
					ug/L				
1,1,2,2-Tetrachloroethane	ND ND		1.0		ug/L			11/18/22 21:14	
1,2,3-Trichloropropane			1.0		ug/L			11/18/22 21:14	
N-Propylbenzene 2-Chlorotoluene	ND ND		1.0		ug/L ug/L			11/18/22 21:14 11/18/22 21:14	

Eurofins Seattle

Client: ERM-West Job ID: 580-119973-1

Project/Site: Arkema - Q4 2022 Groundwater Event

Client Sample ID: MWA-63-110922

Date Collected: 11/09/22 06:33 Date Received: 11/11/22 11:35 Lab Sample ID: 580-119973-2

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Chlorotoluene	ND		1.0	0.38	ug/L			11/18/22 21:14	1
t-Butylbenzene	ND		2.0	0.58	ug/L			11/18/22 21:14	1
1,2,4-Trimethylbenzene	ND		3.0	0.61	ug/L			11/18/22 21:14	1
sec-Butylbenzene	ND		1.0	0.49	ug/L			11/18/22 21:14	1
4-Isopropyltoluene	ND		1.0	0.28	ug/L			11/18/22 21:14	1
1,3-Dichlorobenzene	ND	*_	1.0	0.48	ug/L			11/18/22 21:14	1
1,4-Dichlorobenzene	ND		1.0	0.46	ug/L			11/18/22 21:14	1
n-Butylbenzene	ND		1.0	0.44	ug/L			11/18/22 21:14	1
1,2-Dichlorobenzene	ND		1.0	0.46	ug/L			11/18/22 21:14	1
1,2-Dibromo-3-Chloropropane	ND		3.0	0.57	ug/L			11/18/22 21:14	1
1,2,4-Trichlorobenzene	ND	*1	1.0	0.33	ug/L			11/18/22 21:14	1
Hexachlorobutadiene	ND		3.0	0.79	ug/L			11/18/22 21:14	1
Naphthalene	ND		3.0	0.93	ug/L			11/18/22 21:14	1
1,2,3-Trichlorobenzene	ND		2.0	0.43	ug/L			11/18/22 21:14	1
1,3,5-Trimethylbenzene	ND		1.0	0.55	ug/L			11/18/22 21:14	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	106		80 - 120			•		11/18/22 21:14	1
1,2-Dichloroethane-d4 (Surr)	90		80 - 120					11/18/22 21:14	1
4-Bromofluorobenzene (Surr)	89		80 - 120					11/18/22 21:14	1
Dibromofluoromethane (Surr)	96		80 - 120					11/18/22 21:14	1
Method: SW846 8260D - Vo	latile Organic	Compoun	ds by GC/MS	- RA					
Analyte	_	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methylene Chloride	ND	H	30	14	ug/L		-	12/07/22 00:28	10
Methyl tert-butyl ether	ND	Н	10	4.4	ug/L			12/07/22 00:28	10

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methylene Chloride	ND	Н	30	14	ug/L			12/07/22 00:28	10
Methyl tert-butyl ether	ND	Н	10	4.4	ug/L			12/07/22 00:28	10
1,1,1-Trichloroethane	ND	Н	10	3.9	ug/L			12/07/22 00:28	10
1,3-Dichlorobenzene	ND	Н	10	4.8	ug/L			12/07/22 00:28	10
1,2,4-Trichlorobenzene	ND	Н	10	3.3	ug/L			12/07/22 00:28	10
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	109		80 - 120			-		12/07/22 00:28	10
1,2-Dichloroethane-d4 (Surr)	84		80 - 120					12/07/22 00:28	10
4-Bromofluorobenzene (Surr)	93		80 - 120					12/07/22 00:28	10
Dibromofluoromethane (Surr)	102		80 - 120					12/07/22 00:28	10
Method: EPA 314.0 - Perch	lorate (IC)								
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		4.0	2.0	ug/L			11/17/22 13:00	1
General Chemistry									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (MCAWW 300.0)	33		1.5	0.43	mg/L			12/03/22 00:53	1

Client: ERM-West Job ID: 580-119973-1

Project/Site: Arkema - Q4 2022 Groundwater Event

Client Sample ID: PA-04-110922

Lab Sample ID: 580-119973-3 Date Collected: 11/09/22 07:23

Matrix: Water

Date Received: 11/11/22 11:35

Analyte		Qualifier	RL	MDL		D	Prepared	Analyzed	Dil Fa
Dichlorodifluoromethane	ND	*+	0.40	0.13	ug/L			11/14/22 20:09	
Chloromethane	ND		0.50	0.14	ug/L			11/14/22 20:09	
Vinyl chloride	ND		0.020	0.013	ug/L			11/14/22 20:09	
Bromomethane	ND		0.50	0.13	ug/L			11/14/22 20:09	
Chloroethane	ND	*+	0.50	0.096	ug/L			11/14/22 20:09	
Carbon disulfide	ND		0.30	0.083	_			11/14/22 20:09	
Trichlorofluoromethane	ND		0.50	0.12	ug/L			11/14/22 20:09	
1,1-Dichloroethene	0.19	J	0.20	0.035	-			11/14/22 20:09	
Acetone	ND		10		ug/L			11/14/22 20:09	
Methylene Chloride	ND		5.0		ug/L			11/14/22 20:09	
Methyl tert-butyl ether	ND		0.30	0.070	-			11/14/22 20:09	
2-Butanone (MEK)	ND		10		ug/L			11/14/22 20:09	
trans-1,2-Dichloroethene	ND		0.20	0.033				11/14/22 20:09	
1,1-Dichloroethane	0.25		0.20	0.025	-			11/14/22 20:09	
2,2-Dichloropropane	0.25 ND		0.50	0.023	-			11/14/22 20:09	
Chlorobromomethane	ND		0.20	0.050				11/14/22 20:09	
Chloroform	0.11	1	0.20	0.030	-			11/14/22 20:09	
1,1,1-Trichloroethane	0.035		0.20	0.035	-			11/14/22 20:09	
Carbon tetrachloride	0.035 ND		0.20	0.025				11/14/22 20:09	
1,1-Dichloropropene	ND ND		0.20	0.025	J			11/14/22 20:09	
	ND ND			0.030	J				
Benzene			0.20					11/14/22 20:09	
1,2-Dichloroethane	ND		0.20	0.043	ū			11/14/22 20:09	
1,2-Dichloropropane	ND		0.20	0.060	-			11/14/22 20:09	
4-Methyl-2-pentanone (MIBK)	ND		10		ug/L			11/14/22 20:09	
Dibromomethane	ND		0.20	0.062	-			11/14/22 20:09	
Dichlorobromomethane	ND		0.20	0.060	-			11/14/22 20:09	
cis-1,3-Dichloropropene	ND		0.20	0.090				11/14/22 20:09	
Toluene	ND		0.20	0.050	-			11/14/22 20:09	
trans-1,3-Dichloropropene	ND		0.20	0.092	-			11/14/22 20:09	
1,1,2-Trichloroethane	ND		0.20	0.070				11/14/22 20:09	
Tetrachloroethene	0.16	J	0.24	0.084	-			11/14/22 20:09	
1,3-Dichloropropane	ND		0.20	0.025	ug/L			11/14/22 20:09	
Chlorodibromomethane	ND		0.20	0.055	ug/L			11/14/22 20:09	
Ethylene Dibromide	ND		0.10	0.025	ū			11/14/22 20:09	
Chlorobenzene	ND		0.20	0.060	-			11/14/22 20:09	
1,1,1,2-Tetrachloroethane	ND		0.30	0.038	ug/L			11/14/22 20:09	
Ethylbenzene	ND		0.20	0.030	ug/L			11/14/22 20:09	
m-Xylene & p-Xylene	ND		0.50	0.12	ug/L			11/14/22 20:09	
o-Xylene	ND		0.50	0.15	ug/L			11/14/22 20:09	
Styrene	ND		1.0	0.19	ug/L			11/14/22 20:09	
Bromoform	ND		0.50	0.16	ug/L			11/14/22 20:09	
sopropylbenzene	ND		1.0	0.19	ug/L			11/14/22 20:09	
Bromobenzene	ND		0.20	0.038				11/14/22 20:09	
1,1,2,2-Tetrachloroethane	ND		0.20	0.056	-			11/14/22 20:09	
1,2,3-Trichloropropane	ND		0.20	0.050	-			11/14/22 20:09	
N-Propylbenzene	ND		0.30	0.091				11/14/22 20:09	
2-Chlorotoluene	ND		0.50		ug/L			11/14/22 20:09	
4-Chlorotoluene	ND ND		0.30		ug/L			11/14/22 20:09	
1,3,5-Trimethylbenzene	ND		0.50		ug/L ug/L			11/14/22 20:09	

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Client: ERM-West Job ID: 580-119973-1

Project/Site: Arkema - Q4 2022 Groundwater Event

Client Sample ID: PA-04-110922

Date Received: 11/11/22 11:35

Chloride (MCAWW 300.0)

Lab Sample ID: 580-119973-3 Date Collected: 11/09/22 07:23

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
tert-Butylbenzene	ND		0.50	0.26	ug/L			11/14/22 20:09	1
1,2,4-Trimethylbenzene	ND		0.50	0.20	ug/L			11/14/22 20:09	1
sec-Butylbenzene	ND		1.0	0.17	ug/L			11/14/22 20:09	1
4-Isopropyltoluene	ND		0.50	0.15	ug/L			11/14/22 20:09	1
1,3-Dichlorobenzene	ND		0.30	0.050	ug/L			11/14/22 20:09	1
1,4-Dichlorobenzene	ND		0.30	0.050	ug/L			11/14/22 20:09	1
n-Butylbenzene	ND		1.0	0.23	ug/L			11/14/22 20:09	1
1,2-Dichlorobenzene	ND		0.30	0.038	ug/L			11/14/22 20:09	1
1,2-Dibromo-3-Chloropropane	ND		2.0	0.17	ug/L			11/14/22 20:09	1
1,2,4-Trichlorobenzene	ND		0.50	0.17	ug/L			11/14/22 20:09	1
Hexachlorobutadiene	ND		0.50	0.067	ug/L			11/14/22 20:09	1
Naphthalene	ND		1.0	0.22	ug/L			11/14/22 20:09	1
1,2,3-Trichlorobenzene	ND		0.50	0.15	ug/L			11/14/22 20:09	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	98		80 - 120			-		11/14/22 20:09	1
Dibromofluoromethane (Surr)	111		80 - 120					11/14/22 20:09	1
4-Bromofluorobenzene (Surr)	94		80 - 120					11/14/22 20:09	1
1,2-Dichloroethane-d4 (Surr)	118		80 - 120					11/14/22 20:09	1
Method: SW846 8260D - Vo	latile Organic	Compound	ds bv GC/MS	- RA					
Analyte	_	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
cis-1,2-Dichloroethene	ND		0.20	0.055	ug/L			11/15/22 16:24	1
Trichloroethene	0.086	.1	0.20	0.066	ua/l			11/15/22 16:24	1

Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	98		80 - 120			-		11/15/22 16:24	1
Dibromofluoromethane (Surr)	109		80 - 120					11/15/22 16:24	1
4-Bromofluorobenzene (Surr)	92		80 - 120					11/15/22 16:24	1
1,2-Dichloroethane-d4 (Surr)	117		80 - 120					11/15/22 16:24	1
Method: EPA 314.0 - Perch Analyte	Result	Qualifier	RL	MDL		<u>D</u>	Prepared	Analyzed	Dil Fac
Perchlorate	ND		8.0	4.0	ug/L			11/17/22 13:19	2
General Chemistry									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac

1.5

4.6

0.43 mg/L

12/03/22 01:05

Client: ERM-West Job ID: 580-119973-1

Project/Site: Arkema - Q4 2022 Groundwater Event

Client Sample ID: PA-10i-110922

Date Received: 11/11/22 11:35

1,2,3-Trichloropropane

N-Propylbenzene

2-Chlorotoluene

4-Chlorotoluene

Lab Sample ID: 580-119973-4 Date Collected: 11/09/22 07:50

Matrix: Water

Method: SW846 8260D - Volatile Organic Compounds by GC/MS Result Qualifier Dil Fac Analyte **MDL** Unit D Prepared Analyzed ND Dichlorodifluoromethane 0.40 0.13 ug/L 11/14/22 20:34 0.50 Chloromethane 0.19 J 0.14 ug/L 11/14/22 20:34 Vinyl chloride 0.25 0.020 0.013 ug/L 11/14/22 20:34 ND Bromomethane 0.50 0.13 ug/L 11/14/22 20:34 Chloroethane ND 0.50 0.096 ug/L 11/14/22 20:34 Carbon disulfide ND 0.30 0.083 ug/L 11/14/22 20:34 Trichlorofluoromethane ND 0.50 0.12 ug/L 11/14/22 20:34 0.20 0.035 ug/L 11/14/22 20:34 1,1-Dichloroethene 0.20 Acetone ND 10 3.1 ug/L 11/14/22 20:34 Methylene Chloride ND 5.0 1.2 ug/L 11/14/22 20:34 Methyl tert-butyl ether ND 0.30 0.070 ug/L 11/14/22 20:34 2-Butanone (MEK) ND 10 2.5 ug/L 11/14/22 20:34 1 trans-1,2-Dichloroethene 0.060 0.20 0.033 ug/L 11/14/22 20:34 1,1-Dichloroethane ND 0.20 0.025 ug/L 11/14/22 20:34 0.060 ug/L 2,2-Dichloropropane ND 0.50 11/14/22 20:34 0.055 ug/L cis-1,2-Dichloroethene 0.48 0.20 11/14/22 20:34 Chlorobromomethane ND 0.20 0.050 ug/L 11/14/22 20:34 Chloroform ND 0.20 0.030 ug/L 11/14/22 20:34 1.1.1-Trichloroethane ND 0.20 0.025 ug/L 11/14/22 20:34 Carbon tetrachloride ND 0.20 0.025 ug/L 11/14/22 20:34 1,1-Dichloropropene ND 0.20 0.084 ug/L 11/14/22 20:34 0.055 J 0.20 0.030 ug/L 11/14/22 20:34 **Benzene** 1,2-Dichloroethane 0.20 0.043 ug/L ND 11/14/22 20:34 1,2-Dichloropropane ND 0.20 0.060 ug/L 11/14/22 20:34 4-Methyl-2-pentanone (MIBK) ND 10 1.7 ug/L 11/14/22 20:34 ND 0.062 ug/L Dibromomethane 0.20 11/14/22 20:34 Dichlorobromomethane ND 0.20 0.060 ug/L 11/14/22 20:34 cis-1,3-Dichloropropene ND 0.090 ug/L 0.20 11/14/22 20:34 0.050 ug/L Toluene ND 0.20 11/14/22 20:34 ND 0.20 trans-1,3-Dichloropropene 0.092 ug/L 11/14/22 20:34 1,1,2-Trichloroethane ND 0.20 0.070 ug/L 11/14/22 20:34 Tetrachloroethene ND 0.24 0.084 ug/L 11/14/22 20:34 1,3-Dichloropropane ND 0.20 0.025 ug/L 11/14/22 20:34 0.055 ug/L ND Chlorodibromomethane 0.20 11/14/22 20:34 Ethylene Dibromide ND 0.10 0.025 ug/L 11/14/22 20:34 0.20 0.060 ug/L 11/14/22 20:34 Chlorobenzene 1.5 1,1,1,2-Tetrachloroethane ND 0.30 0.038 ug/L 11/14/22 20:34 Ethylbenzene ND 0.20 0.030 ug/L 11/14/22 20:34 m-Xylene & p-Xylene ND 0.50 0.12 ug/L 11/14/22 20:34 o-Xylene ND 0.50 0.15 ug/L 11/14/22 20:34 Styrene ND 1.0 0.19 ug/L 11/14/22 20:34 Bromoform ND 0.50 0.16 ug/L 11/14/22 20:34 ND Isopropylbenzene 1.0 0.19 ug/L 11/14/22 20:34 0.20 0.038 ug/L Bromobenzene ND 11/14/22 20:34 ND 1,1,2,2-Tetrachloroethane 0.20 0.056 ug/L 11/14/22 20:34

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12/14/2022

11/14/22 20:34

11/14/22 20:34

11/14/22 20:34

11/14/22 20:34

0.20

0.30

0.50

0.30

0.050 ug/L

0.091 ug/L

0.12 ug/L

0.12 ug/L

ND

ND

ND

ND

Client: ERM-West Job ID: 580-119973-1

Project/Site: Arkema - Q4 2022 Groundwater Event

Client Sample ID: PA-10i-110922

Date Collected: 11/09/22 07:50
Date Received: 11/11/22 11:35

Lab Sample ID: 580-119973-4

Matrix: Water

Analyte	Result	Qualifier		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3,5-Trimethylbenzene	ND			0.50	0.15	ug/L			11/14/22 20:34	1
tert-Butylbenzene	ND			0.50	0.26	ug/L			11/14/22 20:34	1
1,2,4-Trimethylbenzene	ND			0.50	0.20	ug/L			11/14/22 20:34	1
sec-Butylbenzene	ND			1.0	0.17	ug/L			11/14/22 20:34	1
4-Isopropyltoluene	ND			0.50	0.15	ug/L			11/14/22 20:34	1
1,3-Dichlorobenzene	ND			0.30	0.050	ug/L			11/14/22 20:34	1
1,4-Dichlorobenzene	ND			0.30	0.050	ug/L			11/14/22 20:34	1
n-Butylbenzene	ND			1.0	0.23	ug/L			11/14/22 20:34	1
1,2-Dichlorobenzene	0.15	J		0.30	0.038	ug/L			11/14/22 20:34	1
1,2-Dibromo-3-Chloropropane	ND			2.0	0.17	ug/L			11/14/22 20:34	1
1,2,4-Trichlorobenzene	ND			0.50	0.17	ug/L			11/14/22 20:34	1
Hexachlorobutadiene	ND			0.50	0.067	ug/L			11/14/22 20:34	1
Naphthalene	ND			1.0	0.22	ug/L			11/14/22 20:34	1
1,2,3-Trichlorobenzene	ND			0.50	0.15	ug/L			11/14/22 20:34	1
Surrogate	%Recovery	Qualifier	Lim	its				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	99		80 -	120			-	-	11/14/22 20:34	1
Dibromofluoromethane (Surr)	111		80 -	120					11/14/22 20:34	1
4-Bromofluorobenzene (Surr)	96		80 -	120					11/14/22 20:34	1
1,2-Dichloroethane-d4 (Surr)	120		80 -	120					11/14/22 20:34	1
- Method: SW846 8260D - Vo	latile Organic	Compound	ds bv	GC/MS	- RA					
Analyte	_	Qualifier		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichloroethene	ND			0.20	0.066	ua/l			11/15/22 16:48	1

Trichloroethene	ND		0.20	0.066	ug/L			11/15/22 16:48	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	98		80 - 120			-		11/15/22 16:48	1
Dibromofluoromethane (Surr)	109		80 - 120					11/15/22 16:48	1
4-Bromofluorobenzene (Surr)	95		80 - 120					11/15/22 16:48	1
1,2-Dichloroethane-d4 (Surr)	121	S1+	80 - 120					11/15/22 16:48	1
Method: EPA 314.0 - Perch Analyte	. ,	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	
							•	, mary zoa	Dil Fac
Perchlorate -	ND		20	10	ug/L		<u> </u>	11/17/22 13:38	Dil Fac
Perchlorate General Chemistry	ND		20	10	ug/L		•		
- - -		Qualifier	20 RL	10 MDL	· ·	D	Prepared		

Client: ERM-West Job ID: 580-119973-1

Project/Site: Arkema - Q4 2022 Groundwater Event

Client Sample ID: PA-22d-110922

Date Collected: 11/09/22 08:43

Date Received: 11/11/22 11:35

Lab Sample ID: 580-119973-5 **Matrix: Water**

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fa
Dichlorodifluoromethane	ND		1.0	0.53	ug/L			11/18/22 21:39	
Chloromethane	ND		1.0	0.28	ug/L			11/18/22 21:39	
Vinyl chloride	ND		1.0	0.22	ug/L			11/18/22 21:39	
Bromomethane	ND		1.0	0.21	ug/L			11/18/22 21:39	
Chloroethane	ND		1.0	0.35	ug/L			11/18/22 21:39	
Trichlorofluoromethane	ND		1.0	0.36	ug/L			11/18/22 21:39	
Carbon disulfide	ND		1.0	0.53	ug/L			11/18/22 21:39	
1,1-Dichloroethene	ND		1.0	0.28	ug/L			11/18/22 21:39	
Acetone	ND		15	3.2	ug/L			11/18/22 21:39	
Methylene Chloride	ND	*_	3.0	1.4	ug/L			11/18/22 21:39	
Methyl tert-butyl ether	ND		1.0	0.44	ug/L			11/18/22 21:39	
trans-1,2-Dichloroethene	ND		1.0		ug/L			11/18/22 21:39	
1,1-Dichloroethane	ND		1.0		ug/L			11/18/22 21:39	
2-Butanone (MEK)	ND		15		ug/L			11/18/22 21:39	
2,2-Dichloropropane	ND		1.0		ug/L			11/18/22 21:39	
cis-1,2-Dichloroethene	ND		1.0		ug/L			11/18/22 21:39	
Bromochloromethane	ND		1.0		ug/L			11/18/22 21:39	
Chloroform	14		1.0		ug/L			11/18/22 21:39	
1,1,1-Trichloroethane	ND		1.0		ug/L			11/18/22 21:39	
Carbon tetrachloride	ND		1.0		ug/L			11/18/22 21:39	
1,1-Dichloropropene	ND		1.0		ug/L			11/18/22 21:39	
Benzene	ND		1.0	0.24				11/18/22 21:39	
1,2-Dichloroethane	ND		1.0	0.42	-			11/18/22 21:39	
Trichloroethene	ND		1.0		ug/L			11/18/22 21:39	
1,2-Dichloropropane	ND		1.0	0.18	-			11/18/22 21:39	
4-Methyl-2-pentanone (MIBK)	ND		5.0		ug/L			11/18/22 21:39	
Dibromomethane	ND		1.0		ug/L			11/18/22 21:39	
Bromodichloromethane	ND		1.0	0.29				11/18/22 21:39	
cis-1,3-Dichloropropene	ND	*+	1.0		ug/L			11/18/22 21:39	
Toluene	ND		1.0		ug/L			11/18/22 21:39	
trans-1,3-Dichloropropene	ND	*+	1.0		ug/L			11/18/22 21:39	
1,1,2-Trichloroethane	ND		1.0		ug/L			11/18/22 21:39	
Tetrachloroethene	ND		1.0		ug/L			11/18/22 21:39	
1,3-Dichloropropane	ND	*+	1.0		ug/L			11/18/22 21:39	
Dibromochloromethane	ND	•	1.0		ug/L			11/18/22 21:39	
1,2-Dibromoethane	ND		1.0		ug/L			11/18/22 21:39	
Chlorobenzene	ND		1.0		ug/L			11/18/22 21:39	
1,1,1,2-Tetrachloroethane	ND		1.0		ug/L			11/18/22 21:39	
Ethylbenzene	ND		1.0		ug/L			11/18/22 21:39	
m-Xylene & p-Xylene	ND		2.0		ug/L			11/18/22 21:39	
o-Xylene	ND		1.0		ug/L			11/18/22 21:39	
Styrene	ND		1.0		ug/L			11/18/22 21:39	
Bromoform	ND ND		1.0		ug/L			11/18/22 21:39	
Isopropylbenzene	ND ND		1.0		ug/L ug/L			11/18/22 21:39	
Bromobenzene	ND ND		1.0		ug/L ug/L			11/18/22 21:39	
1,1,2,2-Tetrachloroethane	ND		1.0		ug/L ug/L			11/18/22 21:39	
	ND ND		1.0		-			11/18/22 21:39	
1,2,3-Trichloropropane					ug/L				
N-Propylbenzene 2-Chlorotoluene	ND ND		1.0		ug/L ug/L			11/18/22 21:39 11/18/22 21:39	

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Client: ERM-West Job ID: 580-119973-1

Project/Site: Arkema - Q4 2022 Groundwater Event

Client Sample ID: PA-22d-110922

Date Collected: 11/09/22 08:43 Date Received: 11/11/22 11:35

1,2-Dichloroethane-d4 (Surr)

4-Bromofluorobenzene (Surr)

Dibromofluoromethane (Surr)

Lab Sample ID: 580-119973-5

11/18/22 21:39

11/18/22 21:39

11/18/22 21:39

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Chlorotoluene	ND		1.0	0.38	ug/L			11/18/22 21:39	1
t-Butylbenzene	ND		2.0	0.58	ug/L			11/18/22 21:39	1
1,2,4-Trimethylbenzene	ND		3.0	0.61	ug/L			11/18/22 21:39	1
sec-Butylbenzene	ND		1.0	0.49	ug/L			11/18/22 21:39	1
4-Isopropyltoluene	ND		1.0	0.28	ug/L			11/18/22 21:39	1
1,3-Dichlorobenzene	ND	*_	1.0	0.48	ug/L			11/18/22 21:39	1
1,4-Dichlorobenzene	ND		1.0	0.46	ug/L			11/18/22 21:39	1
n-Butylbenzene	ND		1.0	0.44	ug/L			11/18/22 21:39	1
1,2-Dichlorobenzene	ND		1.0	0.46	ug/L			11/18/22 21:39	1
1,2-Dibromo-3-Chloropropane	ND		3.0	0.57	ug/L			11/18/22 21:39	1
1,2,4-Trichlorobenzene	ND	*1	1.0	0.33	ug/L			11/18/22 21:39	1
Hexachlorobutadiene	ND		3.0	0.79	ug/L			11/18/22 21:39	1
Naphthalene	ND		3.0	0.93	ug/L			11/18/22 21:39	1
1,2,3-Trichlorobenzene	ND		2.0	0.43	ug/L			11/18/22 21:39	1
1,3,5-Trimethylbenzene	ND		1.0	0.55	ug/L			11/18/22 21:39	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	104		80 - 120					11/18/22 21:39	1

80 - 120

80 - 120

80 - 120

90

88

89

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methylene Chloride	ND	Н	3.0	1.4	ug/L			12/12/22 13:45	1
Methyl tert-butyl ether	ND	Н	1.0	0.44	ug/L			12/12/22 13:45	1
1,1,1-Trichloroethane	ND	Н	1.0	0.39	ug/L			12/12/22 13:45	1
1,3-Dichlorobenzene	ND	Н	1.0	0.48	ug/L			12/12/22 13:45	1
1,2,4-Trichlorobenzene	ND	Н	1.0	0.33	ug/L			12/12/22 13:45	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	96		80 - 120					12/12/22 13:45	1
1,2-Dichloroethane-d4 (Surr)	106		80 - 120					12/12/22 13:45	1
4-Bromofluorobenzene (Surr)	96		80 - 120					12/12/22 13:45	1
Dibromofluoromethane (Surr)	105		80 - 120					12/12/22 13:45	1
Method: EPA 314.0 - Perch	lorate (IC)								
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	17000		4000	2000	ug/L			11/17/22 13:57	1000
General Chemistry									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (MCAWW 300.0)	6000		150	43	mg/L			12/03/22 01:28	100

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10

Client: ERM-West Job ID: 580-119973-1

Project/Site: Arkema - Q4 2022 Groundwater Event

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Client Sample ID: MWA-56d-110922

Date Collected: 11/09/22 09:34 Date Received: 11/11/22 11:35

Isopropylbenzene

1,1,2,2-Tetrachloroethane

1,2,3-Trichloropropane

Bromobenzene

N-Propylbenzene

2-Chlorotoluene

Lab Sample ID: 580-119973-6

Matrix: Water

Analyte		Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Dichlorodifluoromethane	ND		1.0		ug/L			11/18/22 22:03	1
Chloromethane	ND		1.0	0.28	ug/L			11/18/22 22:03	1
Vinyl chloride	ND		1.0	0.22	ug/L			11/18/22 22:03	1
Bromomethane	ND		1.0	0.21	ug/L			11/18/22 22:03	1
Chloroethane	ND		1.0	0.35	ug/L			11/18/22 22:03	1
Trichlorofluoromethane	ND		1.0	0.36	ug/L			11/18/22 22:03	1
Carbon disulfide	ND		1.0	0.53	ug/L			11/18/22 22:03	1
1,1-Dichloroethene	ND		1.0	0.28	ug/L			11/18/22 22:03	1
Acetone	ND		15	3.2	ug/L			11/18/22 22:03	1
Methylene Chloride	ND	*_	3.0	1.4	ug/L			11/18/22 22:03	1
Methyl tert-butyl ether	ND		1.0	0.44	ug/L			11/18/22 22:03	1
trans-1,2-Dichloroethene	ND		1.0	0.39	ug/L			11/18/22 22:03	1
1,1-Dichloroethane	ND		1.0	0.22	ug/L			11/18/22 22:03	1
2-Butanone (MEK)	ND		15		ug/L			11/18/22 22:03	1
2,2-Dichloropropane	ND		1.0		ug/L			11/18/22 22:03	1
cis-1,2-Dichloroethene	ND		1.0	0.35	ug/L			11/18/22 22:03	1
Bromochloromethane	ND		1.0	0.29	ug/L			11/18/22 22:03	1
Chloroform	130		1.0	0.26	ug/L			11/18/22 22:03	1
1,1,1-Trichloroethane	ND		1.0	0.39	ug/L			11/18/22 22:03	1
Carbon tetrachloride	ND		1.0		ug/L			11/18/22 22:03	1
1,1-Dichloropropene	ND		1.0		ug/L			11/18/22 22:03	1
Benzene	ND		1.0		ug/L			11/18/22 22:03	1
1,2-Dichloroethane	ND		1.0		ug/L			11/18/22 22:03	1
Trichloroethene	ND		1.0		ug/L			11/18/22 22:03	1
1,2-Dichloropropane	ND		1.0		ug/L			11/18/22 22:03	1
4-Methyl-2-pentanone (MIBK)	ND		5.0		ug/L			11/18/22 22:03	1
Dibromomethane	ND		1.0		ug/L			11/18/22 22:03	1
Bromodichloromethane	0.55	J	1.0		ug/L			11/18/22 22:03	1
cis-1,3-Dichloropropene	ND		1.0		ug/L			11/18/22 22:03	1
Toluene	ND		1.0		ug/L			11/18/22 22:03	1
trans-1,3-Dichloropropene	ND	*+	1.0		ug/L			11/18/22 22:03	1
1,1,2-Trichloroethane	ND		1.0		ug/L			11/18/22 22:03	1
Tetrachloroethene	ND		1.0		ug/L			11/18/22 22:03	1
1,3-Dichloropropane	ND	*+	1.0		ug/L			11/18/22 22:03	1
Dibromochloromethane	ND		1.0		ug/L			11/18/22 22:03	1
1,2-Dibromoethane	ND		1.0		ug/L			11/18/22 22:03	1
Chlorobenzene	ND		1.0		ug/L			11/18/22 22:03	· · · · · · · 1
1,1,1,2-Tetrachloroethane	ND		1.0		ug/L			11/18/22 22:03	1
Ethylbenzene	ND		1.0		ug/L			11/18/22 22:03	1
m-Xylene & p-Xylene	ND		2.0		ug/L			11/18/22 22:03	· · · · · · · 1
o-Xylene	ND		1.0		ug/L			11/18/22 22:03	1
Styrene	ND		1.0		ug/L			11/18/22 22:03	1
Bromoform	ND		1.0		ug/L			11/18/22 22:03	·
L	ND		1.0	0.01	~g, _			11/10/22 22.00	

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11/18/22 22:03

11/18/22 22:03

11/18/22 22:03

11/18/22 22:03

11/18/22 22:03

11/18/22 22:03

1.0

1.0

1.0

1.0

1.0

1.0

0.44 ug/L

0.43 ug/L

0.52 ug/L

0.41 ug/L

0.50 ug/L

0.51 ug/L

ND

ND

ND

ND

ND

ND

7

q

10

Client: ERM-West Job ID: 580-119973-1

Project/Site: Arkema - Q4 2022 Groundwater Event

Client Sample ID: MWA-56d-110922

Date Collected: 11/09/22 09:34 Date Received: 11/11/22 11:35

Lab Sample ID: 580-119973-6

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Chlorotoluene	ND		1.0	0.38	ug/L			11/18/22 22:03	1
t-Butylbenzene	ND		2.0	0.58	ug/L			11/18/22 22:03	1
1,2,4-Trimethylbenzene	ND		3.0	0.61	ug/L			11/18/22 22:03	1
sec-Butylbenzene	ND		1.0	0.49	ug/L			11/18/22 22:03	1
4-Isopropyltoluene	ND		1.0	0.28	ug/L			11/18/22 22:03	1
1,3-Dichlorobenzene	ND	*_	1.0	0.48	ug/L			11/18/22 22:03	1
1,4-Dichlorobenzene	ND		1.0	0.46	ug/L			11/18/22 22:03	1
n-Butylbenzene	ND		1.0	0.44	ug/L			11/18/22 22:03	1
1,2-Dichlorobenzene	ND		1.0	0.46	ug/L			11/18/22 22:03	1
1,2-Dibromo-3-Chloropropane	ND		3.0	0.57	ug/L			11/18/22 22:03	1
1,2,4-Trichlorobenzene	ND	*1	1.0	0.33	ug/L			11/18/22 22:03	1
Hexachlorobutadiene	ND		3.0	0.79	ug/L			11/18/22 22:03	1
Naphthalene	ND		3.0	0.93	ug/L			11/18/22 22:03	1
1,2,3-Trichlorobenzene	ND		2.0	0.43	ug/L			11/18/22 22:03	1
1,3,5-Trimethylbenzene	ND		1.0	0.55	ug/L			11/18/22 22:03	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	97		80 - 120			-		11/18/22 22:03	1
1,2-Dichloroethane-d4 (Surr)	98		80 - 120					11/18/22 22:03	1
4-Bromofluorobenzene (Surr)	100		80 - 120					11/18/22 22:03	1
Dibromofluoromethane (Surr)	106		80 - 120					11/18/22 22:03	1
Method: SW846 8260D - Vo	latile Organic	Compoun	ds by GC/MS	- RA					
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Matterday - Oblavida		11		4.4	/!			40/40/00 44:44	-

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methylene Chloride	ND	Н	3.0	1.4	ug/L			12/12/22 14:11	1
Methyl tert-butyl ether	ND	Н	1.0	0.44	ug/L			12/12/22 14:11	1
1,1,1-Trichloroethane	ND	Н	1.0	0.39	ug/L			12/12/22 14:11	1
1,3-Dichlorobenzene	ND	Н	1.0	0.48	ug/L			12/12/22 14:11	1
1,2,4-Trichlorobenzene	ND	Н	1.0	0.33	ug/L			12/12/22 14:11	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	103		80 - 120					12/12/22 14:11	1
1,2-Dichloroethane-d4 (Surr)	107		80 - 120					12/12/22 14:11	1
4-Bromofluorobenzene (Surr)	85		80 - 120					12/12/22 14:11	1
Dibromofluoromethane (Surr)	101		80 - 120					12/12/22 14:11	1
Method: EPA 314.0 - Perch	lorate (IC)								
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	12000		800	400	ug/L			11/18/22 18:00	200
General Chemistry									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (MCAWW 300.0)	15000		1500	430	mg/L			12/03/22 02:27	1000

Client: ERM-West Job ID: 580-119973-1

Project/Site: Arkema - Q4 2022 Groundwater Event

Client Sample ID: MWA-58d-110922

Date Collected: 11/09/22 10:22 Date Received: 11/11/22 11:35

N-Propylbenzene

2-Chlorotoluene

4-Chlorotoluene

Lab Sample ID: 580-119973-7

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dichlorodifluoromethane	ND	H	1.0	0.53	ug/L			12/07/22 21:26	1
Chloromethane	ND	Н	1.0	0.28	ug/L			12/07/22 21:26	1
Vinyl chloride	ND	Н	1.0	0.22	ug/L			12/07/22 21:26	1
Bromomethane	0.41	J H B *1	1.0	0.21	ug/L			12/07/22 21:26	1
Chloroethane	ND	Н	1.0	0.35	ug/L			12/07/22 21:26	1
Trichlorofluoromethane	ND	Н	1.0	0.36	ug/L			12/07/22 21:26	1
Carbon disulfide	ND	Н	1.0	0.53	ug/L			12/07/22 21:26	1
1,1-Dichloroethene	ND	Н	1.0	0.28	ug/L			12/07/22 21:26	1
Acetone	ND	Н	15	3.2	ug/L			12/07/22 21:26	1
Methylene Chloride	ND	Н	3.0	1.4	ug/L			12/07/22 21:26	1
Methyl tert-butyl ether	ND	Н	1.0	0.44	ug/L			12/07/22 21:26	1
trans-1,2-Dichloroethene	ND	Н	1.0	0.39	ug/L			12/07/22 21:26	1
1,1-Dichloroethane	ND	Н	1.0	0.22	ug/L			12/07/22 21:26	1
2-Butanone (MEK)	ND	Н	15	4.7	ug/L			12/07/22 21:26	1
2,2-Dichloropropane	ND	H *+	1.0	0.32	ug/L			12/07/22 21:26	1
cis-1,2-Dichloroethene	ND	Н	1.0	0.35	ug/L			12/07/22 21:26	1
Bromochloromethane	ND	Н	1.0	0.29	ug/L			12/07/22 21:26	1
1,1,1-Trichloroethane	ND	Н	1.0	0.39	ug/L			12/07/22 21:26	1
Carbon tetrachloride	ND	Н	1.0	0.30	ug/L			12/07/22 21:26	1
1,1-Dichloropropene	ND	Н	1.0	0.29	ug/L			12/07/22 21:26	1
Benzene	ND	Н	1.0	0.24	ug/L			12/07/22 21:26	1
1,2-Dichloroethane	ND	H	1.0	0.42	ug/L			12/07/22 21:26	1
Trichloroethene	ND	Н	1.0	0.26	ug/L			12/07/22 21:26	1
1,2-Dichloropropane	ND	Н	1.0	0.18	ug/L			12/07/22 21:26	1
4-Methyl-2-pentanone (MIBK)	ND	Н	5.0	2.5	ug/L			12/07/22 21:26	1
Dibromomethane	ND	Н	1.0	0.34	ug/L			12/07/22 21:26	1
Bromodichloromethane	0.62	JH	1.0	0.29	ug/L			12/07/22 21:26	1
cis-1,3-Dichloropropene	ND	Н	1.0	0.42	ug/L			12/07/22 21:26	1
Toluene	ND	Н	1.0	0.39	ug/L			12/07/22 21:26	1
trans-1,3-Dichloropropene	ND	Н	1.0	0.41	ug/L			12/07/22 21:26	1
1,1,2-Trichloroethane	ND	Н	1.0	0.24	ug/L			12/07/22 21:26	1
Tetrachloroethene	ND	*+ H	1.0	0.41	ug/L			12/07/22 21:26	1
1,3-Dichloropropane	ND	Н	1.0	0.35	ug/L			12/07/22 21:26	1
Dibromochloromethane	ND	H	1.0	0.43	ug/L			12/07/22 21:26	1
1,2-Dibromoethane	ND	Н	1.0	0.40	ug/L			12/07/22 21:26	1
Chlorobenzene	ND	Н	1.0	0.44	ug/L			12/07/22 21:26	1
1,1,1,2-Tetrachloroethane	ND	H	1.0	0.18	ug/L			12/07/22 21:26	1
Ethylbenzene	ND	Н	1.0		ug/L			12/07/22 21:26	1
m-Xylene & p-Xylene	ND	Н	2.0		ug/L			12/07/22 21:26	1
o-Xylene	ND	H	1.0		ug/L			12/07/22 21:26	1
Styrene	ND	Н	1.0		ug/L			12/07/22 21:26	1
Bromoform	ND		1.0		ug/L			12/07/22 21:26	1
Isopropylbenzene	ND		1.0		ug/L			12/07/22 21:26	1
Bromobenzene	ND		1.0		ug/L			12/07/22 21:26	1
1,1,2,2-Tetrachloroethane	ND		1.0		ug/L			12/07/22 21:26	1
1,2,3-Trichloropropane	ND		1.0		ug/L			12/07/22 21:26	1
			-		<u> </u>				-

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12/14/2022

12/07/22 21:26

12/07/22 21:26

12/07/22 21:26

1.0

1.0

1.0

0.50 ug/L

0.51 ug/L

0.38 ug/L

ND H

ND H

ND H

Client: ERM-West Job ID: 580-119973-1

Project/Site: Arkema - Q4 2022 Groundwater Event

Client Sample ID: MWA-58d-110922

Date Collected: 11/09/22 10:22 Date Received: 11/11/22 11:35

Lab Sample ID: 580-119973-7

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
t-Butylbenzene	ND	Н	2.0	0.58	ug/L			12/07/22 21:26	1
1,2,4-Trimethylbenzene	ND	Н	3.0	0.61	ug/L			12/07/22 21:26	1
sec-Butylbenzene	ND	Н	1.0	0.49	ug/L			12/07/22 21:26	1
4-Isopropyltoluene	ND	Н	1.0	0.28	ug/L			12/07/22 21:26	1
1,3-Dichlorobenzene	ND	Н	1.0	0.48	ug/L			12/07/22 21:26	1
1,4-Dichlorobenzene	ND	Н	1.0	0.46	ug/L			12/07/22 21:26	1
n-Butylbenzene	ND	Н	1.0	0.44	ug/L			12/07/22 21:26	1
1,2-Dichlorobenzene	ND	Н	1.0	0.46	ug/L			12/07/22 21:26	1
1,2-Dibromo-3-Chloropropane	ND	Н	3.0	0.57	ug/L			12/07/22 21:26	1
1,2,4-Trichlorobenzene	ND	Н	1.0	0.33	ug/L			12/07/22 21:26	1
Hexachlorobutadiene	ND	Н	3.0	0.79	ug/L			12/07/22 21:26	1
Naphthalene	ND	Н	3.0	0.93	ug/L			12/07/22 21:26	1
1,2,3-Trichlorobenzene	ND	Н	2.0	0.43	ug/L			12/07/22 21:26	1
1,3,5-Trimethylbenzene	ND	Н	1.0	0.55	ug/L			12/07/22 21:26	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	108		80 - 120					12/07/22 21:26	1
1,2-Dichloroethane-d4 (Surr)	87		80 - 120					12/07/22 21:26	1
4-Bromofluorobenzene (Surr)	94		80 - 120					12/07/22 21:26	1
Dibromofluoromethane (Surr)	106		80 - 120					12/07/22 21:26	1
Method: SW846 8260D - Vo	latile Organic	Compoun	ds by GC/MS	- DL					
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Old Control				40	/1			10/00/00 00 10	

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloroform	88	Н	5.0	1.3	ug/L			12/08/22 20:43	5
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	102		80 - 120					12/08/22 20:43	5
1,2-Dichloroethane-d4 (Surr)	107		80 - 120					12/08/22 20:43	5
4-Bromofluorobenzene (Surr)	99		80 - 120					12/08/22 20:43	5
Dibromofluoromethane (Surr)	107		80 - 120					12/08/22 20:43	5
Method: EPA 314.0 - Perch	lorate (IC)								
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	49000		4000	2000	ug/L			11/17/22 14:35	1000
General Chemistry									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (MCAWW 300.0)	19000		1500	420	mg/L			12/03/22 02:50	1000

Client: ERM-West Job ID: 580-119973-1

Project/Site: Arkema - Q4 2022 Groundwater Event

Client Sample ID: Dup-02-110922

Date Collected: 11/09/22 10:23 Date Received: 11/11/22 11:35 Lab Sample ID: 580-119973-8

Matrix: Water

Analyte		Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fa
Dichlorodifluoromethane	ND	Н	1.0	0.53	ug/L			12/07/22 21:51	
Chloromethane	ND	Н	1.0	0.28	ug/L			12/07/22 21:51	
Vinyl chloride	ND	Н	1.0	0.22	ug/L			12/07/22 21:51	
Bromomethane	ND	H *1	1.0	0.21	ug/L			12/07/22 21:51	
Chloroethane	ND	Н	1.0	0.35	ug/L			12/07/22 21:51	
Trichlorofluoromethane	ND	Н	1.0	0.36	ug/L			12/07/22 21:51	
Carbon disulfide	ND	Н	1.0	0.53	ug/L			12/07/22 21:51	
1,1-Dichloroethene	ND	Н	1.0	0.28	ug/L			12/07/22 21:51	
Acetone	ND	Н	15	3.2	ug/L			12/07/22 21:51	
Methylene Chloride	ND	Н	3.0	1.4	ug/L			12/07/22 21:51	
Methyl tert-butyl ether	ND	Н	1.0	0.44	ug/L			12/07/22 21:51	
trans-1,2-Dichloroethene	ND	Н	1.0	0.39	ug/L			12/07/22 21:51	
1,1-Dichloroethane	ND	Н	1.0		ug/L			12/07/22 21:51	
2-Butanone (MEK)	ND	Н	15		ug/L			12/07/22 21:51	
2,2-Dichloropropane	ND	H *+	1.0		ug/L			12/07/22 21:51	
cis-1,2-Dichloroethene	ND		1.0		ug/L			12/07/22 21:51	
Bromochloromethane	ND		1.0		ug/L			12/07/22 21:51	
1,1,1-Trichloroethane	ND		1.0		ug/L			12/07/22 21:51	
Carbon tetrachloride	ND		1.0		ug/L			12/07/22 21:51	
1,1-Dichloropropene		Н	1.0		ug/L			12/07/22 21:51	
Benzene	ND		1.0		ug/L			12/07/22 21:51	
1,2-Dichloroethane	ND		1.0		ug/L			12/07/22 21:51	
Trichloroethene		Н	1.0	0.26	-			12/07/22 21:51	
1,2-Dichloropropane	ND		1.0		ug/L			12/07/22 21:51	
4-Methyl-2-pentanone (MIBK)	ND		5.0		ug/L			12/07/22 21:51	
Dibromomethane		H	1.0	0.34	-			12/07/22 21:51	
Bromodichloromethane	0.62		1.0		ug/L			12/07/22 21:51	
cis-1,3-Dichloropropene	ND		1.0		ug/L			12/07/22 21:51	
Toluene	ND		1.0		ug/L			12/07/22 21:51	
trans-1,3-Dichloropropene	ND		1.0		ug/L			12/07/22 21:51	
1,1,2-Trichloroethane	ND		1.0		ug/L			12/07/22 21:51	
Tetrachloroethene		*+ H	1.0		ug/L			12/07/22 21:51	
1,3-Dichloropropane	ND ND		1.0		ug/L			12/07/22 21:51	
Dibromochloromethane	ND		1.0		ug/L			12/07/22 21:51	
1,2-Dibromoethane	ND ND		1.0		ug/L			12/07/22 21:51	
Chlorobenzene			1.0		•				
1,1,1,2-Tetrachloroethane	ND ND		1.0		ug/L ug/L			12/07/22 21:51 12/07/22 21:51	
Ethylbenzene	ND ND		1.0		ug/L				
-	ND ND		2.0		ug/L ug/L			12/07/22 21:51	
m-Xylene & p-Xylene	ND				ug/L ug/L			12/07/22 21:51	
o-Xylene			1.0					12/07/22 21:51	
Styrene	ND		1.0		ug/L			12/07/22 21:51	
Bromoform	ND ND		1.0		ug/L			12/07/22 21:51	
Isopropylbenzene	ND		1.0		ug/L			12/07/22 21:51 12/07/22 21:51	
Bromobenzene 1,1,2,2-Tetrachloroethane	ND		1.0		ug/L				
	ND		1.0		ug/L			12/07/22 21:51	
1,2,3-Trichloropropane	ND		1.0		ug/L			12/07/22 21:51	
N-Propylbenzene	ND		1.0		ug/L			12/07/22 21:51	
2-Chlorotoluene 4-Chlorotoluene	ND ND		1.0		ug/L ug/L			12/07/22 21:51 12/07/22 21:51	

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Client: ERM-West Job ID: 580-119973-1

Project/Site: Arkema - Q4 2022 Groundwater Event

Client Sample ID: Dup-02-110922

Date Collected: 11/09/22 10:23 Date Received: 11/11/22 11:35 Lab Sample ID: 580-119973-8

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
t-Butylbenzene	ND	H	2.0	0.58	ug/L			12/07/22 21:51	1
1,2,4-Trimethylbenzene	ND	Н	3.0	0.61	ug/L			12/07/22 21:51	1
sec-Butylbenzene	ND	Н	1.0	0.49	ug/L			12/07/22 21:51	1
4-Isopropyltoluene	ND	Н	1.0	0.28	ug/L			12/07/22 21:51	1
1,3-Dichlorobenzene	ND	Н	1.0	0.48	ug/L			12/07/22 21:51	1
1,4-Dichlorobenzene	ND	Н	1.0	0.46	ug/L			12/07/22 21:51	1
n-Butylbenzene	ND	Н	1.0	0.44	ug/L			12/07/22 21:51	1
1,2-Dichlorobenzene	ND	Н	1.0	0.46	ug/L			12/07/22 21:51	1
1,2-Dibromo-3-Chloropropane	ND	Н	3.0	0.57	ug/L			12/07/22 21:51	1
1,2,4-Trichlorobenzene	ND	Н	1.0	0.33	ug/L			12/07/22 21:51	1
Hexachlorobutadiene	ND	Н	3.0	0.79	ug/L			12/07/22 21:51	1
Naphthalene	ND	Н	3.0	0.93	ug/L			12/07/22 21:51	1
1,2,3-Trichlorobenzene	ND	Н	2.0	0.43	ug/L			12/07/22 21:51	1
1,3,5-Trimethylbenzene	ND	Н	1.0	0.55	ug/L			12/07/22 21:51	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	108		80 - 120					12/07/22 21:51	1
1,2-Dichloroethane-d4 (Surr)	90		80 - 120					12/07/22 21:51	1
4-Bromofluorobenzene (Surr)	95		80 - 120					12/07/22 21:51	1
Dibromofluoromethane (Surr)	104		80 - 120					12/07/22 21:51	1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloroform	90	Н	5.0	1.3	ug/L			12/08/22 21:08	5
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	105		80 - 120			-		12/08/22 21:08	- 5
1,2-Dichloroethane-d4 (Surr)	107		80 - 120					12/08/22 21:08	5
4-Bromofluorobenzene (Surr)	97		80 - 120					12/08/22 21:08	5
Dibromofluoromethane (Surr)	106		80 - 120					12/08/22 21:08	5
Method: EPA 314.0 - Perch	lorate (IC)								
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	45000		4000	2000	ug/L			11/18/22 18:19	1000
General Chemistry									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (MCAWW 300.0)	19000		1500	430	mg/L			12/03/22 03:14	1000

Client: ERM-West Job ID: 580-119973-1

Project/Site: Arkema - Q4 2022 Groundwater Event

Client Sample ID: PA-23d-111022

Date Collected: 11/10/22 06:49 Date Received: 11/11/22 11:35 Lab Sample ID: 580-119973-9

Matrix: Water

Analyte	Result Qualit	ier RL	MDL		D	Prepared	Analyzed	Dil Fa
Dichlorodifluoromethane	ND *+	1.0	0.53	ug/L			11/23/22 14:06	
Chloromethane	ND	1.0	0.28	ug/L			11/23/22 14:06	
Vinyl chloride	ND	1.0	0.22	ug/L			11/23/22 14:06	
Bromomethane	ND	1.0	0.21	ug/L			11/23/22 14:06	
Chloroethane	ND	1.0	0.35	ug/L			11/23/22 14:06	
Trichlorofluoromethane	ND	1.0	0.36	ug/L			11/23/22 14:06	
Carbon disulfide	ND	1.0	0.53	ug/L			11/23/22 14:06	
1,1-Dichloroethene	ND	1.0	0.28	ug/L			11/23/22 14:06	
Acetone	ND	15	3.2	ug/L			11/23/22 14:06	
Methylene Chloride	ND	3.0	1.4	ug/L			11/23/22 14:06	
Methyl tert-butyl ether	ND	1.0		ug/L			11/23/22 14:06	
trans-1,2-Dichloroethene	ND	1.0	0.39	ug/L			11/23/22 14:06	
1,1-Dichloroethane	ND	1.0		ug/L			11/23/22 14:06	
2-Butanone (MEK)	ND	15		ug/L			11/23/22 14:06	
2,2-Dichloropropane	ND	1.0	0.32	-			11/23/22 14:06	
cis-1,2-Dichloroethene	ND	1.0	0.35				11/23/22 14:06	
Bromochloromethane	ND	1.0	0.29	_			11/23/22 14:06	
Chloroform	ND	1.0	0.26	_			11/23/22 14:06	
1,1,1-Trichloroethane	ND	1.0	0.39				11/23/22 14:06	
Carbon tetrachloride	ND	1.0		ug/L			11/23/22 14:06	
1,1-Dichloropropene	ND	1.0		ug/L			11/23/22 14:06	
Benzene	ND	1.0		ug/L			11/23/22 14:06	
1,2-Dichloroethane	ND	1.0	0.42	-			11/23/22 14:06	
Trichloroethene	ND	1.0		ug/L			11/23/22 14:06	
1,2-Dichloropropane	ND	1.0		ug/L ug/L			11/23/22 14:06	
• •	ND	5.0		ug/L			11/23/22 14:06	
4-Methyl-2-pentanone (MIBK) Dibromomethane	ND ND	1.0		ug/L ug/L			11/23/22 14:06	
Bromodichloromethane	ND	1.0		ug/L			11/23/22 14:06	
cis-1,3-Dichloropropene	ND	1.0	0.42	-			11/23/22 14:06	
Toluene	ND	1.0		ug/L			11/23/22 14:06	
trans-1,3-Dichloropropene	ND	1.0		ug/L			11/23/22 14:06	
1,1,2-Trichloroethane	ND	1.0	0.24	_			11/23/22 14:06	
Tetrachloroethene	ND	1.0	0.41				11/23/22 14:06	
1,3-Dichloropropane	ND	1.0		ug/L			11/23/22 14:06	
Dibromochloromethane	ND	1.0	0.43	-			11/23/22 14:06	
1,2-Dibromoethane	ND	1.0	0.40				11/23/22 14:06	
Chlorobenzene	ND	1.0		ug/L			11/23/22 14:06	
1,1,1,2-Tetrachloroethane	ND	1.0		ug/L			11/23/22 14:06	
Ethylbenzene	ND	1.0		ug/L			11/23/22 14:06	
m-Xylene & p-Xylene	ND	2.0		ug/L			11/23/22 14:06	
o-Xylene	0.39 J	1.0		ug/L			11/23/22 14:06	
Styrene	ND	1.0		ug/L			11/23/22 14:06	
Bromoform	ND	1.0		ug/L			11/23/22 14:06	
Isopropylbenzene	ND	1.0		ug/L			11/23/22 14:06	
Bromobenzene	ND	1.0		ug/L			11/23/22 14:06	
1,1,2,2-Tetrachloroethane	ND	1.0		ug/L			11/23/22 14:06	
1,2,3-Trichloropropane	ND	1.0	0.41	ug/L			11/23/22 14:06	
N-Propylbenzene	ND	1.0	0.50	ug/L			11/23/22 14:06	
2-Chlorotoluene	ND	1.0	0.51	ug/L			11/23/22 14:06	

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Client: ERM-West Job ID: 580-119973-1

Project/Site: Arkema - Q4 2022 Groundwater Event

Client Sample ID: PA-23d-111022

Date Collected: 11/10/22 06:49 Date Received: 11/11/22 11:35 Lab Sample ID: 580-119973-9

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Chlorotoluene	ND		1.0	0.38	ug/L			11/23/22 14:06	1
t-Butylbenzene	ND		2.0	0.58	ug/L			11/23/22 14:06	1
1,2,4-Trimethylbenzene	ND		3.0	0.61	ug/L			11/23/22 14:06	1
sec-Butylbenzene	ND		1.0	0.49	ug/L			11/23/22 14:06	1
4-Isopropyltoluene	ND		1.0	0.28	ug/L			11/23/22 14:06	1
1,3-Dichlorobenzene	ND		1.0	0.48	ug/L			11/23/22 14:06	1
1,4-Dichlorobenzene	ND		1.0	0.46	ug/L			11/23/22 14:06	1
n-Butylbenzene	ND		1.0	0.44	ug/L			11/23/22 14:06	1
1,2-Dichlorobenzene	ND		1.0	0.46	ug/L			11/23/22 14:06	1
1,2-Dibromo-3-Chloropropane	ND		3.0	0.57	ug/L			11/23/22 14:06	1
1,2,4-Trichlorobenzene	ND		1.0	0.33	ug/L			11/23/22 14:06	1
Hexachlorobutadiene	ND		3.0	0.79	ug/L			11/23/22 14:06	1
Naphthalene	ND		3.0	0.93	ug/L			11/23/22 14:06	1
1,2,3-Trichlorobenzene	ND		2.0	0.43	ug/L			11/23/22 14:06	1
1,3,5-Trimethylbenzene	ND		1.0	0.55	ug/L			11/23/22 14:06	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	104		80 - 120			-		11/23/22 14:06	1
1,2-Dichloroethane-d4 (Surr)	89		80 - 120					11/23/22 14:06	1
4-Bromofluorobenzene (Surr)	100		80 - 120					11/23/22 14:06	1
Dibromofluoromethane (Surr)	103		80 - 120					11/23/22 14:06	1
Method: EPA 314.0 - Perch	lorate (IC)								
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		400	200	ug/L		-	11/17/22 14:54	100
General Chemistry									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (MCAWW 300.0)	6900		150	43	mg/L			12/03/22 03:25	100

Client: ERM-West Job ID: 580-119973-1

Project/Site: Arkema - Q4 2022 Groundwater Event

Client Sample ID: RB-02-111022

Date Received: 11/11/22 11:35

Lab Sample ID: 580-119973-10 Date Collected: 11/10/22 07:20

Matrix: Water

Method: SW846 8260D - Volatile Organic Compounds by GC/MS Dil Fac Analyte Result Qualifier **MDL** Unit D Prepared Analyzed ND Dichlorodifluoromethane 1.0 0.53 ug/L 11/23/22 14:30 ND Chloromethane 1.0 0.28 ug/L 11/23/22 14:30 Vinyl chloride ND 1.0 0.22 ug/L 11/23/22 14:30 ND Bromomethane 1.0 0.21 ug/L 11/23/22 14:30 ND 0.35 ug/L 11/23/22 14:30 Chloroethane 1.0 Trichlorofluoromethane ND 1.0 0.36 ug/L 11/23/22 14:30 Carbon disulfide ND 1.0 0.53 ug/L 11/23/22 14:30 1.1-Dichloroethene ND 1.0 0.28 ug/L 11/23/22 14:30 **Acetone** 8.1 J_B 15 3.2 ug/L 11/23/22 14:30 Methylene Chloride ND 3.0 1.4 ug/L 11/23/22 14:30 Methyl tert-butyl ether ND 1.0 0.44 ug/L 11/23/22 14:30 trans-1.2-Dichloroethene ND 1.0 0.39 ug/L 11/23/22 14:30 1 1,1-Dichloroethane ND 1.0 0.22 ug/L 11/23/22 14:30 2-Butanone (MEK) ND 15 4.7 ug/L 11/23/22 14:30 2,2-Dichloropropane ND 1.0 0.32 ug/L 11/23/22 14:30 cis-1,2-Dichloroethene ND 1.0 0.35 ug/L 11/23/22 14:30 Bromochloromethane ND 1.0 0.29 ug/L 11/23/22 14:30 1.0 0.26 ug/L 11/23/22 14:30 Chloroform 0.88 1.0 1.1.1-Trichloroethane ND 0.39 ug/L 11/23/22 14:30 Carbon tetrachloride ND 1.0 0.30 ug/L 11/23/22 14:30 1,1-Dichloropropene ND 1.0 0.29 ug/L 11/23/22 14:30 Benzene ND 1.0 0.24 ug/L 11/23/22 14:30 1,2-Dichloroethane ND 1.0 0.42 ug/L 11/23/22 14:30 Trichloroethene ND 1.0 0.26 ug/L 11/23/22 14:30 1,2-Dichloropropane ND 1.0 0.18 ug/L 11/23/22 14:30 2.5 4-Methyl-2-pentanone (MIBK) ND 5.0 ug/L 11/23/22 14:30 Dibromomethane ND 1.0 0.34 ug/L 11/23/22 14:30 Bromodichloromethane ND 0.29 ug/L 1.0 11/23/22 14:30 cis-1,3-Dichloropropene ND 1.0 0.42 ug/L 11/23/22 14:30 ND 1.0 0.39 ug/L Toluene 11/23/22 14:30 trans-1,3-Dichloropropene ND 1.0 0.41 ug/L 11/23/22 14:30 1,1,2-Trichloroethane ND 1.0 0.24 ug/L 11/23/22 14:30 Tetrachloroethene ND 1.0 0.41 ug/L 11/23/22 14:30 ND 1,3-Dichloropropane 10 0.35 ug/L 11/23/22 14:30 Dibromochloromethane ND 1.0 0.43 ug/L 11/23/22 14:30 1.2-Dibromoethane ND 0.40 ug/L 11/23/22 14:30 1.0 Chlorobenzene ND 1.0 0.44 ug/L 11/23/22 14:30 1,1,1,2-Tetrachloroethane ND 1.0 0.18 ug/L 11/23/22 14:30 Ethylbenzene ND 1.0 0.50 ug/L 11/23/22 14:30 m-Xylene & p-Xylene ND 2.0 0.53 ug/L 11/23/22 14:30 o-Xylene ND 1.0 0.39 ug/L 11/23/22 14:30 Styrene ND 1.0 0.53 ug/L 11/23/22 14:30 ND Bromoform 1.0 0.51 ug/L 11/23/22 14:30 Isopropylbenzene 0.44 ND 1.0 ug/L 11/23/22 14:30 ND Bromobenzene 1.0 0.43 ug/L 11/23/22 14:30 1,1,2,2-Tetrachloroethane ND 1.0 0.52 ug/L 11/23/22 14:30 ND 1.0 1,2,3-Trichloropropane 0.41 ug/L 11/23/22 14:30 N-Propylbenzene ND 1.0 0.50 ug/L 11/23/22 14:30 2-Chlorotoluene ND 1.0 0.51 ug/L 11/23/22 14:30

Client: ERM-West Job ID: 580-119973-1

Project/Site: Arkema - Q4 2022 Groundwater Event

Client Sample ID: RB-02-111022

Date Collected: 11/10/22 07:20 Date Received: 11/11/22 11:35

Analyte

Chloride (MCAWW 300.0)

Lab Sample ID: 580-119973-10

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Chlorotoluene	ND		1.0	0.38	ug/L			11/23/22 14:30	1
t-Butylbenzene	ND		2.0	0.58	ug/L			11/23/22 14:30	1
1,2,4-Trimethylbenzene	ND		3.0	0.61	ug/L			11/23/22 14:30	1
sec-Butylbenzene	ND		1.0	0.49	ug/L			11/23/22 14:30	1
4-Isopropyltoluene	ND		1.0	0.28	ug/L			11/23/22 14:30	1
1,3-Dichlorobenzene	ND		1.0	0.48	ug/L			11/23/22 14:30	1
1,4-Dichlorobenzene	ND		1.0	0.46	ug/L			11/23/22 14:30	1
n-Butylbenzene	ND		1.0	0.44	ug/L			11/23/22 14:30	1
1,2-Dichlorobenzene	ND		1.0	0.46	ug/L			11/23/22 14:30	1
1,2-Dibromo-3-Chloropropane	ND		3.0	0.57	ug/L			11/23/22 14:30	1
1,2,4-Trichlorobenzene	ND		1.0	0.33	ug/L			11/23/22 14:30	1
Hexachlorobutadiene	ND		3.0	0.79	ug/L			11/23/22 14:30	1
Naphthalene	ND		3.0	0.93	ug/L			11/23/22 14:30	1
1,2,3-Trichlorobenzene	ND		2.0	0.43	ug/L			11/23/22 14:30	1
1,3,5-Trimethylbenzene	ND		1.0	0.55	ug/L			11/23/22 14:30	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	106		80 - 120			-		11/23/22 14:30	1
1,2-Dichloroethane-d4 (Surr)	91		80 - 120					11/23/22 14:30	1
4-Bromofluorobenzene (Surr)	95		80 - 120					11/23/22 14:30	1
Dibromofluoromethane (Surr)	106		80 - 120					11/23/22 14:30	1
Method: EPA 314.0 - Perch	lorate (IC)								
Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		4.0	2.0	ug/L			11/17/22 15:13	1
General Chemistry									
- Control of the cont						_			

RL

1.5

MDL Unit

0.43 mg/L

Prepared

Result Qualifier

ND

12/14/2022

Dil Fac

Analyzed

12/03/22 03:49

Client: ERM-West Job ID: 580-119973-1

Project/Site: Arkema - Q4 2022 Groundwater Event

Client Sample ID: PA-24d-111022

Date Received: 11/11/22 11:35

Lab Sample ID: 580-119973-11 Date Collected: 11/10/22 07:47

Matrix: Water

Analyte	Result Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Dichlorodifluoromethane	ND *+	1.0	0.53	ug/L			11/23/22 15:43	1
Chloromethane	ND	1.0	0.28	ug/L			11/23/22 15:43	1
Vinyl chloride	ND	1.0	0.22	ug/L			11/23/22 15:43	1
Bromomethane	ND	1.0	0.21	ug/L			11/23/22 15:43	1
Chloroethane	ND	1.0	0.35	ug/L			11/23/22 15:43	1
Trichlorofluoromethane	ND	1.0	0.36	ug/L			11/23/22 15:43	1
Carbon disulfide	ND	1.0	0.53	ug/L			11/23/22 15:43	1
1,1-Dichloroethene	ND	1.0	0.28	ug/L			11/23/22 15:43	1
Acetone	ND	15	3.2	ug/L			11/23/22 15:43	1
Methylene Chloride	ND	3.0	1.4	ug/L			11/23/22 15:43	1
Methyl tert-butyl ether	ND	1.0	0.44	ug/L			11/23/22 15:43	1
trans-1,2-Dichloroethene	ND	1.0	0.39	ug/L			11/23/22 15:43	1
1,1-Dichloroethane	ND	1.0	0.22	ug/L			11/23/22 15:43	1
2-Butanone (MEK)	ND	15	4.7	ug/L			11/23/22 15:43	1
2,2-Dichloropropane	ND	1.0	0.32	ug/L			11/23/22 15:43	1
cis-1,2-Dichloroethene	ND	1.0		ug/L			11/23/22 15:43	1
Bromochloromethane	ND	1.0		ug/L			11/23/22 15:43	1
Chloroform	ND	1.0		ug/L			11/23/22 15:43	1
1,1,1-Trichloroethane	ND	1.0		ug/L			11/23/22 15:43	1
Carbon tetrachloride	ND	1.0		ug/L			11/23/22 15:43	1
1,1-Dichloropropene	ND	1.0		ug/L			11/23/22 15:43	1
Benzene	ND	1.0		ug/L			11/23/22 15:43	1
1,2-Dichloroethane	1.6	1.0		ug/L			11/23/22 15:43	1
Trichloroethene	ND	1.0		ug/L			11/23/22 15:43	1
1,2-Dichloropropane	ND	1.0		ug/L			11/23/22 15:43	
4-Methyl-2-pentanone (MIBK)	ND	5.0		ug/L			11/23/22 15:43	1
Dibromomethane	ND	1.0		ug/L			11/23/22 15:43	1
Bromodichloromethane	ND	1.0		ug/L			11/23/22 15:43	
cis-1,3-Dichloropropene	ND	1.0		ug/L			11/23/22 15:43	1
Toluene	ND	1.0		ug/L			11/23/22 15:43	1
trans-1,3-Dichloropropene	ND	1.0		ug/L			11/23/22 15:43	
1,1,2-Trichloroethane	ND	1.0		ug/L			11/23/22 15:43	1
Tetrachloroethene	ND	1.0		ug/L			11/23/22 15:43	1
1,3-Dichloropropane	ND	1.0		ug/L			11/23/22 15:43	
Dibromochloromethane	ND	1.0		ug/L			11/23/22 15:43	1
1.2-Dibromoethane	ND	1.0		ug/L			11/23/22 15:43	1
Chlorobenzene	ND	1.0					11/23/22 15:43	
1,1,1,2-Tetrachloroethane	ND	1.0		ug/L ug/L				1
Ethylbenzene	ND ND	1.0		-			11/23/22 15:43	1
				ug/L ug/L			11/23/22 15:43	
m-Xylene & p-Xylene	ND	2.0					11/23/22 15:43	1
o-Xylene	ND ND	1.0		ug/L			11/23/22 15:43	1
Styrene Bromoform	ND	1.0		ug/L			11/23/22 15:43	1
	ND ND	1.0		ug/L			11/23/22 15:43	1
Isopropylbenzene Bromehonzene	ND ND	1.0		ug/L			11/23/22 15:43	1
Bromobenzene	ND ND	1.0		ug/L			11/23/22 15:43	1
1,1,2,2-Tetrachloroethane	ND	1.0		ug/L			11/23/22 15:43	1
1,2,3-Trichloropropane	ND	1.0		ug/L			11/23/22 15:43	1
N-Propylbenzene	ND	1.0		ug/L			11/23/22 15:43	1
2-Chlorotoluene	ND	1.0		ug/L			11/23/22 15:43	

Eurofins Seattle

Client: ERM-West Job ID: 580-119973-1

Project/Site: Arkema - Q4 2022 Groundwater Event

Client Sample ID: PA-24d-111022

Date Received: 11/11/22 11:35

Date Collected: 11/10/22 07:47

Lab Sample ID: 580-119973-11

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Chlorotoluene	ND		1.0	0.38	ug/L			11/23/22 15:43	1
t-Butylbenzene	ND		2.0	0.58	ug/L			11/23/22 15:43	1
1,2,4-Trimethylbenzene	ND		3.0	0.61	ug/L			11/23/22 15:43	1
sec-Butylbenzene	ND		1.0	0.49	ug/L			11/23/22 15:43	1
4-Isopropyltoluene	ND		1.0	0.28	ug/L			11/23/22 15:43	1
1,3-Dichlorobenzene	ND		1.0	0.48	ug/L			11/23/22 15:43	1
1,4-Dichlorobenzene	ND		1.0	0.46	ug/L			11/23/22 15:43	1
n-Butylbenzene	ND		1.0	0.44	ug/L			11/23/22 15:43	1
1,2-Dichlorobenzene	ND		1.0	0.46	ug/L			11/23/22 15:43	1
1,2-Dibromo-3-Chloropropane	ND		3.0	0.57	ug/L			11/23/22 15:43	1
1,2,4-Trichlorobenzene	ND		1.0	0.33	ug/L			11/23/22 15:43	1
Hexachlorobutadiene	ND		3.0	0.79	ug/L			11/23/22 15:43	1
Naphthalene	ND		3.0	0.93	ug/L			11/23/22 15:43	1
1,2,3-Trichlorobenzene	ND		2.0	0.43	ug/L			11/23/22 15:43	1
1,3,5-Trimethylbenzene	ND		1.0	0.55	ug/L			11/23/22 15:43	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac

Surrogate	%Recovery Qualifier	Limits	Prepared Analyzed	Dil Fac
Toluene-d8 (Surr)	103	80 - 120	11/23/22 15:4	3 1
1,2-Dichloroethane-d4 (Surr)	91	80 - 120	11/23/22 15:4	3 1
4-Bromofluorobenzene (Surr)	99	80 - 120	11/23/22 15:4	3 1
Dibromofluoromethane (Surr)	105	80 - 120	11/23/22 15:4	3 1

	700		00-720					11/25/22 15.45	,
- Method: EPA 314.0 - Perchlo	rate (IC)								
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Perchlorate	ND		400	200	ug/L			11/17/22 16:10	100
- General Chemistry									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Chloride (MCAWW 300.0)	32000		1500	430	mg/L			12/03/22 04:12	100

Client: ERM-West Job ID: 580-119973-1

Project/Site: Arkema - Q4 2022 Groundwater Event

Client Sample ID: MWA-31i(d)-111022

Lab Sample ID: 580-119973-12 Date Collected: 11/10/22 08:32

Matrix: Water

Date Received: 11/11/22 11:35

Analyte		Qualifier	RL	MDL		<u>D</u> .	Prepared	Analyzed	Dil Fac
Dichlorodifluoromethane	ND	F1 *+	1.0	0.53	ug/L			11/23/22 16:07	1
Chloromethane	ND	F1	1.0	0.28	ug/L			11/23/22 16:07	1
Vinyl chloride	ND	F1	1.0	0.22	ug/L			11/23/22 16:07	1
Bromomethane	ND	F1	1.0	0.21	ug/L			11/23/22 16:07	1
Chloroethane	ND	F1	1.0	0.35	ug/L			11/23/22 16:07	1
Trichlorofluoromethane	ND	F1	1.0	0.36	ug/L			11/23/22 16:07	1
Carbon disulfide	ND	F1	1.0	0.53	ug/L			11/23/22 16:07	1
1,1-Dichloroethene	ND	F1	1.0	0.28	ug/L			11/23/22 16:07	1
Acetone	ND	F1 F2	15	3.2	ug/L			11/23/22 16:07	1
Methylene Chloride	2.0	J F1 F2	3.0	1.4	ug/L			11/23/22 16:07	1
Methyl tert-butyl ether	ND	F1 F2	1.0	0.44	ug/L			11/23/22 16:07	1
trans-1,2-Dichloroethene	ND	F1 F2	1.0	0.39	-			11/23/22 16:07	1
1,1-Dichloroethane	ND	F1 F2	1.0		ug/L			11/23/22 16:07	1
2-Butanone (MEK)	ND	F1 F2	15		ug/L			11/23/22 16:07	1
2,2-Dichloropropane	ND	F1	1.0		ug/L			11/23/22 16:07	1
cis-1,2-Dichloroethene		F1 F2	1.0		ug/L			11/23/22 16:07	1
Bromochloromethane		F1 F2	1.0		ug/L			11/23/22 16:07	1
Chloroform		F2	1.0		ug/L			11/23/22 16:07	1
1,1,1-Trichloroethane		F1 F2	1.0		ug/L			11/23/22 16:07	
Carbon tetrachloride		F1 F2	1.0		ug/L			11/23/22 16:07	1
1,1-Dichloropropene		F1 F2	1.0		ug/L			11/23/22 16:07	1
Benzene		J F1 F2	1.0		ug/L			11/23/22 16:07	
1,2-Dichloroethane		F1 F2	1.0		ug/L			11/23/22 16:07	,
Trichloroethene		F1 F2	1.0		ug/L			11/23/22 16:07	1
1,2-Dichloropropane		F1 F2	1.0		ug/L			11/23/22 16:07	
4-Methyl-2-pentanone (MIBK)		F1 F2	5.0		ug/L			11/23/22 16:07	,
Dibromomethane		F1 F2	1.0		ug/L ug/L			11/23/22 16:07	,
Bromodichloromethane		F1 F2			ug/L ug/L			11/23/22 16:07	
	ND		1.0 1.0		-			11/23/22 16:07	,
cis-1,3-Dichloropropene		F1 F2			ug/L			11/23/22 16:07	,
Toluene	ND		1.0		ug/L				
trans-1,3-Dichloropropene		F2 F1 F2	1.0		ug/L			11/23/22 16:07	
1,1,2-Trichloroethane			1.0		ug/L			11/23/22 16:07	1
Tetrachloroethene		J F1 F2	1.0		ug/L			11/23/22 16:07	1
1,3-Dichloropropane		F1 F2	1.0		ug/L			11/23/22 16:07	
Dibromochloromethane		F1 F2	1.0	0.43	-			11/23/22 16:07	1
1,2-Dibromoethane		F1 F2	1.0	0.40				11/23/22 16:07	1
Chlorobenzene		J F1 F2	1.0		ug/L			11/23/22 16:07	1
1,1,1,2-Tetrachloroethane		F1 F2	1.0		ug/L			11/23/22 16:07	1
Ethylbenzene		F1 F2	1.0		ug/L			11/23/22 16:07	1
m-Xylene & p-Xylene		F1 F2	2.0		ug/L			11/23/22 16:07	1
o-Xylene		F1 F2	1.0		ug/L			11/23/22 16:07	1
Styrene	ND		1.0		ug/L			11/23/22 16:07	1
Bromoform		F1 F2	1.0		ug/L			11/23/22 16:07	1
Isopropylbenzene		F1 F2	1.0		ug/L			11/23/22 16:07	,
Bromobenzene		F1 F2	1.0	0.43	ug/L			11/23/22 16:07	
1,1,2,2-Tetrachloroethane		F1 F2	1.0	0.52	ug/L			11/23/22 16:07	1
1,2,3-Trichloropropane	ND	F1 F2	1.0	0.41	ug/L			11/23/22 16:07	1
N-Propylbenzene	ND	F1 F2	1.0	0.50	ug/L			11/23/22 16:07	1
2-Chlorotoluene	ND	F1 F2	1.0	0.51	ug/L			11/23/22 16:07	1

Client: ERM-West Job ID: 580-119973-1

Project/Site: Arkema - Q4 2022 Groundwater Event

Client Sample ID: MWA-31i(d)-111022

Lab Sample ID: 580-119973-12 Date Collected: 11/10/22 08:32

Matrix: Water

Date Received: 11/11/22 11:35

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Chlorotoluene	MD	F1	1.0	0.38	ug/L			11/23/22 16:07	1
t-Butylbenzene	ND	F1 F2	2.0	0.58	ug/L			11/23/22 16:07	1
1,2,4-Trimethylbenzene	ND	F1 F2	3.0	0.61	ug/L			11/23/22 16:07	1
sec-Butylbenzene	ND	F1 F2	1.0	0.49	ug/L			11/23/22 16:07	1
4-Isopropyltoluene	ND	F1 F2	1.0	0.28	ug/L			11/23/22 16:07	1
1,3-Dichlorobenzene	ND	F1	1.0	0.48	ug/L			11/23/22 16:07	1
1,4-Dichlorobenzene	ND	F1 F2	1.0	0.46	ug/L			11/23/22 16:07	1
n-Butylbenzene	ND	F1 F2	1.0	0.44	ug/L			11/23/22 16:07	1
1,2-Dichlorobenzene	ND	F1 F2	1.0	0.46	ug/L			11/23/22 16:07	1
1,2-Dibromo-3-Chloropropane	ND	F1 F2	3.0	0.57	ug/L			11/23/22 16:07	1
1,2,4-Trichlorobenzene	ND	F1 F2	1.0	0.33	ug/L			11/23/22 16:07	1
Hexachlorobutadiene	ND	F1 F2	3.0	0.79	ug/L			11/23/22 16:07	1
Naphthalene	ND	F1	3.0	0.93	ug/L			11/23/22 16:07	1
1,2,3-Trichlorobenzene	ND	F1	2.0	0.43	ug/L			11/23/22 16:07	1
1,3,5-Trimethylbenzene	ND	F1	1.0	0.55	ug/L			11/23/22 16:07	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	103		80 - 120			-		11/23/22 16:07	1
1,2-Dichloroethane-d4 (Surr)	91		80 - 120					11/23/22 16:07	1
4-Bromofluorobenzene (Surr)	99		80 - 120					11/23/22 16:07	1
Dibromofluoromethane (Surr)	105		80 - 120					11/23/22 16:07	1
Method: EPA 314.0 - Perch	lorate (IC)								
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	97000		8000	4000	ug/L			11/17/22 16:29	2000
General Chemistry									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (MCAWW 300.0)	19000		1500	430	mg/L			12/03/22 04:59	1000

Client: ERM-West Job ID: 580-119973-1

Project/Site: Arkema - Q4 2022 Groundwater Event

Client Sample ID: PA-20d-111022

Lab Sample ID: 580-119973-13 Date Collected: 11/10/22 09:26

Matrix: Water

Date Received: 11/11/22 11:35

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Dichlorodifluoromethane	ND		1.0	0.53	ug/L		•	11/23/22 17:20	
Chloromethane	ND		1.0		ug/L			11/23/22 17:20	
Vinyl chloride	ND		1.0	0.22	-			11/23/22 17:20	
Bromomethane	ND		1.0		ug/L			11/23/22 17:20	
Chloroethane	ND		1.0		ug/L			11/23/22 17:20	
Trichlorofluoromethane	ND		1.0		ug/L			11/23/22 17:20	
Carbon disulfide	ND		1.0		ug/L			11/23/22 17:20	
1,1-Dichloroethene	ND		1.0	0.28	-			11/23/22 17:20	
Acetone		JB	15		ug/L			11/23/22 17:20	
Methylene Chloride	ND		3.0		ug/L			11/23/22 17:20	
Methyl tert-butyl ether	ND		1.0	0.44	-			11/23/22 17:20	
trans-1,2-Dichloroethene	ND		1.0		ug/L			11/23/22 17:20	
1,1-Dichloroethane	0.64		1.0		ug/L			11/23/22 17:20	
2-Butanone (MEK)	ND		15		ug/L			11/23/22 17:20	
2,2-Dichloropropane	ND		1.0	0.32	-			11/23/22 17:20	
cis-1,2-Dichloroethene	ND		1.0		ug/L			11/23/22 17:20	
Bromochloromethane	ND		1.0	0.29	-			11/23/22 17:20	
Chloroform	0.83	J	1.0		ug/L			11/23/22 17:20	
1,1,1-Trichloroethane	ND		1.0	0.39				11/23/22 17:20	
Carbon tetrachloride	ND		1.0	0.30	-			11/23/22 17:20	
1,1-Dichloropropene	ND		1.0	0.29	-			11/23/22 17:20	
Benzene	ND		1.0	0.24				11/23/22 17:20	
1,2-Dichloroethane	0.54		1.0	0.42				11/23/22 17:20	
Trichloroethene	ND	•	1.0	0.42	-			11/23/22 17:20	
1,2-Dichloropropane	ND		1.0		ug/L			11/23/22 17:20	
4-Methyl-2-pentanone (MIBK)	ND		5.0		ug/L			11/23/22 17:20	
Dibromomethane	ND		1.0	0.34	-			11/23/22 17:20	
Bromodichloromethane	ND		1.0		ug/L			11/23/22 17:20	
cis-1,3-Dichloropropene	ND		1.0	0.42	-			11/23/22 17:20	
Toluene	ND		1.0	0.39	-			11/23/22 17:20	
trans-1,3-Dichloropropene	ND		1.0		ug/L			11/23/22 17:20	
1,1,2-Trichloroethane	ND		1.0		ug/L			11/23/22 17:20	
Tetrachloroethene	ND		1.0		ug/L			11/23/22 17:20	
1,3-Dichloropropane	ND		1.0		ug/L ug/L			11/23/22 17:20	
Dibromochloromethane	ND ND		1.0	0.43	-			11/23/22 17:20	
1,2-Dibromoethane	ND		1.0		ug/L			11/23/22 17:20	
			1.0		ug/L ug/L				
Chlorobenzene	9.3				ug/L ug/L			11/23/22 17:20	
1,1,1,2-Tetrachloroethane	ND ND		1.0 1.0		ug/L ug/L			11/23/22 17:20	
Ethylbenzene m-Xylene & p-Xylene	ND							11/23/22 17:20	
			2.0		ug/L			11/23/22 17:20	
o-Xylene	ND		1.0		ug/L			11/23/22 17:20	
Styrene	ND		1.0		ug/L			11/23/22 17:20	
Bromoform	ND		1.0		ug/L			11/23/22 17:20	
Isopropylbenzene	ND		1.0		ug/L			11/23/22 17:20	
Bromobenzene	ND		1.0		ug/L			11/23/22 17:20	
1,1,2,2-Tetrachloroethane	ND		1.0		ug/L			11/23/22 17:20	
1,2,3-Trichloropropane	ND		1.0		ug/L			11/23/22 17:20	
N-Propylbenzene	ND		1.0		ug/L ug/L			11/23/22 17:20 11/23/22 17:20	

Client: ERM-West Job ID: 580-119973-1

Project/Site: Arkema - Q4 2022 Groundwater Event

Client Sample ID: PA-20d-111022

Lab Sample ID: 580-119973-13 Date Collected: 11/10/22 09:26

Matrix: Water

Date Received: 11/11/22 11:35

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Chlorotoluene	ND		1.0	0.38	ug/L			11/23/22 17:20	1
t-Butylbenzene	ND		2.0	0.58	ug/L			11/23/22 17:20	1
1,2,4-Trimethylbenzene	ND		3.0	0.61	ug/L			11/23/22 17:20	1
sec-Butylbenzene	ND		1.0	0.49	ug/L			11/23/22 17:20	1
4-Isopropyltoluene	ND		1.0	0.28	ug/L			11/23/22 17:20	1
1,3-Dichlorobenzene	ND		1.0	0.48	ug/L			11/23/22 17:20	1
1,4-Dichlorobenzene	ND		1.0	0.46	ug/L			11/23/22 17:20	1
n-Butylbenzene	ND		1.0	0.44	ug/L			11/23/22 17:20	1
1,2-Dichlorobenzene	ND		1.0	0.46	ug/L			11/23/22 17:20	1
1,2-Dibromo-3-Chloropropane	ND		3.0	0.57	ug/L			11/23/22 17:20	1
1,2,4-Trichlorobenzene	0.44	JB	1.0	0.33	ug/L			11/23/22 17:20	1
Hexachlorobutadiene	ND		3.0	0.79	ug/L			11/23/22 17:20	1
Naphthalene	ND		3.0	0.93	ug/L			11/23/22 17:20	1
1,2,3-Trichlorobenzene	0.63	JB	2.0	0.43	ug/L			11/23/22 17:20	1
1,3,5-Trimethylbenzene	ND		1.0	0.55	ug/L			11/23/22 17:20	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	103		80 - 120			-		11/23/22 17:20	
1,2-Dichloroethane-d4 (Surr)	89		80 - 120					11/23/22 17:20	1
4-Bromofluorobenzene (Surr)	99		80 - 120					11/23/22 17:20	1
Dibromofluoromethane (Surr)	102		80 - 120					11/23/22 17:20	
Method: EPA 314.0 - Perch	lorate (IC)								
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		40	20	ug/L			11/17/22 17:26	10
General Chemistry									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (MCAWW 300.0)	1000		150	43	mg/L			12/06/22 00:23	100

Client: ERM-West Job ID: 580-119973-1

Project/Site: Arkema - Q4 2022 Groundwater Event

Client Sample ID: PA-21d-111022

Lab Sample ID: 580-119973-14 Date Collected: 11/10/22 10:13

Matrix: Water

Date Received: 11/11/22 11:35

Method: SW846 8260D - Vola Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dichlorodifluoromethane			100		ug/L		•	11/23/22 18:57	100
Chloromethane	ND		100		ug/L			11/23/22 18:57	100
Vinyl chloride	ND		100		ug/L			11/23/22 18:57	100
Bromomethane	ND		100		ug/L			11/23/22 18:57	100
Chloroethane	ND		100		ug/L			11/23/22 18:57	100
Trichlorofluoromethane	ND		100		ug/L			11/23/22 18:57	100
Carbon disulfide	ND		100		ug/L			11/23/22 18:57	100
1.1-Dichloroethene	ND		100		ug/L			11/23/22 18:57	100
Acetone	ND		1500		ug/L			11/23/22 18:57	100
Methylene Chloride	ND		300		ug/L			11/23/22 18:57	100
Methyl tert-butyl ether	ND		100		ug/L			11/23/22 18:57	100
trans-1,2-Dichloroethene	ND		100		ug/L			11/23/22 18:57	100
1,1-Dichloroethane	ND		100		ug/L			11/23/22 18:57	100
2-Butanone (MEK)	ND		1500		ug/L			11/23/22 18:57	100
2,2-Dichloropropane	ND ND		100		ug/L ug/L			11/23/22 18:57	100
cis-1,2-Dichloroethene	ND		100		ug/L ug/L			11/23/22 18:57	100
Bromochloromethane	ND ND		100		ug/L ug/L			11/23/22 18:57	100
Chloroform	26 .		100		ug/L ug/L			11/23/22 18:57	100
1,1,1-Trichloroethane	ND	J	100		ug/L ug/L			11/23/22 18:57	100
Carbon tetrachloride	ND ND		100		ug/L ug/L			11/23/22 18:57	100
					-				
1,1-Dichloropropene	ND		100		ug/L			11/23/22 18:57	100
Benzene	ND		100		ug/L			11/23/22 18:57	100
1,2-Dichloroethane	ND		100		ug/L			11/23/22 18:57	100
Trichloroethene	ND		100		ug/L			11/23/22 18:57	100
1,2-Dichloropropane	ND		100		ug/L			11/23/22 18:57	100
4-Methyl-2-pentanone (MIBK)	ND		500		ug/L			11/23/22 18:57	100
Dibromomethane	ND		100		ug/L			11/23/22 18:57	100
Bromodichloromethane	ND		100		ug/L			11/23/22 18:57	100
cis-1,3-Dichloropropene	ND		100		ug/L			11/23/22 18:57	100
Toluene	ND		100		ug/L			11/23/22 18:57	100
trans-1,3-Dichloropropene	ND		100		ug/L			11/23/22 18:57	100
1,1,2-Trichloroethane	ND		100		ug/L			11/23/22 18:57	100
Tetrachloroethene	ND		100		ug/L			11/23/22 18:57	100
1,3-Dichloropropane	ND		100		ug/L			11/23/22 18:57	100
Dibromochloromethane	ND		100		ug/L			11/23/22 18:57	100
1,2-Dibromoethane	ND		100		ug/L			11/23/22 18:57	100
Chlorobenzene	15000		100		ug/L			11/23/22 18:57	100
1,1,1,2-Tetrachloroethane	ND		100	18	ug/L			11/23/22 18:57	100
Ethylbenzene	ND		100		ug/L			11/23/22 18:57	100
m-Xylene & p-Xylene	ND		200	53	ug/L			11/23/22 18:57	100
o-Xylene	ND		100	39	ug/L			11/23/22 18:57	100
Styrene	ND		100	53	ug/L			11/23/22 18:57	100
Bromoform	ND		100	51	ug/L			11/23/22 18:57	100
Isopropylbenzene	ND		100	44	ug/L			11/23/22 18:57	100
Bromobenzene	ND		100	43	ug/L			11/23/22 18:57	100
1,1,2,2-Tetrachloroethane	ND		100	52	ug/L			11/23/22 18:57	100
1,2,3-Trichloropropane	ND		100		ug/L			11/23/22 18:57	100
N-Propylbenzene	ND		100	50	ug/L			11/23/22 18:57	100
2-Chlorotoluene	ND		100		ug/L			11/23/22 18:57	100

Client: ERM-West Job ID: 580-119973-1

Project/Site: Arkema - Q4 2022 Groundwater Event

Client Sample ID: PA-21d-111022

Date Received: 11/11/22 11:35

Hexachlorobutadiene

1,2,3-Trichlorobenzene

1,3,5-Trimethylbenzene

Naphthalene

Lab Sample ID: 580-119973-14 Date Collected: 11/10/22 10:13

Matrix: Water

Analyte	Result Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Chlorotoluene	ND	100	38	ug/L			11/23/22 18:57	100
t-Butylbenzene	ND	200	58	ug/L			11/23/22 18:57	100
1,2,4-Trimethylbenzene	ND	300	61	ug/L			11/23/22 18:57	100
sec-Butylbenzene	ND	100	49	ug/L			11/23/22 18:57	100
4-Isopropyltoluene	ND	100	28	ug/L			11/23/22 18:57	100
1,3-Dichlorobenzene	ND	100	48	ug/L			11/23/22 18:57	100
1,4-Dichlorobenzene	ND	100	46	ug/L			11/23/22 18:57	100
n-Butylbenzene	ND	100	44	ug/L			11/23/22 18:57	100
1,2-Dichlorobenzene	ND	100	46	ug/L			11/23/22 18:57	100
1,2-Dibromo-3-Chloropropane	ND	300	57	ug/L			11/23/22 18:57	100
1,2,4-Trichlorobenzene	ND	100	33	ua/L			11/23/22 18:57	100

300

300

200

100

79 ug/L

93 ug/L

43 ug/L

55 ug/L

Surrogate	%Recovery Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	103	80 - 120		11/23/22 18:57	100
1,2-Dichloroethane-d4 (Surr)	86	80 - 120		11/23/22 18:57	100
4-Bromofluorobenzene (Surr)	98	80 - 120		11/23/22 18:57	100
Dibromofluoromethane (Surr)	103	80 - 120		11/23/22 18:57	100

ND

ND

ND

ND

Method: EPA 314.0 - Perchlorat	te (IC)								
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		200	100	ug/L			11/17/22 17:45	50

General Chemistry									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (MCAWW 300.0)	290		150	43	mg/L			12/06/22 00:46	100

100

100

100

100

11/23/22 18:57

11/23/22 18:57

11/23/22 18:57

11/23/22 18:57

Client: ERM-West Job ID: 580-119973-1

Project/Site: Arkema - Q4 2022 Groundwater Event

Client Sample ID: PA-19d-111022

Lab Sample ID: 580-119973-15 Date Collected: 11/10/22 10:59

Matrix: Water

Date Received: 11/11/22 11:35

Analyte	Result Qualifier	RL	MDL		<u>D</u>	Prepared	Analyzed	Dil F
Dichlorodifluoromethane	ND *+	20	11	ug/L			11/23/22 19:21	
Chloromethane	ND	20	5.6	ug/L			11/23/22 19:21	
Vinyl chloride	ND	20	4.4	ug/L			11/23/22 19:21	
Bromomethane	ND	20	4.2	ug/L			11/23/22 19:21	
Chloroethane	ND	20	7.0	ug/L			11/23/22 19:21	
Trichlorofluoromethane	ND	20	7.2	ug/L			11/23/22 19:21	
Carbon disulfide	ND	20	11	ug/L			11/23/22 19:21	
1,1-Dichloroethene	ND	20	5.6	ug/L			11/23/22 19:21	
Acetone	ND	300	64	ug/L			11/23/22 19:21	
Methylene Chloride	ND	60	29	ug/L			11/23/22 19:21	
Methyl tert-butyl ether	ND	20		ug/L			11/23/22 19:21	
trans-1,2-Dichloroethene	ND	20		ug/L			11/23/22 19:21	
1,1-Dichloroethane	ND	20		ug/L			11/23/22 19:21	
2-Butanone (MEK)	ND	300		ug/L			11/23/22 19:21	
2,2-Dichloropropane	ND	20		ug/L			11/23/22 19:21	
cis-1,2-Dichloroethene	17 J	20		ug/L			11/23/22 19:21	
Bromochloromethane	ND	20		ug/L			11/23/22 19:21	
Chloroform	ND	20		ug/L			11/23/22 19:21	
1,1,1-Trichloroethane	ND	20		ug/L			11/23/22 19:21	
Carbon tetrachloride	ND	20		ug/L			11/23/22 19:21	
1,1-Dichloropropene	ND	20		ug/L			11/23/22 19:21	
Benzene		20		ug/L			11/23/22 19:21	
1,2-Dichloroethane	ND	20		ug/L			11/23/22 19:21	
Trichloroethene	ND	20		ug/L			11/23/22 19:21	
1,2-Dichloropropane	ND	20		ug/L			11/23/22 19:21	
4-Methyl-2-pentanone (MIBK)	ND	100		ug/L			11/23/22 19:21	
Dibromomethane	ND	20		ug/L			11/23/22 19:21	
Bromodichloromethane	ND	20		ug/L			11/23/22 19:21	
	ND	20		ug/L ug/L			11/23/22 19:21	
cis-1,3-Dichloropropene Toluene	ND ND	20		_			11/23/22 19:21	
				ug/L				
trans-1,3-Dichloropropene	ND ND	20		ug/L			11/23/22 19:21	
1,1,2-Trichloroethane		20		ug/L			11/23/22 19:21	
Tetrachloroethene	ND	20		ug/L			11/23/22 19:21	
1,3-Dichloropropane	ND	20		ug/L			11/23/22 19:21	
Dibromochloromethane	ND	20		ug/L			11/23/22 19:21	
1,2-Dibromoethane	ND	20		ug/L			11/23/22 19:21	
Chlorobenzene	2500	20		ug/L			11/23/22 19:21	
1,1,1,2-Tetrachloroethane	ND	20		ug/L			11/23/22 19:21	
Ethylbenzene	ND	20		ug/L			11/23/22 19:21	
n-Xylene & p-Xylene	ND	40		ug/L			11/23/22 19:21	
o-Xylene	ND	20		ug/L			11/23/22 19:21	
Styrene	ND	20		ug/L			11/23/22 19:21	
Bromoform	ND	20		ug/L			11/23/22 19:21	
sopropylbenzene	ND	20		ug/L			11/23/22 19:21	
Bromobenzene	ND	20	8.6	ug/L			11/23/22 19:21	
1,1,2,2-Tetrachloroethane	ND	20	10	ug/L			11/23/22 19:21	
1,2,3-Trichloropropane	ND	20	8.2	ug/L			11/23/22 19:21	
N-Propylbenzene	ND	20	10	ug/L			11/23/22 19:21	

Client: ERM-West Job ID: 580-119973-1

Project/Site: Arkema - Q4 2022 Groundwater Event

Client Sample ID: PA-19d-111022

Lab Sample ID: 580-119973-15 Date Collected: 11/10/22 10:59

Matrix: Water

Date Received: 11/11/22 11:35

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Chlorotoluene	ND		20	7.6	ug/L			11/23/22 19:21	20
t-Butylbenzene	ND		40	12	ug/L			11/23/22 19:21	20
1,2,4-Trimethylbenzene	ND		60	12	ug/L			11/23/22 19:21	20
sec-Butylbenzene	ND		20	9.8	ug/L			11/23/22 19:21	20
4-Isopropyltoluene	ND		20	5.6	ug/L			11/23/22 19:21	20
1,3-Dichlorobenzene	ND		20	9.6	ug/L			11/23/22 19:21	20
1,4-Dichlorobenzene	ND		20	9.2	ug/L			11/23/22 19:21	20
n-Butylbenzene	ND		20	8.8	ug/L			11/23/22 19:21	20
1,2-Dichlorobenzene	ND		20	9.2	ug/L			11/23/22 19:21	20
1,2-Dibromo-3-Chloropropane	ND		60	11	ug/L			11/23/22 19:21	20
1,2,4-Trichlorobenzene	ND		20	6.6	ug/L			11/23/22 19:21	20
Hexachlorobutadiene	ND		60	16	ug/L			11/23/22 19:21	20
Naphthalene	ND		60	19	ug/L			11/23/22 19:21	20
1,2,3-Trichlorobenzene	ND		40	8.6	ug/L			11/23/22 19:21	20
1,3,5-Trimethylbenzene	ND		20	11	ug/L			11/23/22 19:21	20
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fa
Toluene-d8 (Surr)	102		80 - 120			-		11/23/22 19:21	20
1,2-Dichloroethane-d4 (Surr)	90		80 - 120					11/23/22 19:21	20
4-Bromofluorobenzene (Surr)	94		80 - 120					11/23/22 19:21	20
Dibromofluoromethane (Surr)	104		80 - 120					11/23/22 19:21	20
Method: EPA 314.0 - Perch	lorate (IC)								
Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		40	20	ug/L			11/17/22 18:04	10
General Chemistry									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (MCAWW 300.0)	280		150	43	mg/L			12/06/22 00:58	100

Client: ERM-West Job ID: 580-119973-1

Project/Site: Arkema - Q4 2022 Groundwater Event

Client Sample ID: PA-30d-111022

Date Received: 11/11/22 11:35

Lab Sample ID: 580-119973-16 Date Collected: 11/10/22 12:09

Matrix: Water

Analyte		Qualifier	RL	MDL		D	Prepared	Analyzed	Dil Fac
Dichlorodifluoromethane	ND	*+	200	110	ug/L			11/23/22 19:46	200
Chloromethane	ND		200	56	ug/L			11/23/22 19:46	200
Vinyl chloride	ND		200	44	ug/L			11/23/22 19:46	200
Bromomethane	ND		200	42	ug/L			11/23/22 19:46	200
Chloroethane	ND		200	70	ug/L			11/23/22 19:46	200
Trichlorofluoromethane	ND		200	72	ug/L			11/23/22 19:46	200
Carbon disulfide	ND		200	110	ug/L			11/23/22 19:46	200
1,1-Dichloroethene	ND		200	56	ug/L			11/23/22 19:46	200
Acetone	ND		3000	640	ug/L			11/23/22 19:46	200
Methylene Chloride	ND		600	290	ug/L			11/23/22 19:46	200
Methyl tert-butyl ether	ND		200	88	ug/L			11/23/22 19:46	200
trans-1,2-Dichloroethene	ND		200		ug/L			11/23/22 19:46	200
1,1-Dichloroethane	ND		200		ug/L			11/23/22 19:46	200
2-Butanone (MEK)	ND		3000		ug/L			11/23/22 19:46	200
2,2-Dichloropropane	ND		200		ug/L			11/23/22 19:46	200
cis-1,2-Dichloroethene	ND		200		ug/L			11/23/22 19:46	200
Bromochloromethane	ND		200		ug/L			11/23/22 19:46	200
Chloroform	ND		200		ug/L			11/23/22 19:46	200
1,1,1-Trichloroethane	ND		200		ug/L			11/23/22 19:46	200
Carbon tetrachloride	ND		200		ug/L			11/23/22 19:46	200
1,1-Dichloropropene	ND		200		ug/L			11/23/22 19:46	200
Benzene	ND		200		ug/L			11/23/22 19:46	200
1,2-Dichloroethane	ND		200		ug/L			11/23/22 19:46	200
Trichloroethene	ND		200		ug/L			11/23/22 19:46	200
1,2-Dichloropropane	ND		200		ug/L			11/23/22 19:46	200
4-Methyl-2-pentanone (MIBK)	ND		1000		ug/L			11/23/22 19:46	200
Dibromomethane	ND		200		ug/L			11/23/22 19:46	200
Bromodichloromethane	ND		200		ug/L			11/23/22 19:46	200
cis-1,3-Dichloropropene	ND		200		ug/L			11/23/22 19:46	200
Toluene	ND ND		200		ug/L			11/23/22 19:46	200
trans-1,3-Dichloropropene	ND		200		ug/L ug/L			11/23/22 19:46	200
1,1,2-Trichloroethane	ND ND		200		ug/L			11/23/22 19:46	200
Tetrachloroethene	ND ND		200		ug/L			11/23/22 19:46	200
1,3-Dichloropropane	ND ND		200					11/23/22 19:46	200
Dibromochloromethane	ND ND		200		ug/L ug/L			11/23/22 19:46	200
1,2-Dibromoethane	ND ND		200		ug/L			11/23/22 19:46	200
			200		ug/L ug/L			11/23/22 19:46	200
Chlorobenzene	26000								
1,1,1,2-Tetrachloroethane	ND ND		200 200		ug/L			11/23/22 19:46	200
Ethylbenzene					ug/L			11/23/22 19:46	200
m-Xylene & p-Xylene	ND		400		ug/L			11/23/22 19:46	200
o-Xylene	ND		200		ug/L			11/23/22 19:46	200
Styrene	ND		200		ug/L			11/23/22 19:46	200
Bromoform	ND		200		ug/L			11/23/22 19:46	200
Isopropylbenzene	ND		200		ug/L			11/23/22 19:46	200
Bromobenzene	ND		200		ug/L			11/23/22 19:46	200
1,1,2,2-Tetrachloroethane	ND		200		ug/L			11/23/22 19:46	200
1,2,3-Trichloropropane	ND		200		ug/L			11/23/22 19:46	200
N-Propylbenzene	ND		200	100	ug/L			11/23/22 19:46	200

Client: ERM-West Job ID: 580-119973-1

Project/Site: Arkema - Q4 2022 Groundwater Event

Client Sample ID: PA-30d-111022

Lab Sample ID: 580-119973-16 Date Collected: 11/10/22 12:09

Matrix: Water

Date Received: 11/11/22 11:35

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Chlorotoluene	ND		200	76	ug/L			11/23/22 19:46	200
t-Butylbenzene	ND		400	120	ug/L			11/23/22 19:46	200
1,2,4-Trimethylbenzene	ND		600	120	ug/L			11/23/22 19:46	200
sec-Butylbenzene	ND		200	98	ug/L			11/23/22 19:46	200
4-Isopropyltoluene	ND		200	56	ug/L			11/23/22 19:46	200
1,3-Dichlorobenzene	ND		200	96	ug/L			11/23/22 19:46	200
1,4-Dichlorobenzene	ND		200	92	ug/L			11/23/22 19:46	200
n-Butylbenzene	ND		200	88	ug/L			11/23/22 19:46	200
1,2-Dichlorobenzene	ND		200	92	ug/L			11/23/22 19:46	200
1,2-Dibromo-3-Chloropropane	ND		600	110	ug/L			11/23/22 19:46	200
1,2,4-Trichlorobenzene	ND		200	66	ug/L			11/23/22 19:46	200
Hexachlorobutadiene	ND		600	160	ug/L			11/23/22 19:46	200
Naphthalene	ND		600	190	ug/L			11/23/22 19:46	200
1,2,3-Trichlorobenzene	ND		400	86	ug/L			11/23/22 19:46	200
1,3,5-Trimethylbenzene	ND		200	110	ug/L			11/23/22 19:46	200
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	102		80 - 120			-		11/23/22 19:46	200
1,2-Dichloroethane-d4 (Surr)	89		80 - 120					11/23/22 19:46	200
4-Bromofluorobenzene (Surr)	95		80 - 120					11/23/22 19:46	200
Dibromofluoromethane (Surr)	101		80 - 120					11/23/22 19:46	200
Method: EPA 314.0 - Perch	lorate (IC)								
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		40	20	ug/L			11/17/22 18:23	10
General Chemistry									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (MCAWW 300.0)	270		150	43	mg/L			12/06/22 01:33	100

Client: ERM-West Job ID: 580-119973-1

Project/Site: Arkema - Q4 2022 Groundwater Event

Client Sample ID: MWA-11i(d)-111022

Lab Sample ID: 580-119973-17

Date Collected: 11/10/22 13:00 **Matrix: Water** Date Received: 11/11/22 11:35

Analyte	Result Quali	ifier RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dichlorodifluoromethane	ND *+	0.40	0.13	ug/L			11/14/22 20:59	1
Chloromethane	ND	0.50	0.14	ug/L			11/14/22 20:59	1
Vinyl chloride	ND	0.020	0.013	ug/L			11/14/22 20:59	1
Bromomethane	ND	0.50	0.13	ug/L			11/14/22 20:59	1
Chloroethane	ND *+	0.50	0.096	ug/L			11/14/22 20:59	1
Carbon disulfide	ND	0.30	0.083	ug/L			11/14/22 20:59	1
Trichlorofluoromethane	ND	0.50	0.12	ug/L			11/14/22 20:59	1
1,1-Dichloroethene	ND	0.20	0.035	ug/L			11/14/22 20:59	1
Acetone	ND *+	10	3.1	ug/L			11/14/22 20:59	1
Methylene Chloride	ND	5.0	1.2	ug/L			11/14/22 20:59	1
Methyl tert-butyl ether	ND	0.30	0.070	ug/L			11/14/22 20:59	1
2-Butanone (MEK)	ND	10		ug/L			11/14/22 20:59	1
trans-1,2-Dichloroethene	ND	0.20	0.033				11/14/22 20:59	1
1,1-Dichloroethane	0.058 J	0.20	0.025	-			11/14/22 20:59	1
2,2-Dichloropropane	ND	0.50	0.060	-			11/14/22 20:59	1
cis-1,2-Dichloroethene	0.14 J	0.20	0.055				11/14/22 20:59	1
Chlorobromomethane	ND	0.20	0.050	-			11/14/22 20:59	1
Chloroform	ND	0.20	0.030	ug/L			11/14/22 20:59	1
1,1,1-Trichloroethane	ND	0.20	0.025				11/14/22 20:59	1
Carbon tetrachloride	ND	0.20	0.025	-			11/14/22 20:59	1
1,1-Dichloropropene	ND	0.20	0.084	•			11/14/22 20:59	1
Benzene	ND	0.20	0.030				11/14/22 20:59	
1,2-Dichloroethane	ND	0.20	0.043	-			11/14/22 20:59	
1,2-Dichloropropane	ND	0.20	0.060	-			11/14/22 20:59	1
4-Methyl-2-pentanone (MIBK)	ND	10		ug/L			11/14/22 20:59	1
Dibromomethane	ND	0.20	0.062	_			11/14/22 20:59	1
Dichlorobromomethane	ND	0.20	0.060	-			11/14/22 20:59	1
cis-1,3-Dichloropropene	ND	0.20	0.090				11/14/22 20:59	
Toluene	ND	0.20	0.050	-			11/14/22 20:59	
trans-1,3-Dichloropropene	ND	0.20	0.092	-			11/14/22 20:59	1
1,1,2-Trichloroethane	ND	0.20	0.070				11/14/22 20:59	
Tetrachloroethene	ND	0.24	0.084	Ū			11/14/22 20:59	
1,3-Dichloropropane	ND	0.20	0.025	_			11/14/22 20:59	1
Chlorodibromomethane	ND	0.20	0.055				11/14/22 20:59	
Ethylene Dibromide	ND	0.10	0.025	-			11/14/22 20:59	
Chlorobenzene	1.1	0.20	0.060	-			11/14/22 20:59	
1,1,1,2-Tetrachloroethane	ND	0.30	0.038				11/14/22 20:59	
Ethylbenzene	ND	0.20	0.030				11/14/22 20:59	
m-Xylene & p-Xylene	ND	0.50	0.12	-			11/14/22 20:59	
o-Xylene	ND	0.50	0.15				11/14/22 20:59	1
Styrene	ND	1.0	0.19				11/14/22 20:59	
Bromoform	ND	0.50	0.16	-			11/14/22 20:59	
Isopropylbenzene	ND	1.0	0.10				11/14/22 20:59	
Bromobenzene	ND	0.20	0.13	-			11/14/22 20:59	
1,1,2,2-Tetrachloroethane	ND	0.20	0.056	-			11/14/22 20:59	
1,2,3-Trichloropropane	ND	0.20	0.050				11/14/22 20:59	
N-Propylbenzene	ND	0.20	0.030	-			11/14/22 20:59	
2-Chlorotoluene	ND	0.50	0.091	_			11/14/22 20:59	
4-Chlorotoluene	ND	0.30	0.12				11/14/22 20:59	

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Client: ERM-West Job ID: 580-119973-1

Project/Site: Arkema - Q4 2022 Groundwater Event

Method: SW846 8260D - Volatile Organic Compounds by GC/MS - RA

Result Qualifier

Client Sample ID: MWA-11i(d)-111022

Date Collected: 11/10/22 13:00

Date Received: 11/11/22 11:35

Analyte

Lab Sample ID: 580-119973-17

Matrix: Water

Method: SW846 8260D - Vo	latile Organic	Compound	ds by GC/MS	(Contin	ued)				
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3,5-Trimethylbenzene	ND		0.50	0.15	ug/L			11/14/22 20:59	1
tert-Butylbenzene	ND		0.50	0.26	ug/L			11/14/22 20:59	1
1,2,4-Trimethylbenzene	ND		0.50	0.20	ug/L			11/14/22 20:59	1
sec-Butylbenzene	ND		1.0	0.17	ug/L			11/14/22 20:59	1
4-Isopropyltoluene	ND		0.50	0.15	ug/L			11/14/22 20:59	1
1,3-Dichlorobenzene	ND		0.30	0.050	ug/L			11/14/22 20:59	1
1,4-Dichlorobenzene	ND		0.30	0.050	ug/L			11/14/22 20:59	1
n-Butylbenzene	ND		1.0	0.23	ug/L			11/14/22 20:59	1
1,2-Dichlorobenzene	ND		0.30	0.038	ug/L			11/14/22 20:59	1
1,2-Dibromo-3-Chloropropane	ND		2.0	0.17	ug/L			11/14/22 20:59	1
1,2,4-Trichlorobenzene	ND		0.50	0.17	ug/L			11/14/22 20:59	1
Hexachlorobutadiene	ND		0.50	0.067	ug/L			11/14/22 20:59	1
Naphthalene	ND		1.0	0.22	ug/L			11/14/22 20:59	1
1,2,3-Trichlorobenzene	ND		0.50	0.15	ug/L			11/14/22 20:59	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	97		80 - 120			-		11/14/22 20:59	1
Dibromofluoromethane (Surr)	112		80 - 120					11/14/22 20:59	1
4-Bromofluorobenzene (Surr)	93		80 - 120					11/14/22 20:59	1
1,2-Dichloroethane-d4 (Surr)	119		80 - 120					11/14/22 20:59	1

Trichloroethene	ND		0.20	0.066	ug/L			11/15/22 17:13	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	98		80 - 120			-		11/15/22 17:13	1
Dibromofluoromethane (Surr)	110		80 - 120					11/15/22 17:13	1
4-Bromofluorobenzene (Surr)	93		80 - 120					11/15/22 17:13	1
1,2-Dichloroethane-d4 (Surr)	117		80 - 120					11/15/22 17:13	1
- -									
Method: EPA 314.0 - Perch Analyte	. ,	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	. ,	Qualifier	RL 80		Unit ug/L	<u>D</u> .	Prepared	Analyzed 11/17/22 18:42	Dil Fac
Analyte	Result	Qualifier				<u> </u>	Prepared	- <u> </u>	
Analyte Perchlorate	Result ND	Qualifier Qualifier		40	ug/L	<u>D</u> .	Prepared Prepared	- <u> </u>	

MDL Unit

Prepared

Analyzed

Dil Fac

Client: ERM-West Job ID: 580-119973-1

Project/Site: Arkema - Q4 2022 Groundwater Event

Method: 8260D - Volatile Organic Compounds by GC/MS

MB MB

Lab Sample ID: MB 580-409881/7

Matrix: Water

Bromobenzene

N-Propylbenzene

1,1,2,2-Tetrachloroethane

1,2,3-Trichloropropane

Analysis Batch: 409881

Client Sample ID: Method Blank Prep Type: Total/NA

Analyte	Result (Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dichlorodifluoromethane	ND		0.40	0.13	ug/L			11/14/22 14:01	1
Chloromethane	ND		0.50	0.14	ug/L			11/14/22 14:01	1
Vinyl chloride	ND		0.020	0.013	ug/L			11/14/22 14:01	1
Bromomethane	ND		0.50	0.13	ug/L			11/14/22 14:01	1
Chloroethane	ND		0.50	0.096	ug/L			11/14/22 14:01	1
Carbon disulfide	ND		0.30	0.083	ug/L			11/14/22 14:01	1
Trichlorofluoromethane	ND		0.50	0.12	ug/L			11/14/22 14:01	1
1,1-Dichloroethene	ND		0.20	0.035	ug/L			11/14/22 14:01	1
Acetone	ND		10	3.1	ug/L			11/14/22 14:01	1
Methylene Chloride	ND		5.0	1.2	ug/L			11/14/22 14:01	1
Methyl tert-butyl ether	ND		0.30	0.070	ug/L			11/14/22 14:01	1
2-Butanone (MEK)	ND		10	2.5	ug/L			11/14/22 14:01	1
trans-1,2-Dichloroethene	ND		0.20	0.033	ug/L			11/14/22 14:01	1
1,1-Dichloroethane	ND		0.20	0.025	ug/L			11/14/22 14:01	1
2,2-Dichloropropane	ND		0.50	0.060	ug/L			11/14/22 14:01	1
cis-1,2-Dichloroethene	ND		0.20	0.055	ug/L			11/14/22 14:01	1
Chlorobromomethane	ND		0.20	0.050	ug/L			11/14/22 14:01	1
Chloroform	ND		0.20	0.030	ug/L			11/14/22 14:01	1
1,1,1-Trichloroethane	ND		0.20	0.025	ug/L			11/14/22 14:01	1
Carbon tetrachloride	ND		0.20	0.025	ug/L			11/14/22 14:01	1
1,1-Dichloropropene	ND		0.20	0.084	ug/L			11/14/22 14:01	1
Benzene	ND		0.20	0.030	ug/L			11/14/22 14:01	1
1,2-Dichloroethane	ND		0.20	0.043	ug/L			11/14/22 14:01	1
Trichloroethene	ND		0.20	0.066	ug/L			11/14/22 14:01	1
1,2-Dichloropropane	ND		0.20	0.060	ug/L			11/14/22 14:01	1
4-Methyl-2-pentanone (MIBK)	ND		10	1.7	ug/L			11/14/22 14:01	1
Dibromomethane	ND		0.20	0.062	ug/L			11/14/22 14:01	1
Dichlorobromomethane	ND		0.20	0.060	ug/L			11/14/22 14:01	1
cis-1,3-Dichloropropene	ND		0.20	0.090	ug/L			11/14/22 14:01	1
Toluene	ND		0.20	0.050	ug/L			11/14/22 14:01	1
trans-1,3-Dichloropropene	ND		0.20	0.092	ug/L			11/14/22 14:01	1
1,1,2-Trichloroethane	ND		0.20	0.070	ug/L			11/14/22 14:01	1
Tetrachloroethene	ND		0.24	0.084	ug/L			11/14/22 14:01	1
1,3-Dichloropropane	ND		0.20	0.025	ug/L			11/14/22 14:01	1
Chlorodibromomethane	0.0736	J	0.20	0.055	ug/L			11/14/22 14:01	1
Ethylene Dibromide	ND		0.10	0.025	ug/L			11/14/22 14:01	1
Chlorobenzene	ND		0.20	0.060	ug/L			11/14/22 14:01	1
1,1,1,2-Tetrachloroethane	ND		0.30	0.038	ug/L			11/14/22 14:01	1
Ethylbenzene	ND		0.20	0.030	ug/L			11/14/22 14:01	1
m-Xylene & p-Xylene	ND		0.50	0.12	ug/L			11/14/22 14:01	1
o-Xylene	ND		0.50	0.15	ug/L			11/14/22 14:01	1
Styrene	ND		1.0	0.19	ug/L			11/14/22 14:01	1
Bromoform	ND		0.50	0.16	ug/L			11/14/22 14:01	1
Isopropylbenzene	ND		1.0	0.19	ug/L			11/14/22 14:01	1
Promohonzono	ND		0.20	0.020	ua/I			11/14/22 14:01	4

11/14/22 14:01

11/14/22 14:01

11/14/22 14:01

11/14/22 14:01

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0.20

0.20

0.20

0.30

0.038 ug/L

0.056 ug/L

0.050 ug/L

0.091 ug/L

ND

ND

ND

ND

Client: ERM-West Job ID: 580-119973-1

Project/Site: Arkema - Q4 2022 Groundwater Event

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

111

Lab Sample ID: MB 580-409881/7

Matrix: Water

Analysis Batch: 409881

Client Sample ID: Method Blank

Prep Type: Total/NA

	MB	MB							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Chlorotoluene	ND		0.50	0.12	ug/L			11/14/22 14:01	1
4-Chlorotoluene	ND		0.30	0.12	ug/L			11/14/22 14:01	1
1,3,5-Trimethylbenzene	ND		0.50	0.15	ug/L			11/14/22 14:01	1
tert-Butylbenzene	ND		0.50	0.26	ug/L			11/14/22 14:01	1
1,2,4-Trimethylbenzene	ND		0.50	0.20	ug/L			11/14/22 14:01	1
sec-Butylbenzene	ND		1.0	0.17	ug/L			11/14/22 14:01	1
4-Isopropyltoluene	ND		0.50	0.15	ug/L			11/14/22 14:01	1
1,3-Dichlorobenzene	ND		0.30	0.050	ug/L			11/14/22 14:01	1
1,4-Dichlorobenzene	ND		0.30	0.050	ug/L			11/14/22 14:01	1
n-Butylbenzene	ND		1.0	0.23	ug/L			11/14/22 14:01	1
1,2-Dichlorobenzene	ND		0.30	0.038	ug/L			11/14/22 14:01	1
1,2-Dibromo-3-Chloropropane	0.199	J	2.0	0.17	ug/L			11/14/22 14:01	1
1,2,4-Trichlorobenzene	ND		0.50	0.17	ug/L			11/14/22 14:01	1
Hexachlorobutadiene	0.0729	J	0.50	0.067	ug/L			11/14/22 14:01	1
Naphthalene	ND		1.0	0.22	ug/L			11/14/22 14:01	1
1,2,3-Trichlorobenzene	ND		0.50	0.15	ug/L			11/14/22 14:01	1

MB MB Surrogate %Recovery Qualifier Limits Prepared Dil Fac Analyzed Toluene-d8 (Surr) 99 80 - 120 11/14/22 14:01 Dibromofluoromethane (Surr) 107 80 - 120 11/14/22 14:01 4-Bromofluorobenzene (Surr) 95 80 - 120 11/14/22 14:01

80 - 120

Lab Sample ID: LCS 580-409881/4

Matrix: Water

Analysis Batch: 409881

1,2-Dichloroethane-d4 (Surr)

Client Sample ID:	: Lab Control Sample
	Prep Type: Total/NA

11/14/22 14:01

•	Spike	LCS	LCS				%Rec
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits
Dichlorodifluoromethane	5.00	7.77	*+	ug/L		155	20 - 150
Chloromethane	5.00	7.21		ug/L		144	32 - 150
Vinyl chloride	5.00	6.41		ug/L		128	41 - 150
Bromomethane	5.00	6.60		ug/L		132	51 - 148
Chloroethane	5.00	6.93		ug/L		139	54 - 140
Carbon disulfide	5.00	6.18		ug/L		124	54 - 142
Trichlorofluoromethane	5.00	6.18		ug/L		124	60 - 132
1,1-Dichloroethene	5.00	5.95		ug/L		119	60 - 129
Acetone	25.0	37.3		ug/L		149	49 - 150
Methylene Chloride	5.00	5.48		ug/L		110	40 - 142
Methyl tert-butyl ether	5.00	4.86		ug/L		97	61 - 131
2-Butanone (MEK)	25.0	26.4		ug/L		106	37 - 150
trans-1,2-Dichloroethene	5.00	5.21		ug/L		104	69 - 121
1,1-Dichloroethane	5.00	5.23		ug/L		105	74 - 120
2,2-Dichloropropane	5.00	5.28		ug/L		106	55 - 140
cis-1,2-Dichloroethene	5.00	5.11		ug/L		102	72 - 120
Chlorobromomethane	5.00	5.15		ug/L		103	79 - 121
Chloroform	5.00	5.31		ug/L		106	75 - 120
1,1,1-Trichloroethane	5.00	5.25		ug/L		105	70 - 121
Carbon tetrachloride	5.00	5.23		ug/L		105	66 - 130

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Client: ERM-West Job ID: 580-119973-1

Project/Site: Arkema - Q4 2022 Groundwater Event

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 580-409881/4

Matrix: Water

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analysis Batch: 409881				
	Spike	LCS LCS	%Rec	
Analyte	Added	Result Qualifier Unit	D %Rec Limits	

Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
1,1-Dichloropropene	5.00	5.25		ug/L		105	72 - 125	
Benzene	5.00	5.48		ug/L		110	80 - 120	
1,2-Dichloroethane	5.00	5.16		ug/L		103	74 - 127	
Trichloroethene	5.00	5.13		ug/L		103	72 - 120	
1,2-Dichloropropane	5.00	5.37		ug/L		107	69 - 130	
4-Methyl-2-pentanone (MIBK)	25.0	27.0		ug/L		108	63 - 137	
Dibromomethane	5.00	5.07		ug/L		101	65 - 141	
Dichlorobromomethane	5.00	5.39		ug/L		108	74 - 131	
cis-1,3-Dichloropropene	5.00	5.33		ug/L		107	77 - 131	
Toluene	5.00	5.47		ug/L		109	80 - 126	
trans-1,3-Dichloropropene	5.00	5.23		ug/L		105	71 - 138	
1,1,2-Trichloroethane	5.00	5.41		ug/L		108	73 - 127	
Tetrachloroethene	5.00	5.20		ug/L		104	75 - 124	
1,3-Dichloropropane	5.00	5.46		ug/L		109	69 - 138	
Chlorodibromomethane	5.00	4.95		ug/L		99	62 - 141	
Ethylene Dibromide	5.00	5.40		ug/L		108	61 - 143	
Chlorobenzene	5.00	5.35		ug/L		107	74 - 123	
1,1,1,2-Tetrachloroethane	5.00	5.41		ug/L		108	69 - 127	
Ethylbenzene	5.00	5.70		ug/L		114	80 - 124	
m-Xylene & p-Xylene	5.00	5.56		ug/L		111	75 - 124	
o-Xylene	5.00	5.75		ug/L		115	71 - 124	
Styrene	5.00	5.71		ug/L		114	74 - 127	
Bromoform	5.00	4.50		ug/L		90	48 - 127	
Isopropylbenzene	5.00	5.86		ug/L		117	71 - 123	
Bromobenzene	5.00	5.18		ug/L		104	74 - 130	
1,1,2,2-Tetrachloroethane	5.00	5.65		ug/L		113	67 - 136	
1,2,3-Trichloropropane	5.00	5.56		ug/L		111	67 - 135	
N-Propylbenzene	5.00	5.85		ug/L		117	72 - 126	
2-Chlorotoluene	5.00	5.41		ug/L		108	73 - 120	
4-Chlorotoluene	5.00	5.54		ug/L		111	75 - 124	
1,3,5-Trimethylbenzene	5.00	5.88		ug/L		118	75 - 123	
tert-Butylbenzene	5.00	5.71		ug/L		114	70 - 129	
1,2,4-Trimethylbenzene	5.00	5.98		ug/L		120	71 - 127	
sec-Butylbenzene	5.00	6.13		ug/L		123	75 - 126	
4-Isopropyltoluene	5.00	6.18		ug/L		124	78 - 125	
1,3-Dichlorobenzene	5.00	5.71		ug/L		114	72 - 125	
1,4-Dichlorobenzene	5.00	5.58		ug/L		112	71 - 129	
n-Butylbenzene	5.00	5.73		ug/L		115	69 - 127	
1,2-Dichlorobenzene	5.00	5.71		ug/L		114	72 - 129	
1,2-Dibromo-3-Chloropropane	5.00	4.75		ug/L		95	55 - 135	
1,2,4-Trichlorobenzene	5.00	5.94		ug/L		119	60 - 130	
Hexachlorobutadiene	5.00	5.51		ug/L		110	63 - 130	
Naphthalene	5.00	5.56		ug/L		111	54 - 137	
1,2,3-Trichlorobenzene	5.00	6.35		ug/L		127	60 - 136	
		2.00		J. –				
100 100								

LCS LCS

Surrogate	%Recovery Qualifie	r Limits
Toluene-d8 (Surr)	103	80 - 120
Dibromofluoromethane (Surr)	99	80 - 120

Client: ERM-West Job ID: 580-119973-1

Project/Site: Arkema - Q4 2022 Groundwater Event

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 580-409881/4

Matrix: Water

Analysis Batch: 409881

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

LCS LCS

Surrogate	%Recovery Qualifie	r Limits
4-Bromofluorobenzene (Surr)	97	80 - 120
1,2-Dichloroethane-d4 (Surr)	99	80 - 120

Lab Sample ID: LCSD 580-409881/5 Client Sample ID: Lab Control Sample Dup

Matrix: Water

Analysis Batch: 409881

Prep '	Type: Total/NA

	Spike	LCSD	LCSD					%Rec	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Dichlorodifluoromethane	5.00	7.89	*+	ug/L		158	20 - 150	2	30
Chloromethane	5.00	7.43		ug/L		149	32 - 150	3	33
Vinyl chloride	5.00	6.64		ug/L		133	41 - 150	3	32
Bromomethane	5.00	6.94		ug/L		139	51 - 148	5	35
Chloroethane	5.00	7.25	*+	ug/L		145	54 - 140	5	33
Carbon disulfide	5.00	6.62		ug/L		132	54 - 142	7	34
Trichlorofluoromethane	5.00	6.38		ug/L		128	60 - 132	3	32
1,1-Dichloroethene	5.00	6.28		ug/L		126	60 - 129	5	29
Acetone	25.0	39.1	*+	ug/L		156	49 - 150	5	24
Methylene Chloride	5.00	5.81		ug/L		116	40 - 142	6	25
Methyl tert-butyl ether	5.00	4.98		ug/L		100	61 - 131	2	27
2-Butanone (MEK)	25.0	26.9		ug/L		108	37 - 150	2	35
trans-1,2-Dichloroethene	5.00	5.55		ug/L		111	69 - 121	6	27
1,1-Dichloroethane	5.00	5.38		ug/L		108	74 - 120	3	26
2,2-Dichloropropane	5.00	5.38		ug/L		108	55 - 140	2	31
cis-1,2-Dichloroethene	5.00	5.37		ug/L		107	72 - 120	5	22
Chlorobromomethane	5.00	5.33		ug/L		107	79 - 121	3	20
Chloroform	5.00	5.44		ug/L		109	75 - 120	2	21
1,1,1-Trichloroethane	5.00	5.40		ug/L		108	70 - 121	3	24
Carbon tetrachloride	5.00	5.37		ug/L		107	66 - 130	3	24
1,1-Dichloropropene	5.00	5.27		ug/L		105	72 - 125	0	23
Benzene	5.00	5.49		ug/L		110	80 - 120	0	22
1,2-Dichloroethane	5.00	5.32		ug/L		106	74 - 127	3	21
Trichloroethene	5.00	5.10		ug/L		102	72 - 120	1	22
1,2-Dichloropropane	5.00	5.24		ug/L		105	69 - 130	3	22
4-Methyl-2-pentanone (MIBK)	25.0	26.6		ug/L		106	63 - 137	2	26
Dibromomethane	5.00	5.30		ug/L		106	65 - 141	5	22
Dichlorobromomethane	5.00	5.41		ug/L		108	74 - 131	0	21
cis-1,3-Dichloropropene	5.00	5.21		ug/L		104	77 - 131	2	24
Toluene	5.00	5.33		ug/L		107	80 - 126	3	20
trans-1,3-Dichloropropene	5.00	5.29		ug/L		106	71 - 138	1	26
1,1,2-Trichloroethane	5.00	5.34		ug/L		107	73 - 127	1	22
Tetrachloroethene	5.00	5.03		ug/L		101	75 - 124	3	20
1,3-Dichloropropane	5.00	5.36		ug/L		107	69 - 138	2	19
Chlorodibromomethane	5.00	4.92		ug/L		98	62 - 141	1	22
Ethylene Dibromide	5.00	5.52		ug/L		110	61 - 143	2	22
Chlorobenzene	5.00	5.36		ug/L		107	74 - 123	0	21
1,1,1,2-Tetrachloroethane	5.00	5.44		ug/L		109	69 - 127	0	22
Ethylbenzene	5.00	5.69		ug/L		114	80 - 124	0	22
m-Xylene & p-Xylene	5.00	5.51		ug/L		110	75 - 124	1	22

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Client: ERM-West Job ID: 580-119973-1

Project/Site: Arkema - Q4 2022 Groundwater Event

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCSD 580-409881/5

Matrix: Water

Analysis Batch: 409881

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

	Spike	LCSD	LCSD				%Rec		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
o-Xylene	5.00	5.80		ug/L		116	71 - 124	1	23
Styrene	5.00	5.79		ug/L		116	74 - 127	1	22
Bromoform	5.00	4.63		ug/L		93	48 - 127	3	23
Isopropylbenzene	5.00	5.91		ug/L		118	71 - 123	1	23
Bromobenzene	5.00	5.04		ug/L		101	74 - 130	3	23
1,1,2,2-Tetrachloroethane	5.00	5.61		ug/L		112	67 - 136	1	24
1,2,3-Trichloropropane	5.00	5.39		ug/L		108	67 - 135	3	25
N-Propylbenzene	5.00	5.62		ug/L		112	72 - 126	4	20
2-Chlorotoluene	5.00	5.31		ug/L		106	73 - 120	2	22
4-Chlorotoluene	5.00	5.43		ug/L		109	75 - 124	2	23
1,3,5-Trimethylbenzene	5.00	5.72		ug/L		114	75 - 123	3	23
tert-Butylbenzene	5.00	5.49		ug/L		110	70 - 129	4	24
1,2,4-Trimethylbenzene	5.00	5.84		ug/L		117	71 - 127	2	23
sec-Butylbenzene	5.00	5.93		ug/L		119	75 - 126	3	23
4-Isopropyltoluene	5.00	6.01		ug/L		120	78 - 125	3	24
1,3-Dichlorobenzene	5.00	5.64		ug/L		113	72 - 125	1	22
1,4-Dichlorobenzene	5.00	5.55		ug/L		111	71 - 129	0	22
n-Butylbenzene	5.00	5.64		ug/L		113	69 - 127	2	24
1,2-Dichlorobenzene	5.00	5.64		ug/L		113	72 - 129	1	22
1,2-Dibromo-3-Chloropropane	5.00	4.87		ug/L		97	55 - 135	3	29
1,2,4-Trichlorobenzene	5.00	5.82		ug/L		116	60 - 130	2	26
Hexachlorobutadiene	5.00	5.39		ug/L		108	63 - 130	2	26
Naphthalene	5.00	5.33		ug/L		107	54 - 137	4	28
1,2,3-Trichlorobenzene	5.00	6.13		ug/L		123	60 - 136	4	28

LCSD LCSD

Surrogate	%Recovery	Qualifier	Limits
Toluene-d8 (Surr)	101		80 - 120
Dibromofluoromethane (Surr)	103		80 - 120
4-Bromofluorobenzene (Surr)	102		80 - 120
1,2-Dichloroethane-d4 (Surr)	102		80 - 120

Lab Sample ID: MB 580-410044/7

Matrix: Water

Analysis Batch: 410044

Client Sample ID: Method Blank Prep Type: Total/NA

	1410	IVID							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
cis-1,2-Dichloroethene	ND		0.20	0.055	ug/L			11/15/22 15:35	1
Trichloroethene	ND		0.20	0.066	ug/L			11/15/22 15:35	1

MB MB Surrogate %Recovery Qualifier Limits Prepared Analyzed Toluene-d8 (Surr) 96 80 - 120 11/15/22 15:35 Dibromofluoromethane (Surr) 110 80 - 120 11/15/22 15:35 80 - 120 11/15/22 15:35 4-Bromofluorobenzene (Surr) 94 80 - 120 1,2-Dichloroethane-d4 (Surr) 114 11/15/22 15:35

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Client: ERM-West Job ID: 580-119973-1

Project/Site: Arkema - Q4 2022 Groundwater Event

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 580-410044/4

Matrix: Water

Analysis Batch: 410044

Client Sample ID: Lab Control Sample Prep Type: Total/NA

LCS LCS %Rec Spike Added Analyte Result Qualifier Unit D %Rec Limits cis-1,2-Dichloroethene 5.00 5.29 ug/L 106 72 - 120 Trichloroethene 5.00 5.11 ug/L 102 72 - 120

LCS LCS

Surrogate	%Recovery	Qualifier	Limits
Toluene-d8 (Surr)	102		80 - 120
Dibromofluoromethane (Surr)	101		80 - 120
4-Bromofluorobenzene (Surr)	98		80 - 120
1,2-Dichloroethane-d4 (Surr)	102		80 - 120

Lab Sample ID: LCSD 580-410044/5

Matrix: Water

Analysis Batch: 410044

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

	Spike	LCSD	LCSD				%Rec		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
cis-1,2-Dichloroethene	5.00	5.30		ug/L		106	72 - 120	0	22
Trichloroethene	5.00	4.99		ug/L		100	72 - 120	2	22

LOOP LOOP

LCSD LCSD

Surrogate	%Recovery	Qualifier	Limits
Toluene-d8 (Surr)	101		80 - 120
Dibromofluoromethane (Surr)	103		80 - 120
4-Bromofluorobenzene (Surr)	100		80 - 120
1,2-Dichloroethane-d4 (Surr)	103		80 - 120

Lab Sample ID: MB 580-410498/5

Matrix: Water

Analysis Batch: 410498

Client Sample ID: Method Blank

Prep Type: Total/NA

•	MB MB							
Analyte	Result Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dichlorodifluoromethane	ND ND	1.0	0.53	ug/L			11/18/22 12:06	1
Chloromethane	ND	1.0	0.28	ug/L			11/18/22 12:06	1
Vinyl chloride	ND	1.0	0.22	ug/L			11/18/22 12:06	1
Bromomethane	ND	1.0	0.21	ug/L			11/18/22 12:06	1
Chloroethane	ND	1.0	0.35	ug/L			11/18/22 12:06	1
Trichlorofluoromethane	ND	1.0	0.36	ug/L			11/18/22 12:06	1
Carbon disulfide	ND	1.0	0.53	ug/L			11/18/22 12:06	1
1,1-Dichloroethene	ND	1.0	0.28	ug/L			11/18/22 12:06	1
Acetone	ND	15	3.2	ug/L			11/18/22 12:06	1
Methylene Chloride	ND	3.0	1.4	ug/L			11/18/22 12:06	1
Methyl tert-butyl ether	ND	1.0	0.44	ug/L			11/18/22 12:06	1
trans-1,2-Dichloroethene	0.428 J	1.0	0.39	ug/L			11/18/22 12:06	1
1,1-Dichloroethane	ND	1.0	0.22	ug/L			11/18/22 12:06	1
2-Butanone (MEK)	ND	15	4.7	ug/L			11/18/22 12:06	1
2,2-Dichloropropane	ND	1.0	0.32	ug/L			11/18/22 12:06	1
cis-1,2-Dichloroethene	ND	1.0	0.35	ug/L			11/18/22 12:06	1
Bromochloromethane	ND	1.0	0.29	ug/L			11/18/22 12:06	1
Chloroform	ND	1.0	0.26	ug/L			11/18/22 12:06	1
1,1,1-Trichloroethane	ND	1.0	0.39	ug/L			11/18/22 12:06	1
Carbon tetrachloride	ND	1.0	0.30	ug/L			11/18/22 12:06	1

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Client: ERM-West Job ID: 580-119973-1

Project/Site: Arkema - Q4 2022 Groundwater Event

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

MB MB

Lab Sample ID: MB 580-410498/5

Matrix: Water

Analysis Batch: 410498

Client Sample ID: Method Blank

Prep Type: Total/NA

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Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloropropene	ND		1.0	0.29	ug/L			11/18/22 12:06	1
Benzene	ND		1.0	0.24	ug/L			11/18/22 12:06	1
1,2-Dichloroethane	ND		1.0	0.42	ug/L			11/18/22 12:06	1
Trichloroethene	ND		1.0	0.26	ug/L			11/18/22 12:06	1
1,2-Dichloropropane	ND		1.0	0.18	ug/L			11/18/22 12:06	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.5	ug/L			11/18/22 12:06	1
Dibromomethane	ND		1.0	0.34	ug/L			11/18/22 12:06	1
Bromodichloromethane	ND		1.0	0.29	ug/L			11/18/22 12:06	1
cis-1,3-Dichloropropene	ND		1.0	0.42				11/18/22 12:06	1
Toluene	ND		1.0	0.39	ug/L			11/18/22 12:06	1
trans-1,3-Dichloropropene	ND		1.0	0.41	ug/L			11/18/22 12:06	1
1,1,2-Trichloroethane	ND		1.0	0.24	ug/L			11/18/22 12:06	1
Tetrachloroethene	ND		1.0	0.41	ug/L			11/18/22 12:06	1
1,3-Dichloropropane	ND		1.0	0.35	ug/L			11/18/22 12:06	1
Dibromochloromethane	ND		1.0	0.43	ug/L			11/18/22 12:06	1
1,2-Dibromoethane	ND		1.0	0.40	ug/L			11/18/22 12:06	1
Chlorobenzene	ND		1.0	0.44				11/18/22 12:06	1
1,1,1,2-Tetrachloroethane	ND		1.0	0.18	-			11/18/22 12:06	1
Ethylbenzene	ND		1.0	0.50	-			11/18/22 12:06	1
m-Xylene & p-Xylene	ND		2.0	0.53				11/18/22 12:06	1
o-Xylene	ND		1.0	0.39	-			11/18/22 12:06	1
Styrene	ND		1.0	0.53	-			11/18/22 12:06	1
Bromoform	ND		1.0	0.51				11/18/22 12:06	1
Isopropylbenzene	ND		1.0	0.44	-			11/18/22 12:06	1
Bromobenzene	ND		1.0	0.43	-			11/18/22 12:06	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.52				11/18/22 12:06	1
1,2,3-Trichloropropane	ND		1.0	0.41	-			11/18/22 12:06	1
N-Propylbenzene	ND		1.0	0.50	-			11/18/22 12:06	1
2-Chlorotoluene	ND		1.0	0.51				11/18/22 12:06	1
4-Chlorotoluene	ND		1.0	0.38				11/18/22 12:06	1
t-Butylbenzene	ND		2.0	0.58	-			11/18/22 12:06	1
1,2,4-Trimethylbenzene	ND		3.0	0.61				11/18/22 12:06	1
sec-Butylbenzene	ND		1.0	0.49	-			11/18/22 12:06	1
4-Isopropyltoluene	ND		1.0	0.28	-			11/18/22 12:06	1
1,3-Dichlorobenzene	ND		1.0	0.48				11/18/22 12:06	1
1,4-Dichlorobenzene	ND		1.0	0.46	-			11/18/22 12:06	1
n-Butylbenzene	ND		1.0	0.44	-			11/18/22 12:06	1
1,2-Dichlorobenzene	ND		1.0	0.46				11/18/22 12:06	1
1,2-Dibromo-3-Chloropropane	ND		3.0	0.57	-			11/18/22 12:06	1
1,2,4-Trichlorobenzene	0.397	J	1.0	0.33	_			11/18/22 12:06	1
Hexachlorobutadiene	ND		3.0	0.79				11/18/22 12:06	1
Naphthalene	1.70	J	3.0	0.93				11/18/22 12:06	1
1,2,3-Trichlorobenzene	1.02		2.0	0.43	-			11/18/22 12:06	1
1,3,5-Trimethylbenzene	ND		1.0	0.55				11/18/22 12:06	·
.,-,-		MD	1.0	0.00	g, -				'
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	102		80 - 120			-	opaica	11/18/22 12:06	1
1,2-Dichloroethane-d4 (Surr)	88		80 - 120					11/18/22 12:06	1

Client: ERM-West Job ID: 580-119973-1

Project/Site: Arkema - Q4 2022 Groundwater Event

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 580-410498/5

Lab Sample ID: LCS 580-410498/6

Matrix: Water

Analysis Batch: 410498

Client Sample ID: Method Blank

Prep Type: Total/NA

MB MB

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	88		80 - 120		11/18/22 12:06	1
Dibromofluoromethane (Surr)	87		80 - 120		11/18/22 12:06	1

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Matrix: Water

Analysis Batch: 410498

	Spike	LCS LCS			%Rec
Analyte	Added	Result Qualifie	r Unit	D %Rec	Limits
Dichlorodifluoromethane	10.0	7.36	ug/L	74	20 - 150
Chloromethane	10.0	7.21	ug/L	72	25 - 150
Vinyl chloride	10.0	8.63	ug/L	86	31 - 150
Bromomethane	10.0	10.7	ug/L	107	36 - 150
Chloroethane	10.0	8.07	ug/L	81	38 - 150
Trichlorofluoromethane	10.0	9.15	ug/L	91	45 - 148
Carbon disulfide	10.0	7.67	ug/L	77	63 - 134
1,1-Dichloroethene	10.0	8.60	ug/L	86	70 - 129
Acetone	50.0	42.9	ug/L	86	44 - 150
Methylene Chloride	10.0	6.84 *-	ug/L	68	77 - 125
Methyl tert-butyl ether	10.0	8.37	ug/L	84	72 - 120
trans-1,2-Dichloroethene	10.0	8.35	ug/L	83	75 - 120
1,1-Dichloroethane	10.0	8.64	ug/L	86	80 - 120
2-Butanone (MEK)	50.0	58.8	ug/L	118	65 - 137
2,2-Dichloropropane	10.0	7.72	ug/L	77	66 - 126
cis-1,2-Dichloroethene	10.0	8.27	ug/L	83	76 - 120
Bromochloromethane	10.0	8.28	ug/L	83	78 - 120
Chloroform	10.0	8.86	ug/L	89	78 - 127
1,1,1-Trichloroethane	10.0	7.81	ug/L	78	74 - 130
Carbon tetrachloride	10.0	7.67	ug/L	77	72 - 129
1,1-Dichloropropene	10.0	9.47	ug/L	95	74 - 120
Benzene	10.0	10.6	ug/L	106	80 - 122
1,2-Dichloroethane	10.0	8.50	ug/L	85	69 - 126
Trichloroethene	10.0	10.7	ug/L	107	80 - 125
1,2-Dichloropropane	10.0	10.8	ug/L	108	80 - 120
4-Methyl-2-pentanone (MIBK)	50.0	39.6	ug/L	79	59 - 141
Dibromomethane	10.0	9.70	ug/L	97	80 - 120
Bromodichloromethane	10.0	10.1	ug/L	101	75 - 124
cis-1,3-Dichloropropene	10.0	17.6 *+	ug/L	176	77 - 120
Toluene	10.0	11.0	ug/L	110	80 - 120
trans-1,3-Dichloropropene	10.0	12.5 *+	ug/L	125	76 - 122
1,1,2-Trichloroethane	10.0	11.6	ug/L	116	80 - 121
Tetrachloroethene	10.0	9.91	ug/L	99	76 - 125
1,3-Dichloropropane	10.0	12.3 *+	ug/L	123	79 - 120
Dibromochloromethane	10.0	10.8	ug/L	108	73 - 125
1,2-Dibromoethane	10.0	11.7	ug/L	117	79 - 126
Chlorobenzene	10.0	10.7	ug/L	107	80 - 120
1,1,1,2-Tetrachloroethane	10.0	9.25	ug/L	92	79 - 120
Ethylbenzene	10.0	10.1	ug/L	101	80 - 120
m-Xylene & p-Xylene	10.0	9.79	ug/L	98	80 - 120

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Client: ERM-West Job ID: 580-119973-1

Project/Site: Arkema - Q4 2022 Groundwater Event

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 580-410498/6

Matrix: Water

Analysis Batch: 410498

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

	Spike	LCS	LCS				%Rec
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits
o-Xylene	10.0	9.33		ug/L		93	80 - 120
Styrene	10.0	9.50		ug/L		95	76 - 122
Bromoform	10.0	9.16		ug/L		92	56 - 139
Isopropylbenzene	10.0	9.33		ug/L		93	80 - 123
Bromobenzene	10.0	11.3		ug/L		113	80 - 120
1,1,2,2-Tetrachloroethane	10.0	11.1		ug/L		111	74 - 124
1,2,3-Trichloropropane	10.0	10.7		ug/L		107	76 - 124
N-Propylbenzene	10.0	11.1		ug/L		111	80 - 122
2-Chlorotoluene	10.0	11.1		ug/L		111	80 - 120
4-Chlorotoluene	10.0	11.3		ug/L		113	73 - 129
t-Butylbenzene	10.0	11.2		ug/L		112	75 - 123
1,2,4-Trimethylbenzene	10.0	11.0		ug/L		110	80 - 120
sec-Butylbenzene	10.0	11.2		ug/L		112	78 - 122
4-Isopropyltoluene	10.0	11.2		ug/L		112	77 - 126
1,3-Dichlorobenzene	10.0	7.40	*_	ug/L		74	77 - 127
1,4-Dichlorobenzene	10.0	10.7		ug/L		107	80 - 120
n-Butylbenzene	10.0	10.7		ug/L		107	57 - 133
1,2-Dichlorobenzene	10.0	10.6		ug/L		106	80 - 120
1,2-Dibromo-3-Chloropropane	10.0	9.05		ug/L		90	65 - 133
1,2,4-Trichlorobenzene	10.0	6.43		ug/L		64	61 - 148
Hexachlorobutadiene	10.0	8.79		ug/L		88	74 - 131
Naphthalene	10.0	8.91		ug/L		89	63 - 150
1,2,3-Trichlorobenzene	10.0	8.64		ug/L		86	65 - 150
1,3,5-Trimethylbenzene	10.0	11.0		ug/L		110	80 - 122

LCS LCS

Surrogate	%Recovery	Qualifier	Limits
Toluene-d8 (Surr)	107		80 - 120
1,2-Dichloroethane-d4 (Surr)	84		80 - 120
4-Bromofluorobenzene (Surr)	85		80 - 120
Dibromofluoromethane (Surr)	82		80 - 120

Lab Sample ID: LCSD 580-410498/7

Matrix: Water

Analysis Batch: 410498

Client Sample	ID: Lab Control S	ample Dup
	Prep Typ	e: Total/NA

	Spike	LCSD	LCSD				%Rec		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Dichlorodifluoromethane	10.0	8.94		ug/L		89	20 - 150	19	33
Chloromethane	10.0	8.47		ug/L		85	25 - 150	16	26
Vinyl chloride	10.0	9.96		ug/L		100	31 - 150	14	26
Bromomethane	10.0	12.6		ug/L		126	36 - 150	16	33
Chloroethane	10.0	8.74		ug/L		87	38 - 150	8	28
Trichlorofluoromethane	10.0	10.3		ug/L		103	45 - 148	12	35
Carbon disulfide	10.0	8.99		ug/L		90	63 - 134	16	24
1,1-Dichloroethene	10.0	9.59		ug/L		96	70 - 129	11	23
Acetone	50.0	47.3		ug/L		95	44 - 150	10	33
Methylene Chloride	10.0	7.84		ug/L		78	77 - 125	14	18
Methyl tert-butyl ether	10.0	9.08		ug/L		91	72 - 120	8	18
trans-1,2-Dichloroethene	10.0	9.27		ug/L		93	75 - 120	10	21

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Client: ERM-West Job ID: 580-119973-1

Project/Site: Arkema - Q4 2022 Groundwater Event

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCSD 580-410498/7

Matrix: Water

Analysis Batch: 410498

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

	Spike	LCSD			_	0/5	%Rec		RPD
Analyte	Added		Qualifier	Unit	D	%Rec	Limits	RPD	Limit
1,1-Dichloroethane	10.0	9.07		ug/L		91	80 - 120	5	15
2-Butanone (MEK)	50.0	52.6		ug/L		105	65 - 137	11	34
2,2-Dichloropropane	10.0	8.65		ug/L		86	66 - 126	11	22
cis-1,2-Dichloroethene	10.0	9.13		ug/L		91	76 - 120	10	20
Bromochloromethane	10.0	9.01		ug/L		90	78 - 120	8	13
Chloroform	10.0	9.58		ug/L		96	78 - 127		14
1,1,1-Trichloroethane	10.0	8.64		ug/L		86	74 - 130	10	19
Carbon tetrachloride	10.0	8.59		ug/L		86	72 - 129	11	19
1,1-Dichloropropene	10.0	9.28		ug/L		93	74 - 120		14
Benzene	10.0	10.4		ug/L		104	80 - 122	2	14
1,2-Dichloroethane	10.0	8.09		ug/L		81	69 - 126	5	11
Trichloroethene	10.0	10.6		ug/L		106	80 - 125	1	13
1,2-Dichloropropane	10.0	9.95		ug/L		100	80 - 120	8	14
4-Methyl-2-pentanone (MIBK)	50.0	36.4		ug/L		73	59 - 141	9	22
Dibromomethane	10.0	9.75		ug/L		98	80 - 120	1	11
Bromodichloromethane	10.0	9.84		ug/L		98	75 - 124	3	13
cis-1,3-Dichloropropene	10.0	12.5	*+	ug/L		125	77 - 120	35	35
Toluene	10.0	10.1		ug/L		101	80 - 120	8	13
trans-1,3-Dichloropropene	10.0	10.5		ug/L		105	76 - 122	17	20
1,1,2-Trichloroethane	10.0	10.3		ug/L		103	80 - 121	12	14
Tetrachloroethene	10.0	9.51		ug/L		95	76 - 125	4	13
1,3-Dichloropropane	10.0	10.6		ug/L		106	79 - 120	15	19
Dibromochloromethane	10.0	10.5		ug/L		105	73 - 125	3	13
1,2-Dibromoethane	10.0	10.8		ug/L		108	79 - 126	9	12
Chlorobenzene	10.0	10.5		ug/L		105	80 - 120	2	10
1,1,1,2-Tetrachloroethane	10.0	10.1		ug/L		101	79 - 120	9	16
Ethylbenzene	10.0	9.99		ug/L		100	80 - 120	1	14
m-Xylene & p-Xylene	10.0	9.76		ug/L		98	80 - 120	0	14
o-Xylene	10.0	9.88		ug/L		99	80 - 120	6	16
Styrene	10.0	9.57		ug/L		96	76 - 122	1	16
Bromoform	10.0	9.56		ug/L		96	56 - 139	4	21
Isopropylbenzene	10.0	10.0		ug/L		100	80 - 123	7	19
Bromobenzene	10.0	9.88		ug/L		99	80 - 120	13	24
1,1,2,2-Tetrachloroethane	10.0	9.70		ug/L		97	74 - 124	14	25
1,2,3-Trichloropropane	10.0	9.21		ug/L		92	76 - 124	15	26
N-Propylbenzene	10.0	9.61		ug/L		96	80 - 122	15	22
2-Chlorotoluene	10.0	10.1		ug/L		101	80 - 120	10	20
4-Chlorotoluene	10.0	9.69		ug/L		97	73 - 129	15	29
t-Butylbenzene	10.0	9.64		ug/L		96	75 - 123	15	21
1,2,4-Trimethylbenzene	10.0	10.1		ug/L		101	80 - 120	9	16
sec-Butylbenzene	10.0	10.1		ug/L		101	78 - 122	11	15
4-Isopropyltoluene	10.0	10.3		ug/L		103	77 - 126	8	20
1,3-Dichlorobenzene	10.0	8.74		ug/L		87	77 - 127	17	35
1,4-Dichlorobenzene	10.0	10.2		ug/L		102	80 - 120	4	17
n-Butylbenzene	10.0	10.2		ug/L		102	57 ₋ 133	5	14
1,2-Dichlorobenzene	10.0	10.5		ug/L		105	80 - 120	1	15
1,2-Dibromo-3-Chloropropane	10.0	9.57		ug/L		96	65 - 133	6	25
1,2,4-Trichlorobenzene	10.0	9.23	*1	ug/L ug/L		92	61 - 148	36	27
Hexachlorobutadiene	10.0	10.1		ug/L		101	74 - 131	14	22

Client: ERM-West Job ID: 580-119973-1

Project/Site: Arkema - Q4 2022 Groundwater Event

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCSD 580-410498/7

Matrix: Water

Analysis Batch: 410498

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

	Spike	LCSD	LCSD				%Rec		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Naphthalene	10.0	10.8		ug/L		108	63 - 150	19	33
1,2,3-Trichlorobenzene	10.0	10.9		ug/L		109	65 - 150	23	33
1,3,5-Trimethylbenzene	10.0	9.96		ug/L		100	80 - 122	10	21

LCSD LCSD

Surrogate	%Recovery	Qualifier	Limits
Toluene-d8 (Surr)	105		80 - 120
1,2-Dichloroethane-d4 (Surr)	84		80 - 120
4-Bromofluorobenzene (Surr)	93		80 - 120
Dibromofluoromethane (Surr)	89		80 - 120

Client Sample ID: Method Blank

Prep Type: Total/NA

Analysis Batch: 410922

Matrix: Water

Lab Sample ID: MB 580-410922/4

	MB	MB							
Analyte	Result	Qualifier	RL	MDL		D	Prepared	Analyzed	Dil Fac
Dichlorodifluoromethane	ND		1.0	0.53	ug/L			11/23/22 10:52	1
Chloromethane	ND		1.0	0.28	ug/L			11/23/22 10:52	1
Vinyl chloride	ND		1.0	0.22	ug/L			11/23/22 10:52	1
Bromomethane	ND		1.0	0.21	ug/L			11/23/22 10:52	1
Chloroethane	ND		1.0	0.35	ug/L			11/23/22 10:52	1
Trichlorofluoromethane	ND		1.0	0.36	ug/L			11/23/22 10:52	1
Carbon disulfide	ND		1.0	0.53	ug/L			11/23/22 10:52	1
1,1-Dichloroethene	ND		1.0	0.28	ug/L			11/23/22 10:52	1
Acetone	8.79	J	15	3.2	ug/L			11/23/22 10:52	1
Methylene Chloride	ND		3.0	1.4	ug/L			11/23/22 10:52	1
Methyl tert-butyl ether	ND		1.0	0.44	ug/L			11/23/22 10:52	1
trans-1,2-Dichloroethene	ND		1.0	0.39	ug/L			11/23/22 10:52	1
1,1-Dichloroethane	ND		1.0	0.22	ug/L			11/23/22 10:52	1
2-Butanone (MEK)	6.95	J	15	4.7	ug/L			11/23/22 10:52	1
2,2-Dichloropropane	ND		1.0	0.32	ug/L			11/23/22 10:52	1
cis-1,2-Dichloroethene	ND		1.0	0.35	ug/L			11/23/22 10:52	1
Bromochloromethane	ND		1.0	0.29	ug/L			11/23/22 10:52	1
Chloroform	ND		1.0	0.26	ug/L			11/23/22 10:52	1
1,1,1-Trichloroethane	ND		1.0	0.39	ug/L			11/23/22 10:52	1
Carbon tetrachloride	ND		1.0	0.30	ug/L			11/23/22 10:52	1
1,1-Dichloropropene	ND		1.0	0.29	ug/L			11/23/22 10:52	1
Benzene	ND		1.0	0.24	ug/L			11/23/22 10:52	1
1,2-Dichloroethane	ND		1.0	0.42	ug/L			11/23/22 10:52	1
Trichloroethene	ND		1.0	0.26	ug/L			11/23/22 10:52	1
1,2-Dichloropropane	ND		1.0	0.18	ug/L			11/23/22 10:52	1
4-Methyl-2-pentanone (MIBK)	3.52	J	5.0	2.5	ug/L			11/23/22 10:52	1
Dibromomethane	ND		1.0	0.34	ug/L			11/23/22 10:52	1
Bromodichloromethane	ND		1.0	0.29	ug/L			11/23/22 10:52	1
cis-1,3-Dichloropropene	ND		1.0	0.42	ug/L			11/23/22 10:52	1
Toluene	ND		1.0		ug/L			11/23/22 10:52	1
trans-1,3-Dichloropropene	ND		1.0	0.41	ug/L			11/23/22 10:52	1
1,1,2-Trichloroethane	ND		1.0		ug/L			11/23/22 10:52	1
Tetrachloroethene	ND		1.0		ug/L			11/23/22 10:52	1

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Job ID: 580-119973-1

Project/Site: Arkema - Q4 2022 Groundwater Event

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 580-410922/4

Matrix: Water

Client: ERM-West

Analysis Batch: 410922

Client Sample ID: Method Blank

Prep Type: Total/NA

	MB	MB							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3-Dichloropropane	ND		1.0	0.35	ug/L			11/23/22 10:52	1
Dibromochloromethane	ND		1.0	0.43	ug/L			11/23/22 10:52	1
1,2-Dibromoethane	ND		1.0	0.40	ug/L			11/23/22 10:52	1
Chlorobenzene	ND		1.0	0.44	ug/L			11/23/22 10:52	1
1,1,1,2-Tetrachloroethane	ND		1.0	0.18	ug/L			11/23/22 10:52	1
Ethylbenzene	ND		1.0	0.50	ug/L			11/23/22 10:52	1
m-Xylene & p-Xylene	ND		2.0	0.53	ug/L			11/23/22 10:52	1
o-Xylene	ND		1.0	0.39	ug/L			11/23/22 10:52	1
Styrene	ND		1.0	0.53	ug/L			11/23/22 10:52	1
Bromoform	ND		1.0	0.51	ug/L			11/23/22 10:52	1
Isopropylbenzene	ND		1.0	0.44	ug/L			11/23/22 10:52	1
Bromobenzene	ND		1.0	0.43	ug/L			11/23/22 10:52	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.52	ug/L			11/23/22 10:52	1
1,2,3-Trichloropropane	ND		1.0	0.41	ug/L			11/23/22 10:52	1
N-Propylbenzene	ND		1.0	0.50	ug/L			11/23/22 10:52	1
2-Chlorotoluene	ND		1.0	0.51	ug/L			11/23/22 10:52	1
4-Chlorotoluene	ND		1.0	0.38	ug/L			11/23/22 10:52	1
t-Butylbenzene	ND		2.0	0.58	ug/L			11/23/22 10:52	1
1,2,4-Trimethylbenzene	ND		3.0	0.61	ug/L			11/23/22 10:52	1
sec-Butylbenzene	ND		1.0	0.49	ug/L			11/23/22 10:52	1
4-Isopropyltoluene	ND		1.0	0.28	ug/L			11/23/22 10:52	1
1,3-Dichlorobenzene	ND		1.0	0.48	ug/L			11/23/22 10:52	1
1,4-Dichlorobenzene	ND		1.0	0.46	ug/L			11/23/22 10:52	1
n-Butylbenzene	ND		1.0	0.44	ug/L			11/23/22 10:52	1
1,2-Dichlorobenzene	ND		1.0	0.46	ug/L			11/23/22 10:52	1
1,2-Dibromo-3-Chloropropane	1.11	J	3.0	0.57	ug/L			11/23/22 10:52	1
1,2,4-Trichlorobenzene	0.758	J	1.0		ug/L			11/23/22 10:52	1
Hexachlorobutadiene	0.803	J	3.0	0.79	ug/L			11/23/22 10:52	1
Naphthalene	0.953	J	3.0	0.93	ug/L			11/23/22 10:52	1
1,2,3-Trichlorobenzene	1.05	J	2.0	0.43	ug/L			11/23/22 10:52	1
1,3,5-Trimethylbenzene	ND		1.0		ug/L			11/23/22 10:52	1

	MB	MB				
Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	105		80 - 120		11/23/22 10:52	1
1,2-Dichloroethane-d4 (Surr)	91		80 - 120		11/23/22 10:52	1
4-Bromofluorobenzene (Surr)	98		80 - 120		11/23/22 10:52	1
Dibromofluoromethane (Surr)	104		80 120		11/23/22 10:52	1

Lab Sample ID: LCS 580-410922/5

Matrix: Water

Analysis Batch: 410922

Client Sample ID: Lab Control Sample Prep Type: Total/NA

	Spike	LCS	LCS				%Rec	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Dichlorodifluoromethane	10.0	16.1	*+	ug/L		161	20 - 150	
Chloromethane	10.0	12.4		ug/L		124	25 - 150	
Vinyl chloride	10.0	12.7		ug/L		127	31 - 150	
Bromomethane	10.0	12.9		ug/L		129	36 - 150	
Chloroethane	10.0	10.6		ug/L		106	38 - 150	

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Client: ERM-West Job ID: 580-119973-1

Project/Site: Arkema - Q4 2022 Groundwater Event

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 580-410922/5

Matrix: Water

Analysis Batch: 410922

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

	Spike	LCS	LCS				%Rec
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits
Trichlorofluoromethane	10.0	12.5		ug/L		125	45 - 148
Carbon disulfide	10.0	10.8		ug/L		108	63 - 134
1,1-Dichloroethene	10.0	11.5		ug/L		115	70 - 129
A t	50.0			/1		400	44 450

	Spike	LCS	LCS				%Rec	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Trichlorofluoromethane	10.0	12.5		ug/L		125	45 - 148	
Carbon disulfide	10.0	10.8		ug/L		108	63 - 134	
1,1-Dichloroethene	10.0	11.5		ug/L		115	70 - 129	
Acetone	50.0	54.1		ug/L		108	44 - 150	
Methylene Chloride	10.0	10.4		ug/L		104	77 - 125	
Methyl tert-butyl ether	10.0	10.0		ug/L		100	72 - 120	
trans-1,2-Dichloroethene	10.0	10.3		ug/L		103	75 - 120	
1,1-Dichloroethane	10.0	9.76		ug/L		98	80 - 120	
2-Butanone (MEK)	50.0	47.7		ug/L		95	65 - 137	
2,2-Dichloropropane	10.0	10.9		ug/L		109	66 - 126	
cis-1,2-Dichloroethene	10.0	9.99		ug/L		100	76 - 120	
Bromochloromethane	10.0	10.2		ug/L		102	78 - 120	
Chloroform	10.0	9.95		ug/L		99	78 - 127	
1,1,1-Trichloroethane	10.0	10.0		ug/L		100	74 - 130	
Carbon tetrachloride	10.0	10.3		ug/L		103	72 - 129	
1,1-Dichloropropene	10.0	9.60		ug/L ug/L		96	74 - 120	
Benzene	10.0	9.66		ug/L		97	80 - 122	
1,2-Dichloroethane	10.0	9.20		ug/L		92	69 - 126	
Trichloroethene	10.0	10.3		ug/L ug/L		103	80 - 125	
1,2-Dichloropropane	10.0	9.25		ug/L		93	80 - 120	
4-Methyl-2-pentanone (MIBK)	50.0	45.3		ug/L ug/L		93 91	59 ₋ 141	
Dibromomethane	10.0	10.5		ug/L ug/L		105	80 - 120	
Bromodichloromethane	10.0	9.75				98	75 - 124	
	10.0	10.2		ug/L			75 - 124 77 - 120	
cis-1,3-Dichloropropene				ug/L		102		
Toluene	10.0	9.93		ug/L		99	80 - 120	
trans-1,3-Dichloropropene	10.0	9.93		ug/L		99	76 - 122	
1,1,2-Trichloroethane	10.0	10.0		ug/L		100	80 - 121	
Tetrachloroethene	10.0	10.9		ug/L		109	76 - 125	
1,3-Dichloropropane	10.0	9.49		ug/L		95	79 - 120	
Dibromochloromethane	10.0	10.6		ug/L		106	73 - 125	
1,2-Dibromoethane	10.0	10.1		ug/L		101	79 - 126	
Chlorobenzene	10.0	10.2		ug/L		102	80 - 120	
1,1,1,2-Tetrachloroethane	10.0	10.5		ug/L		105	79 - 120	
Ethylbenzene	10.0	9.80		ug/L		98	80 - 120	
m-Xylene & p-Xylene	10.0	9.48		ug/L		95	80 - 120	
o-Xylene	10.0	9.58		ug/L		96	80 - 120	
Styrene	10.0	9.81		ug/L		98	76 - 122	
Bromoform	10.0	11.2		ug/L		112	56 - 139	
Isopropylbenzene	10.0	9.97		ug/L		100	80 - 123	
Bromobenzene	10.0	10.7		ug/L		107	80 - 120	
1,1,2,2-Tetrachloroethane	10.0	9.30		ug/L		93	74 - 124	
1,2,3-Trichloropropane	10.0	9.54		ug/L		95	76 - 124	
N-Propylbenzene	10.0	9.72		ug/L		97	80 - 122	
2-Chlorotoluene	10.0	10.1		ug/L		101	80 - 120	
4-Chlorotoluene	10.0	10.1		ug/L		101	73 - 129	
t-Butylbenzene	10.0	9.88		ug/L		99	75 - 123	
1,2,4-Trimethylbenzene	10.0	9.45		ug/L		95	80 - 120	
sec-Butylbenzene	10.0	9.74		ug/L		97	78 - 122	
4-Isopropyltoluene	10.0	9.86		ug/L		99	77 - 126	

Client: ERM-West Job ID: 580-119973-1

Project/Site: Arkema - Q4 2022 Groundwater Event

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

LCS LCS

103

92

104

107

Qualifier

%Recovery

Lab Sample ID: LCS 580-410922/5

Matrix: Water

Analysis Batch: 410922

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

LCS LCS Spike %Rec Analyte Added Result Qualifier Unit %Rec Limits 1.3-Dichlorobenzene 10.0 10.4 104 77 - 127 ug/L 1,4-Dichlorobenzene 10.0 10.5 ug/L 105 80 - 120 n-Butylbenzene 10.0 10.2 ug/L 102 57 - 133 1,2-Dichlorobenzene 10.0 10.5 ug/L 105 80 - 120 1,2-Dibromo-3-Chloropropane 10.0 10.5 105 65 - 133 ug/L 1,2,4-Trichlorobenzene 10.0 10.8 ug/L 108 61 - 148Hexachlorobutadiene 10.0 11.2 ug/L 112 74 - 131 102 Naphthalene 10.0 10.2 ug/L 63 - 150

10.9

9.70

ug/L

ug/L

10.0

10.0

Limits

80 - 120

80 - 120

80 - 120

80 - 120

Lab Sample ID: LCSD 580-410922/6

Matrix: Water

1,2,3-Trichlorobenzene

1,3,5-Trimethylbenzene

Surrogate

Toluene-d8 (Surr)

Analysis Batch: 410922

1,2-Dichloroethane-d4 (Surr)

4-Bromofluorobenzene (Surr)

Dibromofluoromethane (Surr)

Client Sample ID: Lab Control Sample Dup Prep Type: Total/NA

109

97

65 - 150

80 - 122

Spike LCSD LCSD %Rec **RPD** RPD **Analyte** Added Result Qualifier Unit %Rec Limits Limit Dichlorodifluoromethane 10.0 16.0 *+ ug/L 160 20 - 150 0 33 Chloromethane 10.0 12.4 124 25 - 150 26 ug/L 0 10.0 122 Vinyl chloride 12.2 ug/L 31 - 15026 Bromomethane 10.0 13.1 ug/L 131 36 - 150 2 33 Chloroethane 10.0 9.53 ug/L 95 38 - 15011 28 Trichlorofluoromethane 35 10.0 12.1 ug/L 121 45 - 148 63 - 134 Carbon disulfide 10.0 10.3 ug/L 103 24 1,1-Dichloroethene 10.0 11.3 ug/L 113 70 - 129 23 33 Acetone 50.0 59.3 119 44 - 150 9 ug/L Methylene Chloride 10.0 8.75 87 77 - 12518 18 ug/L ug/L 103 Methyl tert-butyl ether 10.0 10.3 72 - 120 3 18 trans-1,2-Dichloroethene 10.0 10.4 ug/L 104 75 - 120 21 ug/L 1,1-Dichloroethane 10.0 9.89 99 80 - 120 15 2-Butanone (MEK) 50.0 53.3 ug/L 107 65 - 13711 34 2,2-Dichloropropane 10.0 10.7 ug/L 107 66 - 126 2 22 102 76 - 120 20 cis-1.2-Dichloroethene 10.0 10.2 ug/L Bromochloromethane 10.0 10.7 ug/L 107 78 - 12013 Chloroform 10.0 10.1 ug/L 101 78 - 1272 14 1,1,1-Trichloroethane 10.0 9.99 ug/L 100 74 - 130 19 72 - 129 103 Carbon tetrachloride 10.0 10.3 ug/L 19 10.0 9.80 98 74 - 120 1,1-Dichloropropene ug/L 14 10.0 9.95 ug/L 99 80 - 12214 Benzene 1,2-Dichloroethane 10.0 9.59 ug/L 96 69 - 126 11 104 Trichloroethene 10.0 104 ug/L 80 - 12513 1,2-Dichloropropane 10.0 9.44 ug/L 94 80 - 1202 14 4-Methyl-2-pentanone (MIBK) 50.0 48.2 ug/L 96 59 - 141 22

Spike

Client: ERM-West Job ID: 580-119973-1

Project/Site: Arkema - Q4 2022 Groundwater Event

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCSD 580-410922/6

Matrix: Water

4-Isopropyltoluene

Analysis Batch: 410922

Client Sample ID: Lab Control Sample Dup Prep Type: Total/NA

%Rec

RPD

14

16

16

21

19

24

25

26

22

20

29

21

16

15

20

35

17

14

15

25 27

22

33

33

21

6

Analyte Added Result Qualifier Unit %Rec Limits RPD Limit Dibromomethane 10.0 10.8 ug/L 108 80 - 120 3 11 ug/L Bromodichloromethane 10.0 9.75 97 75 - 124 0 13 102 35 cis-1,3-Dichloropropene 10.0 10.2 ug/L 77 _ 120 Toluene 10.0 9.92 ug/L 99 80 - 120 0 13 10.0 9.74 97 76 - 122 2 20 trans-1,3-Dichloropropene ug/L 1,1,2-Trichloroethane 10.0 10.2 ug/L 102 80 - 121 14 Tetrachloroethene 10.0 10.8 ug/L 108 76 - 12513 1,3-Dichloropropane 10.0 9.72 ug/L 97 79 - 120 2 19 Dibromochloromethane 10.0 10.5 ug/L 105 73 - 125 13 101 12 1,2-Dibromoethane 10.0 10.1 ug/L 79 - 126 0 10 Chlorobenzene 10.0 9.98 ug/L 100 80 - 120 16 1,1,1,2-Tetrachloroethane 10.0 ug/L 104 79 - 120 O 10.4 10.0 80 - 120 Ethylbenzene 9.81 ug/L 98 14

LCSD LCSD

m-Xylene & p-Xylene 10.0 95 9.51 ug/L 80 - 120 O o-Xylene 10.0 9.55 ug/L 95 80 - 120 Styrene 10.0 9.66 ug/L 97 76 - 122 2 Bromoform 10.0 10.9 109 56 - 139 ug/L 10.0 9.85 99 80 - 123 Isopropylbenzene ug/L Bromobenzene 10.0 10.7 ug/L 107 80 - 120 ug/L 10.0 9.87 99 74 - 124 6 1.1.2.2-Tetrachloroethane

ug/L 1,2,3-Trichloropropane 10.0 9.74 97 76 - 124 2 N-Propylbenzene 10.0 9.78 ug/L 98 80 - 1222-Chlorotoluene 10.0 10.2 ug/L 102 80 - 120 4-Chlorotoluene 10.0 10.0 ug/L 100 73 - 129 99 t-Butylbenzene 10.0 9.91 ug/L 75 - 123 1,2,4-Trimethylbenzene 10.0 9.57 96 80 - 120 ug/L 9.85 99 78 - 122 sec-Butylbenzene 10.0 ug/L

9.85

ug/L

99

77 - 126

1,3-Dichlorobenzene 10.0 10.3 ug/L 103 77 - 1271,4-Dichlorobenzene 10.0 10.4 ug/L 104 80 - 120n-Butylbenzene 10.0 10.3 ug/L 103 57 - 133 1,2-Dichlorobenzene 10.0 10.5 ug/L 105 80 - 120 O ug/L 1,2-Dibromo-3-Chloropropane 10.0 10.8 108 65 - 133 ug/L 1.2.4-Trichlorobenzene 10.0 11.2 112 61 - 148 3

10.0

Hexachlorobutadiene 10.0 11.5 ug/L 115 74 - 131 Naphthalene 10.0 10.5 ug/L 105 63 - 150 3 1,2,3-Trichlorobenzene 10.0 11.2 ug/L 112 65 - 15097 1,3,5-Trimethylbenzene 10.0 9.71 ug/L 80 - 122

LCSD LCSD Surrogate %Recovery Qualifier Limits Toluene-d8 (Surr) 102 80 - 120 1,2-Dichloroethane-d4 (Surr) 93 80 - 120 80 - 120 4-Bromofluorobenzene (Surr) 102 Dibromofluoromethane (Surr) 105 80 - 120

Client: ERM-West Job ID: 580-119973-1

Project/Site: Arkema - Q4 2022 Groundwater Event

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: 580-119973-12 MS

Matrix: Water

Client Sample ID: MWA-31i(d)-111022 **Prep Type: Total/NA**

Analysis Batch: 410922								0/ 5
Amaluta	•	Sample	Spike		MS	l lmi4	D % Doo	%Rec
Analyte Dichlorodifluoromethane		Qualifier F1 *+	Added	21.8	Qualifier	Unit	D %Rec 218	Limits 20 - 150
	ND ND		10.0			ug/L		20 - 150 25 - 150
Chloromethane				17.8		ug/L	178	
Vinyl chloride	ND		10.0	17.3		ug/L	173	31 - 150
Bromomethane	ND		10.0	16.2	F1	ug/L	162	36 - 150
Chloroethane	ND		10.0	13.9		ug/L	139	38 - 150
Trichlorofluoromethane	ND		10.0	15.3	F1	ug/L	153	45 - 148
Carbon disulfide	ND		10.0	13.1		ug/L	131	63 - 134
1,1-Dichloroethene	ND		10.0	14.1	F1	ug/L	141	70 - 129
Acetone		F1 F2	50.0	64.1		ug/L	128	44 - 150
Methylene Chloride	2.0	J F1 F2	10.0	15.0	F1	ug/L	130	77 ₋ 125
Methyl tert-butyl ether	ND	F1 F2	10.0	11.9		ug/L	119	72 - 120
trans-1,2-Dichloroethene	ND	F1 F2	10.0	12.4	F1	ug/L	124	75 - 120
1,1-Dichloroethane	ND	F1 F2	10.0	11.9		ug/L	119	80 - 120
2-Butanone (MEK)	ND	F1 F2	50.0	59.1		ug/L	118	65 - 137
2,2-Dichloropropane	ND	F1	10.0	11.2		ug/L	112	66 - 126
cis-1,2-Dichloroethene	ND	F1 F2	10.0	11.6		ug/L	116	76 - 120
Bromochloromethane	ND	F1 F2	10.0	12.6	F1	ug/L	126	78 - 120
Chloroform	87	F2	10.0	117	4	ug/L	305	78 - 127
1,1,1-Trichloroethane	ND	F1 F2	10.0	11.5		ug/L	115	74 - 130
Carbon tetrachloride	ND	F1 F2	10.0	11.8		ug/L	118	72 - 129
1,1-Dichloropropene	ND	F1 F2	10.0	11.4		ug/L	114	74 - 120
Benzene		J F1 F2	10.0	11.5		ug/L	113	80 - 122
1,2-Dichloroethane		F1 F2	10.0	10.5		ug/L	105	69 - 126
Trichloroethene		F1 F2	10.0	12.0		ug/L	120	80 - 125
1,2-Dichloropropane		F1 F2	10.0	10.3		ug/L	103	80 - 120
4-Methyl-2-pentanone (MIBK)		F1 F2	50.0	64.6		ug/L	129	59 - 141
Dibromomethane		F1 F2	10.0	12.9	F1	ug/L	129	80 - 120
Bromodichloromethane		F1 F2	10.0	10.9		ug/L	109	75 - 124
cis-1,3-Dichloropropene	ND		10.0	9.65		ug/L ug/L	97	77 ₋ 120
Toluene		F1 F2	10.0	11.1		ug/L ug/L	111	80 - 120
	ND		10.0	9.46				76 - 122
trans-1,3-Dichloropropene 1,1,2-Trichloroethane		F1 F2	10.0	11.6		ug/L	95 116	80 - 121
						ug/L		
Tetrachloroethene		J F1 F2	10.0	13.1		ug/L	123	76 - 125
1,3-Dichloropropane		F1 F2	10.0	11.0		ug/L	110	79 - 120
Dibromochloromethane		F1 F2	10.0	11.5		ug/L	115	73 - 125
1,2-Dibromoethane		F1 F2	10.0	11.9		ug/L	119	79 - 126
Chlorobenzene		J F1 F2	10.0	12.1		ug/L	116	80 - 120
1,1,1,2-Tetrachloroethane		F1 F2	10.0	11.2		ug/L	112	79 - 120
Ethylbenzene		F1 F2	10.0	11.0		ug/L	110	80 - 120
m-Xylene & p-Xylene		F1 F2	10.0	10.3		ug/L	103	80 - 120
o-Xylene		F1 F2	10.0	10.4		ug/L	104	80 - 120
Styrene	ND		10.0	ND	F1	ug/L	0	76 - 122
Bromoform		F1 F2	10.0	11.4		ug/L	114	56 - 139
Isopropylbenzene	ND	F1 F2	10.0	11.0		ug/L	110	80 - 123
Bromobenzene	ND	F1 F2	10.0	11.8		ug/L	118	80 - 120
1,1,2,2-Tetrachloroethane	ND	F1 F2	10.0	11.7		ug/L	117	74 - 124
1,2,3-Trichloropropane	ND	F1 F2	10.0	12.2		ug/L	122	76 - 124
N-Propylbenzene	ND	F1 F2	10.0	10.6		ug/L	106	80 - 122

Client: ERM-West Job ID: 580-119973-1

Project/Site: Arkema - Q4 2022 Groundwater Event

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Sample Sample

ND F1F2

ND F1F2

ND F1F2

Lab Sample ID: 580-119973-12 MS

Matrix: Water

1,2-Dichlorobenzene

1,2,4-Trichlorobenzene

1,2,3-Trichlorobenzene

1,3,5-Trimethylbenzene

Hexachlorobutadiene

Naphthalene

1,2-Dibromo-3-Chloropropane

Analysis Batch: 410922

Client Sample ID: MWA-31i(d)-111022

%Rec

Prep Type: Total/NA

Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits
2-Chlorotoluene	ND	F1 F2	10.0	11.2		ug/L		112	80 - 120
4-Chlorotoluene	ND	F1	10.0	11.3		ug/L		113	73 - 129
t-Butylbenzene	ND	F1 F2	10.0	10.7		ug/L		107	75 - 123
1,2,4-Trimethylbenzene	ND	F1 F2	10.0	9.95		ug/L		99	80 - 120
sec-Butylbenzene	ND	F1 F2	10.0	10.4		ug/L		104	78 - 122
4-Isopropyltoluene	ND	F1 F2	10.0	10.4		ug/L		104	77 - 126
1,3-Dichlorobenzene	ND	F1	10.0	11.7		ug/L		117	77 - 127
1,4-Dichlorobenzene	ND	F1 F2	10.0	11.6		ug/L		116	80 - 120
n-Butylbenzene	ND	F1 F2	10.0	10.9		ug/L		109	57 - 133

Spike

10.0

10.0

10.0

80 - 120 119 136 65 - 133 116 61 - 148 114 74 - 131

ND F1F2 10.0 11.4 ug/L ND F1 63 - 150 10.0 14.1 ug/L 141 ND F1 10.0 12.4 ug/L 124 65 - 150 ND F1 10.0 5.50 F1 55 80 - 122 ug/L

ug/L

ug/L

MS MS

11.9

11.6

13.6 F1

MS MS Surrogate Qualifier %Recovery Limits Toluene-d8 (Surr) 102 80 - 120 1,2-Dichloroethane-d4 (Surr) 93 80 - 120 4-Bromofluorobenzene (Surr) 101 80 - 120 Dibromofluoromethane (Surr) 106 80 - 120

Lab Sample ID: 580-119973-12 MSD

Matrix: Water

Analysis Batch: 410922

Client Sample ID: MWA-31i(d)-111022
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added		MSD	Unit		%Rec	%Rec Limits	RPD	RPD Limit
					Qualifier		D				
Dichlorodifluoromethane	ND	F1 *+	10.0	25.5	F1	ug/L		255	20 - 150	16	33
Chloromethane	ND	F1	10.0	22.3	F1	ug/L		223	25 - 150	22	26
Vinyl chloride	ND	F1	10.0	20.5	F1	ug/L		205	31 - 150	17	26
Bromomethane	ND	F1	10.0	19.1	F1	ug/L		191	36 - 150	17	33
Chloroethane	ND	F1	10.0	15.2	F1	ug/L		152	38 - 150	9	28
Trichlorofluoromethane	ND	F1	10.0	17.7	F1	ug/L		177	45 - 148	14	35
Carbon disulfide	ND	F1	10.0	16.3	F1	ug/L		163	63 - 134	22	24
1,1-Dichloroethene	ND	F1	10.0	17.4	F1	ug/L		174	70 - 129	21	23
Acetone	ND	F1 F2	50.0	91.9	F1 F2	ug/L		184	44 - 150	36	33
Methylene Chloride	2.0	J F1 F2	10.0	19.0	F1 F2	ug/L		169	77 - 125	23	18
Methyl tert-butyl ether	ND	F1 F2	10.0	15.2	F1 F2	ug/L		152	72 - 120	25	18
trans-1,2-Dichloroethene	ND	F1 F2	10.0	15.9	F1 F2	ug/L		159	75 - 120	25	21
1,1-Dichloroethane	ND	F1 F2	10.0	14.9	F1 F2	ug/L		149	80 - 120	23	15
2-Butanone (MEK)	ND	F1 F2	50.0	84.8	F1 F2	ug/L		170	65 - 137	36	34
2,2-Dichloropropane	ND	F1	10.0	13.8	F1	ug/L		138	66 - 126	21	22
cis-1,2-Dichloroethene	ND	F1 F2	10.0	15.2	F1 F2	ug/L		152	76 - 120	27	20
Bromochloromethane	ND	F1 F2	10.0	15.9	F1 F2	ug/L		159	78 - 120	24	13
Chloroform	87	F2	10.0	168	E 4 F2	ug/L		807	78 - 127	35	14
1,1,1-Trichloroethane	ND	F1 F2	10.0	14.1	F1 F2	ug/L		141	74 - 130	20	19
Carbon tetrachloride	ND	F1 F2	10.0	14.8	F1 F2	ug/L		148	72 - 129	23	19

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QC Sample Results

Client: ERM-West Job ID: 580-119973-1

Project/Site: Arkema - Q4 2022 Groundwater Event

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: 580-119973-12 MSD

Matrix: Water

Analysis Batch: 410922

Client Sample ID: MWA-31i(d)-111022

		Prep Ty	Prep Type: Total/N							
		%Rec		RPD						
D	%Rec	Limits	RPD	Limit						
_	145	74 - 120	24	14						
	145	80 - 122	25	14						
	138	69 - 126	27	11						
	151	80 - 125	23	13						

Analyte	•	Sample Qualifier	Spike Added		MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,1-Dichloropropene	ND	F1 F2	10.0	14.5	F1 F2	ug/L		145	74 - 120	24	14
Benzene	0.25	J F1 F2	10.0	14.7	F1 F2	ug/L		145	80 - 122	25	14
1,2-Dichloroethane	ND	F1 F2	10.0	13.8	F1 F2	ug/L		138	69 - 126	27	11
Trichloroethene	ND	F1 F2	10.0	15.1	F1 F2	ug/L		151	80 - 125	23	13
1,2-Dichloropropane	ND	F1 F2	10.0	13.1	F1 F2	ug/L		131	80 - 120	24	14
4-Methyl-2-pentanone (MIBK)	ND	F1 F2	50.0	90.8	F1 F2	ug/L		182	59 - 141	34	22
Dibromomethane	ND	F1 F2	10.0	16.4	F1 F2	ug/L		164	80 - 120	24	11
Bromodichloromethane	ND	F1 F2	10.0	13.3	F1 F2	ug/L		133	75 - 124	20	13
cis-1,3-Dichloropropene	ND	F1	10.0	12.8	F1	ug/L		128	77 - 120	28	35
Toluene	ND	F1 F2	10.0	14.6	F1 F2	ug/L		146	80 - 120	27	13
trans-1,3-Dichloropropene	ND	F2	10.0	12.1	F2	ug/L		121	76 - 122	25	20
1,1,2-Trichloroethane	ND	F1 F2	10.0	15.4	F1 F2	ug/L		154	80 - 121	28	14
Tetrachloroethene	0.80	J F1 F2	10.0		F1 F2	ug/L		176	76 - 125	34	13
1,3-Dichloropropane	ND	F1 F2	10.0	14.5	F1 F2	ug/L		145	79 - 120	27	19
Dibromochloromethane	ND	F1 F2	10.0	14.8	F1 F2	ug/L		148	73 - 125	25	13
1,2-Dibromoethane	ND	F1 F2	10.0	15.6	F1 F2	ug/L		156	79 - 126	27	12
Chlorobenzene	0.55	J F1 F2	10.0	15.5	F1 F2	ug/L		150	80 - 120	25	10
1,1,1,2-Tetrachloroethane		F1 F2	10.0	14.5	F1 F2	ug/L		145	79 - 120	25	16
Ethylbenzene	ND	F1 F2	10.0	14.0	F1 F2	ug/L		140	80 - 120	24	14
m-Xylene & p-Xylene	ND	F1 F2	10.0	13.5	F1 F2	ug/L		135	80 - 120	27	14
o-Xylene	ND	F1 F2	10.0	13.5	F1 F2	ug/L		135	80 - 120	26	16
Styrene	ND	F1	10.0	ND	F1	ug/L		0	76 - 122	NC	16
Bromoform	ND.	F1 F2	10.0		F1 F2	ug/L		146	56 - 139	25	21
Isopropylbenzene		F1 F2	10.0		F1 F2	ug/L		139	80 - 123	23	19
Bromobenzene	ND	F1 F2	10.0	15.8	F1 F2	ug/L		158	80 - 120	29	24
1,1,2,2-Tetrachloroethane		F1 F2	10.0		F1 F2	ug/L		160	74 - 124	31	25
1,2,3-Trichloropropane		F1 F2	10.0		F1 F2	ug/L		168	76 - 124	31	26
N-Propylbenzene		F1 F2	10.0		F1 F2	ug/L		141	80 - 122	28	22
2-Chlorotoluene	ND	F1 F2	10.0		F1 F2	ug/L		151	80 - 120	30	20
4-Chlorotoluene	ND		10.0	14.5		ug/L		145	73 - 129	25	29
t-Butylbenzene		F1 F2	10.0		F1 F2	ug/L		143	75 - 123	29	21
1,2,4-Trimethylbenzene		F1 F2	10.0		F1 F2	ug/L		133	80 - 120	29	16
sec-Butylbenzene		F1 F2	10.0		F1 F2	ug/L		136	78 ₋ 122	27	15
4-Isopropyltoluene		F1 F2	10.0		F1 F2	ug/L		135	77 - 126	26	20
1,3-Dichlorobenzene	ND		10.0	15.0		ug/L		150	77 - 127	25	35
1,4-Dichlorobenzene		F1 F2	10.0		F1 F2	ug/L		148	80 - 120	24	17
n-Butylbenzene		F1 F2	10.0		F1 F2	ug/L		141	57 - 133	26	14
1,2-Dichlorobenzene		F1 F2	10.0		F1 F2	ug/L		156	80 - 120	27	15
1,2-Dibromo-3-Chloropropane		F1 F2	10.0		F1 F2	ug/L		193	65 - 133	35	25
1,2,4-Trichlorobenzene		F1 F2	10.0		F1 F2	ug/L		154	61 - 148	28	27
Hexachlorobutadiene		F1 F2	10.0		F1 F2	ug/L ug/L		151	74 - 131	28	22
Naphthalene	ND		10.0	19.3		ug/L ug/L		193	63 - 150	31	33
1,2,3-Trichlorobenzene	ND ND		10.0	16.5		ug/L ug/L		165	65 ₋ 150	28	33
1,3,5-Trimethylbenzene		F1	10.0	5.68		ug/L ug/L		57	80 - 122	3	21

	MSD	MSD	
Surrogate	%Recovery	Qualifier	Limits
Toluene-d8 (Surr)	103		80 - 120
1,2-Dichloroethane-d4 (Surr)	94		80 - 120

Eurofins Seattle

Job ID: 580-119973-1

Project/Site: Arkema - Q4 2022 Groundwater Event

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: 580-119973-12 MSD

Matrix: Water

Client: ERM-West

Analysis Batch: 410922

Client Sample ID: MWA-31i(d)-111022

Prep Type: Total/NA

MSD MSD %Recovery Qualifier Surrogate Limits 4-Bromofluorobenzene (Surr) 100 80 - 120 Dibromofluoromethane (Surr) 107 80 - 120

Lab Sample ID: MB 580-412100/6

Matrix: Water

Analysis Batch: 412100

Client Sample ID: Method Blank

Prep Type: Total/NA

MB MB

Analyte F	Result Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methylene Chloride	ND	3.0	1.4	ug/L			12/06/22 15:15	1
Methyl tert-butyl ether	ND	1.0	0.44	ug/L			12/06/22 15:15	1
1,1,1-Trichloroethane	ND	1.0	0.39	ug/L			12/06/22 15:15	1
1,3-Dichlorobenzene	ND	1.0	0.48	ug/L			12/06/22 15:15	1
1,2,4-Trichlorobenzene	ND	1.0	0.33	ug/L			12/06/22 15:15	1

MB MB

Surrogate	%Recovery Qualified	r Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	110	80 - 120	<u> </u>	2/06/22 15:15	1
1,2-Dichloroethane-d4 (Surr)	80	80 - 120	1.	2/06/22 15:15	1
4-Bromofluorobenzene (Surr)	93	80 - 120	1.	2/06/22 15:15	1
Dibromofluoromethane (Surr)	99	80 - 120	12	2/06/22 15:15	1

Lab Sample ID: LCS 580-412100/7

Matrix: Water

Analysis Batch: 412100

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

	Spike	LCS	LCS				%Rec	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Methylene Chloride	10.0	8.80		ug/L		88	77 - 125	
Methyl tert-butyl ether	10.0	8.17		ug/L		82	72 - 120	
1,1,1-Trichloroethane	10.0	9.50		ug/L		95	74 - 130	
1,3-Dichlorobenzene	10.0	10.5		ug/L		105	77 - 127	
1,2,4-Trichlorobenzene	10.0	9.13		ug/L		91	61 - 148	

LCS LCS

Surrogate	%Recovery	Qualifier	Limits
Toluene-d8 (Surr)	107		80 - 120
1,2-Dichloroethane-d4 (Surr)	86		80 - 120
4-Bromofluorobenzene (Surr)	96		80 - 120
Dibromofluoromethane (Surr)	104		80 - 120

Lab Sample ID: LCSD 580-412100/8

Matrix: Water

Analysis Batch: 412100

Client Sample ID: Lab Control Sample Dup)
Prop Types Total/N/	

Prep Type: Total/NA

	Spike	LCSD	LCSD				%Rec		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Methylene Chloride	10.0	8.67		ug/L		87	77 - 125	2	18
Methyl tert-butyl ether	10.0	8.35		ug/L		84	72 - 120	2	18
1,1,1-Trichloroethane	10.0	9.60		ug/L		96	74 - 130	1	19
1,3-Dichlorobenzene	10.0	10.5		ug/L		105	77 - 127	0	35
1,2,4-Trichlorobenzene	10.0	9.51		ug/L		95	61 - 148	4	27

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QC Sample Results

Client: ERM-West Job ID: 580-119973-1

Project/Site: Arkema - Q4 2022 Groundwater Event

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

LCSD LCSD

Lab Sample ID: LCSD 580-412100/8

Matrix: Water

Analysis Batch: 412100

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

%Recovery Qualifier Surrogate Limits Toluene-d8 (Surr) 106 80 - 120 1,2-Dichloroethane-d4 (Surr) 86 80 - 120 4-Bromofluorobenzene (Surr) 98 80 - 120 Dibromofluoromethane (Surr) 106 80 - 120

Client Sample ID: Method Blank Lab Sample ID: MB 580-412244/6

Matrix: Water

Analysis Batch: 412244

Olichit Gampic ID. Mictiloa Blank
Prep Type: Total/NA

	MB	MB							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dichlorodifluoromethane	ND		1.0	0.53	ug/L			12/07/22 18:12	1
Chloromethane	ND		1.0	0.28	ug/L			12/07/22 18:12	1
Vinyl chloride	ND		1.0	0.22	ug/L			12/07/22 18:12	1
Bromomethane	0.400	J	1.0	0.21	ug/L			12/07/22 18:12	1
Chloroethane	ND		1.0	0.35	ug/L			12/07/22 18:12	1
Trichlorofluoromethane	ND		1.0	0.36	ug/L			12/07/22 18:12	1
Carbon disulfide	ND		1.0	0.53	ug/L			12/07/22 18:12	1
1,1-Dichloroethene	ND		1.0	0.28	ug/L			12/07/22 18:12	1
Acetone	ND		15	3.2	ug/L			12/07/22 18:12	1
Methylene Chloride	ND		3.0	1.4	ug/L			12/07/22 18:12	1
Methyl tert-butyl ether	ND		1.0	0.44	ug/L			12/07/22 18:12	1
trans-1,2-Dichloroethene	ND		1.0	0.39	ug/L			12/07/22 18:12	1
1,1-Dichloroethane	ND		1.0	0.22	ug/L			12/07/22 18:12	1
2-Butanone (MEK)	ND		15	4.7	ug/L			12/07/22 18:12	1
2,2-Dichloropropane	ND		1.0	0.32	ug/L			12/07/22 18:12	1
cis-1,2-Dichloroethene	ND		1.0	0.35	ug/L			12/07/22 18:12	1
Bromochloromethane	ND		1.0	0.29	ug/L			12/07/22 18:12	1
Chloroform	ND		1.0	0.26	ug/L			12/07/22 18:12	1
1,1,1-Trichloroethane	ND		1.0	0.39	ug/L			12/07/22 18:12	1
Carbon tetrachloride	ND		1.0	0.30	ug/L			12/07/22 18:12	1
1,1-Dichloropropene	ND		1.0	0.29	ug/L			12/07/22 18:12	1
Benzene	ND		1.0	0.24	ug/L			12/07/22 18:12	1
1,2-Dichloroethane	ND		1.0	0.42	ug/L			12/07/22 18:12	1
Trichloroethene	ND		1.0	0.26	ug/L			12/07/22 18:12	1
1,2-Dichloropropane	ND		1.0	0.18	ug/L			12/07/22 18:12	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.5	ug/L			12/07/22 18:12	1
Dibromomethane	ND		1.0	0.34	ug/L			12/07/22 18:12	1
Bromodichloromethane	ND		1.0	0.29	ug/L			12/07/22 18:12	1
cis-1,3-Dichloropropene	ND		1.0	0.42	ug/L			12/07/22 18:12	1
Toluene	ND		1.0	0.39	ug/L			12/07/22 18:12	1
trans-1,3-Dichloropropene	ND		1.0	0.41	ug/L			12/07/22 18:12	1
1,1,2-Trichloroethane	ND		1.0	0.24	ug/L			12/07/22 18:12	1
Tetrachloroethene	ND		1.0	0.41	ug/L			12/07/22 18:12	1
1,3-Dichloropropane	ND		1.0	0.35	ug/L			12/07/22 18:12	1
Dibromochloromethane	ND		1.0		ug/L			12/07/22 18:12	1
1,2-Dibromoethane	ND		1.0		ug/L			12/07/22 18:12	1
Oblanakannan									
Chlorobenzene	ND		1.0	0.44	ug/L			12/07/22 18:12	1

Eurofins Seattle

Client: ERM-West Job ID: 580-119973-1

Project/Site: Arkema - Q4 2022 Groundwater Event

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 580-412244/6

Matrix: Water

Analyte

o-Xylene

Ethylbenzene

m-Xylene & p-Xylene

Analysis Batch: 412244

Client Sample ID: Method Blank

Prep Type: Total/NA

MB MB Result Qualifier RL MDL Unit Prepared Analyzed Dil Fac ND 1.0 0.50 ug/L 12/07/22 18:12 ND 2.0 0.53 ug/L 12/07/22 18:12 ND 1.0 12/07/22 18:12 0.39 ug/L ND 1.0 0.53 ug/L 12/07/22 18:12

Styrene ND 12/07/22 18:12 Bromoform 1.0 0.51 ug/L Isopropylbenzene ND 1.0 0.44 ug/L 12/07/22 18:12 Bromobenzene ND 1.0 0.43 ug/L 12/07/22 18:12 1,1,2,2-Tetrachloroethane ND 1.0 0.52 ug/L 12/07/22 18:12 12/07/22 18:12 1,2,3-Trichloropropane ND 1.0 0.41 ug/L

ND N-Propylbenzene 1.0 0.50 ug/L 12/07/22 18:12 2-Chlorotoluene ND 1.0 0.51 ug/L 12/07/22 18:12 4-Chlorotoluene ND 1.0 0.38 ug/L 12/07/22 18:12 t-Butylbenzene ND 2.0 0.58 ug/L 12/07/22 18:12 ND 1,2,4-Trimethylbenzene 3.0 0.61 ug/L 12/07/22 18:12 sec-Butylbenzene ND 1.0 0.49 12/07/22 18:12 ug/L

4-Isopropyltoluene ND 1.0 0.28 ug/L 12/07/22 18:12 1,3-Dichlorobenzene ND 1.0 0.48 ug/L 12/07/22 18:12 1,4-Dichlorobenzene ND 1.0 12/07/22 18:12 0.46 ug/L n-Butylbenzene ND 1.0 0.44 ug/L 12/07/22 18:12 1,2-Dichlorobenzene ND 1.0 0.46 ug/L 12/07/22 18:12 1,2-Dibromo-3-Chloropropane ND 3.0 0.57 ug/L 12/07/22 18:12

1.2.4-Trichlorobenzene ND 1.0 0.33 ua/L 12/07/22 18:12 Hexachlorobutadiene ND 3.0 0.79 ug/L 12/07/22 18:12 Naphthalene ND 3.0 0.93 ug/L 12/07/22 18:12 ND 1,2,3-Trichlorobenzene 20 0.43 ug/L 12/07/22 18:12 1,3,5-Trimethylbenzene ND 0.55 ug/L 12/07/22 18:12 1.0

MB MB Qualifier Surrogate %Recovery Limits Prepared Dil Fac Analyzed Toluene-d8 (Surr) 106 80 - 120 12/07/22 18:12

12/07/22 18:12 1,2-Dichloroethane-d4 (Surr) 85 80 - 120 92 4-Bromofluorobenzene (Surr) 80 - 120 12/07/22 18:12 Dibromofluoromethane (Surr) 103 80 - 120 12/07/22 18:12

Lab Sample ID: LCS 580-412244/7

Matrix: Water

Analysis Batch: 412244

Client Sample ID: Lab Control Sample Prep Type: Total/NA

Spike LCS LCS %Rec Analyte Added Result Qualifier Unit D %Rec Limits Dichlorodifluoromethane 10.0 14.8 ug/L 148 20 - 150 Chloromethane 10.0 11.9 ug/L 119 25 - 150 Vinyl chloride 10.0 12.4 ug/L 124 31 - 150 130 Bromomethane 10.0 13.0 ug/L 36 - 150 Chloroethane 113 10.0 11.3 ug/L 38 - 150Trichlorofluoromethane 10.0 ug/L 113 45 - 148 11.3 Carbon disulfide 10.0 9.70 ug/L 97 63 - 1341.1-Dichloroethene 70 - 129 10.0 104 ug/L 104 Acetone 50.0 37.2 ug/L 74 44 - 150 Methylene Chloride 10.0 9.52 ug/L 95 77 - 125

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QC Sample Results

Client: ERM-West Job ID: 580-119973-1

Project/Site: Arkema - Q4 2022 Groundwater Event

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 580-412244/7

Matrix: Water

2,2-Dichloropropane cis-1,2-Dichloroethene

Bromochloromethane

1,1,1-Trichloroethane

Carbon tetrachloride

1,1-Dichloropropene

1,2-Dichloroethane

1,2-Dichloropropane

Trichloroethene

Dibromomethane

Chloroform

Benzene

Analysis Batch: 412244

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

	Spike	LCS	LCS				%Rec	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Methyl tert-butyl ether	10.0	8.51		ug/L		85	72 - 120	
trans-1,2-Dichloroethene	10.0	9.84		ug/L		98	75 - 120	
1,1-Dichloroethane	10.0	9.87		ug/L		99	80 - 120	
2-Butanone (MEK)	50.0	35.2		ug/L		70	65 - 137	

10.0

10.0

10.0

10.0

10.0

10.0

10.0

65 - 137ug/L ug/L 127 66 - 126 ug/L 105 76 - 120 ug/L 99 78 - 120 101 ug/L 78 - 127

10.1 9.82 ug/L 98 74 - 13098 9.82 ug/L 72 - 129 97 9.71 ug/L 74 - 120

99 10.0 9.90 ug/L 80 - 122 10.0 86 69 - 126 8.56 ug/L 10.0 10.3 ug/L 103 80 - 125 10.0 9.07 ug/L 91 80 - 120

12.7 *+

10.5

9.89

4-Methyl-2-pentanone (MIBK) 50.0 36 4 ug/L 73 59 141 10.0 8.89 ug/L 89 80 - 120 Bromodichloromethane 10.0 8.62 86 75 - 124 ug/L cis-1,3-Dichloropropene 10.0 10.2 ug/L 102 77 - 120

ug/L Toluene 10.0 10.7 107 80 - 120 trans-1,3-Dichloropropene 10.0 8.92 ug/L 89 76 - 122 1.1.2-Trichloroethane 10.0 9.16 ug/L 92 80 - 121 Tetrachloroethene 10.0 12.4 ug/L 124 76 - 125 10.0 8.53 85 79 - 120 1,3-Dichloropropane ug/L 10.0 92 Dibromochloromethane 9.17 ug/L 73 - 125

1,2-Dibromoethane 10.0 8.55 86 79 - 126 ug/L 102 Chlorobenzene 10.0 10.2 ug/L 80 - 120 1,1,1,2-Tetrachloroethane 10.0 10.1 ug/L 101 79 - 120 ug/L Ethylbenzene 10.0 10.0 100 80 - 120m-Xylene & p-Xylene 10.0 9.63 ug/L 96 80 - 120 o-Xylene 10.0 9.45 ug/L 95 80 - 120

Styrene 10.0 9.40 ug/L 94 76 - 122 ug/L Bromoform 10.0 8.81 88 56 - 139 10.0 9.52 95 80 - 123 Isopropylbenzene ug/L Bromobenzene 10.0 11.1 ug/L 111 80 - 120 10.0 8.18 82 74 - 124 1,1,2,2-Tetrachloroethane ug/L 1,2,3-Trichloropropane 10.0 8.49 ug/L 85 76 - 124 102 N-Propylbenzene 10.0 10.2 ug/L 80 - 122

ug/L 2-Chlorotoluene 10.0 10.9 109 80 - 120 4-Chlorotoluene 10.0 107 73 - 129 10.7 ug/L t-Butylbenzene 10.0 10.2 ug/L 102 75 - 123 10.0 1,2,4-Trimethylbenzene 9.85 ug/L 98 80 - 120 sec-Butylbenzene 10.0 9.67 ug/L 97 78 - 122 4-Isopropyltoluene 10.0 9.68 ug/L 97 77 - 1261,3-Dichlorobenzene 10.0 10.7 ug/L 107 77 - 127

1,4-Dichlorobenzene 10.0 10.4 ug/L 104 80 - 120 n-Butylbenzene 10.0 9.54 ug/L 95 57 - 133 1,2-Dichlorobenzene 10.0 10.6 ug/L 106 80 - 120 65 - 133 1,2-Dibromo-3-Chloropropane 10.0 7.48 ug/L 75

Eurofins Seattle

QC Sample Results

Client: ERM-West Job ID: 580-119973-1

Project/Site: Arkema - Q4 2022 Groundwater Event

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 580-412244/7

Matrix: Water

Analysis Batch: 412244

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

	Spike	LCS	LCS				%Rec
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits
1,2,4-Trichlorobenzene	10.0	9.10		ug/L		91	61 - 148
Hexachlorobutadiene	10.0	9.82		ug/L		98	74 - 131
Naphthalene	10.0	7.34		ug/L		73	63 - 150
1,2,3-Trichlorobenzene	10.0	8.28		ug/L		83	65 - 150
1.3.5-Trimethylbenzene	10.0	10.2		ua/l		102	80 - 122

LCS LCS

Surrogate	%Recovery	Qualifier	Limits
Toluene-d8 (Surr)	109		80 - 120
1,2-Dichloroethane-d4 (Surr)	87		80 - 120
4-Bromofluorobenzene (Surr)	94		80 - 120
Dibromofluoromethane (Surr)	106		80 - 120

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Matrix: Water

Lab Sample ID: LCSD 580-412244/8

Analysis Batch: 412244									
	Spike	LCSD	LCSD				%Rec		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Dichlorodifluoromethane	10.0	14.3		ug/L		143	20 - 150	3	33
Chloromethane	10.0	10.9		ug/L		109	25 - 150	9	26
Vinyl chloride	10.0	11.1		ug/L		111	31 - 150	11	26
Bromomethane	10.0	4.28	*1	ug/L		43	36 - 150	101	33
Chloroethane	10.0	9.52		ug/L		95	38 - 150	17	28
Trichlorofluoromethane	10.0	10.2		ug/L		102	45 - 148	11	35
Carbon disulfide	10.0	8.06		ug/L		81	63 - 134	18	24
1,1-Dichloroethene	10.0	9.39		ug/L		94	70 - 129	10	23
Acetone	50.0	39.3		ug/L		79	44 - 150	6	33
Methylene Chloride	10.0	9.16		ug/L		92	77 - 125	4	18
Methyl tert-butyl ether	10.0	8.75		ug/L		88	72 - 120	3	18
trans-1,2-Dichloroethene	10.0	9.79		ug/L		98	75 - 120	1	21
1,1-Dichloroethane	10.0	9.98		ug/L		100	80 - 120	1	15
2-Butanone (MEK)	50.0	36.3		ug/L		73	65 - 137	3	34
2,2-Dichloropropane	10.0	11.8		ug/L		118	66 - 126	8	22
cis-1,2-Dichloroethene	10.0	10.5		ug/L		105	76 - 120	0	20
Bromochloromethane	10.0	10.2		ug/L		102	78 - 120	4	13
Chloroform	10.0	9.99		ug/L		100	78 - 127	1	14
1,1,1-Trichloroethane	10.0	9.77		ug/L		98	74 - 130	1	19
Carbon tetrachloride	10.0	9.93		ug/L		99	72 - 129	1	19
1,1-Dichloropropene	10.0	9.74		ug/L		97	74 - 120	0	14
Benzene	10.0	9.88		ug/L		99	80 - 122	0	14
1,2-Dichloroethane	10.0	8.76		ug/L		88	69 - 126	2	11
Trichloroethene	10.0	10.3		ug/L		103	80 - 125	0	13
1,2-Dichloropropane	10.0	9.01		ug/L		90	80 - 120	1	14
4-Methyl-2-pentanone (MIBK)	50.0	37.5		ug/L		75	59 - 141	3	22
Dibromomethane	10.0	9.37		ug/L		94	80 - 120	5	11
Bromodichloromethane	10.0	8.41		ug/L		84	75 - 124	2	13
cis-1,3-Dichloropropene	10.0	9.78		ug/L		98	77 - 120	4	35
Toluene	10.0	10.6		ug/L		106	80 - 120	1	13
trans-1,3-Dichloropropene	10.0	8.70		ug/L		87	76 - 122	2	20

Eurofins Seattle

Client: ERM-West Job ID: 580-119973-1

Project/Site: Arkema - Q4 2022 Groundwater Event

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCSD 580-412244/8

Matrix: Water

Analysis Batch: 412244

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analysis Datch. 412244	Spike	LCSD	LCSD				%Rec		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
1,1,2-Trichloroethane	10.0	9.31		ug/L		93	80 - 121	2	14
Tetrachloroethene	10.0	13.4	*+	ug/L		134	76 - 125	7	13
1,3-Dichloropropane	10.0	8.75		ug/L		88	79 - 120	2	19
Dibromochloromethane	10.0	8.91		ug/L		89	73 - 125	3	13
1,2-Dibromoethane	10.0	8.72		ug/L		87	79 - 126	2	12
Chlorobenzene	10.0	10.2		ug/L		102	80 - 120	0	10
1,1,1,2-Tetrachloroethane	10.0	10.1		ug/L		101	79 - 120	0	16
Ethylbenzene	10.0	10.0		ug/L		100	80 - 120	0	14
m-Xylene & p-Xylene	10.0	9.64		ug/L		96	80 - 120	0	14
o-Xylene	10.0	9.49		ug/L		95	80 - 120	0	16
Styrene	10.0	9.29		ug/L		93	76 - 122	1	16
Bromoform	10.0	8.18		ug/L		82	56 - 139	7	21
Isopropylbenzene	10.0	9.77		ug/L		98	80 - 123	3	19
Bromobenzene	10.0	11.4		ug/L		114	80 - 120	2	24
1,1,2,2-Tetrachloroethane	10.0	8.17		ug/L		82	74 - 124	0	25
1,2,3-Trichloropropane	10.0	8.71		ug/L		87	76 - 124	3	26
N-Propylbenzene	10.0	10.7		ug/L		107	80 - 122	5	22
2-Chlorotoluene	10.0	11.2		ug/L		112	80 - 120	2	20
4-Chlorotoluene	10.0	10.7		ug/L		107	73 - 129	0	29
t-Butylbenzene	10.0	10.9		ug/L		109	75 - 123	6	21
1,2,4-Trimethylbenzene	10.0	10.1		ug/L		101	80 - 120	2	16
sec-Butylbenzene	10.0	10.4		ug/L		104	78 - 122	7	15
4-Isopropyltoluene	10.0	10.4		ug/L		104	77 - 126	7	20
1,3-Dichlorobenzene	10.0	10.8		ug/L		108	77 - 127	1	35
1,4-Dichlorobenzene	10.0	10.5		ug/L		105	80 - 120	1	17
n-Butylbenzene	10.0	10.3		ug/L		103	57 - 133	8	14
1,2-Dichlorobenzene	10.0	10.6		ug/L		106	80 - 120	0	15
1,2-Dibromo-3-Chloropropane	10.0	7.59		ug/L		76	65 - 133	1	25
1,2,4-Trichlorobenzene	10.0	9.62		ug/L		96	61 - 148	6	27
Hexachlorobutadiene	10.0	11.2		ug/L		112	74 - 131	13	22
Naphthalene	10.0	7.44		ug/L		74	63 - 150	1	33
1,2,3-Trichlorobenzene	10.0	8.81		ug/L		88	65 - 150	6	33
1,3,5-Trimethylbenzene	10.0	10.7		ug/L		107	80 - 122	4	21

LCSD LCSD

Surrogate	%Recovery	Qualifier	Limits
Toluene-d8 (Surr)	108		80 - 120
1,2-Dichloroethane-d4 (Surr)	86		80 - 120
4-Bromofluorobenzene (Surr)	93		80 - 120
Dibromofluoromethane (Surr)	106		80 - 120

Lab Sample ID: MB 580-412308/50

Matrix: Water

Analysis Batch: 412308

MB MB

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloroform	ND		1.0	0.26	ug/L			12/08/22 19:02	1

Eurofins Seattle

Client Sample ID: Method Blank

Prep Type: Total/NA

Job ID: 580-119973-1

Project/Site: Arkema - Q4 2022 Groundwater Event

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 580-412308/50

Matrix: Water

Client: ERM-West

Analysis Batch: 412308

Client Sample ID: Method Blank

Prep Type: Total/NA

MB MB %Recovery Qualifier Limits Analyzed Dil Fac Surrogate Prepared Toluene-d8 (Surr) 104 80 - 120 12/08/22 19:02 1,2-Dichloroethane-d4 (Surr) 109 80 - 120 12/08/22 19:02 93 80 - 120 4-Bromofluorobenzene (Surr) 12/08/22 19:02 Dibromofluoromethane (Surr) 105 80 - 120 12/08/22 19:02

Lab Sample ID: LCS 580-412308/51

Matrix: Water

Analysis Batch: 412308

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Spike LCS LCS %Rec Analyte Added Result Qualifier Unit %Rec Limits Chloroform 5.00 5.45 78 - 127 ug/L 109

LCS LCS Qualifier Limits Surrogate %Recovery Toluene-d8 (Surr) 108 80 - 120 101 80 - 120 1,2-Dichloroethane-d4 (Surr) 80 - 120 4-Bromofluorobenzene (Surr) 100 Dibromofluoromethane (Surr) 100 80 - 120

Lab Sample ID: LCSD 580-412308/52

Matrix: Water

Analysis Batch: 412308

Client Sample ID: Lab Control Sample Dup Prep Type: Total/NA

LCSD LCSD Spike %Rec **RPD** Analyte Added Result Qualifier Unit %Rec Limits RPD Limit Chloroform 5.00 109 78 - 127 5.46 ug/L

LCSD LCSD Surrogate %Recovery Qualifier Limits Toluene-d8 (Surr) 103 80 - 120 1,2-Dichloroethane-d4 (Surr) 102 80 - 120 4-Bromofluorobenzene (Surr) 100 80 - 120 102 80 - 120 Dibromofluoromethane (Surr)

Lab Sample ID: MB 580-412592/6

Matrix: Water

Analysis Batch: 412592

Client Sample ID: Method Blank

Prep Type: Total/NA

MB MB Analyte Result Qualifier RL **MDL** Unit D Dil Fac Prepared Analyzed 3.0 Methylene Chloride ND 1.4 12/12/22 11:43 ug/L Methyl tert-butyl ether ND 1.0 0.44 ug/L 12/12/22 11:43 ND 1,1,1-Trichloroethane 1.0 0.39 ug/L 12/12/22 11:43 1,3-Dichlorobenzene ND 1.0 0.48 ug/L 12/12/22 11:43 1,2,4-Trichlorobenzene ND 1.0 12/12/22 11:43 0.33 ug/L

	MB	MB			
Surrogate	%Recovery	Qualifier	Limits	Prepared Analyzed	Dil Fac
Toluene-d8 (Surr)	102		80 - 120	12/12/22 11	43 1
1,2-Dichloroethane-d4 (Surr)	106		80 - 120	12/12/22 11	43 1
4-Bromofluorobenzene (Surr)	101		80 - 120	12/12/22 11	43 1
Dibromofluoromethane (Surr)	106		80 - 120	12/12/22 11	43 1

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QC Sample Results

Client: ERM-West Job ID: 580-119973-1

Project/Site: Arkema - Q4 2022 Groundwater Event

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 580-412592/7

Matrix: Water

Analysis Batch: 412592

Client Sample ID:	Lab Control Sample	
	Prep Type: Total/NA	

	Spike	LCS	LCS				%Rec	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Methylene Chloride	5.00	4.75		ug/L		95	77 - 125	
Methyl tert-butyl ether	5.00	4.99		ug/L		100	72 - 120	
1,1,1-Trichloroethane	5.00	5.35		ug/L		107	74 - 130	
1,3-Dichlorobenzene	5.00	5.71		ug/L		114	77 - 127	
1,2,4-Trichlorobenzene	5.00	5.76		ug/L		115	61 - 148	

LCS LCS

Surrogate	%Recovery	Qualifier	Limits
Toluene-d8 (Surr)	104		80 - 120
1,2-Dichloroethane-d4 (Surr)	99		80 - 120
4-Bromofluorobenzene (Surr)	102		80 - 120
Dibromofluoromethane (Surr)	103		80 - 120

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Matrix: Water

Analysis Batch: 412592

Lab Sample ID: LCSD 580-412592/8

	Spike	LCSD	LCSD				%Rec		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Methylene Chloride	5.00	4.65		ug/L		93	77 - 125	2	18
Methyl tert-butyl ether	5.00	4.90		ug/L		98	72 - 120	2	18
1,1,1-Trichloroethane	5.00	5.26		ug/L		105	74 - 130	2	19
1,3-Dichlorobenzene	5.00	5.44		ug/L		109	77 - 127	5	35
1,2,4-Trichlorobenzene	5.00	5.47		ug/L		109	61 - 148	5	27

LCSD LCSD

Surrogate	%Recovery	Qualifier	Limits
Toluene-d8 (Surr)	105		80 - 120
1,2-Dichloroethane-d4 (Surr)	99		80 - 120
4-Bromofluorobenzene (Surr)	98		80 - 120
Dibromofluoromethane (Surr)	101		80 - 120

Method: 314.0 - Perchlorate (IC)

Lab Sample ID: MB 320-633633/5

Matrix: Water

Analysis Batch: 633633

Client Sample ID: Method Blank Prep Type: Total/NA

Client Sample ID: Lab Control Sample

MB MB

Analyte **Result Qualifier** RL **MDL** Unit Prepared Analyzed Dil Fac 2.0 ug/L Perchlorate ND 4.0 11/17/22 12:22

Lab Sample ID: LCS 320-633633/6

Matrix: Water

Analysis Batch: 633633

		Spike	LCS	LCS					%Rec	
Analyte		Added	Result	Qualifier	Unit	I	D	%Rec	Limits	
Perchlorate	 	49.9	49.9		ug/L			100	85 - 115	

Eurofins Seattle

Prep Type: Total/NA

Job ID: 580-119973-1

Project/Site: Arkema - Q4 2022 Groundwater Event

Method: 314.0 - Perchlorate (IC) (Continued)

Lab Sample ID: MRL 320-633633/4

Matrix: Water

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Type: Total/NA

Analysis Batch: 633633

Spike MRL MRL %Rec Added Result Qualifier Limits Analyte Unit %Rec Perchlorate 3.99 3.44 J ug/L 86 75 - 125

Lab Sample ID: 580-119973-12 MS Client Sample ID: MWA-31i(d)-111022 Prep Type: Total/NA

Matrix: Water

Client: ERM-West

Analysis Batch: 633633

Sample Sample Spike MS MS %Rec Result Qualifier Added Result Qualifier D %Rec Limits Analyte Unit 97000 99700 Perchlorate 208000 E ug/L 112 80 - 120

Lab Sample ID: 580-119973-12 MSD Client Sample ID: MWA-31i(d)-111022

Matrix: Water

Analysis Batch: 633633

Sample Sample Spike MSD MSD %Rec **RPD** Result Qualifier Added Result Qualifier Limits RPD Analyte Unit %Rec Limit Perchlorate 97000 99700 205000 E 109 80 - 120 ug/L

Lab Sample ID: MB 320-633906/5 Client Sample ID: Method Blank Prep Type: Total/NA

Matrix: Water

Analysis Batch: 633906

MB MB

Analyte Result Qualifier RL MDL Unit Prepared Analyzed Dil Fac Perchlorate 4.0 2.0 11/18/22 11:40 ND ug/L

Lab Sample ID: LCS 320-633906/6 **Client Sample ID: Lab Control Sample** Prep Type: Total/NA

Matrix: Water

Analysis Batch: 633906

LCS LCS Spike %Rec Analyte Added Limits Result Qualifier Unit %Rec Perchlorate 49.9 50.7 102 85 - 115 ug/L

Lab Sample ID: MRL 320-633906/4

Matrix: Water

Analysis Batch: 633906

Spike MRL MRL %Rec Added Result Qualifier Analyte Unit D %Rec Limits 3.99 Perchlorate 3.31 J ug/L 83 75 - 125

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 580-412160/3 Client Sample ID: Method Blank

Matrix: Water

Analysis Batch: 412160

MR MR

Analyzed Analyte Result Qualifier RL MDL Unit Prepared Dil Fac Chloride 1.5 ND 0.43 mg/L 12/02/22 19:25

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Client: ERM-West Job ID: 580-119973-1

Project/Site: Arkema - Q4 2022 Groundwater Event

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: LCS 580-412160/4 Client Sample ID: Lab Control Sample Prep Type: Total/NA

Matrix: Water

Analysis Batch: 412160

Spike LCS LCS %Rec Added Result Qualifier Limits Analyte Unit D %Rec 90 - 110 Chloride 50.0 50.6 mg/L 101

Lab Sample ID: LCSD 580-412160/5 Client Sample ID: Lab Control Sample Dup **Matrix: Water** Prep Type: Total/NA

Analysis Batch: 412160

Spike LCSD LCSD %Rec **RPD** Added Result Qualifier D %Rec Limits RPD Limit Analyte Unit 50.0 90 - 110 Chloride 50.7 mg/L 101 n

Lab Sample ID: 580-119973-12 MS Client Sample ID: MWA-31i(d)-111022 Prep Type: Total/NA

Matrix: Water

Analysis Batch: 412160

Sample Sample Spike MS MS %Rec Result Qualifier Added Result Qualifier Limits **Analyte** Unit %Rec Chloride 19000 50000 71400 104 90 - 110 mg/L

Lab Sample ID: 580-119973-12 MSD Client Sample ID: MWA-31i(d)-111022 **Matrix: Water Prep Type: Total/NA**

Analysis Batch: 412160

Spike MSD MSD %Rec **RPD** Sample Sample Analyte Result Qualifier Added Result Qualifier Unit %Rec Limits **RPD** Limit Chloride 19000 50000 71300 mg/L 104 90 - 110

Lab Sample ID: MB 580-412170/3 Client Sample ID: Method Blank Prep Type: Total/NA

Matrix: Water

Analysis Batch: 412170

MR MR Analyte RL **MDL** Unit Result Qualifier Prepared Analyzed Dil Fac Chloride 1.5 0.43 mg/L 12/05/22 20:52 ND

Lab Sample ID: LCS 580-412170/4 **Client Sample ID: Lab Control Sample**

Matrix: Water

Analysis Batch: 412170

Spike LCS LCS %Rec Added Result Qualifier Analyte Unit %Rec Limits D 50.0 Chloride 51.2 mg/L 102

Lab Sample ID: LCSD 580-412170/5 Client Sample ID: Lab Control Sample Dup

Matrix: Water

Analysis Batch: 412170

Spike LCSD LCSD %Rec **RPD** Added Analyte Result Qualifier Limits RPD Limit Unit D %Rec Chloride 50.0 102 512 mg/L 90 - 110 0

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Job ID: 580-119973-1

Project/Site: Arkema - Q4 2022 Groundwater Event

Client Sample ID: TB-110922

Lab Sample ID: 580-119973-1 Date Collected: 11/09/22 00:01

Matrix: Water

Date Received: 11/11/22 11:35

Client: ERM-West

	Batch	Batch		Dilution	Batch			Prepared
Prep Type	Type	Method	Run	Factor	Number	Analyst	Lab	or Analyzed
Total/NA	Analysis	8260D		1	409881	K1K	EET SEA	11/14/22 16:27

Client Sample ID: MWA-63-110922

Lab Sample ID: 580-119973-2

Date Collected: 11/09/22 06:33 **Matrix: Water**

Date Received: 11/11/22 11:35

	Batch	Batch		Dilution	Batch			Prepared
Prep Type	Type	Method	Run	Factor	Number	Analyst	Lab	or Analyzed
Total/NA	Analysis	8260D		1	410498	BNM	EET SEA	11/18/22 21:14
Total/NA	Analysis	8260D	RA	10	412100	JSM	EET SEA	12/07/22 00:28
Total/NA	Analysis	314.0		1	633633	Y1S	EET SAC	11/17/22 13:00
Total/NA	Analysis	300.0		1	412160	JHR	EET SEA	12/03/22 00:53

Client Sample ID: PA-04-110922

Lab Sample ID: 580-119973-3

Date Collected: 11/09/22 07:23 **Matrix: Water** Date Received: 11/11/22 11:35

	Batch	Batch		Dilution	Batch			Prepared
Prep Type	Type	Method	Run	Factor	Number	Analyst	Lab	or Analyzed
Total/NA	Analysis	8260D		1	409881	K1K	EET SEA	11/14/22 20:09
Total/NA	Analysis	8260D	RA	1	410044	K1K	EET SEA	11/15/22 16:24
Total/NA	Analysis	314.0		2	633633	Y1S	EET SAC	11/17/22 13:19
Total/NA	Analysis	300.0		1	412160	JHR	EET SEA	12/03/22 01:05

Client Sample ID: PA-10i-110922

Lab Sample ID: 580-119973-4 Date Collected: 11/09/22 07:50 **Matrix: Water**

Date Received: 11/11/22 11:35

	Batch	Batch		Dilution	Batch			Prepared
Prep Type	Type	Method	Run	Factor	Number	Analyst	Lab	or Analyzed
Total/NA	Analysis	8260D			409881	K1K	EET SEA	11/14/22 20:34
Total/NA	Analysis	8260D	RA	1	410044	K1K	EET SEA	11/15/22 16:48
Total/NA	Analysis	314.0		5	633633	Y1S	EET SAC	11/17/22 13:38
Total/NA	Analysis	300.0		1	412160	JHR	EET SEA	12/03/22 01:17

Client Sample ID: PA-22d-110922

Lab Sample ID: 580-119973-5 Date Collected: 11/09/22 08:43

Date Received: 11/11/22 11:35

	Batch	Batch		Dilution	Batch			Prepared
Prep Type	Type	Method	Run	Factor	Number	Analyst	Lab	or Analyzed
Total/NA	Analysis	8260D		1	410498	BNM	EET SEA	11/18/22 21:39
Total/NA	Analysis	8260D	RA	1	412592	BNM	EET SEA	12/12/22 13:45
Total/NA	Analysis	314.0		1000	633633	Y1S	EET SAC	11/17/22 13:57
Total/NA	Analysis	300.0		100	412160	JHR	EET SEA	12/03/22 01:28

Eurofins Seattle

Matrix: Water

Job ID: 580-119973-1

Project/Site: Arkema - Q4 2022 Groundwater Event

Client Sample ID: MWA-56d-110922

Lab Sample ID: 580-119973-6 Date Collected: 11/09/22 09:34

Matrix: Water

Date Received: 11/11/22 11:35

Client: ERM-West

	Batch	Batch		Dilution	Batch			Prepared
Prep Type	Туре	Method	Run	Factor	Number	Analyst	Lab	or Analyzed
Total/NA	Analysis	8260D		1	410498	BNM	EET SEA	11/18/22 22:03
Total/NA	Analysis	8260D	RA	1	412592	BNM	EET SEA	12/12/22 14:11
Total/NA	Analysis	314.0		200	633906	AP1	EET SAC	11/18/22 18:00
Total/NA	Analysis	300.0		1000	412160	JHR	EET SEA	12/03/22 02:27

Client Sample ID: MWA-58d-110922

Lab Sample ID: 580-119973-7 Date Collected: 11/09/22 10:22 **Matrix: Water**

Date Received: 11/11/22 11:35

_	Batch	Batch		Dilution	Batch			Prepared
Prep Type	Туре	Method	Run	Factor	Number	Analyst	Lab	or Analyzed
Total/NA	Analysis	8260D	DL		412308	BNM	EET SEA	12/08/22 20:43
Total/NA	Analysis	8260D		1	412244	BNM	EET SEA	12/07/22 21:26
Total/NA	Analysis	314.0		1000	633633	Y1S	EET SAC	11/17/22 14:35
Total/NA	Analysis	300.0		1000	412160	JHR	EET SEA	12/03/22 02:50

Client Sample ID: Dup-02-110922

Lab Sample ID: 580-119973-8 Date Collected: 11/09/22 10:23 **Matrix: Water**

Date Received: 11/11/22 11:35

	Batch	Batch		Dilution	Batch			Prepared
Prep Type	Туре	Method	Run	Factor	Number	Analyst	Lab	or Analyzed
Total/NA	Analysis	8260D	DL	5	412308	BNM	EET SEA	12/08/22 21:08
Total/NA	Analysis	8260D		1	412244	BNM	EET SEA	12/07/22 21:51
Total/NA	Analysis	314.0		1000	633906	AP1	EET SAC	11/18/22 18:19
Total/NA	Analysis	300.0		1000	412160	JHR	EET SEA	12/03/22 03:14

Client Sample ID: PA-23d-111022 Lab Sample ID: 580-119973-9

Date Collected: 11/10/22 06:49 Date Received: 11/11/22 11:35

	Batch	Batch		Dilution	Batch			Prepared
Prep Type	Туре	Method	Run	Factor	Number	Analyst	Lab	or Analyzed
Total/NA	Analysis	8260D		1	410922	BNM	EET SEA	11/23/22 14:06
Total/NA	Analysis	314.0		100	633633	Y1S	EET SAC	11/17/22 14:54
Total/NA	Analysis	300.0		100	412160	JHR	EET SEA	12/03/22 03:25

Client Sample ID: RB-02-111022

Date Collected: 11/10/22 07:20 Matrix: Water

Date Received: 11/11/22 11:35

	Batch	Batch		Dilution	Batch			Prepared
Prep Type	Туре	Method	Run	Factor	Number	Analyst	Lab	or Analyzed
Total/NA	Analysis	8260D		1	410922	BNM	EET SEA	11/23/22 14:30
Total/NA	Analysis	314.0		1	633633	Y1S	EET SAC	11/17/22 15:13
Total/NA	Analysis	300.0		1	412160	JHR	EET SEA	12/03/22 03:49

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Matrix: Water

Lab Sample ID: 580-119973-10

Lab Chronicle

Client: ERM-West Job ID: 580-119973-1

Project/Site: Arkema - Q4 2022 Groundwater Event

Client Sample ID: PA-24d-111022

Lab Sample ID: 580-119973-11 Date Collected: 11/10/22 07:47 **Matrix: Water**

Date Received: 11/11/22 11:35

	Batch	Batch		Dilution	Batch			Prepared
Prep Type	Туре	Method	Run	Factor	Number	Analyst	Lab	or Analyzed
Total/NA	Analysis	8260D		1	410922	BNM	EET SEA	11/23/22 15:43
Total/NA	Analysis	314.0		100	633633	Y1S	EET SAC	11/17/22 16:10
Total/NA	Analysis	300.0		1000	412160	JHR	EET SEA	12/03/22 04:12

Client Sample ID: MWA-31i(d)-111022

Lab Sample ID: 580-119973-12 Date Collected: 11/10/22 08:32 **Matrix: Water**

Date Received: 11/11/22 11:35

	Batch	Batch		Dilution	Batch			Prepared
Prep Type	Туре	Method	Run	Factor	Number	Analyst	Lab	or Analyzed
Total/NA	Analysis	8260D		1	410922	BNM	EET SEA	11/23/22 16:07
Total/NA	Analysis	314.0		2000	633633	Y1S	EET SAC	11/17/22 16:29
Total/NA	Analysis	300.0		1000	412160	JHR	EET SEA	12/03/22 04:59

Client Sample ID: PA-20d-111022

Lab Sample ID: 580-119973-13 Date Collected: 11/10/22 09:26 **Matrix: Water**

Date Received: 11/11/22 11:35

	Batch	Batch		Dilution	Batch			Prepared
Prep Type	Type	Method	Run	Factor	Number	Analyst	Lab	or Analyzed
Total/NA	Analysis	8260D		1	410922	BNM	EET SEA	11/23/22 17:20
Total/NA	Analysis	314.0		10	633633	Y1S	EET SAC	11/17/22 17:26
Total/NA	Analysis	300.0		100	412170	JHR	EET SEA	12/06/22 00:23

Client Sample ID: PA-21d-111022

Date Collected: 11/10/22 10:13 **Matrix: Water**

Date Received: 11/11/22 11:35

	Batch	Batch		Dilution	Batch			Prepared
Prep Type	Type	Method	Run	Factor	Number	Analyst	Lab	or Analyzed
Total/NA	Analysis	8260D		100	410922	BNM	EET SEA	11/23/22 18:57
Total/NA	Analysis	314.0		50	633633	Y1S	EET SAC	11/17/22 17:45
Total/NA	Analysis	300.0		100	412170	JHR	EET SEA	12/06/22 00:46

Client Sample ID: PA-19d-111022

Lab Sample ID: 580-119973-15 Date Collected: 11/10/22 10:59 **Matrix: Water**

Date Received: 11/11/22 11:35

_	Batch	Batch		Dilution	Batch			Prepared
Prep Type	Type	Method	Run	Factor	Number	Analyst	Lab	or Analyzed
Total/NA	Analysis	8260D			410922	BNM	EET SEA	11/23/22 19:21
Total/NA	Analysis	314.0		10	633633	Y1S	EET SAC	11/17/22 18:04
Total/NA	Analysis	300.0		100	412170	JHR	EET SEA	12/06/22 00:58

Eurofins Seattle

Lab Sample ID: 580-119973-14

Lab Chronicle

Client: ERM-West Job ID: 580-119973-1

Project/Site: Arkema - Q4 2022 Groundwater Event

Client Sample ID: PA-30d-111022

Lab Sample ID: 580-119973-16 Date Collected: 11/10/22 12:09

Matrix: Water

Date Received: 11/11/22 11:35

	Batch	Batch		Dilution	Batch			Prepared
Prep Type	Type	Method	Run	Factor	Number	Analyst	Lab	or Analyzed
Total/NA	Analysis	8260D		200	410922	BNM	EET SEA	11/23/22 19:46
Total/NA	Analysis	314.0		10	633633	Y1S	EET SAC	11/17/22 18:23
Total/NA	Analysis	300.0		100	412170	JHR	EET SEA	12/06/22 01:33

Lab Sample ID: 580-119973-17 Client Sample ID: MWA-11i(d)-111022

Date Collected: 11/10/22 13:00 **Matrix: Water**

Date Received: 11/11/22 11:35

	Batch	Batch		Dilution	Batch			Prepared
Prep Type	Type	Method	Run	Factor	Number	Analyst	Lab	or Analyzed
Total/NA	Analysis	8260D		1	409881	K1K	EET SEA	11/14/22 20:59
Total/NA	Analysis	8260D	RA	1	410044	K1K	EET SEA	11/15/22 17:13
Total/NA	Analysis	314.0		20	633633	Y1S	EET SAC	11/17/22 18:42
Total/NA	Analysis	300.0		100	412170	JHR	EET SEA	12/06/22 01:45

Laboratory References:

EET SAC = Eurofins Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

EET SEA = Eurofins Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

Accreditation/Certification Summary

Client: ERM-West Job ID: 580-119973-1

Project/Site: Arkema - Q4 2022 Groundwater Event

Laboratory: Eurofins Seattle

The accreditations/certifications listed below are applicable to this report.

Oregon NELAP 4167 07-08-23	Authority	Program	Identification Number	Expiration Date
	Oregon		4167	07-08-23

Laboratory: Eurofins Sacramento

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Oregon	NELAP	4040	01-29-23

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Sample Summary

Client: ERM-West Job ID: 580-119973-1

Project/Site: Arkema - Q4 2022 Groundwater Event

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-119973-1	TB-110922	Water	11/09/22 00:01	11/11/22 11:35
580-119973-2	MWA-63-110922	Water	11/09/22 06:33	11/11/22 11:35
580-119973-3	PA-04-110922	Water	11/09/22 07:23	11/11/22 11:35
580-119973-4	PA-10i-110922	Water	11/09/22 07:50	11/11/22 11:35
580-119973-5	PA-22d-110922	Water	11/09/22 08:43	11/11/22 11:35
580-119973-6	MWA-56d-110922	Water	11/09/22 09:34	11/11/22 11:35
580-119973-7	MWA-58d-110922	Water	11/09/22 10:22	11/11/22 11:35
580-119973-8	Dup-02-110922	Water	11/09/22 10:23	11/11/22 11:35
580-119973-9	PA-23d-111022	Water	11/10/22 06:49	11/11/22 11:35
580-119973-10	RB-02-111022	Water	11/10/22 07:20	11/11/22 11:35
580-119973-11	PA-24d-111022	Water	11/10/22 07:47	11/11/22 11:35
580-119973-12	MWA-31i(d)-111022	Water	11/10/22 08:32	11/11/22 11:35
580-119973-13	PA-20d-111022	Water	11/10/22 09:26	11/11/22 11:35
580-119973-14	PA-21d-111022	Water	11/10/22 10:13	11/11/22 11:35
580-119973-15	PA-19d-111022	Water	11/10/22 10:59	11/11/22 11:35
580-119973-16	PA-30d-111022	Water	11/10/22 12:09	11/11/22 11:35
580-119973-17	MWA-11i(d)-111022	Water	11/10/22 13:00	11/11/22 11:35

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5755 8th Street East

Tacoma, WA 98424 Phone (253) 922-2310 Fax (253) 922-5047

Eurofins TestAmerica, Seattle

Chain of Custody Record



🔆 curofins

Estatorina (Catalo SydAmerica

Titure (233) 922-2310 Pax (233) 922-3047	Sample Scott Torra Cru					PM:			580-119973 Chain of Custody									COC No:		
Client Information						z, Sh	Sheri L 300-119973 Citain of Custody													
Client Contact: Avery Sopiata, Andrew Gardner, and Sarah Seekins	Phone;	503	307 -	- 20	3 E-Ma		cruz@testamericainc.com												Page: / of	<u>. </u>
Company: ERM-West										A	nalys	is R	eque	sted					Job#:	
Address: 1050 SW 6th Avenue Suite 1650	Due Da	ate Reques	ited:					T	T	T	ΤÍ	T	Ì		Т	TT			Preservation Cod	es:
City: Portland	TAT R	AT Requested (days): 15BD																	A - HCL B - NaOH	M - Hexane N - None
State, Zip:	1	15BD															l		C - Zn Acetate D - Nitric Acid	O - AsNaO2 P - Na2O4S
OR, 97204 Phone:	PO #:			···········		Displayed in	attle												E - NaHSO4 F - MeOH	Q - Na2SO3 R - Na2S2O3
Email:	PN 06 WO#:	29640.20)7			6	list-S	<u>a</u>											G - Amchier H - Ascerbic Acid	S - H2SO4 T - TSP Dodecahydrate
avery.sopiata@erm.com, andrew.gardner@erm.com and saran.seekins@erm.com Project Name:						S OT N	Š Š	st-Seat										82	I - ice J - DI Water K - EDTA	U - Acetone V - MCAA W - pH 4-5
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5755 8th Street East Tacoma, WA 98424

Chain of Custody Record

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Email: avery.soplata@erm.com, andrew.gardner@erm.com and sarah.seekins@erm.com	WO #:					s or No	VOA III	st-Seatti										270		-ice U J-D) Water V	I - Acetone - MCAA V - pH 4-5	
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rer: 01/16/2018 2/14/2021

Eurofins Seattle

Phone: 253-922-2310 Tacoma, WA 98424 5755 8th Street East

Environment Testing

Chain of Custody Record

eurofins

T - TSP Dodecahydrate Special Instructions/Note: Vote: Since laboratory accreditations are subject to change, Eurofins Environment Testing Northwest, LLC places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the Z - other (specify) N - None O - AsNaO2 P - Na2O4S Q - Na2SO3 R - Na2S2O3 S - H2SO4 W - pH 4-5 Y - Trizma U - Acetone Preservation Codes: A - HCL
B - NaOH
C - Zn Acetate
D - Nitric Acid
F - NaHSO4
F - NaHSO4
G - Amchlor
H - Ascorbic Acid COC No: 580-111736.1 580-119973-1 Page 1 of 2 1 - Ice J - DI Water K - EDTA L - EDA Total Number of containers Carrier Tracking No(s) State of Origin: Oregon **Analysis Requested** Accreditations Required (See note)
NELAP - Oregon E-Mail: Sheri.Cruz@et.eurofinsus.com × × × × × × × × × 914.0/ Perchlorate Lab PM: Cruz, Sheri L Perform MS/MSD (Yes or No) Field Filtered Sample (Yes or No) (W=water, S=solid, O=waste/oil, BT=Tissue, Preservation Code: Water Water Water Water Water Water Water Water Water Matrix A=Air) (C=comp, G=grab) Sample Type Sample Pacific 09:34 Pacific 07:23 Pacific 07:50 Pacific 08:43 Pacific 06:49 Pacific 07:20 Pacific 10:22 Pacific 10:23 Time 06:33 12/5/2022 TAT Requested (days): Due Date Requested: Sample Date 11/10/22 11/10/22 11/10/22 11/10/22 11/10/22 11/10/22 11/10/22 11/10/22 11/10/22 Project #: 58016290 SSOW#: Phone: :# OM (Sub Contract Lab) Eurofins Environment Testing Northern Ca Sample Identification - Client ID (Lab ID) Project Name: Arkema - Q4 2022 Groundwater Event-I 916-373-5600(Tel) 916-372-1059(Fax) MWA-56d-110922 (580-119973-6) MWA-58d-110922 (580-119973-7) MWA-63-110922 (580-119973-2) PA-22d-110922 (580-119973-5) Dup-02-110922 (580-119973-8) PA-23d-111022 (580-119973-9) RB-02-111022 (580-119973-10) PA-10i-110922 (580-119973-4) PA-04-110922 (580-119973-3) Client Information 880 Riverside Parkway, Client Contact: Shipping/Receiving West Sacramento State, Zip: CA, 95605 Page 79 of 83

aboratory does not currently maintain accreditation in the State of Origin listed above for analysis/lests/matrix being analyzed, the samples must be shipped back to the Eurofins Environment Testing vorthwest, LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to Eurofins Environment Testing Northwest, LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to Eurofins Environment Testing Northwest, LLC.

Possible Hazard Identification		Sample Disposal (A fee may be a	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)	in 1 month)
Unconfirmed		Return To Client	Disposal By Lab	Months
Deliverable Requested: I, II, III, IV, Other (specify)	Primary Deliverable Rank: 2	Requi		SIBIOM
Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:	
Relinquished by:	Date/Time: 1405	Company Received by	Date/Time: Date/	Сомпару
Relinquished by:	Date/Tithe:	Company Received 6.	Date/Time:	Company
Relinquished by:	Date/Time:	Company Received by:	Date/Time:	Company
Custody Seals Intact: Custody Seal No.:	8098CE1	Cooler Temperature(s) °C and Other Remarks.	larks.	

: eurofins

Environment Testing

Chain of Custody Record

Eurofins Seattle

Phone: 253-922-2310 Facoma, WA 98424 5755 8th Street East

S - H2SO4 T - TSP Dodecahydrate U - Acetone Note: Since laboratory accreditations are subject to change, Eurofins Environment Testing Northwest, LLC places the ownership of method, analyte & accreditation compliance upon out subcontract laboratory or other instructions will be provided. Any changes to laboratory or other instructions will be provided. Any changes to accreditation in the State of Origin listed above for analysis/lests/matrix being analyzed, the samples must be shipped back to the Eurofins Environment Testing Northwest, LLC alterition immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to Eurofins Environment Testing Northwest, LLC. Special Instructions/Note: Z - other (specify) P - Na2O4S Q - Na2SO3 R - Na2S2O3 N - None O - AsNaO2 W - pH 4-5 Preservation Codes: COC No: 580-111736.2 H - Ascorbic Acid 580-119973-1 A - HCL B - NaOH C - Zn Acetate D - Nitric Acid E - NaHSO4 F - MeOH G - Amchlor Page 2 of 2 J - DI Water K - EDTA L - EDA Total Number of containers τ--Carrier Tracking No(s) State of Origin: Oregon **Analysis Requested** Accreditations Required (See note) NELAP - Oregon E-Mail: Sheri.Cruz@et.eurofinsus.com × × × × × × × × 314.0/ Perchlorate × Lab PM: Cruz, Sheri L erform MS/MSD (Yes or No) Field Filtered Sample (Yes or No) Preservation Code: (W=water, S=solid, O=waste/oil, BT=Tissue, Water Matrix Water Water Water Water Water Water Water Water A=Air) Type (C=comp, Sample G=grab) MSD MS Sample Pacific 10:13 Pacific 08:32 Pacific 08:32 Pacific 09:26 Pacific 10:59 Pacific 13:00 Time (days): Due Date Requested: 12/5/2022 Sample Date 11/10/22 11/10/22 11/10/22 11/10/22 11/10/22 11/10/22 11/10/22 11/10/22 11/10/22 Project #: 58016290 (Sub Contract Lab) Eurofins Environment Testing Northern Ca Sample Identification - Client ID (Lab ID) MWA-31i(d)-111022 (580-119973-12MSD) MWA-31i(d)-111022 (580-119973-12MS) 916-373-5600(Tel) 916-372-1059(Fax) Arkema - Q4 2022 Groundwater Event-I MWA-31i(d)-111022 (580-119973-12) WWA-11i(d)-111022 (580-119973-17) PA-24d-111022 (580-119973-11) PA-20d-111022 (580-119973-13) PA-21d-111022 (580-119973-14) PA-19d-111022 (580-119973-15) PA-30d-111022 (580-119973-16) Client Information 880 Riverside Parkway, Shipping/Receiving West Sacramento State, Zip: CA, 95605 Project Name mail

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) Possible Hazard Identification

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2	V Yes △ No	C198C1	Cooler Temper	Cooler Temperature(s) °C and Other Remarks	しかり	

Client: ERM-West Job Number: 580-119973-1

Login Number: 119973 List Source: Eurofins Seattle

List Number: 1

Creator: O'Connell, Jason I

Creator. O Connen, Jason I		
Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>True</td> <td></td>	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Client: ERM-West Job Number: 580-119973-1

Login Number: 119973 List Source: Eurofins Sacramento

List Number: 2

Creator: Simmons, Jason C

Creator. Similions, Jason C		
Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>True</td> <td></td>	True	
The cooler's custody seal, if present, is intact.	True	1728692
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	2.5c
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	False	Received project as a subcontract.
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Job:

Environment Testing

TestAmerica

Tracking #: 60064664127 2-Day / Ground / UPS / CDO / Courier GSO / OnTrac+Goldstreak / USPS / Other_

Use this form to record Sample Custody Seal, Cooler Custody Seal, Temp File in the job folder with the COC.	perature & corrected Temperature & other observations.
Therm. ID Corr. Factor: (+/-) °C Ice Wet Gel Other Cooler Custody Seal: Temp Observed: °C From: Temp Blank D Sample D	Notes:
Opening/Processing The Shipment Cooler compromised/tampered with? Cooler Temperature is acceptable? Frozen samples show signs of thaw? Initials: Date:	
Unpacking/Labeling The Samples COC is complete w/o discrepancies? Samples compromised/tampered with? Containers are not broken or leaking? Sample custody seal? Sample containers have legible labels? Sample date/times are provided? Appropriate containers are used? Sample bottles are completely filled? Sample preservatives verified? Is the Field Sampler's name on COC? Samples require splitting/compositing? Samples w/o discrepancies? Zero headspace?* Alkalinity has no headspace? (Methods 314, 331, 6850) Multiphasic samples are not present?	Trizma Lot #(s): Login Completion Receipt Temperature on COC? Samples received within hold time? NCM Filed? Log Release checked in TALS?
*Containers requiring zero headspace have no headspace, or bubble < 6 mm (1/4") Initials: Date: 1/1/1/1/1/1/1/1/1/1/1/1/1/1/1/1/1/1/1/	Initials: Date: 111000

APPENDIX C DATA VALIDATION MEMOS



1050 SW 6th Avenue Suite 1650 Portland, OR 97204 Telephone: (503) 488-5282 Fax: (503) 488-5124

www.erm.com

Memorandum



То	Sarah Seekins
From	Jack James
Date	21 December 2022
Reference	0629640
Subject	Data Review of Arkema Fourth Quarter 2022 Groundwater Samples: Eurofins Data Packages: 580-119876-1 and 580-119973-1.

The data quality was assessed and any necessary qualifiers were applied following the *USEPA National Functional Guidelines for Organic Superfund Methods Data Review,* November 2020 and the *USEPA National Functional Guidelines for Inorganic Superfund Methods Data Review,* November 2020. Field duplicates were assessed following *Environmental Data Review Supplement for Region 1 Data Review Elements and Superfund Specific Guidance/Procedures,* September 2020.

NON-PREFERRED RESULTS

The laboratory re-analyzed several samples for volatile organic compounds (VOCs) due to laboratory quality control failures in the initial analysis. ERM selected the preferred results between the initial and the re-analysis based on professional judgment. The non-preferred results and professional judgment used for the selection are presented in Table 1.

CASE NARRATIVE COMMENTS

The laboratory described that the middle bracket continuing calibration blank (CCB) was not injected by the auto-sampler in analytical batch 320-635026 for perchlorate. However, the initial calibration blank, the method blank, and the closing bracket CCB, were all non-detect for the analyte. Additionally, perchlorate was not detected in the associated samples; therefore, laboratory introduced contamination is not suspected and qualifications were not necessary.

HOLDING TIME AND PRESERVATION EVALUATION

The samples were prepared and analyzed within the method-prescribed time period from the date of collection, with the exceptions listed in Table 2. One sample was re-analyzed for VOCs due to laboratory quality control failures in the initial analysis. Consequently, the detected result was qualified as an estimate with no bias (J). Additionally, the laboratory analyzed two samples past the recommended hold time for VOCs due to a laboratory error. The detected results were qualified as estimates with no bias (J). The non-detect results were compared to historical data and were in agreement; therefore, they were qualified as estimated non-detects (UJ) and not rejected.

The sample shipments were received at the laboratory within the method-prescribed temperature preservation requirements of less than 6°C. No qualifications were necessary.

BLANK EVALUATION

The method, rinse, and trip blank sample results were non-detected for each of the target analytes, with the exceptions noted in Table 3. Non-detected results or results greater than five times the blank concentration for organics (or 10 times for the common laboratory contaminant acetone and inorganics) were considered not affected by the blank contamination and were not qualified. Associated sample results within five times (ten times for acetone) the method blank concentration, as adjusted for dilution, and less than the reporting limit (RL) were qualified as non-detect (U). Associated sample results greater than the RL but less than five times (ten times for acetone and inorganics) the method blank concentration, as adjusted for dilution, were qualified as estimates with a high bias (J+).

CONTINUING CALIBRATION VERIFICATION EVALUATION

The CCV recoveries were within the laboratory's limits of acceptance, with the exceptions noted in Table 4. No qualifications were applied for non-detected results associated with high CCV recoveries or if the sample results were not associated with the CCV recoveries. Detected sample results associated with high recoveries were qualified as estimates with a high bias (J+). Sample results associated with low recoveries were qualified as estimates (UJ) for non-detects. Sample results associated with CCV recoveries that were described as "out" with no bias indicated were qualified as estimates (J) with no bias for detected results and non-detects as estimates (UJ).

BLANK SPIKE EVALUATION

The laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) recoveries and relative percent differences (RPDs) were within the laboratory's limits of acceptance, with the exceptions listed in Table 5. Non-detect results were not affected by high RPDs and were not qualified. Additionally, no qualifications were required based upon high LCS/LCSD recoveries if the associated samples were non-detected, or if an outlier could be verified by another in-control recovery. One detected sample result associated high LCS/LCSD recoveries were qualified as estimated with no bias (J) due to the additional CCV recovery outlier.

MATRIX SPIKE EVALUATION

The laboratory prepared two samples for matrix spike (MS) and matrix spike duplicate (MSD) analysis. The recoveries and RPDs were within laboratory limits of acceptance, with several exceptions listed in Table 5. Non-detect results were not affected by high RPDs and were not qualified. Additionally, no qualifications were required based upon high MS/MSD recoveries if the associated samples were non-detected, or if an outlier could be verified by another in-control recovery. Detected sample results associated with high recoveries were qualified as estimates with a high bias (J+) unless the result was also associated with a high RPD or an additional CCV recovery outlier. In those instances, the results were qualified as estimates with no bias (J). One sample result was qualified as an estimate with a low bias (J-) due to low MS/MSD recoveries.

SURROGATE SPIKE EVALUATION

The surrogate recoveries were within acceptable limits, with one exception. Qualifications were not necessary due to the high surrogate recovery as the associated sample result was non-detect. The surrogate recovery outlier is presented in Table 6.

CALIBRATION RANGE EXCEEDANCES

The MS/MSD samples prepared from MWA-31i(d)-111022 exceeded the calibration range of the instrument. The parent sample was reported from a dilution within the calibrated range and the MS/MSD recoveries were within laboratory control limits. No qualifications were necessary due to the MS/MSD result being over the calibrated range and they were not presented in this memorandum.

FIELD DUPLICATE EVALUATION

Two samples were submitted in duplicate. ERM calculated the differences or RPDs between detected results in Table 7. An RPD control limit of 30 was used when both the sample and the field duplicate results were greater than or equal to five times the RL. A control limit of \pm two times the reporting limit was used when at least one of the results was less than five times the RL. The control limits were not applicable when both results were below the RLs or if one result was not detected and the other was less than the RL. All analytes in the parent sample/field duplicate pairs met the control limits.

OVERALL ASSESSMENT

No results were rejected. All of the data, including qualified data, can be used for decision-making purposes; however, the limitations indicated by the applied qualifiers should be considered when using the data. The quality of the data generated during this investigation is acceptable for the preparation of technically defensible documents.

Table 1 Samples with Non-Preferred Results Fourth Quarter 2022 Groundwater Samples Arkema Portland Portland, Oregon

Lab Package	Sample ID	Method	Analysis Date/Time	Reason	Analyte	Result	Units
				Sample re-analyzed out	1,1,1-Trichloroethane	ND	μg/L
			12/7/2022 21:02	of hold and confirms, in-	Methyl tert-butyl ether	ND	μg/L
			(batch 580-412244)	hold result is preferred	1,3-Dichlorobenzene	ND	μg/L
580-119876-1	PA-27D-110822	SW8260D		·	Methylene chloride	ND	μg/L
			11/18/2022 18:47 (batch 580-410498)	The out-of-hold (preferred) result is greater than the in-hold	1,2,4-Trichlorobenzene	ND	μg/L
					1,2,4-Trichlorobenzene	ND	μg/L
				Sample re-analyzed out	1,1,1-Trichloroethane	ND	µg/L
	MWA-56D-110922 MWA-63-110922	SW8260D	12/12/22 14:11 (batch 580-412592)	of hold and confirms, in-	Methyl tert-butyl ether	ND	μg/L
				hold result is preferred	1,3-Dichlorobenzene	ND	μg/L
					Methylene chloride	ND	μg/L
			12/7/12 00:28 (batch 580-412100)		1,2,4-Trichlorobenzene	ND	μg/L
				Sample re-analyzed out	1,1,1-Trichloroethane	ND	μg/L
580-119973-1		SW8260D		of hold and confirms, in-	Methyl tert-butyl ether	ND	μg/L
			(batch 300-412100)	hold result is preferred	1,3-Dichlorobenzene	ND	μg/L
					Methylene chloride	ND	μg/L
					1,2,4-Trichlorobenzene	ND	μg/L
			12/12/22 13:45	Sample re-analyzed out	1,1,1-Trichloroethane	ND	μg/L
	PA-22D-110922	SW8260D	(batch 580-412592)	of hold and confirms, in-	Methyl tert-butyl ether	ND	μg/L
			(50001 500 412532)	hold result is preferred	1,3-Dichlorobenzene	ND	μg/L
					Methylene chloride	ND	μg/L

Lab packages reviewed: 580-119876-1 and 580-119973-1

Notes:

ND= Not detected

μg/L = Micrograms per liter

Table 2
Samples with Exceeded Holding Times
Fourth Quarter 2022 Groundwater Samples
Arkema Portland
Portland, Oregon

Lab Package	Sample ID	Method	Analysis Holding Time	Time Exceeded	Affected Analyte	ERM Qualifier
580-119876-1	PA-27D-110822	SW8260D	14 days	15 days	1,2,4-Trichlorobenzene (12/07/22 21:02)	J
					Chloroform	J
	DUP-02-110922	SW8260D	14 days	14 days	Bromodichloromethane	J
	DOP-02-110922		14 days	14 days	Remaining non-detect analytes	UJ
580-119973-1			14 days	15 days	Chloroform	J
					Bromomethane	J
	MWA-58D-110922	SW8260D	14 days	14 days	Bromodichloromethane	J
			14 days	14 days	Remaining non-detect analytes	UJ

Lab packages reviewed: 580-119876-1 and 580-119973-1

Notes:

J = Estimated detected result

UJ = *Nondetected*, *estimated* report *limit*

Table 3
Blank and Associated Suspect Sample Detections
Fourth Quarter 2022 Groundwater Samples
Arkema Portland
Portland, Oregon

Lab Package	Blank ID	Associated Sample	Detected Analyte	Reported Blank Concentration	Blank Report Limit	Associated Sample Result	Associated Sample Report Limit	Units	ERM Qualifier
		None for qualification, samples ND	Dibromochloromethane	0.0715	0.20			μg/L	
	MB 580-409568/7	TB-110722	1,2-Dibromo-3- chloropropane	0.196	2.0	0.19	2.0	μg/L	2.0 U
580-119876-1		None for qualification, samples ND	Bromoform	0.211	0.50			μg/L	
			Hexachlorobutadiene	0.0729	0.50			μg/L	
	MB 580-409881/7	None for qualification,	Dibromochloromethane	0.0736	0.20			μg/L	
	WID 300 403001/1	samples ND	1,2-Dibromo-3- chloropropane	0.199	2.0			μg/L	
	MB 580-410498/5	None for qualification, samples ND	1,2,4-Trichlorobenzene	0.397	1.0			μg/L	
			trans-1,2-Dichloroethene	0.428	1.0			μg/L	
			1,2,3-Trichlorobenzene	1.02	2.0			μg/L	
			Naphthalene	1.70	3.0			μg/L	
	RB-01-110822	None for qualification, samples ND	Chloride	0.61	1.5			mg/L	
	RB-01-110822	None for qualification, samples ND	Chlorobenzene	0.15	0.20			μg/L	
	RB-01-110822	None for qualification, samples ND	Chloromethane	0.15	0.50			μg/L	
	TB-110722	None for qualification, samples ND	1,2-Dibromo-3- chloropropane	0.19	2.0			μg/L	

Table 3
Blank and Associated Suspect Sample Detections
Fourth Quarter 2022 Groundwater Samples
Arkema Portland
Portland, Oregon

Lab Package	Blank ID	Associated Sample	Detected Analyte	Reported Blank Concentration	Blank Report Limit	Associated Sample Result	Associated Sample Report Limit	Units	ERM Qualifie
			Hexachlorobutadiene	0.0729	0.067			μg/L	
	MD 500 400004/7	None for qualification,	Dibromochloromethane	0.0736	0.055			μg/L	
	MB 580-409881/7	samples ND	1,2-Dibromo-3- chloropropane	0.199	0.17			μg/L	
			1,2,4-Trichlorobenzene	0.397	0.33			μg/L	
	MB 580-410498/5	None for qualification,	trans-1,2-Dichloroethene	0.428	0.39			μg/L	
580-119973-1	WID 300-410490/3	samples ND	1,2,3-Trichlorobenzene	1.02	0.43			μg/L	
			Naphthalene	1.70	0.93			μg/L	
		PA-20D-111022	1,2,4-Trichlorobenzene	0.758	1.0	0.44	1.0	μg/L	1.0 U
		None for qualification,	Hexachlorobutadiene	0.803	3.0			μg/L	
	MB 580-410922/4	samples ND	Naphthalene	0.953	3.0			μg/L	
		PA-20D-111022	1,2,3-Trichlorobenzene	1.05	2.0	0.63	2.0	μg/L	2.0 U
		None for qualification, samples ND PA-20D-111022	1,2-Dibromo-3- chloropropane	1.11	3.0			μg/L	
			4-Methyl-2-pentanone	3.52	5.0			μg/L	
			2-Butanone	6.95	15			μg/L	
			Acetone	8.79	15	8.0	15	μg/L	15 U
		RB-02-111022	Acetone	0.79	13	8.1	15	μg/L	15 U
	MB 580-412244/6	MWA-58D-110922	Bromomethane	0.400	1.0	0.41	1.0	μg/L	1.0 U
	RB-02-111022	None for qualification, samples ND	Chloroform	0.88	1.0	0.11	0.20	μg/L	0.20 U

Lab packages reviewed: 580-119876-1 and 580-119973-1

Notes:

MB = Method blank

ND = Not detected

RB = Rinse blank

TB = Trip blank

U = Non-detected

 μ g/L = Micrograms per liter

Table 4
Calibration Verification Recoveries Outside of Acceptable Limits
Fourth Quarter 2022 Groundwater Samples
Arkema Portland
Portland, Oregon

Lab Package	CCV Sample ID	Analyte	CCV Recovery (%)	CCV Limits (%)	Associated Sample	Reported Concentration	Units	ERM Qualifier	
		Carbon disulfide	High	NR	None for qualification	ND	μg/L		
		Acetone	High	NR	None for qualification	ND	μg/L		
		Vinyl chloride	High	NR	None for qualification	ND	μg/L		
		Dichlorodifluoromethane	High	NR	None for qualification	ND	μg/L		
		Bromomethane	High	NR	None for qualification	ND	μg/L		
					DUP-01-110822	0.17	μg/L	J	
					MWA-41-110722	ND	μg/L	UJ	
	Batch 580-409568 CCV				MWA-81I-110722	ND	μg/L	UJ	
		Chloromethane			MWA-82-110722	0.26	μg/L	J	
			0.4			PA-03-110822	0.20	μg/L	J
580-119876-1							PA-08-110722	0.15	μg/L
				ND	PA-09-110822	0.17	μg/L	J	
					PA-15I-110722	ND	μg/L	UJ	
			Out	NR	PA-16I-110822	ND	μg/L	UJ	
					PA-25D-110722	ND	μg/L	UJ	
					PA-26D-110822	ND	μg/L	UJ	
					PA-31-110822	ND	μg/L	UJ	
					PA-32I-110822	ND	μg/L	UJ	
					PA-44I-110722	ND	μg/L	UJ	
					RB-01-110822	0.15	μg/L	J	
					TB-110722	ND	μg/L	UJ	

Table 4
Calibration Verification Recoveries Outside of Acceptable Limits
Fourth Quarter 2022 Groundwater Samples
Arkema Portland
Portland, Oregon

Lab Package	CCV Sample ID	Analyte	CCV Recovery (%)	CCV Limits (%)	Associated Sample	Reported Concentration	Units	ERM Qualifier																
					DUP-01-110822	ND	μg/L	UJ																
					MWA-41-110722	ND	μg/L	UJ																
					MWA-81I-110722	ND	μg/L	UJ																
					MWA-82-110722	ND	μg/L	UJ																
					PA-03-110822	ND	μg/L	UJ																
					PA-08-110722	ND	μg/L	UJ																
					PA-09-110822	ND	μg/L	UJ																
580-119876-1	Batch 580-409568	Chloroethane	Out	NR	PA-15I-110722	ND	μg/L	UJ																
	CCV	Chioroethane	Out	INIX	PA-16I-110822	ND	μg/L	UJ																
					PA-25D-110722	ND	μg/L	UJ																
					PA-26D-110822	ND	μg/L	UJ																
																						PA-31-110822	ND	μg/L
000 110070 1					PA-32I-110822	0.57	μg/L	J																
					PA-44I-110722	ND	μg/L	UJ																
					RB-01-110822	ND	μg/L	UJ																
					TB-110722	ND	μg/L	UJ																
		Carbon disulfide	High	NR	None for qualification	ND	μg/L																	
		Dichlorodifluoromethane	High	NR	None for qualification	ND	μg/L																	
	Batch 580-409881	Acetone	High	NR	PA-17IR-110822	37	μg/L	J+																
	CCV	Chloromethane	High	NR	None for qualification	ND	μg/L																	
		Chloroethane	High	NR	None for qualification	ND	μg/L																	
		Bromomethane	High	NR	None for qualification	ND	μg/L																	
	Batch 580-410498 CCV	4-Methyl-2-pentanone	Out	NR	PA-27D-110822	ND	μg/L	UJ																

Table 4
Calibration Verification Recoveries Outside of Acceptable Limits
Fourth Quarter 2022 Groundwater Samples
Arkema Portland
Portland, Oregon

Lab Package	CCV Sample ID	Analyte	CCV Recovery (%)	CCV Limits (%)	Associated Sample	Reported Concentration	Units	ERM Qualifier
580-119876-1	Batch 580-410498 CCV	Chloromethane	Out	NR	PA-27D-110822	ND	μg/L	UJ
		Acetone	Out	NR	PA-27D-110822	3.5	μg/L	J
		Dichlorodifluoromethane	Out	NR	PA-27D-110822	ND	μg/L	UJ
		Chloroethane	Out	NR	PA-27D-110822	ND	μg/L	UJ
		Carbon disulfide	Out	NR	PA-27D-110822	ND	μg/L	UJ
		cis-1,3-Dichloropropene	High	NR	None for qualification	ND	μg/L	
		trans-1,3-Dichloropropene	High	NR	None for qualification	ND	μg/L	
		1,2,4-Trichlorobenzene	Low	NR	None for qualification, associated result is non- preferred		μg/L	
		Methylene Chloride	Low	NR	PA-27D-110822	ND	μg/L	UJ
		1,3-Dichlorobenzene	Low	NR		ND	μg/L	UJ
		1,1,1-Trichloroethane	Low	NR		ND	μg/L	UJ
		Methyl tert-butyl ether	Low	NR		ND	μg/L	UJ
	Batch 580-412244 CCV	Methylene Chloride	Low	NR	None for qualification, associated result is non- preferred		μg/L	
580-119973-1	Batch 580-409881 CCV	Carbon disulfide	High	NR	None for qualification	ND	μg/L	
		Dichlorodifluoromethane	High	NR	None for qualification	ND	μg/L	
		Acetone	High	NR	None for qualification	ND	μg/L	
	Batch 580-409881 CCV	Chloromethane	High	NR	PA-10I-110922	0.19	μg/L	J+
		Chloroethane	High	NR	None for qualification	ND	μg/L	
		Bromomethane	High	NR	None for qualification	ND	μg/L	

Table 4
Calibration Verification Recoveries Outside of Acceptable Limits
Fourth Quarter 2022 Groundwater Samples
Arkema Portland
Portland, Oregon

Lab Package	CCV Sample ID	Analyte	CCV Recovery (%)	CCV Limits (%)	Associated Sample	Reported Concentration	Units	ERM Qualifier
					MWA-56D-110922	ND	μg/L	UJ
		4-Methyl-2-pentanone	Out	NR	MWA-63-110922	ND	μg/L	UJ
					PA-22D-110922	ND	μg/L	UJ
					MWA-56D-110922	ND	μg/L	UJ
		Chloromethane	Out	NR	MWA-63-110922	ND	μg/L	UJ
					PA-22D-110922	ND	μg/L	UJ
					MWA-56D-110922	ND	μg/L	UJ
		Acetone	Out	NR	MWA-63-110922	ND	μg/L	UJ
					PA-22D-110922	ND	μg/L	UJ
580-119973-1	Batch 580-410498				MWA-56D-110922	ND	μg/L	UJ
300-119973-1	CCV	Dichlorodifluoromethane	Out	NR	MWA-63-110922	ND	μg/L	UJ
					PA-22D-110922	ND	μg/L	UJ
					MWA-56D-110922	ND	μg/L	UJ
		Chloroethane	Out	NR	MWA-63-110922	ND	μg/L	UJ
					PA-22D-110922	ND	μg/L	UJ
					MWA-56D-110922	ND	μg/L	UJ
		Carbon disulfide	Out	NR	MWA-63-110922	ND	μg/L	UJ
					PA-22D-110922	ND	μg/L	UJ
		cis-1,3-Dichloropropene	High	NR	None for qualification	ND	μg/L	
		trans-1,3-Dichloropropene	High	NR	None for qualification	ND	μg/L	

Table 4
Calibration Verification Recoveries Outside of Acceptable Limits
Fourth Quarter 2022 Groundwater Samples
Arkema Portland
Portland, Oregon

Lab Package	CCV Sample ID	Analyte	CCV Recovery (%)	CCV Limits (%)	Associated Sample	Reported Concentration	Units	ERM Qualifier
		Dichlorodifluoromethane	High	NR	None for qualification	ND	μg/L	
580-119973-1	Batch 580-410922	Vinyl Chloride	High	NR	None for qualification	ND	μg/L	
360-119973-1	CCV	Chloromethane	High	NR	None for qualification	ND	μg/L	
		Bromomethane	High	NR	None for qualification	ND	μg/L	

Notes:

CCV = Continuing calibration verification

High = Recovery above maximum acceptable limit

J = Detected results are estimated with no bias

J+ = *Detected results are estimated with a high bias*

Low = Recovery below minimum acceptable limit

ND = Not detected

NR = Not reported

Out = Result was outside of control limits

RB = Rinse blank

TB = Trip blank

μg/L = Micrograms per liter

UJ = *Non-detected*, estimated report limit

Table 5
Spike Recoveries Outside of Acceptable Limits
Fourth Quarter 2022 Groundwater Samples
Arkema Portland
Portland, Oregon

Lab Package	Spike Sample ID	Associated Sample	Analyte	Recovery (%)	Limit (%)	RPD	RPD Limit	Result	Units	ERM Qualifier
			LCS/LCSD							
	1.00 500 400500/4	None for qualification	Dichlorodifluoromethane	170/163	20-150	4	30		μg/L	
	LCS 580-409568/4 LCSD 580-409568/5	None for qualification	Chloromethane	157/150	32-150	5	33		μg/L	
	1 2000 300-409300/3	PA-32I-110822	Chloroethane	150/145	54-140	4	33	0.57	μg/L	J ¹
	1.00 500 400004/4		Dichlorodifluoromethane	155/158	20-150	2	30		μg/L	
	LCS 580-409881/4 LCSD 580-409881/5	None for qualification	Chloroethane	139/145	54-140	5	35		μg/L	
	1000 300-40300 1/3		Acetone	149/156	49-150	5	24		μg/L	
580-119876-1			Methylene Chloride	68/78	77-125	14	18		μg/L	
			cis-1,3-Dichloropropene	176/125	77-120	35	35		μg/L	
	LCS 580-410498/6 LCSD 580-410498/7	None for qualification	trans-1,3- Dichloropropene	125/105	76-122	17	20		μg/L	
			1,3-Dichloropropane	123/106	79-120	15	19		μg/L	
			1,3-Dichlorobenzene	74/87	77-127	17	35		μg/L	
			1,2,4-Trichlorobenzene	64/92	61-148	36	27		μg/L	
	LCS 580-409881/4		Dichlorodifluoromethane	155/158	20-150	2	30		μg/L	
	LCSD 580-409881/5	None for qualification	Chloroethane	139/145	54-140	5	35		μg/L	
	2002 000 10000170		Acetone	149/156	49-150	5	24		μg/L	
			Methylene Chloride	68/78	77-125	14	18		μg/L	
580-119973-1			cis-1,3-Dichloropropene	176/125	77-120	35	35		μg/L	
	LCS 580-410498/6 LCSD 580-410498/7	None for qualification	trans-1,3- Dichloropropene	125/105	76-122	17	20		μg/L	
	1030 300-410490/7		1,3-Dichloropropane	123/106	79-120	15	19		μg/L	
			1,3-Dichlorobenzene	74/87	77-127	17	35		μg/L	
		-	1,2,4-Trichlorobenzene	64/92	61-148	36	27		μg/L	
	LCS 580-410922/5 LCSD 580-410922/6	None for qualification	Dichlorodifluoromethane	161/160	20-150	0	35		μg/L	

Table 5
Spike Recoveries Outside of Acceptable Limits
Fourth Quarter 2022 Groundwater Samples
Arkema Portland
Portland, Oregon

Lab Package	Spike Sample ID	Associated Sample	Analyte	Recovery (%)	Limit (%)	RPD	RPD Limit	Result	Units	ERM Qualifier
580-119973-1	LCS 580-412244/7	None for qualification	2,2-Dichloropropane	127/43	66-126	101	33		μg/L	
-	LCSD 580-412244/8		Tetrachloroethene	124/134	76-125	7	13		μg/L	
	<u> </u>	<u> </u>	MS/MSD							
			Dichlorodifluoromethane	167/186	20-150	11	30	ND	μg/L	
			Chloromethane	162/173	32-150	7	33	ND	μg/L	
			Bromomethane	152/159	51-148	5	35	ND	μg/L	
	PA-32i-110822		Chloroethane	164/165	54-140	0	33	0.57	μg/L	J^1
580-119876-1	MS/MSD	PA-32i-110822	Trichlorofluoromethane	131/139	60-132	1	32	ND	μg/L	
	WIGHNIGE		1,1-Dichloroethene	142/133	60-129	2	29	0.090	μg/L	J+
			Isopropylbenzene	122/124	71-123	2	23	ND	μg/L	
			Vinyl chloride	167/164	41-150	2	32	0.31	μg/L	J+
			Chloride	85/85	90-110	0	15	75	mg/L	J-
			Dichlorodifluoromethane	278/255	20-150	16	33	ND	μg/L	
			Chloromethane	178/223	25-150	22	26	ND	μg/L	
580-119973-1	MWA-31i(d)-111022	MWA-31i(d)-111022	Vinyl chloride	173/205	31-150	17	26	ND	μg/L	
300-118813-1	MS/MSD	WIVV A-311(u)-111022	Bromomethane	162/191	36-150	17	33	ND	μg/L	
			Chloroethane	139/152	38-150	9	28	ND	μg/L	
			Trichlorofluoromethane	153/177	45-148	14	35	ND	μg/L	

Table 5
Spike Recoveries Outside of Acceptable Limits
Fourth Quarter 2022 Groundwater Samples
Arkema Portland
Portland, Oregon

Lab Package	Spike Sample ID	Associated Sample	Analyte	Recovery (%)	Limit (%)	RPD	RPD Limit	Result	Units	ERM Qualifier
			Carbon disulfide	131/163	63-134	22	24	ND	μg/L	
			1,1-Dichloroethene	141/174	70-129	21	23	ND	μg/L	
			Acetone	128/184	44-150	36	33	ND	μg/L	
			Methylene Chloride	130/169	77-125	23	18	2.0	μg/L	J
			Methyl tert-butyl ether	119/152	72-120	25	18	ND	μg/L	
			trans-1,2-Dichloroethene	124/159	75-120	25	21	ND	μg/L	
			1,1-Dichloroethane	119/149	80-120	23	15	ND	μg/L	
			2-Butanone	118/170	65-137	36	34	ND	μg/L	
			2,2-Dichloropropane	112/138	66-126	21	22	ND	μg/L	
			cis-1,2-Dichloroethene	116/152	76-120	27	20	ND	μg/L	
500 440070 4	MWA-31i(d)-111022	NAVA 04'(I) 444000	Bromochloromethane	126/159	78-120	24	13	ND	μg/L	
580-119973-1	MS/MSD	MWA-31i(d)-111022	Chloroform	305/807	78-127	35	14	87	μg/L	J
			1,1,1-Trichloroethane	115/141	74-130	20	19	ND	μg/L	
			Carbon tetrachloride	118/148	72-129	23	19	ND	μg/L	
			1,1-Dichloropropene	114/145	74-120	24	14	ND	μg/L	
			Benzene	113/145	80-122	25	14	0.25	μg/L	J
			1,2-Dichloroethane	105/138	69-126	27	11	ND	μg/L	
			Trichloroethene	120/151	80-125	23	13	ND	μg/L	
			1,2-Dichloropropane	103/131	80-120	24	14	ND	μg/L	
			4-Methyl-2-pentanone	129/182	59-141	34	22	ND	μg/L	
			Dibromomethane	129/164	80-120	24	11	ND	μg/L	
			Bromodichloromethane	109/133	75-124	20	13	ND	μg/L	
			cis-1,3-Dichloropropene	97/128	77-120	28	35	ND	μg/L	

Table 5
Spike Recoveries Outside of Acceptable Limits
Fourth Quarter 2022 Groundwater Samples
Arkema Portland
Portland, Oregon

Lab Package	Spike Sample ID	Associated Sample	Analyte	Recovery (%)	Limit (%)	RPD	RPD Limit	Result	Units	ERM Qualifier
			Toluene	111/146	80-120	27	13	ND	μg/L	
			trans-1,3- Dichloropropene	95/121	76-122	25	20	ND	μg/L	
			1,1,2-Trichloroethane	116/154	80-121	28	14	ND	μg/L	
			Tetrachloroethene	123/176	76-125	34	13	0.80	μg/L	J
			1,3-Dichloropropane	110/145	79-120	27	19	ND	μg/L	
			Dibromochloromethane	115/148	73-125	25	13	ND	μg/L	
			1,2-Dibromoethane	119/156	79-126	27	12	ND	μg/L	
		Chlorobenzene	116/150	80-120	25	10	0.55	μg/L	J	
			1,1,1,2- Tetrachloroethane	112/145	79-120	25	16	ND	μg/L	
			Ethylbenzene	110/140	80-120	24	14	ND	μg/L	
500 440070 4	MWA-31i(d)-111022	MANA 04:/ I) 444000	m-Xylene & p-Xylene	103/135	80-120	27	14	ND	μg/L	
580-119973-1	MS/MSD	MWA-31i(d)-111022	o-Xylene	104/135	80-120	26	16	ND	μg/L	
			Styrene	0/0	76-122	NC	16	ND	μg/L	
			Bromoform	114/146	56-139	25	21	ND	μg/L	
			Isopropylbenzene	110/139	80-123	23	19	ND	μg/L	
			Bromobenzene	118/158	80-120	29	24	ND	μg/L	
			1,1,2,2- Tetrachloroethane	117/160	74-124	31	25	ND	μg/L	
			1,2,3-Trichloropropane	122/168	76-124	31	26	ND	μg/L	
			N-Propylbenzene	106/141	80-122	28	22	ND	μg/L	
			2-Chlorotoluene	112/151	80-120	30	20	ND	μg/L	
			4-Chlorotoluene	113/145	76-129	25	29	ND	μg/L	
			4-Chlorotoluene	107/143	75-123	29	21	ND	μg/L	
		1,	1,2,4-Trimethylbenzene	99/133	80-120	29	16	ND	μg/L	

Table 5
Spike Recoveries Outside of Acceptable Limits
Fourth Quarter 2022 Groundwater Samples
Arkema Portland
Portland, Oregon

Lab Package	Spike Sample ID	Associated Sample	Analyte	Recovery (%)	Limit (%)	RPD	RPD Limit	Result	Units	ERM Qualifier
			sec-Butylbenzene	104/136	78-122	27	15	ND	μg/L	
			4-Isopropyltoluene	104/135	77-126	26	20	ND	μg/L	
			1,3-Dichlorobenzene	117/150	77-127	25	35	ND	μg/L	
			1,4-Dichlorobenzene	116/148	80-120	24	17	ND	μg/L	
			n-Butylbenzene	109/141	57-133	26	14	ND	μg/L	
	MWA-31i(d)-111022 MS/MSD	MWA-31i(d)-111022	1,2-Dichlorobenzene	119/156	80-120	27	15	ND	μg/L	
580-119973-1			1,2-Dibromo-3- Chloropropane	136/193	65-133	35	25	ND	μg/L	
			1,2,4-Trichlorobenzene	116/154	61-148	28	27	ND	μg/L	
			Hexachlorobutadiene	114/151	74-131	28	22	ND	μg/L	
			Naphthalene	141/193	63-150	31	33	ND	μg/L	
		_	1,2,3-Trichlorobenzene	124/165	65-150	28	33	ND	μg/L	
			1,3,5-Trimethylbenzene	55/57	80-122	3	21	ND	μg/L	

Notes:

1 = Qualified for additional continuing calibration verification recoveries

J = Estimated detected result

J+ = Detected results are estimated with a high bias

J- = Detected results are estimated with a low bias

LCS/LCSD = Laboratory control sample/laboratory control sample duplicate

mg/L = Milligrams per liter

MS/MSD = Matrix spike/matrix spike duplicate

ND = Not detected

RPD = Relative percent difference

μg/L = Micrograms per liter

Table 6
Surrogate Recovery Results out of Acceptable Limits
Fourth Quarter 2022 Groundwater Samples
Arkema Portland
Portland, Oregon

Lab Package	Sample ID	Method	Surrogate	Recovery (%)	Limit (%)	Affected Analyte	Dilution Factor	ERM Qualifier
580-119973-1	PA-10i-110922	8260B	1,2-Dichloroethane-d4	121	80-120	None for qualification		

Table 7
Field Duplicate Evaluation
Fourth Quarter 2022 Groundwater Samples
Arkema Portland
Portland, Oregon

			Conce	ntration	Repor	t Limit						
Lab Package	Primary/Duplicate Sample ID	Analyte	Sample	Duplicate	Sample	Duplicate	Difference	Difference Limit	Units	RPD	RPD Limit	ERM Qualifier
		Chloride	5.9	5.9	1.5	1.5	0.0	3.0	mg/L		NA	
		Chloroform	0.054	0.055	0.20	0.20		NA	μg/L		NA	
		Trichloroethene	0.075	0.068	0.20	0.20		NA	μg/L		NA	
		Chloromethane	0.17	ND	0.50	0.50		NA	μg/L		NA	
580-119876-1	PA-31-110822/	Tetrachloroethene	0.19	0.20	0.24	0.24		NA	μg/L		NA	
	DUP-01-110822	Trichlorofluoromethane (Freon 11)	0.28	0.27	0.50	0.50		NA	μg/L		NA	
		1,1,1-Trichloroethane	0.34	0.34	0.20	0.20	0.00	0.40	μg/L		NA	
		1,1-Dichloroethane	0.35	0.36	0.20	0.20	0.01	0.40	μg/L		NA	
		1,1-Dichloroethene	1.6	1.5	0.20	0.20		NA	μg/L	6.5	30	
		Chloride	19000	19000	1500	1500		NA	mg/L	0	30	
	MMA	Perchlorate	49000	45000	4000	4000		NA	μg/L	8.5	30	
580-119973-1	MWA-58d-110922 DUP-02-110922	Bromodichloromethane	0.62	0.62	1.0	1.0		NA	μg/L		NA	
	DOP-02-110922 -	Bromomethane	0.41	ND	1.0	1.0		NA	μg/L		NA	
		Chloroform	88	90	5.0	5.0		NA	μg/L	2.2	30	

Notes:

mg/L = Milligrams per liter

NA = Not applicable

ND = Not detected

RPD = Relative percent difference

 μ g/L = Micrograms per liter

APPENDIX D	PRIOR GROUNDWATER MONITORING PROGRAM DATA TABLES AND GRAPHS

www.erm.com Version: 1.0 Project No.: 0629640 Client: Retia USA LLC February 2023
TOTAL Classification: Restricted Distribution

			1		Oblasida	Chlashassas	Danahlanata
Aquifer	Well ID	Cluster	Sample ID	Date	Chloride ug/L	Chlorobenzene ug/L	Perchlorate ug/L
Shallow	MWA-41	GCC6 & Proximal Wells	MWA-41-102319	10/23/2019	5,900	ug/∟ < 0.44 U	< 0.95 U
Shallow	MWA-41	GCC6 & Proximal Wells	MWA-41-021220	02/12/2020	10,900	0.16 j	< 0.95 U
Shallow	MWA-41	GCC6 & Proximal Wells	MWA-41-051820	05/18/2020	14,000	< 0.025 U	< 0.95 U
Shallow	MWA-41	GCC6 & Proximal Wells	MWA-41-081820	08/18/2020	16,000	< 0.025 U	< 0.95 U
Shallow	MWA-41	GCC6 & Proximal Wells	MWA-41-102720	10/27/2020	5,800	< 0.025 U	< 0.95 U
Shallow	MWA-41	GCC6 & Proximal Wells	MWA-41-031821	03/18/2021	18,000	< 0.025 U	< 2.0 U
Shallow	MWA-41	GCC6 & Proximal Wells	MWA-41-092221	09/22/2021	10,000	< 0.025 U	< 2.0 U
Shallow	MWA-41	GCC6 & Proximal Wells GCC6 & Proximal Wells	MWA-41-121421	12/14/2021	5,300 14,000 J-	< 0.025 < 0.060 U	< 2.0
Shallow Shallow	MWA-41 MWA-41	GCC6 & Proximal Wells	MWA-41-031422 MWA-41-060622	03/14/2022 06/06/2022	9,600	< 0.060 U	< 2.0 U < 2.0 U
Shallow	MWA-41	GCC6 & Proximal Wells	MWA-41-110722	11/07/2022	21,000	< 0.060 U	< 2.0 U
Shallow	MWA-63	GCC1 & Proximal Wells	MWA-63-110619	11/06/2019	83,000	< 44 U	< 0.95 U
Shallow	MWA-63	GCC1 & Proximal Wells	MWA-63-021720	02/17/2020	8,400	< 0.44 U	< 0.95 U
Shallow	MWA-63	GCC1 & Proximal Wells	MWA-63-052620	05/26/2020	13,000	< 0.44 U	< 0.95 U
Shallow	MWA-63	GCC1 & Proximal Wells	MWA-63-082420	08/24/2020	29,000	< 0.44 U	< 0.95 U
Shallow	MWA-63	GCC1 & Proximal Wells	MWA-63-110320	11/03/2020	71,000	< 0.44 U	< 4.8 U
Shallow	MWA-63	GCC1 & Proximal Wells	MWA-63-032921	03/29/2021	7,200 J	< 0.44 U	< 2.0 U
Shallow	MWA-63	GCC1 & Proximal Wells	MWA-63-092321	09/23/2021	58,000 J	< 0.44 UJ	< 2.0 U
Shallow	MWA-63	GCC1 & Proximal Wells	MWA-63-121521	12/15/2021	14,000	< 0.44	< 2.0
Shallow	MWA-63	GCC1 & Proximal Wells	MWA-63-031522	03/15/2022	5,500 J-	< 4.4 UJ	< 2.0 U
Shallow Shallow	MWA-63 MWA-63	GCC1 & Proximal Wells GCC1 & Proximal Wells	MWA-63-060822 MWA-63-110922	06/08/2022 11/09/2022	4,900 33,000	< 0.30 U < 0.44 U	13 < 2.0 U
Shallow	MWA-82	GCC1 & Proximal Wells	MWA-82-102319	10/23/2019	14,700	< 0.44 U	190
Shallow	MWA-82	GCC6 & Proximal Wells	MWA-82-102319	02/11/2020	34,800	0.24	< 48 U
Shallow	MWA-82	GCC6 & Proximal Wells	MWA-82-051920	05/19/2020	10,000	< 0.025 U	71 j
Shallow	MWA-82	GCC6 & Proximal Wells	MWA-82-081820	08/18/2020	15,000	0.030 j	530
Shallow	MWA-82	GCC6 & Proximal Wells	MWA-82-102720	10/27/2020	14,000	< 0.20 U	77
Shallow	MWA-82	GCC6 & Proximal Wells	MWA-82-031821	03/18/2021	11,000 J	< 0.025 U	290
Shallow	MWA-82	GCC6 & Proximal Wells	MWA-82-092121	09/21/2021	14,000	< 0.025 U	56
Shallow	MWA-82	GCC6 & Proximal Wells	MWA-82-121421	12/14/2021	13,000	< 0.025	150
Shallow	MWA-82	GCC6 & Proximal Wells GCC6 & Proximal Wells	MWA-82-031422	03/14/2022 06/06/2022	11,000 J-	< 0.060 U	52
Shallow Shallow	MWA-82 MWA-82	GCC6 & Proximal Wells	MWA-82-060622 MWA-82-110722	11/07/2022	11,000 9,000	< 0.060 U < 0.060 U	340 120
Shallow	PA-03	GCC0 & Froximal Wells	PA-03-102519	10/25/2019	9,700	< 0.44 U	< 4.8 U
Shallow	PA-03	GCC1 & Proximal Wells	Pa-03-021420	02/14/2020	9,700	0.29	< 48 U
Shallow	PA-03	GCC1 & Proximal Wells	PA-03-052120	05/21/2020	8,300	< 0.025 U	< 48 U
Shallow	PA-03	GCC1 & Proximal Wells	PA-03-081820	08/18/2020	10,000	< 0.025 U	< 95 U
Shallow	PA-03	GCC1 & Proximal Wells	PA-03-102820	10/28/2020	< 9,000 U	< 0.025 U	< 19 U
Shallow	PA-03	GCC1 & Proximal Wells	PA-03-032221	03/22/2021	9,600 J	< 0.025 U	< 20 U
Shallow	PA-03	GCC1 & Proximal Wells	PA-03-092221	09/22/2021	7,800	< 0.025 U	< 20 U
Shallow	PA-03	GCC1 & Proximal Wells	PA-03-121321	12/13/2021	7,300	< 0.025	< 20
Shallow	PA-03	GCC1 & Proximal Wells	PA-03-031622	03/16/2022	7,300	< 0.060 U	< 20 U
Shallow Shallow	PA-03 PA-03	GCC1 & Proximal Wells GCC1 & Proximal Wells	PA-03-060822 PA-03-110822	06/08/2022 11/08/2022	5,500 6,200	< 0.070 U < 0.060 U	< 4.0 U
Shallow	PA-04	GCC1 & Proximal Wells	PA-03-110822 PA-04-102819	10/28/2019	14,300	< 2.0 U	< 4.8 U
Shallow	PA-04	GCC1 & Proximal Wells	PA-04-021720	02/17/2020	13,700	0.14 j	< 48 U
Shallow	PA-04	GCC1 & Proximal Wells	PA-04-052220	05/22/2020	12,000	< 0.025 U	< 4.8 U
Shallow	PA-04	GCC1 & Proximal Wells	PA-04-081920	08/19/2020	14,000 J+	< 0.025 U	< 19 U
Shallow	PA-04	GCC1 & Proximal Wells	PA-04-102920	10/29/2020	12,000	< 0.025 U	< 4.8 U
Shallow	PA-04	GCC1 & Proximal Wells	PA-04-032421	03/24/2021	7,900 J	< 0.025 U	< 20 U
Shallow	PA-04	GCC1 & Proximal Wells	PA-04-092221	09/22/2021	11,000	< 0.025 U	< 10 U
Shallow	PA-04 PA-04	GCC1 & Proximal Wells	PA-04-121321	12/13/2021	7,000	< 0.025	< 20 < 2.0 U
Shallow Shallow	PA-04 PA-04	GCC1 & Proximal Wells GCC1 & Proximal Wells	PA-04-031722 PA-04-060822	03/17/2022 06/08/2022	6,500 7,900	< 0.060 U < 0.35 U	< 2.0 U
Shallow	PA-04 PA-04	GCC1 & Proximal Wells	PA-04-110922	11/09/2022	4,600	< 0.060 U	< 4.0 U
Shallow	PA-08	GCC6 & Proximal Wells	PA-08-102219	10/22/2019	201,000	< 0.44 U	< 19 U
Shallow	PA-08	GCC6 & Proximal Wells	Pa-08-021320	02/13/2020	197,000	0.53	< 48 U
Shallow	PA-08	GCC6 & Proximal Wells	PA-08-051920	05/19/2020	130,000	0.11 j	< 48 U
Shallow	PA-08	GCC6 & Proximal Wells	PA-08-081820	08/18/2020	100,000	< 0.025 U	< 48 U
Shallow	PA-08	GCC6 & Proximal Wells	PA-08-102720	10/27/2020	130,000	0.092 j	< 19 U
Shallow	PA-08	GCC6 & Proximal Wells	PA-08-031821	03/18/2021	110,000	< 0.025 U	< 20 U
Shallow	PA-08	GCC6 & Proximal Wells GCC6 & Proximal Wells	PA-08-092121	09/21/2021	200,000	< 0.25 U	< 20 U
Shallow Shallow	PA-08 PA-08	GCC6 & Proximal Wells	PA-08-121321 PA-08-031422	12/13/2021 03/14/2022	130,000 250,000 J-	0.084 < 0.060 U	< 20 < 20 U
Shallow	PA-08	GCC6 & Proximal Wells	PA-08-060622	06/06/2022	330,000	< 0.60 U	< 20 U
Shallow	PA-08	GCC6 & Proximal Wells	PA-08-110722	11/07/2022	770,000	< 0.060 U	< 10 U
Shallow	PA-09	GCC6 & Proximal Wells	PA-09-110119	11/01/2019	23,600	< 0.44 U	< 48 U
Shallow	PA-09	GCC6 & Proximal Wells	Pa-09-021220	02/12/2020	199,000	0.16 j	< 0.95 U
Shallow	PA-09	GCC6 & Proximal Wells	PA-09-051820	05/18/2020	14,000	< 0.025 U	< 19 U
Shallow	PA-09	GCC6 & Proximal Wells	PA-09-081820	08/18/2020	160,000 J+	< 0.025 U	< 19 U
Shallow	PA-09	GCC6 & Proximal Wells	PA-09-102820	10/28/2020	14,000 J+	< 0.20 U	40
Shallow	PA-09	GCC6 & Proximal Wells	PA-09-031621	03/16/2021	19,000	< 0.025 U	36
Shallow	PA-09	GCC6 & Proximal Wells	PA-09-092121	09/21/2021	61,000	< 0.25 U	< 20 U
Shallow Shallow	PA-09 PA-09	GCC6 & Proximal Wells GCC6 & Proximal Wells	PA-09-121321 PA-09-031522	12/13/2021 03/15/2022	13,000 24,000 J-	< 0.25 < 0.060 U	< 20 20
	PA-09	GCC6 & Proximal Wells	PA-09-060722	()6/(17/2(122	19.000	< 0.060.0	120
Shallow Shallow	PA-09 PA-09	GCC6 & Proximal Wells GCC6 & Proximal Wells	PA-09-060722 PA-09-110822	06/07/2022 11/08/2022	19,000 68,000	< 0.060 U < 0.060 U	120 < 10 U

Salthor Pr.31						Chloride	Chlorobonzono	Darablarete
Statistics	Aquifer	Well ID	Cluster	Sample ID	Date		Chlorobenzene ug/l	Perchlorate ug/L
Sealow PA-31 GCC 4 Proximal Wells PA-31-662730 6.0027 4.0025	Shallow	PA-31	GCC1 & Proximal Wells	PA-31-021820	02/18/2020			< 48 U
Station								< 9.5 U
Shallow PA-31 GCC1 & Prozent Wells PA-31-05221 002202021 5,500 J 0.025 U 1.05 V	Shallow	PA-31		PA-31-082420	08/24/2020	8,800 J+	< 0.025 U	< 9.5 U
Shallow PA-31 GCC1 & Procental Wells PA-31-092261 09222021 6,700 < 0.025 < 22								< 4.8 U
Shallow PA-31								< 20 U
Shallow PA-31 CCC1 & Procent Wels PA-31050502 00002022 4,300 0.070 U <10								
Stallow PA-31 GCC1 & Pocomal Wells PA-31 (000022 00000000000000000000000000000								
Shallow PA-31 CCC1 & Prozent Wels PA-31-110822 1,108/2022 5,900 0,060 U < 4.0 Informedate MWA-811 CCC6 & Prozent Wels MWA-81-102720 07/12/2020 37,200 0,26 4.0 Informedate MWA-811 CCC6 & Prozent Wels MWA-81-102720 07/12/2020 37,200 0,26 4.0 Informedate MWA-811 CCC6 & Prozent Wels MWA-81-102720 07/12/2020 190,000 0.26 4.0 Informedate MWA-811 CCC6 & Prozent Wels MWA-811-07220 107/12/2020 190,000 4.0 Informedate MWA-811 CCC6 & Prozent Wels MWA-811-07220 107/12/2020 100,000 4.0 Informedate MWA-811 CCC6 & Prozent Wels MWA-811-07220 107/12/2020 100,000 4.0 Informedate MWA-811 CCC6 & Prozent Wels MWA-811-07220 107/12/2020 100,000 4.0 Informedate MWA-811 CCC6 & Prozent Wels MWA-811-07220 107/12/2020 100,000 4.0 Informedate MWA-811 CCC6 & Prozent Wels MWA-811-07220 107/12/2020 100,000 4.0 Informedate MWA-811 CCC6 & Prozent Wels MWA-811-07220 107/12/2020 100,000 4.0 Informedate MWA-811 CCC6 & Prozent Wels MWA-811-07220 100,000 4.0 Informedate PA-10 CCC1 & Prozent Wels MWA-811-07220 100,000 4.0 Informedate PA-10 CCC1 & Prozent Wels PA-10-10720 107/12/2020 100,000 4.0 Informedate PA-10 CCC1 & Prozent Wels PA-10-10720 4.0 Inform								< 100 U
Intermediate								< 4.0 U
Intermediate	Intermediate	MWA-81i	GCC6 & Proximal Wells	MWA-81i-102319	10/23/2019	49,800	< 0.44 U	< 0.95 U
Intermediate								< 0.95 U
Intermediate								< 0.95 U
Intermediate MWA-811 GCCG & Proximal Wells MWA-811-031821 0.93282021 130,000 < 0.025 U < 2.0 contemporation MWA-811 GCCG & Proximal Wells MWA-811-21421 12142021 130,000 < 0.025 U < 2.0 contemporation MWA-811 GCCG & Proximal Wells MWA-811-21421 12142021 140,000 < 0.025 U < 2.0 contemporation MWA-811 GCCG & Proximal Wells MWA-811-21421 12142021 140,000 < 0.025 U < 2.0 contemporation MWA-811 GCCG & Proximal Wells MWA-811-21421 12142021 140,000 < 0.025 U < 2.0 contemporation MWA-811 GCCG & Proximal Wells MWA-811-21421 12142021 140,000 < 0.025 U < 2.0 contemporation MWA-811-21421 12142021 140,000 < 0.025 U < 2.0 contemporation MWA-811-21421 12142021 1419.00 < 0.025 U < 2.0 contemporation MWA-811-21421 12142021 1419.00 < 0.025 U < 4.0 contemporation MWA-811-21421 1419.00 1419.00 contemporation MWA-811-21421 1419.00 contemporation MWA-811-21421 1419.00 contemporation MWA-811-21421 1419.00 contemporation MWA-811-21421 contemporation MW								
Intermediate MWA-811 GCC68 & Proximal Wells MWA-811-092221 199,090 0.025 U < 2.0 c.								< 2.0 U
Intermediate MW-811 GCCG & Frozenia Wells MW-811-013422 0314/2022 14,000 J								< 2.0 U
Intermediate								< 4.0
Intermediate	Intermediate					14,000 J-		< 2.0 U
Intermediate								< 2.0 U
Intermediate								< 10 U
Intermediate PA-10 GCC1 & Proximal Wells PA-101-052620 05/28/2020 82,000 0.51 < 48 Intermediate PA-10 GCC1 & Proximal Wells PA-101-103920 09192020 62,000 0.70 < 4.8 Intermediate PA-10 GCC1 & Proximal Wells PA-101-103920 09192020 82,000 0.70 < 4.8 Intermediate PA-10 GCC1 & Proximal Wells PA-101-1039221 10/29/2020 13,000,000 < 0.44 < 4.8 Intermediate PA-10 GCC1 & Proximal Wells PA-101-032221 092/20201 75,000 0.65 < 20 Intermediate PA-10 GCC1 & Proximal Wells PA-101-032221 12/12/2021 75,000 0.65 < 20 Intermediate PA-10 GCC1 & Proximal Wells PA-101-037222 09.172/2022 90,000 < 0.05 < 20 Intermediate PA-10 GCC1 & Proximal Wells PA-101-037222 09.172/2022 90,000 0.077 < 20 Intermediate PA-10 GCC1 & Proximal Wells PA-101-037222 09.172/2022 90,000 0.077 < 20 Intermediate PA-10 GCC1 & Proximal Wells PA-101-037222 09.172/2022 90,000 0.077 < 20 Intermediate PA-10 GCC1 & Proximal Wells PA-101-037222 09.172/2022 90,000 0.077 < 20 Intermediate PA-15 GCC6 & Proximal Wells PA-15-031820 02/18/2020 45,000 1.5 Intermediate PA-15 GCC6 & Proximal Wells PA-15-031820 02/18/2020 270,000 0.005 0.005 0.005 0.005 Intermediate PA-15 GCC6 & Proximal Wells PA-15-031820 09/18/2020 270,000 0.005								< 4.8 U
Intermediate PA-10 GCC1 & Proximal Wells PA-101-091920 08/19/2020 82,000 0.70 < 4.95 Intermediate PA-10 GCC1 & Proximal Wells PA-101-092421 03/24/2021 1,300,000 < 0.04 U < 2.0 Intermediate PA-10 GCC1 & Proximal Wells PA-101-092421 03/24/2021 72,000 < 0.67 < 2.01 Intermediate PA-10 GCC1 & Proximal Wells PA-101-092421 03/24/2021 72,000 0.65 < 2.01 Intermediate PA-10 GCC1 & Proximal Wells PA-101-191221 12/13/2021 72,000 0.65 < 2.01 Intermediate PA-10 GCC1 & Proximal Wells PA-101-191221 12/13/2021 72,000 0.65 < 2.01 Intermediate PA-10 GCC1 & Proximal Wells PA-101-060822 06/08/2022 84,000 1.5 < 1.01 Intermediate PA-10 GCC1 & Proximal Wells PA-101-060822 11/09/2022 44,000 1.5 < 1.01 Intermediate PA-10 GCC1 & Proximal Wells PA-101-108/22 11/09/2022 44,000 1.5 < 1.01 Intermediate PA-15 GCC3 & Proximal Wells PA-151-105/19 11/05/2019 115,000 < 0.04 U < 48 Intermediate PA-15 GCC3 & Proximal Wells PA-151-105/19 11/05/2019 115,000 < 0.025 U < 48 Intermediate PA-15 GCC3 & Proximal Wells PA-151-06/10/2019 11/05/2019 12/05/200 22/05/200 < 0.025 U < 20 Intermediate PA-15 GCC3 & Proximal Wells PA-151-06/20/2019 11/05/200 22/05/200 < 0.025 U < 20 Intermediate PA-15 GCC3 & Proximal Wells PA-151-06/20/2019 22/05/200 < 0.025 U < 20 Intermediate PA-15 GCC3 & Proximal Wells PA-151-06/20/2019 22/05/200 < 0.025 U < 20 Intermediate PA-15 GCC3 & Proximal Wells PA-151-06/20/2019 20/05/200 < 0.025 U < 20 Intermediate PA-15 GCC3 & Proximal Wells PA-151-06/20/2019 20/05/200 < 0.025 U < 20 Intermediate PA-15 GCC3 & Proximal Wells PA-151-06/20/2019 20/05/200 < 0.025 U < 20 Intermediate PA-15 GCC3 & Proximal Wells PA-151-06/20/2019 20/05/200 < 0.000 U < 0.000 U < 0.000 U < 0.000 U < 0.000								< 48 U
Intermediate PA-10 GCC1 & Proximal Wells PA-10-1029201 10292/2021 13,000,000 c.0.44 U c.2.0 Intermediate PA-10 GCC1 & Proximal Wells PA-10-1029221 0922/2021 75,000 0.67 c.2.0 Intermediate PA-10 GCC1 & Proximal Wells PA-10-1029221 0922/2021 75,000 0.65 c.2.0 Intermediate PA-10 GCC1 & Proximal Wells PA-10-1029221 0922/2021 75,000 0.65 c.2.0 Intermediate PA-10 GCC1 & Proximal Wells PA-10-1031722 0317/2022 90,000 c.0.050 U c.2.0 Intermediate PA-10 GCC1 & Proximal Wells PA-10-1031722 0317/2022 90,000 c.0.050 U c.2.0 Intermediate PA-10 GCC1 & Proximal Wells PA-10-1031722 0317/2022 90,000 c.0.050 U c.2.0 Intermediate PA-15 GCC6 & Proximal Wells PA-15-105192 11,090/2022 45,000 c.0.25 U c.4.6 Intermediate PA-15 GCC6 & Proximal Wells PA-15-1051820 0518/2020 249,000 c.0.025 U c.4.6 Intermediate PA-15 GCC6 & Proximal Wells PA-15-1051820 0518/2020 249,000 c.0.025 U c.4.6 Intermediate PA-15 GCC6 & Proximal Wells PA-15-1051820 0518/2020 249,000 c.0.025 U c.4.6 Intermediate PA-15 GCC6 & Proximal Wells PA-15-1051820 0518/2020 229,000 c.0.025 U c.4.6 Intermediate PA-15 GCC6 & Proximal Wells PA-15-1067820 0611/2020 259,000 c.0.025 U c.4.6 Intermediate PA-15 GCC6 & Proximal Wells PA-15-1067820 0611/2020 259,000 c.0.025 U c.2.0 Intermediate PA-15 GCC6 & Proximal Wells PA-15-1067820 1029/2020 239,000 c.0.025 U c.2.0 Intermediate PA-15 GCC6 & Proximal Wells PA-15-1067820 1029/2020 290,000 c.0.025 U c.2.0 Intermediate PA-15 GCC6 & Proximal Wells PA-15-1067820 1029/2020 290,000 c.0.025 U c.2.0 Intermediate PA-15 GCC6 & Proximal Wells PA-15-107722 1029/2020 390,000 c.0.025 U c.2.0 Intermediate PA-15 GCC6 & Proximal Wells PA-15-107722 1029/2020 390,000 c.0.025 U c.2.0 Intermediate PA-16 GCC6 & Proximal Wells PA-16-107220 0719/202								< 95 U
Intermediate								< 4.8 U
Intermediate	Intermediate	PA-10i	GCC1 & Proximal Wells	PA-10I-032421				< 20 U
Intermediate								< 20 U
Intermediate PA-10 GCC1 & Proximal Wells PA-101-080822 06/08/2022 84,000 0.37 j < 2.0 Intermediate PA-15 GCC6 & Proximal Wells PA-151-10519 11/08/2022 45,000 4.5,000 4.0 4.5 (1.5 4.5								< 20
Intermediate								
Intermediate PA-15 GCC6 & Proximal Wells PA-15+10519 1105/2019 115,000 < 0.44 U < 48								< 2.0 U
Intermediate PA-15i GCC6 & Proximal Wells Pa-15i-021820 02/18/2020 249,000 < 0.025 U < 48 Intermediate PA-15i GCC6 & Proximal Wells PA-15i-031820 05/18/2020 270,000 < 0.025 U < 48 Intermediate PA-15i GCC6 & Proximal Wells PA-15i-031820 08/17/2020 250,000 < 0.25 U < 48 Intermediate PA-15i GCC6 & Proximal Wells PA-15i-031820 01/28/2020 230,000 < 2.5 U < 48 Intermediate PA-15i GCC6 & Proximal Wells PA-15i-031820 01/28/2020 230,000 < 0.25 U < 20 Intermediate PA-15i GCC6 & Proximal Wells PA-15i-031221 03/17/2021 360,000 < 0.25 U < 20 Intermediate PA-15i GCC6 & Proximal Wells PA-15i-031221 10/9/21/2021 360,000 < 0.25 U < 20 Intermediate PA-15i GCC6 & Proximal Wells PA-15i-031422 12/14/2021 340,000 < 0.025 < 20 Intermediate PA-15i GCC6 & Proximal Wells PA-15i-031422 03/14/2022 340,000 < 0.000 < 0.000 Intermediate PA-15i GCC6 & Proximal Wells PA-15i-031422 03/14/2022 340,000 < 0.000 < 0.000 < 0.000 Intermediate PA-15i GCC6 & Proximal Wells PA-15i-031422 03/14/2022 300,000 < 0.000 < 0.000 < 0.000 Intermediate PA-16i GCC6 & Proximal Wells PA-15i-101422 03/14/2022 300,000 < 0.000 < 0.000 < 0.000 Intermediate PA-16i GCC6 & Proximal Wells PA-16i-101419 11/04/2019 319,000 < 0.44 U < 48 Intermediate PA-16i GCC6 & Proximal Wells PA-16i-101419 11/04/2019 319,000 < 0.022 < 48 Intermediate PA-16i GCC6 & Proximal Wells PA-16i-051920 02/12/2020 150,000 0.073 < 48 Intermediate PA-16i GCC6 & Proximal Wells PA-16i-051920 03/19/2020 95,000 0.013 < 48 Intermediate PA-16i GCC6 & Proximal Wells PA-16i-051920 03/19/2020 95,000 0.013 < 48 Intermediate PA-16i GCC6 & Proximal Wells PA-16i-051920 03/19/2020 95,000 0.013 < 48 Intermediate PA-16i GCC6 & Proximal Wells PA-17i-051920 03/19/2020 95,000 0.025 < 20 Intermediate PA-16i GCC6								< 48 U
Intermediate PA-15i GCC6 & Proximal Wells PA-151-081720 09/17/2020 290,000 < 0.025 U < 4.8 Intermediate PA-15i GCC6 & Proximal Wells PA-151-081721 03/17/2021 260,000 < 0.025 U < 2.0 Intermediate PA-15i GCC6 & Proximal Wells PA-151-081721 03/17/2021 360,000 < 0.025 U < 2.0 Intermediate PA-15i GCC6 & Proximal Wells PA-151-081721 03/17/2021 360,000 < 0.025 U < 2.0 Intermediate PA-15i GCC6 & Proximal Wells PA-151-081721 03/17/2021 360,000 < 0.025 U < 2.0 Intermediate PA-15i GCC6 & Proximal Wells PA-151-14121 12/14/2021 340,000 < 0.025 < 2.0 Intermediate PA-15i GCC6 & Proximal Wells PA-151-14121 12/14/2021 250,000 J < 0.060 U < 2.0 Intermediate PA-15i GCC6 & Proximal Wells PA-151-080822 08/06/2022 300,000 < 0.80 U < 2.0 Intermediate PA-15i GCC6 & Proximal Wells PA-151-10722 11/07/2022 300,000 < 0.80 U < 2.0 Intermediate PA-15i GCC6 & Proximal Wells PA-151-10722 11/07/2022 300,000 < 0.29 < 1.0 Intermediate PA-16i GCC6 & Proximal Wells PA-161-110419 11/07/2022 300,000 < 0.24 < 1.0 Intermediate PA-16i GCC6 & Proximal Wells PA-161-011220 02/11/2020 180,000 0.22 < 48 Intermediate PA-16i GCC6 & Proximal Wells PA-161-01220 05/19/2020 180,000 0.22 < 48 Intermediate PA-16i GCC6 & Proximal Wells PA-161-012720 05/19/2020 180,000 0.27 < 0.073 < 48 Intermediate PA-16i GCC6 & Proximal Wells PA-161-012720 05/19/2020 180,000 0.25 < 0.00 Intermediate PA-16i GCC6 & Proximal Wells PA-161-012720 01/07/2020 180,000 0.035 < 0.00 Intermediate PA-16i GCC6 & Proximal Wells PA-161-012720 01/07/2020 180,000 0.035 < 0.00 Intermediate PA-16i GCC6 & Proximal Wells PA-161-012720 01/07/2020 180,000 0.035 < 0.00 Intermediate PA-16i GCC6 & Proximal Wells PA-161-012720 01/07/2020 180,000 0.035 < 0.00 Intermediate PA-16i GCC6 & Proxima						249,000	< 0.025 U	< 48 U
Intermediate	Intermediate	PA-15i	GCC6 & Proximal Wells	PA-15I-051820	05/18/2020	270,000	< 0.025 U	< 48 U
Intermediate								< 48 U
Intermediate PA-15 GCG & Proximal Wells PA-15 -092121 392/1/2021 340,000 < 0.25 U < 20 Intermediate PA-15 GCG & Proximal Wells PA-15 -1921421 12/14/2021 340,000 < 0.025 < 22 Intermediate PA-15 GCG & Proximal Wells PA-15 -1921421 12/14/2021 256,000 < 0.060 U < 20 Intermediate PA-15 GCG & Proximal Wells PA-15 -1031422 03/14/2022 256,000 < 0.060 U < 20 Intermediate PA-15 GCG & Proximal Wells PA-15 -1031422 11/07/2022 850,000 < 0.060 U < 20 Intermediate PA-15 GCG & Proximal Wells PA-15 -110419 11/04/2019 319,000 < 0.44 U < 48 Intermediate PA-16 GCG & Proximal Wells PA-16 -101212 11/04/2019 319,000 < 0.44 U < 48 Intermediate PA-16 GCG & Proximal Wells PA-16 -101212 02/12/2020 186,000 0.22 < 48 Intermediate PA-16 GCG & Proximal Wells PA-16 -012120 02/12/2020 186,000 0.073 < 48 Intermediate PA-16 GCG & Proximal Wells PA-16 -01920 06/19/2020 59,000 J 0.13 < 48 Intermediate PA-16 GCG & Proximal Wells PA-16 -012720 06/19/2020 69,000 0.31 < 4.8 Intermediate PA-16 GCG & Proximal Wells PA-16 -012721 03/17/2021 140,000 < 0.025 U < 20 Intermediate PA-16 GCG & Proximal Wells PA-16 -012721 03/17/2021 140,000 < 0.025 U < 20 Intermediate PA-16 GCG & Proximal Wells PA-16 -013722 03/17/2021 140,000 < 0.025 U < 20 Intermediate PA-16 GCG & Proximal Wells PA-16 -031522 03/15/2022 110,000 J < 0.060 U < 10 Intermediate PA-16 GCG & Proximal Wells PA-16 -031522 03/15/2022 110,000 J < 0.060 U < 10 Intermediate PA-16 GCG & Proximal Wells PA-16 -031522 03/15/2022 110,000 J < 0.060 U < 10 Intermediate PA-16 GCG & Proximal Wells PA-16 -031522 03/15/2022 110,000 J < 0.060 U < 0.057 J < 22 Intermediate PA-178 GCG & Proximal Wells PA-178 -031622 03/15/2022 110,000 J < 0.060 U < 0.057 J < 0.050 U < 0.057 J < 0.050 U < 0.								< 4.8 U
Intermediate PA-15 GCG & Proximal Wells PA-15-121421 12/14/2021 340,000 < 0.025 < 20 Intermediate PA-15 GCG & Proximal Wells PA-15-080822 08/06/2022 300,000 < 0.60 U < 20 Intermediate PA-15 GCG & Proximal Wells PA-15-080822 08/06/2022 300,000 < 0.60 U < 20 Intermediate PA-15 GCG & Proximal Wells PA-15-110722 11/07/2022 850,000 0.29 < 10 Intermediate PA-16 GCG & Proximal Wells PA-16-1104729 11/07/2022 850,000 0.29 < 10 Intermediate PA-16 GCG & Proximal Wells PA-16-110479 11/04/2019 319,000 < 0.44 U < 48 Intermediate PA-16 GCG & Proximal Wells PA-16-107220 02/12/2020 156,000 0.22 < 48 Intermediate PA-16 GCG & Proximal Wells PA-16-107220 02/12/2020 156,000 0.22 < 48 Intermediate PA-16 GCG & Proximal Wells PA-16-1081920 05/19/2020 150,000 0.073 < 48 Intermediate PA-16 GCG & Proximal Wells PA-16-1081920 08/19/2020 95,000 J+ 0.13 < 48 Intermediate PA-16 GCG & Proximal Wells PA-16-1081920 08/19/2020 95,000 J+ 0.13 < 48 Intermediate PA-16 GCG & Proximal Wells PA-16-1091720 10/27/2020 69,000 0.31 < 4.8 A Intermediate PA-16 GCG & Proximal Wells PA-16-1091721 03/21/2021 140,000 < 0.025 U < 20 Intermediate PA-16 GCG & Proximal Wells PA-16-109121 03/21/2021 10/2021 03/21/2021 10/2021								
Intermediate PA-15i GCC6 & Proximal Wells PA-15i-031422 03/14/2022 250,000 J < 0.060 U < 20 Intermediate PA-15i GCC6 & Proximal Wells PA-15i-060622 0606/2022 300,000 < 0.60 U < 20 Intermediate PA-15i GCC6 & Proximal Wells PA-15i-110722 11/07/2022 850,000 0.29 < 10 Intermediate PA-16i GCC6 & Proximal Wells PA-16i-110722 11/07/2022 850,000 0.22 < 48 Intermediate PA-16i GCC6 & Proximal Wells PA-16i-110419 11/04/2019 319,000 < 0.44 U < 48 Intermediate PA-16i GCC6 & Proximal Wells PA-16i-110419 11/04/2019 319,000 0.22 < 48 Intermediate PA-16i GCC6 & Proximal Wells PA-16i-051920 055/19/2020 150,000 0.073 < 48 Intermediate PA-16i GCC6 & Proximal Wells PA-16i-051920 055/19/2020 95,000 0.13 < 48 Intermediate PA-16i GCC6 & Proximal Wells PA-16i-051920 03/19/2020 95,000 0.31 < 48 Intermediate PA-16i GCC6 & Proximal Wells PA-16i-102720 10/27/2020 69,000 0.31 < 4.8 Intermediate PA-16i GCC6 & Proximal Wells PA-16i-102720 10/27/2020 69,000 0.31 < 4.8 Intermediate PA-16i GCC6 & Proximal Wells PA-16i-092121 09/21/2021 50,000 < 0.025 U < 20 Intermediate PA-16i GCC6 & Proximal Wells PA-16i-092121 09/21/2021 50,000 < 0.25 U < 20 Intermediate PA-16i GCC6 & Proximal Wells PA-16i-1021421 12/14/2021 95,000 < 0.25 U < 20 Intermediate PA-16i GCC6 & Proximal Wells PA-16i-092121 10/000 0.006 U < 20 Intermediate PA-16i GCC6 & Proximal Wells PA-16i-00222 110,000 0.006 U < 20 Intermediate PA-16i GCC6 & Proximal Wells PA-16i-00222 110,000 0.006 U < 20 Intermediate PA-176 GCC6 & Proximal Wells PA-178-102819 10/28/2019 73,600 0.57 j < 48 Intermediate PA-1778 GCC1 & Proximal Wells PA-1778-002420 05/21/2020 65,000 0.055 U < 20 Intermediate PA-1778 GCC1 & Proximal Wells PA-1778-002420 05/21/2020 65,000 0.025 U < 25 Intermediate PA-1778								
Intermediate PA-15 GCC6 & Proximal Wells PA-15I-060622 06/06/2022 300,000 < 0.60 U < 20 Intermediate PA-15 GCC6 & Proximal Wells PA-15I-110722 11/07/2022 850,000 0.29 < 10 Intermediate PA-16 GCC6 & Proximal Wells PA-16I-110419 11/04/2019 319,000 < 0.44 U < 48 Intermediate PA-16 GCC6 & Proximal Wells PA-16I-021220 02/12/2020 186,000 0.22 < 48 Intermediate PA-16 GCC6 & Proximal Wells PA-16I-021220 02/12/2020 150,000 0.073 j < 48 Intermediate PA-16 GCC6 & Proximal Wells PA-16I-031920 05/19/2020 150,000 0.073 j < 48 Intermediate PA-16 GCC6 & Proximal Wells PA-16I-031920 06/19/2020 95,000 J+ 0.13 j < 48 Intermediate PA-16 GCC6 & Proximal Wells PA-16I-031220 03/19/2020 95,000 J+ 0.13 j < 48 Intermediate PA-16 GCC6 & Proximal Wells PA-16I-031721 03/17/2021 140,000 < 0.025 U < 20 Intermediate PA-16 GCC6 & Proximal Wells PA-16I-031721 03/17/2021 140,000 < 0.025 U < 20 Intermediate PA-16 GCC6 & Proximal Wells PA-16I-031522 09/12/2021 50,000 0.21 < 22 Intermediate PA-16 GCC6 & Proximal Wells PA-16I-031522 03/15/2022 110,000 < 0.30 U < 20 Intermediate PA-16 GCC6 & Proximal Wells PA-16I-031522 03/15/2022 110,000 J < 0.060 U < 10 Intermediate PA-16 GCC6 & Proximal Wells PA-16I-031522 03/15/2022 110,000 J < 0.060 U < 10 Intermediate PA-16 GCC6 & Proximal Wells PA-16I-031522 03/15/2022 170,000 < 0.060 U < 10 Intermediate PA-16 GCC6 & Proximal Wells PA-16I-031522 03/15/2022 170,000 < 0.060 U < 10 Intermediate PA-17 GCC1 & Proximal Wells PA-17 03/15/2022 170,000 < 0.060 U < 10 Intermediate PA-17 GCC1 & Proximal Wells PA-17 03/15/2020 05,000 0.057 < 48 Intermediate PA-17 GCC1 & Proximal Wells PA-17 03/13/2021 05,000 0.055 04 Intermediate PA-17 GCC1 & Proximal Wells PA-17 03/13/2021 05/000 0.000								< 20 U
Intermediate PA-16i GCG8 Proximal Wells PA-16i-110419 11,04/2019 319,000 < 0.44 U < 4.8	Intermediate	PA-15i	GCC6 & Proximal Wells	PA-15I-060622	06/06/2022		< 0.60 U	< 20 U
Intermediate	Intermediate							< 10 U
Intermediate								< 48 U
Intermediate								< 48 U
Intermediate								
Intermediate								< 4.8 U
Intermediate								< 20 U
Intermediate	Intermediate	PA-16i	GCC6 & Proximal Wells	PA-16I-092121	09/21/2021	50,000	< 0.25 U	< 10 U
Intermediate								< 20
Intermediate						· · · · · · · · · · · · · · · · · · ·		< 10 U
Intermediate								< 20 U
Intermediate								< 4.0 U < 48 U
Intermediate							_	< 190 U
Intermediate								< 48 U
Intermediate		PA-17iR	GCC1 & Proximal Wells	PA-17iR-082420			< 0.025 U	< 95 U
Intermediate PA-17iR GCC1 & Proximal Wells PA-17iR-092221 09/22/2021 35,000 < 0.025 U < 20								< 4.8 U
Intermediate PA-17iR GCC1 & Proximal Wells PA-17iR-121321 12/13/2021 30,000 < 0.025 < 20								< 20 U
Intermediate								< 20 U
Intermediate								< 20 U
Intermediate								< 10 U
Intermediate								< 10 U
Intermediate				PA-32i-103019	10/30/2019			< 48 U
Intermediate								< 190 U
Intermediate PA-32i GCC1 & Proximal Wells PA-32i-110220 11/02/2020 170,000 < 0.025 U < 48								< 48 U
Intermediate PA-32i GCC1 & Proximal Wells PA-32I-040121 04/01/2021 130,000 0.43 < 20								< 95 U
Intermediate								< 48 U < 20 U
Intermediate								< 20 U
Intermediate								< 20
							0.28 J+	< 20 U
Intermediate PA-32i GCC1 & Proximal Wells PA-32 -110822 11/08/2022 75 000 L 0.28 -20								< 20 U
	Intermediate	PA-32i	GCC1 & Proximal Wells	PA-32I-110822	11/08/2022	75,000 J-	0.28	< 20 U
								< 4.8 U < 48 U

					Chloride	Chlorobonzono	Doroblavata
Aquifer	Well ID	Cluster	Sample ID	Date	ug/L	Chlorobenzene ug/L	Perchlorate ug/L
Intermediate	PA-44i	GCC6 & Proximal Wells	PA-44I-051920	05/19/2020	53,000	< 0.025 U	< 95 U
Intermediate	PA-44i	GCC6 & Proximal Wells	PA-44I-081820	08/18/2020	76,000	< 0.025 U	< 48 U
Intermediate	PA-44i	GCC6 & Proximal Wells	PA-44i-102720	10/27/2020	34,000	< 0.025 U	< 4.8 U
Intermediate	PA-44i	GCC6 & Proximal Wells	PA-44I-031621	03/16/2021	60,000	< 0.025 U	7.1 J
Intermediate	PA-44i	GCC6 & Proximal Wells	PA-44I-092321	09/23/2021	39,000	< 0.025 U	390
Intermediate Intermediate	PA-44i PA-44i	GCC6 & Proximal Wells GCC6 & Proximal Wells	PA-44I-121421 PA-44I-031522	12/14/2021 03/15/2022	51,000 23,000 J-	< 0.025 < 0.060 U	130 270
Intermediate	PA-44i	GCC6 & Proximal Wells	PA-44I-060622	06/06/2022	47,000	< 0.30 U	66
Intermediate	PA-44i	GCC6 & Proximal Wells	PA-44I-110722	11/07/2022	75,000	< 0.060 U	< 2.0 U
Deep	MWA-11i(d)	Well Distal from BW and GCCs	MWA-11I(D)-110519	11/05/2019	1,640,000	< 0.44 U	< 48 U
Deep	MWA-11i(d)	Well Distal from BW and GCCs	MWA-11i(d)-022620	02/26/2020	1,480,000	2.4	< 0.95 U
Deep	MWA-11i(d)	Well Distal from BW and GCCs	MWA-11i(d)-052920	05/29/2020	1,600,000	< 0.025 U	< 9.5 U
Deep	MWA-11i(d)	Well Distal from BW and GCCs	MWA-11i(d)-082720	08/27/2020	1,500,000	0.071 j	< 0.95 U
Deep	MWA-11i(d) MWA-11i(d)	Well Distal from BW and GCCs	MWA-11i(d)-110420 MWA-11I(D)-040221	11/04/2020	1,500,000	0.64 J	< 4.8 U
Deep Deep	MWA-11i(d)	Well Distal from BW and GCCs Well Distal from BW and GCCs	MWA-11I(D)-040221 MWA-11I(D)-092421	04/02/2021 09/24/2021	180,000 1,700,000	0.039 J 0.047 j	< 20 U < 10 U
Deep	MWA-11i(d)	Well Distal from BW and GCCs	MWA-11I(D)-121621	12/16/2021	1,500,000	< 0.025	< 20
Deep	MWA-11i(d)	Well Distal from BW and GCCs	MWA-11I(D)-031722	03/17/2022	2,200,000	0.060 j	< 20 U
Deep	MWA-11i(d)	Well Distal from BW and GCCs	MWA-11I(D)-060922	06/09/2022	2,000,000	< 0.70 U	< 20 U
Deep	MWA-11i(d)	Well Distal from BW and GCCs	MWA-11I(D)-111022	11/10/2022	1,600,000	1.1	< 40 U
Deep	MWA-31i(d)	GCC5 & Proximal Wells	MWA-31i(d)-102419	10/24/2019	25,900,000	0.57 j	100,000
Deep	MWA-31i(d)	GCC5 & Proximal Wells	MWA-31i(D)-021320	02/13/2020	27,700,000	0.58 j	91,000
Deep Deep	MWA-31i(d) MWA-31i(d)	GCC5 & Proximal Wells GCC5 & Proximal Wells	MWA-31I(D)-052020 MWA-31I(D)-081920	05/20/2020 08/19/2020	27,000,000 23,000,000	< 0.44 U 0.52 j	100,000 89,000
Deep	MWA-31i(d)	GCC5 & Proximal Wells	MWA-31i(d)-103020	10/30/2020	30,000,000	< 0.44 U	91,000
Deep	MWA-31i(d)	GCC5 & Proximal Wells	MWA-31I(D)-032421	03/24/2021	27,000,000	< 0.44 U	91,000
Deep	MWA-31i(d)	GCC5 & Proximal Wells	MWA-31I(D)-092321	09/23/2021	29,000,000	< 0.44 U	91,000
Deep	MWA-31i(d)	GCC5 & Proximal Wells	MWA-31I(D)-121521	12/15/2021	18,000,000	< 0.44	99,000
Deep	MWA-31i(d)	GCC5 & Proximal Wells	MWA-31I(D)-031622	03/16/2022	20,000,000	< 0.44 U	97,000
Deep	MWA-31i(d)	GCC5 & Proximal Wells	MWA-31I(D)-060722	06/07/2022	28,000,000	0.32 j	100,000
Deep Deep	MWA-31i(d) MWA-56d	GCC5 & Proximal Wells GCC4 & Proximal Wells	MWA-31I(D)-111022 MWA-56D-102419	11/10/2022 10/24/2019	19,000,000	0.55 J < 0.44 U	97,000
Deep	MWA-56d	GCC4 & Proximal Wells	MWA-56D-102419	02/14/2020	20,100,000 22,300,000	< 0.44 U < 2.0 U	3,300 3,500
Deep	MWA-56d	GCC4 & Proximal Wells	MWA-56D-052120	05/21/2020	21,000,000	< 0.44 U	5,700
Deep	MWA-56d	GCC4 & Proximal Wells	MWA-56D-082020	08/20/2020	24,000,000	< 0.44 U	6,400
Deep	MWA-56d	GCC4 & Proximal Wells	MWA-56d-102920	10/29/2020	22,000,000	< 0.44 U	7,100
Deep	MWA-56d	GCC4 & Proximal Wells	MWA-56D-032521	03/25/2021	26,000,000	< 4.4 U	6,500
Deep	MWA-56d	GCC4 & Proximal Wells	MWA-56D-092421	09/24/2021	21,000,000	< 0.44 U	8,100
Deep	MWA-56d	GCC4 & Proximal Wells	MWA-56D-121621	12/16/2021	18,000,000	< 0.44	8,400
Deep Deep	MWA-56d MWA-56d	GCC4 & Proximal Wells GCC4 & Proximal Wells	MWA-56D-031722 MWA-56D-060822	03/17/2022 06/08/2022	19,000,000 18,000,000	< 0.44 U < 0.30 U	9,200 11,000
Deep	MWA-56d	GCC4 & Proximal Wells	MWA-56D-110922	11/09/2022	15,000,000	< 0.44 U	12,000
Deep	MWA-58d	GCC4 & Proximal Wells	MWA-58d-102519	10/25/2019	18,900,000	< 0.44 U	61,000
Deep	MWA-58d	GCC4 & Proximal Wells	MWA-58D-021320	02/13/2020	21,100,000	< 0.44 U	49,000
Deep	MWA-58d	GCC4 & Proximal Wells	MWA-58D-052120	05/21/2020	19,000,000	< 0.44 U	46,000
Deep	MWA-58d	GCC4 & Proximal Wells	MWA-58D-082020	08/20/2020	20,000,000	< 0.44 U	45,000
Deep	MWA-58d	GCC4 & Proximal Wells	MWA-58d-102920	10/29/2020	20,000,000	< 0.44 U	44,000
Deep	MWA-58d MWA-58d	GCC4 & Proximal Wells GCC4 & Proximal Wells	MWA-58D-032621 MWA-58D-092421	03/26/2021 09/24/2021	29,000,000 J-	< 0.44 U < 0.44 U	43,000 43,000
Deep Deep	MWA-58d	GCC4 & Proximal Wells	MWA-58D-092421 MWA-58D-121621	12/16/2021	23,000,000 23,000,000	< 0.44 U < 4.4	38,000
Deep	MWA-58d	GCC4 & Proximal Wells	MWA-58D-031722	03/17/2022	26,000,000	< 4.4 U	44,000
Deep	MWA-58d	GCC4 & Proximal Wells	MWA-58D-060822	06/08/2022	23,000,000	< 0.30 U	47,000
Deep	MWA-58d	GCC4 & Proximal Wells	MWA-58D-110922	11/09/2022	19,000,000	< 0.44 UJ	49,000
Deep	PA-19d	GCC2	Pa-19d-110619	11/06/2019	94,000	9,300 J-	< 48 U
Deep	PA-19d	GCC2	Pa-19d-022620	02/26/2020	111,000	8,300	< 48 U
Deep	PA-19d	GCC2	PA-19d-052920	05/29/2020	140,000	8,200	< 48 U
Deep Deep	PA-19d PA-19d	GCC2 GCC2	PA-19D-082620 PA-19d-110520	08/26/2020 11/05/2020	160,000 180,000	5,200 3,800	< 95 U < 48 U
Deep	PA-19d PA-19d	GCC2 GCC2	PA-190-110520 PA-19D-040521	04/05/2020	340,000	7,100	< 48 U < 20 U
Deep	PA-19d	GCC2	PA-19D-092321	09/23/2021	320,000 J	< 0.44 R	< 20 U
Deep	PA-19d	GCC2	PA-19D-121621	12/16/2021	330,000	2,700 J	< 200
Deep	PA-19d	GCC2	PA-19D-031722	03/17/2022	340,000	2,600	< 20 U
Deep	PA-19d	GCC2	PA-19D-060922	06/09/2022	360,000	3,200	< 20 U
Deep	PA-19d	GCC2	PA-19D-111022	11/10/2022	280,000	2,500	< 20 U
Deep	PA-20d	GCC3 GCC3	PA-20d-110719	11/07/2019	570,000	41	56 J+
Deep Deep	PA-20d PA-20d	GCC3	Pa-20d-022420 PA-20d-052120	02/24/2020 05/21/2020	789,000 840,000	39 40	58 46
Deep	PA-20d PA-20d	GCC3	PA-20D-082520	08/25/2020	800,000 J+	31	58
Deep	PA-20d	GCC3	PA-20d-110320	11/03/2020	840,000	37 J	61
Deep	PA-20d	GCC3	PA-20D-032521	03/25/2021	1,100,000	23	76
Deep	PA-20d	GCC3	PA-20D-092221	09/22/2021	1,100,000	24	99
Deep	PA-20d	GCC3	PA-20D-121521	12/15/2021	1,000,000	23	< 100
Deep	PA-20d	GCC3	PA-20D-031722	03/17/2022	1,200,000	12	140
Deep	PA-20d	GCC3	PA-20D-060922	06/09/2022	1,100,000	18	< 20 U
Deep	PA-20d	GCC3	PA-20D-111022	11/10/2022	1,000,000	9.3	< 20 U 2,400
Doon	DV-314	じししょ	Pa-214-110710	11/07/2010			
Deep Deep	PA-21d PA-21d	GCC3 GCC3	Pa-21d-110719 Pa-21d-022620	11/07/2019 02/26/2020	347,000 463,000	27,000 38,000	1,300

Aquifer	Well ID	Cluster	Sample ID	Date	Chloride	Chlorobenzene	Perchlorate
Deep	PA-21d	GCC3	PA-21D-082520	08/25/2020	ug/L 360.000	ug/L 36,000	ug/L 1,300
Deep	PA-21d PA-21d	GCC3	PA-21D-062520 PA-21d-110420	11/04/2020	370,000	40,000 J+	1,300
Deep	PA-21d	GCC3	PA-21D-040121	04/01/2021	430,000	47,000	< 20 U
Deep	PA-21d	GCC3	PA-21D-092421	09/24/2021	350,000	39,000 J	1,800
Deep	PA-21d	GCC3	PA-21D-121521	12/15/2021	320,000	49,000 J	1,200
Deep	PA-21d	GCC3	PA-21D-031722	03/17/2022	360,000	16,000	1,100
Deep	PA-21d	GCC3	PA-21D-060922	06/09/2022	360,000	27,000	< 20 U
Deep	PA-21d	GCC3	PA-21D-111022	11/10/2022	290,000	15,000	< 100 U
Deep	PA-22d PA-22d	GCC4 & Proximal Wells GCC4 & Proximal Wells	PA-22d-102419 Pa-22d-022120	10/24/2019 02/21/2020	10,200,000 9,190,000	< 0.44 U < 0.44 U	54,000 38,000
Deep Deep	PA-22d PA-22d	GCC4 & Proximal Wells GCC4 & Proximal Wells	PA-22d-022120 PA-22d-052020	05/20/2020	9,800,000	< 0.44 U	40,000
Deep	PA-22d	GCC4 & Proximal Wells	PA-22D-082120	08/21/2020	9,200,000 J+	< 0.44 U	38,000
Deep	PA-22d	GCC4 & Proximal Wells	PA-22d-110320	11/03/2020	9,100,000	< 0.44 U	37,000
Deep	PA-22d	GCC4 & Proximal Wells	PA-22D-032421	03/24/2021	8,200,000	< 0.44 U	33,000
Deep	PA-22d	GCC4 & Proximal Wells	PA-22D-092221	09/22/2021	7,400,000	< 0.44 U	26,000
Deep	PA-22d	GCC4 & Proximal Wells	PA-22D-121521	12/15/2021	7,100,000	< 0.44	24,000
Deep	PA-22d	GCC4 & Proximal Wells	PA-22D-031622	03/16/2022	8,000,000	< 0.44 U	23,000
Deep	PA-22d	GCC4 & Proximal Wells	PA-22D-060822	06/08/2022	7,300,000	< 0.30 U	22,000
Deep	PA-22d	GCC4 & Proximal Wells	PA-22D-110922	11/09/2022	6,000,000	< 0.44 U	17,000
Deep	PA-23d	GCC5 & Proximal Wells	PA-23d-110519	11/05/2019	12,500	2.8	< 0.95 U
Deep	PA-23d	GCC5 & Proximal Wells	Pa-23d-021920	02/19/2020 05/20/2020	5,690,000	< 0.44 U	< 0.95 U
Deep Deep	PA-23d PA-23d	GCC5 & Proximal Wells GCC5 & Proximal Wells	PA-23d-052020 PA-23D-082020	05/20/2020	12,000,000 22,000,000	1.3 j < 0.44 U	< 4.8 U < 4.8 U
Deep	PA-23d PA-23d	GCC5 & Proximal Wells	PA-23D-062020 PA-23d-102920	10/29/2020	27,000,000	< 0.44 U	< 4.8 U
Deep	PA-23d	GCC5 & Proximal Wells	PA-23D-032521	03/25/2021	16.000.000	< 0.44 U	< 1,000 U
Deep	PA-23d	GCC5 & Proximal Wells	PA-23D-092321	09/23/2021	17,000,000	< 0.44 U	< 100 U
Deep	PA-23d	GCC5 & Proximal Wells	PA-23D-121421	12/14/2021	5,700,000	< 0.44	< 50
Deep	PA-23d	GCC5 & Proximal Wells	PA-23D-031622	03/16/2022	89,000	< 0.44 U	< 2.0 U
Deep	PA-23d	GCC5 & Proximal Wells	PA-23D-060722	06/07/2022	9,700,000	< 0.30 U	< 100 U
Deep	PA-23d	GCC5 & Proximal Wells	PA-23D-111022	11/10/2022	6,900,000	< 0.44 U	< 200 U
Deep	PA-24d	GCC5 & Proximal Wells	PA-24d-110619	11/06/2019	42,300,000	< 0.44 U	< 48 U
Deep	PA-24d	GCC5 & Proximal Wells	Pa-24d-022020	02/20/2020	41,500,000	< 0.44 U	< 48 U
Deep	PA-24d	GCC5 & Proximal Wells	PA-24d-051920	05/19/2020	46,000,000	< 0.44 U	< 48 U
Deep Deep	PA-24d PA-24d	GCC5 & Proximal Wells GCC5 & Proximal Wells	PA-24D-082020 PA-24d-102920	08/20/2020 10/29/2020	43,000,000	< 0.44 U < 0.44 U	< 19 U
Deep	PA-240 PA-24d	GCC5 & Proximal Wells	PA-24D-031821	03/18/2021	44,000,000 44,000,000	< 0.44 U	< 4.8 U < 200 U
Deep	PA-24d	GCC5 & Proximal Wells	PA-24D-092221	09/22/2021	38,000,000	< 0.44 U	< 100 U
Deep	PA-24d	GCC5 & Proximal Wells	PA-24D-121521	12/15/2021	35,000,000	< 0.44	< 200
Deep	PA-24d	GCC5 & Proximal Wells	PA-24D-031622	03/16/2022	38,000,000	< 0.44 U	< 200 U
Deep	PA-24d	GCC5 & Proximal Wells	PA-24D-060722	06/07/2022	35,000,000	< 0.30 U	< 400 U
Deep	PA-24d	GCC5 & Proximal Wells	PA-24D-111022	11/10/2022	32,000,000	< 0.44 U	< 200 U
Deep	PA-25d	GCC6 & Proximal Wells	PA-25d-110519	11/05/2019	1,100	< 0.44 U	< 0.95 U
Deep	PA-25d	GCC6 & Proximal Wells	Pa-25d-021820	02/18/2020	22,100	< 0.025 U	< 0.95 U
Deep Deep	PA-25d PA-25d	GCC6 & Proximal Wells GCC6 & Proximal Wells	Pa-25d-051820 PA-25D-081820	05/18/2020 08/18/2020	23,000 24,000	< 0.025 U < 0.025 U	< 0.95 U < 9.5 U
Deep	PA-25d	GCC6 & Proximal Wells	PA-25D-061620 PA-25d-102720	10/27/2020	20,000	< 0.025 U	< 0.95 U
Deep	PA-25d	GCC6 & Proximal Wells	PA-25D-031821	03/18/2021	20,000	< 0.025 U	< 2.0 U
Deep	PA-25d	GCC6 & Proximal Wells	PA-25D-092121	09/22/2021	24,000	< 0.025 U	< 2.0 U
Deep	PA-25d	GCC6 & Proximal Wells	PA-25D-121421	12/14/2021	23,000	< 0.025	< 2.0
Deep	PA-25d	GCC6 & Proximal Wells	PA-25D-031422	03/14/2022	18,000 J-	< 0.060 U	< 2.0 U
Deep	PA-25d	GCC6 & Proximal Wells	PA-25D-060722	06/07/2022	23,000	< 0.060 U	< 2.0 U
Deep	PA-25d	GCC6 & Proximal Wells	PA-25D-110722	11/07/2022	34,000	< 0.060 U	< 2.0 U
Deep	PA-26d	GCC6 & Proximal Wells	PA-26d-110419	11/04/2019	7,400	< 0.44 U	< 0.95 U
Deep	PA-26d	GCC6 & Proximal Wells	Pa-26d-021320	02/13/2020	46,000	0.71	< 0.95 U < 0.95 U
Deep Deep	PA-26d PA-26d	GCC6 & Proximal Wells GCC6 & Proximal Wells	PA-26D-051820 PA-26D-081920	05/18/2020 08/19/2020	48,000 48,000	< 0.025 U < 0.025 U	< 0.95 U
Deep	PA-26d PA-26d	GCC6 & Proximal Wells	PA-26D-081920 PA-26d-102820	10/28/2020	52,000	< 0.025 U	< 9.5 U
Deep	PA-26d	GCC6 & Proximal Wells	PA-26D-031621	03/16/2021	37,000	< 0.025 U	< 2.0 U
Deep	PA-26d	GCC6 & Proximal Wells	PA-26D-092321	09/23/2021	60,000	< 0.025 U	< 2.0 U
Deep	PA-26d	GCC6 & Proximal Wells	PA-26D-121321	12/13/2021	62,000	< 0.025	< 4.0
Deep	PA-26d	GCC6 & Proximal Wells	PA-26D-031522	03/15/2022	72,000 J-	< 0.060 U	< 2.0 U
Deep	PA-26d	GCC6 & Proximal Wells	PA-26D-060722	06/07/2022	63,000	< 0.060 U	< 2.0 U
Deep	PA-26d	GCC6 & Proximal Wells	PA-26D-110822	11/08/2022	6,500	< 0.060 U	< 2.0 U
Deep	PA-27d	GCC1 & Proximal Wells	PA-27d-102519	10/25/2019	1,150,000	< 0.44 U	< 4.8 U
Deep	PA-27d	GCC1 & Proximal Wells	Pa-27d-021420	02/14/2020	824,000	0.84 j	< 48 U
Deep Deep	PA-27d PA-27d	GCC1 & Proximal Wells GCC1 & Proximal Wells	PA-27D-052120 PA-27D-081820	05/21/2020 08/18/2020	870,000 810,000 J+	< 0.44 U 0.52 j	< 48 U < 95 U
Deep	PA-27d PA-27d	GCC1 & Proximal Wells	PA-27D-061620 PA-27d-110420	11/04/2020	1,100,000	3.5 J	< 95 U
Deep	PA-27d	GCC1 & Proximal Wells	PA-27D-032321	03/23/2021	710,000 J-	< 0.44 U	< 20 U
Deep	PA-27d	GCC1 & Proximal Wells	PA-27D-092221	09/22/2021	840,000	< 0.44 U	< 20 U
Deep	PA-27d	GCC1 & Proximal Wells	PA-27D-121321	12/13/2021	930,000	< 0.44	< 20
Deep	PA-27d	GCC1 & Proximal Wells	PA-27D-031622	03/16/2022	1,000,000	< 0.44 U	< 20 U
Deep	PA-27d	GCC1 & Proximal Wells	PA-27D-060822	06/08/2022	890,000	< 0.30 U	< 20 U
Deep	PA-27d	GCC1 & Proximal Wells	PA-27D-110822	11/08/2022	960,000	< 0.44 U	< 10 U
Deep	PA-30d	GCC2	PA-30d-103119	10/31/2019	170,000	4,900 J-	< 48 U
Deep Deep	PA-30d PA-30d	GCC2 GCC2	Pa-30d-022520 PA-30d-052120	02/25/2020 05/21/2020	207,000 280,000	5,700 5,800	< 190 U < 48 U

Aquifer	Well ID	Cluster	Sample ID	Date	Chloride	Chlorobenzene	Perchlorate
Aquilei	Well ID	Cluster	Sample ID	Date	ug/L	ug/L	ug/L
Deep	PA-30d	GCC2	PA-30d-110520	11/05/2020	440,000	4,700	< 48 U
Deep	PA-30d	GCC2	PA-30D-040221	04/02/2021	56,000	4,600	< 100 U
Deep	PA-30d	GCC2	PA-30D-092421	09/24/2021	540,000	< 0.44 R	< 20 U
Deep	PA-30d	GCC2	PA-30D-121621	12/16/2021	490,000	3,500	< 200
Deep	PA-30d	GCC2	PA-30D-031722	03/17/2022	490,000	4,700	< 20 U
Deep	PA-30d	GCC2	PA-30D-060922	06/09/2022	460,000	6,600	< 20 U
Deep	PA-30d	GCC2	PA-30D-111022	11/10/2022	270,000	26,000	< 20 U

Notes:

Bolded values indicate concentrations above the Reportable Detection Limit.

< = Compound not detected. Reportable detection limit shown.

 μ g/L = micrograms per liter

Qualifiers:

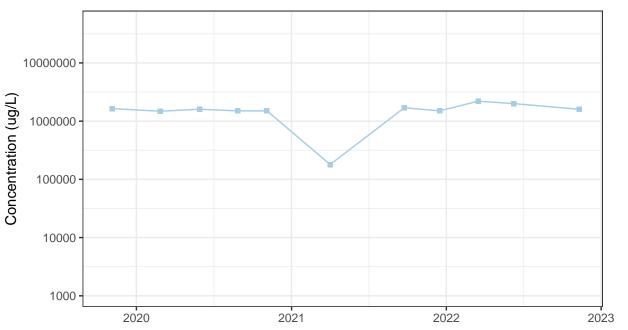
- j = The analyte was positively identified; associated numerical value is the approximate concentration of the analyte in the sample.
- J = The analyte was positively identified; associated numerical value is the approximate concentration of the analyte in the sample.

 J+ = The concentration of the sample is considered to be biased high, as the associated QC results exceed the upper control limits.
- J- = The concentration of the sample is considered to be biased low, as the associated QC results are outside the lower control limits.
- U = Compound not detected based on quality assurance review.
- UJ = Analyte was analyzed for, but not detected. The detection limit is a quantitative estimate.
- R = Rejected. Quality control indicates that the data are unusable (compound may or not be present).

Chloride in GCC1 & Proximal Wells **Aquifer Depth** Shallow, Detect 10000000 Shallow, ND Intermediate, Detect Concentration (ug/L) Intermediate, ND 1000000 Deep, Detect Deep, ND 100000 Well MWA-63 -PA-03 PA-04 PA-10I 10000 PA-17IR -PA-27D PA-31 PA-32I 1000 2020 2021 2022 2023 Chloride in GCC2 10000000 **Aquifer Depth** Shallow, Detect Concentration (ug/L) Shallow, ND 1000000 Intermediate, Detect Intermediate, ND Deep, Detect 100000 Deep, ND Well 10000 — PA-19D — PA-30D 1000 2020 2021 2022 2023 Chloride in GCC3 10000000 **Aquifer Depth** Shallow, Detect Concentration (ug/L) Shallow, ND 1000000 Intermediate, Detect Intermediate, ND Deep, Detect 100000 Deep, ND Well 10000 — PA-20D — PA-21D 1000 2020 2021 2022 2023

Chloride in GCC4 & Proximal Wells **Aquifer Depth** 10000000 Shallow, Detect Shallow, ND Concentration (ug/L) Intermediate, Detect 1000000 Intermediate, ND Deep, Detect Deep, ND 100000 Well MWA-56D — MWA-58D 10000 PA-22D 1000 2020 2022 2023 Chloride in GCC5 & Proximal Wells **Aquifer Depth** 10000000 Shallow, Detect Shallow, ND Concentration (ug/L) Intermediate, Detect 1000000 Intermediate, ND Deep, Detect Deep, ND 100000 Well MWA-31I(D) — PA-23D 10000 PA-24D 1000 2020 2021 2022 2023 Chloride in GCC6 & Proximal Wells **Aquifer Depth** Shallow, Detect 10000000 Shallow, ND Intermediate, Detect Concentration (ug/L) Intermediate, ND 1000000 Deep, Detect Deep, ND 100000 Well MWA-41 -- MWA-81I MWA-82 -PA-08 10000 PA-09 PA-15I PA-16I PA-25D PA-26D --- PA-44I 1000 2020 2022 2021 2023

Chloride in Well Distal from BW and GCCs

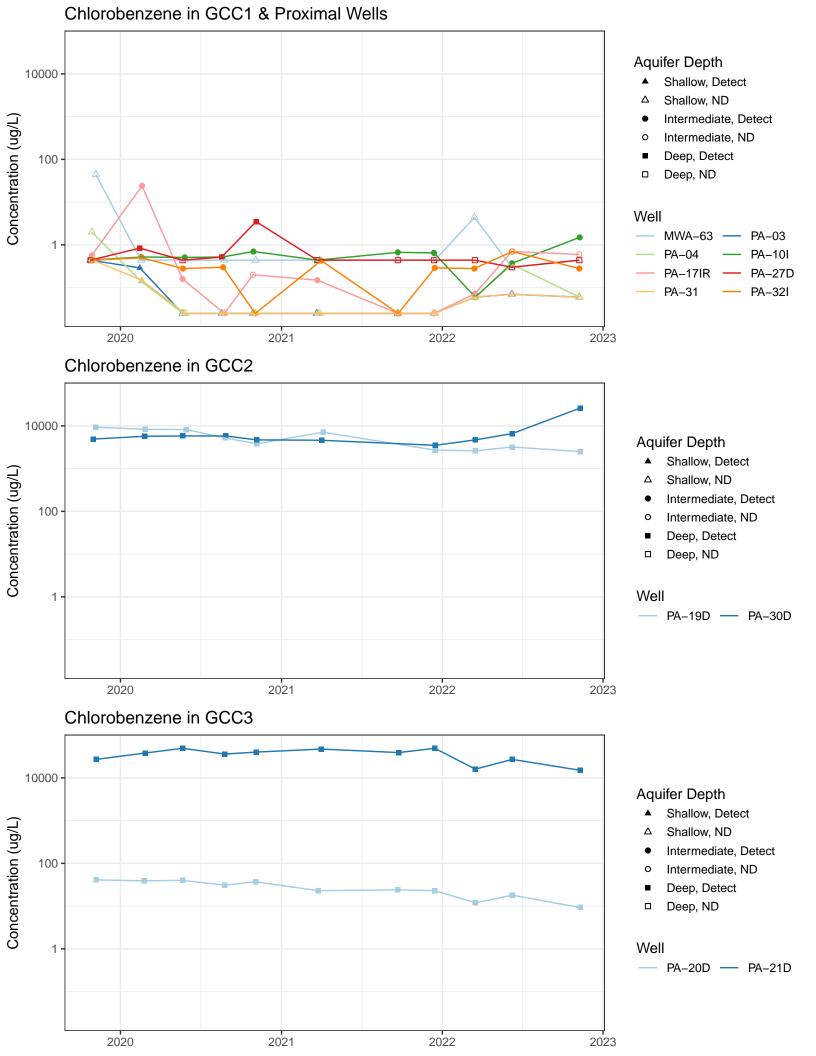


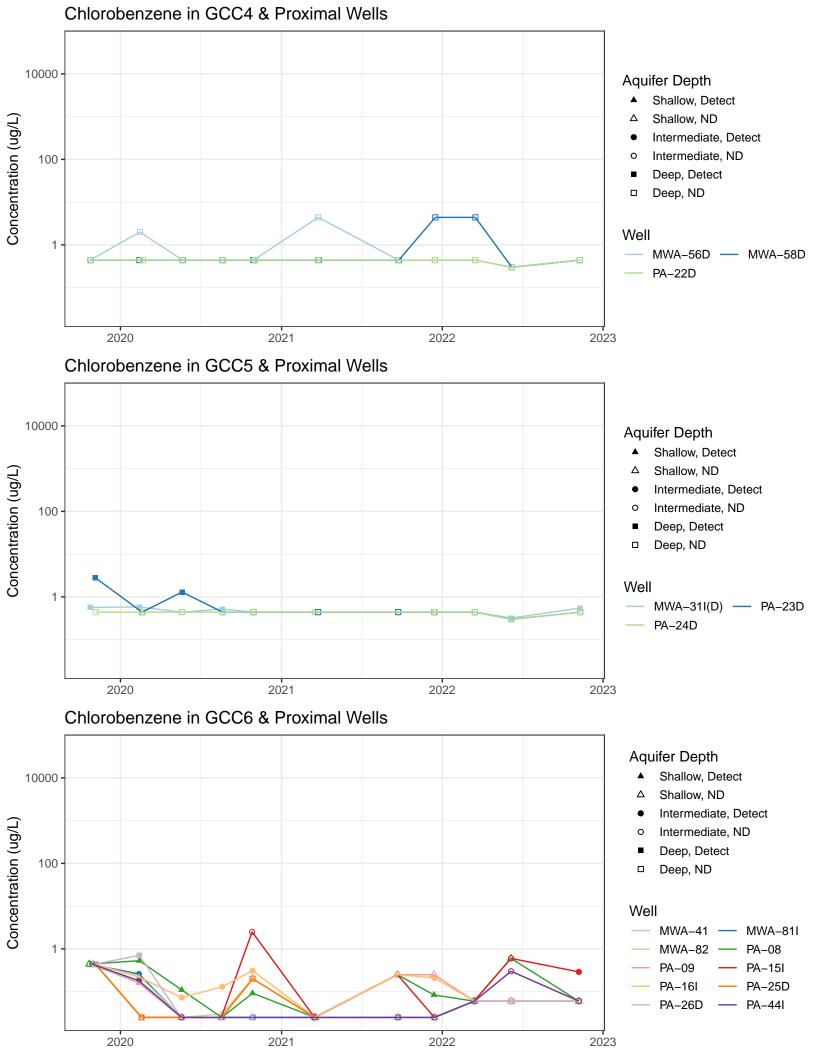
Aquifer Depth

- ▲ Shallow, Detect
- △ Shallow, ND
- Intermediate, Detect
- o Intermediate, ND
- Deep, Detect
- □ Deep, ND

Well

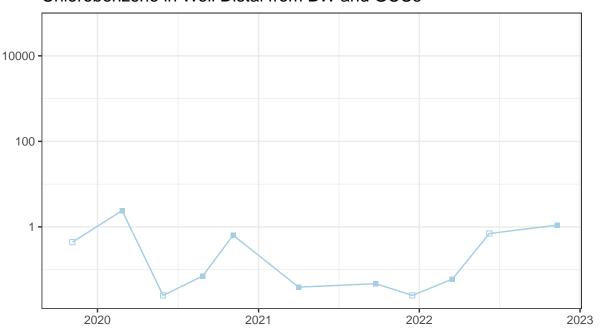
--- MWA-11I(D)





Chlorobenzene in Well Distal from BW and GCCs

Concentration (ug/L)

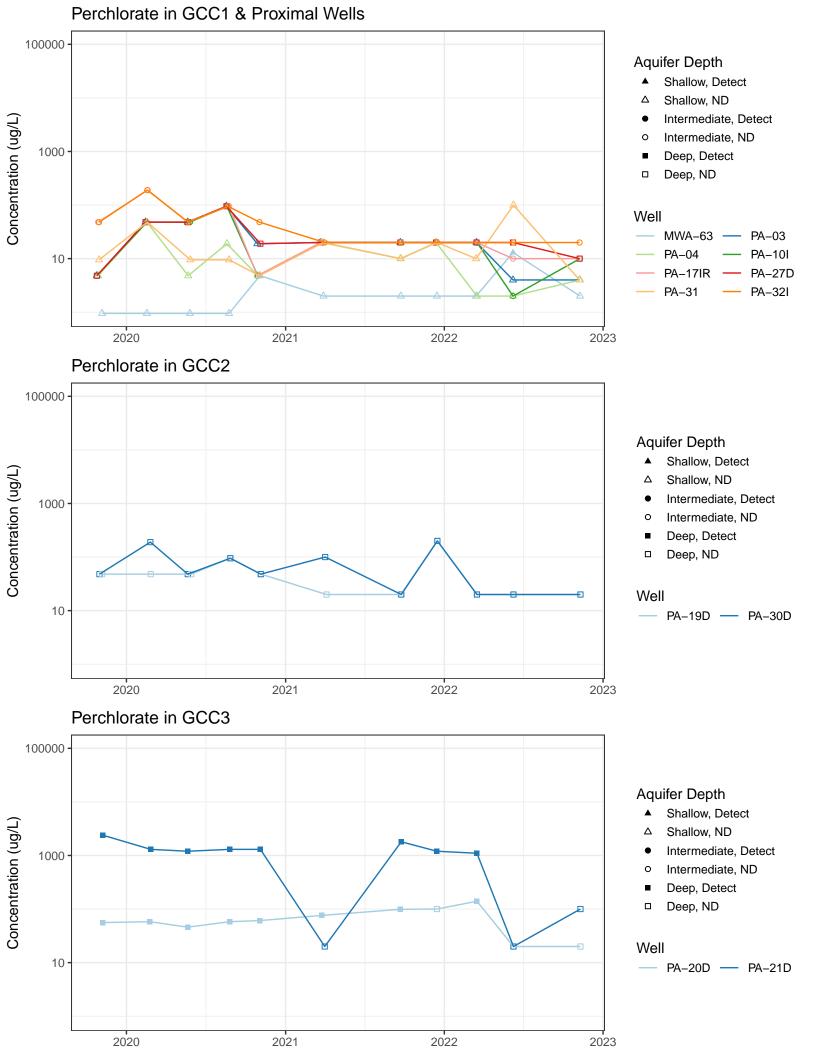


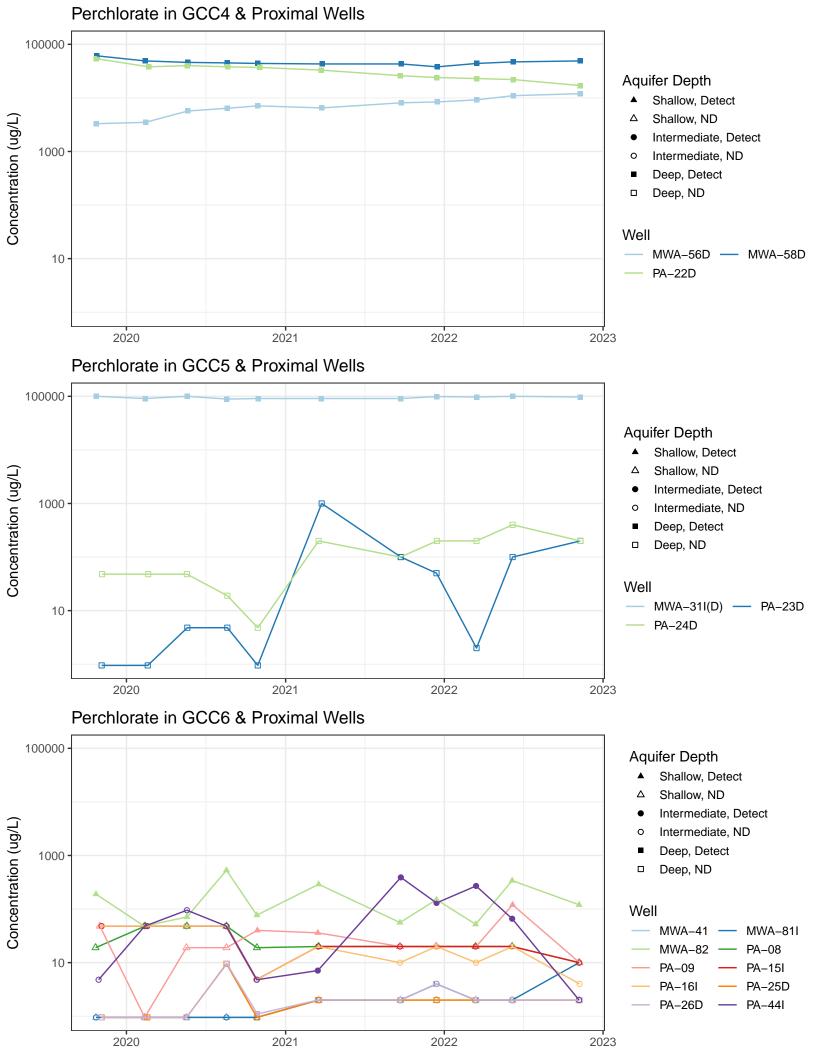
Aquifer Depth

- ▲ Shallow, Detect
- △ Shallow, ND
- Intermediate, Detect
- o Intermediate, ND
- Deep, Detect
- □ Deep, ND

Well

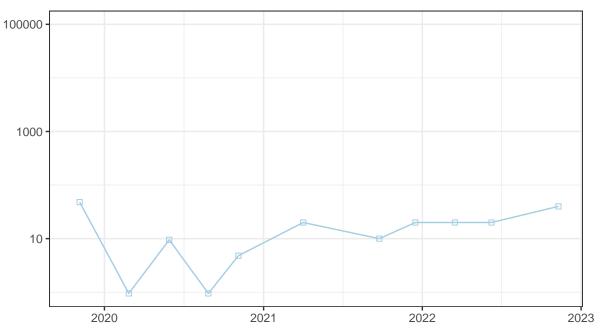
--- MWA-11I(D)





Perchlorate in Well Distal from BW and GCCs

Concentration (ug/L)



Aquifer Depth

- ▲ Shallow, Detect
- △ Shallow, ND
- Intermediate, Detect
- Intermediate, ND
- Deep, Detect
- □ Deep, ND

Well

--- MWA-11I(D)

APPENDIX E HISTORICAL DATA TABLE

Appendix E
Historical Data Table
Arkema Quarter 2, 2022, Groundwater Monitoring Report
Arkema Inc. Facility
Portland, Oregon

Aquifer	Well ID	Sample ID	Date	2,4'-DDD	4,4'-DDD	2,4'-DDE	4,4'-DDE	2,4'-DDT	4,4'-DDT	Total of 2,4' and 4,4'- DDD, -DDE, -DDT	Chloride	Chlorobenzene	Chromium (VI)	Perchlorate
				μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L
Shallow	MWA-2	GAMWA210297	1/2/1997		< 0.1 U		< 0.1 U		0.12	0.12 T		< 5 U		
Shallow	MWA-2	GAMWA210397	3/12/1997		< 0.1 UJ		< 0.1 UJ		< 0.1 UJ	< 0.1 UJT		7		
Shallow	MWA-2	GAMWA210697	6/24/1997		< 0.1 UJ		< 0.1 UJ		< 0.1 UJ	< 0.1 UJT		6,000		
Shallow	MWA-2	GAMWA210997	9/30/1997		0.17 J		< 0.1 UJ		< 0.1 UJ	0.17 JT		9,000		
Shallow	MWA-2	GW059801	5/28/1998		0.25 J		< 0.04 U		0.33 J	0.58 JT	10,400	4		
Shallow	MWA-2	GW019907	1/27/1999		0.32		0.04		0.18	0.54 T	41,100 T	94		
Shallow	MWA-2	GW029906	4/27/1999		0.8		< 0.04 U		0.6	1.4 T	16,800	970 J		
Shallow	MWA-2	GW039907	8/24/1999		0.7		< 0.4 UJ		< 0.4 UJ	0.7 T	33,800	4,400		
Shallow	MWA-2	GW049905	11/16/1999		0.39 J		< 0.04 UJ		< 0.24 U	0.39 JT	41,700	2,100		
Shallow	MWA-2	GW010111	3/29/2001		0.57		< 0.1 U		< 0.1 U	0.57 T	158,000 J	4,300		
Shallow	MWA-2	GW020106	6/12/2001		0.4		0.055		< 0.05 UJ	0.455 T	384.000	4,600		
Shallow	MWA-2	GW04100205	4/10/2002		0.41		< 0.099 U		< 0.099 U	0.41 T	1,400,000	27,000		
Shallow	MWA-2	GW-060903-01	6/9/2003		< 1.70 U		< 1.70 U		< 2.80 U	< 2.8 UT	981,000	13,700		1,400
Shallow	MWA-2	MWA-2-111004	11/10/2004		< 0.500 UJ		< 0.500 UJ		< 0.500 UJ	< 0.5 UJT	361,000	30,200		1,400
Shallow	MWA-2	MWA-2-031005	3/10/2004		< 2.50 UJ		< 2.50 UJ		< 2.50 UJ	< 2.5 UJT		,		
Shallow	MWA-2	MWA-2-031005 MWA-2-062205	6/22/2005		< 2.50 UJ 3.35					< 2.5 UJ I		15,400		
Shallow	MWA-2 MWA-2		9/15/2005		3.35 0.543 J		< 0.500 UJ		< 0.500 UJ 0.0789 J	3.35 I 0.8089 JT		12,200		
		MWA-2-091505					< 0.184 U			I I		21,900		
Shallow	MWA-2	MWA-2-102705	10/27/2005		0.477		0.0965		< 0.236 UJ	0.5735 T		23,500		
Shallow	MWA-2	MWA-2-122005	12/20/2005		0.312		< 0.239 UJ		< 0.239 UJ	0.312 T		16,200		
Shallow	MWA-2	MWA-2-011306	1/13/2006		0.510		< 0.0971 UJ		< 0.0971 UJ	0.51 T		4		
Shallow	MWA-2	MWA-2-032906	3/29/2006		0.240		< 0.0952 UJ		0.190	0.43 T		4,050		
Shallow	MWA-2	MWA-2-040407	4/4/2007		0.292		< 0.287 U		< 0.191 U	0.292 A	376,000	2,570		73.8
Shallow	MWA-2	MWA-2-080609	8/6/2009		< 0.286 U		< 0.286 U		0.191	0.191 A	340,000	18,200		3.9
Shallow	MWA-15R	GW010117	3/30/2001		37		< 10 U		450	487 T	1960,000 J	260,000		
Shallow	MWA-15R	GW020121	6/15/2001		7.4		< 0.96 U		73 J	80.4 JT	1,560,000	210,000		
Shallow	MWA-15R	GW04160201	4/16/2002		25		4.2 J		75 J	104 JT	407,000	48,000		
Shallow	MWA-15R	GW-061003-04	6/10/2003		28.4 J		< 3.40 U		113	141 JT	388,000	13,300		350
Shallow	MWA-15R	MWA-15R-100203	10/2/2003									27,200		
Shallow	MWA-15R	MWA-15R-111403	11/14/2003									163,000		
Shallow	MWA-15R	MWA-15R-011304	1/13/2004									64,400		
Shallow	MWA-15R	MWA-15R-013004	1/30/2004									24,600		
Shallow	MWA-15R	MWA-15R-030204	3/2/2004									2,450		
Shallow	MWA-15R	MWA-15R-111004	11/10/2004		27.7		< 5.00 UJ		86.2	113 T		154,000		
Shallow	MWA-15R	MWA-15R-031005	3/10/2005		79.7		< 25.0 UJ		534	613.7 T		97,000		
Shallow	MWA-15R	MWA-15R-062205	6/22/2005		40.9		9.88		193	243.78 T		87,700		
Shallow	MWA-15R	MWA-15R-091605	9/16/2005		73.2		11.2 J		619 J	703 JT		240.000		
Shallow	MWA-15R	MWA-15R-122105	12/21/2005		10.1		1.53		86.5	98.13 T		217,000		
Shallow	MWA-15R	MWA-15R-033006	3/30/2006		124		24		458	606 T		72,900		
Shallow	MWA-15R	MWA-15R-033006	4/17/2007		48.3 J		7.71		207	263 JA	129,000	34		
Shallow	MWA-15R	MWA-15R-041707	8/19/2009		111		21.9		702	835 A			< 25 UJ	
										I I	156,000	23,500	< 20 UJ	
Shallow	MWA-15R	MWA-15R-090309	9/3/2009		377		52.1		5,210	5,640 A	4 200 200	44		
Shallow	MWA-18	GW010105	3/27/2001		0.045		.0.000411		0.046 J	0.046 JT	1,200,000	41	. 50 ! ! !	
Shallow	MWA-18	GW020110	6/13/2001		0.015 J		< 0.0094 U		< 0.026 U	0.015 JT	894,000 J	34	< 50 UJ	
Shallow	MWA-18	GW04040203	4/4/2002		< 0.0096 U		< 0.0096 U		< 0.019 U	< 0.019 UT	2,210,000	8		
Shallow	MWA-18	GW-060603-03	6/6/2003		< 0.0170 U		< 0.0170 U		< 0.0280 U	< 0.028 UT	1,410,000	< 3.06 U		< 25 U
Shallow	MWA-18	MWA-18-050505	5/5/2005								612,000		833	
Shallow	MWA-18	MWA-18-071405	7/14/2005										676	
Shallow	MWA-18	MWA-18	8/3/2005		< 0.0500 U		< 0.0500 U		< 0.0500 U	< 0.05 UT		0.580		
Shallow	MWA-18	MWA-18-081605	8/16/2005										248	
Shallow	MWA-18	MWA-18-091205	9/12/2005								410,000		1,180	3.4
Shallow	MWA-18	MWA-18-120805	12/8/2005										5.90 J	
Shallow	MWA-18	MWA-18-011006	1/10/2006										30.0	
Shallow	MWA-18	MWA-18-021306	2/13/2006										< 4.55 U	
Shallow	MWA-18	MWA-18-072606	7/26/2006										3.4	
		MWA-18-041107	4/11/2007	1	< 0.0971 U	t	< 0.0971 U		< 0.0971 U	< 0.0971 UA	233,000	1.33	2.2 J	< 8.0 U

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Shallow MWA-18 MWA-18-081009 8/10/2009 0.0155 0.00671 J 0.00789 J 0.0301 JA 270,000 Shallow MWA-19 GW010104 3/27/2001 < 0.02 UJ < 0.02 UJ 0.095 J 0.095 J 5,540,000 Shallow MWA-19 GW020112 6W020112 < 0.0099 U < 0.0099 U < 0.016 U < 0.016 U < 0.016 U < 0.017 U 12,700,000 J	μg/L 0.930 J < 0.5 U < 0.5 U	μg/L 340 J	μg/L
Shallow MWA-18 MWA-18-081009 8/10/2009 0.0155 0.00671 J 0.00789 J 0.0301 JA 270,000 Shallow MWA-19 GW010104 3/27/2001 < 0.02 UJ < 0.02 UJ 0.095 J 0.095 JT 5,540,000 Shallow MWA-19 GW020112 6/13/2001 < 0.0099 U < 0.0099 U < 0.016 U < 0.016 UT 12,700,000 J	0.930 J < 0.5 U		
Shallow MWA-19 GW010104 3/27/2001 < 0.02 UJ	< 0.5 U		< 4 U
, ,	< 0.5 U		
Obst. NAMA 40 ONO 40004 4/4000		< 50 UJ	
Shallow MWA-19 GW04040204 4/4/2002 < 0.0097 U < 0.0097 U 0.1 0.1 T 13,100,000	< 0.5 U		
Shallow MWA-19 GW-060603-04 6/6/2003 0.0935 < 0.0170 U	< 0.64 U		< 82 U
Shallow MWA-19 MWA-19-050605 5/6/2005 2,100,000		2,680	
Shallow MWA-19 MWA-19-071305 7/13/2005		159	
Shallow MWA-19 MWA-19 8/3/2005 0.114 < 0.0500 U	3.14		
Shallow MWA-19 MWA-19-081705 8/17/2005		407	<u> </u>
Shallow MWA-19 MWA-19-091305 9/13/2005 1,240,000		824	< 1 U
Shallow MWA-19 MWA-19-120805 12/8/2005		101	
Shallow MWA-19 MWA-19-010906 1/9/2006		33.2	
Shallow MWA-19 MWA-19-021006 2/10/2006		12.1	
Shallow MWA-19 MWA-19-072606 7/26/2006		56.8	
Shallow MWA-19 MWA-19-040907 4/9/2007 0.0743 J < 0.0966 U	1.79	11.3	< 80.0 U
Shallow MWA-19 MWA-19-081009 8/10/2009 0.183 J 0.175 J 1.14 1.5 JA 406,000	0.390 J	500 J	< 40 U
Shallow MWA-20 GW010103 3/27/2001 0.088 J 0.088 J 2,810,000 T	2,700	F0.5	
Shallow MWA-20 GW020114 6/13/2001 1,780,000 J Shallow MWA-20 GW04090204 4/9/2002 1,135,000 T	1,100 1,900	59.5	
	· · · · · · · · · · · · · · · · · · ·		
Shallow MWA-20 GW-060503-03 6/5/2003 0.0688 J 0.213 J 0.282 JT 1,500,000 Shallow MWA-20 MWA-20-050905 5/9/2005 <td< th=""><th>215</th><th>436</th><th> </th></td<>	215	436	
Shallow MWA-20 MWA-20-030905 5/9/2005 Shallow MWA-20 MWA-20-071305 7/13/2005 Shallow MWA-20 MWA-20-071305 7/13/2005		74.1	
Shallow MWA-20 MWA-20 HWWA-20-071303 7713/2003 C 0.0500 U C 0.0500	1,540	74.1	
Shallow MWA-20 MWA-20 6/4/2005 C 0.0300	1,340	676	
Shallow MWA-20 MWA-20-001005 0/10/2005		573	
Shallow MWA-20 MWA-20-121205 12/12/2005		9.67 J	<u> </u>
Shallow MWA-20 MWA-20-011006 1/10/2006		52.5	
Shallow MWA-20 MWA-20-020906 2/9/2006		43.8	
Shallow MWA-20 MWA-20-072506 7/25/2006		14.36 J	
Shallow MWA-20 MWA-20-041107 4/11/2007 < 0.0485 U < 0.0485 U 0.0692 J 0.0692 J 583,000	1,500 J	8.6	< 33.9 U
Shallow MWA-20 MWA-20-081709 8/17/2009 < 0.00952 U < 0.00952 U 0.00836 J 0.00836 JA 164,000	1,780	67 J	< 40 U
Shallow MWA-22 GW020122 6/15/2001 0.83 < 0.096 U	38		
Shallow MWA-22 GW04110203 4/11/2002 < 0.099 U	310		
Shallow MWA-22 GW-061003-02 6/10/2003 < 0.13 U	128		
Shallow MWA-22 MWA-22 8/1/2005 0.115 < 0.0500 U	6,460		<u> </u>
Shallow MWA-22 MWA-22-041607 4/16/2007 0.133 < 0.0976 U	538	103	<u> </u>
Shallow MWA-22 MWA-22-081909 8/19/2009 < 0.144 U	123	48 J	< 40 U
Shallow MWA-22 MWA-22-022119 2/21/2019 < 0.10 UJ	3,400	< 13 UJ	< 48
Shallow MWA-24 GW11150102 11/15/2001	< 2.5 U		
Shallow MWA-24 GW04080201 4/8/2002 408,000 408			
Shallow MWA-24 GW-060503-04 6/5/2003 < 0.232 U		F0.0.1	
Shallow MWA-24 MWA-24-050505 5/5/2005 529,000 Shallow MWA-24 MWA-24-071205 7/12/2005		52.8 J 54.1 J	
Shallow MWA-24 MWA-24-071205 7/12/2005 Shallow MWA-24 MWA-24-081105 8/11/2005		35.5	
Shallow MWA-24 MWA-24-001105 6/11/2005 Shallow MWA-24 MWA-24-000705 9/7/2005		20.3	
Shallow MWA-24 MWA-24-090705 9/12005 Shallow MWA-24 MWA-24-091405 9/14/2005		20.0	30
Shallow MWA-24 MWA-24-120705 12/7/2005 Shallow MWA-24 MWA-24-120705 12/7/2005		63.5	
Shallow MWA-24 MWA-24-011106 1/11/2006		31.9	
Shallow MWA-24 MWA-24-020806 2/8/2006		30.6	
Shallow MWA-24 MWA-24-072506 7/25/2006		24	
Shallow MWA-24 MWA-24-040307 4/3/2007 274,000	1.90 J	76.2	258 J
Shallow MWA-24 MWA-24-080509 8/5/2009 237,000	< 0.500 U	86 J	17.9
Shallow MWA-29 GW04080204 4/8/2002 < 0.0096 U	< 0.5 U		
Shallow MWA-29 GW-060403-06 6/4/2003 < 0.0170 UJ			< 110 U
Shallow MWA-29 MWA-29-050905 5/9/2005 9,100,000		14.1	

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Aquifer	Well ID	Sample ID	Date	2,4'-DDD	4,4'-DDD	2,4'-DDE	4,4'-DDE	2,4'-DDT	4,4'-DDT	Total of 2,4' and 4,4'- DDD, -DDE, -DDT	Chloride	Chlorobenzene	Chromium (VI)	Perchlorate
				μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L
Shallow	MWA-29	MWA-29-071805	7/18/2005										< 4.55 U	
Shallow	MWA-29	MWA-29-081205	8/12/2005										< 4.55 U	
Shallow	MWA-29	MWA-29-091205	9/12/2005								12,600,000		107	4,800
Shallow	MWA-29	MWA-29-120805	12/8/2005										186	
Shallow	MWA-29	MWA-29-010606	1/6/2006										14.1	
Shallow	MWA-29	MWA-29-020806	2/8/2006										19.5	
Shallow	MWA-29	MWA-29-072406	7/24/2006										< 20 U	
Shallow	MWA-29	MWA-29-041607	4/16/2007		< 0.0966 U		< 0.0966 U		< 0.0966 U	< 0.0966 UA	9,710,000		< 20 UJ	243
Shallow	MWA-29	MWA-29-080609	8/6/2009		< 0.00952 U		< 0.00952 U		< 0.00952 U	< 0.00952 UA	3,750,000		< 25 UJ	< 20 U
Shallow	MWA-30	GW04120203	4/12/2002		0.18		0.021 J		0.012	0.213 JT	179,000,000	< 0.5 U		
Shallow	MWA-30	GW-060403-08	6/4/2003		< 0.0170 UJ		< 0.0170 UJ		< 0.0280 UJ	< 0.028 UJT	164,000,000			7,900
Shallow	MWA-30	MWA-30-050605	5/6/2005								104,000,000		3,040	
Shallow	MWA-30	MWA-30-051005	5/10/2005											621
Shallow	MWA-30	MWA-30-071805	7/18/2005										13.0	
Shallow	MWA-30	MWA-30	8/3/2005		< 0.0500 U		< 0.0500 U		< 0.0500 U	< 0.05 UT		< 0.136 U		
Shallow	MWA-30	MWA-30-081705	8/17/2005										6,270	
Shallow	MWA-30	MWA-30-010606	1/6/2006										32.8	
Shallow	MWA-30	MWA-30-021006	2/10/2006										< 4.55 U	
Shallow	MWA-30	MWA-30-072606	7/26/2006										< 2 U	
Shallow	MWA-30	MWA-30-040507	4/5/2007		< 0.0962 U		< 0.0962 U		< 0.0962 U	< 0.0962 UA	39,400,000	0.900	8.5 J	< 80.0 U
Shallow	MWA-30	MWA-30-081009	8/10/2009		0.148		< 0.00943 U		< 0.00943 U	0.148 A	12,900,000	< 2.00 UJ	1,100 J	< 80 U
Shallow	MWA-33	GW-060503-05	6/5/2003				7 01000 10 0		7 2 1 2 2 2 2	1	198,000	< 2.51 U	1,1000	540
Shallow	MWA-33	GW-061103-02	6/11/2003		< 0.0170 UJ		< 0.0170 UJ		< 0.518 U	< 0.518 UT	286,000	12.0.0		320
Shallow	MWA-33	MWA-33-050505	5/5/2005		10.011000		10.0170		10.0100	10.0.00	200,000		44.6	020
Shallow	MWA-33	MWA-33-071405	7/14/2005							+			51.8	
Shallow	MWA-33	MWA-33-081105	8/11/2005							+			36.2	
Shallow	MWA-33	MWA-33-090705	9/7/2005							+			30.2	
Shallow	MWA-33	MWA-33-091405	9/14/2005										30.2	1,500
Shallow	MWA-33	MWA-33-031405 MWA-33-120805	12/8/2005										17.7	1,500
Shallow	MWA-33	MWA-33-120005 MWA-33-011106	1/11/2006										8.74 J	
Shallow	MWA-33	MWA-33-020806	2/8/2006										14.8	
Shallow	MWA-33	MWA-33-020000 MWA-33-072406	7/24/2006										11 J	
Shallow	MWA-33	MWA-33-040307	4/3/2007		0.0688 J		0.106		0.0892 J	0.264 JA	336,000		11.9	< 20.0 U
Shallow	MWA-33	MWA-33-080509	8/5/2009		< 0.0952 U		< 0.0952 U		< 0.0952 U	< 0.0952 UA	929,000		14 J	< 8 U
Shallow	MWA-40	MWA-40-050505	5/5/2005		< 0.0932 0		< 0.0932 0		< 0.0932 0	< 0.0932 0A	929,000		< 4.55 U	700
Shallow	MWA-40	MWA-40-030303	7/12/2005		1								< 4.55 U	
Shallow	MWA-40	MWA-40-081105	8/11/2005		-								< 4.55 U	
Shallow	MWA-40	MWA-40-090705	9/7/2005		-								< 4.55 U	
Shallow	MWA-40	MWA-40-120705	12/7/2005		-								4.76 J < 4.55 U	
Shallow	MWA-40	MWA-40-120705 MWA-40-011106	1/11/2006		-								< 4.55 U	
Shallow	MWA-40	MWA-40-011106 MWA-40-020806	2/8/2006										< 4.55 U < 4.55 U	
					-									
Shallow Shallow	MWA-40 MWA-40	MWA-40-072406 MWA-40-040307	7/24/2006 4/3/2007								204.000		9.5 J	< 400 U
											294,000		21.7	
Shallow	MWA-40	MWA-40-080509	8/5/2009		1						220,000		42 J	< 20 U
Shallow	MWA-41	MWA-41-050905	5/9/2005		1					+			< 4.55 U	
Shallow	MWA-41	MWA-41-071505	7/15/2005		-							+	< 4.55 U	
Shallow	MWA-41	MWA-41-081205	8/12/2005		1								< 4.55 U	
Shallow	MWA-41	MWA-41-090705	9/7/2005		1								< 4.55 U	
Shallow	MWA-41	MWA-41-120805	12/8/2005										0.600 J	
Shallow	MWA-41	MWA-41-010506	1/5/2006										< 4.55 U	
Shallow	MWA-41	MWA-41-020806	2/8/2006										< 4.55 U	
Shallow	MWA-41	MWA-41-072406	7/24/2006										15.1 J	
Shallow	MWA-41	MWA-41-041607	4/16/2007								26,600		< 0.6 U	1.7 J
Shallow	MWA-41	MWA-41-080609	8/6/2009								26,300		< 25 UJ	< 4 U
Shallow	MWA-42	MWA-42-050505	5/5/2005		ļ					1		1	56.2	

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Aquifer	Well ID	Sample ID	Date	2,4'-DDD	4,4'-DDD	2,4'-DDE	4,4'-DDE	2,4'-DDT	4,4'-DDT	Total of 2,4' and 4,4'- DDD, -DDE, -DDT	Chloride	Chlorobenzene	Chromium (VI)	Perchlorate
				μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L
Shallow	MWA-42	MWA-42-071205	7/12/2005										< 4.55 U	
Shallow	MWA-42	MWA-42	8/2/2005		< 0.250 UJ		< 0.250 UJ		< 0.250 UJ	< 0.25 UJT		94.0		
Shallow	MWA-42	MWA-42-081505	8/15/2005										11.9	
Shallow	MWA-42	MWA-42-090805	9/8/2005								913,000			
Shallow	MWA-42	MWA-42-092305	9/23/2005										46.7	
Shallow	MWA-42	MWA-42-120705	12/7/2005										27.7	
Shallow	MWA-42	MWA-42-011106	1/11/2006										5.77 J	
Shallow	MWA-42	MWA-42-020906	2/9/2006										6.26 J	
Shallow	MWA-42	MWA-42-072506	7/25/2006 4/3/2007		0.101		0.407		0.444	0.400.4	45.000	2.25	8.6 J 7.4	. 00 0 1 1
Shallow Shallow	MWA-42 MWA-42	MWA-42-040307 MWA-42-081709	8/17/2009		0.101		0.197 0.152		0.111 < 0.0952 U	0.409 A 0.256 A	45,000	3.35 129	< 25 UJ	< 80.0 U
Shallow					0.104		0.152		< 0.0952 0	0.256 A	816,000	129		< 40 0
Shallow	MWA-46 MWA-46	MWA-46-050605 MWA-46-071405	5/6/2005 7/14/2005										49.5 J 41.1	
Shallow	MWA-46	MWA-46	8/4/2005		< 0.0500 U		< 0.0500 U		0.611 J	0.611 JT		40.2	41.1	
Shallow	MWA-46	MWA-46-081605	8/4/2005		< 0.0000 0		< 0.0000 0		0.0113	0.011 J1		40.2	20.3	
Shallow	MWA-46	MWA-46-091305	9/13/2005						+		1,250,000	+	43.3	< 1 U
Shallow	MWA-46	MWA-46-120905	12/9/2005								1,230,000		16.7	<u> </u>
Shallow	MWA-46	MWA-46-010906	1/9/2006										< 4.55 U	
Shallow	MWA-46	MWA-46-021306	2/13/2006				+		+				5.14 J	
Shallow	MWA-46	MWA-46-072606	7/26/2006				+		+				35.4	
Shallow	MWA-46	MWA-46-041107	4/11/2007		< 0.0980 U		< 0.0980 U		0.323	0.323 A	1,820,000	938	22	< 80.0 U
Shallow	MWA-46	MWA-46-081009	8/10/2009		0.429		0.176 J		0.728	1.33 JA	651,000	1.54	< 250 UJ	< 40 U
Shallow	MWA-47	MWA-47-050605	5/6/2005		0.423		0.1700		0.720	1.00 0A	001,000	1.04	< 4.55 U	V 40 0
Shallow	MWA-47	MWA-47-071905	7/19/2005							+			< 40.0 UJ	
Shallow	MWA-47	MWA-47-081705	8/17/2005										4.63 J	
Shallow	MWA-47	MWA-47-090905	9/9/2005								9,690,000		< 4.55 U	66,000
Shallow	MWA-47	MWA-47-121205	12/12/2005								0,000,000		< 4.55 U	00,000
Shallow	MWA-47	MWA-47-010606	1/6/2006										14.3	
Shallow	MWA-47	MWA-47-021006	2/10/2006										< 4.55 U	
Shallow	MWA-47	MWA-47-072606	7/26/2006										< 2 U	
Shallow	MWA-47	MWA-47-040507	4/5/2007		0.265		0.0489 J		0.152	0.466 JA	3,690,000	0.540	< 20 UJ	82.3
Shallow	MWA-47	MWA-47-080609	8/6/2009		0.200		0.0353 J		0.0931 J	0.328 JA	2,110,000	0.880 J	110 J	< 20 U
Shallow	MWA-47	MWA-47-022119	2/21/2019	0.040 j	0.067	< 0.10	< 0.0050	< 0.10	0.041	0.148		33	1.1	3.9 j
Shallow	MWA-61	MWA-61	8/1/2005	-	< 2.50 UJ		< 2.50 UJ		< 2.50 UJ	< 2.5 UJT		5,800		
Shallow	MWA-61	MWA-61-102605	10/26/2005		0.109		< 0.236 UJ		0.129	0.238 T		2,100		
Shallow	MWA-61	MWA-61-112105	11/21/2005		0.11		0.0557 J		0.204	0.369 JT		133		
Shallow	MWA-61	MWA-61-011306	1/13/2006		0.545	<u> </u>	< 0.0472 U		0.124	0.669 T	<u> </u>	465		
Shallow	MWA-61	MWA-61-040407	4/4/2007		0.567		< 0.0980 U		< 0.0980 U	0.567 A	683,000	325		343
Shallow	MWA-61	MWA-61-081009	8/10/2009		0.356 J		< 0.476 U		< 0.476 U	0.356 JA	473,000	715 J		489
Shallow	MWA-61	MWA-61-022119	2/21/2019	0.27 J+	0.50 J+	< 0.10	0.016 J+	< 0.10	0.029 J+	0.815		690	< 1.0	37
Shallow	MWA-63	MWA-63-102705	10/27/2005		< 0.0472 U		< 0.0472 U		< 0.0472 U	< 0.0472 UT		7.60		
Shallow	MWA-63	MWA-63-112105	11/21/2005		< 0.0495 U		< 0.0495 U		0.0533 J	0.0533 JT		< 0.272 U		
Shallow	MWA-63	MWA-63-040407	4/4/2007		< 0.00995 UJ		< 0.00995 UJ		0.00603 J	0.00603 JA	358,000	0.180 J		< 4.0 U
Shallow	MWA-63	MWA-63-080509	8/5/2009		< 0.00952 U		< 0.00952 U		0.00574 J	0.00574 JA	690,000	< 100 U		< 8 U
Shallow	MWA-63	MWA-63-022119	2/21/2019	< 0.10	< 0.0050	< 0.10	< 0.0050	< 0.10	< 0.010	< 0.10		5,800	< 1.0 UJ	< 4.0
Shallow	MWA-69	MWA-69	8/2/2005		17.3		< 5.00 UJ		51.1	68.4 T		9,010		
Shallow	MWA-69	MWA-69-102505	10/25/2005		3.93		0.289		6.84	11.059 T		2,690		
Shallow	MWA-69	MWA-69-112205	11/22/2005		4.36		0.425		9.33	14.115 T		3,640		
Shallow	MWA-69	MWA-69-011606	1/16/2006		8.64		0.838		29.5	38.978 T	F44 000	166		00.5.
Shallow	MWA-69	MWA-69-041707	4/17/2007		15.6		1.05 J		46.4 J	62.9 JA	511,000	5,360		29.5 J
Shallow	MWA-69	MWA-69-081109	8/11/2009		50.0		4.16		57.9	112.06	297,000	6,930		< 20 U
Shallow	MWA-69	MWA-69-090309	9/3/2009		7.45		0.369		5.95	13.8 A		4 700		
Intermediate	MWA-8I	GWG001	11/24/1998		E 2 1		0.07.1		4 1	6 27 IT	2 660 000	1,700		
Intermediate	MWA-8I	GW019906	1/27/1999		5.3 J		0.07 J		1 J	6.37 JT	2,660,000	4,800		
Intermediate	MWA-8I	GW029908	4/27/1999		0.16 J		< 0.04 UJ		< 0.04 UJ	0.16 JT	2,290,000	4,300 J		

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Aquifer	Well ID	Sample ID	Date	2,4'-DDD	4,4'-DDD	2,4'-DDE	4,4'-DDE	2,4'-DDT	4,4'-DDT	Total of 2,4' and 4,4'- DDD, -DDE, -DDT	Chloride	Chlorobenzene	Chromium (VI)	Perchlorate
				μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L
Intermediate	MWA-8I	GW039905	8/24/1999		0.05 J		< 0.04 UJ		< 0.04 UJ	0.05 JT	2,660,000	3,400		
Intermediate	MWA-8I	GW049906	11/16/1999		0.08 J					0.08 JT	2,530,000	2,800		
Intermediate	MWA-8I	GW010112	3/29/2001		< 0.1 U		< 0.1 U		< 0.1 U	< 0.1 UT	1,660,000 J	4,100		
Intermediate	MWA-8I	GW020107	6/12/2001		0.11 J					0.11 JT	1,420,000	1,400		
Intermediate	MWA-8I	GW04100206	4/10/2002		0.08		< 0.0097 U		0.012	0.092 T	2,110,000	940		
Intermediate	MWA-8I	GW-060903-02	6/9/2003		< 0.0170 U		< 0.0170 U		< 0.0280 U	< 0.028 UT	2,380,000	23		< 20 U
Intermediate	MWA-8I	MWA-8I-111004	11/10/2004		< 0.0500 U		< 0.0500 U		0.590	0.59 T	,,	24		
Intermediate	MWA-8I	MWA-8I-031005	3/10/2005		< 0.0500 U		< 0.0500 U		0.138 J	0.138 JT		185		
Intermediate	MWA-8I	MWA-8I-062105	6/21/2005		< 0.0500 U		< 0.0500 U		< 0.0500 U	< 0.05 UT		27		
Intermediate	MWA-8I	MWA-8I-091505	9/15/2005		< 0.00103 U		< 0.00367 U		0.0243 J	0.0243 JT		122		
Intermediate	MWA-8I	MWA-8I-102705	10/27/2005		< 0.0472 U		< 0.0472 U		< 0.0472 U	< 0.0472 UT		215		
Intermediate	MWA-8I	MWA-8I-112105	11/21/2005		< 0.0472 U		< 0.0472 U		0.0678 J	0.0678 JT		46		
Intermediate	MWA-8I	MWA-8I-122005	12/20/2005		< 0.0957 UJ		< 0.0957 UJ		< 0.0957 UJ	< 0.0957 UJT		25		
Intermediate	MWA-8I	MWA-8I-032906	3/29/2006		< 0.0490 U		< 0.0490 U		< 0.0490 U	< 0.049 UT		18		
Intermediate	MWA-8I	MWA-8I-040407	4/4/2007		< 0.0490 U		< 0.0490 U		< 0.0490 U	< 0.049 UA	1,420,000	4,910		< 200 U
Intermediate	MWA-8I	MWA-8I-080609	8/6/2009		< 0.0976 U		< 0.0190 U		0.0194	0.0194 A	1,020,000	746		< 20 U
Intermediate	MWA-32I	GW-060403-10	6/4/2003		< 0.0190 UJ		< 0.0190 UJ		< 0.0280 UJ	< 0.028 UJT	31,000,000	140		200,000
	MWA-32I	MWA-32I-050605	5/6/2005		< 0.0170 03		< 0.0170 03		< 0.0260 03	< 0.026 031	17,600,000		176	200,000
Intermediate		MWA-32I-050605 MWA-32I-051005									17,000,000		1/6	450,000
Intermediate	MWA-32I		5/10/2005										440	158,000
Intermediate	MWA-32I	MWA-32I-071805	7/18/2005		0.050011		0.0500.11		0.0500.11	0.05.117			119	
Intermediate	MWA-32I	MWA-32I	8/3/2005		< 0.0500 U		< 0.0500 U		< 0.0500 U	< 0.05 UT		1		
Intermediate	MWA-32I	MWA-32I-081705	8/17/2005										555	
Intermediate	MWA-32I	MWA-32I-091405	9/14/2005								13,700,000		386	160,000
Intermediate	MWA-32I	MWA-32I-120905	12/9/2005										14.4	
Intermediate	MWA-32I	MWA-32I-010606	1/6/2006										6.55 J	
Intermediate	MWA-32I	MWA-32I-021006	2/10/2006										6.72 J	
Intermediate	MWA-32I	MWA-32I-072606	7/26/2006										< 2 U	
Intermediate	MWA-32I	MWA-32I-040507	4/5/2007		0.0818 J		< 0.0952 U		< 0.0952 U	0.0818 JA	33,800,000	0.470 J	8 J	131 J
Intermediate	MWA-32I	MWA-32I-081009	8/10/2009		0.0568 J		< 0.0962 U		< 0.0962 U	0.0568 JA	2,520,000	0.180 J	210 J	29,900
Intermediate	MWA-34I	GW-060603-05	6/6/2003		0.0892		< 0.0170 U		0.327	0.416 T	3,040,000	666		4,600
Intermediate	MWA-34I	MWA-34I-050605	5/6/2005								5,260,000		35.8	
Intermediate	MWA-34I	MWA-34I-071805	7/18/2005										17.6	
Intermediate	MWA-34I	MWA-34I	8/3/2005		< 0.0500 U		< 0.0500 U		< 0.0500 U	< 0.05 UT		1,540		
Intermediate	MWA-34I	MWA-34I-081705	8/17/2005										192	
Intermediate	MWA-34I	MWA-34I-091305	9/13/2005								4,580,000		26.9	5,900
Intermediate	MWA-34I	MWA-34I-120905	12/9/2005										30.2	
Intermediate	MWA-34I	MWA-34I-010906	1/9/2006										13.5	
Intermediate	MWA-34I	MWA-34I-021006	2/10/2006										12.3	
Intermediate	MWA-34I	MWA-34I-072606	7/26/2006										34.5	
Intermediate	MWA-34I	MWA-34I-040907	4/9/2007		< 0.0971 U		< 0.0971 U		< 0.0971 U	< 0.0971 UA	1,400,000	3,920	32.6	< 80.0 U
Intermediate	MWA-34I	MWA-34I-081109	8/11/2009		< 0.0200 U		< 0.0200 U		< 0.0200 U	< 0.02 UA	740,000	3,240	< 250 UJ	< 40 U
Intermediate	MWA-49I	MWA-49I-050605	5/6/2005									·	< 4.55 U	
Intermediate	MWA-49I	MWA-49I-071405	7/14/2005										< 4.55 U	
Intermediate	MWA-49I	MWA-49I	8/3/2005		< 0.0500 U		< 0.0500 U		0.204	0.204 T		6		
Intermediate	MWA-49I	MWA-49I-081605	8/16/2005									-	< 4.55 U	
Intermediate	MWA-49I	MWA-49I-091305	9/13/2005								10,600,000		< 4.55 U	160,000
Intermediate	MWA-49I	MWA-49I-120905	12/9/2005								-,		< 4.55 U	
Intermediate	MWA-49I	MWA-49I-010906	1/9/2006										< 4.55 U	
Intermediate	MWA-49I	MWA-49I-021306	2/13/2006						†				< 4.55 U	
Intermediate	MWA-49I	MWA-49I-072606	7/26/2006										< 2 U	
Intermediate	MWA-49I	MWA-49I-041107	4/11/2007		< 0.0971 U		< 0.0971 U		0.135	0.135 A	11,000,000	0.780 J	0.9 J	42,800
Intermediate	MWA-49I	MWA-49I-081009	8/10/2009		0.0402 J		0.0394 J		0.269	0.349 JA	7,560,000	< 10.0 U	< 25 UJ	58,900
Intermediate	MWA-51I	MWA-51I-050505	5/5/2005		0.070£ U		0.0007 0		0.203	5.575 GA	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	10.00	48.5	30,300
	MWA-51I	MWA-51I-071405	7/14/2005				1		-	+		1	63.1	
Intermediate														

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Aquifer	Well ID	Sample ID	Date	2,4'-DDD	4,4'-DDD	2,4'-DDE	4,4'-DDE	2,4'-DDT	4,4'-DDT	Total of 2,4' and 4,4'- DDD, -DDE, -DDT	Chloride	Chlorobenzene	Chromium (VI)	Perchlorate
				μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L
Intermediate	MWA-51I	MWA-51I-081605	8/16/2005										24.3	
Intermediate	MWA-51I	MWA-51I-091305	9/13/2005								8,910,000		46.8	590
Intermediate	MWA-51I	MWA-51I-120805	12/8/2005										22.0	
Intermediate	MWA-51I	MWA-51I-011006	1/10/2006										< 4.55 U	
Intermediate	MWA-51I	MWA-51I-021306	2/13/2006										10.7	
Intermediate	MWA-51I	MWA-51I-041107	4/11/2007		0.103		< 0.0962 U		0.0572 J	0.16 JA	4,640,000	358	31.3	54.6 J
Intermediate	MWA-51I	MWA-51I-081009	8/10/2009		0.113		< 0.0962 U		0.0363 J	0.149 JA	2,780,000	336 J	< 250 UJ	< 40 U
Intermediate	MWA-53I	MWA-53I-050905	5/9/2005										< 4.55 U	
Intermediate	MWA-53I	MWA-53I-071805	7/18/2005										< 4.55 U	
Intermediate	MWA-53I	MWA-53I-081205	8/12/2005										< 4.55 U	
Intermediate	MWA-53I	MWA-53I-091205	9/12/2005								14,300,000		< 4.55 U	1,400
Intermediate	MWA-53I	MWA-53I-120805	12/8/2005								, ,		1.10 J	,
Intermediate	MWA-53I	MWA-53I-010606	1/6/2006										< 4.55 U	
Intermediate	MWA-53I	MWA-53I-020806	2/8/2006										< 4.55 U	
Intermediate	MWA-53I	MWA-53I-072406	7/24/2006						1			1	6.8 J	
Intermediate	MWA-53I	MWA-53I-041607	4/16/2007								16,200,000		< 6 UJ	209
Intermediate	MWA-53I	MWA-53I-080609	8/6/2009								5,980,000		< 25 UJ	< 20 U
Intermediate	MWA-54I	MWA-54I-050505	5/5/2005								0,000,000		54.8	1200
Intermediate	MWA-54I	MWA-54I-071205	7/12/2005										< 136 U	
Intermediate	MWA-54I	MWA-54I-081505	8/15/2005										< 4.55 U	
Intermediate	MWA-54I	MWA-54I-090805	9/8/2005								5,540,000		< 4.55 0	
Intermediate	MWA-54I	MWA-54I-092305	9/23/2005								3,340,000		6.34 J	
		MWA-54I-120705	12/7/2005											
Intermediate	MWA-54I												7.20 J	
Intermediate	MWA-54I	MWA-54I-011106	1/11/2006										11.3	
Intermediate	MWA-54I	MWA-54I-020906	2/9/2006										11.3	
Intermediate	MWA-54I	MWA-54I-07506	7/25/2006		0.000011		0.000011		0.000011	0.0000114		_	17.5 J	40.011
Intermediate	MWA-54I	MWA-54I-040307	4/3/2007		< 0.0962 U		< 0.0962 U		< 0.0962 U	< 0.0962 UA	3,090,000	9	14.4	< 40.0 U
Intermediate	MWA-54I	MWA-54I-081909	8/19/2009		0.0380 J		0.00781 J		0.0103 J	0.0561	2,750,000	7	210 J	< 40 U
Intermediate	MWA-64I	MWA-64I	8/1/2005		0.207		< 0.0500 U		0.309	0.516 T		2,320		
Intermediate	MWA-64I	MWA-64I-040407	4/4/2007		0.0563 J		< 0.0966 U		< 0.0966 U	0.0563 JA	1,910,000	17,500		< 400 U
Intermediate	MWA-64I	MWA-64I-080609	8/6/2009		0.0290 J		< 0.0952 U		0.0319 J	0.0609 JA	1,590,000	2,070		< 40 U
Intermediate	MWA-66I	MWA-66I	8/2/2005		< 0.500 UJ		< 0.500 UJ		< 0.500 UJ	< 0.5 UJT		12,900		
Intermediate	MWA-66I	MWA-66I-041707	4/17/2007		< 0.0957 U		< 0.0957 U		< 0.0957 U	< 0.0957 UA	1,890,000	8,160		39.0 J
Intermediate	MWA-66I	MWA-66I-081109	8/11/2009		< 0.0340 U		< 0.00971 U		0.00620 J	0.0062 JA	1,720,000	7,780	< 25 UJ	1,240
Intermediate	MWA-70I	MWA-70I-B	4/19/2006								68,000	< 0.17 U	< 1.62 U	< 200 U
Intermediate	MWA-70I	MWA-70I-040307	4/3/2007								4,090,000		1.4 J	< 40.0 U
Intermediate	MWA-70I	MWA-70I-080509	8/5/2009								5,200,000		< 25 U	< 20 U
Deep	MWA-11I(D)	GWG004	12/7/1998									49		
Deep	MWA-11I(D)	GW019916	1/29/1999		< 0.04 U		< 0.04 U		0.2	0.2 T	612,000	2.5		
Deep	MWA-11I(D)	GW029905	4/27/1999		0.19		< 0.04 U		0.08	0.27 T	637,000	< 0.5 UJ		
Deep	MWA-11I(D)	GW039916	8/26/1999		0.12		< 0.04 U		0.05	0.17 T	802,000	< 0.5 U		
Deep	MWA-11I(D)	GW049914	11/17/1999		0.1 J		< 0.04 UJ		< 0.04 UJ	0.1 JT	963,000	< 1 U		
Deep	MWA-11I(D)	GW010118	3/30/2001		0.25		< 0.1 U		0.7	0.95 T	768,000 J	< 0.5 U		
Deep	MWA-11I(D)	GW020119	6/15/2001		0.25		0.01 J		0.48	0.74 JT	773,000	< 0.5 U		
Deep	MWA-11I(D)	GW04110204	4/11/2002		< 0.16 U		< 0.0097 U		< 0.085 U	< 0.16 UT	833,000	< 1.4 U		
Deep	MWA-11I(D)	GW-061003-03	6/10/2003		1.2		< 0.0170 U		< 0.573 U	1.2 T	550,000	< 0.71 U		< 20 U
Deep	MWA-11I(D)	MWA-11	8/1/2005		0.593		< 0.0500 U		0.0829 J	0.6759 JT		0.810		
Deep	MWA-11I(D)	MWA-11I-041707	4/17/2007		0.0722 J		< 0.0971 U		0.0591 J	0.131 JA	1,210,000	1.92		< 8.0 U
Deep	MWA-11I(D)	MWA-11I-081909	8/19/2009		0.658		0.0459 J		0.0599 J	0.764 JA	1,090,000	< 0.780 U	40 J	< 4 U
Deep	MWA-31I(D)	GW04080205	4/8/2002		< 0.0097 U		< 0.0097 U		< 0.0097 U	< 0.0097 UT	39,100,000	< 0.5 U		
Deep	MWA-31I(D)	GW-060403-07	6/4/2003		< 0.0170 U		< 0.0170 U		< 0.0280 U	< 0.028 UT	61,100,000	1 2.0 0		4,700
Deep	MWA-31I(D)	MWA-31I-050605	5/6/2005								62,100,000	1	726	-,
Deep	MWA-31I(D)	MWA-31I-071805	7/18/2005								02,100,000		250	
Deep	MWA-31I(D)	MWA-31I-081705	8/17/2005										142	
Deep	MWA-31I(D)	MWA-31I-091405	9/14/2005								57,900,000		1,020	
peeh	INIAA-211(D)	1V1VVA-011-091400	3/17/2003	1			1	l	I		31,300,000	I	1,020	

Appendix E
Historical Data Table
Arkema Quarter 4, 2022, Groundwater Monitoring Report
Arkema Inc. Facility
Portland, Oregon

Aquifer	Well ID	Sample ID	Date	2,4'-DDD	4,4'-DDD	2,4'-DDE	4,4'-DDE	2,4'-DDT	4,4'-DDT	Total of 2,4' and 4,4'- DDD, -DDE, -DDT	Chloride	Chlorobenzene	Chromium (VI)	Perchlorate
				μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L
Deep	MWA-31I(D)	MWA-31I-120905	12/9/2005										25.1	
Deep	MWA-31I(D)	MWA-31I-010906	1/9/2006										45.3	
Deep	MWA-31I(D)	MWA-31I-021006	2/10/2006										104	
Deep	MWA-31I(D)	MWA-31I-072606	7/26/2006										< 2 U	
Deep	MWA-31I(D)	MWA-31I(D)-040507	4/5/2007		< 0.0962 U		< 0.0962 U		< 0.0962 U	< 0.0962 UA	53,700,000	0.640	< 6 UJ	5,730
Deep	MWA-31I(D)	MWA-31I(D)-081009	8/10/2009		< 0.00952 U		< 0.00952 U		< 0.00952 U	< 0.00952 UA	54,300,000	< 2.50 UJ	9,300 J	1,840
Deep	MWA-56D	MWA-56D-050605	5/6/2005										< 4.55 U	
Deep	MWA-56D	MWA-56D-071405	7/14/2005										22.3	
Deep	MWA-56D	MWA-56D-081605	8/16/2005										< 4.55 U	
Deep	MWA-56D	MWA-56D-091305	9/13/2005								30,800,000		< 4.55 U	
Deep	MWA-56D	MWA-56D-120905	12/9/2005										< 4.55 UJ	
Deep	MWA-56D	MWA-56D-010906	1/9/2006										< 4.55 U	
Deep	MWA-56D	MWA-56D-021306	2/13/2006										< 4.55 U	
Deep	MWA-56D	MWA-56D-072606	7/26/2006										< 2 U	
Deep	MWA-56D	MWA-56D-041107	4/11/2007		< 0.0971 U		< 0.0971 U		< 0.0971 U	< 0.0971 UA	27,900,000	< 2.50 U	< 2 UJ	2,430
Deep	MWA-56D	MWA-56D-081009	8/10/2009		< 0.00976 U		< 0.00976 U		0.00690 J	0.0069 JA	22,800,000	< 5.00 U	< 25 UJ	2,140
Deep	MWA-58D	MWA-58D-050605	5/6/2005										< 4.55 U	
Deep	MWA-58D	MWA-58D-071405	7/14/2005										< 4.55 U	
Deep	MWA-58D	MWA-58D-081705	8/17/2005										< 4.55 U	
Deep	MWA-58D	MWA-58D-091305	9/13/2005								60,700,000		< 4.55 U	
Deep	MWA-58D	MWA-58D-120905	12/9/2005										< 4.55 UJ	
Deep	MWA-58D	MWA-58D-010906	1/9/2006										< 4.55 U	
Deep	MWA-58D	MWA-58D-021006	2/10/2006										< 4.55 U	
Deep	MWA-58D	MWA-58D-072606	7/26/2006										< 2 U	
Deep	MWA-58D	MWA-58D-040907	4/9/2007		< 0.0962 U		< 0.0962 U		< 0.0962 U	< 0.0962 UA	53,600,000	< 2.50 U	57.5	59,600
Deep	MWA-58D	MWA-58D-081009	8/10/2009		< 0.00943 U		< 0.00943 U		0.0286	0.0286 A	33,600,000	2.00 J	< 25 UJ	128,000

Notes:

Bolded values indicate concentrations above the Reportable Detection Limit.

< = Compound not detected. Reportable detection limit shown.

μg/L = micrograms per liter

DDD = Dichlorodiphenyldichloroethane

DDE = Dichlorodiphenyldichloroethylene

DDT = Dichlorodiphenyltrichloroethane

Qualifers:

A = Total value based on limited number of analytes.

j = The analyte was positively identified; associated numerical value is the approximate concentration of the analyte in the sample.

J = The analyte was positively identified; associated numerical value is the approximate concentration of the analyte in the sample.

J+ = The concentration of the sample is considered to be biased high, as the associated QC results exceed the upper control limits.

J- = The concentration of the sample is considered to be biased low, as the associated QC results are outside the lower control limits.

T = Sample temperature did not meet quality control criteria.

U = Compound not detected based on quality assurance review.

UJ = Analyte was analyzed for, but not detected. The detection limit is a quantitative estimate.

R = Rejected. Quality control indicates that the data are unusable (compound may or not be present).

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