KEY ENVIRONMENTAL INCORPORATED

October 10, 2023

Transmitted Electronically

Mr. Austin Tweedy
Hydrogeologist
Division of Environmental Response & Revitalization
Ohio EPA – Southeast District Office
2195 Front Street
Logan, Ohio 43138

Re: 2023 Second Quarter Groundwater Monitoring Report
Howmet - Former WearEver Facility
Chillicothe, Ohio

Dear Mr. Tweedy:

Attached, please find the above-referenced groundwater monitoring report for the former WearEver facility located in Chillicothe, Ohio.

If you have any questions or desire additional information, please do not hesitate to call.

Best regards,

Key Environmental, Inc.

Andrew Franze, P.G.
Senior Project Manager

cc: Patrick Cook - Howmet

Attachment

GROUNDWATER MONITORING REPORT
SECOND QUARTER SAMPLING EVENT
JUNE 2023

HOWMET FORMER WEAREVER FACILITY
CHILLICOTHE, OHIO
OCTOBER 2023

Prepared for:

HOWMET AEROSPACE INC.
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Pittsburgh, Pennsylvania 15212

Prepared by:

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1.0 INTRODUCTION

Historical manufacturing at the Howmet Aerospace Inc. (formerly known as Alcoa Inc. and more recently known as Arconic Inc.) Former WearEver Facility (Site) located in Chillicothe, Ohio has resulted in the presence of volatile organic compounds (VOCs) in subsurface soils and groundwater at the Site. Figure 1 is a location map for the Site and surrounding areas. Remedial investigations have determined that on-Site VOCs sustain a groundwater plume that extends off-Site to a non-potable production well located approximately 2,000 feet (ft) northeast of the Site and operated by a local paper mill. The paper mill was sold by the Glatfelter Paper Company, Inc. (Glatfelter) to Pixelle Specialty Solutions (Pixelle) on October 9, 2019, per the Ross County Clerk records. In March of 1999, Alcoa entered into an agreement (Director's Final Findings and Orders) with the Ohio Environmental Protection Agency (Ohio EPA) to perform specific remedial actions at the Site, and to monitor the groundwater plume. Although the on-Site remedial actions have improved groundwater quality, the off-Site VOC groundwater plume is expected to persist for many years.

The Groundwater Monitoring Plan (GWMP; KEY Environmental, 2012) was updated in March 2012 to document changes to the predominant groundwater flow direction and monitoring trigger data. The GWMP was approved by the Ohio EPA on June 4, 2012.

The Fifth Revision of the GWMP describes the groundwater monitoring activities to be performed at the Site. The Second Quarter 2023 event included those elements of the GWMP listed as "quarterly," including:

1) Monitoring of groundwater flow direction in the plume area and along the southeastern property line;
2) Monitoring groundwater quality on the southeastern Site area and off-Site center line of the VOC plume; and
3) Downloading data from the barometric pressure transducer and transducer data loggers installed in monitoring wells MW-H-I, MW-I-I and MW-F-I.

In addition to the revisions contained in the March 2012 GWMP, additional monitoring recommendations were made during the course of the Third Five-Year Review conducted in 2015. These recommendations, which were approved by Ohio EPA in a February 3, 2016 response letter, consist of:

- Discontinue sampling of the Hammond Well (unless a southeast shift of groundwater flow direction occurs);
- Discontinue sampling of monitoring wells MW-D-D and MW-H-I; and
- Reduce sampling to annual at monitoring wells MW-D-I, MW-I-I, and MW-G-I.

Appendix A of this report includes Table 1 and Figure 2 of the revised GWMP that provides the schedule for sample collection and analysis, and the locations of the on- and off-Site monitoring

wells. Also shown on Figure 2 of the revised GWMP (Appendix A) are the temporary quarterly monitoring well locations identified in Howmet's Temporary GWMP Modification dated March 12, 2021.

The objectives of the quarterly monitoring events described in the revised GWMP are as follows:

1) Confirm that hydrodynamic control of the existing off-Site VOC groundwater plume is maintained by the Pixelle Collector Wells 17 and 18, located to the east and northeast of the Site, by detecting potential southerly shifting of the plume toward potential groundwater receptors southeast of the Site; and

2) Monitor the sample concentrations of the off-Site plume.

In addition to these objectives, the GWMP includes performing water level measurements in selected wells to monitor the groundwater flow direction and the Groundwater Use Notification Agreements (GWUNAs) placed on the properties surrounding the Site.

In order to meet the objectives of the GWMP, the Second Quarter 2023 Sampling Event was completed in June 2023. Additional monitoring wells along the southeastern border of the property were sampled in accordance with Howmet's Temporary GWMP Modification. This report has been prepared to present the results of the monitoring performed under the revised GWMP.

2.0 MONITORING ACTIVITIES

On behalf of Howmet, Field and Technical Services, LLC (FTS) conducted the Second Quarter 2023 monitoring activities in accordance with the revised GWMP dated March of 2012, the approved monitoring changes recommended in the Third Five-Year Review, and Howmet's Temporary GWMP Modification dated March 11, 2021. The temporary modification to the GWMP is in response to the shift in groundwater flow direction discussed in the First Quarter 2021 Progress Report. The Second Quarter 2023 sampling event included the following activities:

- Measuring water levels at Site-related monitoring wells and select off-site Pixelle observation wells;
- Retrieving groundwater samples from 12 monitoring wells and two pumping wells;
- Downloading data from the barometric pressure transducer and continuous water level recorders maintained within three on-Site wells MW-F-I, MW-H-I, and MW-I-I; and
- Installing Equilibrator® passive diffusion samplers in monitoring wells (after completion of the groundwater sample collection).

During a previous sampling event, FTS installed passive diffusion samplers in the quarterly, semiannual, residual source monitoring wells, and the additional wells noted in Howmet's Temporary GWMP Modification. The passive samplers were allowed to equilibrate for approximately three months (between March 21, 2023 and June 9, 2023), prior to sample collection on June 9, 2023. Prior to removing the samplers, water levels were measured in Site monitoring wells. After the water level measurements were completed, the diffusion samplers were extracted from the wells and the contents transferred into pre-preserved 40-milliliter (mL) vials. The samples were submitted under chain of custody protocol to Eurofins Laboratories in Cleveland, Ohio for analysis by USEPA SW-846 Method 8260D.

3.0 MONITORING RESULTS

3.1 WATER LEVEL MEASUREMENTS

Water levels were measured in 20 Site-related monitoring wells and seven Pixelle observation wells during the Second Quarter 2023 Monitoring Event. The water level measurements and piezometric surface elevations for the Second Quarter 2023 are provided in Table 1. The June 2023 water level data were used to calculate groundwater elevations, which were used to develop a piezometric surface elevation contour map for the intermediate zone (Figures 2 and 3). Figure 2 provides a Site piezometric surface map and Figure 3 provides an expanded piezometric surface map that includes select Pixelle observation wells.

Pixelle operates several collector wells around the Site that influence groundwater flow beneath the Site. Collector Wells 17 and 18, are located approximately 2,000 ft east and northeast of the Site, respectively. Historically, Collector Well 18 provided the greatest influence on groundwater flow direction which was typically to the northeast. However, as noted in the 2020 Five-Year Review Report[1], it was observed in the second quarter of 2020 that the groundwater flow direction had shifted to the southeast. Pixelle was contacted to determine if they had well maintenance issues or had made changes to their pumping operations. Subsequent data provided by Pixelle showed apparent reduced production from their collector wells prior to the second quarter of 2020. Subsequent groundwater flow data at the Site through the third quarter of 2021 showed the flow was generally to the southeast and the horizontal hydraulic gradient was less than half of the typical historical values.

An assessment of the last seven rounds of potentiometric data indicates that the horizontal groundwater flow direction at the Site is still partially inconsistent with historical data; however, the flow direction across the Site has shifted back toward the east as a result of increased pumping at Collector Well 17 due to maintenance work performed by Pixelle. There is also an apparent eastern or northeastern flow direction at, or immediately beyond, the eastern property boundary during recent monitoring events. Pixelle redeveloped Collector Well 17 in October 2021 which improved Collector Well efficiency. The June 2023 expanded gauging data included in Figure 3 shows that groundwater beneath the Site is captured by Collector Wells 17 and 18. Additionally, the horizontal hydraulic gradient estimated from this potentiometric data (June 2023) at the Site was approximately 0.004 ft/ft which is comparable to typical historical values.

In addition to measured water levels, daily water levels were recorded between March 21, 2023 and June 8, 2023 at on-Site monitoring wells equipped with pressure transducers/data recorders (MW-H-I, MW-F-I, and MW-I-I). Transducer data was downloaded, and the resulting water level data are illustrated on Figure 4. Historically and under typical conditions, MW-H-I groundwater elevations are greater than groundwater elevations at MW-I-I and MW-F-I groundwater elevations. The groundwater elevation data in Figure 4 depict short-term changes in groundwater flow directions.

[1] 2021, Key Environmental Inc., 2020 Five Year Review Report, Howmet Former Wearever Site, Chillicothe, Ohio.

The transducer data indicated that MW-H-I water levels were slightly lower than those observed at MW-I-I and/or MW-F-I during the first part of the Second Quarter (April 1 – April 20, 2023). Observed water levels at MW-H-I were greater than those at MW-I-I and MW-F-I beginning on April 21, 2023 for the remainder of the Second Quarter. The transducer data indicated that groundwater flow direction shifted to the east during the fourth quarter 2021 in comparison to previous 2021 monitoring quarters and has since continued to flow to the east. Since the fourth quarter 2021, groundwater flow is easterly (in the vicinity of MW-H-I, MW-I-I, and MW-F-I). Groundwater flow shifts slightly to the northeast at and beyond the property boundary toward Collector Wells 17 and 18.

3.2 GROUNDWATER SAMPLE RESULTS

The quarterly sampling locations included in this second quarter sampling event for the Groundwater Plume Monitoring Network is provided in Table 1 of the GWMP (Appendix A). In addition to the quarterly sampling locations, the additional wells noted in Howmet's Temporary GWMP Modification (MW-G-S, MW-G-I, MW-G-D, MW-I-I, MW-D-I, MW-D-D, and MW-OS-3 [see Figure 2 in Appendix A]) were also sampled.

The analytical data were evaluated in accordance with the National Functional Guidelines for Organic Data Review (USEPA, 2020). No data validation issues were identified. The laboratory report and data validation are provided in Appendix B. The following subsections provide a summary of the groundwater sample analytical results collected during the Second Quarter 2023.

3.2.1 Quarterly Groundwater Plume Monitoring Network

The quarterly Plume Monitoring Well Network consists of wells MW-C-I, MW-D-S, MW-I-S, MW-OS-1-I, and MW-OS-2. Table 2, and the following, provides a summary of the second quarter sampling event VOC results from the quarterly monitoring wells.

- The sample collected from on-Site monitoring well MW-D-S had constituent of interest (COI) detections of trichloroethylene (TCE) at 17 micrograms per liter (µg/l) and cis-1,2-dichloroethylene (cis-DCE) at 14 µg/l. TCE detected in the MW-D-S sample is the only COI that exceeds the federal Maximum Contaminant Limit (MCL). Figure 5 depicts TCE concentration data at MW-D-S. Although the TCE concentrations fluctuate, the chart shows an overall downward trend from the end of 2013 to the present.
- The sample collected from on-Site monitoring well MW-I-S had a detection of 1.2 µg/l TCE. No COIs were detected greater than the respective MCLs at monitoring point MW-I-S. Figure 6 is a trend chart depicting the fluctuating TCE concentrations at perimeter well MW-I-S.
- The sample collected from on-Site monitoring point MW-C-I had detections of the following constituents: 1,1-dichloroethylene (1,1-DCE) at 99 µg/l, cis-DCE at 2,400 µg/l, and vinyl chloride at 230 µg/l. The detections of 1,1-DCE, cis-DCE, and vinyl chloride exceeded their respective MCLs. The second quarter chlorinated VOC concentrations at MW-C-I fall within the range of historical

concentrations which have been declining overall since 2013. Figure 7 illustrates the cis-DCE and vinyl chloride concentrations trends at MW-C-I.

- The sample collected from off-Site monitoring well MW-OS-1-I had results of cis-DCE at 1,600 µg/l and vinyl chloride at 220 µg/l. The detections of cis-DCE and vinyl chloride exceed their respective MCLs. Figure 8 depicts the trends of cis-DCE and vinyl chloride in monitoring well MW-OS-1-I. Although the detected total VOC levels fluctuate, an overall decreasing trend in VOC concentrations over time is observed.
- No Site-related COIs were detected at monitoring point MW-OS-2 which is located to the east of the Site.
- The additional wells along the southeastern property boundary monitored in accordance with Howmet's Temporary GWMP Modification consist of MW-G-S, MW-G-1, MW-G-D, MW-I-I, MW-D-I, MW-D-D, and MW-OS-3. As shown in Table 2, there were no detections of Site-related COIs.

Relationships between water levels and VOC concentrations for the period of 2010 to 2015 were examined during the development of the 2015 Five-Year Review Report. During that five-year window, water levels and total chlorinated VOC concentrations fluctuated seasonally but VOC concentrations declined overall. During that period, total chlorinated VOC concentrations at MW-OS-1-I typically decreased with a seasonal decline in groundwater elevation (indicating positive correlation between water levels and VOC concentrations), whereas the opposite was typically true at MW-D-S (indicating negative correlation between water levels and VOC concentrations). These localized seasonal relationships have not been as evident in recent years and the overall VOC concentrations have continued to decline.

Sample results for the second quarter 2023 sampling event indicated detections of acetone in 11 samples (10 quarterly monitoring well samples and one duplicate sample), as indicated on Table 2. In accordance with Ohio EPA's letter dated November 12, 2019, KEY investigated the occurrence of acetone detections in groundwater samples from quarterly monitoring wells MW-D-S, MW-I-S, and MW-OS-2 from the previous five groundwater monitoring reports (from the third quarter 2018 to the third quarter 2019). It was determined that MW-I-S was the only monitoring well with consistent occurrences of acetone during that time period, as MW-D-S had two sampling events where acetone was below detection limits (first quarter 2019 and fourth quarter 2018) and MW-OS-2 had one sampling event where acetone was below detection limits (second quarter 2019).

Acetone is widely recognized as a common laboratory artifact because it is used to clean glassware and other laboratory equipment, however, acetone has not typically been detected in the method (lab) blanks during the sampling events. Acetone was identified as a Site constituent of interest in the 1996 Remedial Investigation (RI) Report (Marsh and ICF Kaiser, 1996) because the maximum concentration of 38,000 µg/l exceeded the EPA Region 3 Tapwater RBC of 37,000 µg/l. The recent concentrations of acetone are approximately three orders of magnitude below the maximum concentration noted in the RI (38,000 µg/l), as well as the EPA Residential Tapwater Regional Screening Level (14,000 µg/l). Therefore, although the recurring detections of acetone cannot

conclusively be attributed to the laboratory contamination, KEY maintains that acetone is not considered a Site constituent of interest based on comparison of the reported concentrations to the EPA Residential Tapwater Regional Screening Level (RSL) for acetone.

2-butanone was detected during the second quarter event below the reporting limits in two quarterly monitoring wells located away from the source zone and these detections are not considered Site related considering the following: 1) detections are low in concentration and are not consistently detected in samples; 2) detections occurred at the edge of the property, away from source zones, indicating they are not related to constituents of interest found in source zones.

4.0 EVALUATION

Section 6.3 of the approved GWMP presents specific criteria used to evaluate the monitoring data. Below are the criteria and the evaluation results from the second quarter 2023 monitoring activities.

4.1 QUARTERLY TRIGGER CRITERIA

1. **Daily Water Levels**: Daily water level elevation from MW-H-I, MW-I-I and MW-F-I.

   - The water level in MW-H-I should have a higher average elevation than both MW-I-I and MW-F-I.

   Evaluation result: Met.

   Figure 4 (hydrograph) depicts the elevation of the water table surface for the three wells outfitted with pressure transducers/data loggers. Average groundwater elevations in MW-H-I, MW-I-I, and MW-F-I were 589.70 ft, 589.69 ft, and 589.60 ft, respectively, for the March 21, 2023 to June 8, 2023 monitoring period. The transducer data indicated that MW-H-I water levels were greater than MW-I-I and MW-F-I for the monitoring period.

2. **Manual Water Levels**: The groundwater flow direction as determined from the manual measurements should not consistently flow in an easterly or southeasterly direction for two consecutive quarters along the eastern boundary of the Site.

   Evaluation Result: Met.

   Variable groundwater flow directions were evident across the Site during the last two quarterly events. The groundwater flow direction during the March 21, 2023 event and the June 9, 2023 event in the western portion of the Site was primarily toward the east-southeast, however; the groundwater flow direction gradually shifts slightly to the east-northeast at and beyond, the eastern boundary of the Site.

3. **Sample Results:** The following should be true:

- Site-related VOC concentrations meet the following criteria in all quarterly water quality samples from wells MW-I-S and MW-OS-2.

  - MCL not exceeded at the same well for two consecutive quarterly events; and,
  - None of these wells may exceed five times MCL in any one quarter.

  Evaluation Result: Met.

  Table 2 includes water quality data for the above-listed monitoring points.

- No site-related VOC constituents exceeded MCLs for MW-I-S and MW-OS-2 during the first quarter 2023 and second quarter 2023 sample events.

5.0 SUMMARY & RECOMMENDATIONS

All of the quarterly evaluation criteria were met during this monitoring period. As noted in Five-Year Review (FYR) reports for the Site going back to 2010, occasional variations in pumping rates at collector wells operated by Pixelle Specialty Solutions can temporarily modify groundwater flow direction beneath the Site area. A shift in groundwater flow direction to the southeast occurred from 2008 to 2013 as described in the 2010 and 2015 FYR reports. As described in the 2020 FYR report, it occurred again in 2020. During the 2022 monitoring events, the groundwater flow direction at the Site shifted back more to the east as a result of increased collector well pumping and this flow direction continued during the June 2023 event. Expanded potentiometric surface maps that include Pixelle observation wells show that groundwater beneath the Site is captured by Collector Wells 17 and 18. The groundwater flow direction gradually shifts slightly to the northeast at and beyond, the eastern boundary of the Site.

The residences located southeast of the Site are connected to the municipal water supply and despite the occasional transient southeast groundwater flow conditions, the water quality trigger criteria associated with the groundwater plume monitoring well network are consistently met (including the second quarter 2023 sample event). The concentrations of VOCs observed in groundwater samples collected from wells located near the southeastern property boundary that are routinely sampled per the GWMP were within the range of historical concentrations and continue to show an overall declining trend over time. Additionally, the results of the additional wells sampled along the southeastern property boundary in accordance with the March 11, 2021 Temporary GWMP Modification showed no chlorinated VOC detections during this event.

Several on-Site and off-Site wells located within the center of the plume near the northeastern property boundary (away from domestic wells located to the southeast) continue to have VOCs at concentrations that exceed MCLs. Trend graphs for these wells show concentrations continue to attenuate over time as anticipated by the selected remedy.

Going forward, the sampling and gauging frequencies described in the GWMP (as described in Table 1 of Appendix A) will continue to be implemented. The resulting groundwater flow direction, hydraulic gradients, and water quality data will continue to be evaluated to ensure that the constituent plume is not encroaching upon residential properties to the southeast.

TABLES

TABLE 1
GROUNDWATER MONITORING SUMMARY
SECOND QUARTER 2023
HOWMET FORMER WEAREVER SITE
CHILLICOTHE, OH

Well No.	Elevation (TOC)	Total Depth	Depth to Water	Groundwater Elevation	Sample Number	Sample Collection Date	Sample Time
Up Gradient							
MW-E-I	619.29	62.20	28.75	590.54	--	--	--
Drum Storage							
MW-DS-I	612.94	60.25	23.12	589.82	--	--	--
Draw Tank							
MW-DT-I	615.24	62.46	25.91	589.33	--	--	--
Drum Storage							
MW-BL-I	617.45	62.75	28.27	589.18	--	--	--
MW-H-I	611.40	62.00	22.65	588.75	--	--	--
Property Line Perimeter							
MW-A-I	616.06	60.10	25.70	590.36	--	--	--
MW-B-I	613.30	62.50	23.82	589.48	--	--	--
MW-C-I	611.64	62.23	22.64	589.00	MW-C-I	6/9/2023	814
MW-D-S	614.77	38.10	26.28	588.49	MW-D-S	6/9/2023	907
MW-D-I	614.90	62.26	26.46	588.44	MW-D-I	6/9/2023	930
MW-D-D	615.16	77.86	26.70	588.46	MW-D-D	6/9/2023	940
MW-F-I	621.41	62.32	32.85	588.56	--	--	--
MW-I-S	610.47	33.22	21.77	588.70	MW-I-S	6/9/2023	830
MW-I-I	610.18	61.84	21.58	588.60	MW-I-I	6/9/2023	845
MW-G-S	609.94	31.72	21.00	588.94	MW-G-S	6/9/2023	1006
MW-G-I	610.01	60.05	21.10	588.91	MW-G-I	6/9/2023	1014
MW-G-D	610.37	74.58	21.40	588.97	MW-G-D	6/9/2023	1020
Off Site Wells							
MW-OS-1-I	610.33	61.80	21.78	588.55	MW-OS-1-I	6/9/2023	753
MW-OS-2	615.31	51.90	27.62	587.69	MW-OS-2	6/9/2023	742
MW-OS-3	612.10	52.25	24.38	587.72	MW-OS-3, M-99A	6/9/2023	722
Pixelle Wells							
OW-13	619.54	NM	71.50	548.04	--	--	--
OW-14	614.08	80.50	26.55	587.53	--	--	--
TB-1	617.70	92.90	26.46	591.24	--	--	--
OW-17	606.24	81.92	27.97	578.27	--	--	--
OW-18	619.84	87.85	40.20	579.64	--	--	--
OW-74	619.41	92.70	22.70	596.71	--	--	--
OW-20	605.60	70.75	19.68	585.92	--	--	--

Notes

Updated elevation TOC data collected on September 24, 2021 and March 20, 2023 by DLZ Ohio, inc.

Pixelle observation well survey data obtained from Pixelle.

Elevation TOC data provided in reference to NGVD29.

TABLE 2
SUMMARY OF VOC DETECTIONS
QUARTERLY GROUNDWATER PLUME MONITORING NETWORK
SECOND QUARTER 2022
HOWMET FORMER WEAREVER SITE
CHILLICOTHE, OH

Sample ID		Maximum Contaminant Levels (MCLs)	MW-G-S MW-G-S-06092023 6/9/2023	MW-G-I MW-G-I-06092023 6/9/2023	MW-G-D MW-G-D-06092023 6/9/2023	MW-I-S MW-I-S-06092023 6/9/2023	MW-I-I MW-I-I-06092023 6/9/2023	MW-C-I MW-C-I-06092023 6/9/2023
Monitoring Location Monitoring Network			MW-G-S Additional Quarterly	MW-G-I Additional Quarterly	MW-G-D Additional Quarterly	MW-I-S Quarterly	MW-I-I Additional Quarterly	MW-C-I Quarterly
CONSTITUENT	**UNITS**							
1,1-Dichloroethylene	ug/l	7	0.49 U	0.49 U	0.49 U	0.49 U	0.49 U	**99**
2-Butanone	ug/l	--	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	58 U
Acetone	ug/l	--	**25**	**31**	**35**	**27**	**38**	270 U
cis-1,2-Dichloroethylene	ug/l	70	0.46 U	0.46 U	0.46 U	0.46 U	0.46 U	**2400**
Trichloroethylene	ug/l	5	0.44 U	0.44 U	0.44 U	**1.2**	0.44 U	22 U
Vinyl chloride	ug/l	2	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	**230**

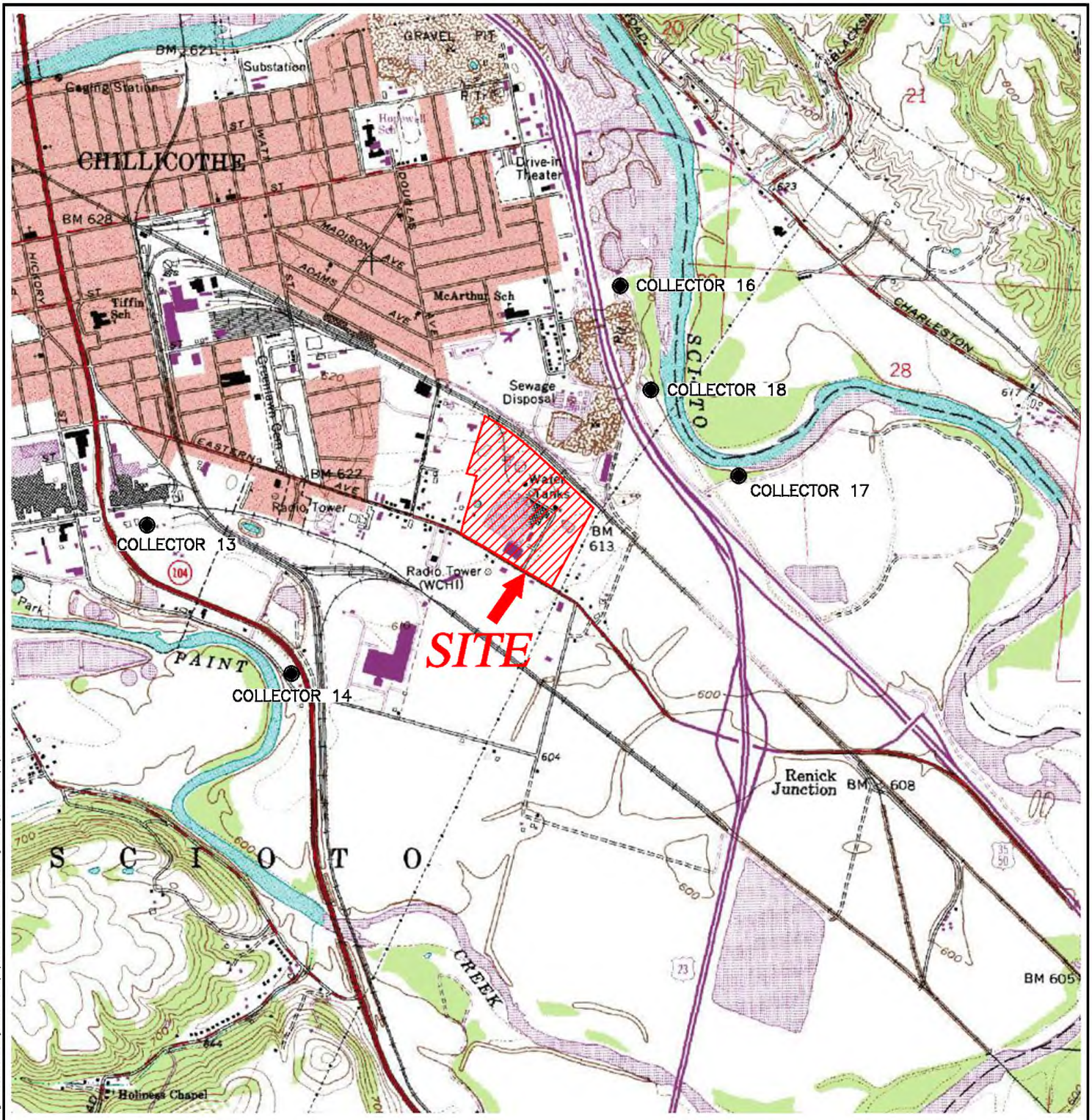
Notes:
U = constituent not detected at the reported concentration
J = estimated concentration
Bold = constituent detected
Highlighted - constituent exceeds MCLs

TABLE 2
SUMMARY OF VOC DETECTIONS
QUARTERLY GROUNDWATER PLUME MONITORING NETWORK
SECOND QUARTER 2022
HOWMET FORMER WEAREVER SITE
CHILLICOTHE, OH

Sample ID		Maximum Contaminant Levels (MCLs)	MW-D-S MW-D-S-06092023 6/9/2023	MW-D-I MW-D-I-06092023 6/9/2023	MW-D-D MW-D-D-06092023 6/9/2023	MW-OS-1-I MW-OS-1-I-06092023 6/9/2023	MW-OS-02 MW-OS-2-06092023 6/9/2023	MW-OS-3 MW-OS-3-06092023 6/9/2023	M-99A M-99A-06092023 6/9/2023
Monitoring Location Monitoring Network			**MW-D-S Quarterly**	**MW-D-I Additional Quarterly**	**MW-D-D Additional Quarterly**	**MW-OS-1-I Quarterly**	**MW-OS-02 Quarterly**	**MW-OS-3 Additional Quarterly**	**MW-OS-3 (DUP) Quarterly**
CONSTITUENT	**UNITS**								
1,1-Dichloroethylene	ug/l	7	2.5 U	0.49 U	0.49 U	49 U	0.98 U	0.49 U	0.49 U
2-Butanone	ug/l	--	5.8 U	1.2 U	1.2 U	**120 J**	**3.9 J**	1.2 U	1.2 U
Acetone	ug/l	--	**28**	**23**	**44**	540 U	**130**	**36**	**30**
cis-1,2-Dichloroethylene	ug/l	70	**14**	0.46 U	0.46 U	**1600**	0.92 U	0.46 U	0.46 U
Trichloroethylene	ug/l	5	**17**	0.44 U	0.44 U	44 U	0.88 U	0.44 U	0.44 U
Vinyl chloride	ug/l	2	2.3 U	0.45 U	0.45 U	**220**	0.9 U	0.45 U	0.45 U

Notes:
U = constituent not detected at the reported concentration
J = estimated concentration
Bold = constituent detected
Highlighted - constituent exceeds MCLs

FIGURES



HOWMET AEROSPACE, INC.

DRWN: SCC	DATE: 08/08/23	KEY ENVIRONMENTAL INCORPORATED
CHKD: AEF	DATE: 08/09/23	
APPD: AEF	DATE: 08/22/23	
SCALE:	AS SHOWN	

FORMER WEAREVER FACILITY
CHILLICOTHE, OH

REFERENCE: USGS NORTH AMERICAN DATUM 1983 / UTM ZONE 17N: CHILLICOTHE, OH, UNITED STATES 7/1/1992

ISSUE DATE:

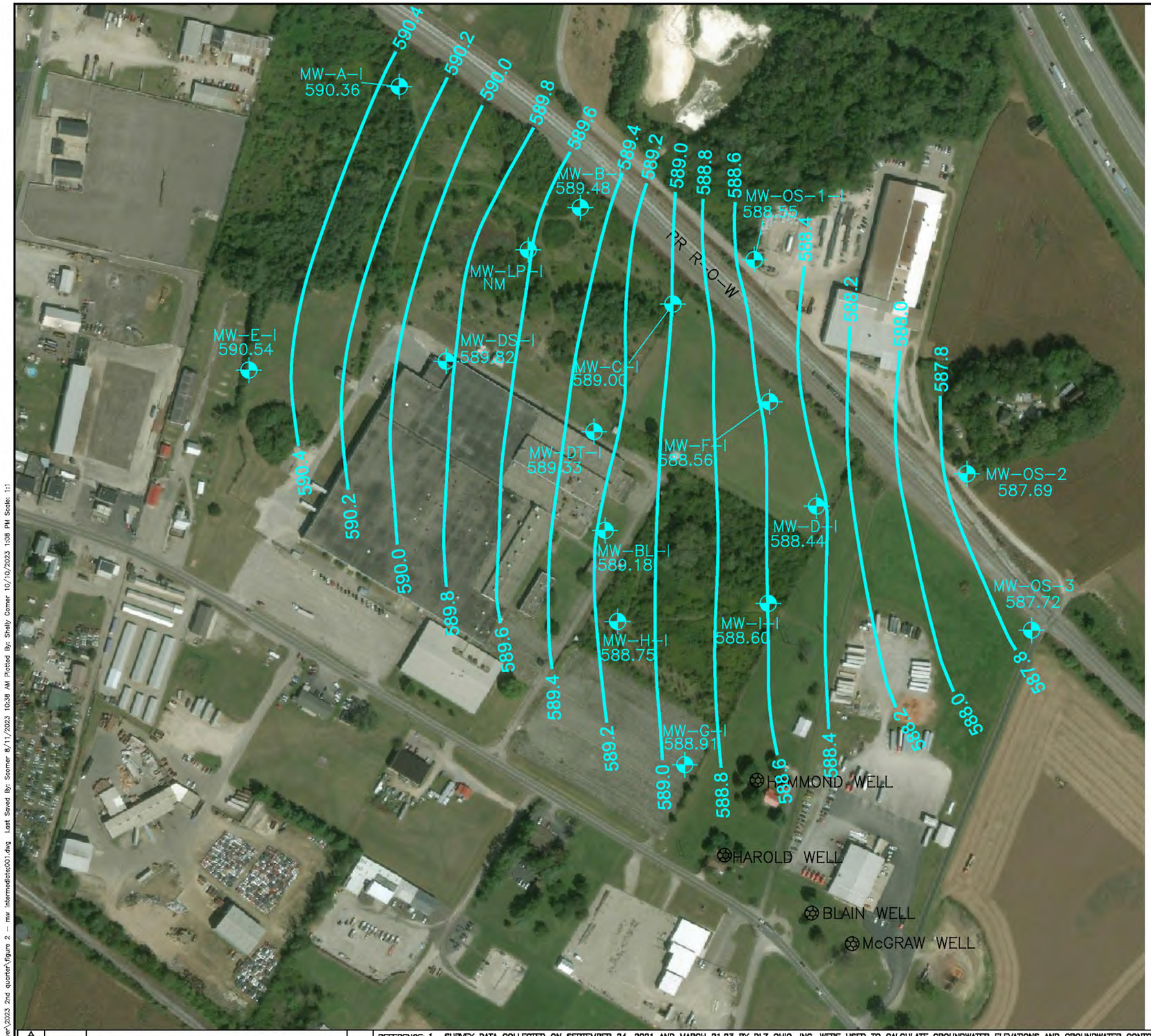
KEY ENVIRONMENTAL, INC.
200 THIRD AVENUE
CARNEGIE, PA 15106

SITE TOPOGRAPHIC LOCATION

PROJECT NO: 18-615

FIGURE 1

y:\vicoo-wearever\2023 2nd quarter\figure 1 - site location map.dwg Last Saved By: Scomer 8/8/2023 3:01 PM Plotted By: Shelly Comer 8/8/2023 3:36 PM Scale: 1:1



N

LEGEND

588.55	WATER ELEVATION
588.00	GROUNDWATER ELEVATION CONTOUR
	MONITORING WELL
	RESIDENTIAL WELL
NM	NOT MEASURED

NOTE:
MW-H-I NOT USED USED TO GENERATE CONTOURS.

0 300 600 FEET

REV #	DATE	DESCRIPTION	APPD
3			
2			
1			

REFERENCE:
1. SURVEY DATA COLLECTED ON SEPTEMBER 24, 2021 AND MARCH 21,23 BY DLZ OHIO, INC. WERE USED TO CALCULATE GROUNDWATER ELEVATIONS AND GROUNDWATER CONTOURS. SURVEY RESULTS ARE BASED ON THE OHIO STATE PLANE COORDINATE SYSTEM, SOUTH ZONE, NAD 83 (2011) AND NGVD29 VERTICAL DATUM. THE DATA ORIGINALLY PROVIDED IN NAVD88 VERTICAL DATUM WAS CONVERTED TO NGVD29 FOR COMPARABILITY WITH RI SURVEY DATA.
2. AERIAL OBTAINED FROM GOOGLE EARTH.

ISSUE DATE:

KEY ENVIRONMENTAL, INC.
200 THIRD AVENUE
CARNEGIE, PA 15106

HOWMET AEROSPACE, INC.

DRWN: SCC	DATE: 08/08/23	KEY ENVIRONMENTAL INCORPORATED
CHKD: RMW	DATE: 08/09/23	
APPD: AEF	DATE: 08/20/23	
SCALE: AS SHOWN		

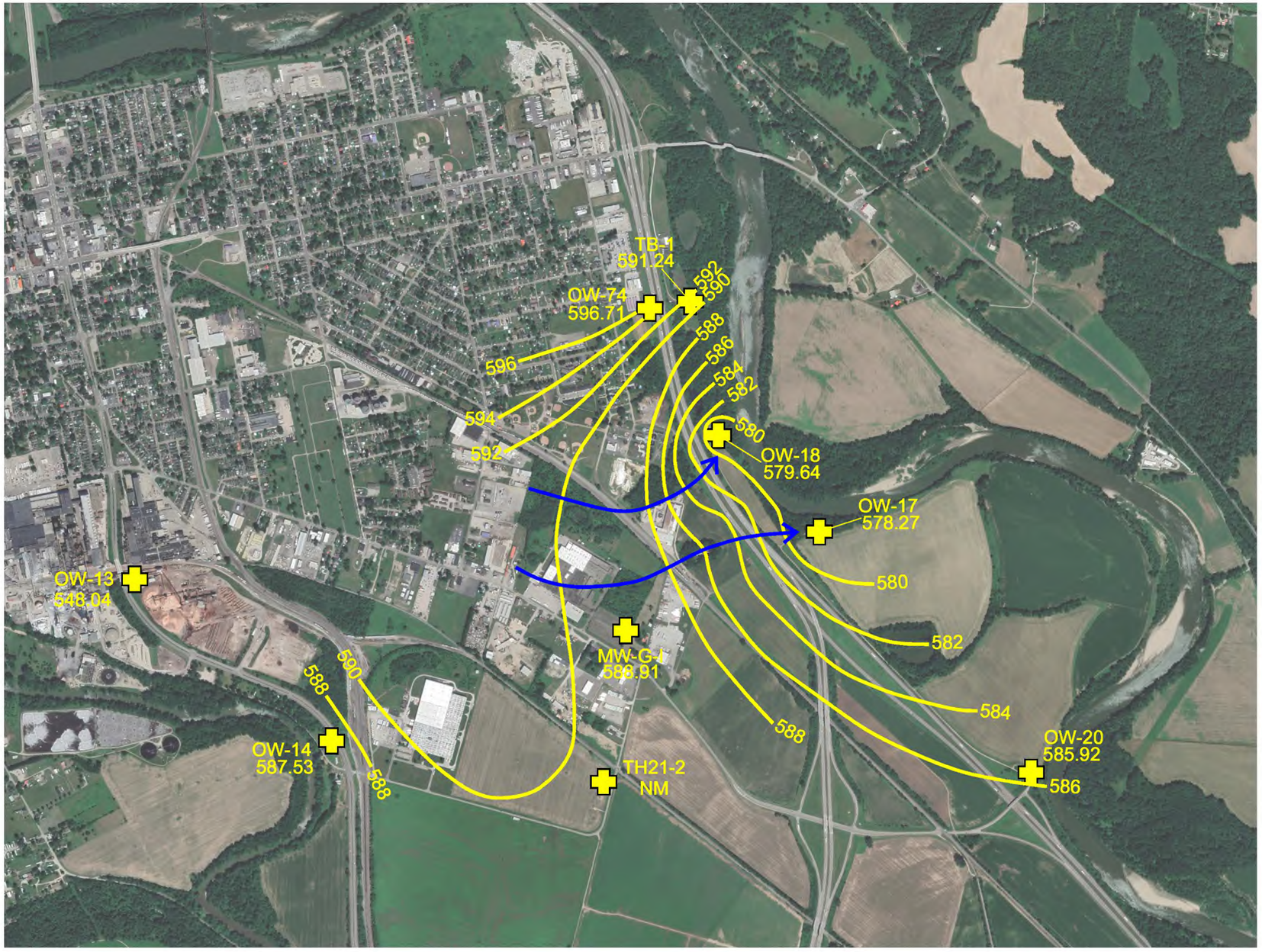
HOWMET FORMER WEAREVER FACILITY
CHILLICOTHE, OHIO

PIEZOMETER SURFACE OF INTERMEDIATE AQUIFER ZONE JUNE 09, 2023

PROJECT NO: 23-626

FIGURE 2

y:\alcoa-wearever\2023 2nd quarter\figure 2 - mw intermediate001.dwg Last Saved By: Scomer 8/11/2023 10:38 AM Plotted By: Shelly Comer 10/10/2023 1:08 PM Scale: 1:1



LEGEND

585.92 — PIXELLE OBSERVATION WELL & GROUNDWATER ELEVATION

2 FT INFERRED GW CONTOURS

ON–SITE FLOW PATH

NOTE:
OW–13 NOT USED TO GENERATE CONTOURS.

0 1500 3000 FEET

REV #	DATE	DESCRIPTION	APPD
3			
2			
1			

REFERENCE:
1. APPROXIMATE LOCATIONS OF PIXELLE COLLECTOR WELLS AND OBSERVATION WELLS OBTAINED FROM 2020 ANNUAL REPORT –COLLECTOR WELL PERFORMANCE AND WATER LEVEL MONITORING (RAINNY COLLECTOR WELLS, FEBRUARY 9, 2021)
2. AERIAL OBTAINED FROM GOOGLE EARTH

ISSUE DATE:

KEY ENVIRONMENTAL, INC.
200 THIRD AVENUE
CARNEGIE, PA 15106

HOWMET AEROSPACE, INC.

DRWN: SCC	DATE: 08/08/23	KEY ENVIRONMENTAL INCORPORATED
CHKD: RMW	DATE: 08/09/23	
APPD: AEF	DATE: 08/22/23	
SCALE: AS SHOWN		

HOWMET FORMER WEAREVER FACILITY
CHILLICOTHE, OHIO

EXPANDED PIEZOMETRIC SURFACE OF INTERMEDIATE AQUIFER ZONE
JUNE 09, 2023

PROJECT NO: 23–628

FIGURE 3

Figure 4
Hydrograph - Groundwater Level Recorders
November 29, 2012 - June 8, 2023

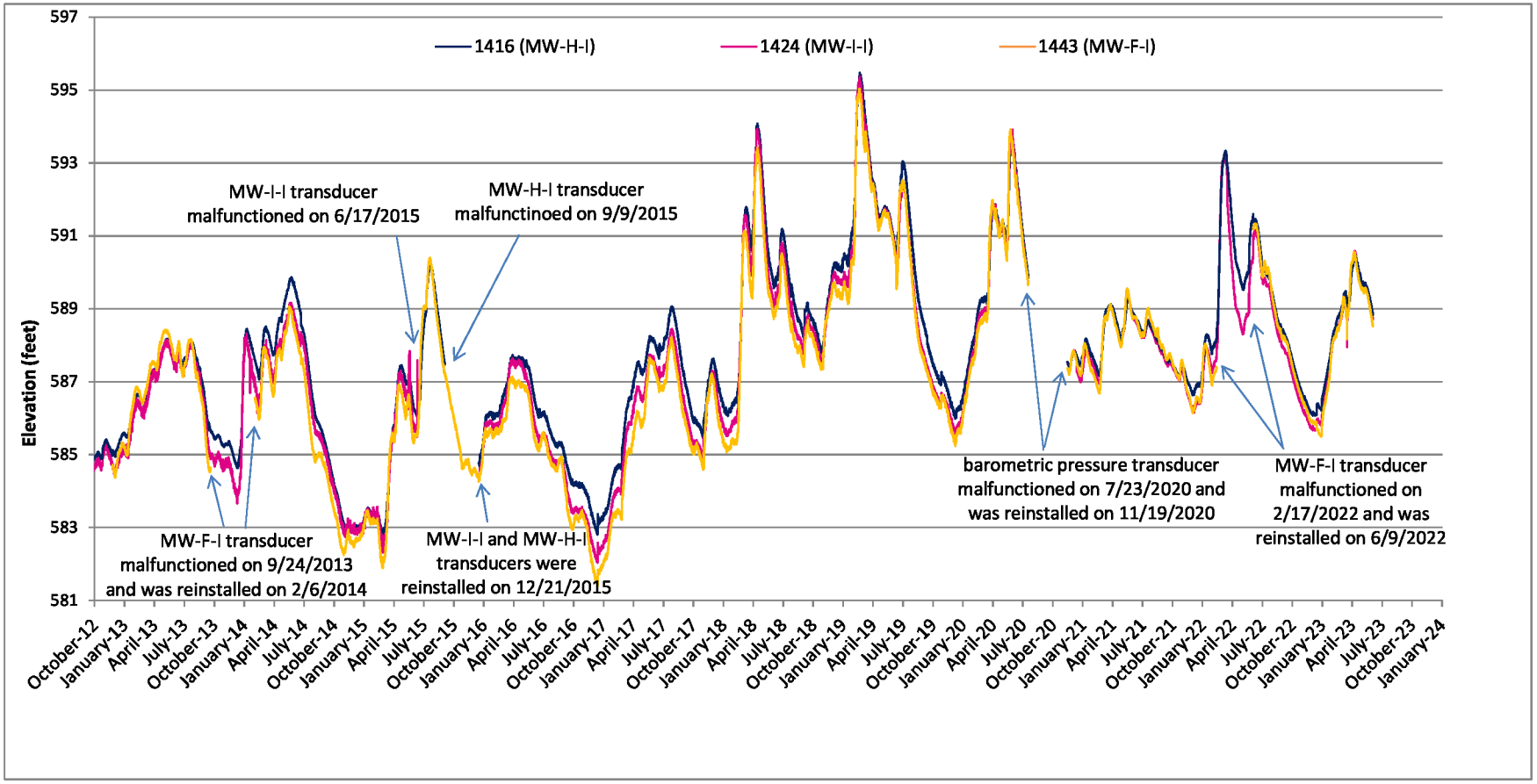


Figure 5
MW-D-S TCE Concentration vs Time

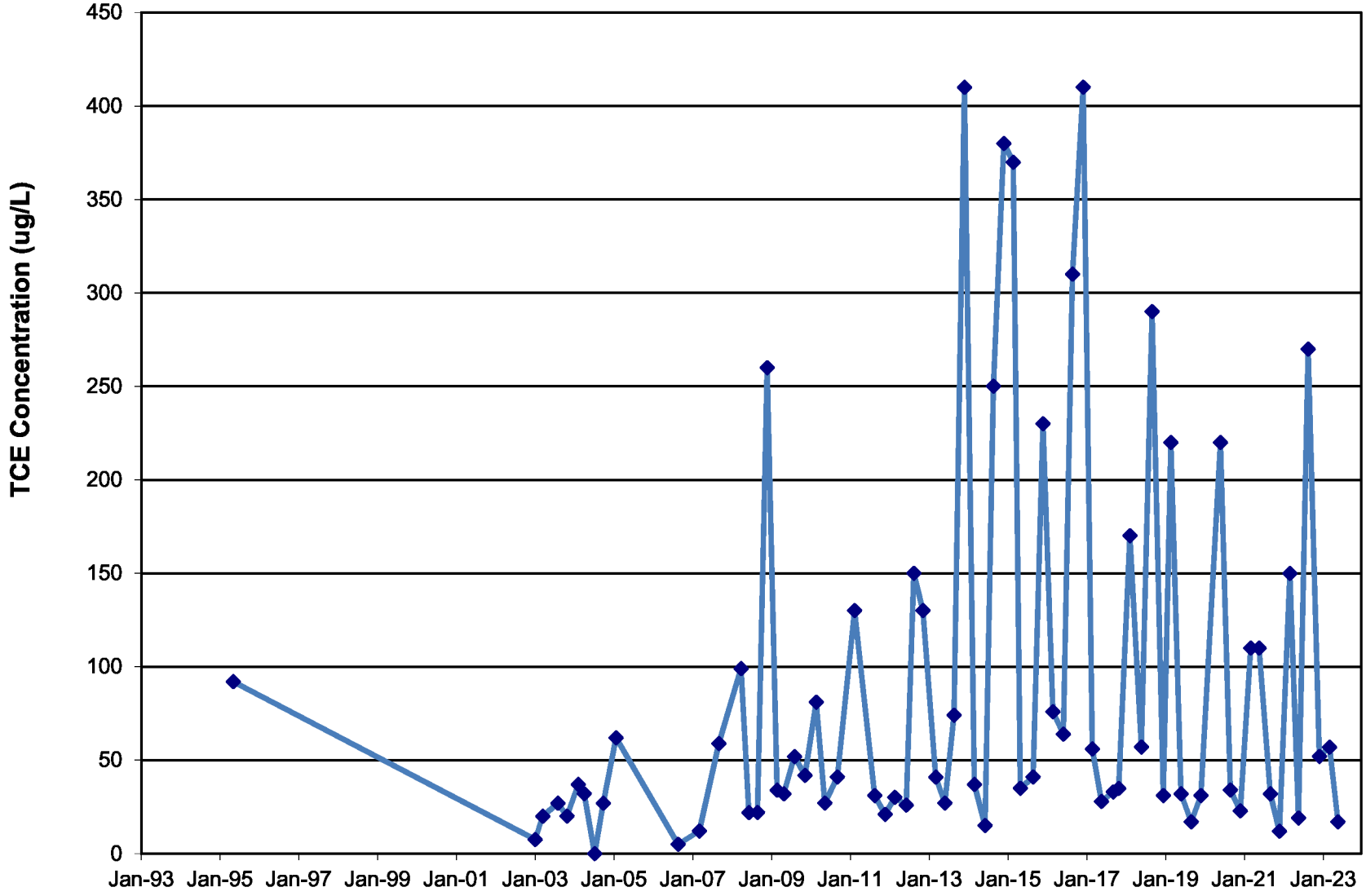


Figure 6
MW-I-S TCE Concentration vs Time

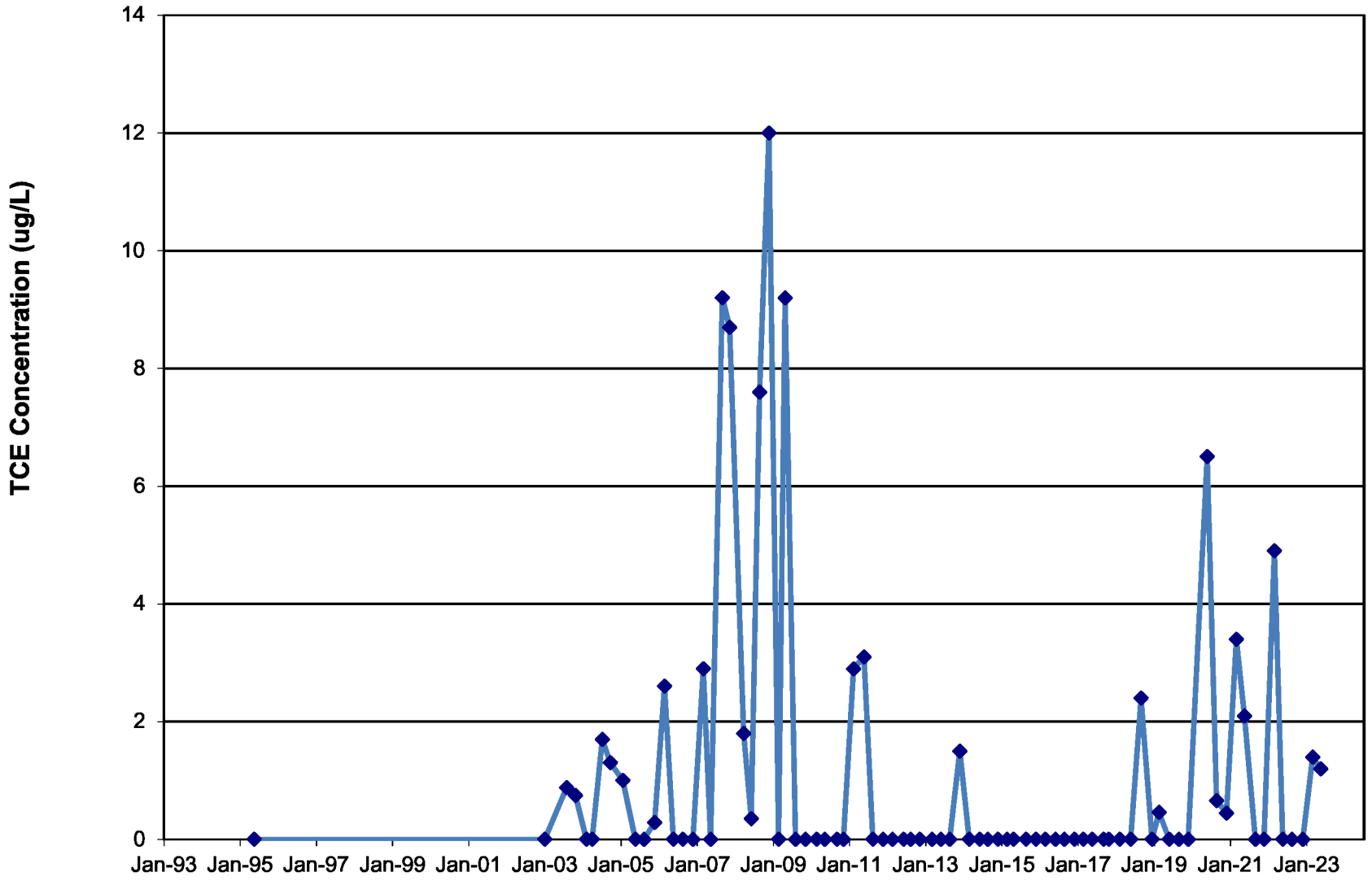


Figure 7
MW-C-I Cis-1,2-DCE and Vinyl Chloride Concentration vs Time

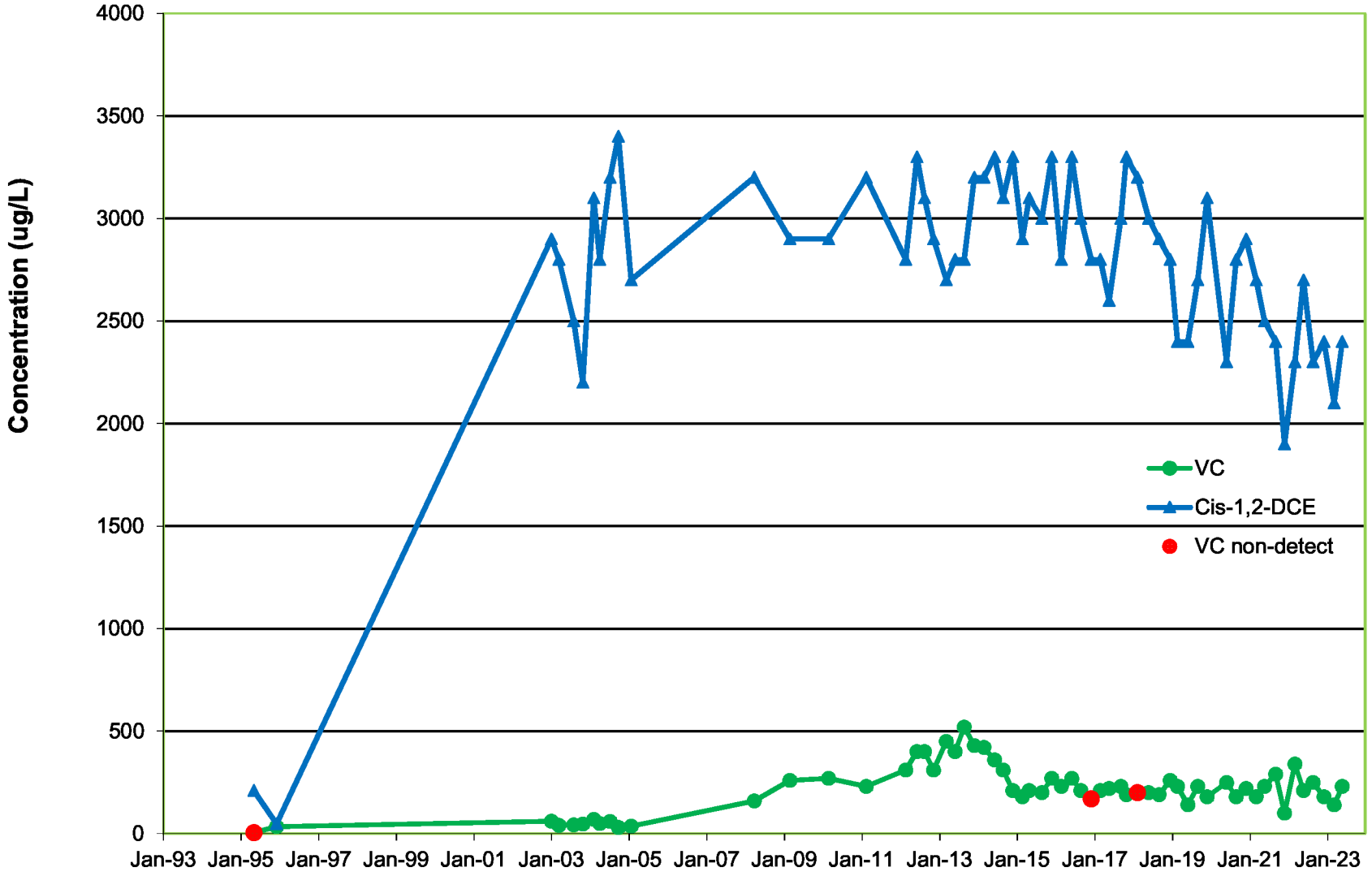
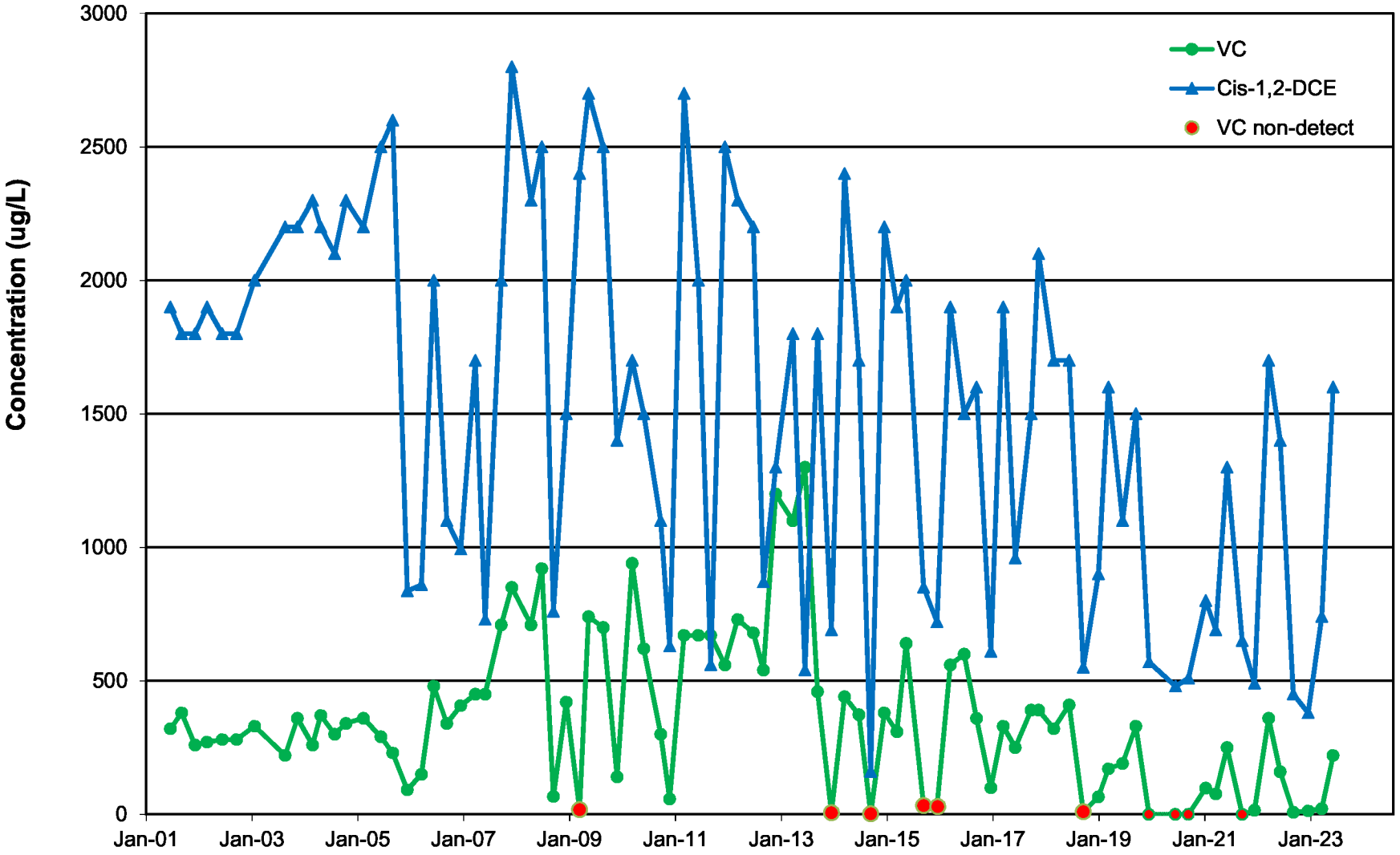


Figure 8
MW-OS-1-I Cis-1,2-DCE and Vinyl Chloride Concentration vs Time



APPENDIX A

Figure 2 and Table 1 from Groundwater Monitoring Plan

N

LEGEND

- RESIDENTIAL MONITORING WELL
- HOWMET WEAREVER FACILITY MONITORING WELL
- INDUSTRIAL WATER SUPPLY WELL
- QUARTERLY SAMPLING LOCATION
- SEMIANNUAL SAMPLING LOCATION
- RESIDUAL SOURCE AREA (ANNUAL) SAMPLING LOCATION
- MW-OS-3 — TEMPORARY QUARTERLY MONITORING WELL

0 600 1200 FEET

NOTE:
BASEMAP AND WELL LOCATIONS ADAPTED FROM DWG NO. 894030-B2, IT CORPORATION, 6/27/00.

REV #	DATE	DESCRIPTION	APPD
3			
2			
1			

REFERENCE: TEMPORARY QUARTERLY MONITORING WELLS AS DESIGNATED IN HOWMET TEMPORARY GWMP MODIFICATION LETTER TO OEPA DATED MARCH 12, 2021.

ISSUE DATE:

KEY ENVIRONMENTAL, INC.
200 THIRD AVENUE
CARNEGIE, PA 15106

HOWMET AEROSPACE INC.

DRWN: SCC	DATE: 12/31/20	KEY ENVIRONMENTAL INCORPORATED
CHKD: TDS	DATE: 12/31/20	
APPD: TDS	DATE: 01/29/21	
SCALE: AS SHOWN		

HOWMET FORMER WEAREVER FACILITY
CHILLICOTHE, OHIO

LOCATION OF ONSITE AND OFFSITE MONITORING POINTS

PROJECT NO: 20-034

FIGURE 2

TABLE 1
GROUNDWATER MONITORING SUMMARY

	QUARTERLY			SEMIANNUAL		ANNUAL	
	(MARCH, JUNE, SEPTEMBER, DECEMBER)			IN ADDITION TO QUARTERLY MONITORING (MARCH, SEPTEMBER)		IN ADDITION TO QUARTERLY AND SEMIANNUAL MONITORING (MARCH)	
MONITORING WELL NO.	DOWNLOAD AUTOMATED GROUNDWATER LEVELS	GROUNDWATER LEVELS FOR FLOW DIRECTION, INTERMEDIATE ZONE	GROUNDWATER SAMPLING FOR PLUME LOCATION (VOCS)[1]	GROUNDWATER LEVELS FOR FLOW DIRECTION, ALL ZONES	GROUNDWATER SAMPLING FOR PLUME LOCATION (VOCS)[1]	OBTAIN FLOW RATES FROM CHILLICOTHE PAPER INDUSTRIAL WELLS[2]	GROUNDWATER SAMPLING FOR REMEDIAL SOURCE AREA MONITORING (VOCS)[1]
Up Gradient							
MW-BG-S							
MW-E-S				X			
MW-E-I		X					
MW-E-D				X			
Sludge Pit							
MW-SP-S							
MW-SP-I							
MW-SP-D							
Drum Storage							
MW-DS-S				X			
MW-DS-I		X					X
MW-DS-D							
Draw Tank							
MW-DT-S				X			X
MW-DT-I		X					
MW-DT-D				X			
Leach Pit							
MW-LP-S							
MW-LP-I							X
MW-LP-D							
Building Perimeter							
MW-1S							X
MW-AS2-S							X
MW-AS3-S							X
MW-AS4-S							X
MW-AS5-S							X
MW-BL-S				X			X
MW-BL-I		X					
MW-BL-D				X			
MW-GA-S							X
MW-H-I	X	X			*		

TABLE 1
GROUNDWATER MONITORING SUMMARY

	QUARTERLY			SEMIANNUAL		ANNUAL	
	(MARCH, JUNE, SEPTEMBER, DECEMBER)			IN ADDITION TO QUARTERLY MONITORING (MARCH, SEPTEMBER)		IN ADDITION TO QUARTERLY AND SEMIANNUAL MONITORING (MARCH)	
MONITORING WELL NO.	DOWNLOAD AUTOMATED GROUNDWATER LEVELS	GROUNDWATER LEVELS FOR FLOW DIRECTION, INTERMEDIATE ZONE	GROUNDWATER SAMPLING FOR PLUME LOCATION (VOCS)[1]	GROUNDWATER LEVELS FOR FLOW DIRECTION, ALL ZONES	GROUNDWATER SAMPLING FOR PLUME LOCATION (VOCS)[1]	OBTAIN FLOW RATES FROM CHILLICOTHE PAPER INDUSTRIAL WELLS[2]	GROUNDWATER SAMPLING FOR REMEDIAL SOURCE AREA MONITORING (VOCS)[1]
Property Line Perimeter							
MW-2D							
MW-5				X			X
MW-A-I		X					
MW-A-S				X			
MW-B-I		X					X
MW-B-D				X			
MW-C-S				X			X
MW-C-I		X	X				
MW-C-D				X			
MW-F-S				X			X
MW-F-I	X	X					X
MW-F-D				X			
MW-D-S		X	X				
MW-D-I		X					X
MW-D-D				X	*		
MW-I-S		X	X				
MW-I-I	X	X					X
MW-G-S				X	X		
MW-G-I		X					X
MW-G-D				X			
OW-1D							
OW-1R							
Off Site Wells							
Hammond			**				
MW-0S-1-I		X	X				
MW-0S-1-D				X			
MW-0S-2		X	X				
MW-0S-3		X			X		
Chillicothe Paper Pumping Wells							
Chillicothe Paper 13						X	
Chillicothe Paper 14						X	
Chillicothe Paper 16						X	
Chillicothe Paper 17					X	X	
Chillicothe Paper 18					X	X	

Notes:

[1]VOC analysis by USEPA SW-846 Method 8260B.

[2]Obtained annually from Chillicothe Paper's monthly data summary reports.

*Based on the revised 3rd 5 Year Review submitted by KEY and the cooresponding OEPA approval letter on September 7, 2016, sampling is no longer required at wells MW-D-D and MW-H-I.

**Based on the revised 3rd 5 Year Review submitted by KEY and the cooresponding OEPA approval letter on September 7, 2016, sampling is no longer required at the Hammond well, contingent upon ground water flow direction remaining north/northeastward away from the Hammond well.

APPENDIX B

Laboratory Results and Data Validation Report

Key Environmental, Inc.

DATE: July 6, 2023

FROM: Emily Vargo

SUBJECT: Wearever Groundwater

SAMPLE DELIVERY GROUP (SDG): 240-186869-1

SAMPLES: MW-G-S, MW-G-I, MW-G-D, M-99A (MW-OS-3), MW-OS-3, MW-OS-2, MW-OS-1I, MW-C-I, MW-I-S, MW-I-I, MW-D-S, MW-D-I, MW-D-D, TRIP BLANK

ANALYSES: Method 8260D (VOCs)

LABORATORY: Eurofins Laboratories, Cleveland

The data contained in this SDG were evaluated with regard to the following parameters:

- □ Sample Shipment
  Noncompliances: None

- □ Data Completeness
  Noncompliances: None

- □ Holding Times
  Noncompliances: None

- □ Laboratory Blank Contamination
  Noncompliances: None

- □ Field Blank Contamination
  Noncompliances: None

- □ Surrogate Recovery
  Noncompliances: None

- □ Laboratory Control Sample
  Noncompliances: The LCS recoveries for acetone were above recovery limits. The LCS recovery of vinyl chloride fell below recovery limits. No action was taken on this basis.

- □ Matrix Spike/Matrix Spike Duplicate Sample
  Noncompliances: The MS and/or MSD recoveries of several SVOCs fell below recovery limits, no action was taken on this basis.

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Angela Gatchie
Key Environmental, Inc
200 Third Avenue
Carnegie, Pennsylvania 15106

Generated 7/4/2023 12:38:53 AM

JOB DESCRIPTION

Alcoa - Wearever - Chillicothe

JOB NUMBER

240-186869-1

Eurofins Cleveland
180 S. Van Buren Avenue
Barberton OH 44203

See page two for job notes and contact information.

myEOL

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

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 North Central, LLC Project Manager.

Authorization

Generated
7/4/2023 12:38:53 AM

Authorized for release by
Shali Brown, Project Manager II
Shali.Brown@et.eurofinsus.com
(615)301-5031

Table of Contents

Definitions/Glossary

Client: Key Environmental, Inc
Job ID: 240-186869-1
Project/Site: Alcoa - Wearever - Chillicothe

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
*-	LCS and/or LCSD is outside acceptance limits, low biased.
*+	LCS and/or LCSD is outside acceptance limits, high biased.
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

Case Narrative

Client: Key Environmental, Inc
Project/Site: Alcoa - Wearever - Chillicothe

Job ID: 240-186869-1

Job ID: 240-186869-1

Laboratory: Eurofins Cleveland

Narrative

Job Narrative
240-186869-1

Receipt
The samples were received on 6/10/2023 9:20 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 time was 0.8°C

GC/MS VOA
Method 8260D: The continuing calibration verification (CCV) analyzed in batch 240-578264 was outside the method criteria for the following analyte(s): Acetone, Carbon tetrachloride and Chloroethane. A CCV standard at or below the reporting limit (RL) was analyzed with the affected samples and found to be acceptable. As indicated in the reference method, sample analysis may proceed; however, any detection for the affected analyte(s) is considered estimated.

Method 8260D: The laboratory control sample and/or the laboratory control sample duplicate (LCS/LCSD) for analytical batch 240-578264 recovered outside control limits for the following analyte(s): Acetone. Acetone has been identified as a poor performing analyte when analyzed using this method; therefore, re-extraction/re-analysis was not performed.

Method 8260D: The continuing calibration verification (CCV) analyzed in batch 240-578109 was outside the method criteria for the following analyte(s): 1,1,2,2-Tetrachloroethane, Acetone, Carbon tetrachloride, Chloromethane and Hexane. A CCV standard at or below the reporting limit (RL) was analyzed with the affected samples and found to be acceptable. As indicated in the reference method, sample analysis may proceed; however, any detection for the affected analyte(s) is considered estimated.

Method 8260D: The laboratory control sample and/or the laboratory control sample duplicate (LCS/LCSD) for analytical batch 240-578109 recovered outside control limits for the following analyte(s): Acetone. Acetone has been identified as a poor performing analyte when analyzed using this method; therefore, re-extraction/re-analysis was not performed.

Method 8260D: The laboratory control sample (LCS) for 240-578264 recovered below the control limits for the following analyte: Vinyl chloride. A CCV standard at or below the reporting limit was analyzed with this batch and found to be acceptable. The affected target analyte recovered within acceptance limits; therefore, the MRL demonstrates the analytical system had sufficient sensitivity to detect the analyte had it been present. Since the affected target analyte was not detected in the associated samples, the results were reported.

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

Method Summary

Client: Key Environmental, Inc
Job ID: 240-186869-1
Project/Site: Alcoa - Wearever - Chillicothe

Method	Method Description	Protocol	Laboratory
8260D	Volatile Organic Compounds by GC/MS	SW846	EET CLE
5030C	Purge and Trap	SW846	EET CLE

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

EET CLE = Eurofins Cleveland, 180 S. Van Buren Avenue, Barberton, OH 44203, TEL (330)497-9396

Sample Summary

Client: Key Environmental, Inc
Job ID: 240-186869-1
Project/Site: Alcoa - Wearever - Chillicothe

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-186869-1	MW-G-S	Water	06/09/23 10:06	06/10/23 09:20
240-186869-2	MW-G-I	Water	06/09/23 10:14	06/10/23 09:20
240-186869-3	MW-G-D	Water	06/09/23 10:20	06/10/23 09:20
240-186869-4	M-99A	Water	06/09/23 07:00	06/10/23 09:20
240-186869-5	MW-OS-3	Water	06/09/23 07:22	06/10/23 09:20
240-186869-6	MW-OS-2	Water	06/09/23 07:42	06/10/23 09:20
240-186869-7	MW-OS-1I	Water	06/09/23 07:53	06/10/23 09:20
240-186869-8	MW-C-I	Water	06/09/23 08:14	06/10/23 09:20
240-186869-9	MW-I-S	Water	06/09/23 08:30	06/10/23 09:20
240-186869-10	MW-I-I	Water	06/09/23 08:45	06/10/23 09:20
240-186869-11	MW-D-S	Water	06/09/23 09:07	06/10/23 09:20
240-186869-12	MW-D-I	Water	06/09/23 09:30	06/10/23 09:20
240-186869-13	MW-D-D	Water	06/09/23 09:40	06/10/23 09:20
240-186869-14	TRIP BLANK	Water	06/09/23 00:00	06/10/23 09:20

Detection Summary

Client: Key Environmental, Inc
Project/Site: Alcoa - Wearever - Chillicothe

Job ID: 240-186869-1

Client Sample ID: MW-G-S — Lab Sample ID: 240-186869-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	25	*+	10	5.4	ug/L	1		8260D	Total/NA

Client Sample ID: MW-G-I — Lab Sample ID: 240-186869-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	31	*+	10	5.4	ug/L	1		8260D	Total/NA

Client Sample ID: MW-G-D — Lab Sample ID: 240-186869-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	35	*+	10	5.4	ug/L	1		8260D	Total/NA

Client Sample ID: M-99A — Lab Sample ID: 240-186869-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	30	*+	10	5.4	ug/L	1		8260D	Total/NA

Client Sample ID: MW-OS-3 — Lab Sample ID: 240-186869-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	36	*+	10	5.4	ug/L	1		8260D	Total/NA

Client Sample ID: MW-OS-2 — Lab Sample ID: 240-186869-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	130	*+	20	11	ug/L	2		8260D	Total/NA
2-Butanone (MEK)	3.9	J	20	2.3	ug/L	2		8260D	Total/NA

Client Sample ID: MW-OS-1I — Lab Sample ID: 240-186869-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	1600		100	46	ug/L	100		8260D	Total/NA
2-Butanone (MEK)	120	J	1000	120	ug/L	100		8260D	Total/NA
Vinyl chloride	220		100	45	ug/L	100		8260D	Total/NA

Client Sample ID: MW-C-I — Lab Sample ID: 240-186869-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1-Dichloroethene	99		50	25	ug/L	50		8260D	Total/NA
cis-1,2-Dichloroethene	2400		50	23	ug/L	50		8260D	Total/NA
Vinyl chloride	230		50	23	ug/L	50		8260D	Total/NA

Client Sample ID: MW-I-S — Lab Sample ID: 240-186869-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	27	*+	10	5.4	ug/L	1		8260D	Total/NA
Trichloroethene	1.2		1.0	0.44	ug/L	1		8260D	Total/NA

Client Sample ID: MW-I-I — Lab Sample ID: 240-186869-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	38	*+	10	5.4	ug/L	1		8260D	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: Key Environmental, Inc
Job ID: 240-186869-1
Project/Site: Alcoa - Wearever - Chillicothe

Client Sample ID: MW-D-S — Lab Sample ID: 240-186869-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	28	*+	10	5.4	ug/L	1		8260D	Total/NA
cis-1,2-Dichloroethene	14	F1	5.0	2.3	ug/L	5		8260D	Total/NA
Trichloroethene	17	F1	5.0	2.2	ug/L	5		8260D	Total/NA

Client Sample ID: MW-D-I — Lab Sample ID: 240-186869-12

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	23	*+	10	5.4	ug/L	1		8260D	Total/NA

Client Sample ID: MW-D-D — Lab Sample ID: 240-186869-13

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	44	*+	10	5.4	ug/L	1		8260D	Total/NA

Client Sample ID: TRIP BLANK — Lab Sample ID: 240-186869-14

No Detections.

This Detection Summary does not include radiochemical test results.

Client: Key Environmental, Inc
Job ID: 240-186869-1
Project/Site: Alcoa - Wearever - Chillicothe

Client Sample ID: MW-G-S
Lab Sample ID: 240-186869-1
Date Collected: 06/09/23 10:06
Matrix: Water
Date Received: 06/10/23 09:20

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.48	ug/L			06/22/23 13:32	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.60	ug/L			06/22/23 13:32	1
1,1,2-Trichloroethane	ND		1.0	0.48	ug/L			06/22/23 13:32	1
1,1-Dichloroethane	ND		1.0	0.47	ug/L			06/22/23 13:32	1
1,1-Dichloroethene	ND		1.0	0.49	ug/L			06/22/23 13:32	1
1,2-Dichloroethane	ND		1.0	0.46	ug/L			06/22/23 13:32	1
1,2-Dichloropropane	ND		1.0	0.47	ug/L			06/22/23 13:32	1
2-Hexanone	ND		10	1.1	ug/L			06/22/23 13:32	1
Acetone	**25**	***+**	10	5.4	ug/L			06/23/23 14:24	1
Benzene	ND		1.0	0.42	ug/L			06/22/23 13:32	1
Bromoform	ND		1.0	0.76	ug/L			06/22/23 13:32	1
Bromomethane	ND		1.0	0.42	ug/L			06/22/23 13:32	1
Carbon disulfide	ND		1.0	0.59	ug/L			06/22/23 13:32	1
Carbon tetrachloride	ND		1.0	0.26	ug/L			06/22/23 13:32	1
Chlorobenzene	ND		1.0	0.38	ug/L			06/22/23 13:32	1
Chloroethane	ND		1.0	0.83	ug/L			06/22/23 13:32	1
Chloroform	ND		1.0	0.47	ug/L			06/22/23 13:32	1
Chloromethane	ND		1.0	0.63	ug/L			06/22/23 13:32	1
cis-1,2-Dichloroethene	ND		1.0	0.46	ug/L			06/22/23 13:32	1
cis-1,3-Dichloropropene	ND		1.0	0.61	ug/L			06/22/23 13:32	1
Dichlorobromomethane	ND		1.0	0.38	ug/L			06/22/23 13:32	1
Ethylbenzene	ND		1.0	0.42	ug/L			06/22/23 13:32	1
Hexane	ND		1.0	0.37	ug/L			06/22/23 13:32	1
m-Xylene & p-Xylene	ND		2.0	0.42	ug/L			06/22/23 13:32	1
2-Butanone (MEK)	ND		10	1.2	ug/L			06/22/23 13:32	1
4-Methyl-2-pentanone (MIBK)	ND		10	0.99	ug/L			06/22/23 13:32	1
Methylene Chloride	ND		5.0	2.6	ug/L			06/22/23 13:32	1
o-Xylene	ND		1.0	0.42	ug/L			06/22/23 13:32	1
Styrene	ND		1.0	0.45	ug/L			06/22/23 13:32	1
Tetrachloroethene	ND		1.0	0.44	ug/L			06/22/23 13:32	1
Toluene	ND		1.0	0.44	ug/L			06/22/23 13:32	1
trans-1,2-Dichloroethene	ND		1.0	0.51	ug/L			06/22/23 13:32	1
trans-1,3-Dichloropropene	ND		1.0	0.67	ug/L			06/22/23 13:32	1
Trichloroethene	ND		1.0	0.44	ug/L			06/22/23 13:32	1
Vinyl chloride	ND		1.0	0.45	ug/L			06/22/23 13:32	1
Xylenes, Total	ND		2.0	0.42	ug/L			06/22/23 13:32	1
Chlorodibromomethane	ND		1.0	0.39	ug/L			06/22/23 13:32	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*107*		*62 - 137*		*06/22/23 13:32*	*1*
1,2-Dichloroethane-d4 (Surr)	*96*		*62 - 137*		*06/23/23 14:24*	*1*
4-Bromofluorobenzene (Surr)	*94*		*56 - 136*		*06/22/23 13:32*	*1*
4-Bromofluorobenzene (Surr)	*92*		*56 - 136*		*06/23/23 14:24*	*1*
Toluene-d8 (Surr)	*97*		*78 - 122*		*06/22/23 13:32*	*1*
Toluene-d8 (Surr)	*93*		*78 - 122*		*06/23/23 14:24*	*1*
Dibromofluoromethane (Surr)	*100*		*73 - 120*		*06/22/23 13:32*	*1*
Dibromofluoromethane (Surr)	*93*		*73 - 120*		*06/23/23 14:24*	*1*

Client: Key Environmental, Inc
Project/Site: Alcoa - Wearever - Chillicothe

Job ID: 240-186869-1

Client Sample ID: MW-G-I
Date Collected: 06/09/23 10:14
Date Received: 06/10/23 09:20

Lab Sample ID: 240-186869-2
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.48	ug/L			06/22/23 13:57	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.60	ug/L			06/22/23 13:57	1
1,1,2-Trichloroethane	ND		1.0	0.48	ug/L			06/22/23 13:57	1
1,1-Dichloroethane	ND		1.0	0.47	ug/L			06/22/23 13:57	1
1,1-Dichloroethene	ND		1.0	0.49	ug/L			06/22/23 13:57	1
1,2-Dichloroethane	ND		1.0	0.46	ug/L			06/22/23 13:57	1
1,2-Dichloropropane	ND		1.0	0.47	ug/L			06/22/23 13:57	1
2-Hexanone	ND		10	1.1	ug/L			06/22/23 13:57	1
Acetone	31	*+	10	5.4	ug/L			06/23/23 14:49	1
Benzene	ND		1.0	0.42	ug/L			06/22/23 13:57	1
Bromoform	ND		1.0	0.76	ug/L			06/22/23 13:57	1
Bromomethane	ND		1.0	0.42	ug/L			06/22/23 13:57	1
Carbon disulfide	ND		1.0	0.59	ug/L			06/22/23 13:57	1
Carbon tetrachloride	ND		1.0	0.26	ug/L			06/22/23 13:57	1
Chlorobenzene	ND		1.0	0.38	ug/L			06/22/23 13:57	1
Chloroethane	ND		1.0	0.83	ug/L			06/22/23 13:57	1
Chloroform	ND		1.0	0.47	ug/L			06/22/23 13:57	1
Chloromethane	ND		1.0	0.63	ug/L			06/22/23 13:57	1
cis-1,2-Dichloroethene	ND		1.0	0.46	ug/L			06/22/23 13:57	1
cis-1,3-Dichloropropene	ND		1.0	0.61	ug/L			06/22/23 13:57	1
Dichlorobromomethane	ND		1.0	0.38	ug/L			06/22/23 13:57	1
Ethylbenzene	ND		1.0	0.42	ug/L			06/22/23 13:57	1
Hexane	ND		1.0	0.37	ug/L			06/22/23 13:57	1
m-Xylene & p-Xylene	ND		2.0	0.42	ug/L			06/22/23 13:57	1
2-Butanone (MEK)	ND		10	1.2	ug/L			06/22/23 13:57	1
4-Methyl-2-pentanone (MIBK)	ND		10	0.99	ug/L			06/22/23 13:57	1
Methylene Chloride	ND		5.0	2.6	ug/L			06/22/23 13:57	1
o-Xylene	ND		1.0	0.42	ug/L			06/22/23 13:57	1
Styrene	ND		1.0	0.45	ug/L			06/22/23 13:57	1
Tetrachloroethene	ND		1.0	0.44	ug/L			06/22/23 13:57	1
Toluene	ND		1.0	0.44	ug/L			06/22/23 13:57	1
trans-1,2-Dichloroethene	ND		1.0	0.51	ug/L			06/22/23 13:57	1
trans-1,3-Dichloropropene	ND		1.0	0.67	ug/L			06/22/23 13:57	1
Trichloroethene	ND		1.0	0.44	ug/L			06/22/23 13:57	1
Vinyl chloride	ND		1.0	0.45	ug/L			06/22/23 13:57	1
Xylenes, Total	ND		2.0	0.42	ug/L			06/22/23 13:57	1
Chlorodibromomethane	ND		1.0	0.39	ug/L			06/22/23 13:57	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*110*		*62 - 137*		*06/22/23 13:57*	*1*
1,2-Dichloroethane-d4 (Surr)	*97*		*62 - 137*		*06/23/23 14:49*	*1*
4-Bromofluorobenzene (Surr)	*98*		*56 - 136*		*06/22/23 13:57*	*1*
4-Bromofluorobenzene (Surr)	*93*		*56 - 136*		*06/23/23 14:49*	*1*
Toluene-d8 (Surr)	*99*		*78 - 122*		*06/22/23 13:57*	*1*
Toluene-d8 (Surr)	*94*		*78 - 122*		*06/23/23 14:49*	*1*
Dibromofluoromethane (Surr)	*103*		*73 - 120*		*06/22/23 13:57*	*1*
Dibromofluoromethane (Surr)	*91*		*73 - 120*		*06/23/23 14:49*	*1*

Client: Key Environmental, Inc
Job ID: 240-186869-1
Project/Site: Alcoa - Wearever - Chillicothe

Client Sample ID: MW-G-D
Lab Sample ID: 240-186869-3
Date Collected: 06/09/23 10:20
Matrix: Water
Date Received: 06/10/23 09:20

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.48	ug/L			06/22/23 14:23	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.60	ug/L			06/22/23 14:23	1
1,1,2-Trichloroethane	ND		1.0	0.48	ug/L			06/22/23 14:23	1
1,1-Dichloroethane	ND		1.0	0.47	ug/L			06/22/23 14:23	1
1,1-Dichloroethene	ND		1.0	0.49	ug/L			06/22/23 14:23	1
1,2-Dichloroethane	ND		1.0	0.46	ug/L			06/22/23 14:23	1
1,2-Dichloropropane	ND		1.0	0.47	ug/L			06/22/23 14:23	1
2-Hexanone	ND		10	1.1	ug/L			06/22/23 14:23	1
Acetone	**35**	***+**	10	5.4	ug/L			06/23/23 15:15	1
Benzene	ND		1.0	0.42	ug/L			06/22/23 14:23	1
Bromoform	ND		1.0	0.76	ug/L			06/22/23 14:23	1
Bromomethane	ND		1.0	0.42	ug/L			06/22/23 14:23	1
Carbon disulfide	ND		1.0	0.59	ug/L			06/22/23 14:23	1
Carbon tetrachloride	ND		1.0	0.26	ug/L			06/22/23 14:23	1
Chlorobenzene	ND		1.0	0.38	ug/L			06/22/23 14:23	1
Chloroethane	ND		1.0	0.83	ug/L			06/22/23 14:23	1
Chloroform	ND		1.0	0.47	ug/L			06/22/23 14:23	1
Chloromethane	ND		1.0	0.63	ug/L			06/22/23 14:23	1
cis-1,2-Dichloroethene	ND		1.0	0.46	ug/L			06/22/23 14:23	1
cis-1,3-Dichloropropene	ND		1.0	0.61	ug/L			06/22/23 14:23	1
Dichlorobromomethane	ND		1.0	0.38	ug/L			06/22/23 14:23	1
Ethylbenzene	ND		1.0	0.42	ug/L			06/22/23 14:23	1
Hexane	ND		1.0	0.37	ug/L			06/22/23 14:23	1
m-Xylene & p-Xylene	ND		2.0	0.42	ug/L			06/22/23 14:23	1
2-Butanone (MEK)	ND		10	1.2	ug/L			06/22/23 14:23	1
4-Methyl-2-pentanone (MIBK)	ND		10	0.99	ug/L			06/22/23 14:23	1
Methylene Chloride	ND		5.0	2.6	ug/L			06/22/23 14:23	1
o-Xylene	ND		1.0	0.42	ug/L			06/22/23 14:23	1
Styrene	ND		1.0	0.45	ug/L			06/22/23 14:23	1
Tetrachloroethene	ND		1.0	0.44	ug/L			06/22/23 14:23	1
Toluene	ND		1.0	0.44	ug/L			06/22/23 14:23	1
trans-1,2-Dichloroethene	ND		1.0	0.51	ug/L			06/22/23 14:23	1
trans-1,3-Dichloropropene	ND		1.0	0.67	ug/L			06/22/23 14:23	1
Trichloroethene	ND		1.0	0.44	ug/L			06/22/23 14:23	1
Vinyl chloride	ND		1.0	0.45	ug/L			06/22/23 14:23	1
Xylenes, Total	ND		2.0	0.42	ug/L			06/22/23 14:23	1
Chlorodibromomethane	ND		1.0	0.39	ug/L			06/22/23 14:23	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*109*		*62 - 137*		*06/22/23 14:23*	*1*
1,2-Dichloroethane-d4 (Surr)	*95*		*62 - 137*		*06/23/23 15:15*	*1*
4-Bromofluorobenzene (Surr)	*96*		*56 - 136*		*06/22/23 14:23*	*1*
4-Bromofluorobenzene (Surr)	*89*		*56 - 136*		*06/23/23 15:15*	*1*
Toluene-d8 (Surr)	*97*		*78 - 122*		*06/22/23 14:23*	*1*
Toluene-d8 (Surr)	*90*		*78 - 122*		*06/23/23 15:15*	*1*
Dibromofluoromethane (Surr)	*100*		*73 - 120*		*06/22/23 14:23*	*1*
Dibromofluoromethane (Surr)	*89*		*73 - 120*		*06/23/23 15:15*	*1*

Client: Key Environmental, Inc
Job ID: 240-186869-1
Project/Site: Alcoa - Wearever - Chillicothe

Client Sample ID: M-99A
Lab Sample ID: 240-186869-4
Date Collected: 06/09/23 07:00
Matrix: Water
Date Received: 06/10/23 09:20

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.48	ug/L			06/22/23 14:48	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.60	ug/L			06/22/23 14:48	1
1,1,2-Trichloroethane	ND		1.0	0.48	ug/L			06/22/23 14:48	1
1,1-Dichloroethane	ND		1.0	0.47	ug/L			06/22/23 14:48	1
1,1-Dichloroethene	ND		1.0	0.49	ug/L			06/22/23 14:48	1
1,2-Dichloroethane	ND		1.0	0.46	ug/L			06/22/23 14:48	1
1,2-Dichloropropane	ND		1.0	0.47	ug/L			06/22/23 14:48	1
2-Hexanone	ND		10	1.1	ug/L			06/22/23 14:48	1
Acetone	**30**	***+**	10	5.4	ug/L			06/23/23 15:40	1
Benzene	ND		1.0	0.42	ug/L			06/22/23 14:48	1
Bromoform	ND		1.0	0.76	ug/L			06/22/23 14:48	1
Bromomethane	ND		1.0	0.42	ug/L			06/22/23 14:48	1
Carbon disulfide	ND		1.0	0.59	ug/L			06/22/23 14:48	1
Carbon tetrachloride	ND		1.0	0.26	ug/L			06/22/23 14:48	1
Chlorobenzene	ND		1.0	0.38	ug/L			06/22/23 14:48	1
Chloroethane	ND		1.0	0.83	ug/L			06/22/23 14:48	1
Chloroform	ND		1.0	0.47	ug/L			06/22/23 14:48	1
Chloromethane	ND		1.0	0.63	ug/L			06/22/23 14:48	1
cis-1,2-Dichloroethene	ND		1.0	0.46	ug/L			06/22/23 14:48	1
cis-1,3-Dichloropropene	ND		1.0	0.61	ug/L			06/22/23 14:48	1
Dichlorobromomethane	ND		1.0	0.38	ug/L			06/22/23 14:48	1
Ethylbenzene	ND		1.0	0.42	ug/L			06/22/23 14:48	1
Hexane	ND		1.0	0.37	ug/L			06/22/23 14:48	1
m-Xylene & p-Xylene	ND		2.0	0.42	ug/L			06/22/23 14:48	1
2-Butanone (MEK)	ND		10	1.2	ug/L			06/22/23 14:48	1
4-Methyl-2-pentanone (MIBK)	ND		10	0.99	ug/L			06/22/23 14:48	1
Methylene Chloride	ND		5.0	2.6	ug/L			06/22/23 14:48	1
o-Xylene	ND		1.0	0.42	ug/L			06/22/23 14:48	1
Styrene	ND		1.0	0.45	ug/L			06/22/23 14:48	1
Tetrachloroethene	ND		1.0	0.44	ug/L			06/22/23 14:48	1
Toluene	ND		1.0	0.44	ug/L			06/22/23 14:48	1
trans-1,2-Dichloroethene	ND		1.0	0.51	ug/L			06/22/23 14:48	1
trans-1,3-Dichloropropene	ND		1.0	0.67	ug/L			06/22/23 14:48	1
Trichloroethene	ND		1.0	0.44	ug/L			06/22/23 14:48	1
Vinyl chloride	ND		1.0	0.45	ug/L			06/22/23 14:48	1
Xylenes, Total	ND		2.0	0.42	ug/L			06/22/23 14:48	1
Chlorodibromomethane	ND		1.0	0.39	ug/L			06/22/23 14:48	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*111*		*62 - 137*		*06/22/23 14:48*	*1*
1,2-Dichloroethane-d4 (Surr)	*94*		*62 - 137*		*06/23/23 15:40*	*1*
4-Bromofluorobenzene (Surr)	*99*		*56 - 136*		*06/22/23 14:48*	*1*
4-Bromofluorobenzene (Surr)	*90*		*56 - 136*		*06/23/23 15:40*	*1*
Toluene-d8 (Surr)	*100*		*78 - 122*		*06/22/23 14:48*	*1*
Toluene-d8 (Surr)	*89*		*78 - 122*		*06/23/23 15:40*	*1*
Dibromofluoromethane (Surr)	*102*		*73 - 120*		*06/22/23 14:48*	*1*
Dibromofluoromethane (Surr)	*89*		*73 - 120*		*06/23/23 15:40*	*1*

Client: Key Environmental, Inc
Job ID: 240-186869-1
Project/Site: Alcoa - Wearever - Chillicothe

Client Sample ID: MW-OS-3
Lab Sample ID: 240-186869-5
Date Collected: 06/09/23 07:22
Matrix: Water
Date Received: 06/10/23 09:20

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.48	ug/L			06/23/23 16:06	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.60	ug/L			06/23/23 16:06	1
1,1,2-Trichloroethane	ND		1.0	0.48	ug/L			06/23/23 16:06	1
1,1-Dichloroethane	ND		1.0	0.47	ug/L			06/23/23 16:06	1
1,1-Dichloroethene	ND		1.0	0.49	ug/L			06/23/23 16:06	1
1,2-Dichloroethane	ND		1.0	0.46	ug/L			06/23/23 16:06	1
1,2-Dichloropropane	ND		1.0	0.47	ug/L			06/23/23 16:06	1
2-Hexanone	ND		10	1.1	ug/L			06/23/23 16:06	1
Acetone	**36**	***+**	10	5.4	ug/L			06/23/23 16:06	1
Benzene	ND		1.0	0.42	ug/L			06/23/23 16:06	1
Bromoform	ND		1.0	0.76	ug/L			06/23/23 16:06	1
Bromomethane	ND		1.0	0.42	ug/L			06/23/23 16:06	1
Carbon disulfide	ND		1.0	0.59	ug/L			06/23/23 16:06	1
Carbon tetrachloride	ND		1.0	0.26	ug/L			06/23/23 16:06	1
Chlorobenzene	ND		1.0	0.38	ug/L			06/23/23 16:06	1
Chloroethane	ND		1.0	0.83	ug/L			06/23/23 16:06	1
Chloroform	ND		1.0	0.47	ug/L			06/23/23 16:06	1
Chloromethane	ND		1.0	0.63	ug/L			06/23/23 16:06	1
cis-1,2-Dichloroethene	ND		1.0	0.46	ug/L			06/23/23 16:06	1
cis-1,3-Dichloropropene	ND		1.0	0.61	ug/L			06/23/23 16:06	1
Dichlorobromomethane	ND		1.0	0.38	ug/L			06/23/23 16:06	1
Ethylbenzene	ND		1.0	0.42	ug/L			06/23/23 16:06	1
Hexane	ND		1.0	0.37	ug/L			06/23/23 16:06	1
m-Xylene & p-Xylene	ND		2.0	0.42	ug/L			06/23/23 16:06	1
2-Butanone (MEK)	ND		10	1.2	ug/L			06/23/23 16:06	1
4-Methyl-2-pentanone (MIBK)	ND		10	0.99	ug/L			06/23/23 16:06	1
Methylene Chloride	ND		5.0	2.6	ug/L			06/23/23 16:06	1
o-Xylene	ND		1.0	0.42	ug/L			06/23/23 16:06	1
Styrene	ND		1.0	0.45	ug/L			06/23/23 16:06	1
Tetrachloroethene	ND		1.0	0.44	ug/L			06/23/23 16:06	1
Toluene	ND		1.0	0.44	ug/L			06/23/23 16:06	1
trans-1,2-Dichloroethene	ND		1.0	0.51	ug/L			06/23/23 16:06	1
trans-1,3-Dichloropropene	ND		1.0	0.67	ug/L			06/23/23 16:06	1
Trichloroethene	ND		1.0	0.44	ug/L			06/23/23 16:06	1
Vinyl chloride	ND	*-	1.0	0.45	ug/L			06/23/23 16:06	1
Xylenes, Total	ND		2.0	0.42	ug/L			06/23/23 16:06	1
Chlorodibromomethane	ND		1.0	0.39	ug/L			06/23/23 16:06	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*113*		*62 - 137*		*06/22/23 15:14*	*5*
1,2-Dichloroethane-d4 (Surr)	*96*		*62 - 137*		*06/23/23 16:06*	*1*
4-Bromofluorobenzene (Surr)	*100*		*56 - 136*		*06/22/23 15:14*	*5*
4-Bromofluorobenzene (Surr)	*91*		*56 - 136*		*06/23/23 16:06*	*1*
Toluene-d8 (Surr)	*99*		*78 - 122*		*06/22/23 15:14*	*5*
Toluene-d8 (Surr)	*91*		*78 - 122*		*06/23/23 16:06*	*1*
Dibromofluoromethane (Surr)	*104*		*73 - 120*		*06/22/23 15:14*	*5*
Dibromofluoromethane (Surr)	*91*		*73 - 120*		*06/23/23 16:06*	*1*

Client: Key Environmental, Inc
Project/Site: Alcoa - Wearever - Chillicothe

Job ID: 240-186869-1

Client Sample ID: MW-OS-2
Date Collected: 06/09/23 07:42
Date Received: 06/10/23 09:20

Lab Sample ID: 240-186869-6
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		2.0	0.96	ug/L			06/22/23 15:40	2
1,1,2,2-Tetrachloroethane	ND		2.0	1.2	ug/L			06/22/23 15:40	2
1,1,2-Trichloroethane	ND		2.0	0.96	ug/L			06/22/23 15:40	2
1,1-Dichloroethane	ND		2.0	0.94	ug/L			06/22/23 15:40	2
1,1-Dichloroethene	ND		2.0	0.98	ug/L			06/22/23 15:40	2
1,2-Dichloroethane	ND		2.0	0.91	ug/L			06/22/23 15:40	2
1,2-Dichloropropane	ND		2.0	0.94	ug/L			06/22/23 15:40	2
2-Hexanone	ND		20	2.2	ug/L			06/22/23 15:40	2
Acetone	**130**	***+**	20	11	ug/L			06/23/23 16:31	2
Benzene	ND		2.0	0.84	ug/L			06/22/23 15:40	2
Bromoform	ND		2.0	1.5	ug/L			06/22/23 15:40	2
Bromomethane	ND		2.0	0.84	ug/L			06/22/23 15:40	2
Carbon disulfide	ND		2.0	1.2	ug/L			06/22/23 15:40	2
Carbon tetrachloride	ND		2.0	0.52	ug/L			06/22/23 15:40	2
Chlorobenzene	ND		2.0	0.76	ug/L			06/22/23 15:40	2
Chloroethane	ND		2.0	1.7	ug/L			06/22/23 15:40	2
Chloroform	ND		2.0	0.94	ug/L			06/22/23 15:40	2
Chloromethane	ND		2.0	1.3	ug/L			06/22/23 15:40	2
cis-1,2-Dichloroethene	ND		2.0	0.92	ug/L			06/22/23 15:40	2
cis-1,3-Dichloropropene	ND		2.0	1.2	ug/L			06/22/23 15:40	2
Dichlorobromomethane	ND		2.0	0.75	ug/L			06/22/23 15:40	2
Ethylbenzene	ND		2.0	0.84	ug/L			06/22/23 15:40	2
Hexane	ND		2.0	0.74	ug/L			06/22/23 15:40	2
m-Xylene & p-Xylene	ND		4.0	0.84	ug/L			06/22/23 15:40	2
2-Butanone (MEK)	**3.9**	**J**	20	2.3	ug/L			06/22/23 15:40	2
4-Methyl-2-pentanone (MIBK)	ND		20	2.0	ug/L			06/22/23 15:40	2
Methylene Chloride	ND		10	5.2	ug/L			06/22/23 15:40	2
o-Xylene	ND		2.0	0.84	ug/L			06/22/23 15:40	2
Styrene	ND		2.0	0.90	ug/L			06/22/23 15:40	2
Tetrachloroethene	ND		2.0	0.88	ug/L			06/22/23 15:40	2
Toluene	ND		2.0	0.88	ug/L			06/22/23 15:40	2
trans-1,2-Dichloroethene	ND		2.0	1.0	ug/L			06/22/23 15:40	2
trans-1,3-Dichloropropene	ND		2.0	1.3	ug/L			06/22/23 15:40	2
Trichloroethene	ND		2.0	0.88	ug/L			06/22/23 15:40	2
Vinyl chloride	ND		2.0	0.90	ug/L			06/22/23 15:40	2
Xylenes, Total	ND		4.0	0.84	ug/L			06/22/23 15:40	2
Chlorodibromomethane	ND		2.0	0.78	ug/L			06/22/23 15:40	2

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*109*		*62 - 137*		*06/22/23 15:40*	*2*
1,2-Dichloroethane-d4 (Surr)	*97*		*62 - 137*		*06/23/23 16:31*	*2*
4-Bromofluorobenzene (Surr)	*97*		*56 - 136*		*06/22/23 15:40*	*2*
4-Bromofluorobenzene (Surr)	*92*		*56 - 136*		*06/23/23 16:31*	*2*
Toluene-d8 (Surr)	*98*		*78 - 122*		*06/22/23 15:40*	*2*
Toluene-d8 (Surr)	*89*		*78 - 122*		*06/23/23 16:31*	*2*
Dibromofluoromethane (Surr)	*99*		*73 - 120*		*06/22/23 15:40*	*2*
Dibromofluoromethane (Surr)	*90*		*73 - 120*		*06/23/23 16:31*	*2*

Client: Key Environmental, Inc
Job ID: 240-186869-1
Project/Site: Alcoa - Wearever - Chillicothe

Client Sample ID: MW-OS-1I
Lab Sample ID: 240-186869-7
Date Collected: 06/09/23 07:53
Matrix: Water
Date Received: 06/10/23 09:20

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		100	48	ug/L			06/22/23 16:05	100
1,1,2,2-Tetrachloroethane	ND		100	60	ug/L			06/22/23 16:05	100
1,1,2-Trichloroethane	ND		100	48	ug/L			06/22/23 16:05	100
1,1-Dichloroethane	ND		100	47	ug/L			06/22/23 16:05	100
1,1-Dichloroethene	ND		100	49	ug/L			06/22/23 16:05	100
1,2-Dichloroethane	ND		100	46	ug/L			06/22/23 16:05	100
1,2-Dichloropropane	ND		100	47	ug/L			06/22/23 16:05	100
2-Hexanone	ND		1000	110	ug/L			06/22/23 16:05	100
Acetone	ND	*+	1000	540	ug/L			06/22/23 16:05	100
Benzene	ND		100	42	ug/L			06/22/23 16:05	100
Bromoform	ND		100	76	ug/L			06/22/23 16:05	100
Bromomethane	ND		100	42	ug/L			06/22/23 16:05	100
Carbon disulfide	ND		100	59	ug/L			06/22/23 16:05	100
Carbon tetrachloride	ND		100	26	ug/L			06/22/23 16:05	100
Chlorobenzene	ND		100	38	ug/L			06/22/23 16:05	100
Chloroethane	ND		100	83	ug/L			06/22/23 16:05	100
Chloroform	ND		100	47	ug/L			06/22/23 16:05	100
Chloromethane	ND		100	63	ug/L			06/22/23 16:05	100
cis-1,2-Dichloroethene	**1600**		100	46	ug/L			06/22/23 16:05	100
cis-1,3-Dichloropropene	ND		100	61	ug/L			06/22/23 16:05	100
Dichlorobromomethane	ND		100	38	ug/L			06/22/23 16:05	100
Ethylbenzene	ND		100	42	ug/L			06/22/23 16:05	100
Hexane	ND		100	37	ug/L			06/22/23 16:05	100
m-Xylene & p-Xylene	ND		200	42	ug/L			06/22/23 16:05	100
2-Butanone (MEK)	**120**	**J**	1000	120	ug/L			06/22/23 16:05	100
4-Methyl-2-pentanone (MIBK)	ND		1000	99	ug/L			06/22/23 16:05	100
Methylene Chloride	ND		500	260	ug/L			06/22/23 16:05	100
o-Xylene	ND		100	42	ug/L			06/22/23 16:05	100
Styrene	ND		100	45	ug/L			06/22/23 16:05	100
Tetrachloroethene	ND		100	44	ug/L			06/22/23 16:05	100
Toluene	ND		100	44	ug/L			06/22/23 16:05	100
trans-1,2-Dichloroethene	ND		100	51	ug/L			06/22/23 16:05	100
trans-1,3-Dichloropropene	ND		100	67	ug/L			06/22/23 16:05	100
Trichloroethene	ND		100	44	ug/L			06/22/23 16:05	100
Vinyl chloride	**220**		100	45	ug/L			06/22/23 16:05	100
Xylenes, Total	ND		200	42	ug/L			06/22/23 16:05	100
Chlorodibromomethane	ND		100	39	ug/L			06/22/23 16:05	100

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*114*		*62 - 137*		*06/22/23 16:05*	*100*
4-Bromofluorobenzene (Surr)	*98*		*56 - 136*		*06/22/23 16:05*	*100*
Toluene-d8 (Surr)	*100*		*78 - 122*		*06/22/23 16:05*	*100*
Dibromofluoromethane (Surr)	*103*		*73 - 120*		*06/22/23 16:05*	*100*

Client: Key Environmental, Inc
Job ID: 240-186869-1
Project/Site: Alcoa - Wearever - Chillicothe

Client Sample ID: MW-C-I
Lab Sample ID: 240-186869-8
Date Collected: 06/09/23 08:14
Matrix: Water
Date Received: 06/10/23 09:20

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		50	24	ug/L			06/22/23 16:31	50
1,1,2,2-Tetrachloroethane	ND		50	30	ug/L			06/22/23 16:31	50
1,1,2-Trichloroethane	ND		50	24	ug/L			06/22/23 16:31	50
1,1-Dichloroethane	ND		50	24	ug/L			06/22/23 16:31	50
1,1-Dichloroethene	**99**		50	25	ug/L			06/22/23 16:31	50
1,2-Dichloroethane	ND		50	23	ug/L			06/22/23 16:31	50
1,2-Dichloropropane	ND		50	24	ug/L			06/22/23 16:31	50
2-Hexanone	ND		500	56	ug/L			06/22/23 16:31	50
Acetone	ND	*+	500	270	ug/L			06/22/23 16:31	50
Benzene	ND		50	21	ug/L			06/22/23 16:31	50
Bromoform	ND		50	38	ug/L			06/22/23 16:31	50
Bromomethane	ND		50	21	ug/L			06/22/23 16:31	50
Carbon disulfide	ND		50	30	ug/L			06/22/23 16:31	50
Carbon tetrachloride	ND		50	13	ug/L			06/22/23 16:31	50
Chlorobenzene	ND		50	19	ug/L			06/22/23 16:31	50
Chloroethane	ND		50	42	ug/L			06/22/23 16:31	50
Chloroform	ND		50	24	ug/L			06/22/23 16:31	50
Chloromethane	ND		50	32	ug/L			06/22/23 16:31	50
cis-1,2-Dichloroethene	**2400**		50	23	ug/L			06/22/23 16:31	50
cis-1,3-Dichloropropene	ND		50	31	ug/L			06/22/23 16:31	50
Dichlorobromomethane	ND		50	19	ug/L			06/22/23 16:31	50
Ethylbenzene	ND		50	21	ug/L			06/22/23 16:31	50
Hexane	ND		50	19	ug/L			06/22/23 16:31	50
m-Xylene & p-Xylene	ND		100	21	ug/L			06/22/23 16:31	50
2-Butanone (MEK)	ND		500	58	ug/L			06/22/23 16:31	50
4-Methyl-2-pentanone (MIBK)	ND		500	50	ug/L			06/22/23 16:31	50
Methylene Chloride	ND		250	130	ug/L			06/22/23 16:31	50
o-Xylene	ND		50	21	ug/L			06/22/23 16:31	50
Styrene	ND		50	23	ug/L			06/22/23 16:31	50
Tetrachloroethene	ND		50	22	ug/L			06/22/23 16:31	50
Toluene	ND		50	22	ug/L			06/22/23 16:31	50
trans-1,2-Dichloroethene	ND		50	26	ug/L			06/22/23 16:31	50
trans-1,3-Dichloropropene	ND		50	34	ug/L			06/22/23 16:31	50
Trichloroethene	ND		50	22	ug/L			06/22/23 16:31	50
Vinyl chloride	**230**		50	23	ug/L			06/22/23 16:31	50
Xylenes, Total	ND		100	21	ug/L			06/22/23 16:31	50
Chlorodibromomethane	ND		50	20	ug/L			06/22/23 16:31	50

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*111*		*62 - 137*		*06/22/23 16:31*	*50*
4-Bromofluorobenzene (Surr)	*98*		*56 - 136*		*06/22/23 16:31*	*50*
Toluene-d8 (Surr)	*99*		*78 - 122*		*06/22/23 16:31*	*50*
Dibromofluoromethane (Surr)	*105*		*73 - 120*		*06/22/23 16:31*	*50*

Client: Key Environmental, Inc
Project/Site: Alcoa - Wearever - Chillicothe

Job ID: 240-186869-1

Client Sample ID: MW-I-S
Date Collected: 06/09/23 08:30
Date Received: 06/10/23 09:20

Lab Sample ID: 240-186869-9
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.48	ug/L			06/22/23 16:57	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.60	ug/L			06/22/23 16:57	1
1,1,2-Trichloroethane	ND		1.0	0.48	ug/L			06/22/23 16:57	1
1,1-Dichloroethane	ND		1.0	0.47	ug/L			06/22/23 16:57	1
1,1-Dichloroethene	ND		1.0	0.49	ug/L			06/22/23 16:57	1
1,2-Dichloroethane	ND		1.0	0.46	ug/L			06/22/23 16:57	1
1,2-Dichloropropane	ND		1.0	0.47	ug/L			06/22/23 16:57	1
2-Hexanone	ND		10	1.1	ug/L			06/22/23 16:57	1
Acetone	**27**	***+**	10	5.4	ug/L			06/23/23 17:23	1
Benzene	ND		1.0	0.42	ug/L			06/22/23 16:57	1
Bromoform	ND		1.0	0.76	ug/L			06/22/23 16:57	1
Bromomethane	ND		1.0	0.42	ug/L			06/22/23 16:57	1
Carbon disulfide	ND		1.0	0.59	ug/L			06/22/23 16:57	1
Carbon tetrachloride	ND		1.0	0.26	ug/L			06/22/23 16:57	1
Chlorobenzene	ND		1.0	0.38	ug/L			06/22/23 16:57	1
Chloroethane	ND		1.0	0.83	ug/L			06/22/23 16:57	1
Chloroform	ND		1.0	0.47	ug/L			06/22/23 16:57	1
Chloromethane	ND		1.0	0.63	ug/L			06/22/23 16:57	1
cis-1,2-Dichloroethene	ND		1.0	0.46	ug/L			06/22/23 16:57	1
cis-1,3-Dichloropropene	ND		1.0	0.61	ug/L			06/22/23 16:57	1
Dichlorobromomethane	ND		1.0	0.38	ug/L			06/22/23 16:57	1
Ethylbenzene	ND		1.0	0.42	ug/L			06/22/23 16:57	1
Hexane	ND		1.0	0.37	ug/L			06/22/23 16:57	1
m-Xylene & p-Xylene	ND		2.0	0.42	ug/L			06/22/23 16:57	1
2-Butanone (MEK)	ND		10	1.2	ug/L			06/22/23 16:57	1
4-Methyl-2-pentanone (MIBK)	ND		10	0.99	ug/L			06/22/23 16:57	1
Methylene Chloride	ND		5.0	2.6	ug/L			06/22/23 16:57	1
o-Xylene	ND		1.0	0.42	ug/L			06/22/23 16:57	1
Styrene	ND		1.0	0.45	ug/L			06/22/23 16:57	1
Tetrachloroethene	ND		1.0	0.44	ug/L			06/22/23 16:57	1
Toluene	ND		1.0	0.44	ug/L			06/22/23 16:57	1
trans-1,2-Dichloroethene	ND		1.0	0.51	ug/L			06/22/23 16:57	1
trans-1,3-Dichloropropene	ND		1.0	0.67	ug/L			06/22/23 16:57	1
Trichloroethene	**1.2**		1.0	0.44	ug/L			06/22/23 16:57	1
Vinyl chloride	ND		1.0	0.45	ug/L			06/22/23 16:57	1
Xylenes, Total	ND		2.0	0.42	ug/L			06/22/23 16:57	1
Chlorodibromomethane	ND		1.0	0.39	ug/L			06/22/23 16:57	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*113*		*62 - 137*		*06/22/23 16:57*	*1*
1,2-Dichloroethane-d4 (Surr)	*95*		*62 - 137*		*06/23/23 17:23*	*1*
4-Bromofluorobenzene (Surr)	*98*		*56 - 136*		*06/22/23 16:57*	*1*
4-Bromofluorobenzene (Surr)	*86*		*56 - 136*		*06/23/23 17:23*	*1*
Toluene-d8 (Surr)	*99*		*78 - 122*		*06/22/23 16:57*	*1*
Toluene-d8 (Surr)	*87*		*78 - 122*		*06/23/23 17:23*	*1*
Dibromofluoromethane (Surr)	*105*		*73 - 120*		*06/22/23 16:57*	*1*
Dibromofluoromethane (Surr)	*89*		*73 - 120*		*06/23/23 17:23*	*1*

Client: Key Environmental, Inc
Project/Site: Alcoa - Wearever - Chillicothe

Job ID: 240-186869-1

Client Sample ID: MW-I-I
Date Collected: 06/09/23 08:45
Date Received: 06/10/23 09:20

Lab Sample ID: 240-186869-10
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.48	ug/L			06/22/23 17:22	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.60	ug/L			06/22/23 17:22	1
1,1,2-Trichloroethane	ND		1.0	0.48	ug/L			06/22/23 17:22	1
1,1-Dichloroethane	ND		1.0	0.47	ug/L			06/22/23 17:22	1
1,1-Dichloroethene	ND		1.0	0.49	ug/L			06/22/23 17:22	1
1,2-Dichloroethane	ND		1.0	0.46	ug/L			06/22/23 17:22	1
1,2-Dichloropropane	ND		1.0	0.47	ug/L			06/22/23 17:22	1
2-Hexanone	ND		10	1.1	ug/L			06/22/23 17:22	1
Acetone	**38**	***+**	10	5.4	ug/L			06/23/23 17:48	1
Benzene	ND		1.0	0.42	ug/L			06/22/23 17:22	1
Bromoform	ND		1.0	0.76	ug/L			06/22/23 17:22	1
Bromomethane	ND		1.0	0.42	ug/L			06/22/23 17:22	1
Carbon disulfide	ND		1.0	0.59	ug/L			06/22/23 17:22	1
Carbon tetrachloride	ND		1.0	0.26	ug/L			06/22/23 17:22	1
Chlorobenzene	ND		1.0	0.38	ug/L			06/22/23 17:22	1
Chloroethane	ND		1.0	0.83	ug/L			06/22/23 17:22	1
Chloroform	ND		1.0	0.47	ug/L			06/22/23 17:22	1
Chloromethane	ND		1.0	0.63	ug/L			06/22/23 17:22	1
cis-1,2-Dichloroethene	ND		1.0	0.46	ug/L			06/22/23 17:22	1
cis-1,3-Dichloropropene	ND		1.0	0.61	ug/L			06/22/23 17:22	1
Dichlorobromomethane	ND		1.0	0.38	ug/L			06/22/23 17:22	1
Ethylbenzene	ND		1.0	0.42	ug/L			06/22/23 17:22	1
Hexane	ND		1.0	0.37	ug/L			06/22/23 17:22	1
m-Xylene & p-Xylene	ND		2.0	0.42	ug/L			06/22/23 17:22	1
2-Butanone (MEK)	ND		10	1.2	ug/L			06/22/23 17:22	1
4-Methyl-2-pentanone (MIBK)	ND		10	0.99	ug/L			06/22/23 17:22	1
Methylene Chloride	ND		5.0	2.6	ug/L			06/22/23 17:22	1
o-Xylene	ND		1.0	0.42	ug/L			06/22/23 17:22	1
Styrene	ND		1.0	0.45	ug/L			06/22/23 17:22	1
Tetrachloroethene	ND		1.0	0.44	ug/L			06/22/23 17:22	1
Toluene	ND		1.0	0.44	ug/L			06/22/23 17:22	1
trans-1,2-Dichloroethene	ND		1.0	0.51	ug/L			06/22/23 17:22	1
trans-1,3-Dichloropropene	ND		1.0	0.67	ug/L			06/22/23 17:22	1
Trichloroethene	ND		1.0	0.44	ug/L			06/22/23 17:22	1
Vinyl chloride	ND		1.0	0.45	ug/L			06/22/23 17:22	1
Xylenes, Total	ND		2.0	0.42	ug/L			06/22/23 17:22	1
Chlorodibromomethane	ND		1.0	0.39	ug/L			06/22/23 17:22	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*112*		*62 - 137*		*06/22/23 17:22*	*1*
1,2-Dichloroethane-d4 (Surr)	*91*		*62 - 137*		*06/23/23 17:48*	*1*
4-Bromofluorobenzene (Surr)	*97*		*56 - 136*		*06/22/23 17:22*	*1*
4-Bromofluorobenzene (Surr)	*85*		*56 - 136*		*06/23/23 17:48*	*1*
Toluene-d8 (Surr)	*99*		*78 - 122*		*06/22/23 17:22*	*1*
Toluene-d8 (Surr)	*89*		*78 - 122*		*06/23/23 17:48*	*1*
Dibromofluoromethane (Surr)	*105*		*73 - 120*		*06/22/23 17:22*	*1*
Dibromofluoromethane (Surr)	*87*		*73 - 120*		*06/23/23 17:48*	*1*

Client: Key Environmental, Inc
Job ID: 240-186869-1
Project/Site: Alcoa - Wearever - Chillicothe

Client Sample ID: MW-D-S
Lab Sample ID: 240-186869-11
Date Collected: 06/09/23 09:07
Matrix: Water
Date Received: 06/10/23 09:20

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND	F1	5.0	2.4	ug/L			06/22/23 17:48	5
1,1,2,2-Tetrachloroethane	ND	F1	5.0	3.0	ug/L			06/22/23 17:48	5
1,1,2-Trichloroethane	ND	F1	5.0	2.4	ug/L			06/22/23 17:48	5
1,1-Dichloroethane	ND	F1	5.0	2.4	ug/L			06/22/23 17:48	5
1,1-Dichloroethene	ND	F1	5.0	2.5	ug/L			06/22/23 17:48	5
1,2-Dichloroethane	ND	F1	5.0	2.3	ug/L			06/22/23 17:48	5
1,2-Dichloropropane	ND	F1	5.0	2.4	ug/L			06/22/23 17:48	5
2-Hexanone	ND	F1	50	5.6	ug/L			06/22/23 17:48	5
Acetone	**28**	***+**	10	5.4	ug/L			06/23/23 19:05	1
Benzene	ND	F1	5.0	2.1	ug/L			06/22/23 17:48	5
Bromoform	ND	F1	5.0	3.8	ug/L			06/22/23 17:48	5
Bromomethane	ND	F1	5.0	2.1	ug/L			06/22/23 17:48	5
Carbon disulfide	ND	F1	5.0	3.0	ug/L			06/22/23 17:48	5
Carbon tetrachloride	ND	F1	5.0	1.3	ug/L			06/22/23 17:48	5
Chlorobenzene	ND	F1	5.0	1.9	ug/L			06/22/23 17:48	5
Chloroethane	ND	F1	5.0	4.2	ug/L			06/22/23 17:48	5
Chloroform	ND	F1	5.0	2.4	ug/L			06/22/23 17:48	5
Chloromethane	ND	F1	5.0	3.2	ug/L			06/22/23 17:48	5
cis-1,2-Dichloroethene	**14**	**F1**	5.0	2.3	ug/L			06/22/23 17:48	5
cis-1,3-Dichloropropene	ND	F1	5.0	3.1	ug/L			06/22/23 17:48	5
Dichlorobromomethane	ND	F1	5.0	1.9	ug/L			06/22/23 17:48	5
Ethylbenzene	ND	F1	5.0	2.1	ug/L			06/22/23 17:48	5
Hexane	ND	F1	5.0	1.9	ug/L			06/22/23 17:48	5
m-Xylene & p-Xylene	ND	F1	10	2.1	ug/L			06/22/23 17:48	5
2-Butanone (MEK)	ND	F1	50	5.8	ug/L			06/22/23 17:48	5
4-Methyl-2-pentanone (MIBK)	ND	F1	50	5.0	ug/L			06/22/23 17:48	5
Methylene Chloride	ND	F1	25	13	ug/L			06/22/23 17:48	5
o-Xylene	ND	F1	5.0	2.1	ug/L			06/22/23 17:48	5
Styrene	ND	F1	5.0	2.3	ug/L			06/22/23 17:48	5
Tetrachloroethene	ND	F1	5.0	2.2	ug/L			06/22/23 17:48	5
Toluene	ND	F1	5.0	2.2	ug/L			06/22/23 17:48	5
trans-1,2-Dichloroethene	ND	F1	5.0	2.6	ug/L			06/22/23 17:48	5
trans-1,3-Dichloropropene	ND	F1	5.0	3.4	ug/L			06/22/23 17:48	5
Trichloroethene	**17**	**F1**	5.0	2.2	ug/L			06/22/23 17:48	5
Vinyl chloride	ND	F1	5.0	2.3	ug/L			06/22/23 17:48	5
Xylenes, Total	ND	F1	10	2.1	ug/L			06/22/23 17:48	5
Chlorodibromomethane	ND	F1	5.0	2.0	ug/L			06/22/23 17:48	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*105*		*62 - 137*		*06/22/23 17:48*	*5*
1,2-Dichloroethane-d4 (Surr)	*95*		*62 - 137*		*06/23/23 19:05*	*1*
4-Bromofluorobenzene (Surr)	*94*		*56 - 136*		*06/22/23 17:48*	*5*
4-Bromofluorobenzene (Surr)	*88*		*56 - 136*		*06/23/23 19:05*	*1*
Toluene-d8 (Surr)	*97*		*78 - 122*		*06/22/23 17:48*	*5*
Toluene-d8 (Surr)	*88*		*78 - 122*		*06/23/23 19:05*	*1*
Dibromofluoromethane (Surr)	*100*		*73 - 120*		*06/22/23 17:48*	*5*
Dibromofluoromethane (Surr)	*92*		*73 - 120*		*06/23/23 19:05*	*1*

Client: Key Environmental, Inc
Job ID: 240-186869-1
Project/Site: Alcoa - Wearever - Chillicothe

Client Sample ID: MW-D-I
Lab Sample ID: 240-186869-12
Date Collected: 06/09/23 09:30
Matrix: Water
Date Received: 06/10/23 09:20

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.48	ug/L			06/22/23 19:04	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.60	ug/L			06/22/23 19:04	1
1,1,2-Trichloroethane	ND		1.0	0.48	ug/L			06/22/23 19:04	1
1,1-Dichloroethane	ND		1.0	0.47	ug/L			06/22/23 19:04	1
1,1-Dichloroethene	ND		1.0	0.49	ug/L			06/22/23 19:04	1
1,2-Dichloroethane	ND		1.0	0.46	ug/L			06/22/23 19:04	1
1,2-Dichloropropane	ND		1.0	0.47	ug/L			06/22/23 19:04	1
2-Hexanone	ND		10	1.1	ug/L			06/22/23 19:04	1
Acetone	**23**	***+**	10	5.4	ug/L			06/23/23 18:14	1
Benzene	ND		1.0	0.42	ug/L			06/22/23 19:04	1
Bromoform	ND		1.0	0.76	ug/L			06/22/23 19:04	1
Bromomethane	ND		1.0	0.42	ug/L			06/22/23 19:04	1
Carbon disulfide	ND		1.0	0.59	ug/L			06/22/23 19:04	1
Carbon tetrachloride	ND		1.0	0.26	ug/L			06/22/23 19:04	1
Chlorobenzene	ND		1.0	0.38	ug/L			06/22/23 19:04	1
Chloroethane	ND		1.0	0.83	ug/L			06/22/23 19:04	1
Chloroform	ND		1.0	0.47	ug/L			06/22/23 19:04	1
Chloromethane	ND		1.0	0.63	ug/L			06/22/23 19:04	1
cis-1,2-Dichloroethene	ND		1.0	0.46	ug/L			06/22/23 19:04	1
cis-1,3-Dichloropropene	ND		1.0	0.61	ug/L			06/22/23 19:04	1
Dichlorobromomethane	ND		1.0	0.38	ug/L			06/22/23 19:04	1
Ethylbenzene	ND		1.0	0.42	ug/L			06/22/23 19:04	1
Hexane	ND		1.0	0.37	ug/L			06/22/23 19:04	1
m-Xylene & p-Xylene	ND		2.0	0.42	ug/L			06/22/23 19:04	1
2-Butanone (MEK)	ND		10	1.2	ug/L			06/22/23 19:04	1
4-Methyl-2-pentanone (MIBK)	ND		10	0.99	ug/L			06/22/23 19:04	1
Methylene Chloride	ND		5.0	2.6	ug/L			06/22/23 19:04	1
o-Xylene	ND		1.0	0.42	ug/L			06/22/23 19:04	1
Styrene	ND		1.0	0.45	ug/L			06/22/23 19:04	1
Tetrachloroethene	ND		1.0	0.44	ug/L			06/22/23 19:04	1
Toluene	ND		1.0	0.44	ug/L			06/22/23 19:04	1
trans-1,2-Dichloroethene	ND		1.0	0.51	ug/L			06/22/23 19:04	1
trans-1,3-Dichloropropene	ND		1.0	0.67	ug/L			06/22/23 19:04	1
Trichloroethene	ND		1.0	0.44	ug/L			06/22/23 19:04	1
Vinyl chloride	ND		1.0	0.45	ug/L			06/22/23 19:04	1
Xylenes, Total	ND		2.0	0.42	ug/L			06/22/23 19:04	1
Chlorodibromomethane	ND		1.0	0.39	ug/L			06/22/23 19:04	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*107*		*62 - 137*		*06/22/23 19:04*	*1*
1,2-Dichloroethane-d4 (Surr)	*100*		*62 - 137*		*06/23/23 18:14*	*1*
4-Bromofluorobenzene (Surr)	*94*		*56 - 136*		*06/22/23 19:04*	*1*
4-Bromofluorobenzene (Surr)	*91*		*56 - 136*		*06/23/23 18:14*	*1*
Toluene-d8 (Surr)	*96*		*78 - 122*		*06/22/23 19:04*	*1*
Toluene-d8 (Surr)	*92*		*78 - 122*		*06/23/23 18:14*	*1*
Dibromofluoromethane (Surr)	*102*		*73 - 120*		*06/22/23 19:04*	*1*
Dibromofluoromethane (Surr)	*96*		*73 - 120*		*06/23/23 18:14*	*1*

Client: Key Environmental, Inc
Job ID: 240-186869-1
Project/Site: Alcoa - Wearever - Chillicothe

Client Sample ID: MW-D-D
Lab Sample ID: 240-186869-13
Date Collected: 06/09/23 09:40
Matrix: Water
Date Received: 06/10/23 09:20

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.48	ug/L			06/22/23 19:29	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.60	ug/L			06/22/23 19:29	1
1,1,2-Trichloroethane	ND		1.0	0.48	ug/L			06/22/23 19:29	1
1,1-Dichloroethane	ND		1.0	0.47	ug/L			06/22/23 19:29	1
1,1-Dichloroethene	ND		1.0	0.49	ug/L			06/22/23 19:29	1
1,2-Dichloroethane	ND		1.0	0.46	ug/L			06/22/23 19:29	1
1,2-Dichloropropane	ND		1.0	0.47	ug/L			06/22/23 19:29	1
2-Hexanone	ND		10	1.1	ug/L			06/22/23 19:29	1
Acetone	**44**	***+**	10	5.4	ug/L			06/23/23 18:40	1
Benzene	ND		1.0	0.42	ug/L			06/22/23 19:29	1
Bromoform	ND		1.0	0.76	ug/L			06/22/23 19:29	1
Bromomethane	ND		1.0	0.42	ug/L			06/22/23 19:29	1
Carbon disulfide	ND		1.0	0.59	ug/L			06/22/23 19:29	1
Carbon tetrachloride	ND		1.0	0.26	ug/L			06/22/23 19:29	1
Chlorobenzene	ND		1.0	0.38	ug/L			06/22/23 19:29	1
Chloroethane	ND		1.0	0.83	ug/L			06/22/23 19:29	1
Chloroform	ND		1.0	0.47	ug/L			06/22/23 19:29	1
Chloromethane	ND		1.0	0.63	ug/L			06/22/23 19:29	1
cis-1,2-Dichloroethene	ND		1.0	0.46	ug/L			06/22/23 19:29	1
cis-1,3-Dichloropropene	ND		1.0	0.61	ug/L			06/22/23 19:29	1
Dichlorobromomethane	ND		1.0	0.38	ug/L			06/22/23 19:29	1
Ethylbenzene	ND		1.0	0.42	ug/L			06/22/23 19:29	1
Hexane	ND		1.0	0.37	ug/L			06/22/23 19:29	1
m-Xylene & p-Xylene	ND		2.0	0.42	ug/L			06/22/23 19:29	1
2-Butanone (MEK)	ND		10	1.2	ug/L			06/22/23 19:29	1
4-Methyl-2-pentanone (MIBK)	ND		10	0.99	ug/L			06/22/23 19:29	1
Methylene Chloride	ND		5.0	2.6	ug/L			06/22/23 19:29	1
o-Xylene	ND		1.0	0.42	ug/L			06/22/23 19:29	1
Styrene	ND		1.0	0.45	ug/L			06/22/23 19:29	1
Tetrachloroethene	ND		1.0	0.44	ug/L			06/22/23 19:29	1
Toluene	ND		1.0	0.44	ug/L			06/22/23 19:29	1
trans-1,2-Dichloroethene	ND		1.0	0.51	ug/L			06/22/23 19:29	1
trans-1,3-Dichloropropene	ND		1.0	0.67	ug/L			06/22/23 19:29	1
Trichloroethene	ND		1.0	0.44	ug/L			06/22/23 19:29	1
Vinyl chloride	ND		1.0	0.45	ug/L			06/22/23 19:29	1
Xylenes, Total	ND		2.0	0.42	ug/L			06/22/23 19:29	1
Chlorodibromomethane	ND		1.0	0.39	ug/L			06/22/23 19:29	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*102*		*62 - 137*		*06/22/23 19:29*	*1*
1,2-Dichloroethane-d4 (Surr)	*95*		*62 - 137*		*06/23/23 18:40*	*1*
4-Bromofluorobenzene (Surr)	*94*		*56 - 136*		*06/22/23 19:29*	*1*
4-Bromofluorobenzene (Surr)	*88*		*56 - 136*		*06/23/23 18:40*	*1*
Toluene-d8 (Surr)	*97*		*78 - 122*		*06/22/23 19:29*	*1*
Toluene-d8 (Surr)	*88*		*78 - 122*		*06/23/23 18:40*	*1*
Dibromofluoromethane (Surr)	*94*		*73 - 120*		*06/22/23 19:29*	*1*
Dibromofluoromethane (Surr)	*90*		*73 - 120*		*06/23/23 18:40*	*1*

Client: Key Environmental, Inc
Job ID: 240-186869-1
Project/Site: Alcoa - Wearever - Chillicothe

Client Sample ID: TRIP BLANK
Lab Sample ID: 240-186869-14
Date Collected: 06/09/23 00:00
Matrix: Water
Date Received: 06/10/23 09:20

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.48	ug/L			06/22/23 19:55	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.60	ug/L			06/22/23 19:55	1
1,1,2-Trichloroethane	ND		1.0	0.48	ug/L			06/22/23 19:55	1
1,1-Dichloroethane	ND		1.0	0.47	ug/L			06/22/23 19:55	1
1,1-Dichloroethene	ND		1.0	0.49	ug/L			06/22/23 19:55	1
1,2-Dichloroethane	ND		1.0	0.46	ug/L			06/22/23 19:55	1
1,2-Dichloropropane	ND		1.0	0.47	ug/L			06/22/23 19:55	1
2-Hexanone	ND		10	1.1	ug/L			06/22/23 19:55	1
Acetone	ND	*+	10	5.4	ug/L			06/22/23 19:55	1
Benzene	ND		1.0	0.42	ug/L			06/22/23 19:55	1
Bromoform	ND		1.0	0.76	ug/L			06/22/23 19:55	1
Bromomethane	ND		1.0	0.42	ug/L			06/22/23 19:55	1
Carbon disulfide	ND		1.0	0.59	ug/L			06/22/23 19:55	1
Carbon tetrachloride	ND		1.0	0.26	ug/L			06/22/23 19:55	1
Chlorobenzene	ND		1.0	0.38	ug/L			06/22/23 19:55	1
Chloroethane	ND		1.0	0.83	ug/L			06/22/23 19:55	1
Chloroform	ND		1.0	0.47	ug/L			06/22/23 19:55	1
Chloromethane	ND		1.0	0.63	ug/L			06/22/23 19:55	1
cis-1,2-Dichloroethene	ND		1.0	0.46	ug/L			06/22/23 19:55	1
cis-1,3-Dichloropropene	ND		1.0	0.61	ug/L			06/22/23 19:55	1
Dichlorobromomethane	ND		1.0	0.38	ug/L			06/22/23 19:55	1
Ethylbenzene	ND		1.0	0.42	ug/L			06/22/23 19:55	1
Hexane	ND		1.0	0.37	ug/L			06/22/23 19:55	1
m-Xylene & p-Xylene	ND		2.0	0.42	ug/L			06/22/23 19:55	1
2-Butanone (MEK)	ND		10	1.2	ug/L			06/22/23 19:55	1
4-Methyl-2-pentanone (MIBK)	ND		10	0.99	ug/L			06/22/23 19:55	1
Methylene Chloride	ND		5.0	2.6	ug/L			06/22/23 19:55	1
o-Xylene	ND		1.0	0.42	ug/L			06/22/23 19:55	1
Styrene	ND		1.0	0.45	ug/L			06/22/23 19:55	1
Tetrachloroethene	ND		1.0	0.44	ug/L			06/22/23 19:55	1
Toluene	ND		1.0	0.44	ug/L			06/22/23 19:55	1
trans-1,2-Dichloroethene	ND		1.0	0.51	ug/L			06/22/23 19:55	1
trans-1,3-Dichloropropene	ND		1.0	0.67	ug/L			06/22/23 19:55	1
Trichloroethene	ND		1.0	0.44	ug/L			06/22/23 19:55	1
Vinyl chloride	ND		1.0	0.45	ug/L			06/22/23 19:55	1
Xylenes, Total	ND		2.0	0.42	ug/L			06/22/23 19:55	1
Chlorodibromomethane	ND		1.0	0.39	ug/L			06/22/23 19:55	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*104*		*62 - 137*		*06/22/23 19:55*	*1*
4-Bromofluorobenzene (Surr)	*96*		*56 - 136*		*06/22/23 19:55*	*1*
Toluene-d8 (Surr)	*96*		*78 - 122*		*06/22/23 19:55*	*1*
Dibromofluoromethane (Surr)	*95*		*73 - 120*		*06/22/23 19:55*	*1*

Surrogate Summary

Client: Key Environmental, Inc
Project/Site: Alcoa - Wearever - Chillicothe

Job ID: 240-186869-1

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

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)			
		DCA	BFB	TOL	DBFM
Lab Sample ID	Client Sample ID	(62-137)	(56-136)	(78-122)	(73-120)
240-186869-1	MW-G-S	107	94	97	100
240-186869-1	MW-G-S	96	92	93	93
240-186869-2	MW-G-I	110	98	99	103
240-186869-2	MW-G-I	97	93	94	91
240-186869-3	MW-G-D	109	96	97	100
240-186869-3	MW-G-D	95	89	90	89
240-186869-4	M-99A	111	99	100	102
240-186869-4	M-99A	94	90	89	89
240-186869-5	MW-OS-3	113	100	99	104
240-186869-5	MW-OS-3	96	91	91	91
240-186869-6	MW-OS-2	109	97	98	99
240-186869-6	MW-OS-2	97	92	89	90
240-186869-7	MW-OS-1I	114	98	100	103
240-186869-8	MW-C-I	111	98	99	105
240-186869-9	MW-I-S	113	98	99	105
240-186869-9	MW-I-S	95	86	87	89
240-186869-10	MW-I-I	112	97	99	105
240-186869-10	MW-I-I	91	85	89	87
240-186869-11	MW-D-S	105	94	97	100
240-186869-11	MW-D-S	95	88	88	92
240-186869-11 MS	MW-D-S	102	107	104	97
240-186869-11 MS	MW-D-S	84	92	92	85
240-186869-11 MSD	MW-D-S	99	105	103	98
240-186869-11 MSD	MW-D-S	97	97	94	91
240-186869-12	MW-D-I	107	94	96	102
240-186869-12	MW-D-I	100	91	92	96
240-186869-13	MW-D-D	102	94	97	94
240-186869-13	MW-D-D	95	88	88	90
240-186869-14	TRIP BLANK	104	96	96	95
LCS 240-578109/5	Lab Control Sample	97	105	103	97
LCS 240-578264/9	Lab Control Sample	96	100	102	97
MB 240-578109/9	Method Blank	112	101	100	103
MB 240-578264/10	Method Blank	100	94	93	97

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
TOL = Toluene-d8 (Surr)
DBFM = Dibromofluoromethane (Surr)

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

Lab Sample ID: MB 240-578109/9
Matrix: Water
Analysis Batch: 578109

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.48	ug/L			06/22/23 11:56	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.60	ug/L			06/22/23 11:56	1
1,1,2-Trichloroethane	ND		1.0	0.48	ug/L			06/22/23 11:56	1
1,1-Dichloroethane	ND		1.0	0.47	ug/L			06/22/23 11:56	1
1,1-Dichloroethene	ND		1.0	0.49	ug/L			06/22/23 11:56	1
1,2-Dichloroethane	ND		1.0	0.46	ug/L			06/22/23 11:56	1
1,2-Dichloropropane	ND		1.0	0.47	ug/L			06/22/23 11:56	1
2-Hexanone	ND		10	1.1	ug/L			06/22/23 11:56	1
Acetone	ND		10	5.4	ug/L			06/22/23 11:56	1
Benzene	ND		1.0	0.42	ug/L			06/22/23 11:56	1
Bromoform	ND		1.0	0.76	ug/L			06/22/23 11:56	1
Bromomethane	ND		1.0	0.42	ug/L			06/22/23 11:56	1
Carbon disulfide	ND		1.0	0.59	ug/L			06/22/23 11:56	1
Carbon tetrachloride	ND		1.0	0.26	ug/L			06/22/23 11:56	1
Chlorobenzene	ND		1.0	0.38	ug/L			06/22/23 11:56	1
Chloroethane	ND		1.0	0.83	ug/L			06/22/23 11:56	1
Chloroform	ND		1.0	0.47	ug/L			06/22/23 11:56	1
Chloromethane	ND		1.0	0.63	ug/L			06/22/23 11:56	1
cis-1,2-Dichloroethene	ND		1.0	0.46	ug/L			06/22/23 11:56	1
cis-1,3-Dichloropropene	ND		1.0	0.61	ug/L			06/22/23 11:56	1
Dichlorobromomethane	ND		1.0	0.38	ug/L			06/22/23 11:56	1
Ethylbenzene	ND		1.0	0.42	ug/L			06/22/23 11:56	1
Hexane	ND		1.0	0.37	ug/L			06/22/23 11:56	1
m-Xylene & p-Xylene	ND		2.0	0.42	ug/L			06/22/23 11:56	1
2-Butanone (MEK)	ND		10	1.2	ug/L			06/22/23 11:56	1
4-Methyl-2-pentanone (MIBK)	ND		10	0.99	ug/L			06/22/23 11:56	1
Methylene Chloride	ND		5.0	2.6	ug/L			06/22/23 11:56	1
o-Xylene	ND		1.0	0.42	ug/L			06/22/23 11:56	1
Styrene	ND		1.0	0.45	ug/L			06/22/23 11:56	1
Tetrachloroethene	ND		1.0	0.44	ug/L			06/22/23 11:56	1
Toluene	ND		1.0	0.44	ug/L			06/22/23 11:56	1
trans-1,2-Dichloroethene	ND		1.0	0.51	ug/L			06/22/23 11:56	1
trans-1,3-Dichloropropene	ND		1.0	0.67	ug/L			06/22/23 11:56	1
Trichloroethene	ND		1.0	0.44	ug/L			06/22/23 11:56	1
Vinyl chloride	ND		1.0	0.45	ug/L			06/22/23 11:56	1
Xylenes, Total	ND		2.0	0.42	ug/L			06/22/23 11:56	1
Chlorodibromomethane	ND		1.0	0.39	ug/L			06/22/23 11:56	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*112*		*62 - 137*		*06/22/23 11:56*	*1*
4-Bromofluorobenzene (Surr)	*101*		*56 - 136*		*06/22/23 11:56*	*1*
Toluene-d8 (Surr)	*100*		*78 - 122*		*06/22/23 11:56*	*1*
Dibromofluoromethane (Surr)	*103*		*73 - 120*		*06/22/23 11:56*	*1*

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

Lab Sample ID: LCS 240-578109/5
Matrix: Water
Analysis Batch: 578109

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1-Trichloroethane	20.0	15.5		ug/L		78	64 - 131
1,1,2,2-Tetrachloroethane	20.0	23.8		ug/L		119	58 - 157
1,1,2-Trichloroethane	20.0	20.3		ug/L		101	70 - 138
1,1-Dichloroethane	20.0	19.3		ug/L		97	72 - 127
1,1-Dichloroethene	20.0	17.1		ug/L		86	63 - 134
1,2-Dichloroethane	20.0	18.3		ug/L		91	66 - 128
1,2-Dichloropropane	20.0	21.2		ug/L		106	75 - 133
2-Hexanone	40.0	49.6		ug/L		124	43 - 167
Acetone	40.0	73.1	*+	ug/L		183	50 - 149
Benzene	20.0	19.3		ug/L		97	77 - 123
Bromoform	20.0	16.8		ug/L		84	57 - 129
Bromomethane	20.0	13.7		ug/L		68	36 - 142
Carbon disulfide	20.0	17.1		ug/L		86	43 - 140
Carbon tetrachloride	20.0	14.1		ug/L		71	55 - 137
Chlorobenzene	20.0	18.0		ug/L		90	80 - 121
Chloroethane	20.0	14.5		ug/L		73	38 - 152
Chloroform	20.0	18.3		ug/L		92	74 - 122
Chloromethane	20.0	17.2		ug/L		86	47 - 143
cis-1,2-Dichloroethene	20.0	18.4		ug/L		92	77 - 123
cis-1,3-Dichloropropene	20.0	17.6		ug/L		88	64 - 130
Dichlorobromomethane	20.0	16.8		ug/L		84	69 - 126
Ethylbenzene	20.0	17.8		ug/L		89	80 - 121
Hexane	20.0	16.0		ug/L		80	53 - 144
m-Xylene & p-Xylene	20.0	17.8		ug/L		89	80 - 120
2-Butanone (MEK)	40.0	49.9		ug/L		125	54 - 156
4-Methyl-2-pentanone (MIBK)	40.0	44.0		ug/L		110	46 - 158
Methylene Chloride	20.0	23.6		ug/L		118	71 - 125
o-Xylene	20.0	17.7		ug/L		89	80 - 123
Styrene	20.0	18.8		ug/L		94	80 - 135
Tetrachloroethene	20.0	15.2		ug/L		76	76 - 123
Toluene	20.0	18.8		ug/L		94	80 - 123
trans-1,2-Dichloroethene	20.0	19.3		ug/L		96	75 - 124
trans-1,3-Dichloropropene	20.0	19.2		ug/L		96	57 - 129
Trichloroethene	20.0	14.7		ug/L		73	70 - 122
Vinyl chloride	20.0	13.4		ug/L		67	60 - 144
Xylenes, Total	40.0	35.5		ug/L		89	80 - 121
Chlorodibromomethane	20.0	17.0		ug/L		85	70 - 124

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*97*		*62 - 137*
4-Bromofluorobenzene (Surr)	*105*		*56 - 136*
Toluene-d8 (Surr)	*103*		*78 - 122*
Dibromofluoromethane (Surr)	*97*		*73 - 120*

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

Lab Sample ID: 240-186869-11 MS
Matrix: Water
Analysis Batch: 578109

Client Sample ID: MW-D-S
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1-Trichloroethane	ND	F1	800	80.6	F1	ug/L		10	60 - 130
1,1,2,2-Tetrachloroethane	ND	F1	800	119	F1	ug/L		15	54 - 145
1,1,2-Trichloroethane	ND	F1	800	103	F1	ug/L		13	69 - 131
1,1-Dichloroethane	ND	F1	800	97.0	F1	ug/L		12	68 - 125
1,1-Dichloroethene	ND	F1	800	90.3	F1	ug/L		11	56 - 135
1,2-Dichloroethane	ND	F1	800	88.9	F1	ug/L		11	63 - 126
1,2-Dichloropropane	ND	F1	800	104	F1	ug/L		13	69 - 130
2-Hexanone	ND	F1	1600	240	F1	ug/L		15	35 - 156
Benzene	ND	F1	800	98.7	F1	ug/L		12	64 - 128
Bromoform	ND	F1	800	81.8	F1	ug/L		10	47 - 125
Bromomethane	ND	F1	800	65.5	F1	ug/L		8	28 - 150
Carbon disulfide	ND	F1	800	89.5	F1	ug/L		11	38 - 140
Carbon tetrachloride	ND	F1	800	74.1	F1	ug/L		9	51 - 133
Chlorobenzene	ND	F1	800	91.4	F1	ug/L		11	74 - 121
Chloroethane	ND	F1	800	68.0	F1	ug/L		8	10 - 199
Chloroform	ND	F1	800	93.3	F1	ug/L		12	70 - 122
Chloromethane	ND	F1	800	78.5	F1	ug/L		10	32 - 149
cis-1,2-Dichloroethene	14	F1	800	109	F1	ug/L		12	66 - 128
cis-1,3-Dichloropropene	ND	F1	800	83.2	F1	ug/L		10	47 - 125
Dichlorobromomethane	ND	F1	800	82.9	F1	ug/L		10	62 - 125
Ethylbenzene	ND	F1	800	90.8	F1	ug/L		11	67 - 127
Hexane	ND	F1	800	91.5	F1	ug/L		11	41 - 131
m-Xylene & p-Xylene	ND	F1	800	92.4	F1	ug/L		12	71 - 123
2-Butanone (MEK)	ND	F1	1600	246	F1	ug/L		15	40 - 151
4-Methyl-2-pentanone (MIBK)	ND	F1	1600	208	F1	ug/L		13	31 - 153
Methylene Chloride	ND	F1	800	119	F1	ug/L		15	62 - 129
o-Xylene	ND	F1	800	89.9	F1	ug/L		11	70 - 125
Styrene	ND	F1	800	97.0	F1	ug/L		12	70 - 139
Tetrachloroethene	ND	F1	800	83.3	F1	ug/L		10	62 - 131
Toluene	ND	F1	800	95.8	F1	ug/L		12	58 - 135
trans-1,2-Dichloroethene	ND	F1	800	95.8	F1	ug/L		12	56 - 136
trans-1,3-Dichloropropene	ND	F1	800	93.5	F1	ug/L		12	47 - 120
Trichloroethene	17	F1	800	96.5	F1	ug/L		10	61 - 124
Vinyl chloride	ND	F1	800	67.6	F1	ug/L		8	43 - 157
Xylenes, Total	ND	F1	1600	182	F1	ug/L		11	71 - 123
Chlorodibromomethane	ND	F1	800	84.0	F1	ug/L		11	65 - 120

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*102*		*62 - 137*
4-Bromofluorobenzene (Surr)	*107*		*56 - 136*
Toluene-d8 (Surr)	*104*		*78 - 122*
Dibromofluoromethane (Surr)	*97*		*73 - 120*

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

Lab Sample ID: 240-186869-11 MSD
Client Sample ID: MW-D-S
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 578109

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,1,1-Trichloroethane	ND	F1	800	78.3	F1	ug/L		10	60 - 130	3	17
1,1,2,2-Tetrachloroethane	ND	F1	800	115	F1	ug/L		14	54 - 145	3	15
1,1,2-Trichloroethane	ND	F1	800	97.6	F1	ug/L		12	69 - 131	5	14
1,1-Dichloroethane	ND	F1	800	93.3	F1	ug/L		12	68 - 125	4	13
1,1-Dichloroethene	ND	F1	800	85.9	F1	ug/L		11	56 - 135	5	26
1,2-Dichloroethane	ND	F1	800	87.9	F1	ug/L		11	63 - 126	1	12
1,2-Dichloropropane	ND	F1	800	100	F1	ug/L		13	69 - 130	4	13
2-Hexanone	ND	F1	1600	229	F1	ug/L		14	35 - 156	5	17
Benzene	ND	F1	800	95.4	F1	ug/L		12	64 - 128	3	14
Bromoform	ND	F1	800	80.9	F1	ug/L		10	47 - 125	1	15
Bromomethane	ND	F1	800	64.0	F1	ug/L		8	28 - 150	2	26
Carbon disulfide	ND	F1	800	86.7	F1	ug/L		11	38 - 140	3	23
Carbon tetrachloride	ND	F1	800	73.1	F1	ug/L		9	51 - 133	1	24
Chlorobenzene	ND	F1	800	89.0	F1	ug/L		11	74 - 121	3	14
Chloroethane	ND	F1	800	66.1	F1	ug/L		8	10 - 199	3	30
Chloroform	ND	F1	800	89.5	F1	ug/L		11	70 - 122	4	14
Chloromethane	ND	F1	800	76.5	F1	ug/L		10	32 - 149	3	27
cis-1,2-Dichloroethene	14	F1	800	106	F1	ug/L		12	66 - 128	3	14
cis-1,3-Dichloropropene	ND	F1	800	83.3	F1	ug/L		10	47 - 125	0	13
Dichlorobromomethane	ND	F1	800	81.4	F1	ug/L		10	62 - 125	2	13
Ethylbenzene	ND	F1	800	89.7	F1	ug/L		11	67 - 127	1	15
Hexane	ND	F1	800	85.8	F1	ug/L		11	41 - 131	6	35
m-Xylene & p-Xylene	ND	F1	800	90.2	F1	ug/L		11	71 - 123	2	16
2-Butanone (MEK)	ND	F1	1600	248	F1	ug/L		15	40 - 151	1	20
4-Methyl-2-pentanone (MIBK)	ND	F1	1600	202	F1	ug/L		13	31 - 153	3	15
Methylene Chloride	ND	F1	800	117	F1	ug/L		15	62 - 129	2	17
o-Xylene	ND	F1	800	87.9	F1	ug/L		11	70 - 125	2	15
Styrene	ND	F1	800	93.7	F1	ug/L		12	70 - 139	4	18
Tetrachloroethene	ND	F1	800	80.1	F1	ug/L		10	62 - 131	4	20
Toluene	ND	F1	800	93.7	F1	ug/L		12	58 - 135	2	14
trans-1,2-Dichloroethene	ND	F1	800	93.9	F1	ug/L		12	56 - 136	2	15
trans-1,3-Dichloropropene	ND	F1	800	89.3	F1	ug/L		11	47 - 120	5	14
Trichloroethene	17	F1	800	93.1	F1	ug/L		10	61 - 124	4	15
Vinyl chloride	ND	F1	800	64.9	F1	ug/L		8	43 - 157	4	24
Xylenes, Total	ND	F1	1600	178	F1	ug/L		11	71 - 123	2	15
Chlorodibromomethane	ND	F1	800	83.6	F1	ug/L		10	65 - 120	0	13

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*99*		*62 - 137*
4-Bromofluorobenzene (Surr)	*105*		*56 - 136*
Toluene-d8 (Surr)	*103*		*78 - 122*
Dibromofluoromethane (Surr)	*98*		*73 - 120*

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

Lab Sample ID: MB 240-578264/10
Matrix: Water
Analysis Batch: 578264

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.48	ug/L			06/23/23 13:33	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.60	ug/L			06/23/23 13:33	1
1,1,2-Trichloroethane	ND		1.0	0.48	ug/L			06/23/23 13:33	1
1,1-Dichloroethane	ND		1.0	0.47	ug/L			06/23/23 13:33	1
1,1-Dichloroethene	ND		1.0	0.49	ug/L			06/23/23 13:33	1
1,2-Dichloroethane	ND		1.0	0.46	ug/L			06/23/23 13:33	1
1,2-Dichloropropane	ND		1.0	0.47	ug/L			06/23/23 13:33	1
2-Hexanone	ND		10	1.1	ug/L			06/23/23 13:33	1
Acetone	ND		10	5.4	ug/L			06/23/23 13:33	1
Benzene	ND		1.0	0.42	ug/L			06/23/23 13:33	1
Bromoform	ND		1.0	0.76	ug/L			06/23/23 13:33	1
Bromomethane	ND		1.0	0.42	ug/L			06/23/23 13:33	1
Carbon disulfide	ND		1.0	0.59	ug/L			06/23/23 13:33	1
Carbon tetrachloride	ND		1.0	0.26	ug/L			06/23/23 13:33	1
Chlorobenzene	ND		1.0	0.38	ug/L			06/23/23 13:33	1
Chloroethane	ND		1.0	0.83	ug/L			06/23/23 13:33	1
Chloroform	ND		1.0	0.47	ug/L			06/23/23 13:33	1
Chloromethane	ND		1.0	0.63	ug/L			06/23/23 13:33	1
cis-1,2-Dichloroethene	ND		1.0	0.46	ug/L			06/23/23 13:33	1
cis-1,3-Dichloropropene	ND		1.0	0.61	ug/L			06/23/23 13:33	1
Dichlorobromomethane	ND		1.0	0.38	ug/L			06/23/23 13:33	1
Ethylbenzene	ND		1.0	0.42	ug/L			06/23/23 13:33	1
Hexane	ND		1.0	0.37	ug/L			06/23/23 13:33	1
m-Xylene & p-Xylene	ND		2.0	0.42	ug/L			06/23/23 13:33	1
2-Butanone (MEK)	ND		10	1.2	ug/L			06/23/23 13:33	1
4-Methyl-2-pentanone (MIBK)	ND		10	0.99	ug/L			06/23/23 13:33	1
Methylene Chloride	ND		5.0	2.6	ug/L			06/23/23 13:33	1
o-Xylene	ND		1.0	0.42	ug/L			06/23/23 13:33	1
Styrene	ND		1.0	0.45	ug/L			06/23/23 13:33	1
Tetrachloroethene	ND		1.0	0.44	ug/L			06/23/23 13:33	1
Toluene	ND		1.0	0.44	ug/L			06/23/23 13:33	1
trans-1,2-Dichloroethene	ND		1.0	0.51	ug/L			06/23/23 13:33	1
trans-1,3-Dichloropropene	ND		1.0	0.67	ug/L			06/23/23 13:33	1
Trichloroethene	ND		1.0	0.44	ug/L			06/23/23 13:33	1
Vinyl chloride	ND		1.0	0.45	ug/L			06/23/23 13:33	1
Xylenes, Total	ND		2.0	0.42	ug/L			06/23/23 13:33	1
Chlorodibromomethane	ND		1.0	0.39	ug/L			06/23/23 13:33	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*100*		*62 - 137*		*06/23/23 13:33*	*1*
4-Bromofluorobenzene (Surr)	*94*		*56 - 136*		*06/23/23 13:33*	*1*
Toluene-d8 (Surr)	*93*		*78 - 122*		*06/23/23 13:33*	*1*
Dibromofluoromethane (Surr)	*97*		*73 - 120*		*06/23/23 13:33*	*1*

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

Lab Sample ID: LCS 240-578264/9
Matrix: Water
Analysis Batch: 578264

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1-Trichloroethane	20.0	15.8		ug/L		79	64 - 131
1,1,2,2-Tetrachloroethane	20.0	22.2		ug/L		111	58 - 157
1,1,2-Trichloroethane	20.0	18.3		ug/L		91	70 - 138
1,1-Dichloroethane	20.0	18.0		ug/L		90	72 - 127
1,1-Dichloroethene	20.0	16.1		ug/L		81	63 - 134
1,2-Dichloroethane	20.0	16.2		ug/L		81	66 - 128
1,2-Dichloropropane	20.0	18.7		ug/L		94	75 - 133
2-Hexanone	40.0	34.2		ug/L		86	43 - 167
Acetone	40.0	64.3	*+	ug/L		161	50 - 149
Benzene	20.0	18.4		ug/L		92	77 - 123
Bromoform	20.0	16.3		ug/L		82	57 - 129
Bromomethane	20.0	12.0		ug/L		60	36 - 142
Carbon disulfide	20.0	17.4		ug/L		87	43 - 140
Carbon tetrachloride	20.0	14.1		ug/L		70	55 - 137
Chlorobenzene	20.0	17.4		ug/L		87	80 - 121
Chloroethane	20.0	11.8		ug/L		59	38 - 152
Chloroform	20.0	17.7		ug/L		89	74 - 122
Chloromethane	20.0	11.7		ug/L		58	47 - 143
cis-1,2-Dichloroethene	20.0	18.2		ug/L		91	77 - 123
cis-1,3-Dichloropropene	20.0	15.3		ug/L		77	64 - 130
Dichlorobromomethane	20.0	15.7		ug/L		79	69 - 126
Ethylbenzene	20.0	17.5		ug/L		87	80 - 121
Hexane	20.0	14.3		ug/L		71	53 - 144
m-Xylene & p-Xylene	20.0	18.1		ug/L		91	80 - 120
2-Butanone (MEK)	40.0	39.5		ug/L		99	54 - 156
4-Methyl-2-pentanone (MIBK)	40.0	33.4		ug/L		84	46 - 158
Methylene Chloride	20.0	21.1		ug/L		106	71 - 125
o-Xylene	20.0	18.0		ug/L		90	80 - 123
Styrene	20.0	18.4		ug/L		92	80 - 135
Tetrachloroethene	20.0	15.5		ug/L		78	76 - 123
Toluene	20.0	18.3		ug/L		92	80 - 123
trans-1,2-Dichloroethene	20.0	17.9		ug/L		90	75 - 124
trans-1,3-Dichloropropene	20.0	16.4		ug/L		82	57 - 129
Trichloroethene	20.0	15.0		ug/L		75	70 - 122
Vinyl chloride	20.0	11.1	*-	ug/L		55	60 - 144
Xylenes, Total	40.0	36.1		ug/L		90	80 - 121
Chlorodibromomethane	20.0	16.2		ug/L		81	70 - 124

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*96*		*62 - 137*
4-Bromofluorobenzene (Surr)	*100*		*56 - 136*
Toluene-d8 (Surr)	*102*		*78 - 122*
Dibromofluoromethane (Surr)	*97*		*73 - 120*

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

Lab Sample ID: 240-186869-11 MS
Matrix: Water
Analysis Batch: 578264

Client Sample ID: MW-D-S
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Acetone	28	*+	40.0	57.5		ug/L		75	33 - 149		

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*84*		*62 - 137*
4-Bromofluorobenzene (Surr)	*92*		*56 - 136*
Toluene-d8 (Surr)	*92*		*78 - 122*
Dibromofluoromethane (Surr)	*85*		*73 - 120*

Lab Sample ID: 240-186869-11 MSD
Matrix: Water
Analysis Batch: 578264

Client Sample ID: MW-D-S
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Acetone	28	*+	40.0	77.3		ug/L		124	33 - 149	29	34

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*97*		*62 - 137*
4-Bromofluorobenzene (Surr)	*97*		*56 - 136*
Toluene-d8 (Surr)	*94*		*78 - 122*
Dibromofluoromethane (Surr)	*91*		*73 - 120*

QC Association Summary

Client: Key Environmental, Inc
Project/Site: Alcoa - Wearever - Chillicothe

Job ID: 240-186869-1

GC/MS VOA

Analysis Batch: 578109

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-186869-1	MW-G-S	Total/NA	Water	8260D	
240-186869-2	MW-G-I	Total/NA	Water	8260D	
240-186869-3	MW-G-D	Total/NA	Water	8260D	
240-186869-4	M-99A	Total/NA	Water	8260D	
240-186869-5	MW-OS-3	Total/NA	Water	8260D	
240-186869-6	MW-OS-2	Total/NA	Water	8260D	
240-186869-7	MW-OS-1I	Total/NA	Water	8260D	
240-186869-8	MW-C-I	Total/NA	Water	8260D	
240-186869-9	MW-I-S	Total/NA	Water	8260D	
240-186869-10	MW-I-I	Total/NA	Water	8260D	
240-186869-11	MW-D-S	Total/NA	Water	8260D	
240-186869-12	MW-D-I	Total/NA	Water	8260D	
240-186869-13	MW-D-D	Total/NA	Water	8260D	
240-186869-14	TRIP BLANK	Total/NA	Water	8260D	
MB 240-578109/9	Method Blank	Total/NA	Water	8260D	
LCS 240-578109/5	Lab Control Sample	Total/NA	Water	8260D	
240-186869-11 MS	MW-D-S	Total/NA	Water	8260D	
240-186869-11 MSD	MW-D-S	Total/NA	Water	8260D	

Analysis Batch: 578264

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-186869-1	MW-G-S	Total/NA	Water	8260D	
240-186869-2	MW-G-I	Total/NA	Water	8260D	
240-186869-3	MW-G-D	Total/NA	Water	8260D	
240-186869-4	M-99A	Total/NA	Water	8260D	
240-186869-5	MW-OS-3	Total/NA	Water	8260D	
240-186869-6	MW-OS-2	Total/NA	Water	8260D	
240-186869-9	MW-I-S	Total/NA	Water	8260D	
240-186869-10	MW-I-I	Total/NA	Water	8260D	
240-186869-11	MW-D-S	Total/NA	Water	8260D	
240-186869-12	MW-D-I	Total/NA	Water	8260D	
240-186869-13	MW-D-D	Total/NA	Water	8260D	
MB 240-578264/10	Method Blank	Total/NA	Water	8260D	
LCS 240-578264/9	Lab Control Sample	Total/NA	Water	8260D	
240-186869-11 MS	MW-D-S	Total/NA	Water	8260D	
240-186869-11 MSD	MW-D-S	Total/NA	Water	8260D	

Lab Chronicle

Client: Key Environmental, Inc
Project/Site: Alcoa - Wearever - Chillicothe

Job ID: 240-186869-1

Client Sample ID: MW-G-S
Date Collected: 06/09/23 10:06
Date Received: 06/10/23 09:20

Lab Sample ID: 240-186869-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	578109	AJS	EET CLE	06/22/23 13:32
Total/NA	Analysis	8260D		1	578264	AJS	EET CLE	06/23/23 14:24

Client Sample ID: MW-G-I
Date Collected: 06/09/23 10:14
Date Received: 06/10/23 09:20

Lab Sample ID: 240-186869-2
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	578109	AJS	EET CLE	06/22/23 13:57
Total/NA	Analysis	8260D		1	578264	AJS	EET CLE	06/23/23 14:49

Client Sample ID: MW-G-D
Date Collected: 06/09/23 10:20
Date Received: 06/10/23 09:20

Lab Sample ID: 240-186869-3
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	578109	AJS	EET CLE	06/22/23 14:23
Total/NA	Analysis	8260D		1	578264	AJS	EET CLE	06/23/23 15:15

Client Sample ID: M-99A
Date Collected: 06/09/23 07:00
Date Received: 06/10/23 09:20

Lab Sample ID: 240-186869-4
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	578109	AJS	EET CLE	06/22/23 14:48
Total/NA	Analysis	8260D		1	578264	AJS	EET CLE	06/23/23 15:40

Client Sample ID: MW-OS-3
Date Collected: 06/09/23 07:22
Date Received: 06/10/23 09:20

Lab Sample ID: 240-186869-5
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		5	578109	AJS	EET CLE	06/22/23 15:14
Total/NA	Analysis	8260D		1	578264	AJS	EET CLE	06/23/23 16:06

Client Sample ID: MW-OS-2
Date Collected: 06/09/23 07:42
Date Received: 06/10/23 09:20

Lab Sample ID: 240-186869-6
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		2	578109	AJS	EET CLE	06/22/23 15:40
Total/NA	Analysis	8260D		2	578264	AJS	EET CLE	06/23/23 16:31

Lab Chronicle

Client: Key Environmental, Inc
Job ID: 240-186869-1
Project/Site: Alcoa - Wearever - Chillicothe

Client Sample ID: MW-OS-1I
Lab Sample ID: 240-186869-7
Date Collected: 06/09/23 07:53
Matrix: Water
Date Received: 06/10/23 09:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		100	578109	AJS	EET CLE	06/22/23 16:05

Client Sample ID: MW-C-I
Lab Sample ID: 240-186869-8
Date Collected: 06/09/23 08:14
Matrix: Water
Date Received: 06/10/23 09:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		50	578109	AJS	EET CLE	06/22/23 16:31

Client Sample ID: MW-I-S
Lab Sample ID: 240-186869-9
Date Collected: 06/09/23 08:30
Matrix: Water
Date Received: 06/10/23 09:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	578109	AJS	EET CLE	06/22/23 16:57
Total/NA	Analysis	8260D		1	578264	AJS	EET CLE	06/23/23 17:23

Client Sample ID: MW-I-I
Lab Sample ID: 240-186869-10
Date Collected: 06/09/23 08:45
Matrix: Water
Date Received: 06/10/23 09:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	578109	AJS	EET CLE	06/22/23 17:22
Total/NA	Analysis	8260D		1	578264	AJS	EET CLE	06/23/23 17:48

Client Sample ID: MW-D-S
Lab Sample ID: 240-186869-11
Date Collected: 06/09/23 09:07
Matrix: Water
Date Received: 06/10/23 09:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		5	578109	AJS	EET CLE	06/22/23 17:48
Total/NA	Analysis	8260D		1	578264	AJS	EET CLE	06/23/23 19:05

Client Sample ID: MW-D-I
Lab Sample ID: 240-186869-12
Date Collected: 06/09/23 09:30
Matrix: Water
Date Received: 06/10/23 09:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	578109	AJS	EET CLE	06/22/23 19:04
Total/NA	Analysis	8260D		1	578264	AJS	EET CLE	06/23/23 18:14

Lab Chronicle

Client: Key Environmental, Inc
Job ID: 240-186869-1
Project/Site: Alcoa - Wearever - Chillicothe

Client Sample ID: MW-D-D
Lab Sample ID: 240-186869-13
Date Collected: 06/09/23 09:40
Matrix: Water
Date Received: 06/10/23 09:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	578109	AJS	EET CLE	06/22/23 19:29
Total/NA	Analysis	8260D		1	578264	AJS	EET CLE	06/23/23 18:40

Client Sample ID: TRIP BLANK
Lab Sample ID: 240-186869-14
Date Collected: 06/09/23 00:00
Matrix: Water
Date Received: 06/10/23 09:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	578109	AJS	EET CLE	06/22/23 19:55

Laboratory References:

EET CLE = Eurofins Cleveland, 180 S. Van Buren Avenue, Barberton, OH 44203, TEL (330)497-9396

Accreditation/Certification Summary

Client: Key Environmental, Inc
Job ID: 240-186869-1
Project/Site: Alcoa - Wearever - Chillicothe

Laboratory: Eurofins Cleveland

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
California	State	2927	02-27-24
Connecticut	State	PH-0590	06-29-23
Florida	NELAP	E87225	06-30-23
Georgia	State	4062	06-27-23
Illinois	NELAP	200004	07-31-23
Iowa	State	421	06-01-25
Kentucky (UST)	State	112225	02-28-24
Kentucky (WW)	State	KY98016	12-31-23
Michigan	State	9135	02-27-24
Minnesota	NELAP	039-999-348	12-31-23
Minnesota (Petrofund)	State	3506	08-01-23
New Jersey	NELAP	OH001	06-30-23
New York	NELAP	10975	04-02-24
Ohio	State	8303	06-27-23
Ohio VAP	State	ORELAP 4062	06-27-23
Oregon	NELAP	4062	02-27-24
Pennsylvania	NELAP	68-00340	08-31-24
Texas	NELAP	T104704517-22-17	08-31-23
Virginia	NELAP	460175	09-14-23
West Virginia DEP	State	210	12-31-23

Eurofins Cleveland
180 S. Van Buren Avenue
Barberton, OH 44203
Phone: 330-497-9396 Fax: 330-497-0772

0.6/0.8

Chain of Custody Record

eurofins | Environment Testing

Client Information	Sampler: Shane Lindquist	Lab PM: Brown, Shali	Carrier Tracking No(s):	COC No: 240-108847-26054.1
Client Contact: Hank Pappert	Phone: Shane Lindquist	E-Mail: Shali.Brown@et.eurofinsus.com	State of Origin:	Page: Page 1 of 2
Company: Key Environmental, Inc	PWSID:			Job #:
Address: 200 Third Avenue	Due Date Requested:			
City: Carnegie	TAT Requested (days):			
State, Zip: PA, 15106	Compliance Project: ∆ Yes ∆ No			
Phone: 412-429-2694(Tel)	PO #: Purchase Order not required			
Email: HPappert.2006@f-ts.com	WO #:			
Project Name: Alcoa - Wearever	Project #: 24006086			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8260B - 8260B - PP VOC's	Total Number of containers	Special Instructions/Note:
			Preservation Code:				A		
MW-G-S	6/9/23	1006	G	W	N	N	3		
MW-G-I	6/9/23	1014	G	W	N	N	3		
MW-G-D	6/9/23	1020	G	W	N	N	3		

Shane Lindquist 6/9/23

240-186869 Chain of Custody

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months

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

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by	Date/Time	Company	Received by	Date/Time	Company
Shane Lindquist FTS	6/9/23 1427	FTS	Leah M. Smith	06-10-23 920	EETNC
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: ∆ Yes ∆ No | Custody Seal No.:

Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Eurofins Cleveland
180 S. Van Buren Avenue
Barberton, OH 44203
Phone: 330-497-9396 Fax: 330-497-0772

Chain of Custody Record

eurofins | Environment Testing

Client Information	Sampler: Shane Lindquist	Lab PM: Brown, Shali	Carrier Tracking No(s):	COC No: 240-108847-26054.2
Client Contact: Hank Pappert	Phone: 716-801-0000	E-Mail: Shali.Brown@et.eurofinsus.com	State of Origin:	Page: Page 2 of 2
Company: Key Environmental, Inc	PWSID:			Job #:
Address: 200 Third Avenue	Due Date Requested:			
City: Carnegie	TAT Requested (days):			
State, Zip: PA, 15106	Compliance Project: ∆ Yes ∆ No			
Phone: 412-429-2694(Tel)	PO #: Purchase Order not required			
Email: HPappert.2006@f-ts.com	WO #:			
Project Name: Alcoa - Wearever	Project #: 24006086			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8260B - 8260B - PP VOC's	Total Number of containers	Special Instructions/Note:
			Preservation Code:				A		
M-99A	6/9/23	0700	G	W	N	N	3		
MW-OS-3	6/9/23	0722	G	W	N	N	3		
MW-OS-2	6/9/23	0742	G	W	N	N	3		
MW-OS-1I	6/9/23	0753	G	W	N	N	3		
MW-C-I	6/9/23	0814	G	W	N	N	3		
MW-I-S	6/9/23	0830	G	W	N	N	3		
MW-I-I	6/9/23	0845	G	W	N	N	3		
MW-D-S	6/9/23	0907	G	W	N	Y	3		
MW-D-S/MS/MSD	6/9/23	0907	G	W	N	Y	6		
MW-D-I	6/9/23	0930	G	W	N	N	3		
MW-D-D	6/9/23	0940	G	W	N	N	3		

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months

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

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Shane Lindquist FTS	6/9/23 1427	FTS	Leah M. Smith	06-10-23 920	EETMC
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: ∆ Yes ∆ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Eurofins - Canton Sample Receipt Form/Narrative **Login # :** _____
Barberton Facility

Client Key Environmental Inc Site Name _____ Cooler unpacked by: Leah M. Smith

Cooler Received on 06-10-23 Opened on 06-12-23

FedEx: 1st Grd (Exp) UPS FAS Clipper Client Drop Off Eurofins Courier Other _____

Receipt After-hours: Drop-off Date/Time _____ Storage Location _____

Eurofins Cooler # EC Foam Box Client Cooler Box Other _____

Packing material used: Bubble Wrap Foam Plastic Bag None Other _____

COOLANT: Wet Ice Blue Ice Dry Ice Water None

1. Cooler temperature upon receipt ☐ See Multiple Cooler Form

IR GUN # 13 (CF +0.2 °C) Observed Cooler Temp. 0.6 °C Corrected Cooler Temp. 0.8 °C

2. Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity_____	(Yes)	No
-Were the seals on the outside of the cooler(s) signed & dated?	(Yes)	No NA
-Were tamper/custody seals on the bottle(s) or bottle kits (LLHg/MeHg)?	Yes	(No)
-Were tamper/custody seals intact and uncompromised?	Yes	No (NA)
3. Shippers' packing slip attached to the cooler(s)?	(Yes)	No
4. Did custody papers accompany the sample(s)?	(Yes)	No
5. Were the custody papers relinquished & signed in the appropriate place?	(Yes)	No
6. Was/were the person(s) who collected the samples clearly identified on the COC?	(Yes)	No
7. Did all bottles arrive in good condition (Unbroken)?	(Yes)	No
8. Could all bottle labels (ID/Date/Time) be reconciled with the COC?	(Yes)	No
9. For each sample, does the COC specify preservatives (Y/N), # of containers (Y/N), and sample type of grab/comp (Y/N)?		
10. Were correct bottle(s) used for the test(s) indicated?	(Yes)	No
11. Sufficient quantity received to perform indicated analyses?	(Yes)	No
12. Are these work share samples and all listed on the COC?	Yes	(No)
If yes, Questions 13-17 have been checked at the originating laboratory.		
13. Were all preserved sample(s) at the correct pH upon receipt?	Yes	No (NA) pH Strip Lot# 10BDH4321
14. Were VOAs on the COC?	(Yes)	No
15. Were air bubbles >6 mm in any VOA vials? ● ← Larger than this.	Yes	(No) NA
16. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # 62225	(Yes)	No
17. Was a LL Hg or Me Hg trip blank present? _____	Yes	(No)

Tests that are not checked for pH by Receiving:
VOAs
Oil and Grease
TOC

Contacted PM _____ Date _____ by _____ via Verbal Voice Mail Other

Concerning _____

18. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES ☐ additional next page

Samples processed by:

_____

_____

_____

_____

19. SAMPLE CONDITION

Sample(s) _____ were received after the recommended holding time had expired.

Sample(s) _____ were received in a broken container.

Sample(s) _____ were received with bubble >6 mm in diameter. (Notify PM)

20. SAMPLE PRESERVATION

Sample(s) _____ were further preserved in the laboratory.

Time preserved: _____ Preservative(s) added/Lot number(s): _____

VOA Sample Preservation - Date/Time VOAs Frozen: _____