October 9, 2025 Project Reference #23543

Mr. Andrew Sergeant, LPG
Project Manager
Voluntary Remediation Program
Office of Land Quality
100 N. Senate Avenue
Indianapolis, IN 46204

RE: 2024 Annual Groundwater Monitoring Report in Response to the Indiana Department of Environmental Management Comment Letter dated August 12, 2025, THAN/Harcros 3517 East Michigan St, Indianapolis, IN 46201 VRP# 6011005

Dear Mr. Sergeant:

The Sigma Group Inc. (Sigma) has prepared this letter in response to the Indiana Department of Environmental Management (IDEM) letter dated August 12, 2025, for the THAN/Harcros Indianapolis Site located at 3517 East Michigan Street in Indianapolis, Indiana (Site). In the August 12, 2025 letter, Comment #2 stated that additional monitoring wells are needed to delineate the lower intermediate (LI) and the lower shallow (LS) groundwater plumes. Specifically, the letter stated that the cis-1,2-dichloroethene (cis-1,2-DCE) and vinyl chloride (VC) plumes are not delineated to the northwest of the Site within the LI aquifer, and the VC plume is not delineated to the southwest of the Site within the LS aquifer.

Sigma has reviewed available information associated with groundwater monitoring activities completed at the Site as well as an adjacent off-site property and has prepared this letter to summarize additional information relative to the need to further delineate site-related volatile organic compounds (VOCs) within the LI and LS aquifers.

LOWER INTERMEDIATE AQUIFER NORTHEAST OF THE SITE

Background
The 2024 groundwater sample collected from monitoring well W-20, the northwestern-most site-related monitoring well that is screened within the LI aquifer (**Figure 1**), contained a cis-1,2-DCE concentration of 2,200 µg/L and VC concentration of 1,600 µg/L, which exceed IDEM Tier II Non-Residential cleanup goals of 1,022 µg/L and 10 µg/L, respectively.

To evaluate the extent of site-related VOCs in the LI aquifer, Sigma reviewed available historical groundwater potentiometric surface maps, groundwater analytical data, boring logs, well construction data, for the Site and the surrounding area.

Conceptual Model Update
Based on a review of the IDEM Virtual File Cabinet, Sigma identified that the adjacent property to the north of the Site is an open Voluntary Remediation Program (VRP) site #6020801, Sherman Park Facility (SPF), located at 600 North Sherman Drive in Indianapolis. According to the *2024 Annual Progress Report*, for the SPF, ”chlorinated volatile organic compounds (CVOCs) are present in groundwater in the upper

water-bearing unit (UWBU) near the west side of the former main building as a result of the historical usage of chemicals near the former Chemical Storage Building (CSB), the former Solvent Tank Area (STA), the former Metal Plating Area (MPA) and the former 1,1,-Trichloroethane Still Area (TSA)" (Ramboll, 2024). In addition, the 2024 Annual Progress Report indicates the primary COCs at the SPF include trichloroethene (TCE), 1,1,1-trichloroethane (1,1,1-TCA) and their degradation products including cis-1,2-DCE, 1,1-dichloroethene (1,1-DCE), 1,1-dichloroethane (1,1-DCA), VC, and chloroethane. Groundwater remediation activities at the SPF have been ongoing since approximately 2010.

Sigma reviewed the available information in the IDEM virtual file for the SPF site and utilized the available boring log, well construction, groundwater elevation, and groundwater analytical data to further evaluate VOC impacts to groundwater downgradient (northwest) of W-20.

Sigma reviewed the available SPF boring logs and well construction logs to identify SPF monitoring wells screened at elevations that correlate with Site-related LI aquifer monitoring well screen elevations. **Figure 1** depicts the groundwater monitoring wells across both sites that are screened within the LI aquifer based on Sigma's review.

The intermediate aquifer at the Site has historically been divided into distinct upper intermediate (UI) and LI units. Based on the elevations and stratographic information, there are several monitoring wells located at the SPF site that are screened within the LI aquifer (**Figure 1**). The geologic cross-section (**Figure 2**) depicts the LI aquifer and the wells screened within. It should be noted that while historic Site-related documents refer to the LI aquifer, the same geologic unit is referred to as the Lower Water-Bearing Unit by SPF-related documents. For purposes of this response, the unit will be referred to as the LI aquifer.

Potentiometric Surface Maps

Groundwater flow direction within the LI aquifer was evaluated using Site and SPF wells with screen elevations within the LI aquifer. The potentiometric surfaces for groundwater within the LI aquifer using November 2006, July 2018, and July/December 2024 data are presented in **Attachment A** and **Figures 3** and **4**, respectively. **Figures 3** and **4** were created using groundwater elevation data from both sites. **Figure 5** was created using December 2024 groundwater elevation data from the Site and July 2024 data from the SPF site (the dates closest together in 2024). The potentiometric surface depicted on **Figure 4** should be considered qualitative due to the seasonal variation between groundwater depth measurements.

It should also be noted that EW-02 is a groundwater extraction well installed on the Site in 2002 and screened within the LI aquifer. EW-02 was installed and has been operated to limit offsite migration of groundwater within the LI aquifer. Based on historical groundwater elevations, the radius of influence from groundwater extraction at EW-02 has extended to at least monitoring well W-20 northwest of the Site and approximately 150 feet northwest of EW-02.

- Based on available data, groundwater within the LI aquifer historically flows to the north across the Site and the SPF is downgradient of W-20.

- The 2006 potentiometric map (**Attachment A**) depicts groundwater flow to the northeast across the Site with no radius of influence from EW-02 measured. During this period of time, extraction well EW-02 was not operating due to ongoing soil remediation activities. There was no groundwater elevation data available for the SPF wells during this timeframe.

- The 2018 potentiometric map depicts groundwater flow generally to the north/northwest at the Site, with a groundwater low centered around EW-02, due to active groundwater extraction from the LI aquifer. At the SPF site, the groundwater elevations depict a general flow to the west/ southwest. A groundwater high/mound is present at SPF well MW-303.

- The 2024 potentiometric map depicts groundwater flow generally to the north/northwest at the Site, with a groundwater low centered around EW-02 due to active groundwater extraction, which is consistent with previous data. At the SPF site, the groundwater elevations depict a general flow to the west/northwest. The groundwater elevation for MW-253 was omitted due to a reported field measurement error, where the elevation level was measured approximately 10 feet higher than the historical level.

Groundwater Quality Data Evaluation

Monitoring Well W-20

Sigma reviewed historical groundwater analytical data from both the Site and the SPF to evaluate CVOC concentrations within the LI. Based on groundwater analytical data from the most recent groundwater sampling events at each property, isoconcentration maps for cis-1,2-DCE and VC concentrations within the LI aquifer are presented as **Figures 5** and **6**, respectively. Trend graphs were created for each of the monitoring wells screened within the LI aquifer at the sites and are presented in **Attachment B** and **Figure 7**.

While 2024 cis-1,2-DCE and VC concentrations exceeded IDEM Tier II Non-Residential cleanup goals at W-20, the concentration trend graph indicates that both cis-1,2-DCE and VC concentrations have been consistently decreasing at W-20 since 2012. In addition, no parent products (tetrachloroethene [PCE] and/or TCE) were detected at W-20 during the 2024 sampling event.

SPF Monitoring Wells

MW-153 is located approximately 340 feet northwest (downgradient) of W-20 and does not contain concentrations of CVOCs greater than the laboratory limit of detection (Ramboll, 2025). The monitoring well was not sampled in the July 2019 and the 2020 events due to damage from vandalism (Tetra Tech, 2020 & 2021). Based on SPF reports in the IDEM Virtual File Cabinet, a replacement monitoring well at this location was constructed, which has been sampled since March 2022. Groundwater analytical results for the replacement MW-153 report CVOCs have not been detected since March 2022, with the exception of VC detections in March 2022 and February 2023 at concentrations of 4.0 µg/L and 2.3 µg/L, respectively. Therefore, analytical results for MW-153 indicate that the extent of Site-related CVOC impacts down-gradient of W-20 have been adequately delineated.

SPF monitoring wells MW-163 and MW-253 are located north and northwest of SPF monitoring well MW-153. MW-163 is located approximately 275 feet north of W-20, and MW-253 is located approximately 560 feet northwest of W-20. Groundwater samples collected from both monitoring wells contain cis-1,2-DCE concentrations that are greater than those reported within groundwater samples collected from well W-20. In addition, review of the CVOC concentration trend graphs for these wells (**Attachment B)** do not indicate a trend similar to the observed decreasing trend in CVOC concentrations within groundwater samples collected from well W-20. Therefore, it is likely that the CVOC impacts present within groundwater samples collected at wells MW-163 and MW-253 are not associated with the CVOC impacts present at well W-20.

Summary of Findings
Based on the information presented above and in the accompanying **Figures** and **Attachments**, Sigma has observed the following:

- The general groundwater flow direction within the LI aquifer across the Site is to the north/northwest, with hydraulic containment from extraction well EW-02 within its area of influence of at least 150 feet. The groundwater flow at the north adjacent SPF site appears to vary but generally trends to the west/northwest.

- Extraction well EW-02 appears to be operating as intended and provides containment of the Site-related CVOC impacts within the LI aquifer.

- CVOC concentrations within groundwater samples collected from monitoring well W-20 have consistently decreased since 2012.

- Since the replacement monitoring well for MW-153 was constructed, CVOCs have not been detected within groundwater samples collected since March 2022, with the exception of VC detections in March 2022 and February 2023 at concentrations of 4.0 µg/L and 2.3 µg/L, respectively. MW-153 is the nearest downgradient well from Site monitoring well W-20.

- Based on the CVOC concentration trends and totals within groundwater samples collected at the SPF monitoring wells downgradient of MW-153 (MW-163 and MW-253), there does not appear to be correlation with the CVOC concentrations detected at Site well W-20.

Conclusion
Based on the groundwater flow and concentration data from available wells associated with the Site and the adjacent SPF site, cis-1,2-DCE and VC concentrations at W-20 are both decreasing and are adequately delineated by data from samples collected at downgradient monitoring well within the LI aquifer, MW-153. Therefore, installation of additional monitoring wells to further define the extent of Site-related CVOC impacts to the LI aquifer is not warranted.

LOWER SHALLOW AQUIFER

Background
The 2024 groundwater sample collected from monitoring well W-60, the southwestern-most site-related lower shallow (LS) aquifer monitoring well (**Figure 8**), contained a VC concentration of 350 µg/L, which exceeds the IDEM Tier II Residential cleanup goals of 2 µg/L. To evaluate the extent of site-related CVOCs in the LS aquifer, Sigma reviewed groundwater potentiometric surface data and historical groundwater analytical data.

Potentiometric Surface Map
Based on information within the *2024 Annual Groundwater Report*, the upper and lower shallow aquifer generally flow to the southwest (Sigma, 2025). A groundwater flow map for the shallow aquifer is included in **Attachment C**. The 2024 groundwater flow direction within the LS aquifer is consistent with the historic flow direction in the LS aquifer.

Groundwater Quality Data Evaluation

Sigma reviewed historical groundwater analytical data from the Site to evaluate CVOC concentration trends within the LS aquifer. Trend graphs were created for each of the Site monitoring wells screened within the LS aquifer. The trend graphs are presented in **Attachment D** and **Figure 8**. LS aquifer groundwater quality data is summarized in the following sections.

Periodic enhanced in-situ bioremediation (EISB) injections have been implemented at the Site since 2011. The EISB injections have been completed to enhance the naturally occurring anaerobic reductive dechlorination (RD) of site-related CVOCs (PCE and TCE) to non-toxic end products (methane, ethane, and ethene) in the upper and lower shallow aquifers. During RD of PCE and TCE, transient concentration increases of daughter products cis-1,2-DCE and VC are expected. While 2024 VC concentrations exceeded the IDEM Tier II Residential cleanup goal at W-60, the reported cis-1,2-DCE concentration within the groundwater sample collected at W-60 is less than the IDEM Tier II Residential cleanup goal. In addition, CVOC concentrations within the monitoring wells immediately upgradient (W-34, W-56, and W-58) have consistently indicated decreasing trends. This is consistent with the CVOC trend graphs from monitoring wells located on-site, near the CVOC source area. Ethene, the final end product resulting from RD of VC has also been consistently detected at W-60 and within the wells immediately upgradient, suggesting that the RD occurring at and near W-60 is achieving complete degradation of CVOCs.

Based on CVOC concentrations, the presence of RD end products (ethene), and CVOC concentration trends in W-60 and LS monitoring wells upgradient of W-60, it is anticipated that VC concentrations in W-60 will continue to decrease as the CVOC source is remediated onsite by EISB.

In addition to laboratory analytical data, groundwater quality parameters have been measured at Site monitoring wells to evaluate if anaerobic conditions supportive of ongoing RD are present. The groundwater quality parameters measured include oxidation reduction potential (ORP), dissolved oxygen (DO), and neutral pH readings. Groundwater quality parameters at W-60 and upgradient LS wells exhibit negative ORP, DO concentrations less than 1 mg/L and neutral pH indicating reducing conditions continue in the LS aquifer offsite, downgradient of the EISB injection areas onsite.

Conclusion

Based on concentration data from monitoring wells screened within the LS aquifer at the Site, VC concentrations exhibiting an increasing trend were limited to W-60, the most downgradient monitoring well. However, this increasing trend of VC at W-60 is expected and transient, given the RD of CVOCs on Site. The historical ORP and DO values combined with concentrations of ethene further support that RD is ongoing and effectively achieving complete degradation of VC to ethene.

The monitoring wells immediately upgradient from W-60 (W-58, W-34, W-56) contain decreasing CVOC concentration trends, suggesting that the CVOC concentrations at W-60, including VC, will follow a similar trend as the upgradient monitoring wells and decrease over time. Groundwater quality parameters in LS monitoring wells upgradient of W-60 also indicate reducing conditions and contain ethene which supports that complete RD is ongoing. As a result of ongoing RD, the lateral extent of cis-1,2-DCE and VC in the LS aquifer is expected to continue to decrease. Therefore, installation of additional monitoring wells downgradient of W-60 is not necessary. Continued monitoring of CVOCs in groundwater, including groundwater quality and natural attenuation parameters in Site wells, including W-60, is recommended.

Please contact us if you have any questions or need additional information.

Sincerely,

THE SIGMA GROUP, INC.

Grant Zwiefelhofer, P.G.
Project Geologist

Stephen R. Meer, P.E.
Senior Engineer

Paul Rohde, P.G.
Geoscience Group Leader

Cc: Mr. Anthony Halling, Philips North America, LLC
Mr. Michael Potts, Terraphase Engineering Inc.

Figures:

Figure 1 – Site Features Map
Figure 2 – Geologic Cross-Section A-A'
Figure 3 – Groundwater Potentiometric Map – July 2018 – Lower Intermediate Aquifer
Figure 4 – Groundwater Potentiometric Map – July/December 2024 – Lower Intermediate Aquifer
Figure 5 – Cis-1,2-DCE Concentrations in Groundwater – July/December 2024 – Lower Intermediate Aquifer
Figure 6 – Vinyl Chloride Concentrations in Groundwater – July/December 2024 – Lower Intermediate Aquifer
Figure 7 – CVOC Trend Graphs – Lower Intermediate Aquifer
Figure 8 – CVOC Trend Graphs – Lower Shallow Aquifer

Attachments:

Attachment A – Figure 3 Site Groundwater Elevations, Lower Intermediate Aquifer, November 2006, THAN/Harcros Indianapolis Site
Attachment B – CVOC Trend Graphs – Lower Intermediate Aquifer
Attachment C – Figure 2-1 Site Groundwater Elevations – Upper Shallow Aquifer, December 2024
Attachment D – CVOC Trend Graphs – Lower Shallow Aquifer

FIGURES

LEGEND

- APPROXIMATE GE SHERMAN PARK SITE BOUNDARY
- GE SHERMAN PARK MONITORING WELL
- APPROXMATE THAN/HACROS SITE BOUNDARY
- THAN/HACROS MONITORING WELL
- THAN/HACROS EXTRACTION WELL

MW-33
MW-343
MW-273
MW-123
MW-333
MW-303
MW-133
MW-323
MW-183
MW-253
MW-153
MW-163
MW-313
MW-173
W-17
W-20
Cross-section A-A'
W-26
EW-2
W-41
W-35
W-19
W-28
W-42
W-18
W-11

N

0 190 FT. 380 FT.

GRAPHIC SCALE

THE SIGMA GROUP
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SITE FEATURES MAP

THAN/HARCOS INDIANAPOLIS
3517 EAST MICHIGAN STREET, INDIANAPOLIS

FIGURE
1

PROJECT: 23543 | FILE FOLDER: 060 CAD - 200_Env | FILENAME: 2025 IDEM Response Figure 01 - Basemap.ai | CREATED BY: EMS | DATE: 9/3/2025 | MODIFIED BY: GSZ | DATE: 9/25/2025

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A

A’

THAN/HARCROS
IDIANAPOLIS SITE

SHERMAN PARK FACILITY

W-18

W-19

W-20

MW-153

MW-333

E. Michigan St

CLAYEY SILT
AND SILTY CLAY

CLAYEY SILT, SILTY CLAY,
AND GRAVELLY CLAY

SILTY CLAY

SILTY CLAY

CLAYEY SAND

SAND

SILTY SAND AND
GRAVELLY SAND

SHALLOW AQUIFER

SANDY GRAVEL AND
CLAYEY SAND

SILTY SAND

SILTY CLAY

SAND

CLAYEY SILT
AND SILTY CLAY

SANDY SILT
AND CLAYEY SILT

SILTY CLAY

SILTY CLAY

SAND

CLAYEY GRAVEL
AND SILTY SAND

INTERMEDIATE AQUIFER
UPPER ZONE

GRAVELLY SILT
AND SILTY CLAY

CLAYEY SILT
AND SILTY CLAY

INTERMEDIATE AQUIFER
UPPER ZONE

SANDY GRAVEL AND
GRAVELLY SAND

INTERMEDIATE AQUIFER
LOWER ZONE

SILTY SAND,
SAND AND GRAVEL

SAND

SANDY GRAVEL AND
GRAVELLY SAND

INTERMEDIATE AQUIFER
LOWER ZONE

Elevation (ft)

790 780 770 760 750 740 730 720 710 700 690 680 670 660

0 100 200 300 400 500 600 700 800 900 1,000 1,100 1,200 1,300

Distance Along Baseline (ft)

SUBSURFACE DIAGRAM

FILL SOILS

SANDS AND GRAVELS

SILTS AND CLAYS

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GEOLOGIC CROSS-SECTION B-B’

THAN/HARCOS INDIANAPOLIS
3517 EAST MICHIGAN STREET, INDIANAPOLIS

FIGURE
2

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LEGEND

- APPROXIMATE GE SHERMAN PARK SITE BOUNDARY
- GE SHERMAN PARK MONITORING WELL
- APPROXMATE THAN/HACROS SITE BOUNDARY
- THAN/HACROS MONITORING WELL
- THAN/HACROS EXTRACTION WELL
- (650.00) STATIC GROUDWATER LEVEL (FT. MSL)
- GROUNDWATER CONTOUR LINE (CONTOUR INTERVAL = 1.0 FT.)
- GROUNDWATER FLOW DIRECTION

NOTES:
1. APRIL 2024 AERIAL PHOTOGRAPHY PROVIDED BY GOOGLE EARTH.
2. THE GROUNDWATER ELEVATION MEASUREMENTS FOR THE MONITORING WELLS WERE COLLECTED IN JULY 2018.

MW-33 (761.21)
MW-343 (740.98)
MW-273 (741.10)
MW-123 (741.86)
MW-333 (742.41)
MW-303 (743.62)
MW-133 (742.05)
MW-323 (741.52)
MW-187 (741.62)
MW-253 (741.89)
MW-153 (742.12)
(741.86) MW-163
(742.28) MW-313
MW-173 (741.90)
(742.35) W-17
(742.82) W-20
(741.07) W-26
EW-2
(742.21) W-41
(742.22) W-35
(742.87) W-19
(741.55) W-28
(742.81) W-42
(743.28) W-18
(743.18) W-11

742 743 744 746 748 750 752 754 756 758 760

N

0 190 FT. 380 FT.
GRAPHIC SCALE

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GROUNDWATER CONTOUR MAP JULY 2018

THAN/HARCOS INDIANAPOLIS
3517 EAST MICHIGAN STREET, INDIANAPOLIS

FIGURE 3

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LEGEND

- APPROXIMATE GE SHERMAN PARK SITE BOUNDARY
- GE SHERMAN PARK MONITORING WELL
- APPROXMATE THAN/HACROS SITE BOUNDARY
- THAN/HACROS MONITORING WELL
- THAN/HACROS EXTRACTION WELL
- (650.00) STATIC GROUDWATER LEVEL (FT. MSL)
- GROUNDWATER CONTOUR LINE (CONTOUR INTERVAL = 1.0 FT.)
- GROUNDWATER FLOW DIRECTION

NOTES:
1. APRIL 2024 AERIAL PHOTOGRAPHY PROVIDED BY GOOGLE EARTH.
2. PHILLIPS WATER LEVELS WERE COLLECTED ON DECEMBER 16, 2024.
3. GE WATER LEVELS WERE COLLECTED ON JULY 17, 2024.

740 740.5 741 741.5 742

MW-33 (741.03)
MW-343 (739.70)
MW-273
MW-123 (740.33)
MW-333 (740.68)
MW-303 (740.51)
MW-133 (740.63)
MW-323 (740.53)
MW-183 (740.54)
MW-253
MW-153 (740.81)
MW-163 (740.77)
MW-313 (741.21)
MW-173 (740.77)
W-17 (741.47)
W-20 (741.48)
W-26 (741.07)
EW-2
W-41 (741.29)
W-35 (741.29)
W-19 (741.92)
W-28 (741.55)
W-42 (741.80)
W-18 (742.23)
W-11 (742.07)

0 190 FT. 380 FT.
GRAPHIC SCALE

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GROUNDWATER CONTOUR MAP 2024
THAN/HARCOS INDIANAPOLIS
3517 EAST MICHIGAN STREET, INDIANAPOLIS

FIGURE 4

PROJECT: 23543 | FILE FOLDER: 060 CAD - 200_Env | FILENAME: 2025 IDEM Response Figure 01 - Basemap.ai | CREATED BY: EMS | DATE: 9/3/2025 | MODIFIED BY: GSZ | DATE: 9/25/2025

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LEGEND

- APPROXIMATE GE SHERMAN PARK SITE BOUNDARY
- GE SHERMAN PARK MONITORING WELL
- APPROXMATE THAN/HACROS SITE BOUNDARY
- THAN/HACROS MONITORING WELL
- THAN/HACROS EXTRACTION WELL
- 10,000 µg/L
- 1,000 µg/L
- 100 µg/L
- 10 µg/L

NOTES:
1. APRIL 2024 AERIAL PHOTOGRAPHY PROVIDED BY GOOGLE EARTH.
2. THE GROUNDWATER DATA FROM THE GE SITE WERE COLLECTED DURING THE JULY 2024 SAMPLING EVENT.
3. THE GROUNDWATER DATA FROM THE PHILLIPS SITE WERE COLLECTED DURING THE DECEMBER 2024 SAMPLING EVENT.

MW-33 **ND**
MW-343 **ND**
MW-273 **ND**
MW-123 **ND**
MW-333 **11,200 µg/L**
MW-303 **627 µg/L**
MW-133 **627 µg/L**
MW-323 **60.7 µg/L**
MW-183 **ND**
MW-253 **11,000 µg/L**
MW-163 **6,920 µg/L**
MW-313 **616 µg/L**
MW-173 **1,080 µg/L**
MW-153 **ND**
W-17 **3.1 µg/L**
W-20 **2,200 µg/L**
EW-2
W-26 **450 µg/L**
W-41 **810 µg/L**
W-35 **1,300 µg/L**
W-19 **510 µg/L**
W-28 **350 µg/L**
W-42 **340 µg/L**
W-18 **540 µg/L**
W-11 **24 µg/L**

0 190 FT. 380 FT.
GRAPHIC SCALE

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CIS-1,2-DCE CONCENTRATIONS IN GROUNDWATER - JULY/DECEMBER 2024 - LOWER INTERMEDIATE AQUIFER

THAN/HARCOS INDIANAPOLIS
3517 EAST MICHIGAN STREET, INDIANAPOLIS

FIGURE
5

PROJECT: 23543
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CREATED BY: EMS
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MODIFIED BY: GSZ
DATE: 9/25/2025

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LEGEND

- APPROXIMATE GE SHERMAN PARK SITE BOUNDARY
- GE SHERMAN PARK MONITORING WELL
- APPROXMATE THAN/HACROS SITE BOUNDARY
- THAN/HACROS MONITORING WELL
- THAN/HACROS EXTRACTION WELL
- 1,000 µg/L
- 100 µg/L
- 10 µg/L

NOTES:
1. APRIL 2024 AERIAL PHOTOGRAPHY PROVIDED BY GOOGLE EARTH.
2. THE GROUNDWATER DATA FROM THE GE SITE WERE COLLECTED DURING THE JULY 2024 SAMPLING EVENT.
3. THE GROUNDWATER DATA FROM THE PHILLIPS SITE WERE COLLECTED DURING THE DECEMBER 2024 SAMPLING EVENT.

MW-33 **ND**
MW-343 **ND**
MW-273 **ND**
MW-123 **ND**
MW-333 **1,610 µg/L**
MW-303 **197 µg/L**
MW-133 **318 µg/L**
MW-323 **19 µg/L**
MW-183 **11.2 µg/L**
MW-253 **1,430 µg/L**
MW-153 **ND**
MW-163 **1,450 µg/L**
MW-313 **38.1 µg/L**
MW-173 **95.1 µg/L**
W-17 **ND**
W-20 **1,600 µg/L**
EW-2
W-26 **300 µg/L**
W-41 **370 µg/L**
W-35 **180 µg/L**
W-19 **750 µg/L**
W-28 **110 µg/L**
W-42 **250 µg/L**
W-18 **350 µg/L**
W-11 **1 µg/L**

0 190 FT. 380 FT.
GRAPHIC SCALE

DATE: 9/25/2025
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DATE: 9/3/2025
CREATED BY: EMS
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PROJECT: 23543

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VINYL CHLORIDE CONCENTRATIONS IN GROUNDWATER - JULY/DECEMBER 2024 - LOWER INTERMEDIATE AQUIFER

THAN/HARCOS INDIANAPOLIS
3517 EAST MICHIGAN STREET, INDIANAPOLIS

FIGURE
6

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LEGEND

- APPROXIMATE GE SHERMAN PARK SITE BOUNDARY
- GE SHERMAN PARK MONITORING WELL
- APPROXMATE THAN/HACROS SITE BOUNDARY
- THAN/HACROS MONITORING WELL
- THAN/HACROS EXTRACTION WELL

MW-123
MW-133
MW-303
MW-343
MW-33
MW-273
MW-333
MW-323
MW-153
MW-183
MW-253
MW-163
MW-313
MW-173
W-17
W-20
W-26
EW-2
W-41
W-35
W-19
W-28
W-42
W-18
W-11

THE TREND GRAPHS UTILIZE ANALYTICAL DATA FOR THE MONTORING WELLS DEPICTED FROM THE IDEM DATABASE FOR YEAR RANGING FROM 1995 TO 2024.

0 190 FT. 380 FT.
GRAPHIC SCALE

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CVOC TREND GRAPHS
LOWER INTERMEDIATE AQUIFER

THAN/HACROS INDIANAPOLIS
3517 EAST MICHIGAN STREET, INDIANAPOLIS

FIGURE
7

PROJECT: 23543
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DATE: 9/3/2025

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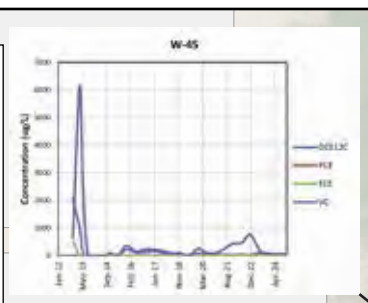
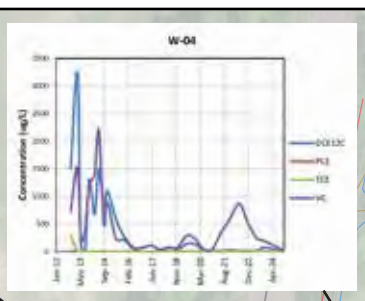
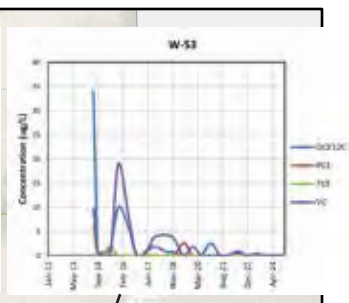
Legend

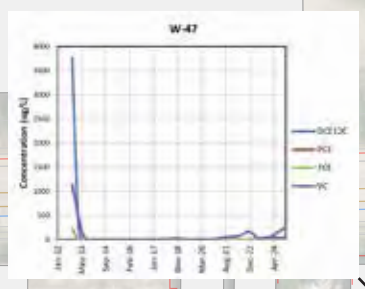
- Extraction Well
- Lower Shallow Aquifer Monitoring Well
- Site Boundary
- Water Hydrant
- Water Main
- Natural Gas Line
- Sanitary Sewer Point
- Sanitary Sewers
- Storm Sewer Point
- Storm Sewer Line

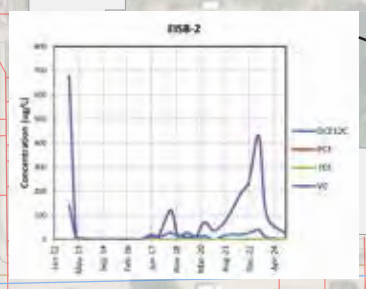
Notes:
1. October 2020 Aerial Photography provided by Esri ArcGIS Online World Imagery Service.

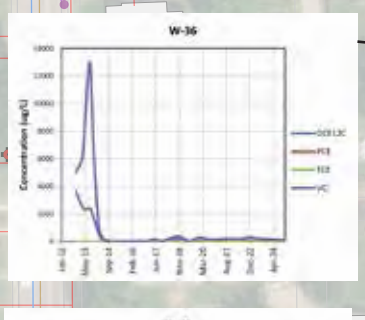


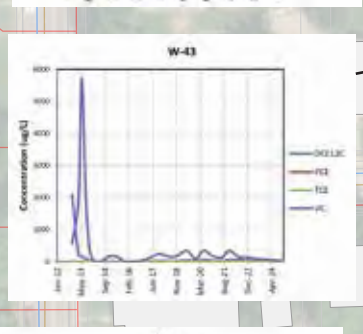


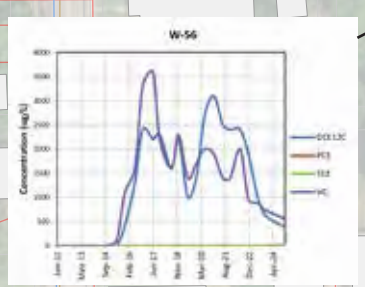


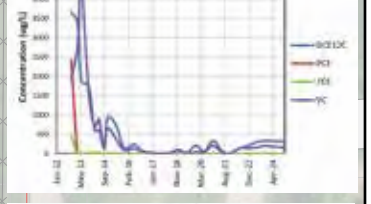


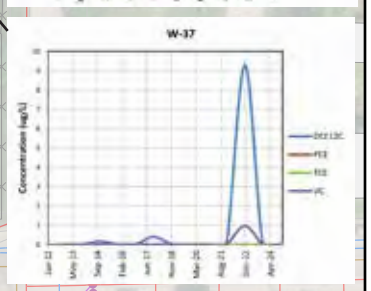


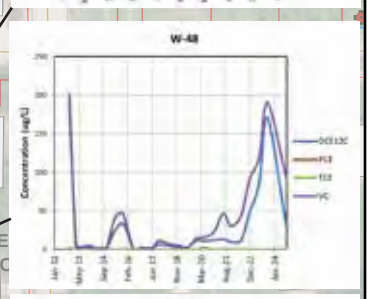


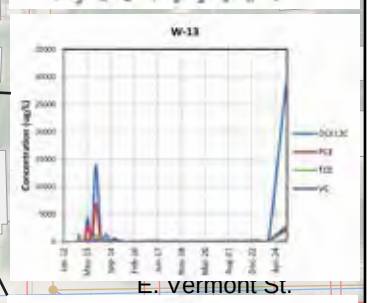


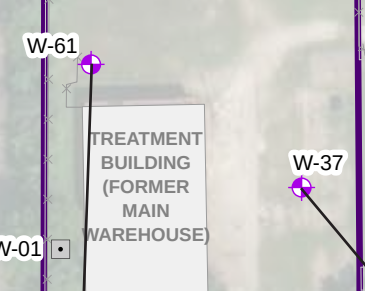


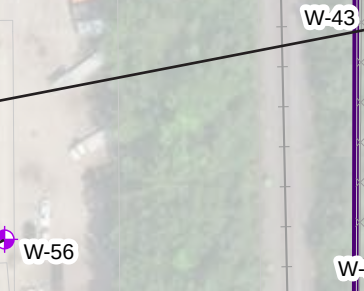


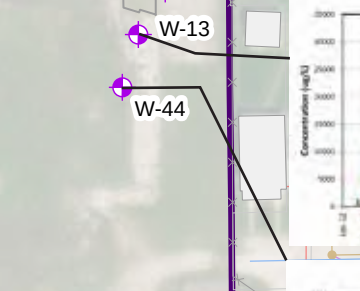












0 80 160
Feet

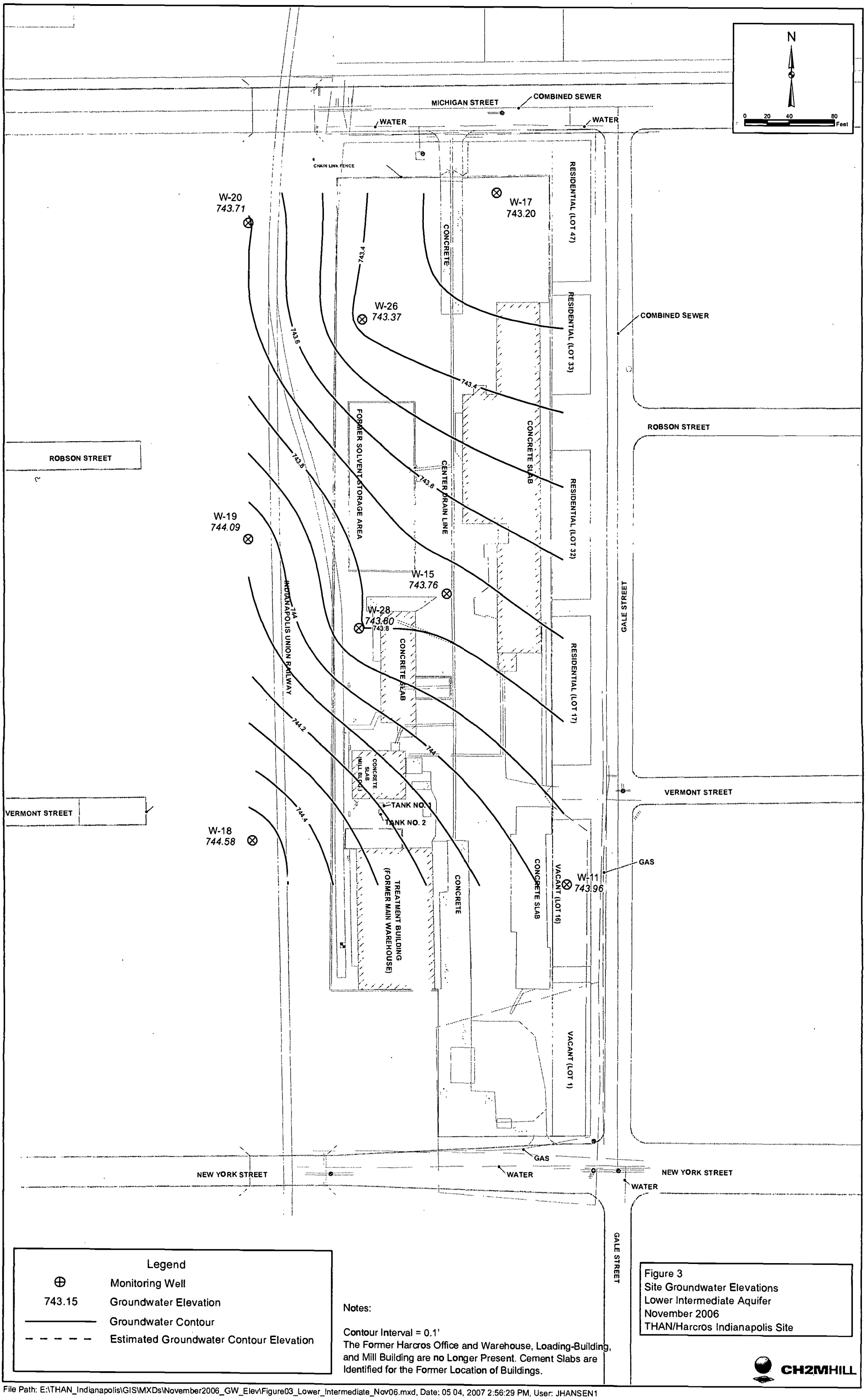
N

Figure 8
CVOC TREND GRAPHS - LOWER SHALLOW AQUIFER
THAN / Harcros Indianapolis Site
3517 East Michigan Street, Indianapolis

THE SIGMA GROUP
Single Source. Sound Solutions.

ATTACHMENT A

Figure 3 Site Groundwater Elevations, Lower Intermediate Aquifer
November 2006, THAN/Harcros Indianapolis Site



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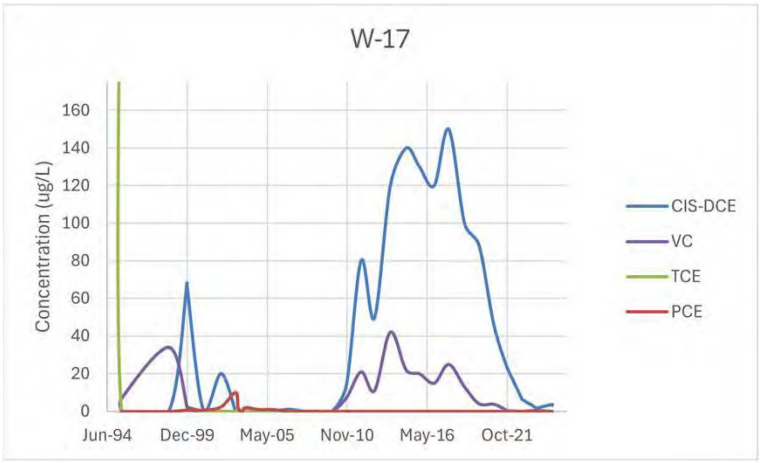
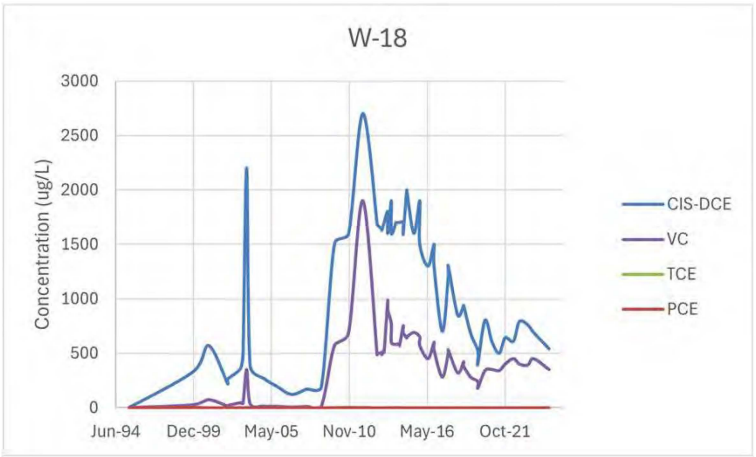
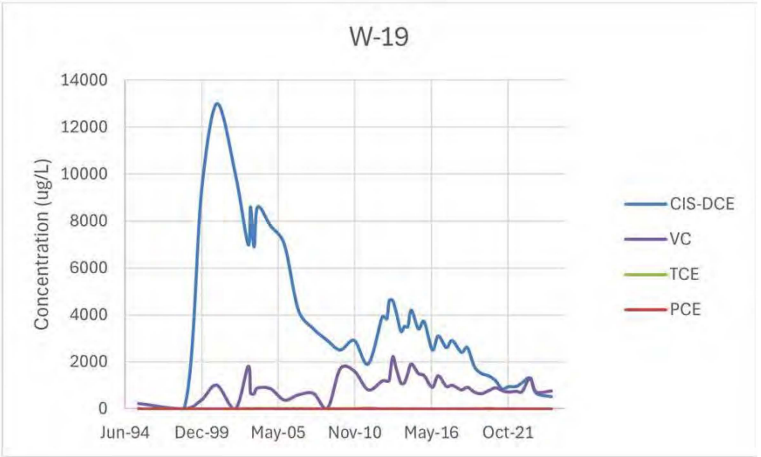
ATTACHMENT B

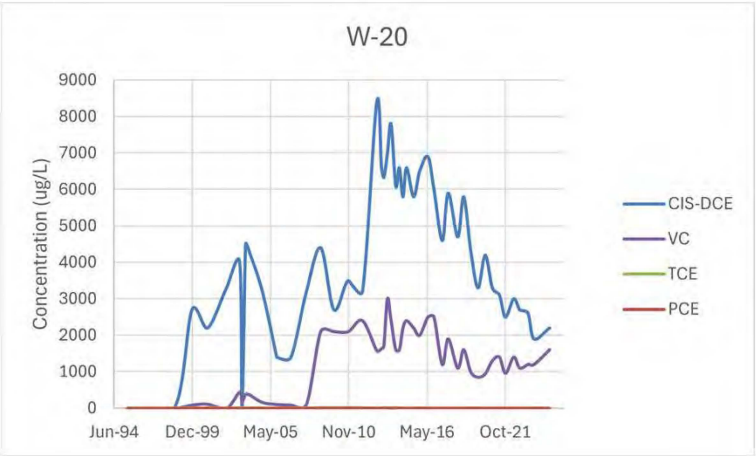
CVOC Trend Graphs
Lower Intermediate Aquifer

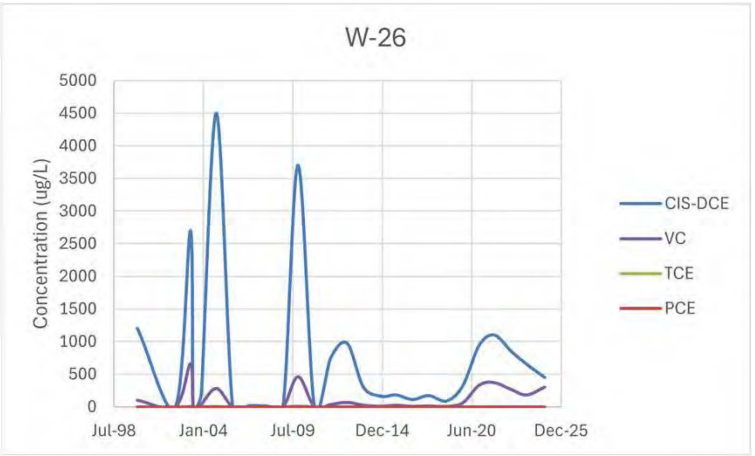

W-11
Concentration (ug/L)
180
160
140
120
100
80
60
40
20
0
Jun-94
Dec-99
May-05
Nov-10
May-16
Oct-21
CIS-DCE
VC
TCE
PCE

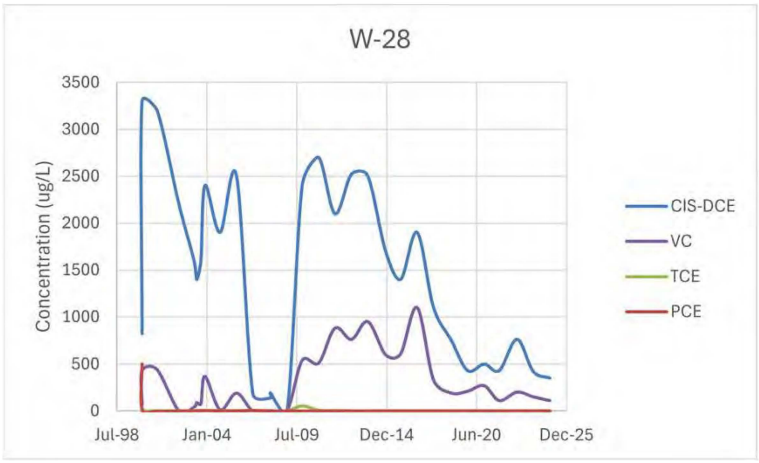

W-17
Concentration (ug/L)
160
140
120
100
80
60
40
20
0
Jun-94
Dec-99
May-05
Nov-10
May-16
Oct-21
CIS-DCE
VC
TCE
PCE

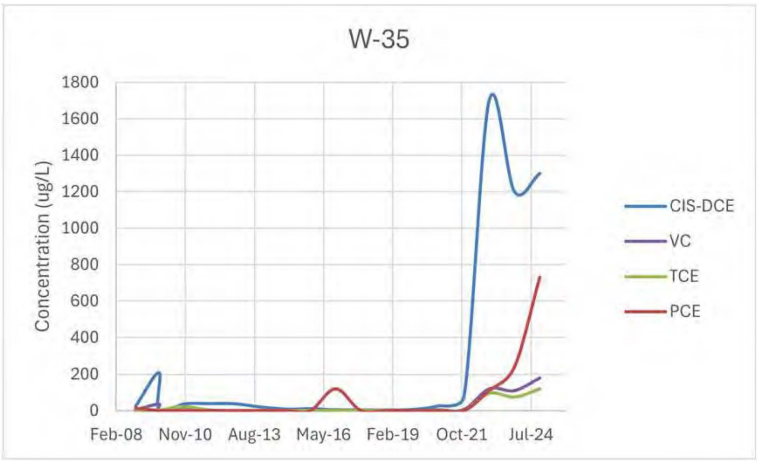

W-18
Concentration (ug/L)
3000
2500
2000
1500
1000
500
0
Jun-94
Dec-99
May-05
Nov-10
May-16
Oct-21
CIS-DCE
VC
TCE
PCE

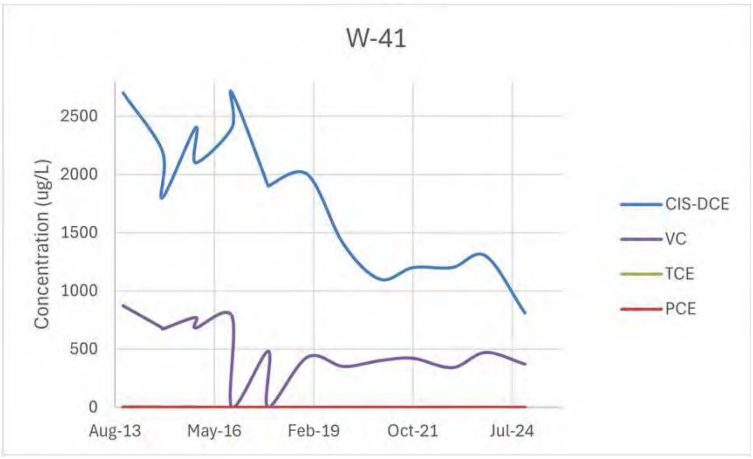

W-19
Concentration (ug/L)
14000
12000
10000
8000
6000
4000
2000
0
Jun-94
Dec-99
May-05
Nov-10
May-16
Oct-21
CIS-DCE
VC
TCE
PCE

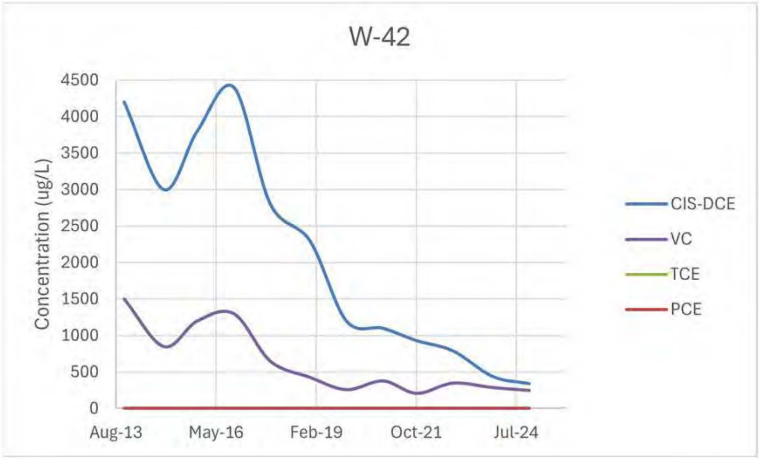

W-20
Concentration (ug/L)
9000
8000
7000
6000
5000
4000
3000
2000
1000
0
Jun-94
Dec-99
May-05
Nov-10
May-16
Oct-21
CIS-DCE
VC
TCE
PCE

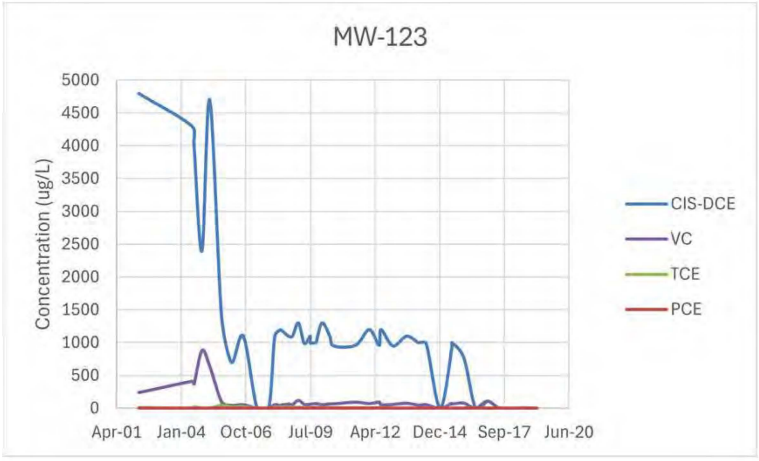

W-26
Concentration (ug/L)
5000
4500
4000
3500
3000
2500
2000
1500
1000
500
0
Jul-98
Jan-04
Jul-09
Dec-14
Jun-20
Dec-25
CIS-DCE
VC
TCE
PCE

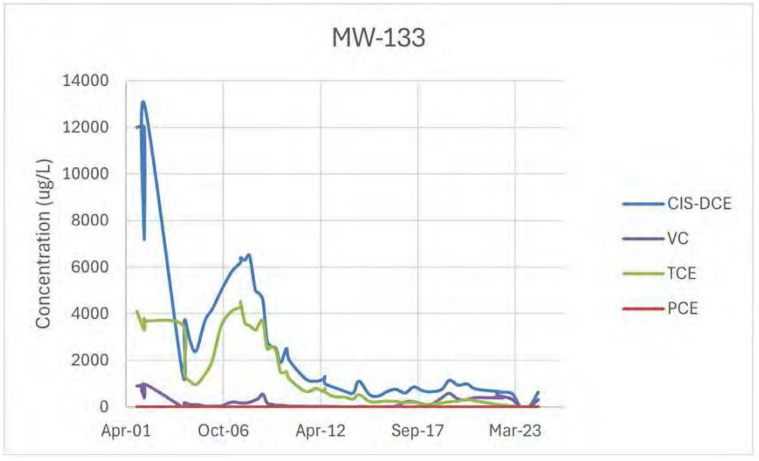

W-28
Concentration (ug/L)
3500
3000
2500
2000
1500
1000
500
0
Jul-98
Jan-04
Jul-09
Dec-14
Jun-20
Dec-25
CIS-DCE
VC
TCE
PCE

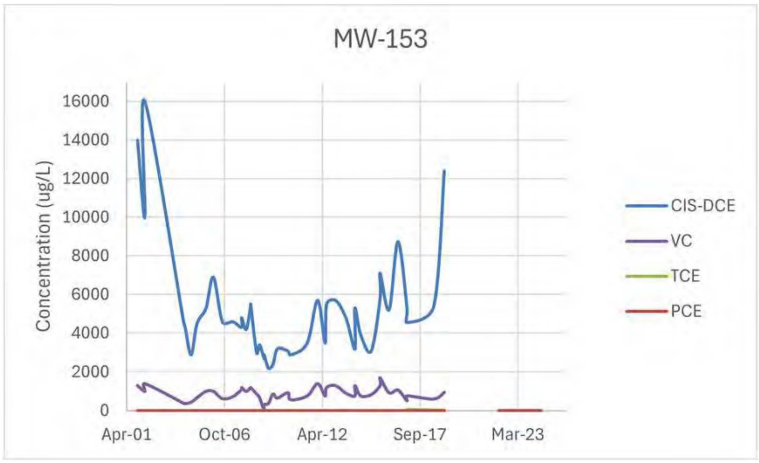

W-35
Concentration (ug/L)
1800
1600
1400
1200
1000
800
600
400
200
0
Feb-08
Nov-10
Aug-13
May-16
Feb-19
Oct-21
Jul-24
CIS-DCE
VC
TCE
PCE

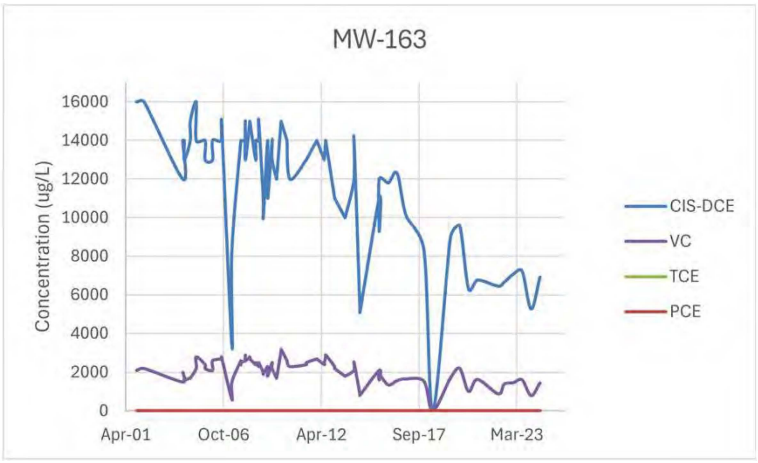

W-41
Concentration (ug/L)
2500
2000
1500
1000
500
0
Aug-13
May-16
Feb-19
Oct-21
Jul-24
CIS-DCE
VC
TCE
PCE

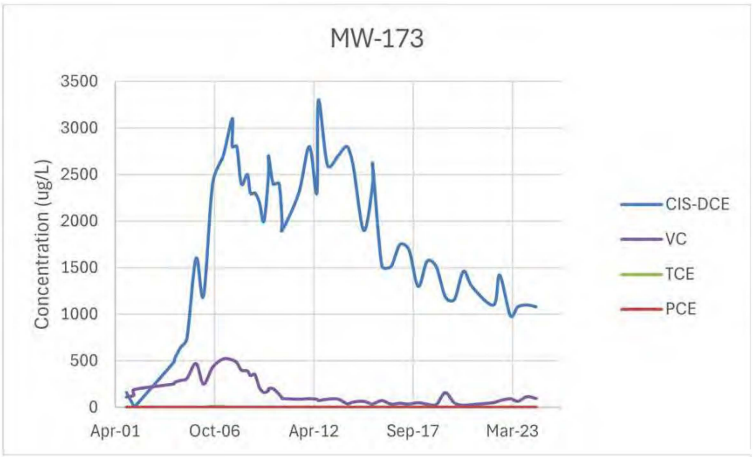

W-42
Concentration (ug/L)
4500
4000
3500
3000
2500
2000
1500
1000
500
0
Aug-13
May-16
Feb-19
Oct-21
Jul-24
CIS-DCE
VC
TCE
PCE

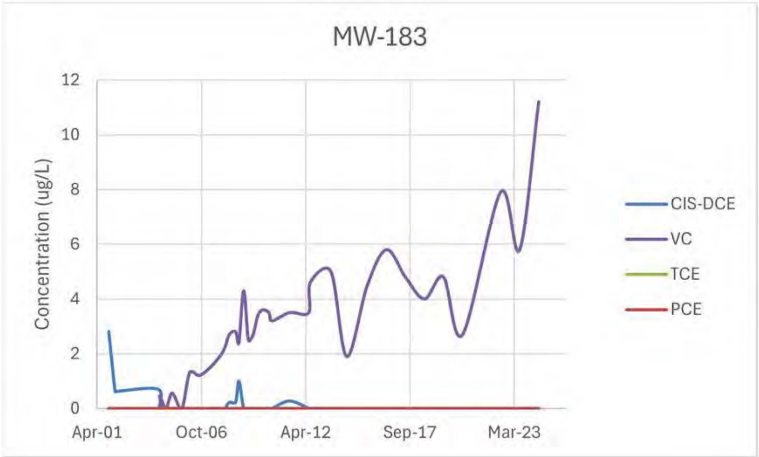

MW-123
Concentration (ug/L)
5000
4500
4000
3500
3000
2500
2000
1500
1000
500
0
Apr-01
Jan-04
Oct-06
Jul-09
Apr-12
Dec-14
Sep-17
Jun-20
CIS-DCE
VC
TCE
PCE


MW-133
Concentration (ug/L)
14000
12000
10000
8000
6000
4000
2000
0
Apr-01
Oct-06
Apr-12
Sep-17
Mar-23
CIS-DCE
VC
TCE
PCE

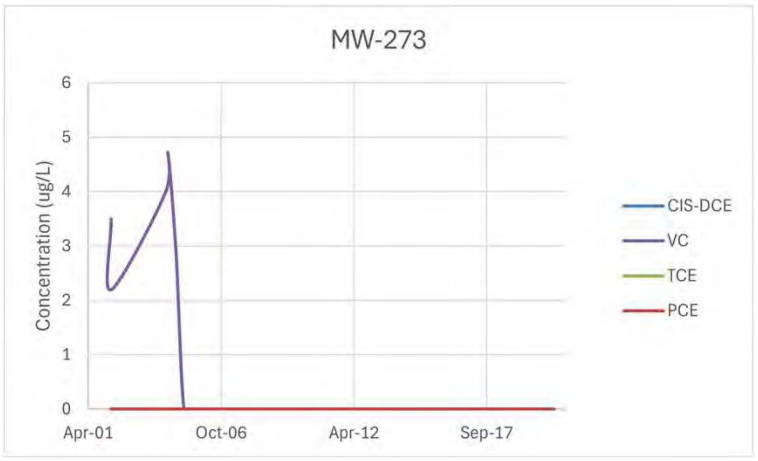

MW-153
Concentration (ug/L)
16000
14000
12000
10000
8000
6000
4000
2000
0
Apr-01
Oct-06
Apr-12
Sep-17
Mar-23
CIS-DCE
VC
TCE
PCE

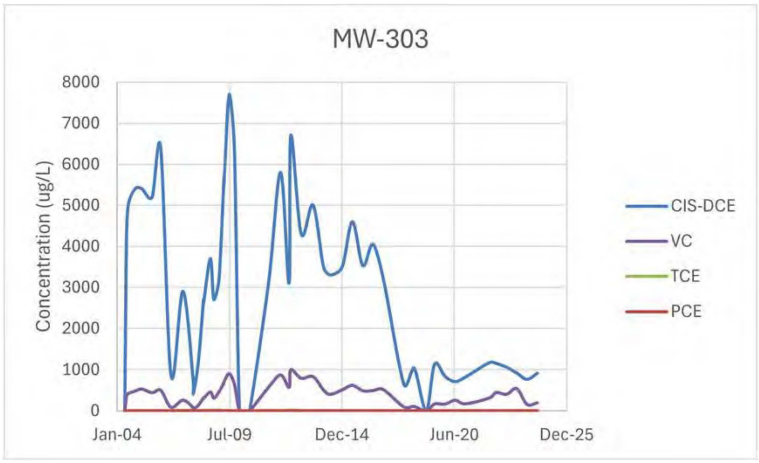

MW-163
Concentration (ug/L)
16000
14000
12000
10000
8000
6000
4000
2000
0
Apr-01
Oct-06
Apr-12
Sep-17
Mar-23
CIS-DCE
VC
TCE
PCE

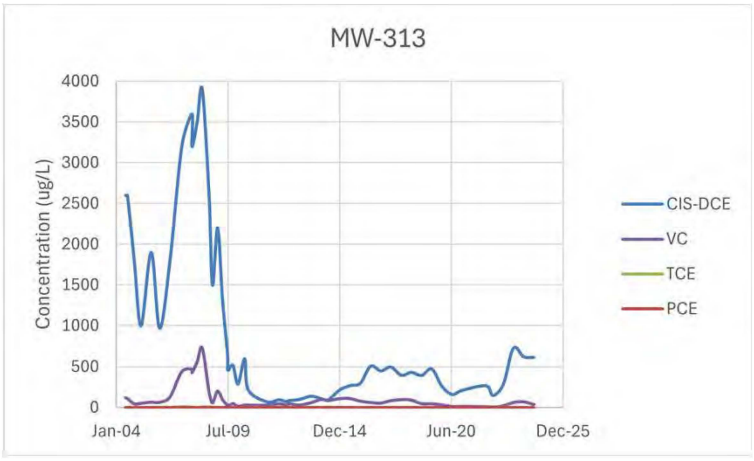

MW-173
Concentration (ug/L)
3500
3000
2500
2000
1500
1000
500
0
Apr-01
Oct-06
Apr-12
Sep-17
Mar-23
CIS-DCE
VC
TCE
PCE

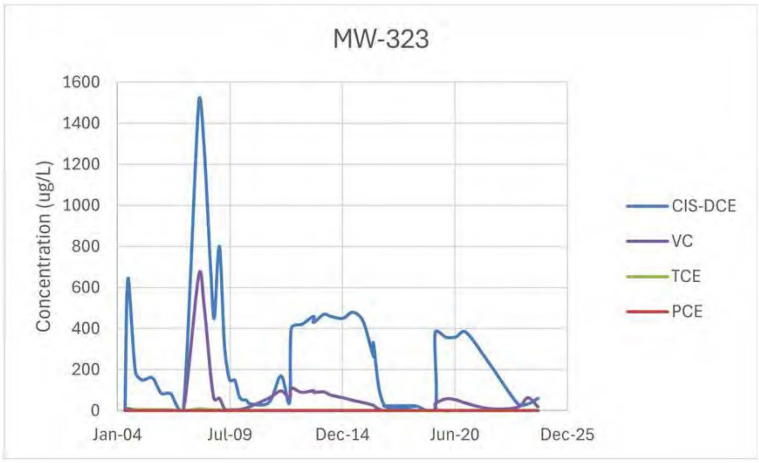

MW-183
Concentration (ug/L)
12
10
8
6
4
2
0
Apr-01
Oct-06
Apr-12
Sep-17
Mar-23
CIS-DCE
VC
TCE
PCE

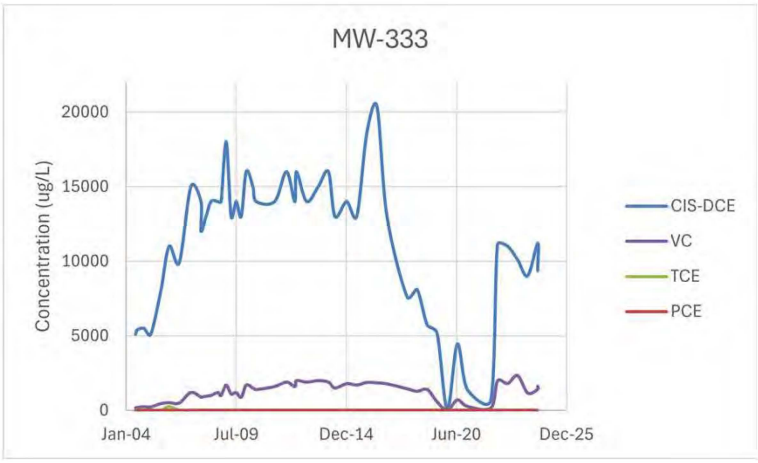

MW-253
Concentration (ug/L)
20000
18000
16000
14000
12000
10000
8000
6000
4000
2000
0
Apr-01
Oct-06
Apr-12
Sep-17
Mar-23
CIS-DCE
VC
TCE
PCE

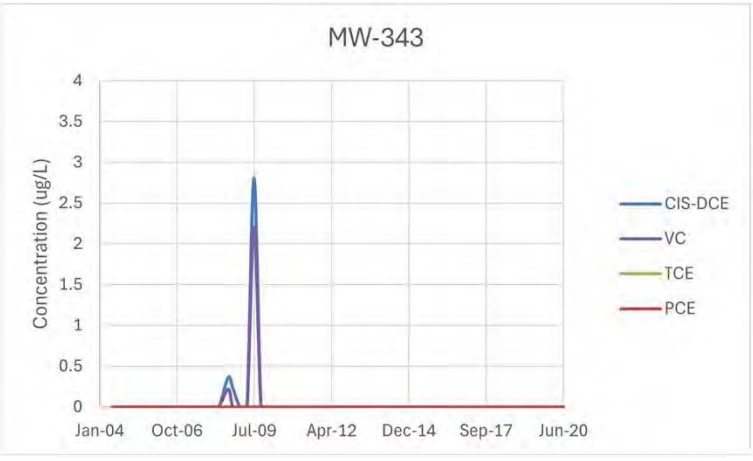

MW-273
Concentration (ug/L)
6
5
4
3
2
1
0
Apr-01
Oct-06
Apr-12
Sep-17
CIS-DCE
VC
TCE
PCE


MW-303
Concentration (ug/L)
8000
7000
6000
5000
4000
3000
2000
1000
0
Jan-04
Jul-09
Dec-14
Jun-20
Dec-25
CIS-DCE
VC
TCE
PCE


MW-313
Concentration (ug/L)
4000
3500
3000
2500
2000
1500
1000
500
0
Jan-04
Jul-09
Dec-14
Jun-20
Dec-25
CIS-DCE
VC
TCE
PCE


MW-323
Concentration (ug/L)
1600
1400
1200
1000
800
600
400
200
0
Jan-04
Jul-09
Dec-14
Jun-20
Dec-25
CIS-DCE
VC
TCE
PCE


MW-333
Concentration (ug/L)
20000
15000
10000
5000
0
Jan-04
Jul-09
Dec-14
Jun-20
Dec-25
CIS-DCE
VC
TCE
PCE


MW-343
Concentration (ug/L)
4
3.5
3
2.5
2
1.5
1
0.5
0
Jan-04
Oct-06
Jul-09
Apr-12
Dec-14
Sep-17
Jun-20
CIS-DCE
VC
TCE
PCE

ATTACHMENT C

Figure 2-1 Site Groundwater Elevations
Upper Shallow Aquifer, December 2024

Legend

- Extraction Well
- Piezometer
- LNAPL Extraction Well
- Bedrock Monitoring Well
- Upper Shallow Aquifer Monitoring Well
- Lower Shallow Aquifer Monitoring Well
- Upper Intermediate Aquifer Monitoring Well
- Lower Intermediate Aquifer Monitoring Well
- No Longer Monitored
- Approximate Direction of Groundwater Flow in Upper Shallow Aquifer
- Groundwater Elevation Contour (dashed where inferred)
- Water Hydrant
- Water Main
- Natural Gas Line
- Sanitary Sewer Point
- Sanitary Sewers
- Storm Sewer Point
- Storm Sewer Line

Notes:
1. Grayed out wells are not used for contouring.
2. September 2022 Aerial Photography provided by Esri ArcGIS Online World Imagery Service.

E. Michigan St.
Robson St.
N. Gale St.
N. Lasalle St.
E. Vermont St.
E. New York St.
TREATMENT BUILDING (FORMER MAIN WAREHOUSE)
W-54 757.73
W-53
W-51 757.28
W-16 757.63
W-17
W-20
W-33
W-52
W-30
W-04
W-03 757.60
W-45
W-46 756.23
W-26
EW-02
W-27
W-41
W-35
EISB-01 757.97
W-47
W-62 757.84
W-19
W-24
EISB-02
W-39
W-36
W-48
W-22 757.51
W-28
W-14 757.50
W-13
W-43
W-12 758.17
W-44
W-42
LNAPL-4
LNAPL-3
W-32
PIEZO-1
W-61
LNAPL-2
W-38
LNAPL-1
W-18
W-21 757.34
W-50 756.85
W-10
W-11
W-37
W-09
W-08 758.30
W-25 757.35
EW-01
W-49 756.80
Z-17
Z-19
Z-10
EW-03
W-07
Z-09
W-55 755.77
W-56
W-57 751.85
W-58
W-40 754.98
W-34
W-59 744.37
W-60
758.0
756.0
754.0
752.0
750.0
748.0
746.0

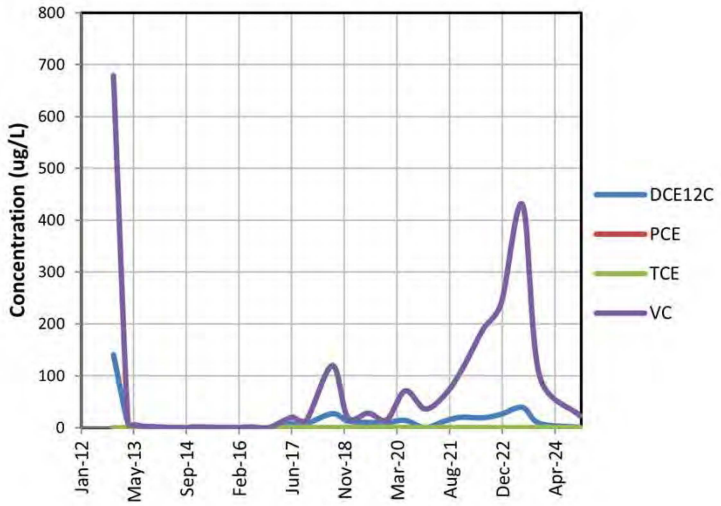
0 125 250
Feet
N

Figure 2-1
Site Groundwater Elevations - Upper Shallow Aquifer
December 2024
THAN / Harcros Indianapolis Site

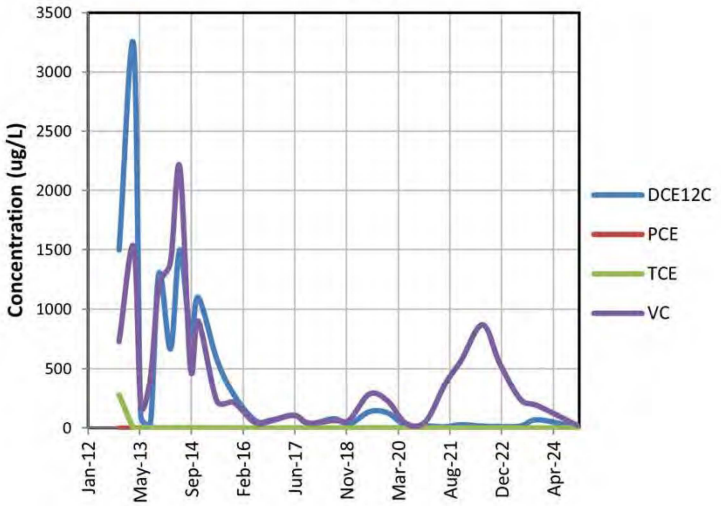
ATTACHMENT D

CVOC Trend Graphs
Lower Shallow Aquifer

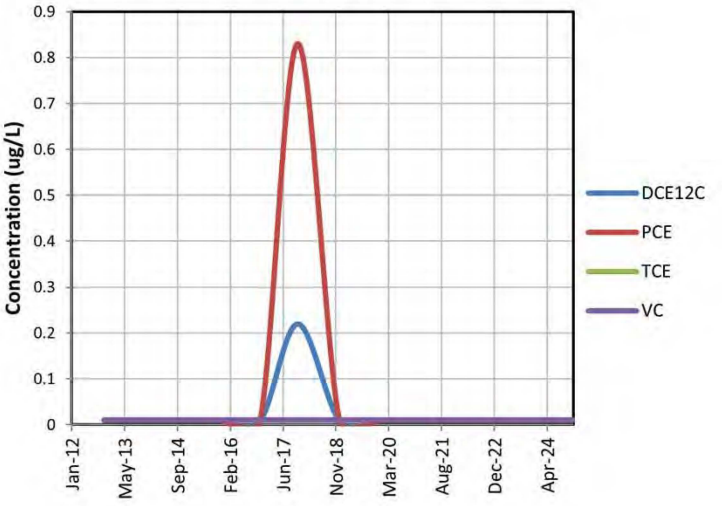
EISB-2



W-04



W-07



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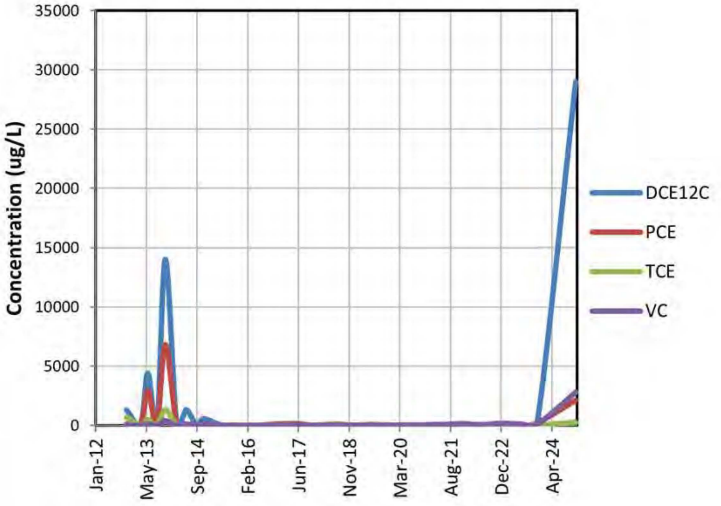

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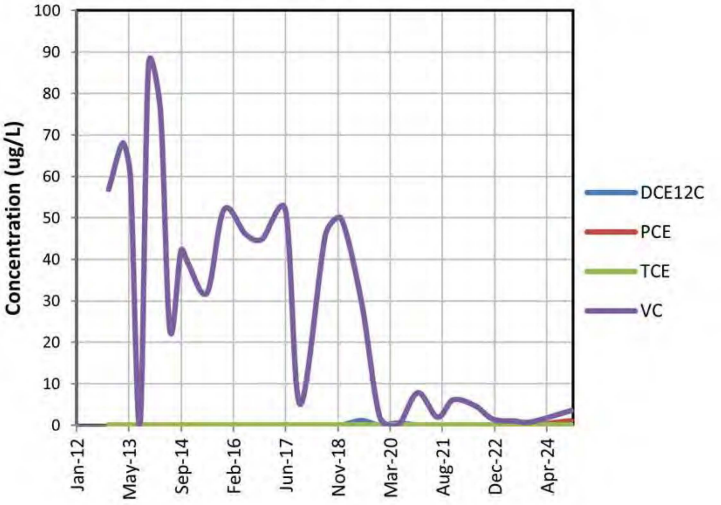

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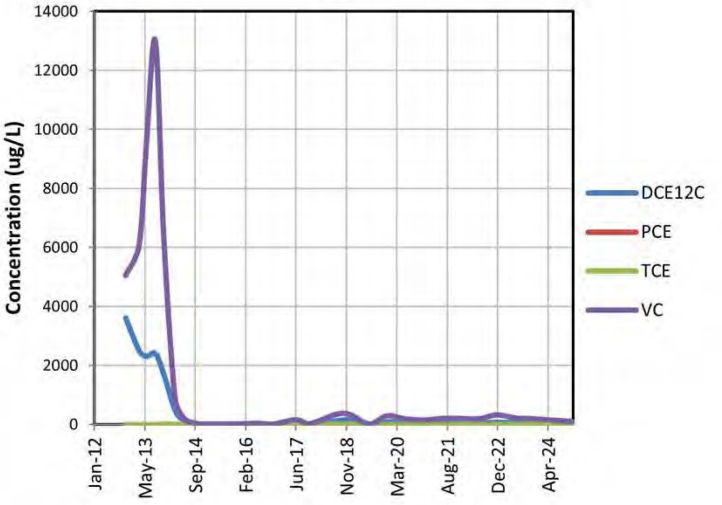

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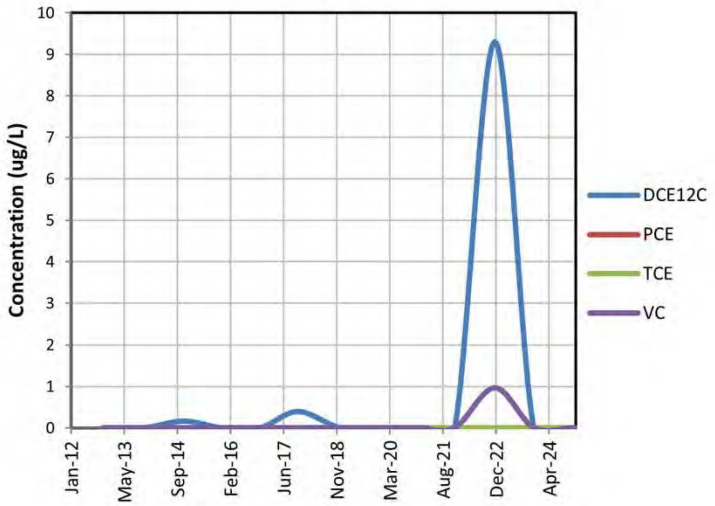

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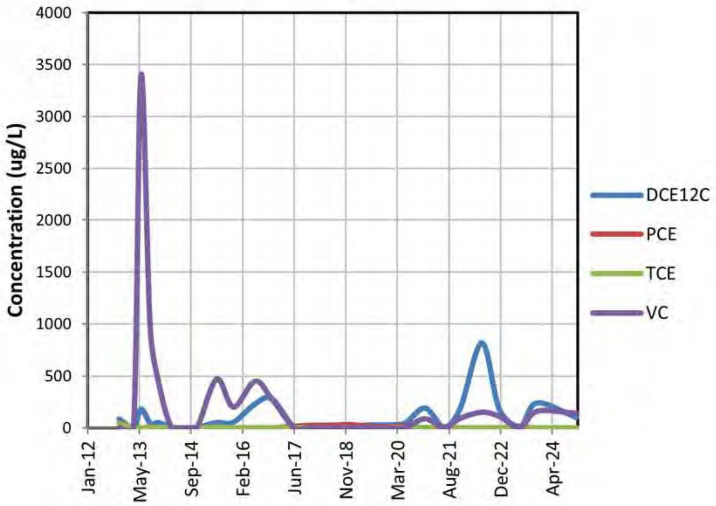

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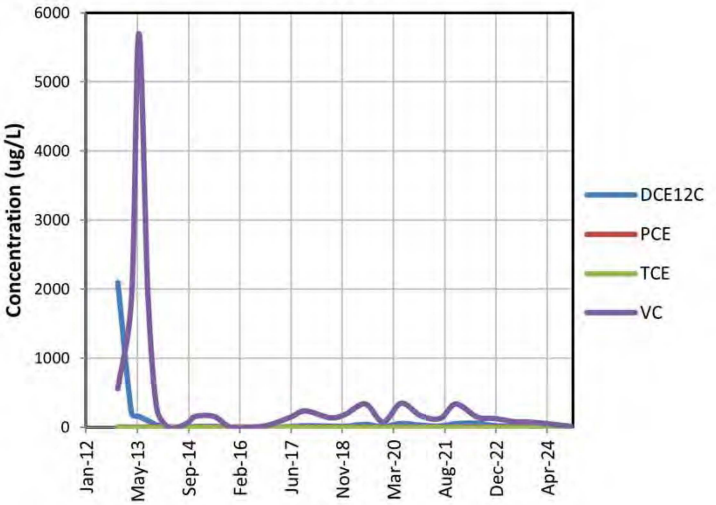
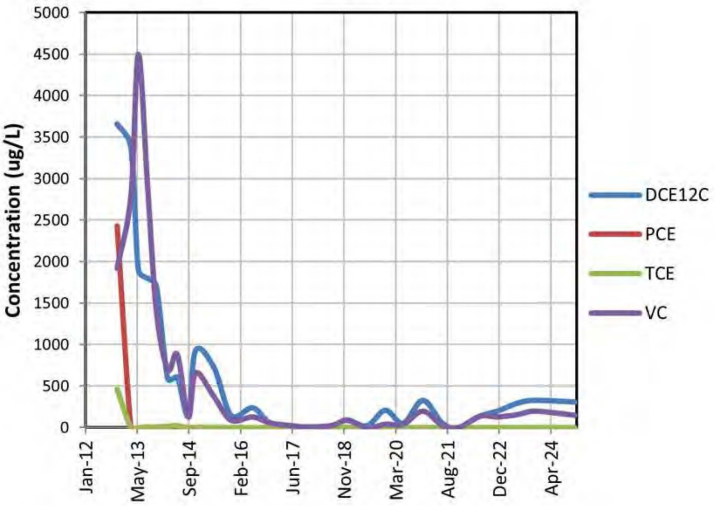


W-44



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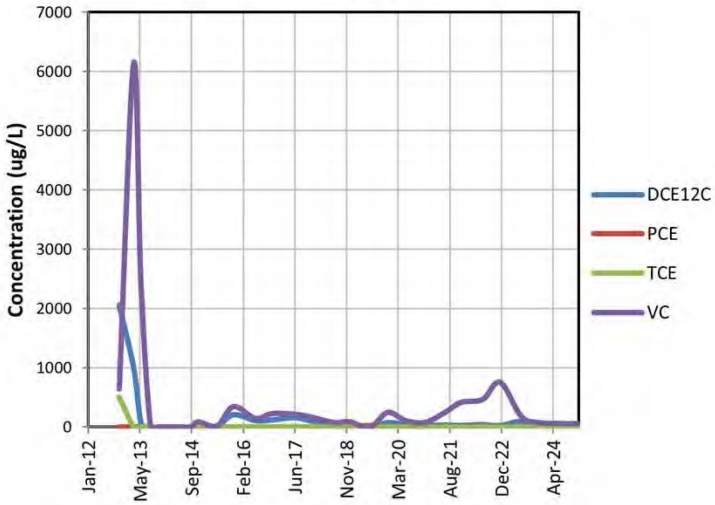

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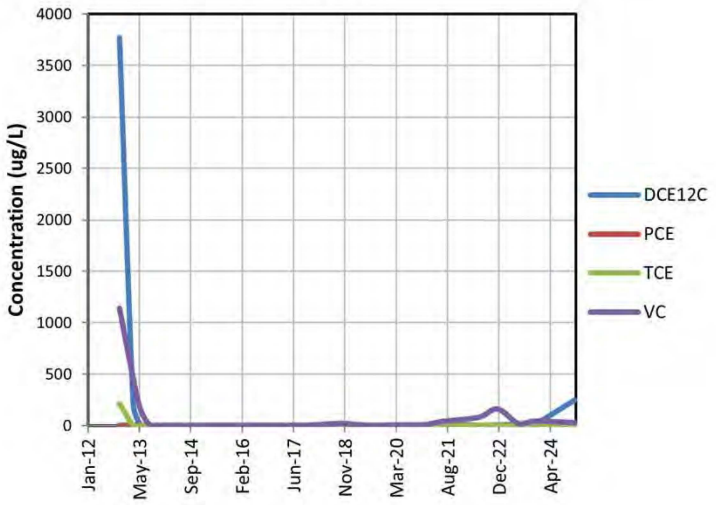

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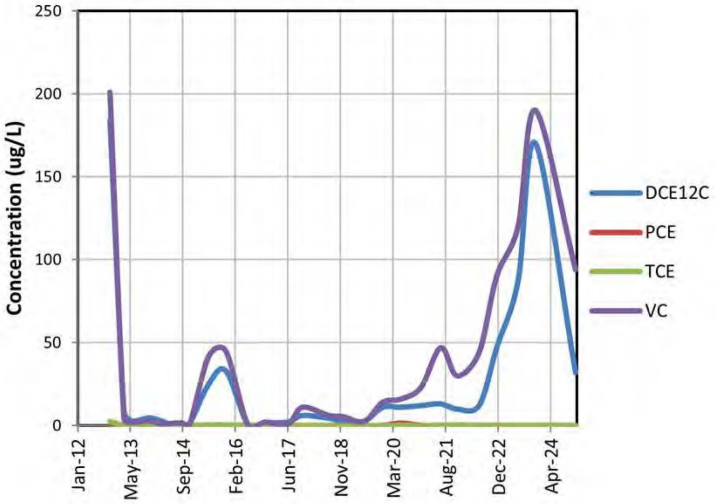

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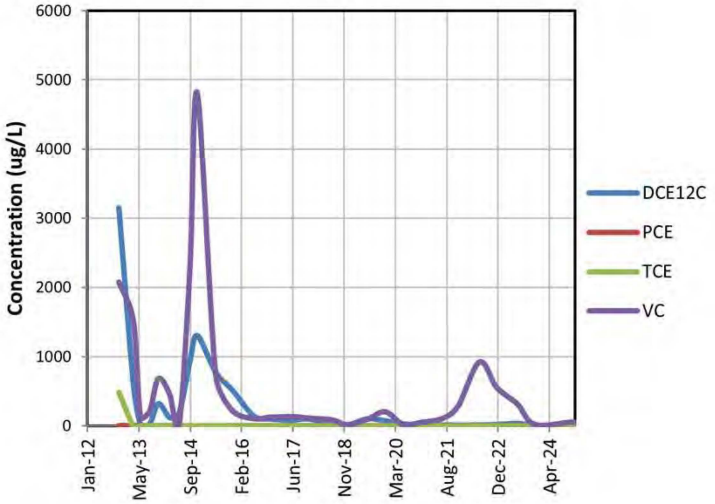
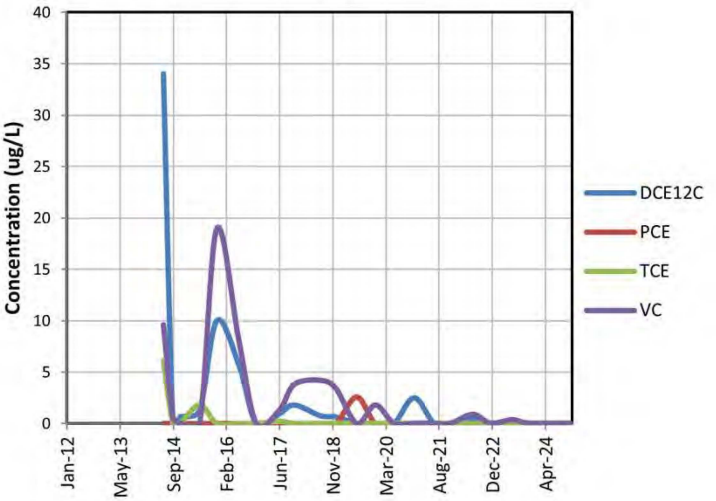


W-53



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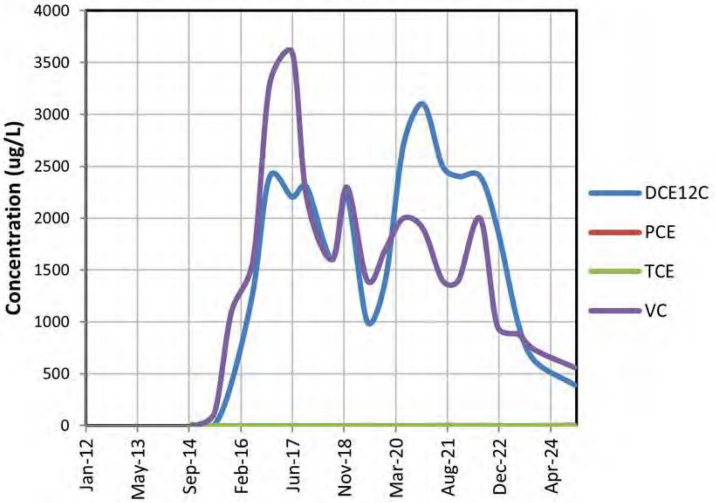

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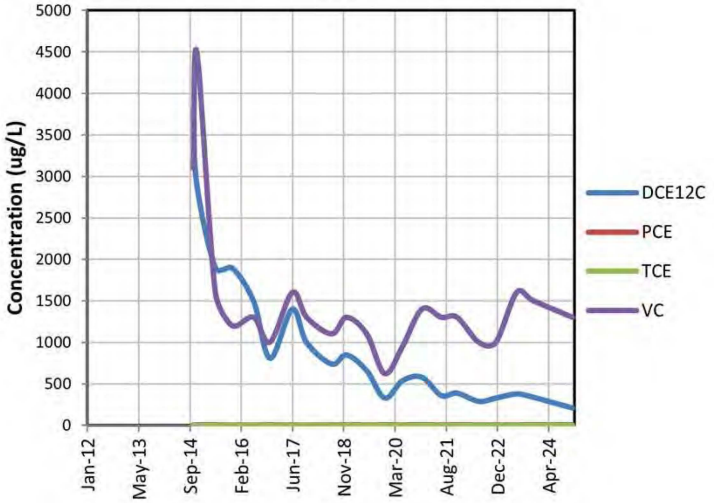

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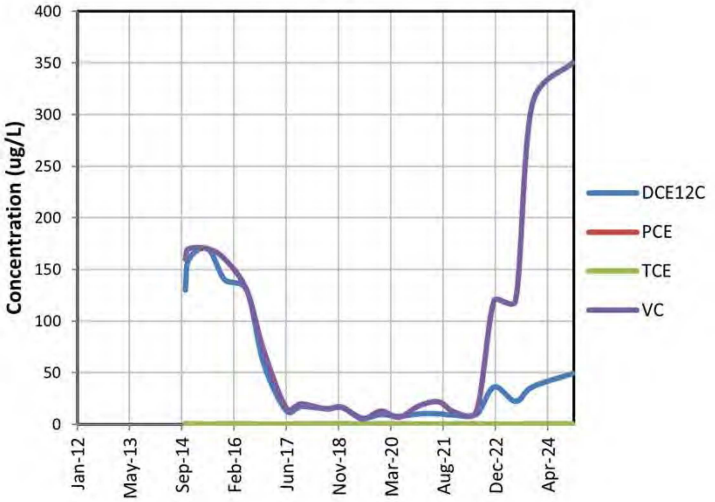

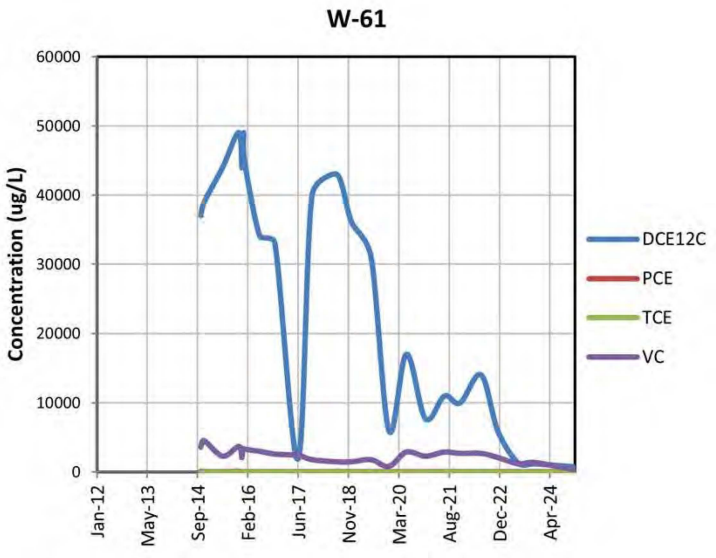
W-61
Concentration (ug/L)
60000
50000
40000
30000
20000
10000
0
Jan-12
May-13
Sep-14
Feb-16
Jun-17
Nov-18
Mar-20
Aug-21
Dec-22
Apr-24
DCE12C
PCE
TCE
VC