William M. Parry
Senior Manager of Environmental Remediation
Direct: (518) 767-6049
FAX: (904) 245-2727

E-mail: William_parry@csx.com

Public Safety & Environment
Department
1 Bells Crossing Road
Selkirk, NY 12158

File: MD, Brunswick; Brunswick Yard; 9415381

September 26, 2024

Maryland Department of the Environment
Oil Control Program
Waste Management Administration
1800 Washington Blvd., Suite 620
Baltimore, Maryland 21230-1719

Quarterly Report – Second Quarter 2024
CSXT Brunswick Yard, Brunswick, Maryland
MDE Case No. 1994-1379-FR

To Ms. Thompson:

Please find attached the *Quarterly Report – Second Quarter 2024* for the above referenced site. This site is an active rail yard. This report summarizes the activities completed in the Second Quarter of 2024, including groundwater and LPH monitoring and LPH recovery. If you have any questions or concerns, please do not hesitate to contact me at (518) 767-6049.

Sincerely,

William Parry, CGWP, PG
Senior Manager of Environmental Remediation

Copy:
Jim Richmond, MDE
Susan Bull, MDE
Steve Jarvela, USEPA
Andrew Landsman, NPS
Steve Rice, NPS
Jeri DeYoung, NPS
Barry Glotfelty, Frederick County
Albert Buell, Arcadis
Tom Duffy, Arcadis
File

Ms. Kathleen Thompson
Maryland Department of the Environment
Oil Control Program
Waste Management Administration
1800 Washington Blvd., Suite 620
Baltimore, Maryland 21230-1719

Arcadis U.S., Inc.
7550 Teague Road
Suite 210
Hanover
Maryland 21076
Phone: 410 987 0032
Fax: 410 799 2533
www.arcadis.com

Date: September 26, 2024
Our Ref: 30128305
Subject: Quarterly Report – Second Quarter 2024
CSXT Brunswick Yard, Brunswick, Maryland
CSXT Project # 9415381

Dear Ms. Thompson,

On behalf of CSX Transportation, Inc. (CSXT), Arcadis U.S., Inc. has prepared this quarterly report presenting the results of work performed during the second quarter of 2024 (April through June) at the CSXT Brunswick Yard (the Site) in Brunswick, Maryland. The work performed was implemented pursuant to the Remedial Recovery and Monitoring Plan (RRMP) approval letter dated December 20, 2017, and the alterations and requirements presented in the Post Remedial Monitoring Recommendations (PRMR) Memo approval letter from the Maryland Department of the Environment (MDE) dated August 10, 2023.

The RRMP was developed following a review of historical investigation results and recommended a transition to a risk-based management plan that includes long-term periodic monitoring and no active remediation. This recommendation was founded using multiple lines of evidence including historical fluid level gauging data, groundwater monitoring data, the current and historical monitoring well network and extent of liquid phase hydrocarbon (LPH) impacts, LPH recovery, evaluation of LPH transmissivity, and quantification of natural source zone depletion rates. Transitional and post-remedial monitoring plans were also included in the RRMP to further guide the Site to an optimized scope of work focused on evaluating pertinent site conditions while maintaining compliance with applicable regulatory guidance., the results of which were summarized and documented in the PRMR Memo submitted to MDE in November 2020,

In accordance with the RRMP and PRMR Memo approval letter, summarized in **Table 1**, the following activities were conducted during the reporting period:

- Groundwater elevation and LPH thickness monitoring was conducted to further develop existing hydrographs. The hydrographs were visually examined for trends in groundwater elevation and LPH thickness to determine if LPH is stable or if conditions exist that suggest a significant change in site conditions or that LPH is unstable and potentially migrating.
- Manual LPH recovery was conducted at wells where greater than 0.2 feet of LPH was present at the time of gauging.
- LPH monitoring and recovery data was assessed to supplement previous findings regarding the feasibility of ongoing LPH mass removal from the subsurface, both manually and hydraulically.

A schedule of upcoming post-remedial Site activities is outlined in **Table 2**, which was developed based on the response to findings provided by the MDE Oil Control Program.

Liquid Phase Hydrocarbon Recovery and Monitoring Activities

Multiple lines of evidence, developed through the historical collection of data and including data collected during the second quarter of 2024, demonstrate that the LPH plume is stable and support a transition to a risk-based LPH management strategy for the remaining LPH in the subsurface.

Since December 2017, a transitional period of Site operation and maintenance, monitoring, and LPH recovery has been conducted to further develop the Site Conceptual Model, demonstrate data consistency, and strengthen the existing lines of evidence. These activities, described in detail in the RRMP and outlined in the PRMR Memo approval, are intended to guide the Site from the former operational and monitoring status to an optimized scope of activities focused on evaluating existing conditions and potential risk, while maintaining the required compliance with applicable regulatory guidance. At the request of MDE, the following data were collected in the second quarter of 2024 to further support this strategy.

Fluid Level Gauging

Quarterly site-wide gauging of accessible CSXT and NPS monitoring wells, extraction wells, and collection sumps was conducted on June 12, 2024. The second quarter 2024 well gauging data are presented on **Table 3** and hydrographs for wells that have historically had measurable LPH present are included as **Attachment 1**. Potentiometric groundwater elevation contours and measured LPH thicknesses from the second quarter event are presented on **Figure 1**. Groundwater elevations measured during this reporting period are generally within the range of historically observed elevations with the exception of CSXT MW-32, CSX MW-38, CSXT MW-49, and CSXT MW-59, which indicated a new historical maximum due to precipitation prior to and during the event. As discussed in previous submittals, heterogeneity in soil lithology has resulted in localized perched or confined conditions that may occur at wells when groundwater encounters a less conductive or confining subsurface unit. Elevations at several other wells remain slightly elevated or near historical maximums when compared to historical measurements collected prior to implementation of the RRMP and subsequent redevelopment of the wells in 2018.

Measurable LPH was detected in 19 wells during the second quarter 2024 (bolded in the table below). All 19 wells where LPH was detected during the second quarter 2024 have historically had measurable LPH present. Similar to groundwater elevations, new historical maximum thicknesses likely attributable to fluctuations in groundwater elevation and localized conditions as well as the precipitation events prior to the gauging event were observed at two wells, CSXT MW-37 and CSXT MW-60. Wells with LPH present downgradient of those two locations do not show an increase in measurable LPH thickness outside of the historic range, indicating the increases at CSXT MW-37 and CSXT MW-60 are not an indication of a change in conditions. These wells will continue to be monitored for trends in LPH thickness as part of the ongoing gauging program.

Site Wells with Historic Occurrences of Measurable LPH (1995-present)
CS-1, CS-2, CS-3, CSXT MW-02, CSXT MW-4R, CSXT MW-6R, CSXT MW-23, **CSXT MW-26**, CSXT MW-27, CSXT MW-28, CSXT MW-30, **CSXT MW-32**, CSXT MW-33, **CSXT MW-37**, **CSXT MW-38**, **CSXT MW-41**, **CSXT MW-49**, **CSXT MW-53**, **CSXT MW-54**, **CSXT MW-55**, **CSXT MW-56**, **CSXT MW-57**, **CSXT MW-58**, **CSXT MW-59**, **CSXT MW-60**, CSXT MW-61, **CSXT MW-62**, **CSXT MW-63**, CSXT MW-65, **CSXT MW-67**, CSXT MW-68, CSXT MW-70, EW-1, EW-2, **EW-3**, EW-4, **EW-5**, EW-7, and NPS MW-04.

Measurable LPH thicknesses were not detected in the area to the southeast of the former roundhouse during the second quarter of 2024. LPH thicknesses were within the historic range of seasonal fluctuation previously recorded in the areas to the east of the former fuel pump house, in the vicinity of the former aboveground storage

tank, and west of the former roundhouse. When evaluating the recent fluid level measurements and LPH thicknesses at the wells, the following should be taken into consideration:

- All wells with LPH historically measured were redeveloped in March 2018 at the start of the RRMP implementation.
- The LPH skimmer system that began operations in 2009 was shut down prior to that redevelopment and remains inactive.
- Since December 2017, manual recovery of LPH from wells has been reduced from monthly to quarterly and only at wells with more than 0.2 feet of LPH present at the time of gauging.

Liquid Phase Hydrocarbon Recovery

Manual LPH recovery was conducted via peristaltic pump on June 12, 2024 and focused on monitoring wells with greater than 0.2 feet of measurable LPH. The volume of LPH removed at each well was recorded, and the recovered LPH was stored in on-site containers (e.g., 55-gallon drums). LPH recovery volumes are presented in **Table 3**.

Hydrographs depicting the historical fluid gauging data for LPH thickness, LPH recovery during the second quarter event, cumulative LPH recovery, and potentiometric groundwater elevations are included in **Attachment 2** for the wells listed below. A total of 14 wells had more than 0.2 feet of LPH present at the time of gauging in June 2024. Manual LPH recovery was performed on all 14 wells (bolded in the table below), as well as CSXT MW-26 which had 0.15 ft of LPH

Well Locations Included in Attachment 1 (Historical Gauging Data Charts)
CSXT MW-02, CSXT MW-04R, CSXT MW-26, CSXT MW-28, CSXT MW-32, CSXT MW-33, **CSXT MW-37**, CSXT MW-38, **CSXT MW-41**, CSXT MW-49, **CSXT MW-53**, **CSXT MW-54**, **CSXT MW-55**, **CSXT MW-56**, **CSXT MW-57**, **CSXT MW-58**, **CSXT MW-59**, **CSXT MW-60**, CSXT MW-61, **CSXT MW-62**, **CSXT MW-63**, **CSXT MW-67**, **EW-3**, EW-5, and EW-7.

Total LPH recovery in the second quarter of 2024 was approximately 18 gallons. Cumulative recovery since July 2009, including LPH recovered through the skimmer system, is approximately 1,605 gallons. Based on the LPH thicknesses measured in the wells and some conservative assumptions regarding borehole size, approximately 12 gallons of LPH were present in the well casing and 5 gallons were present in the borehole filter pack, totaling approximately 17 gallons of LPH collectively. The manual recovery of approximately 18 gallons from wells with LPH present was only slightly more than the volume calculated as present in the well casings and adjacent filter pack, indicating limited LPH recharge to the wells from the formation across the Site. LPH recovery volumes are presented in **Table 3**.

Post Remedial Monitoring

The transition phase has been completed in accordance with the RRMP. Moving forward, the post-remedial monitoring plan will be implemented as a long-term solution to Site and risk management as approved by MDE in the PRMP Memo approval letter. Data collected as part of the transition phase and detailed in this document continue to support the findings of the RRMP. Specifically, data confirms the LPH plume at the Site is stable and not migrating, LPH is no longer practically recoverable, and the remaining LPH in the subsurface will continue to be degraded by ongoing natural source zone depletion processes. The PRMR Memo detailing the recommendations for post-remedial monitoring implementation was submitted in November 11, 2020 and

approved with alterations and requirements in the PRMR Memo Approval letter dated on August 10, 2023. The following changes to current transitional activities were approved by MDE in the PRMR Memo Approval letter:

- Collection sump and extraction well abandonments.
- Fluid level gauging reduced from quarterly to bi-annually at wells that do not contain measurable LPH.
- Groundwater monitoring remains a semi-annual event to confirm ongoing stability of dissolved-phase TPH-DRO concentrations.

Summary

LPH and groundwater level measurements collected in the second quarter of 2024 confirm that measurable LPH thicknesses remain in wells within the currently defined LPH plume footprint (as presented in the RRMP) and fluctuate with changes in groundwater elevation. However, measurable LPH has not been detected in wells outside of the known LPH plume footprint since implementation of the RRMP (December 2017), supporting LPH plume stability and that the LPH plume is not migrating.

Since December 2017, Site activities and monitoring plan modifications have been implemented to move towards a risk-based management strategy for the Site. These completed activities are summarized in **Table 1**. Data collected during the second quarter 2024 continue to support the lines of evidence established to transition the Site to a risk based LPH management strategy, as presented in the RRMP and the Site Conceptual Model – Second Addendum. As the transitional activities have been completed, the next phase of Site management will include implementation of the post-remedial monitoring program per the PRMR Memo Approval letter.

Future Activities

The RRMP dated May 23, 2017, and the MDE RRMP approval letter dated December 20, 2017, outline the initial approach for implementation of a remedial path forward for the Site. RRMP implementation commenced upon receipt of MDE approval in December 2017, and the included activities were completed over the planned two-year transitional period. Data collected during the transitional period continue to support the lines of evidence presented in the RRMP for implementing risk based LPH management at the Site. Specifically, the LPH plume is stable and not migrating and has been recovered to the maximum extent practicable. Additionally, dissolved-phase constituent trends in groundwater, since the RRMP was implemented, are stable or decreasing in wells located within the residual portion of the LPH plume. In accordance with the MDE response to the PRMR, these observations support implementing post-remedial monitoring at the Site, which will include the continued reduction of monitoring activities. The activities detailed in MDE's August 2023 approval letter will continue to be implemented through 2024, as outlined in **Table 2**.

The following activities are planned activities for the third quarter 2024:

- Site-wide synoptic water level measurements and manual LPH recovery at wells with more than 0.2 feet of LPH.
- Groundwater sampling will be conducted at monitoring wells CSXT MW-3, CSXT MW-6R, CSXT MW-22, CSXT MW-24, CSXT MW-25, CSXT MW-29, CSXT MW-43, CSXT MW-51, CSXT MW-64, CSXT MW-69, CSXT MW-71, NPS MW-1, NPS MW-2, NPS MW-4, NPS MW-5, NPS MW-13, NPS MW-14, NPS MW-16, and NPS MW-18.

Please contact the undersigned at 410.923.7761 if you have any questions or require additional information regarding this correspondence.

Sincerely,
Arcadis U.S., Inc.

Joshua R. Wilson
Project Manager

Email: Joshua.Wilson@arcadis.com
Phone Number: 410.923.7833

CC. W. Parry, CSXT
S. Jarvela, USEPA
S. Bull, MDE
A. Landsman, NPS
J. DeYoung, NPS
S. Rice, NPS
B. Glotfelty, Frederick County
T. Duffy, Arcadis

Enclosures:

Tables

1. Completed RRMP Site Activities
2. Groundwater Gauging, Sampling, Remedial Action, and Reporting Schedule
3. Well Gauging and LPH Recovery Summary (Second Quarter 2024)

Figure

1 Groundwater Elevation Contours and LPH Thicknesses Map – June 12, 2024

Attachments

1 Hydrographs – Groundwater Elevations and LPH Thickness
2 LPH Recovery Data

Tables

Table 1
Completed RRMP Site Activities
Quarterly Report – Second Quarter 2024
Brunswick Yard, Brunswick, Maryland

Date	Task				
	Groundwater and LPH Monitoring and Recovery[1,3]	Groundwater Sampling[2]	Remedial Recovery and Monitoring Plan Activities		
			Site Activities	Location Type	Location ID
June 2023	X	X			
September 2023	X				
December 2023	X	X			
March 2024[4]	X	X			
June 2024	X				

Abbreviations
CSXT - CSX Transportation, Inc.
EW - Extraction well
LPH - Liquid phase hydrocarbon
MW - Monitoring well
NPS - National Park Service
NSZD - Natural source zone depletion
USEPA - United States Environmental Protection Agency

Notes
1. Gauging and manual recovery will be completed at wells historically exhibiting LPH on a quarterly basis.

2. Site-wide synoptic water level measurements will be conducted on a semi-annual basis per the Post-Remedial Monitoring Recommendation (PRMR) Memo approved by the Maryland Department of the Environment on August 10, 2023.

3. Routine groundwater sampling conducted on a semi-annual basis at monitoring wells CSXT MW-3, CSXT MW-6R, CSXT MW-22, CSXT MW-24, CSXT MW-25, CSXT MW-29, CSXT MW-43, CSXT MW-51, CSXT MW-64, CSXT MW-69, CSXT MW-71, NPS MW-1, NPS MW-2, NPS MW-4, NPS MW-5, NPS MW-13, NPS MW-14, NPS MW-16, and NPS MW-18. The analytical parameters include full-suite volatile organic compounds, including fuel oxygenates, using USEPA Method 8260 and total petroleum hydrocarbons/diesel-range organics by USEPA by Method 8015B. Field parameters including temperature, pH, and specific conductivity measured during the well purging process. Groundwater samples collected after three well volumes have been purged from each well with new polyethylene bailers, provided there is no measurable LPH present in the well at the time of sampling.

4. Additional groundwater sampling was conducted in March 2024 to evaluate current groundwater trends and support decision making regarding well abandonment activities.

Table 2
Groundwater Gauging, Sampling, Remedial Action, and Reporting Schedule
Quarterly Report – Second Quarter 2024
Brunswick Yard, Brunswick, Maryland

Date	Task			
	LPH Monitoring and Recovery[1]	Groundwater Monitoring & Sampling[2,3]	Remedial Recovery and Monitoring Plan Activities[7]	Remedial Action Progress Report
January 2024				
February 2024				
March 2024	✓	✓	✓	✓ (for 1st Quarter 2024)
April 2024				
May 2024				
June 2024	✓			✓ (for 2nd Quarter 2024)
July 2024				
August 2024				
September 2024	✓	✓	✓	✓ (for 3rd Quarter 2024)
October 2024				
November 2024	✓			✓ (for 4th Quarter 2024)
December 2024				

Notes:

1. Liquid phase hydrocarbon (LPH) Monitoring and System Operation and Maintenance (O&M) will be conducted at a quarterly frequency through December 2023, per Maryland Department of the Environment (MDE) approval and implementation of the *Remedial Recovery and Monitoring Plan*.
2. Groundwater sampling will be conducted on a semi-annual basis at monitoring wells CSXT MW-3, CSXT MW-6R, CSXT MW-22, CSXT MW-24, CSXT MW-25, CSXT MW-29, CSXT MW-43, CSXT MW-51, CSXT MW-64, CSXT MW-69, CSXT MW-71, NPS MW-1, NPS MW-2, NPS MW-4, NPS MW-5, NPS MW-13, NPS MW-14, NPS MW-16, and NPS MW-18.

   The analytic parameters include full-suite volatile organic compounds (VOCs), including fuel oxygenates, using United States Environmental Protection Agency (USEPA) Method 8260 and total petroleum hydrocarbons/diesel-range organics (total petroleum hydrocarbons – diesel range organics [TPH-DRO]) by USEPA by Method 8015B. Field parameters including temperature, pH, and specific conductivity shall be measured during the well purging process. Groundwater samples will be collected after three well volumes have been purged from each well with new polyethylene bailers, provided there is no measurable LPH present in the well at the time of sampling.
3. Site-wide synoptic water level and LPH measurements and manual LPH recovery will be conducted on a quarterly basis.
4. Any proposed modifications to the approved *Remedial Recovery and Monitoring Plan* and *Post-Remedial Monitoring Recommendations (PRMR) Memo* will be submitted to the MDE for approval prior to implementation.
5. A comprehensive round of groundwater sampling was conducted at all site wells not exhibiting measurable LPH in March of 2024.

Table 3
Well Gauging and LPH Recovery Summary (Second Quarter 2024)
Quarterly Report - Second Quarter 2024
Brunswick Yard, Brunswick, Maryland

ARCADIS

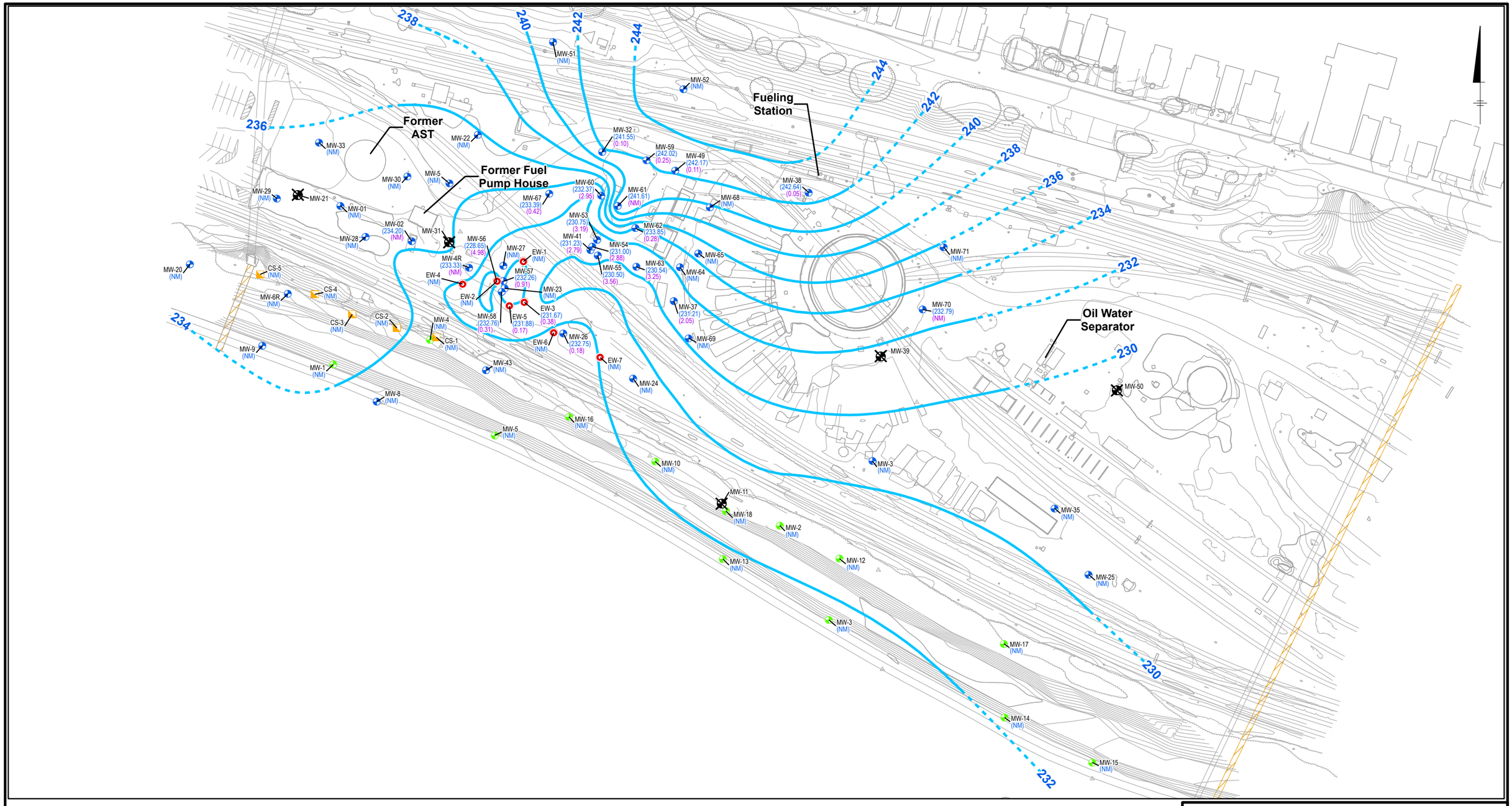
Well ID	Well Casing Diameter (inches)	Measurement Date	Top of Casing Elevation (feet amsl)	DTLPH (feet bTOC)	DTW (feet bTOC)	LPH Thickness (feet)	Groundwater Elevation (feet amsl)	Corrected Groundwater Elevation (feet amsl)	LPH Recovery Method	LPH Present in Well Casing (gallons)	LPH Present in Filter Pack/Borehole (gallons)	LPH Recovered (mL)	LPH Recovered (gallons)	Total LPH Recovered Since July 2009 (gallons)
CS-1	--	6/12/2024	--	--	NM	--	--	--	--	--	--	0	0.00	--
CS-2	--	6/12/2024	--	--	NM	--	--	--	--	--	--	0	0.00	--
CS-3	--	6/12/2024	--	--	NM	--	--	--	--	--	--	0	0.00	--
CS-4	--	6/12/2024	--	--	NM	--	--	--	--	--	--	0	0.00	--
CS-5	--	6/12/2024	--	--	NM	--	--	--	--	--	--	0	0.00	--
EW-1	--	6/12/2024	243.50	--	NM	--	--	--	--	--	--	0	0.00	--
EW-2	--	6/12/2024	243.30	--	NM	--	--	--	--	--	--	0	0.00	--
EW-3	6	6/12/2024	242.70	10.65	11.03	0.38	231.67	232.00	PP	0.56	0.17	1893	0.50	20.32
EW-4	6	6/12/2024	243.20	--	NM	--	--	--	--	--	--	0	0.00	0.36
EW-5	6	6/12/2024	243.60	11.55	11.72	0.17	231.88	232.03	--	0.25	0.08	0	0.00	7.06
EW-6	6	6/12/2024	242.40	--	NM	--	--	--	--	--	--	0	0.00	0.02
EW-7	6	6/12/2024	243.20	--	NM	--	--	--	--	--	--	0	0.00	0.52
MW-01	4	6/12/2024	247.20	--	NM	--	--	--	--	--	--	0	0.00	0.67
MW-02	4	6/12/2024	247.55	--	13.35	--	234.20	234.20	--	--	--	0	0.00	0.54
MW-03	4	6/12/2024	248.38	--	NM	--	--	--	--	--	--	0	0.00	0.30
MW-04R	4	6/12/2024	244.68	--	11.35	--	233.33	233.33	--	--	--	0	0.00	2.28
MW-05	4	6/12/2024	245.37	--	NM	--	--	--	--	--	--	0	0.00	1.66
MW-06R	4	6/12/2024	233.63	--	NM	--	--	--	--	--	--	0	0.00	1.59
MW-08	4	6/12/2024	235.51	--	NM	--	--	--	--	--	--	0	0.00	1.46
MW-09	4	6/12/2024	237.54	--	NM	--	--	--	--	--	--	0	0.00	1.25
MW-20	4	6/12/2024	236.27	--	NM	--	--	--	--	--	--	0	0.00	0.39
MW-22	4	6/12/2024	245.65	--	NM	--	--	--	--	--	--	0	0.00	0.03
MW-23	4	6/12/2024	244.57	--	NM	--	--	--	--	--	--	0	0.00	0.30
MW-24	4	6/12/2024	244.50	--	NM	--	--	--	--	--	--	0	0.00	1.59
MW-25	4	6/12/2024	245.36	--	NM	--	--	--	--	--	--	0	0.00	0.06
MW-26	4	6/12/2024	244.67	11.74	11.92	0.18	232.75	232.91	--	0.12	0.05	0	0.00	5.64
MW-27	4	6/12/2024	244.29	--	NM	--	--	--	--	--	--	0	0.00	4.10
MW-28	4	6/12/2024	244.23	--	NM	--	--	--	--	--	--	0	0.00	0.16
MW-29	4	6/12/2024	243.74	--	NM	--	--	--	--	--	--	0	0.00	0.00
MW-30	4	6/12/2024	245.46	--	NM	--	--	--	--	--	--	0	0.00	0.00
MW-32	4	6/12/2024	245.80	4.15	4.25	0.10	241.55	241.64	--	0.07	0.03	0	0.00	6.38
MW-33	4	6/12/2024	244.26	--	NM	--	--	--	--	--	--	0	0.00	0.01
MW-35	4	6/12/2024	245.80	--	NM	--	--	--	--	--	--	0	0.00	0.00
MW-37	4	6/12/2024	245.06	11.80	13.85	2.05	231.21	232.99	PP	1.34	0.53	4732	1.25	41.65
MW-38	4	6/12/2024	246.09	3.40	3.45	0.05	242.64	242.68	--	--	--	0	0.00	89.21
MW-41	4	6/12/2024	246.07	12.05	14.84	2.79	231.23	233.66	PP	1.82	0.72	8063	2.13	202.60
MW-43	4	6/12/2024	238.90	--	NM	--	--	--	--	--	--	0	0.00	0.00
MW-49	4	6/12/2024	246.02	3.74	3.85	0.11	242.17	242.27	--	0.07	0.03	0	0.00	58.78
MW-51	4	6/12/2024	249.34	--	NM	--	--	--	--	--	--	0	0.00	0.00
MW-52	4	6/12/2024	247.00	--	NM	--	--	--	--	--	--	0	0.00	0.00
MW-53	2	6/12/2024	246.10	12.16	15.35	3.19	230.75	233.53	PP	0.52	0.36	3785	1.00	199.65
MW-54	2	6/12/2024	245.60	11.72	14.60	2.88	231.00	233.51	PP	0.47	0.33	7571	2.00	153.06
MW-55	2	6/12/2024	246.12	12.06	15.62	3.56	230.50	233.60	PP	0.58	0.41	3785	1.00	307.99
MW-56	2	6/12/2024	244.63	11.00	15.98	4.98	228.65	232.98	PP	0.81	0.57	5678	1.50	203.88
MW-57	2	6/12/2024	244.52	11.35	12.26	0.91	232.26	233.05	PP	0.15	0.10	946	0.25	48.39

Table 3
Well Gauging and LPH Recovery Summary (Second Quarter 2024)
Quarterly Report - Second Quarter 2024
Brunswick Yard, Brunswick, Maryland

Well ID	Well Casing Diameter (inches)	Measurement Date	Top of Casing Elevation (feet amsl)	DTLPH (feet bTOC)	DTW (feet bTOC)	LPH Thickness (feet)	Groundwater Elevation (feet amsl)	Corrected Groundwater Elevation (feet amsl)	LPH Recovery Method	LPH Present in Well Casing (gallons)	LPH Present in Filter Pack/Borehole (gallons)	LPH Recovered (mL)	LPH Recovered (gallons)	Total LPH Recovered Since July 2009 (gallons)
MW-58	2	6/12/2024	244.42	11.35	11.66	0.31	232.76	233.03	PP	0.05	0.04	76	0.02	4.31
MW-59	4	6/12/2024	246.07	3.8	4.05	0.25	242.02	242.24	PP	0.16	0.06	2839	0.75	19.17
MW-60	4	6/12/2024	245.57	10.25	13.20	2.95	232.37	234.94	PP	1.93	0.76	10410	2.75	49.62
MW-61	4	6/12/2024	245.63	--	4.02	--	241.61	241.61	--	--	--	0	0.00	1.88
MW-62	4	6/12/2024	246.08	11.95	12.23	0.28	233.85	234.09	PP	0.18	0.07	454	0.12	8.39
MW-63	4	6/12/2024	246.25	12.46	15.71	3.25	230.54	233.37	PP	2.12	0.84	15520	4.10	148.02
MW-64	4	6/12/2024	245.45	--	NM	--	--	--	--	--	--	0	0.00	0.00
MW-65	4	6/12/2024	245.54	--	NM	--	--	--	--	--	--	0	0.00	1.77
MW-67	4	6/12/2024	245.83	12.02	12.44	0.42	233.39	233.76	PP	0.27	0.11	2839	0.75	9.95
MW-68	4	6/12/2024	245.09	--	NM	--	--	--	--	--	--	0	0.00	0.00
MW-69	4	6/12/2024	244.98	--	NM	--	--	--	--	--	--	0	0.00	0.01
MW-70	4	6/12/2024	245.57	--	12.78	--	232.79	232.79	--	--	--	0	0.00	0.35
MW-71	4	6/12/2024	246.21	--	NM	--	--	--	--	--	--	0	0.00	0.00
NPS MW-01	4	6/12/2024	234.94	--	NM	--	--	--	--	--	--	0	0.00	0.00
NPS MW-02	4	6/12/2024	237.19	--	NM	--	--	--	--	--	--	0	0.00	0.00
NPS MW-03	4	6/12/2024	234.50	--	NM	--	--	--	--	--	--	0	0.00	0.00
NPS MW-04	--	6/12/2024	234.50	--	NM	--	--	--	--	--	--	0	0.00	0.00
NPS MW-05	4	6/12/2024	235.69	--	NM	--	--	--	--	--	--	0	0.00	0.00
NPS MW-10	2	6/12/2024	237.73	--	NM	--	--	--	--	--	--	0	0.00	0.00
NPS MW-12	2	6/12/2024	242.61	--	NM	--	--	--	--	--	--	0	0.00	0.00
NPS MW-13	2	6/12/2024	234.72	--	NM	--	--	--	--	--	--	0	0.00	0.00
NPS MW-14	2	6/12/2024	234.74	--	NM	--	--	--	--	--	--	0	0.00	0.00
NPS MW-15	2	6/12/2024	234.38	--	NM	--	--	--	--	--	--	0	0.00	0.00
NPS MW-16	2	6/12/2024	240.09	--	NM	--	--	--	--	--	--	0	0.00	0.00
NPS MW-17	2	6/12/2024	242.71	--	NM	--	--	--	--	--	--	0	0.00	0.00
NPS MW-18	4	6/12/2024	234.15	--	NM	--	--	--	--	--	--	0	0.00	0.00
									Total:	11.47	5.24	68591	18.12	1605.37

Notes:
amsl - above mean sea level
bTOC - below top of well casing
DTLPH- depth to liquid phase hydrocarbons
NR - LPH recovery not attempted
NM - Not Measured
DTW - depth to water
LPH - liquid phase hydrocarbon
PP - Peristaltic pump
* - Borehole diameter was estimated to be 2 inches larger than the well casing at each location, and a LPH specific yeild value of 0.175 (per ATSM E2856) was used to calculate borehole/filter pack storage capacity.

Figures



LEGEND

- National Park Service Monitoring Well
- CSXT Monitoring Well
- Extraction Well
- Collection Sump
- Abandoned Monitoring Well
- Stone Drainage Culvert
- Groundwater Elevation Contour (Dashed Where Inferred)
- (228.65) Groundwater Elevation in Feet Above Mean Sea Level (AMSL)
- (4.98) Liquid Phase Hydrocarbon Thickness (FT)
- (NM) Not Measured
- (NM) Not Measured

0 115 230

SCALE IN FEET

CSX TRANSPORTATION, INC.
BRUNSWICK, MARYLAND

GROUNDWATER ELEVATION CONTOURS AND LPH THICKNESSES MAP JUNE 12, 2024

ARCADIS

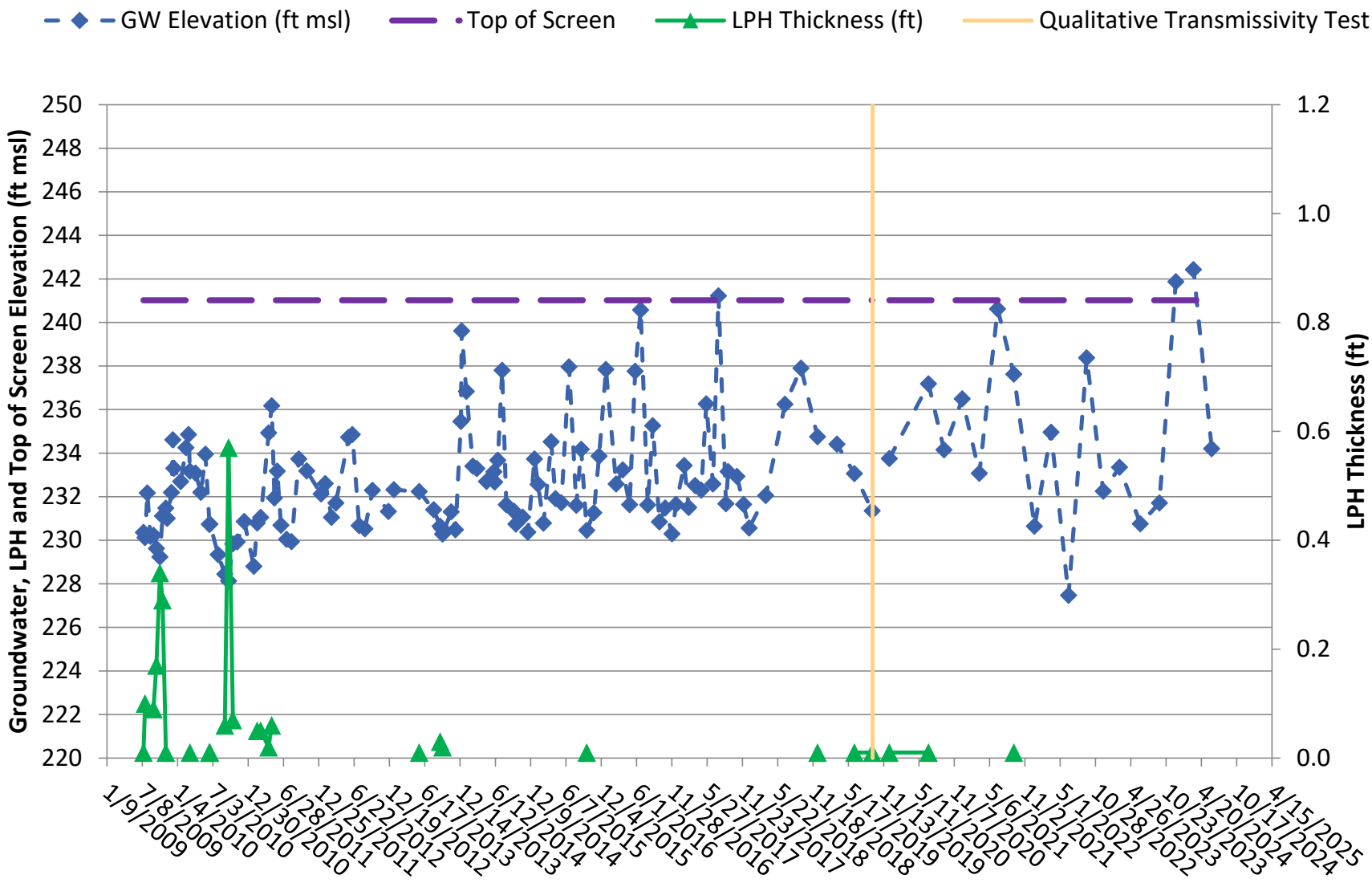
FIGURE 1

CITY: (KNOXVILLE) DIV/GROUP:(ENV/GIS) DB:(B.ALTOM) PIC:(J.MADDALENA) PM:(A.BUELL) TM:(L.BAUMGARTNER)
PATH: T:_ENV\CSX_Brunswick\Q2_2024\Q2_2024.aprx SAVED: 8/7/2024 BY: pmv9108 PROJECT: MD000843.0013

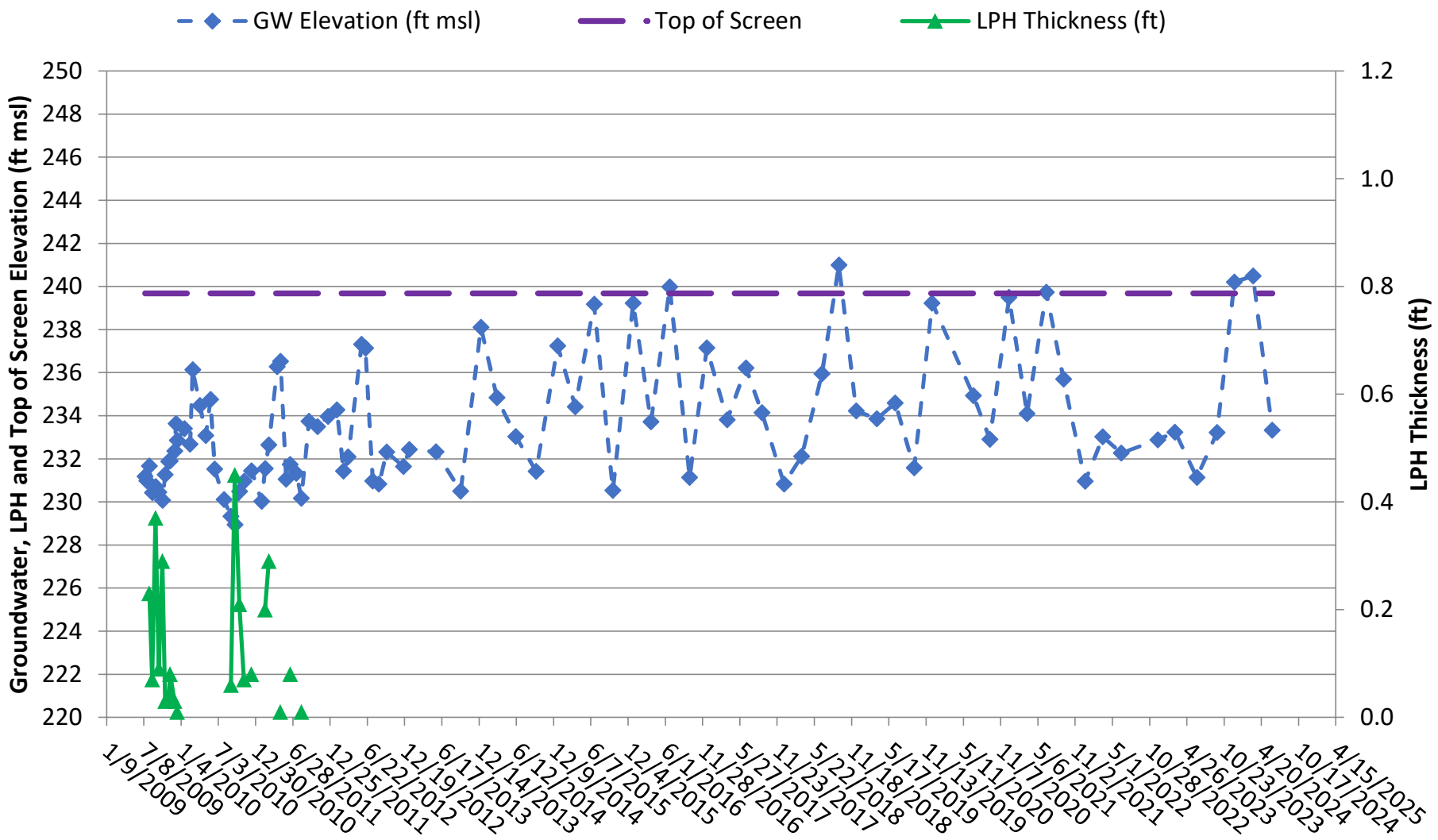
Attachment 1

Hydrographs – Groundwater Elevations and LPH Thickness

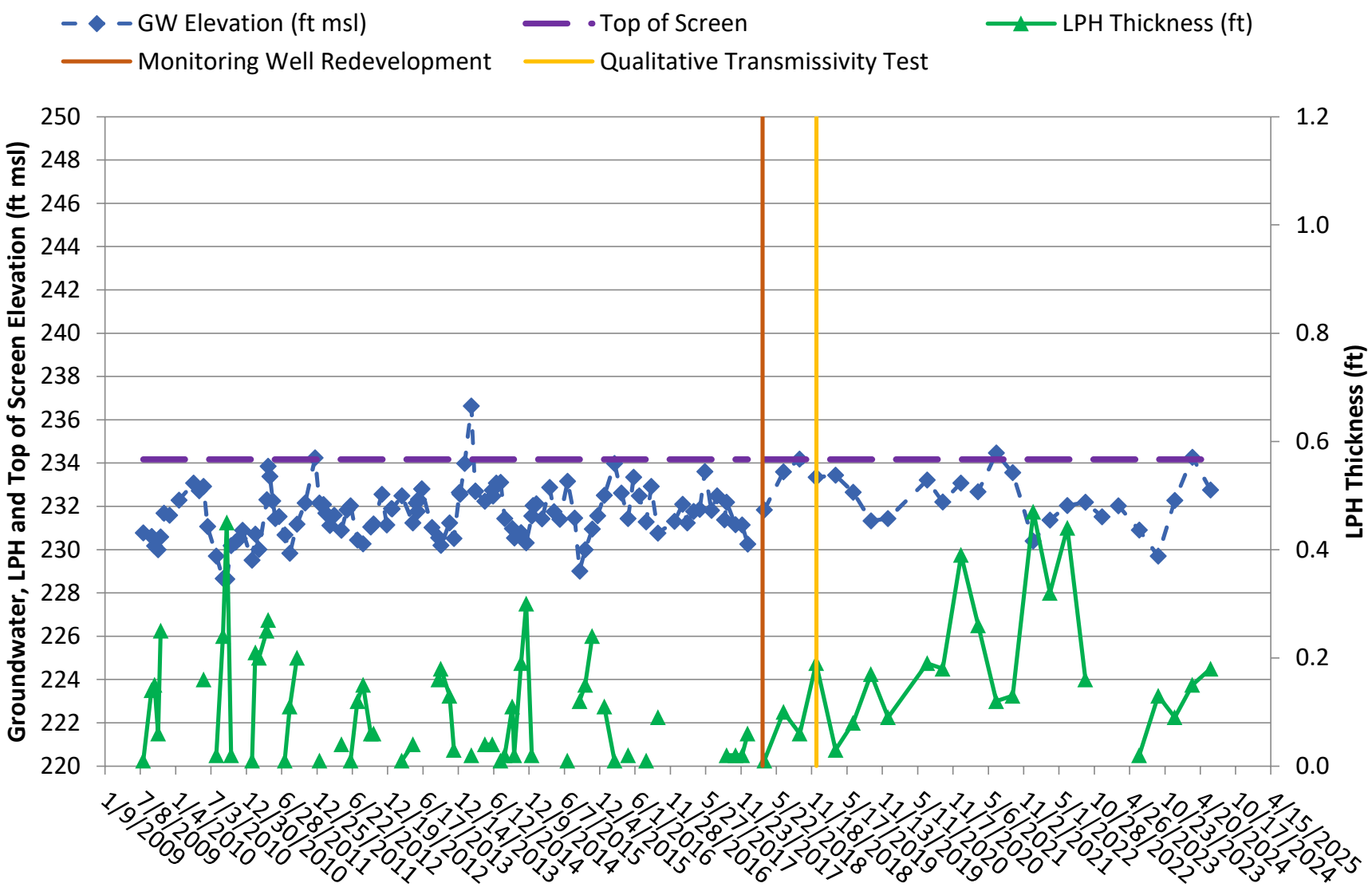
LPH and Groundwater Elevations and LPH Recovery: MW-2
July 12, 2009 through June 12, 2024
CSXT Brunswick Yard, Brunswick, Maryland



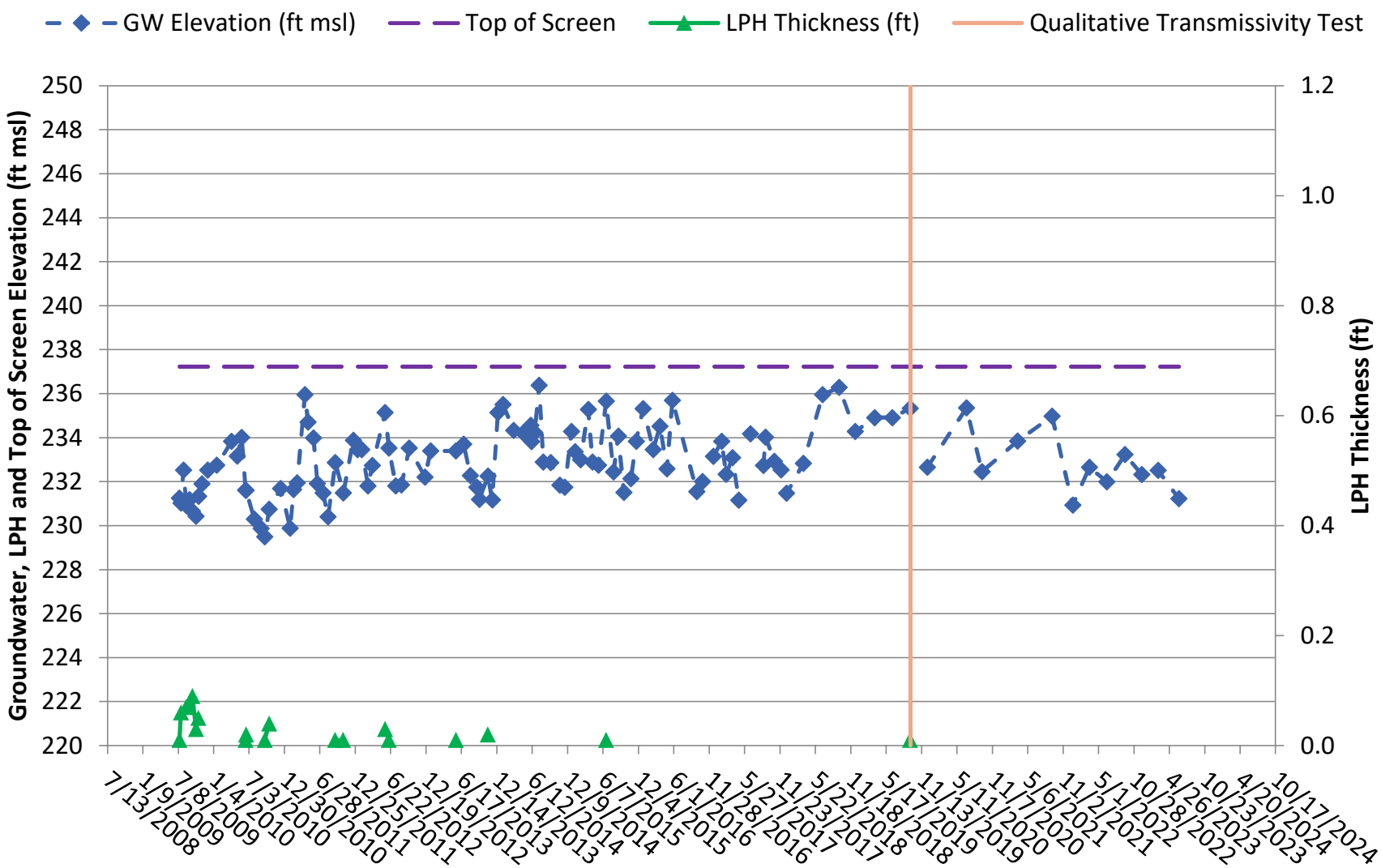
LPH and Groundwater Elevations and LPH Recovery: MW-4R
July 12, 2009 through June 12, 2024
CSXT Brunswick Yard, Brunswick, Maryland



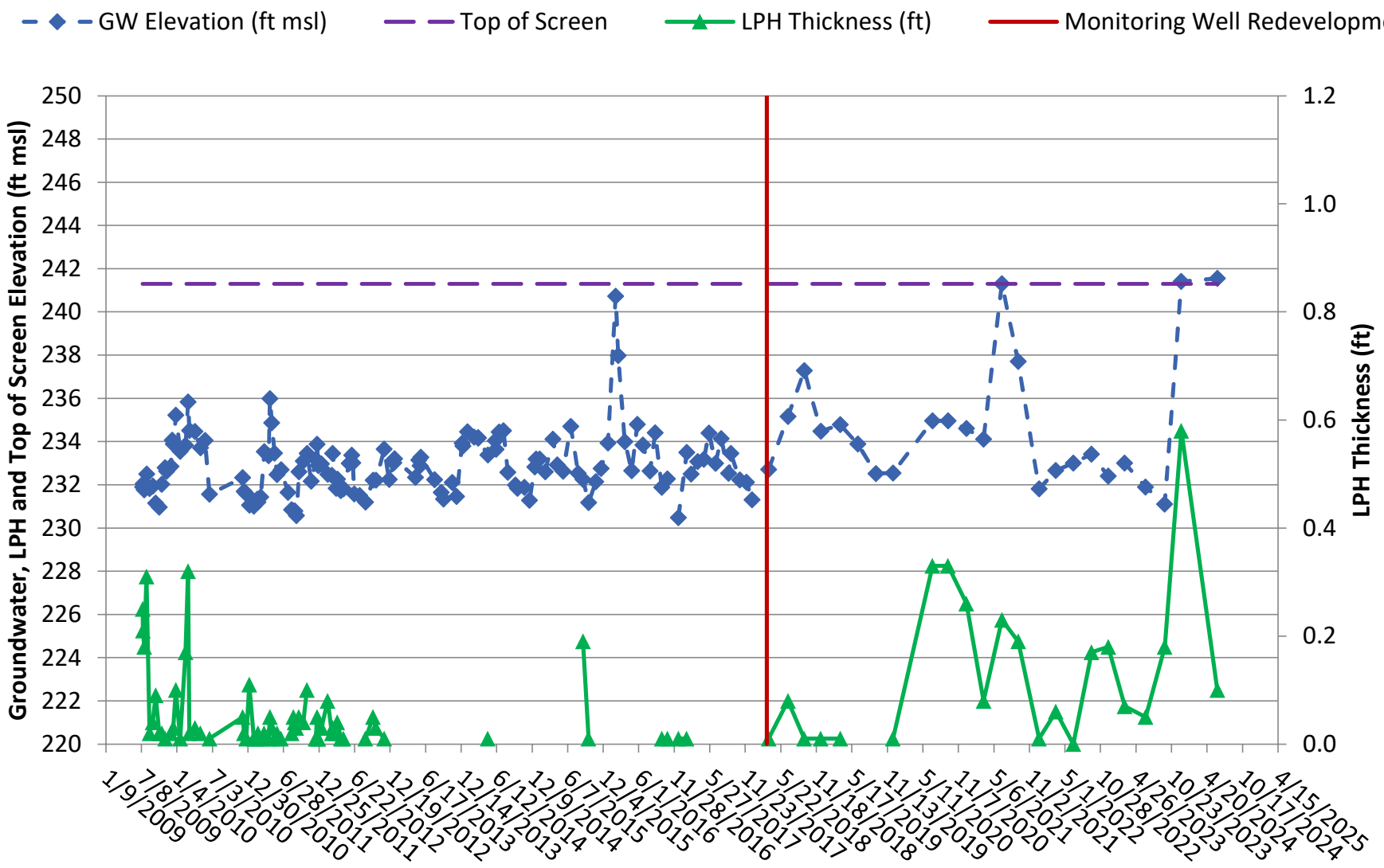
LPH and Groundwater Elevations and LPH Recovery: MW-26
July 12, 2009 through June 12, 2024
CSXT Brunswick Yard, Brunswick, Maryland



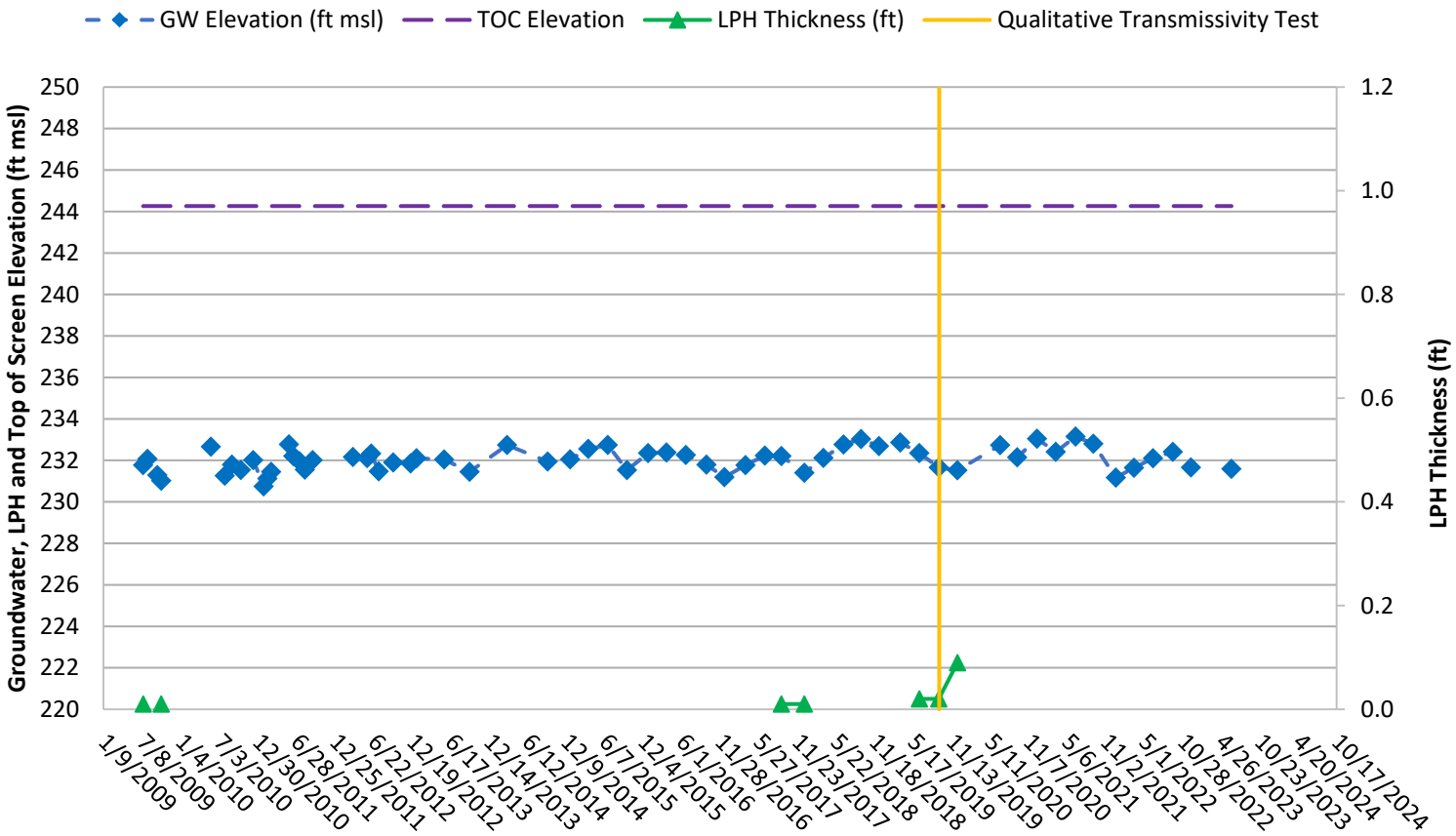
LPH and Groundwater Elevations and LPH Recovery: MW-28
July 12, 2009 through June 12, 2024
CSXT Brunswick Yard, Brunswick, Maryland



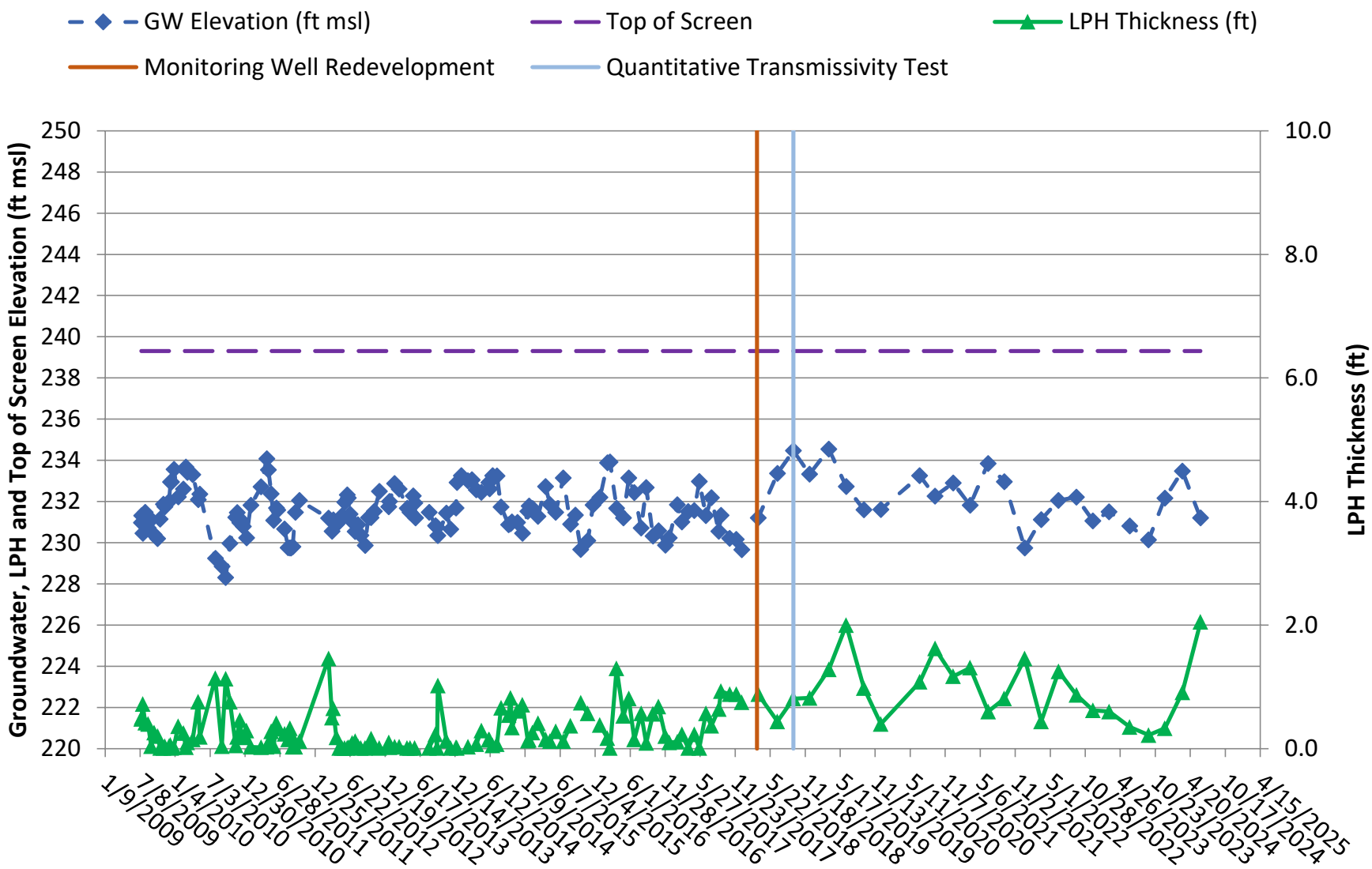
LPH and Groundwater Elevations and LPH Recovery: MW-32
July 12, 2009 through June 12, 2024
CSXT Brunswick Yard, Brunswick, Maryland



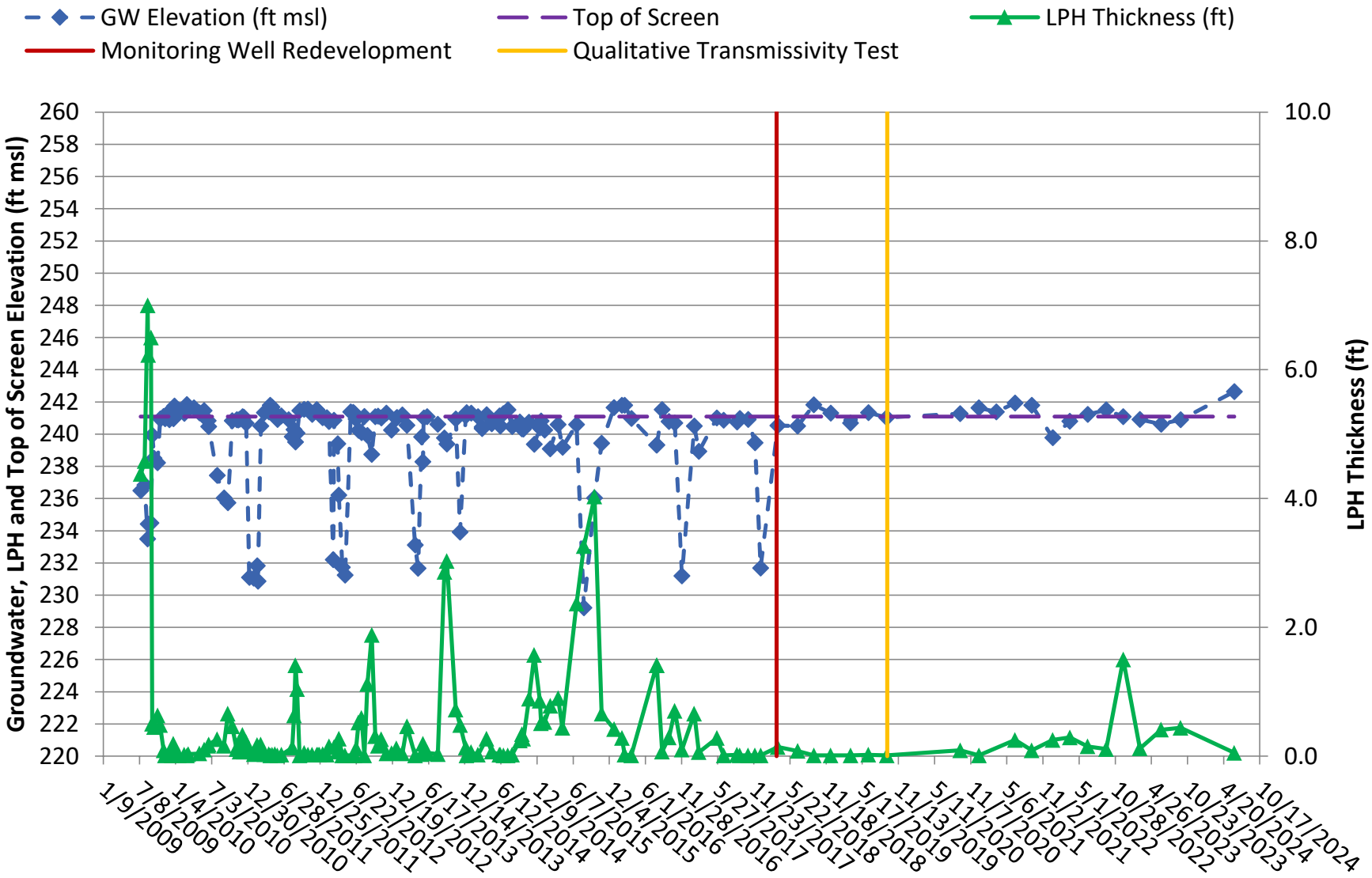
LPH and Groundwater Elevations and LPH Recovery: MW-33
July 12, 2009 through June 12, 2024
CSXT Brunswick Yard, Brunswick, Maryland



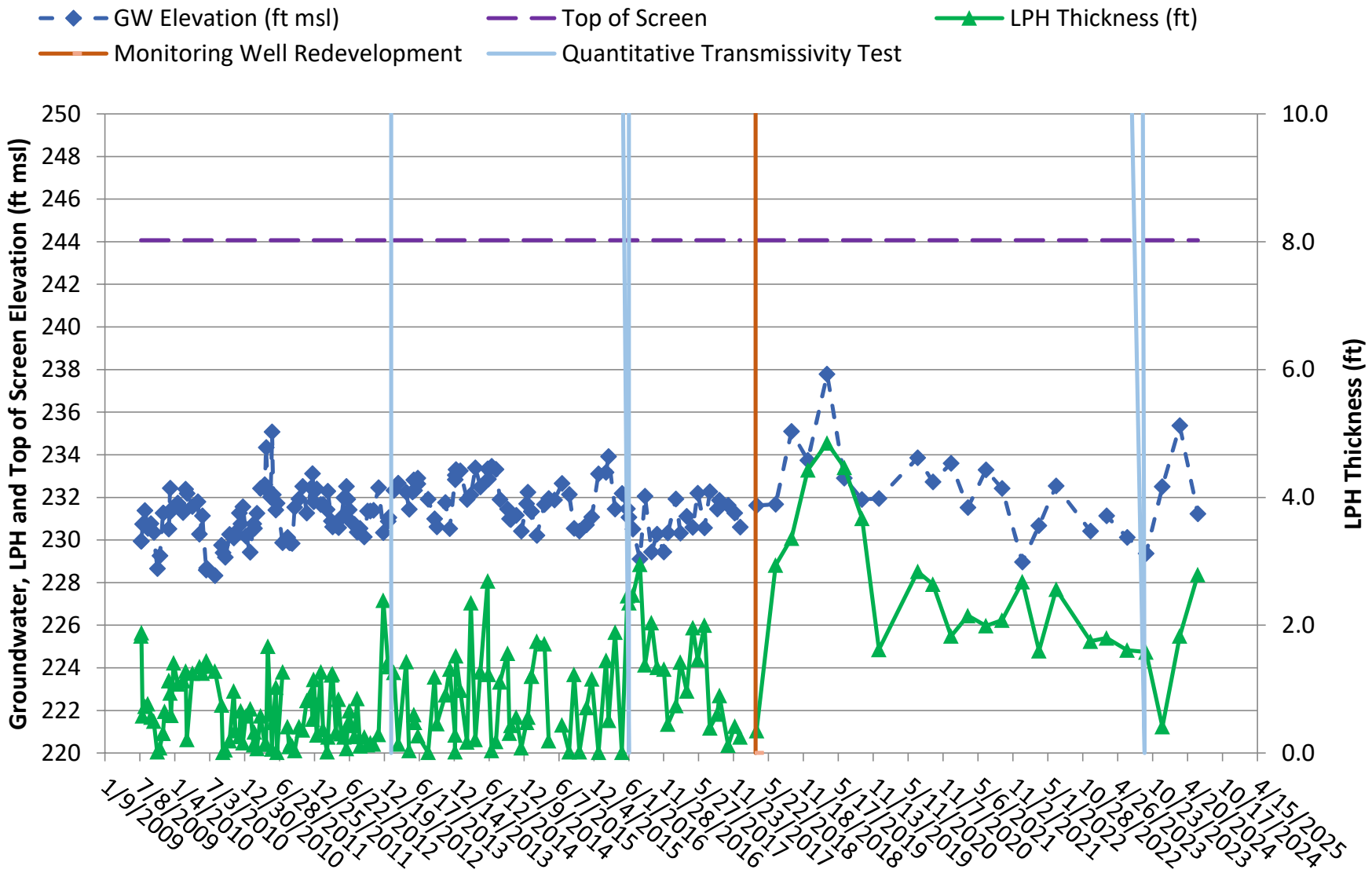
LPH and Groundwater Elevations and LPH Recovery: MW-37
July 12, 2009 through June 12, 2024
CSXT Brunswick Yard, Brunswick, Maryland



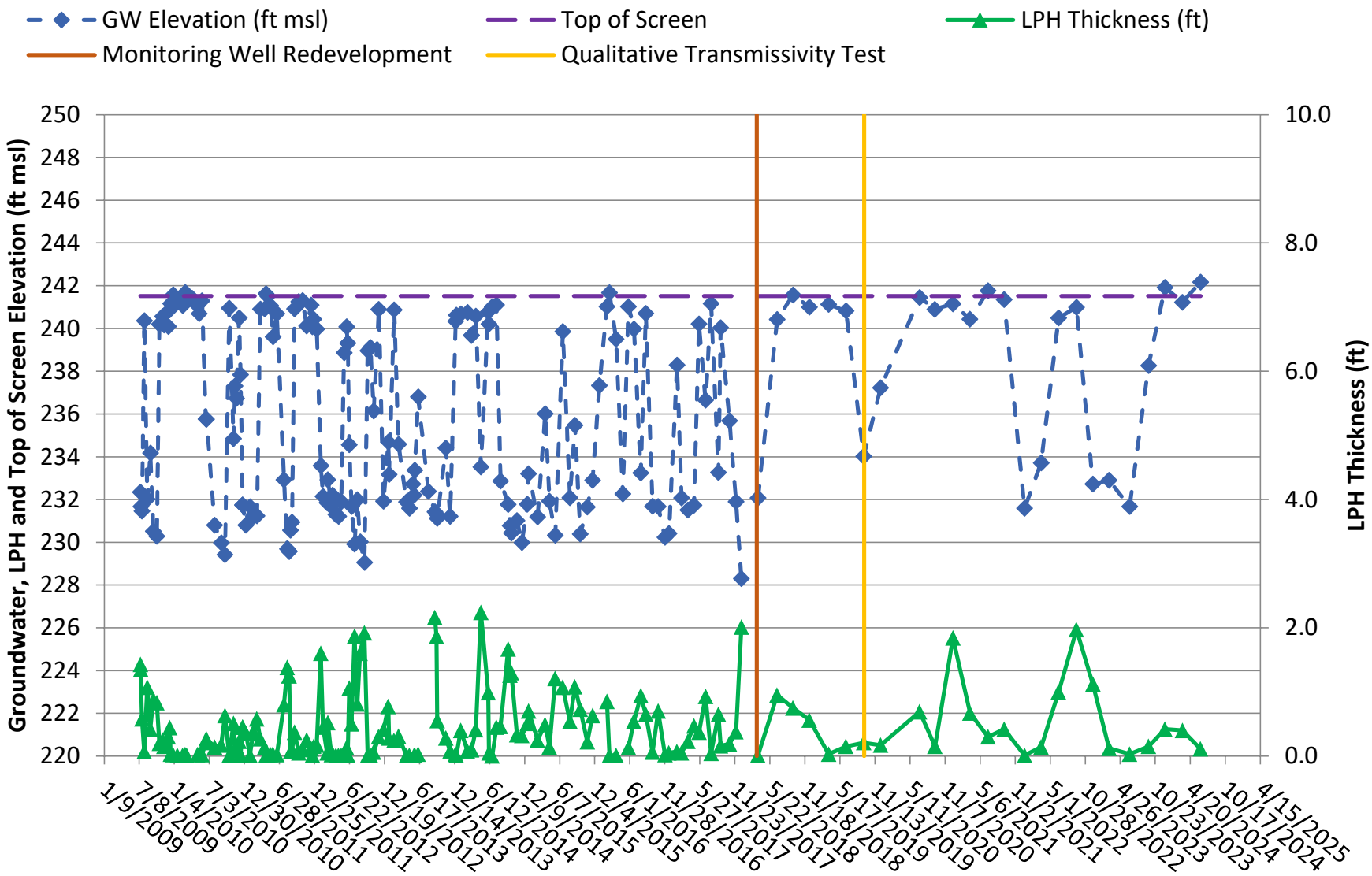
LPH and Groundwater Elevations and LPH Recovery: MW-38
July 12, 2009 through June 12, 2024
CSXT Brunswick Yard, Brunswick, Maryland



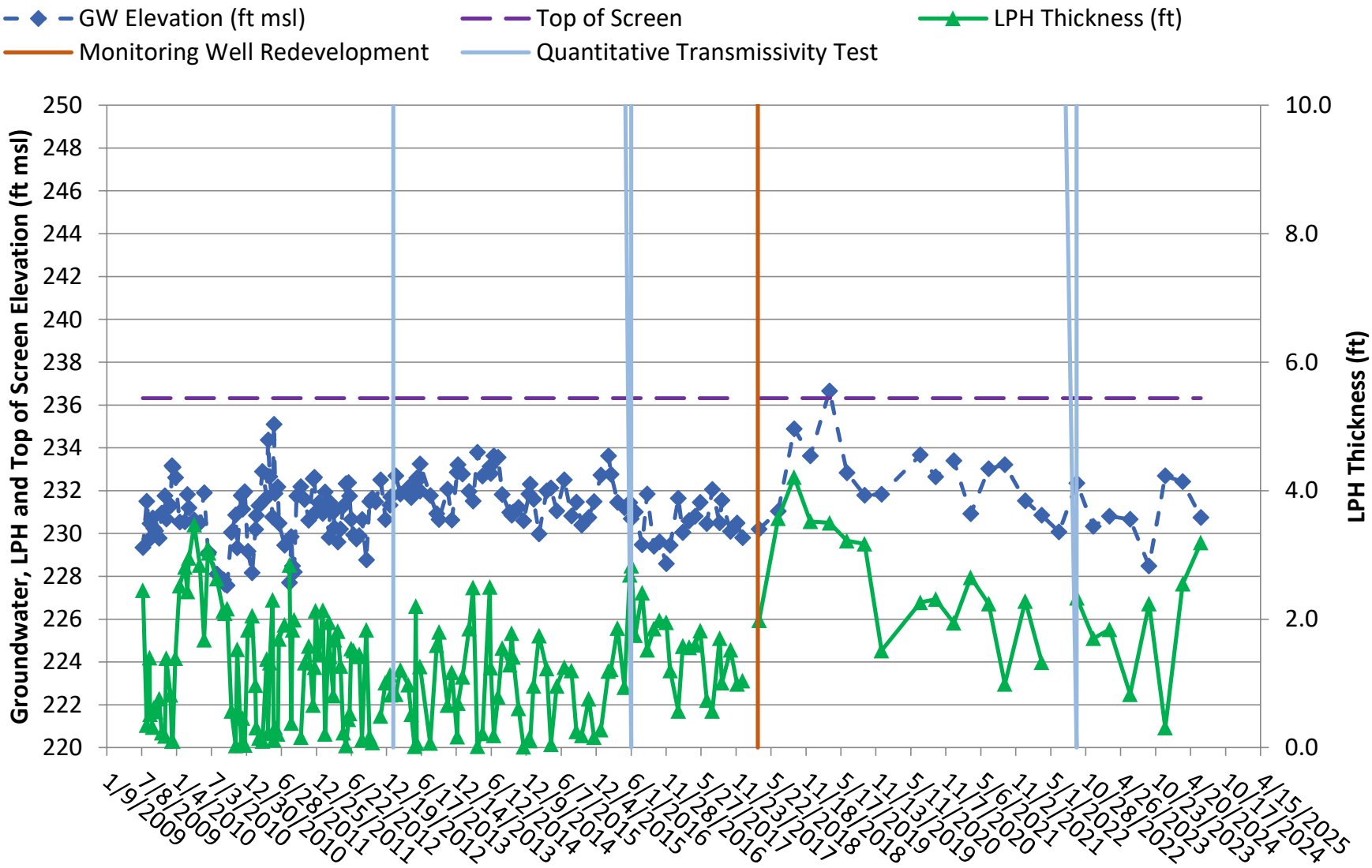
LPH and Groundwater Elevations and LPH Recovery: MW-41
July 12, 2009 through June 12, 2024
CSXT Brunswick Yard, Brunswick, Maryland



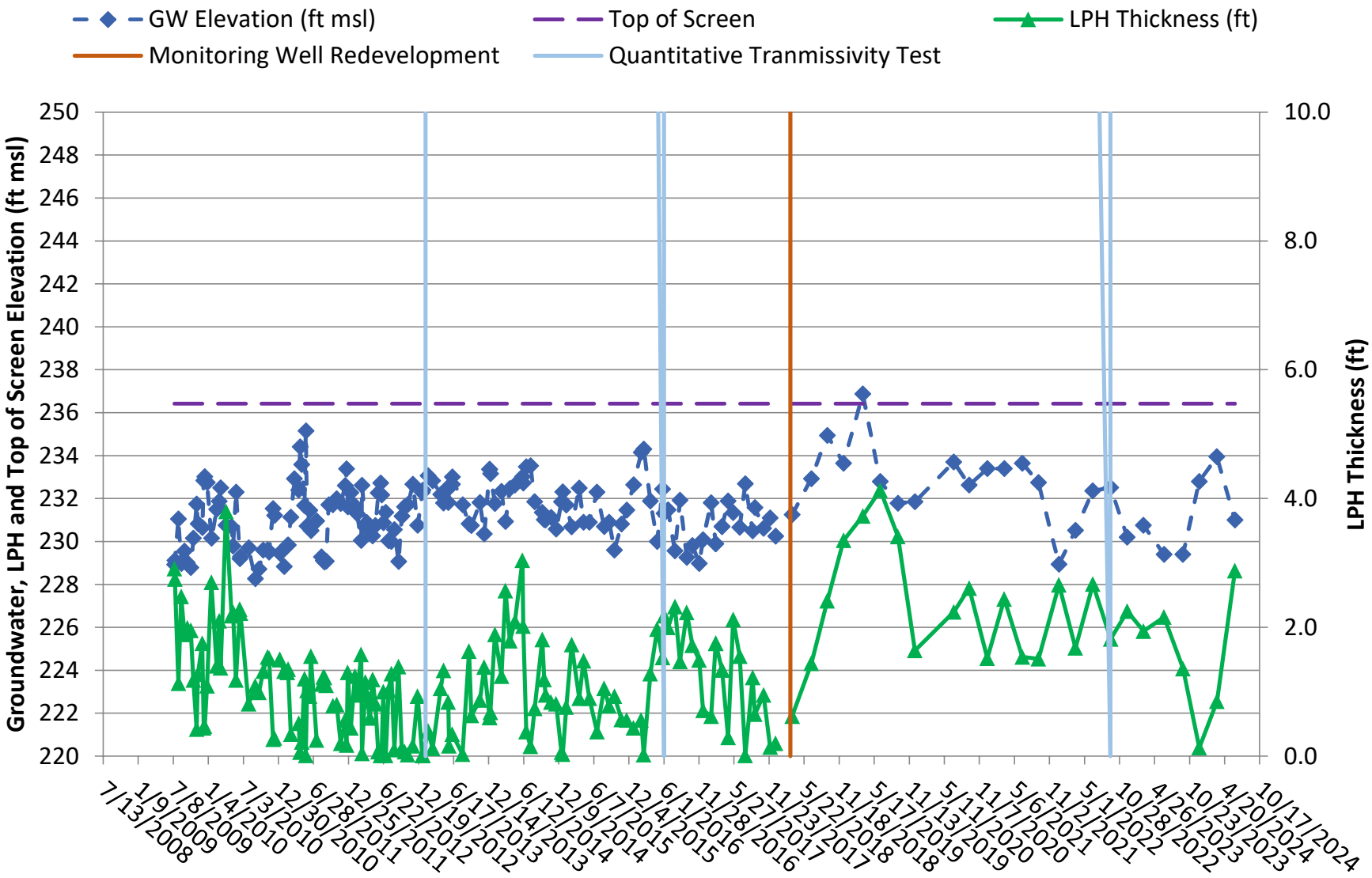
LPH and Groundwater Elevations and LPH Recovery: MW-49
July 12, 2009 through June 12, 2024
CSXT Brunswick Yard, Brunswick, Maryland



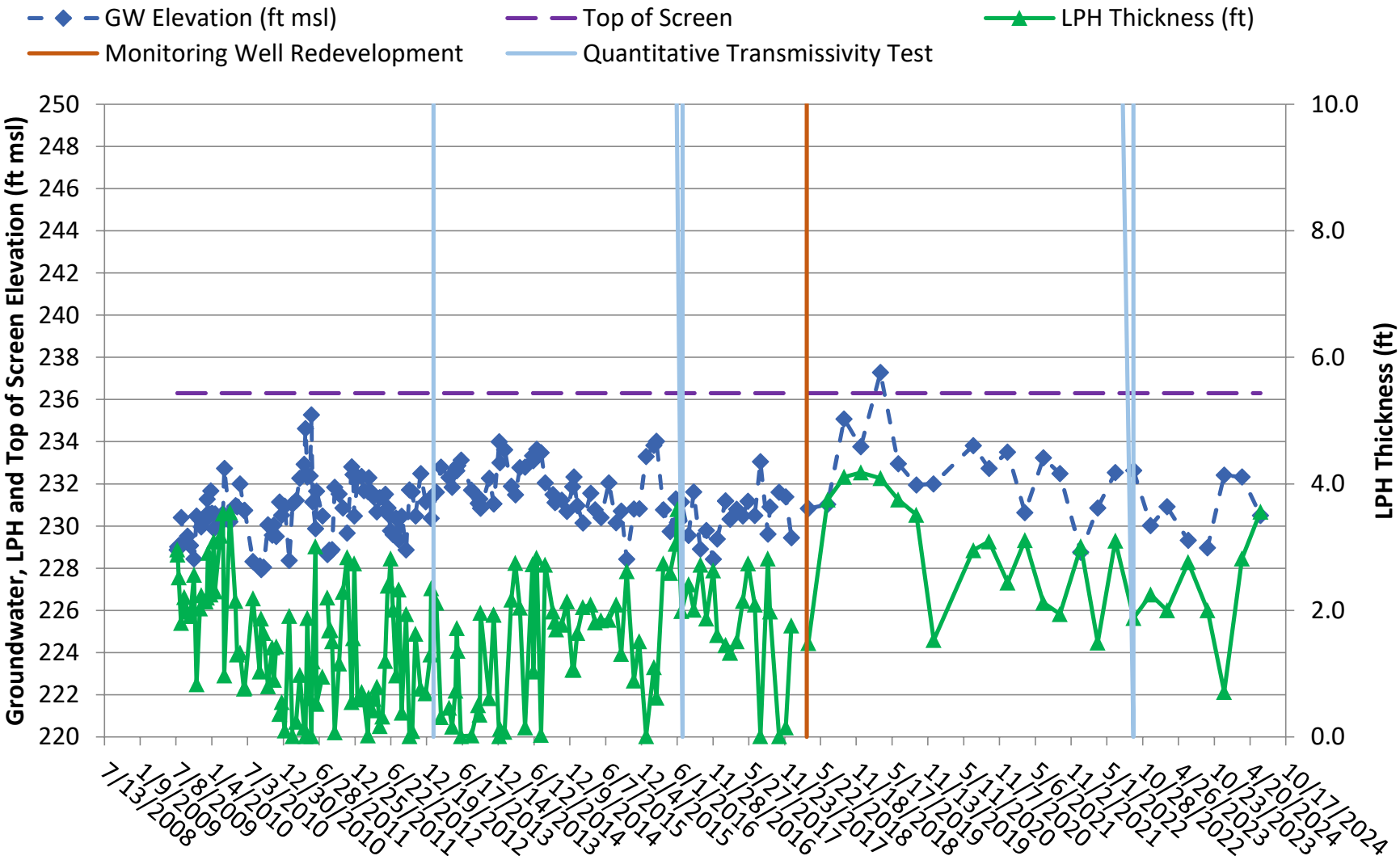
LPH and Groundwater Elevations and LPH Recovery: MW-53
July 12, 2009 through June 12, 2024
CSXT Brunswick Yard, Brunswick, Maryland



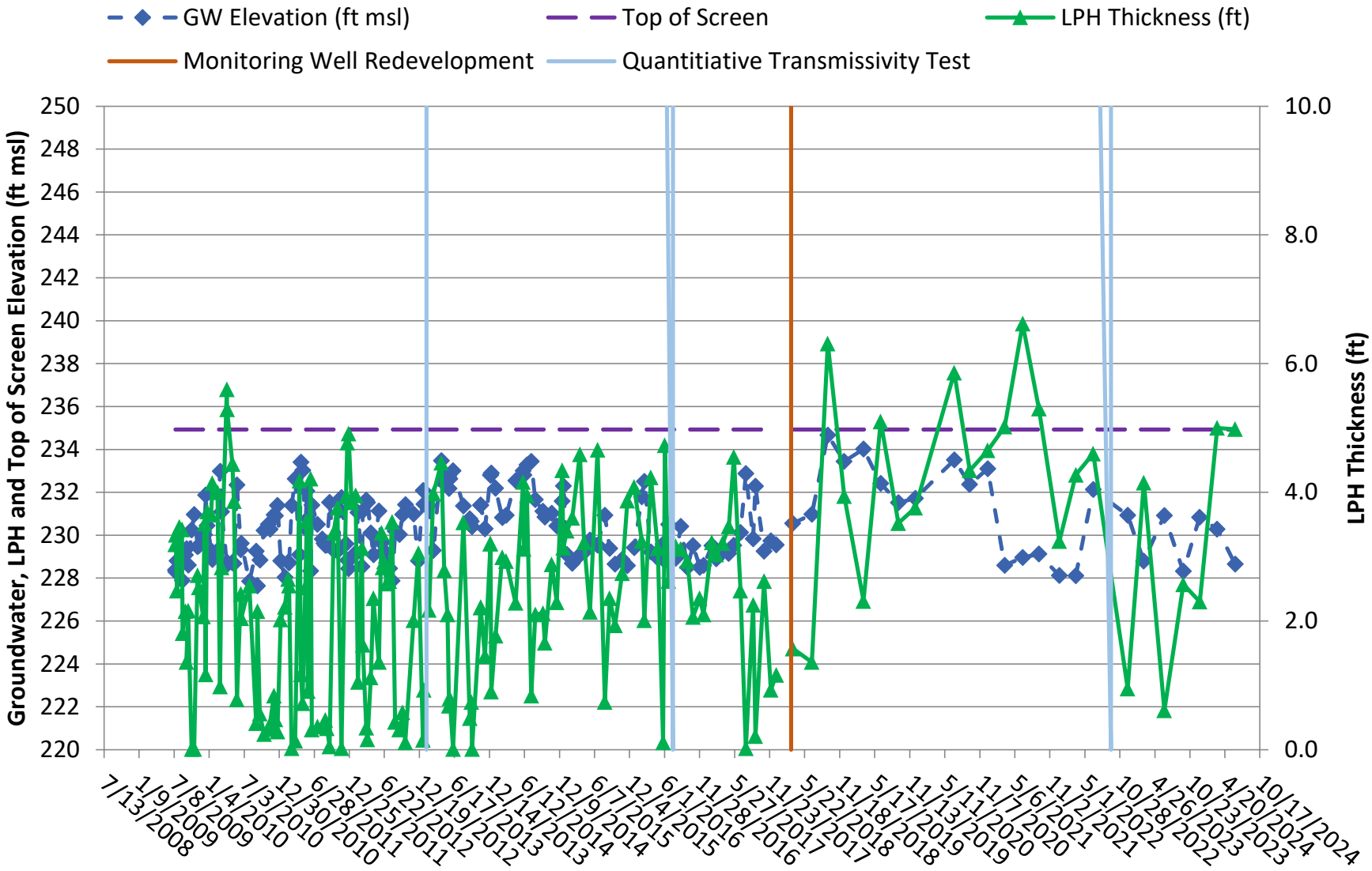
LPH and Groundwater Elevations and LPH Recovery: MW-54
July 12, 2009 through June 12, 2024
CSXT Brunswick Yard, Brunswick, Maryland



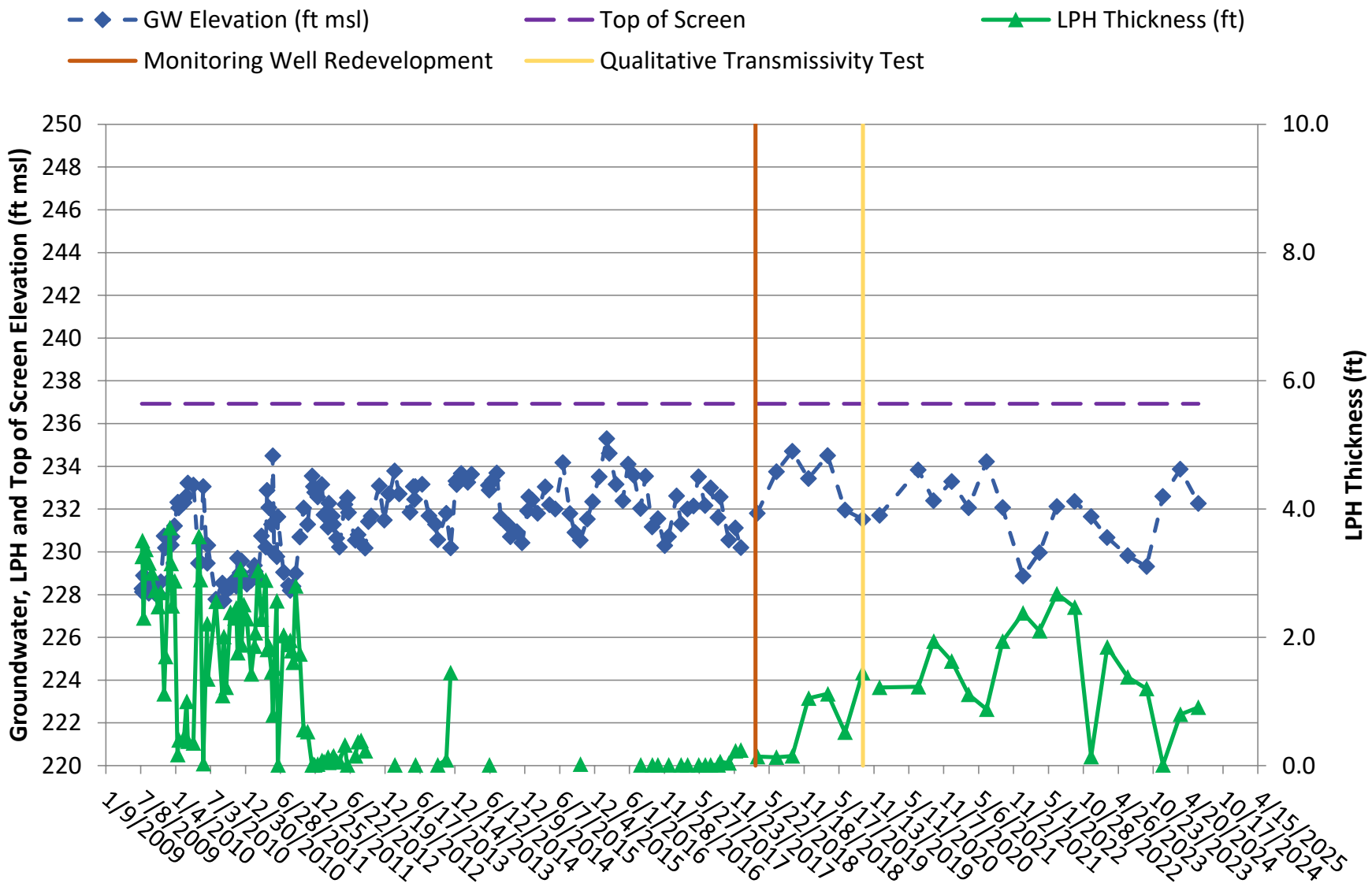
LPH and Groundwater Elevations and LPH Recovery: MW-55
July 12, 2009 through June 12, 2024
CSXT Brunswick Yard, Brunswick, Maryland



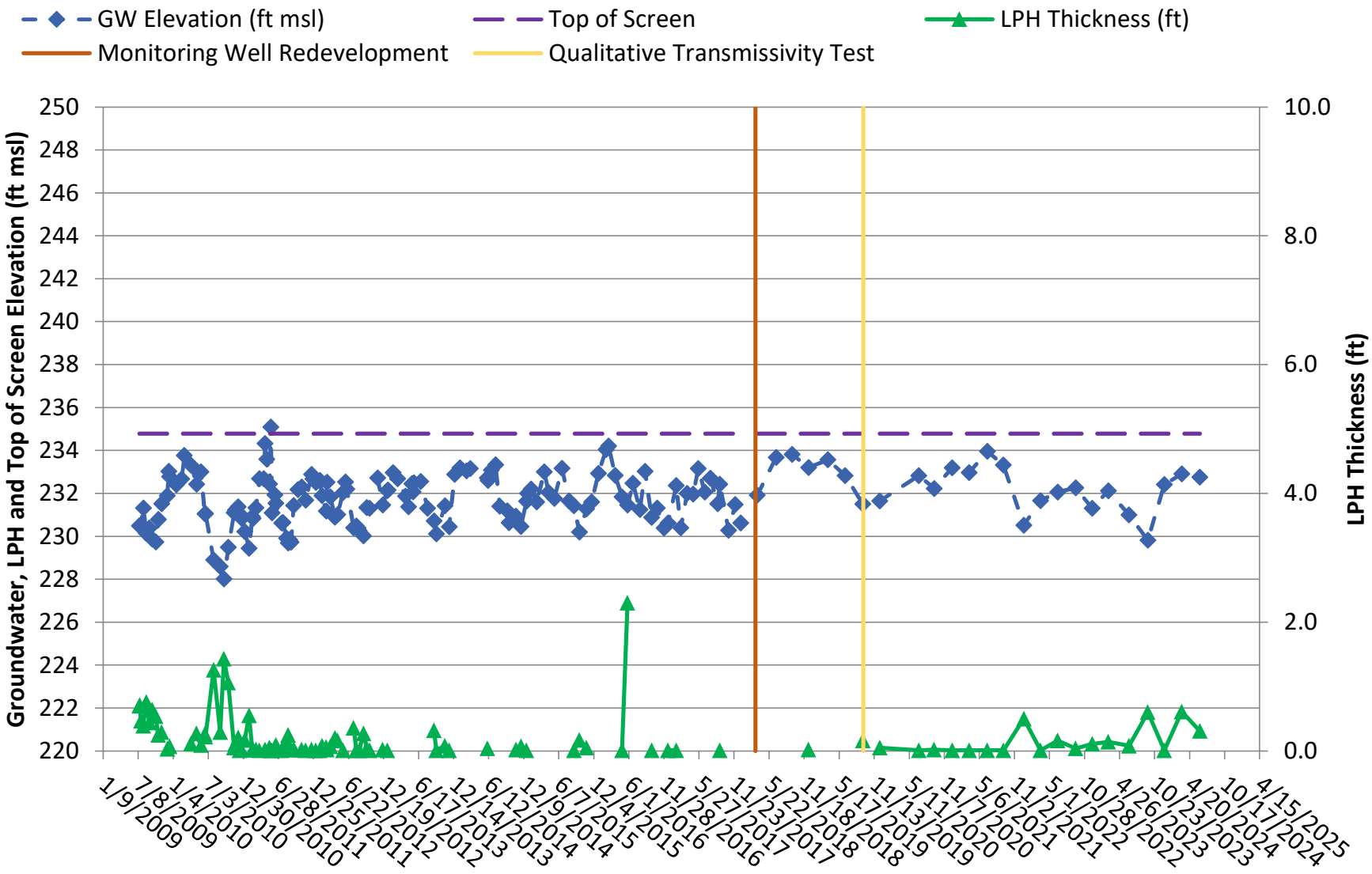
LPH and Groundwater Elevations and LPH Recovery: MW-56
July 2009 through June 12, 2024
CSXT Brunswick Yard, Brunswick, Maryland



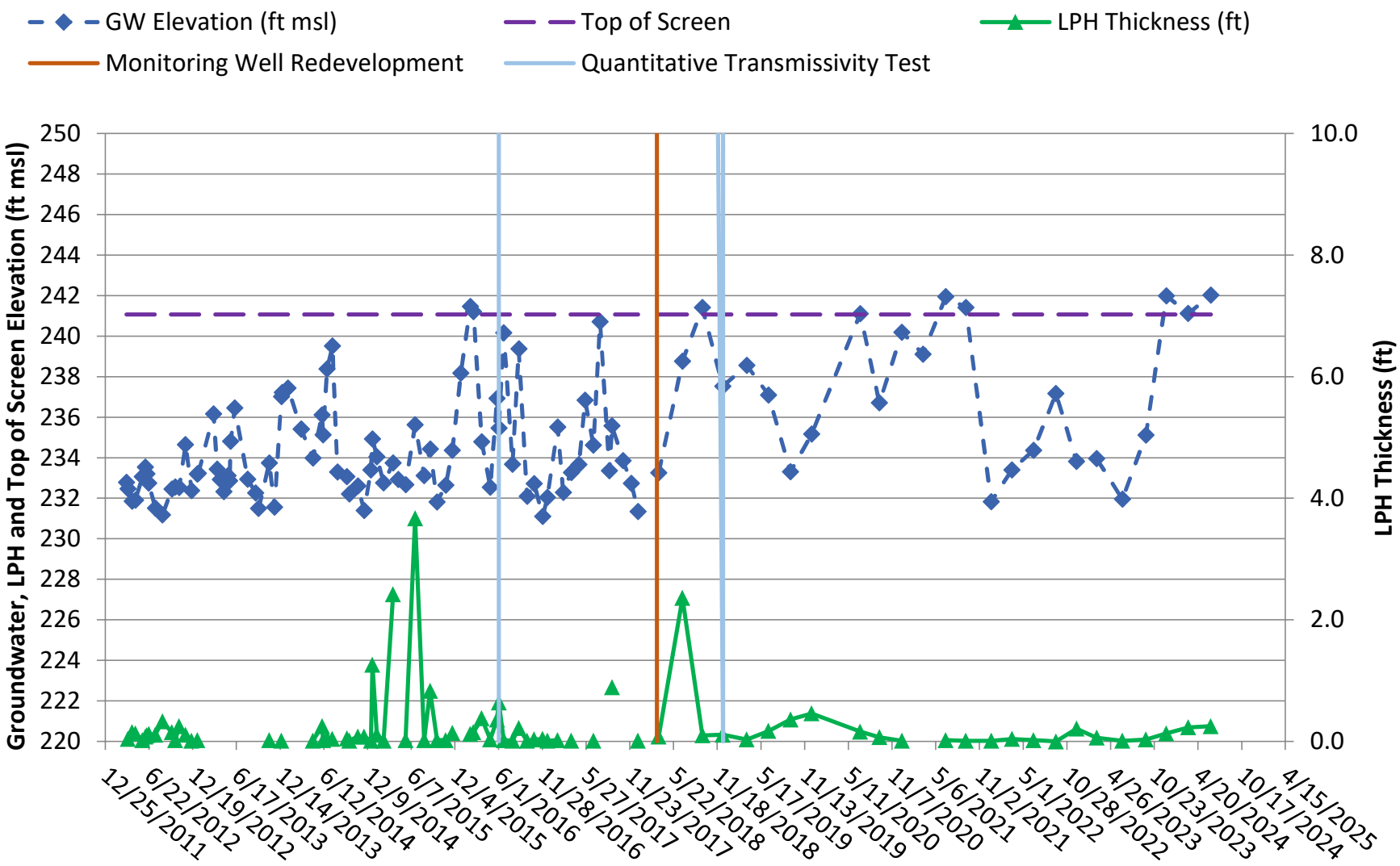
LPH and Groundwater Elevations and LPH Recovery: MW-57
July 12, 2009 through June 12, 2024
CSXT Brunswick Yard, Brunswick, Maryland



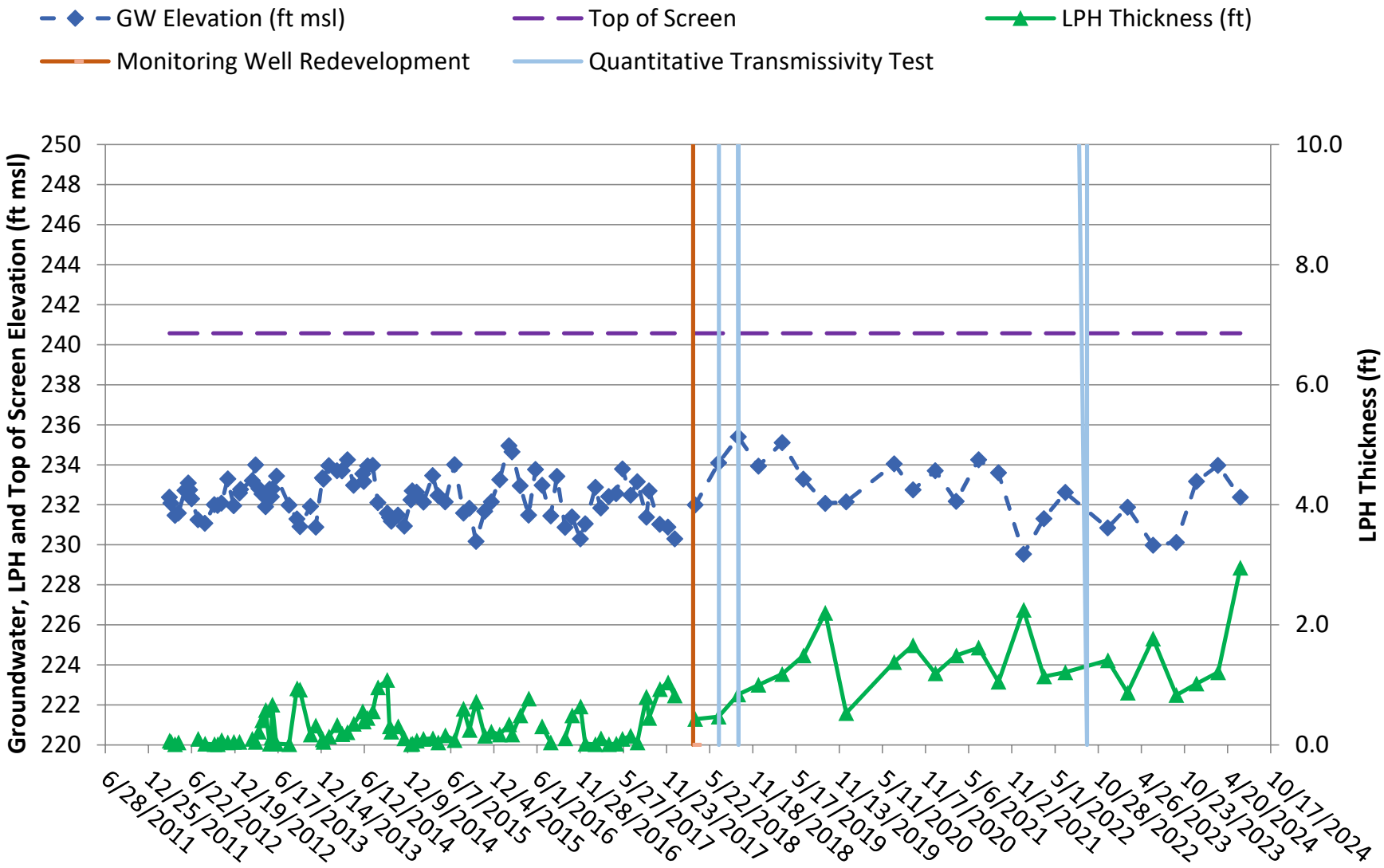
LPH and Groundwater Elevations and LPH Recovery: MW-58
July 12, 2009 through June 12, 2024
CSXT Brunswick Yard, Brunswick, Maryland



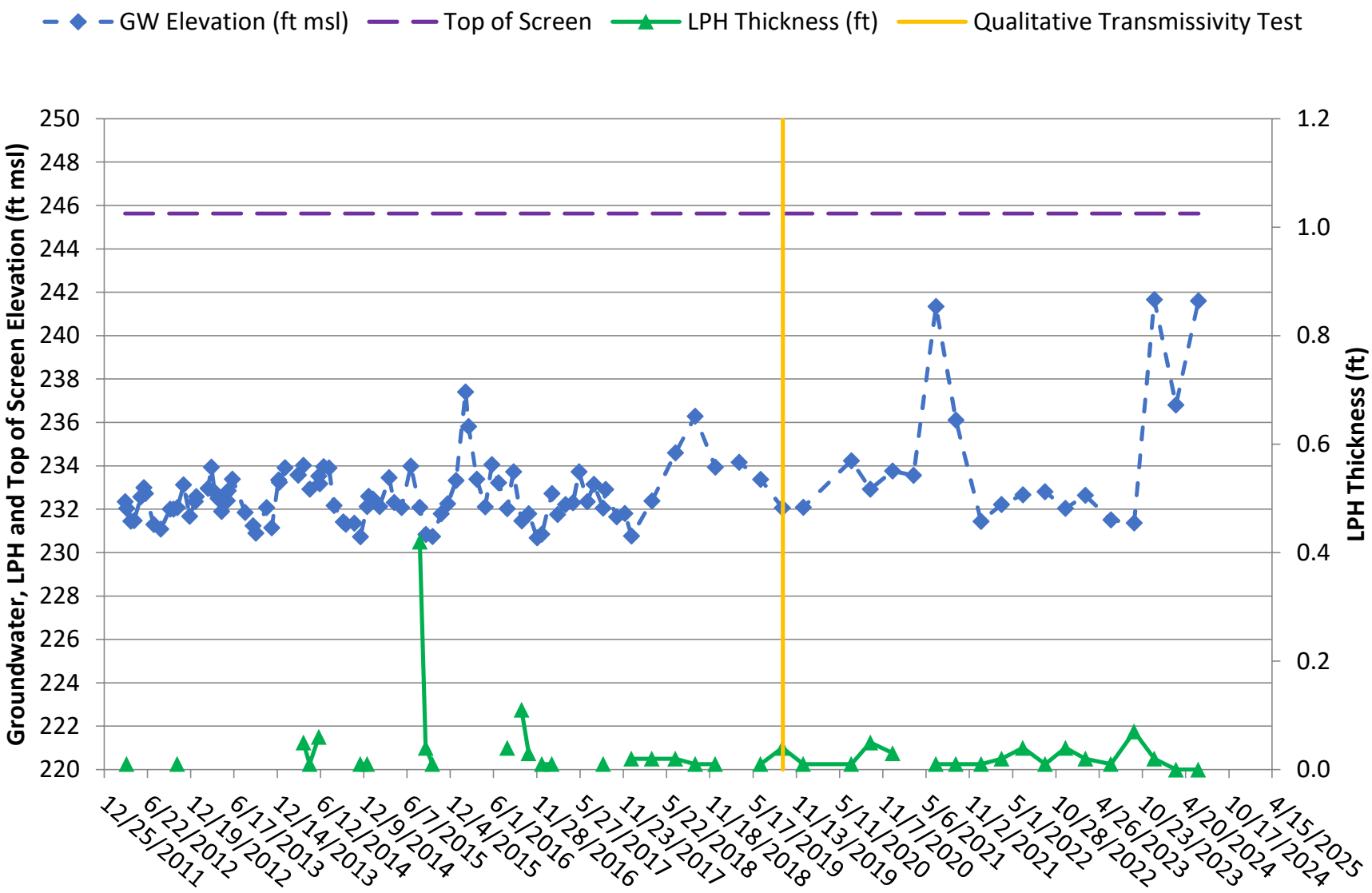
LPH and Groundwater Elevations and LPH Recovery: MW-59
March 21, 2012 through June 12, 2024
CSXT Brunswick Yard, Brunswick, Maryland



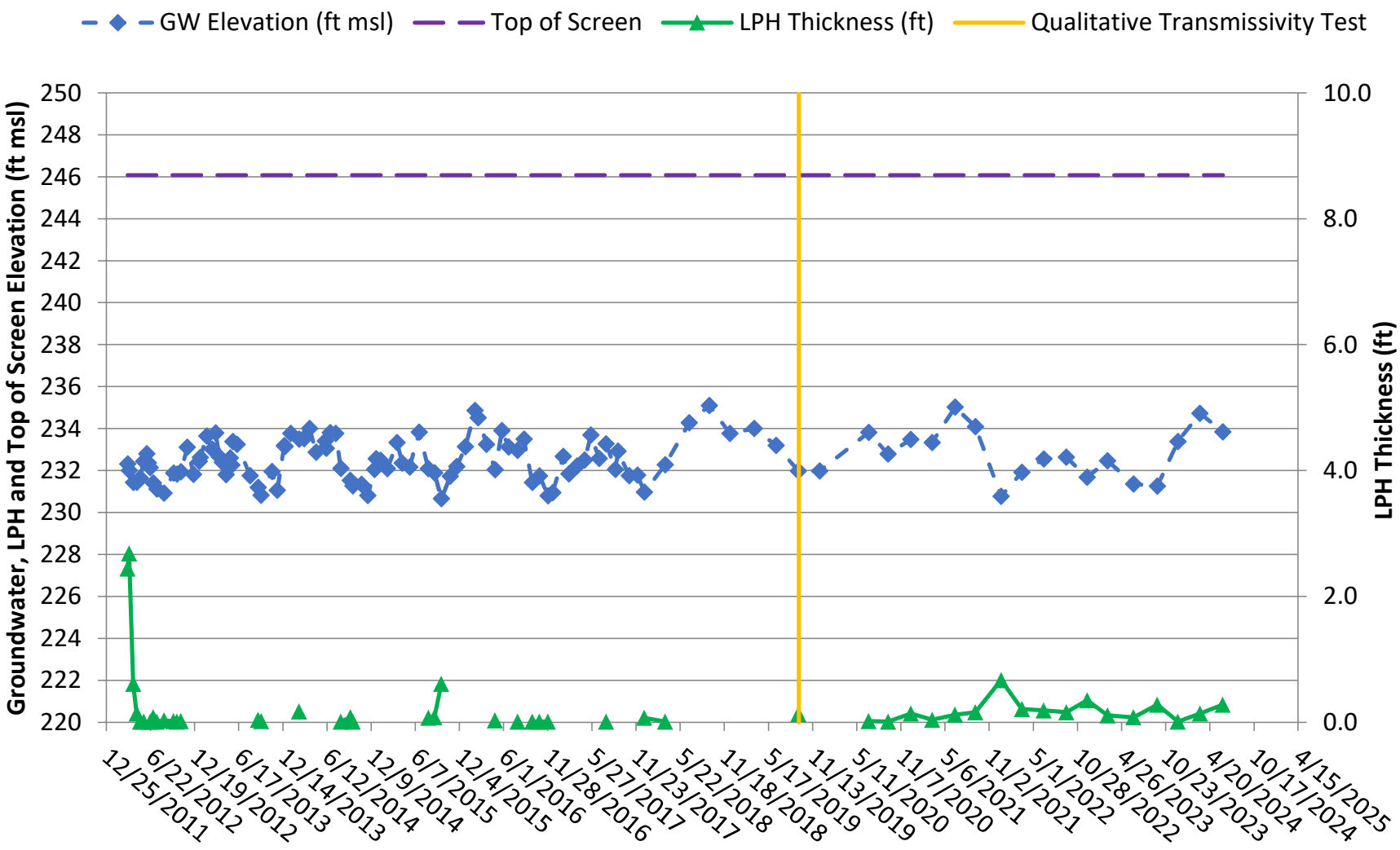
LPH and Groundwater Elevations and LPH Recovery: MW-60
March 21, 2012 through June 12, 2024
CSXT Brunswick Yard, Brunswick, Maryland



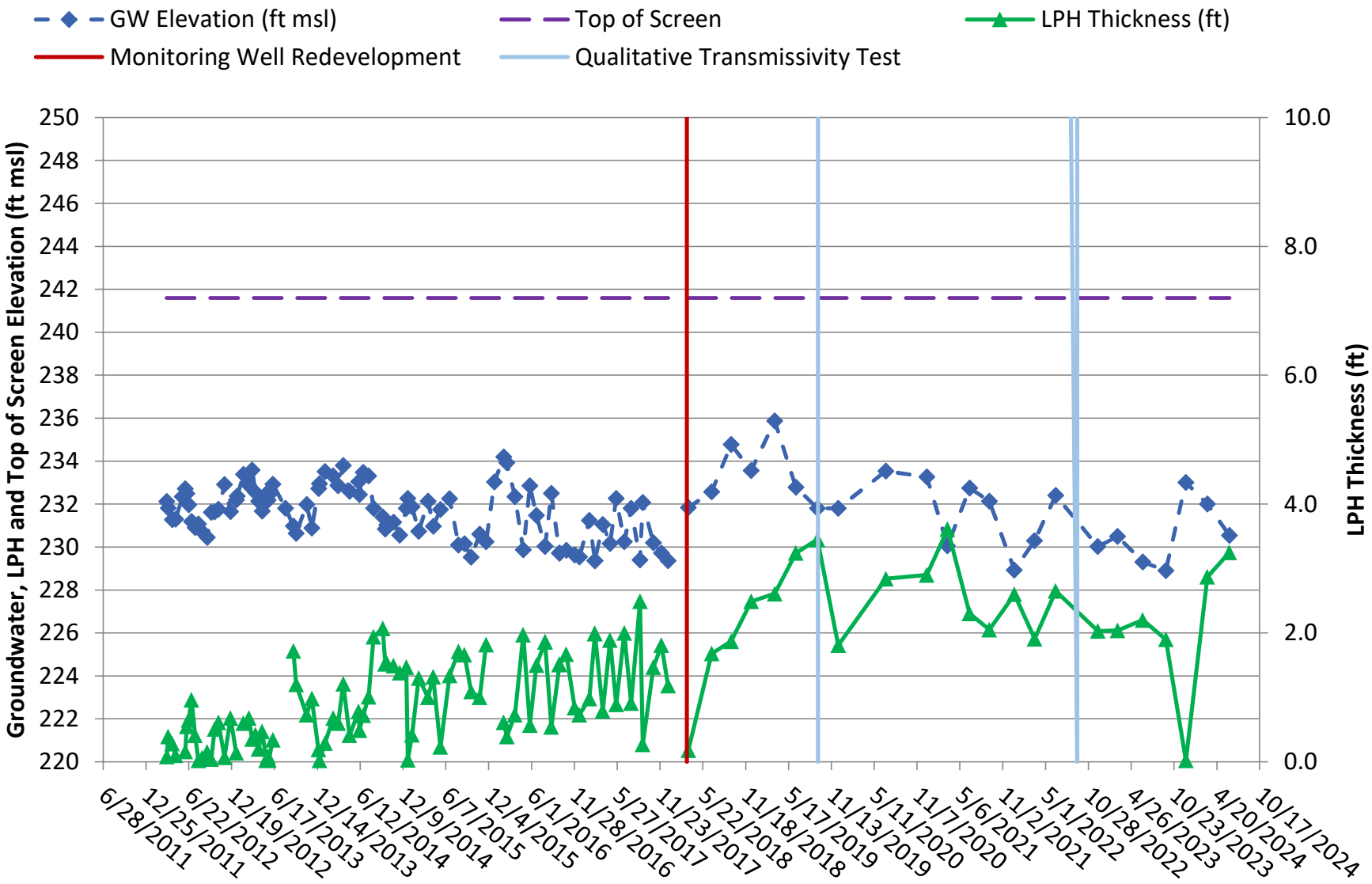
LPH and Groundwater Elevations and LPH Recovery: MW-61
March 21, 2012 through June 12, 2024
CSXT Brunswick Yard, Brunswick, Maryland



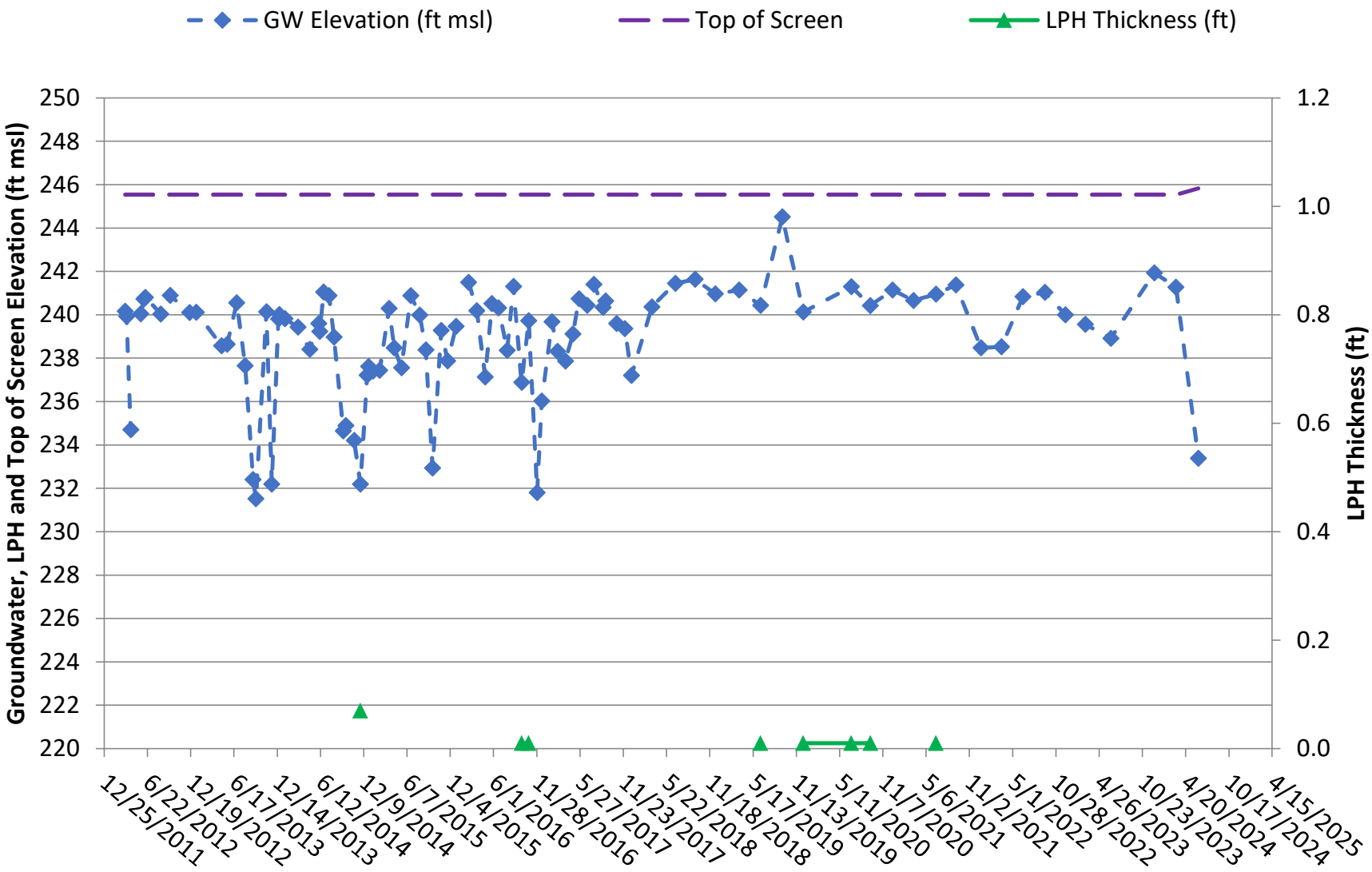
LPH and Groundwater Elevations and LPH Recovery: MW-62
March 21, 2012 through June 12, 2024
CSXT Brunswick Yard, Brunswick, Maryland



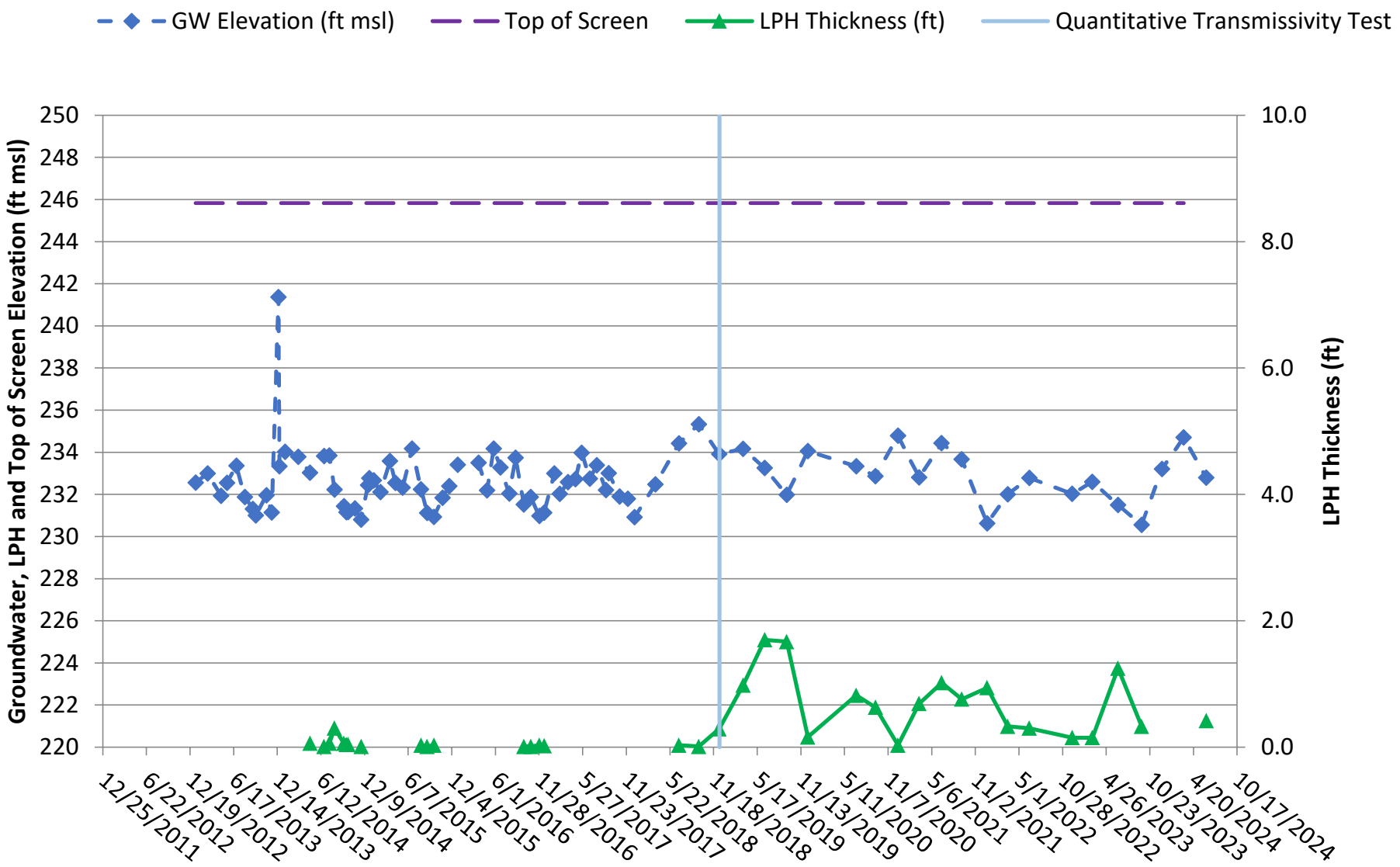
LPH and Groundwater Elevations and LPH Recovery: MW-63
March 21, 2012 through June 12, 2024
CSXT Brunswick Yard, Brunswick, Maryland



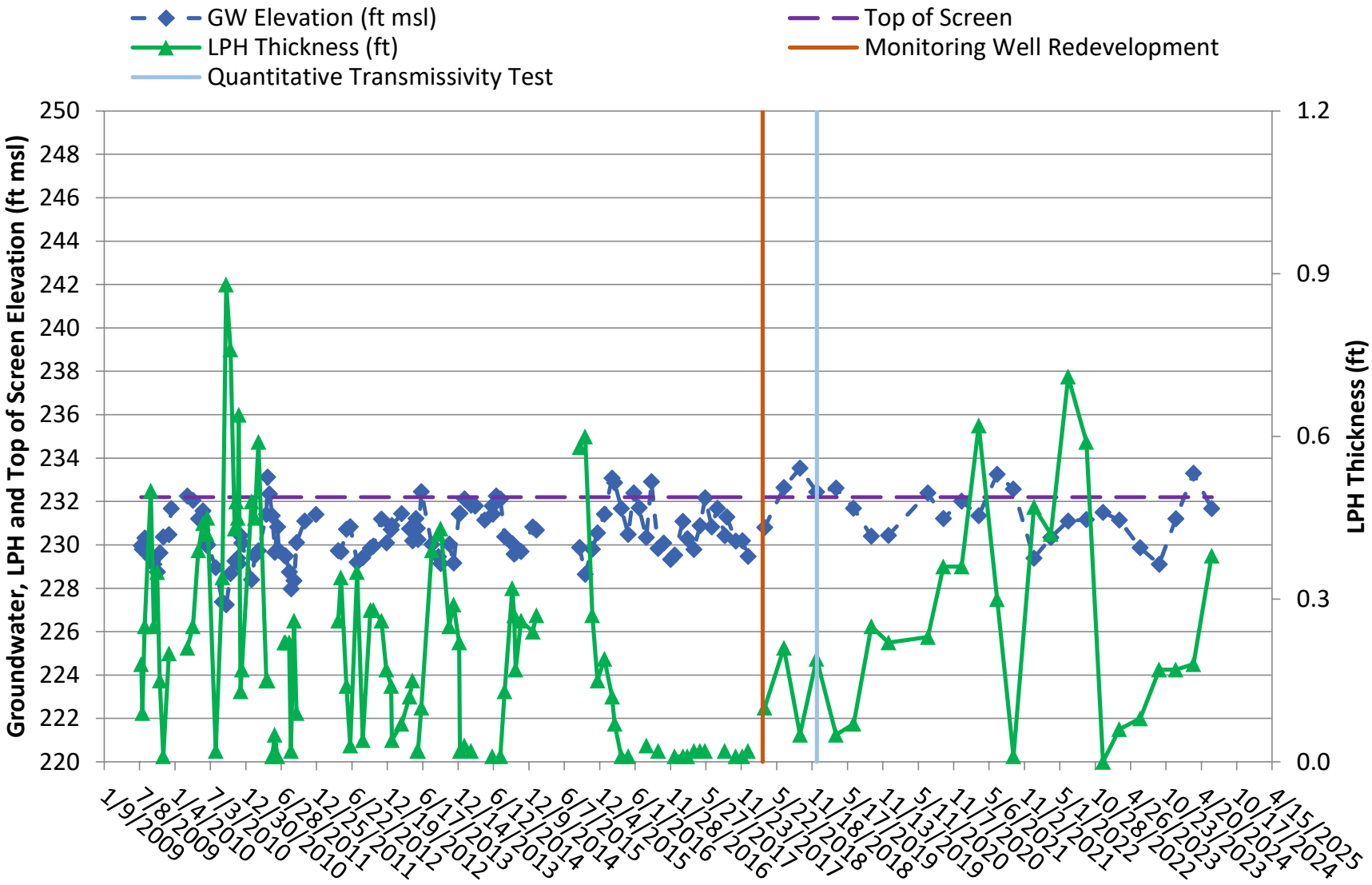
LPH and Groundwater Elevations and LPH Recovery: MW-65
March 21, 2012 through June 12, 2024
CSXT Brunswick Yard, Brunswick, Maryland



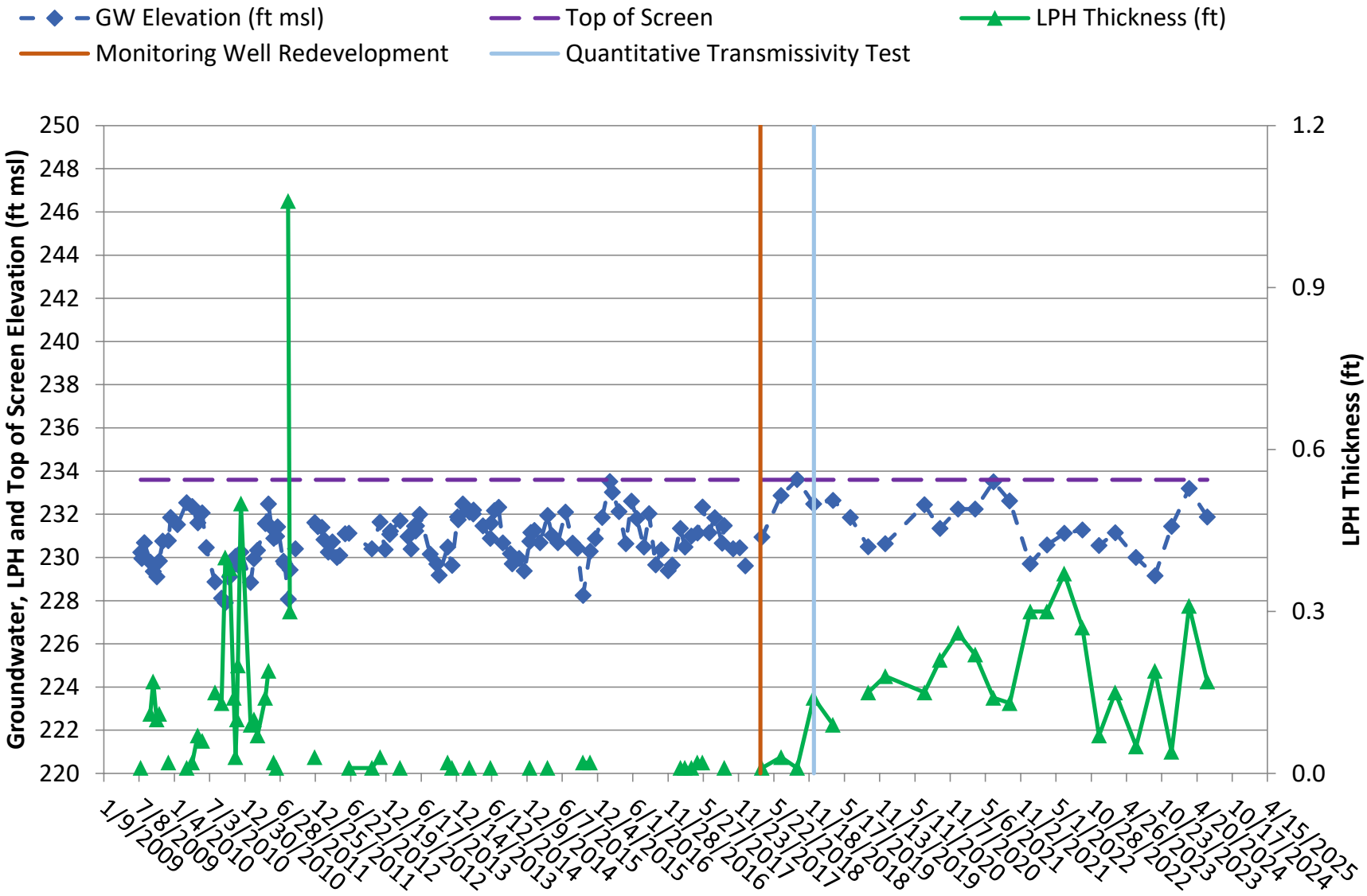
LPH and Groundwater Elevations and LPH Recovery: MW-67
Janurary 11, 2013 through JUne 12, 2024
CSXT Brunswick Yard, Brunswick, Maryland



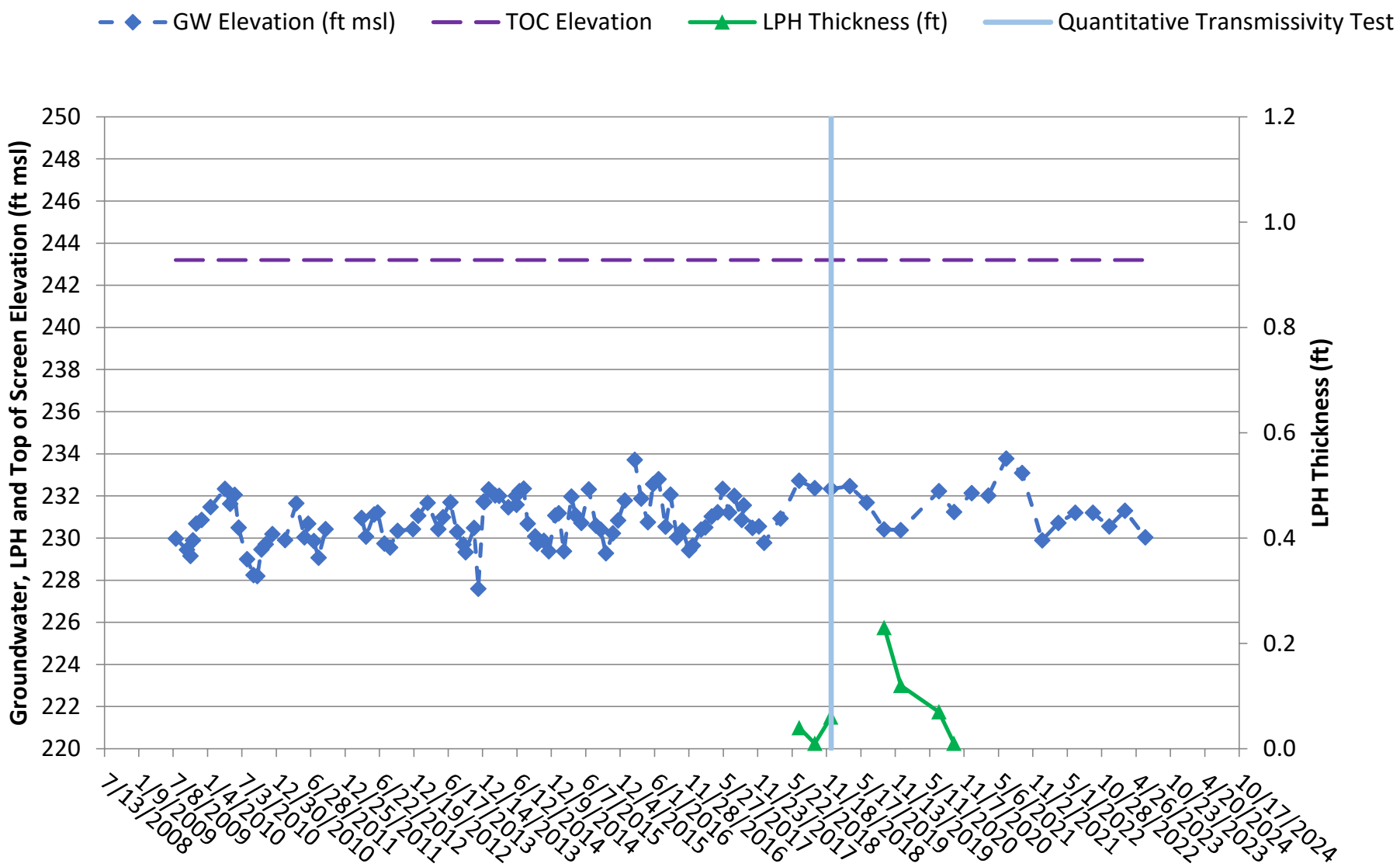
LPH and Groundwater Elevations and LPH Recovery: EW-3
July 12, 2009 through June 12, 2024
CSXT Brunswick Yard, Brunswick, Maryland



LPH and Groundwater Elevations and LPH Recovery: EW-5
July 12, 2009 through June 12, 2024
CSXT Brunswick Yard, Brunswick, Maryland

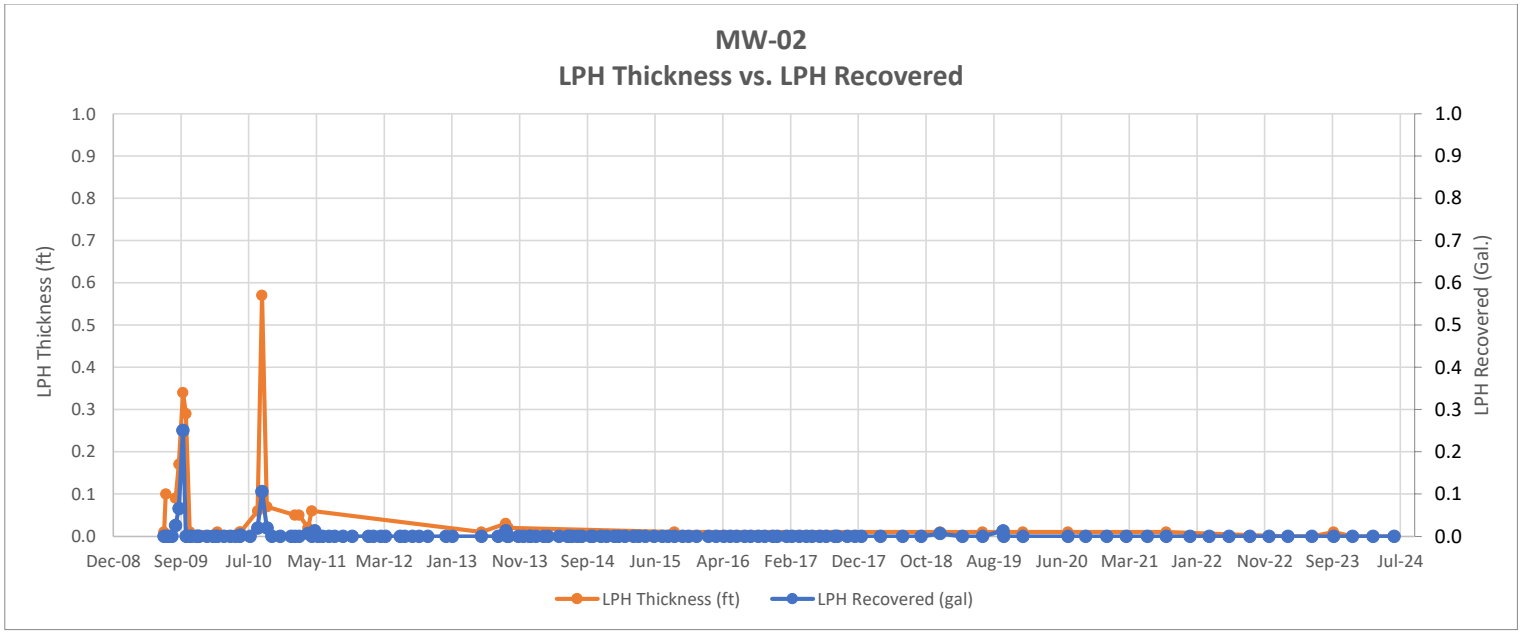


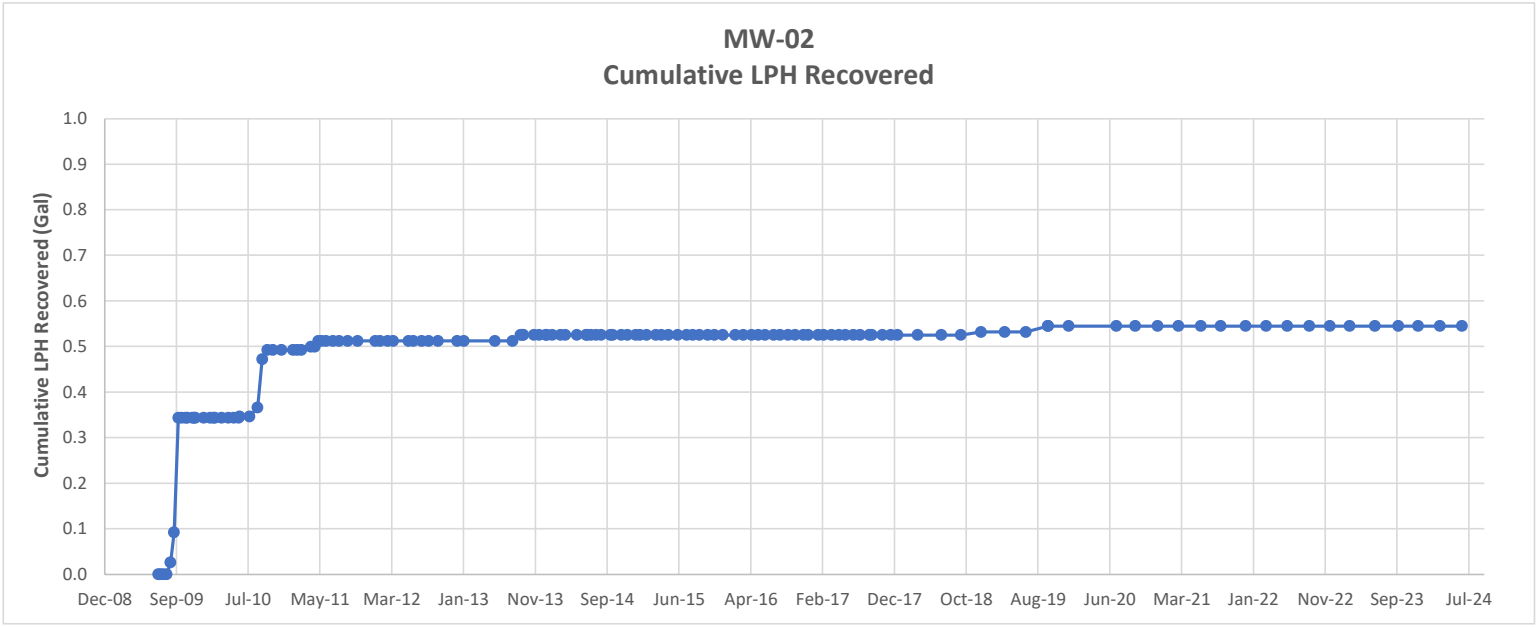
LPH and Groundwater Elevations and LPH Recovery: EW-07
July 22, 2009 through February 28, 2023
CSXT Brunswick Yard, Brunswick, Maryland

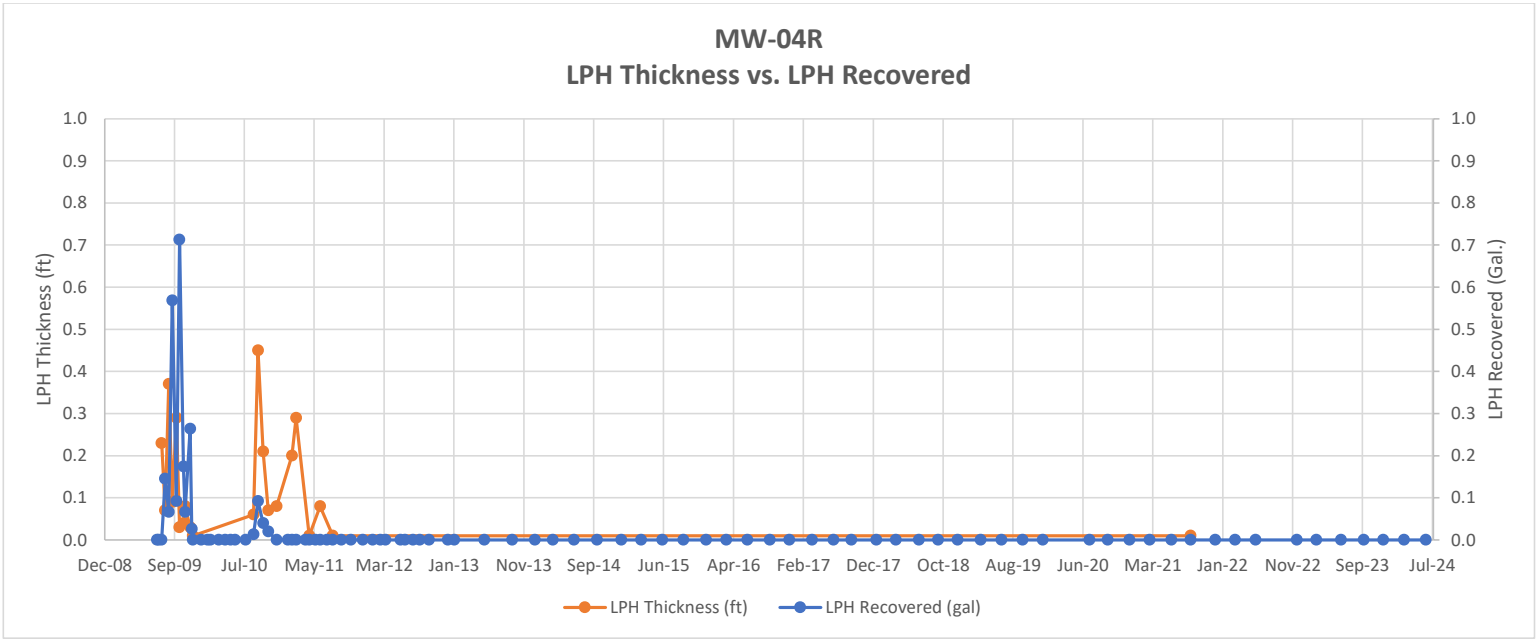


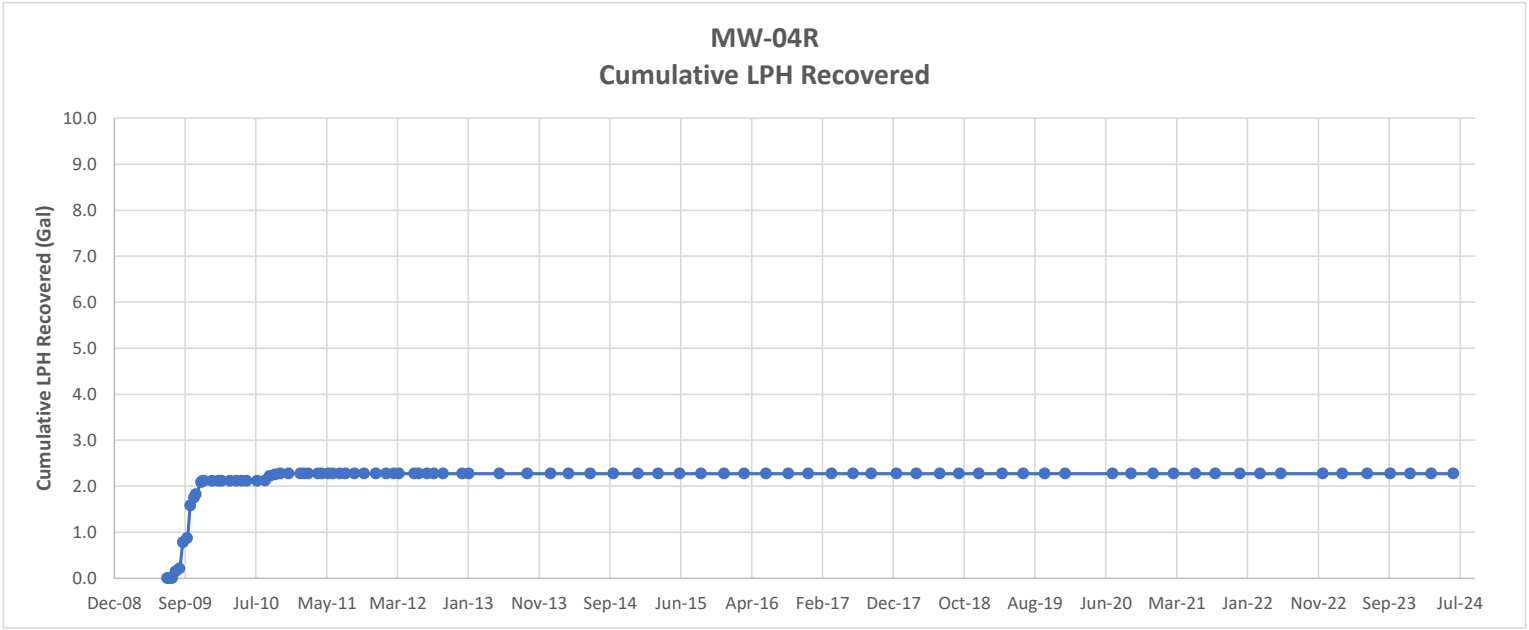
Attachment 2

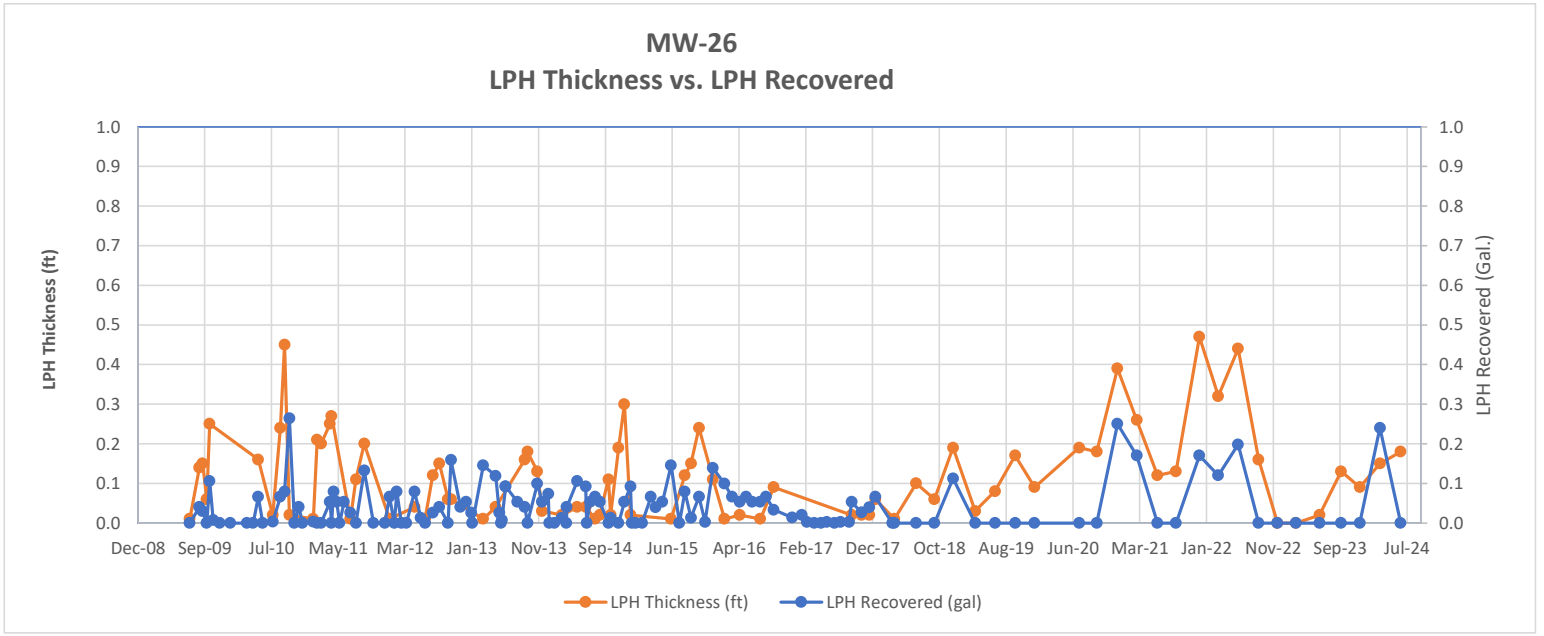
LPH Recovery Data

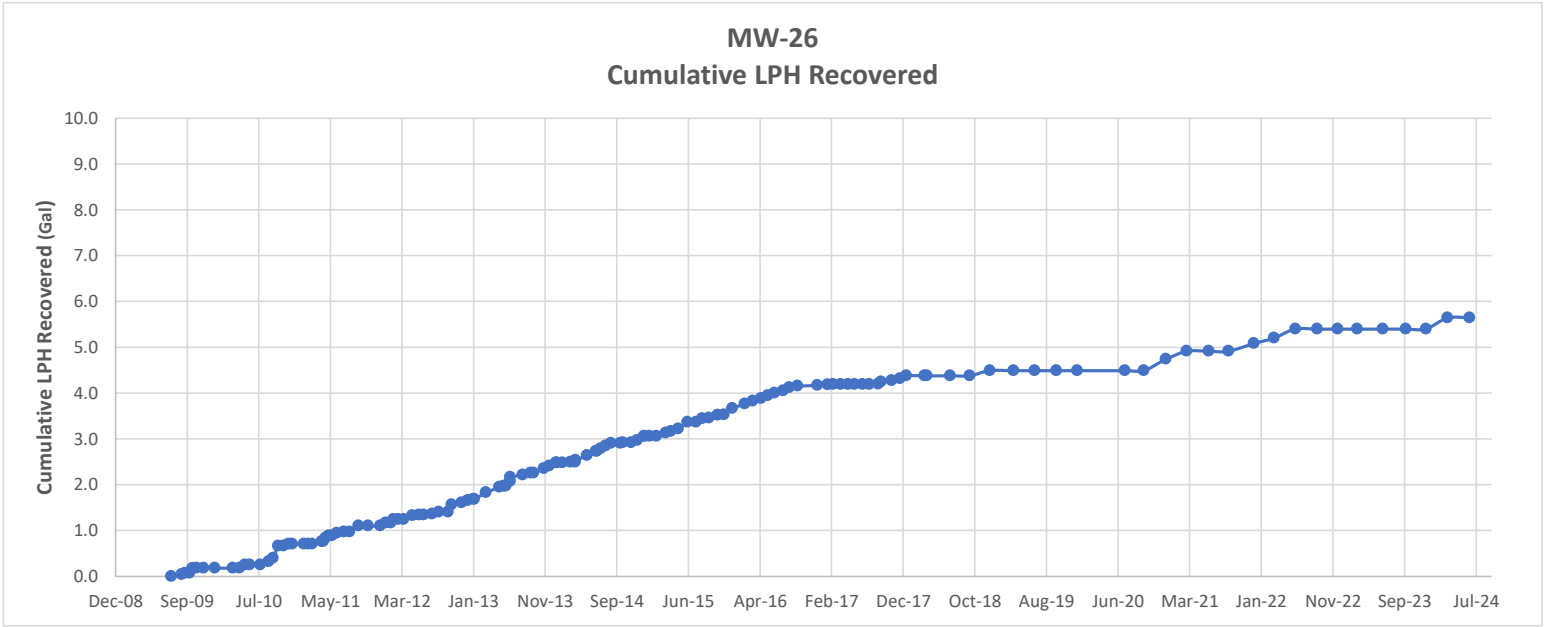

MW-02
LPH Thickness vs. LPH Recovered
LPH Thickness (ft)
LPH Recovered (Gal.)
1.0
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0.0
Dec-08
Sep-09
Jul-10
May-11
Mar-12
Jan-13
Nov-13
Sep-14
Jun-15
Apr-16
Feb-17
Dec-17
Oct-18
Aug-19
Jun-20
Mar-21
Jan-22
Nov-22
Sep-23
Jul-24
LPH Thickness (ft)
LPH Recovered (gal)

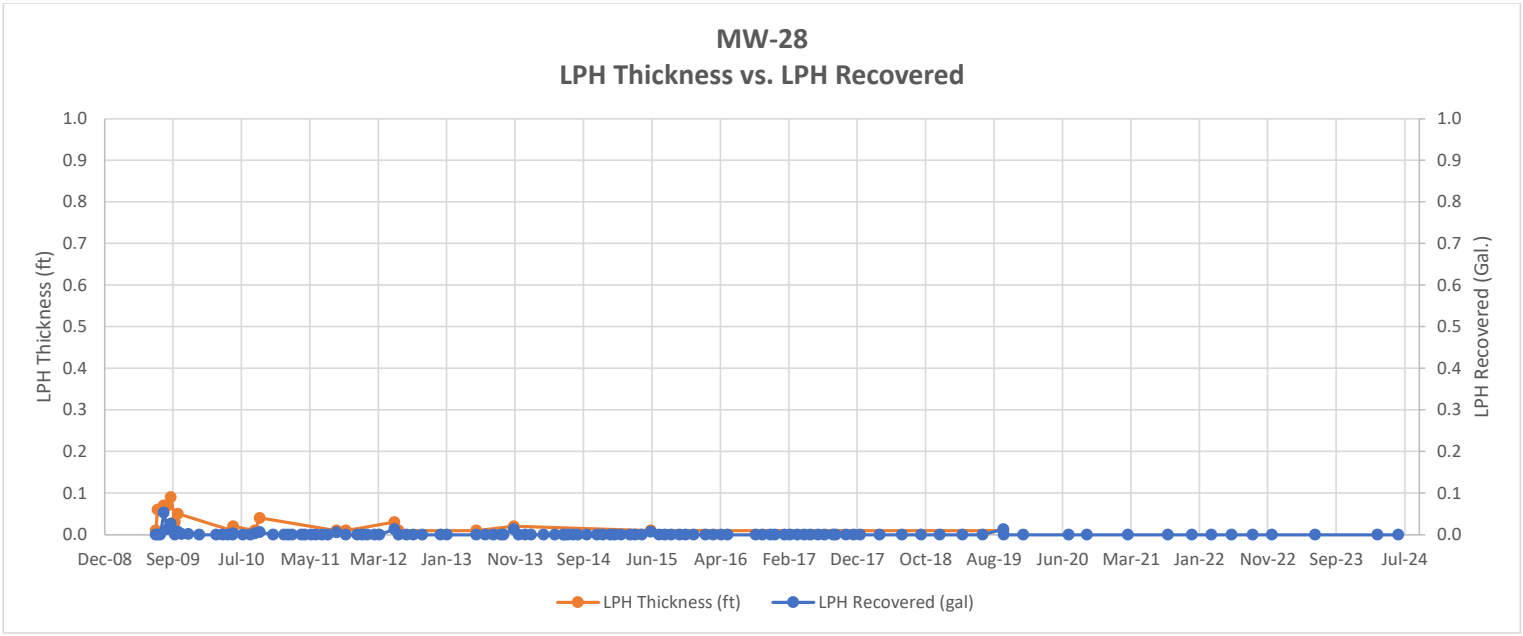

MW-02
Cumulative LPH Recovered
Cumulative LPH Recovered (Gal)
1.0
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0.0
Dec-08
Sep-09
Jul-10
May-11
Mar-12
Jan-13
Nov-13
Sep-14
Jun-15
Apr-16
Feb-17
Dec-17
Oct-18
Aug-19
Jun-20
Mar-21
Jan-22
Nov-22
Sep-23
Jul-24

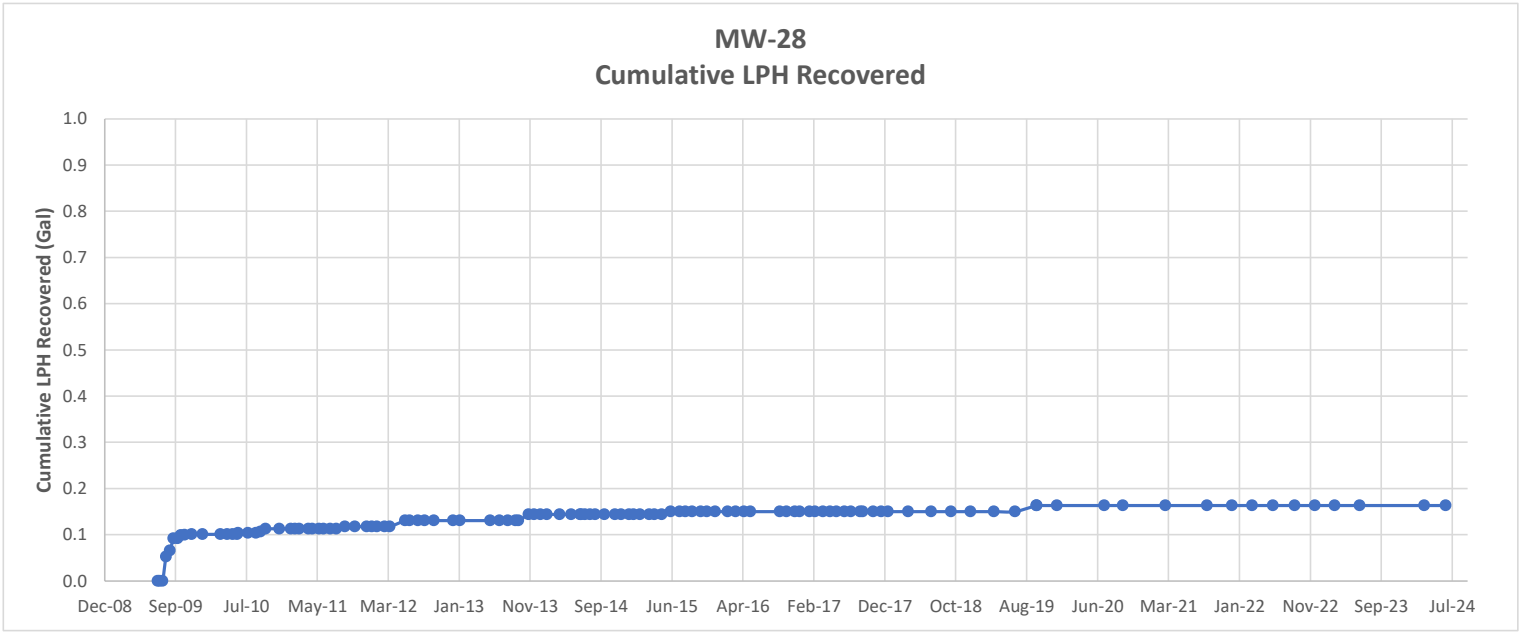

MW-04R
LPH Thickness vs. LPH Recovered
LPH Thickness (ft)
LPH Recovered (Gal.)
1.0
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0.0
Dec-08
Sep-09
Jul-10
May-11
Mar-12
Jan-13
Nov-13
Sep-14
Jun-15
Apr-16
Feb-17
Dec-17
Oct-18
Aug-19
Jun-20
Mar-21
Jan-22
Nov-22
Sep-23
Jul-24
LPH Thickness (ft)
LPH Recovered (gal)

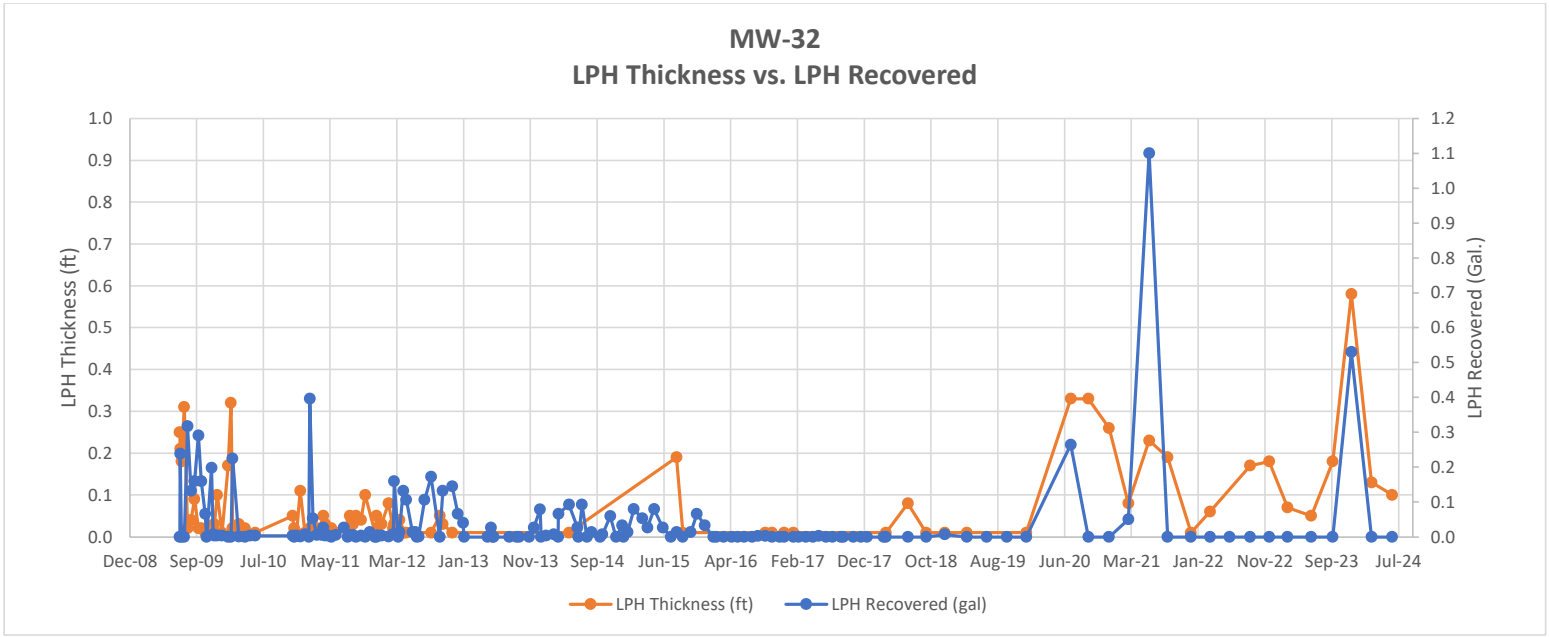

MW-04R
Cumulative LPH Recovered
Cumulative LPH Recovered (Gal)
10.0
9.0
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
Dec-08
Sep-09
Jul-10
May-11
Mar-12
Jan-13
Nov-13
Sep-14
Jun-15
Apr-16
Feb-17
Dec-17
Oct-18
Aug-19
Jun-20
Mar-21
Jan-22
Nov-22
Sep-23
Jul-24

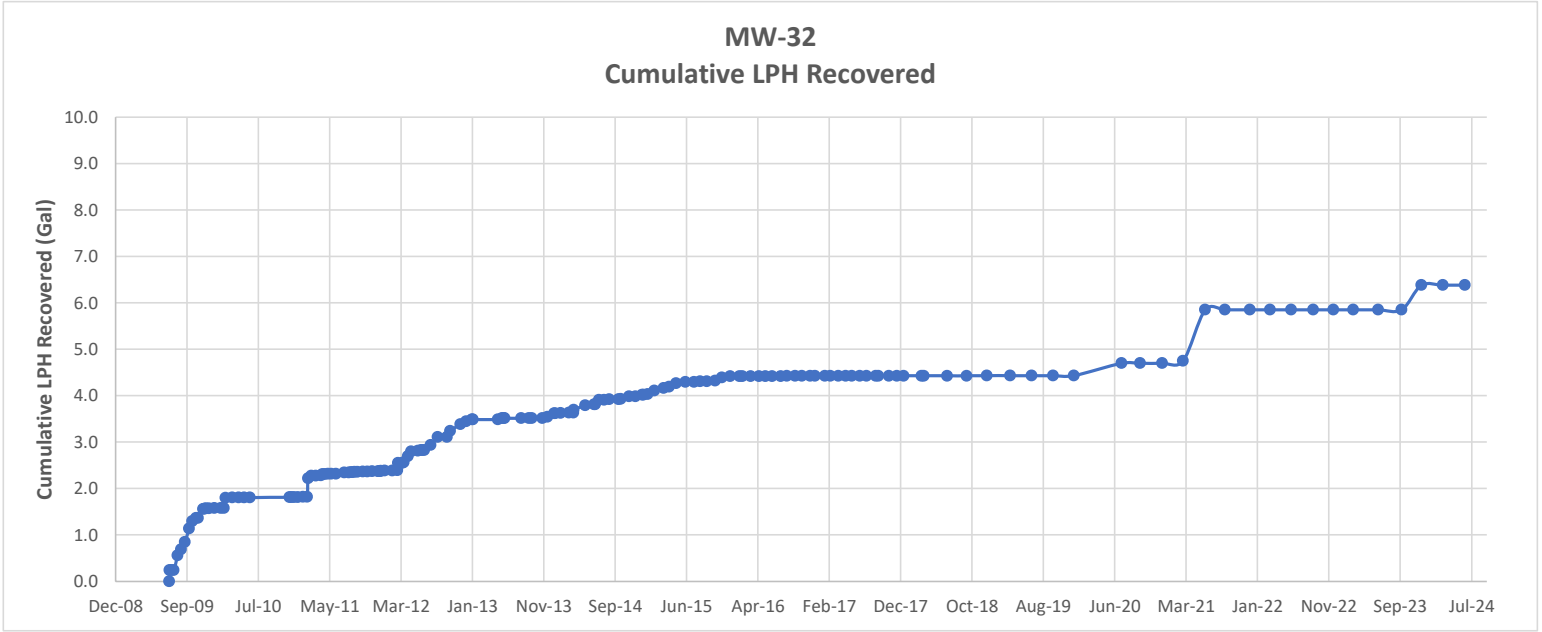

MW-26
LPH Thickness vs. LPH Recovered
LPH Thickness (ft)
LPH Recovered (Gal.)
1.0
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0.0
Dec-08
Sep-09
Jul-10
May-11
Mar-12
Jan-13
Nov-13
Sep-14
Jun-15
Apr-16
Feb-17
Dec-17
Oct-18
Aug-19
Jun-20
Mar-21
Jan-22
Nov-22
Sep-23
Jul-24
LPH Thickness (ft)
LPH Recovered (gal)

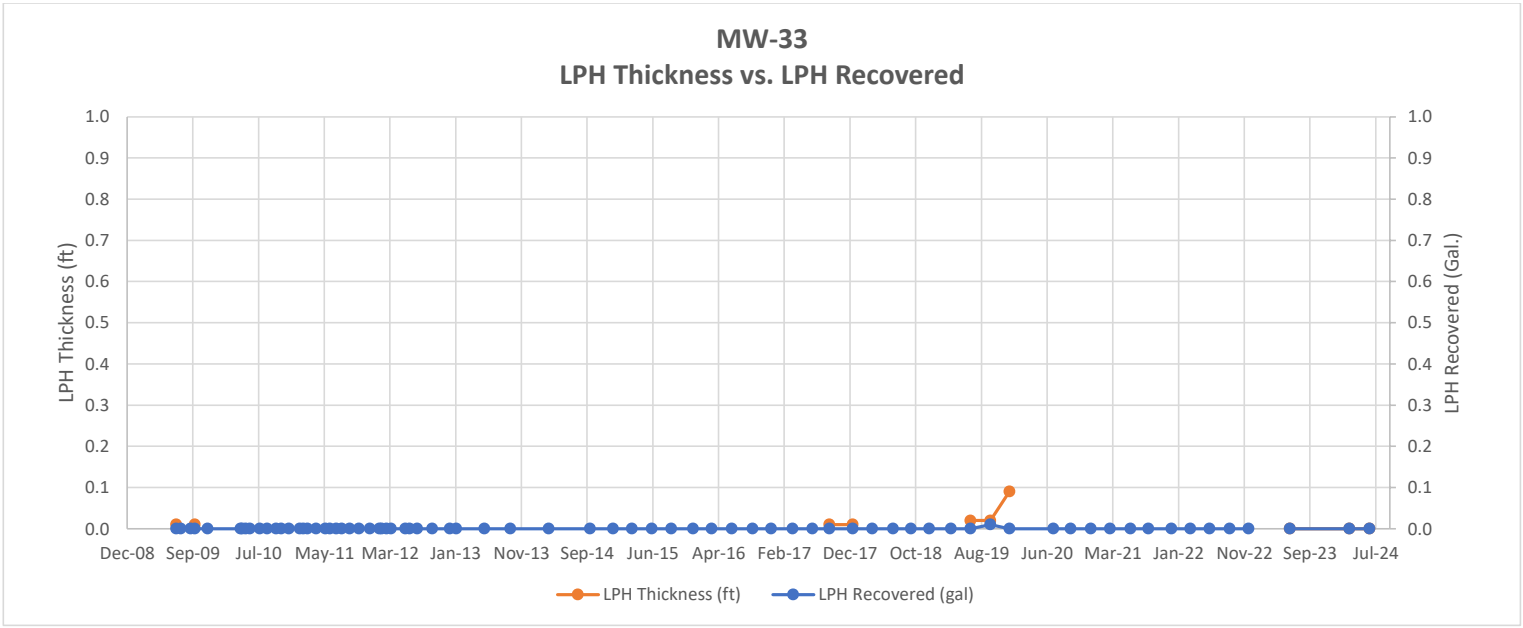

MW-26
Cumulative LPH Recovered
Cumulative LPH Recovered (Gal)
10.0
9.0
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
Dec-08
Sep-09
Jul-10
May-11
Mar-12
Jan-13
Nov-13
Sep-14
Jun-15
Apr-16
Feb-17
Dec-17
Oct-18
Aug-19
Jun-20
Mar-21
Jan-22
Nov-22
Sep-23
Jul-24

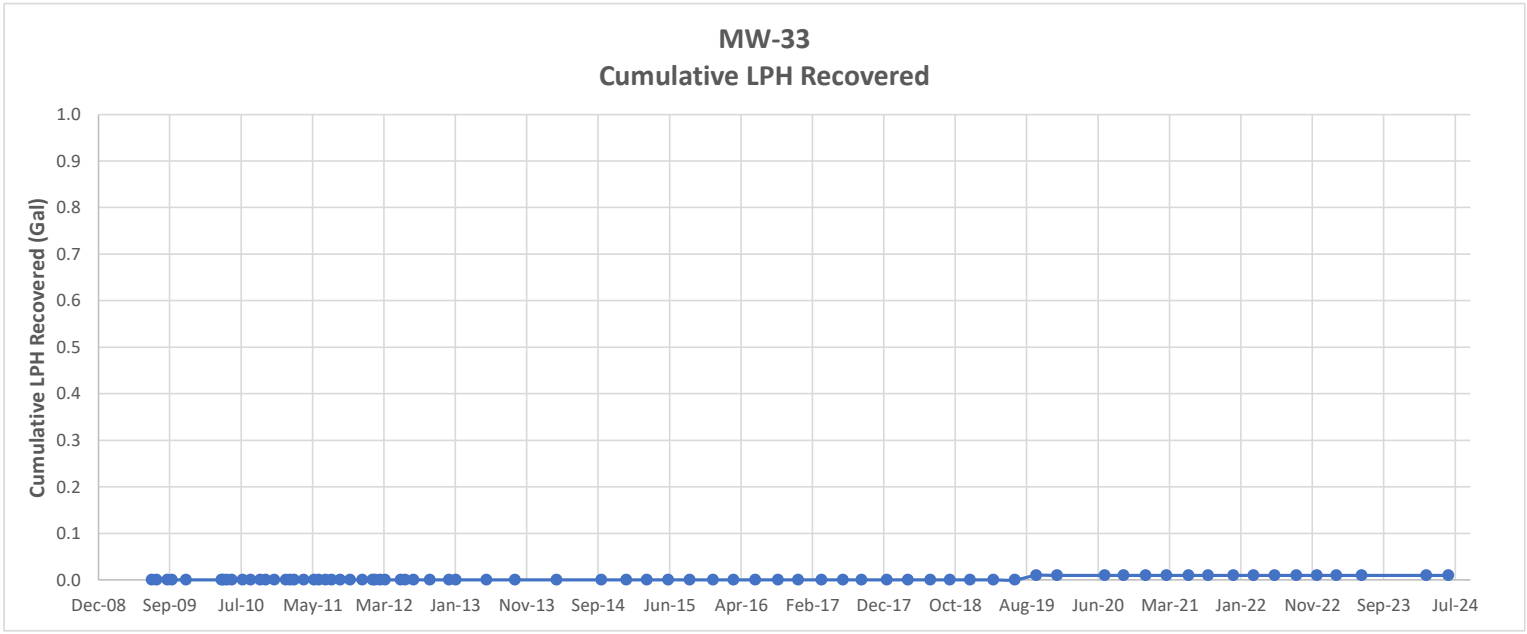

MW-28
LPH Thickness vs. LPH Recovered
LPH Thickness (ft)
LPH Recovered (Gal.)
1.0
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0.0
Dec-08
Sep-09
Jul-10
May-11
Mar-12
Jan-13
Nov-13
Sep-14
Jun-15
Apr-16
Feb-17
Dec-17
Oct-18
Aug-19
Jun-20
Mar-21
Jan-22
Nov-22
Sep-23
Jul-24
LPH Thickness (ft)
LPH Recovered (gal)

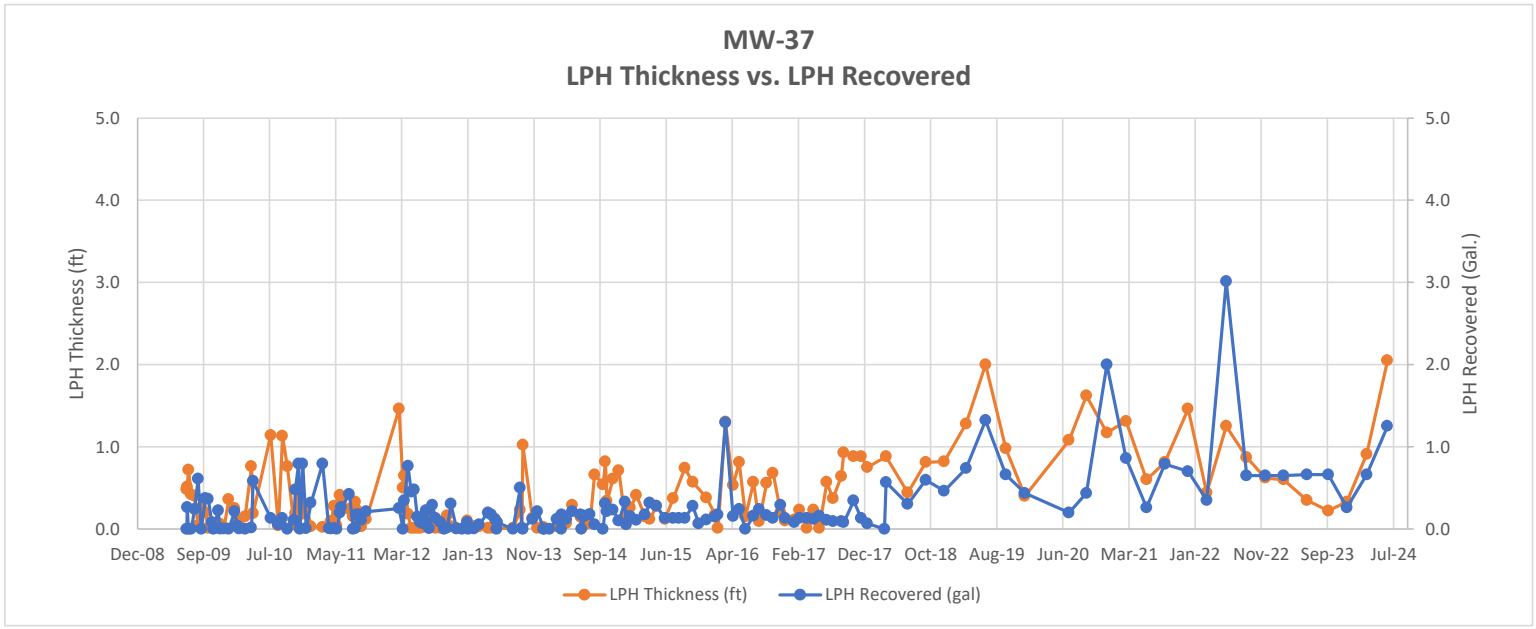

MW-28
Cumulative LPH Recovered
Cumulative LPH Recovered (Gal)
1.0
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0.0
Dec-08
Sep-09
Jul-10
May-11
Mar-12
Jan-13
Nov-13
Sep-14
Jun-15
Apr-16
Feb-17
Dec-17
Oct-18
Aug-19
Jun-20
Mar-21
Jan-22
Nov-22
Sep-23
Jul-24

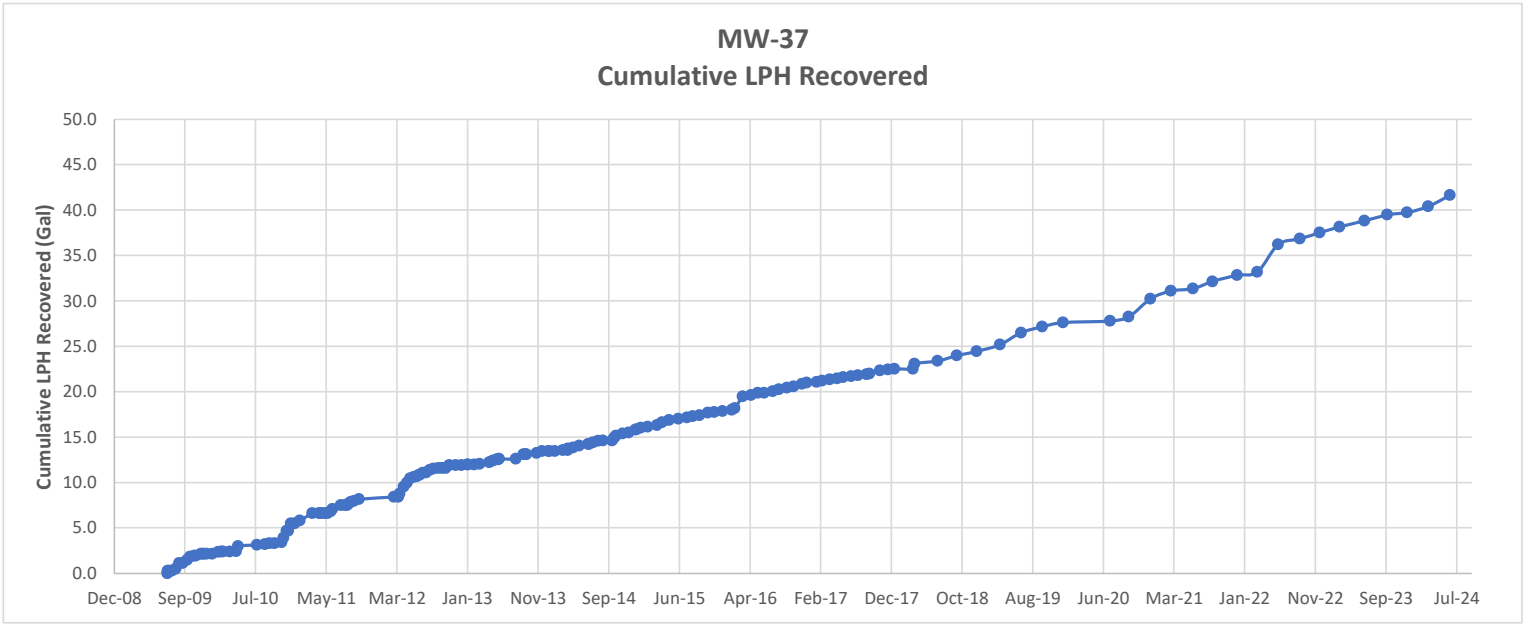

MW-32
LPH Thickness vs. LPH Recovered
LPH Thickness (ft)
LPH Recovered (Gal.)
1.0
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0.0
1.2
1.1
1.0
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0.0
Dec-08
Sep-09
Jul-10
May-11
Mar-12
Jan-13
Nov-13
Sep-14
Jun-15
Apr-16
Feb-17
Dec-17
Oct-18
Aug-19
Jun-20
Mar-21
Jan-22
Nov-22
Sep-23
Jul-24
LPH Thickness (ft)
LPH Recovered (gal)

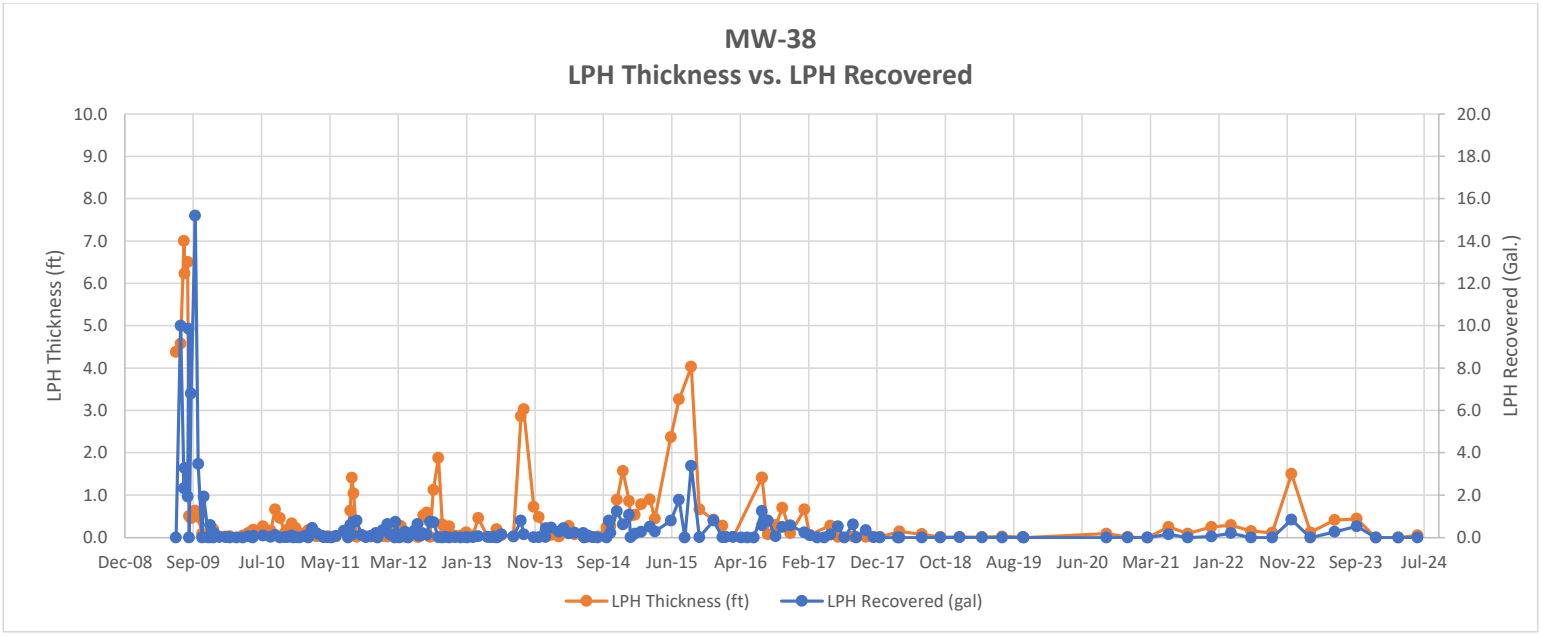

MW-32
Cumulative LPH Recovered
Cumulative LPH Recovered (Gal)
10.0
9.0
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
Dec-08
Sep-09
Jul-10
May-11
Mar-12
Jan-13
Nov-13
Sep-14
Jun-15
Apr-16
Feb-17
Dec-17
Oct-18
Aug-19
Jun-20
Mar-21
Jan-22
Nov-22
Sep-23
Jul-24

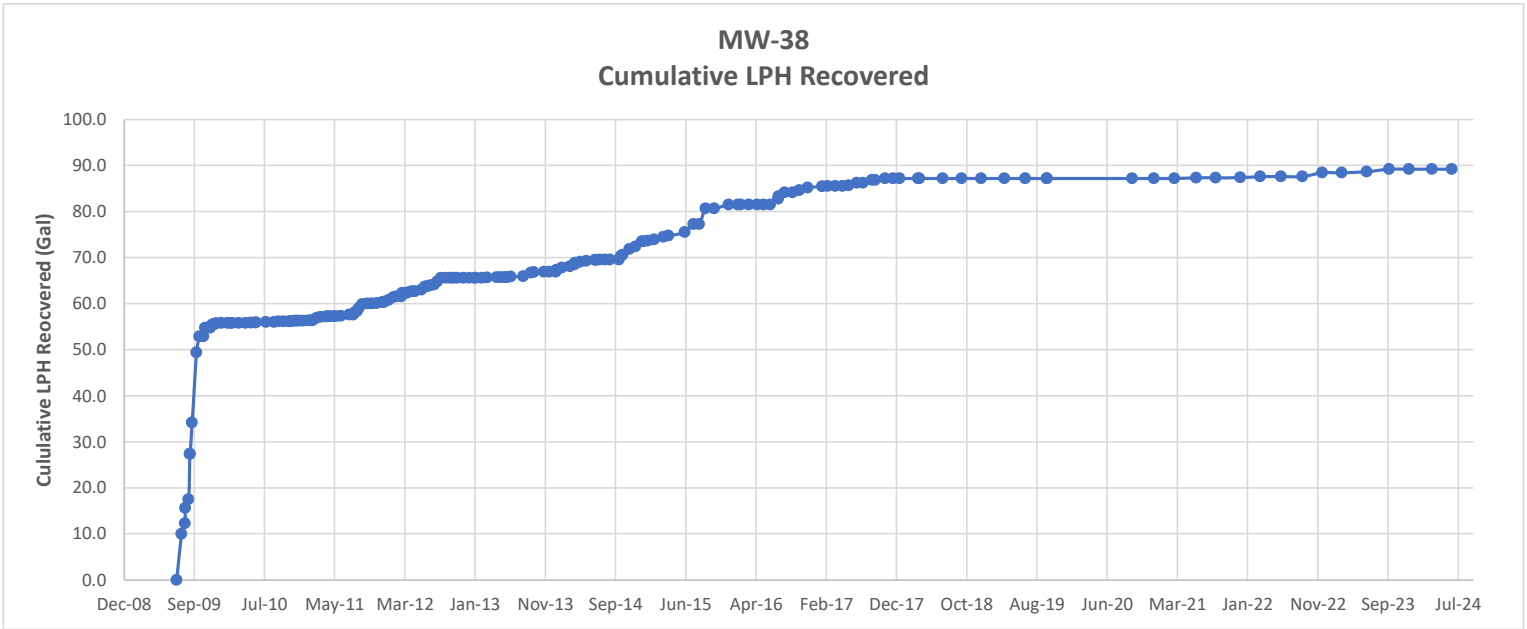

MW-33
LPH Thickness vs. LPH Recovered
LPH Thickness (ft)
LPH Recovered (Gal.)
1.0
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0.0
Dec-08 Sep-09 Jul-10 May-11 Mar-12 Jan-13 Nov-13 Sep-14 Jun-15 Apr-16 Feb-17 Dec-17 Oct-18 Aug-19 Jun-20 Mar-21 Jan-22 Nov-22 Sep-23 Jul-24
LPH Thickness (ft)
LPH Recovered (gal)

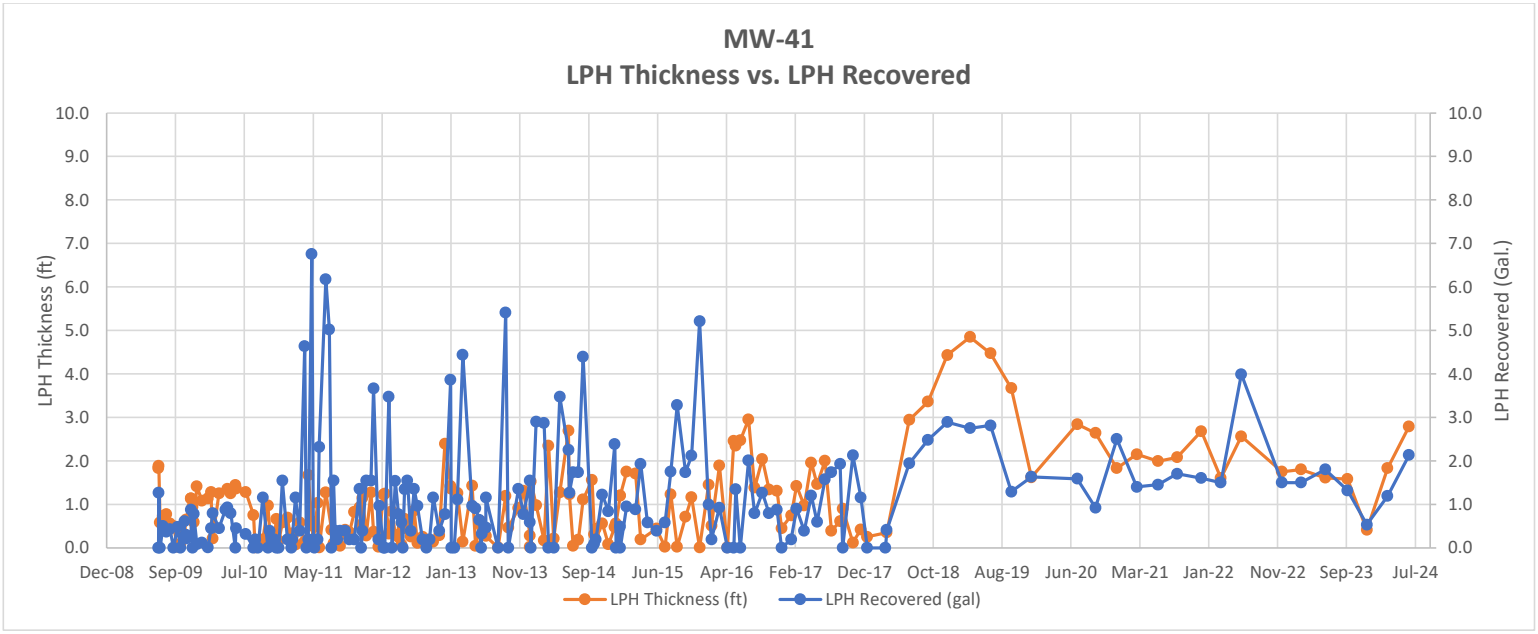

MW-33
Cumulative LPH Recovered
Cumulative LPH Recovered (Gal)
1.0
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0.0
Dec-08 Sep-09 Jul-10 May-11 Mar-12 Jan-13 Nov-13 Sep-14 Jun-15 Apr-16 Feb-17 Dec-17 Oct-18 Aug-19 Jun-20 Mar-21 Jan-22 Nov-22 Sep-23 Jul-24

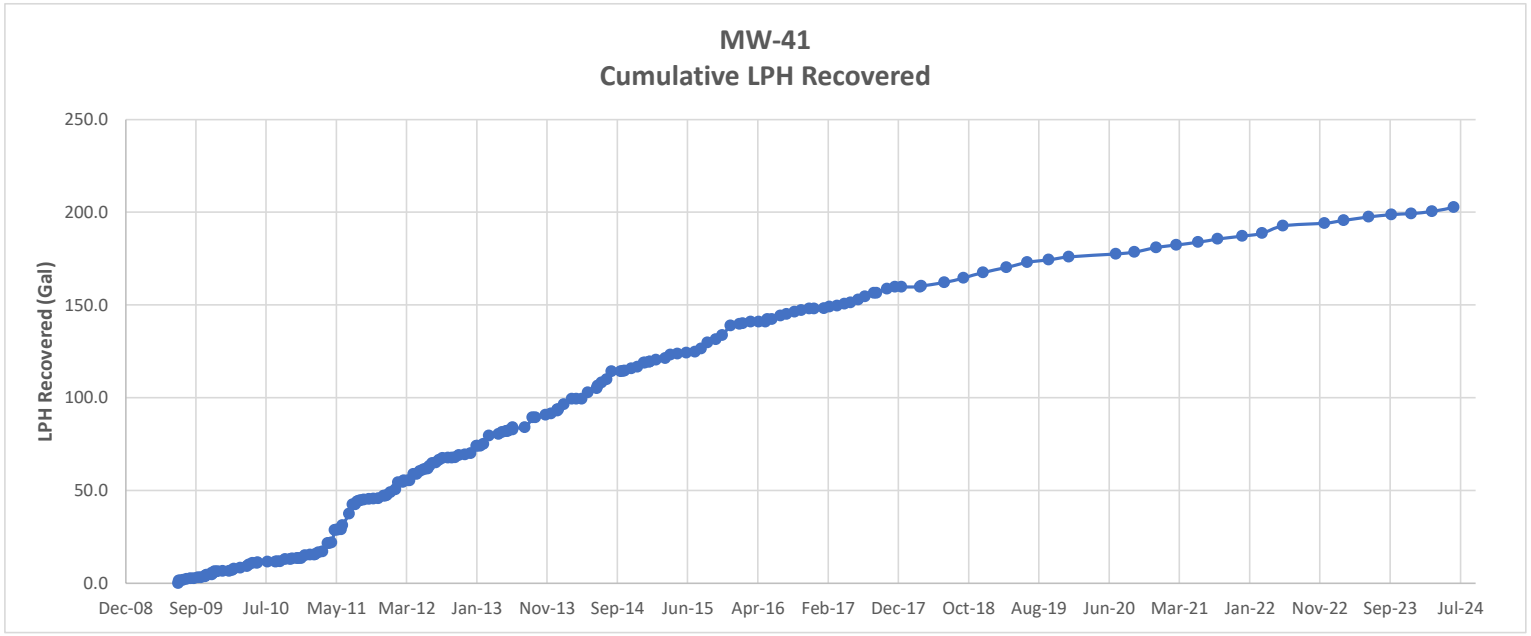

MW-37
LPH Thickness vs. LPH Recovered
LPH Thickness (ft)
LPH Recovered (Gal.)
5.0
4.0
3.0
2.0
1.0
0.0
Dec-08
Sep-09
Jul-10
May-11
Mar-12
Jan-13
Nov-13
Sep-14
Jun-15
Apr-16
Feb-17
Dec-17
Oct-18
Aug-19
Jun-20
Mar-21
Jan-22
Nov-22
Sep-23
Jul-24
LPH Thickness (ft)
LPH Recovered (gal)

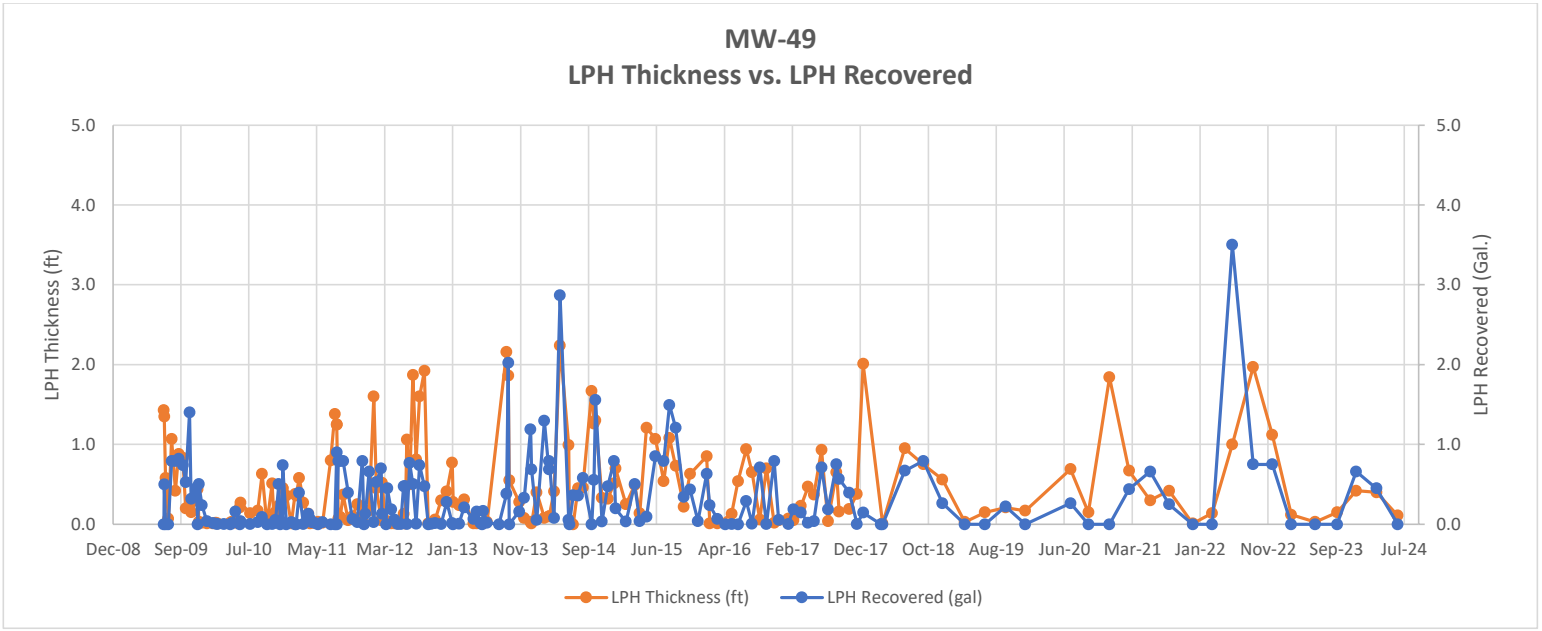

MW-37
Cumulative LPH Recovered
Cumulative LPH Recovered (Gal)
50.0
45.0
40.0
35.0
30.0
25.0
20.0
15.0
10.0
5.0
0.0
Dec-08
Sep-09
Jul-10
May-11
Mar-12
Jan-13
Nov-13
Sep-14
Jun-15
Apr-16
Feb-17
Dec-17
Oct-18
Aug-19
Jun-20
Mar-21
Jan-22
Nov-22
Sep-23
Jul-24

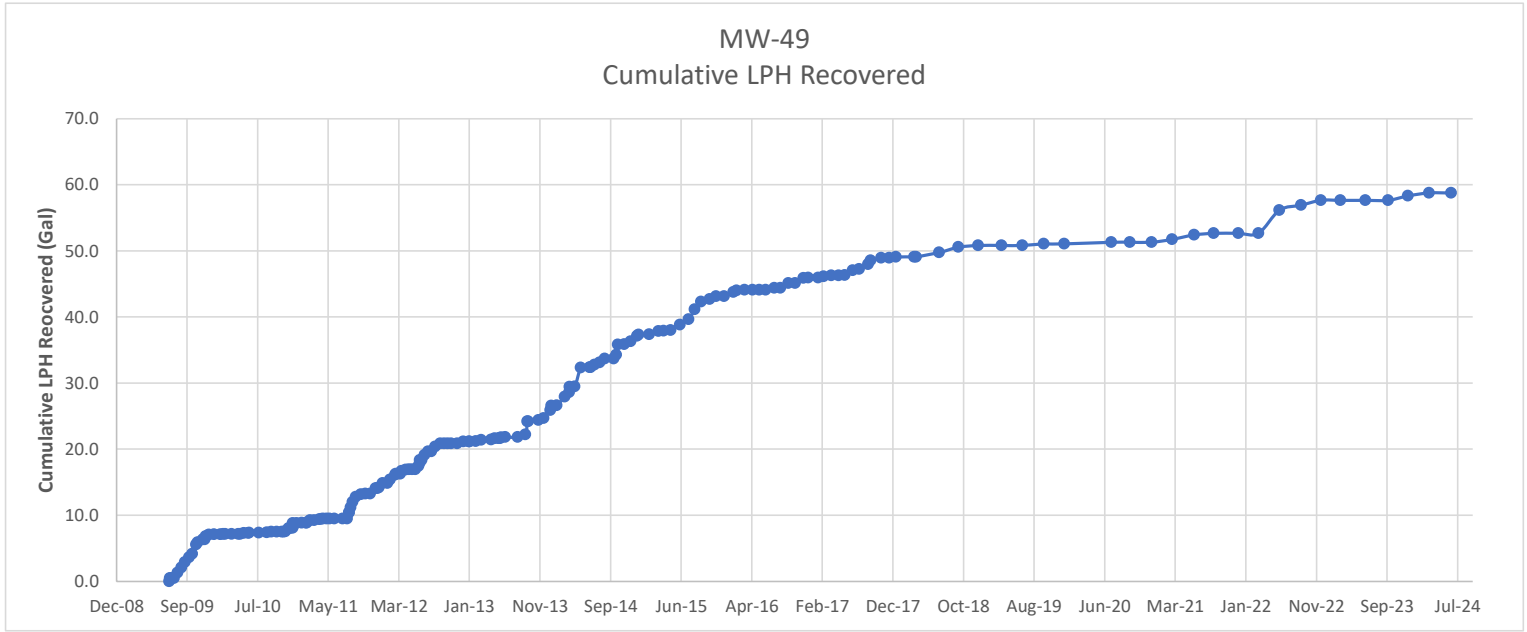

MW-38
LPH Thickness vs. LPH Recovered
LPH Thickness (ft)
LPH Recovered (Gal.)
10.0
9.0
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
20.0
18.0
16.0
14.0
12.0
10.0
8.0
6.0
4.0
2.0
0.0
Dec-08
Sep-09
Jul-10
May-11
Mar-12
Jan-13
Nov-13
Sep-14
Jun-15
Apr-16
Feb-17
Dec-17
Oct-18
Aug-19
Jun-20
Mar-21
Jan-22
Nov-22
Sep-23
Jul-24
LPH Thickness (ft)
LPH Recovered (gal)

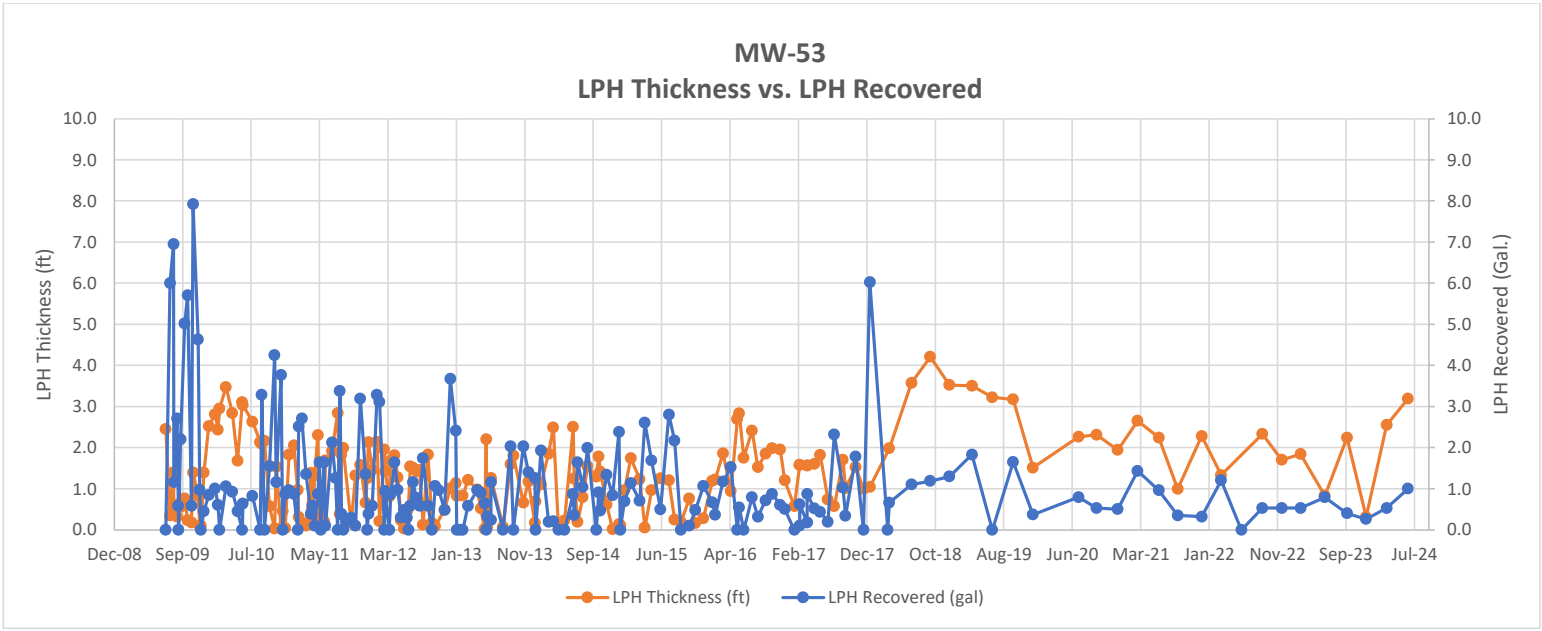

MW-38
Cumulative LPH Recovered
Cululative LPH Reocvered (Gal)
100.0
90.0
80.0
70.0
60.0
50.0
40.0
30.0
20.0
10.0
0.0
Dec-08
Sep-09
Jul-10
May-11
Mar-12
Jan-13
Nov-13
Sep-14
Jun-15
Apr-16
Feb-17
Dec-17
Oct-18
Aug-19
Jun-20
Mar-21
Jan-22
Nov-22
Sep-23
Jul-24

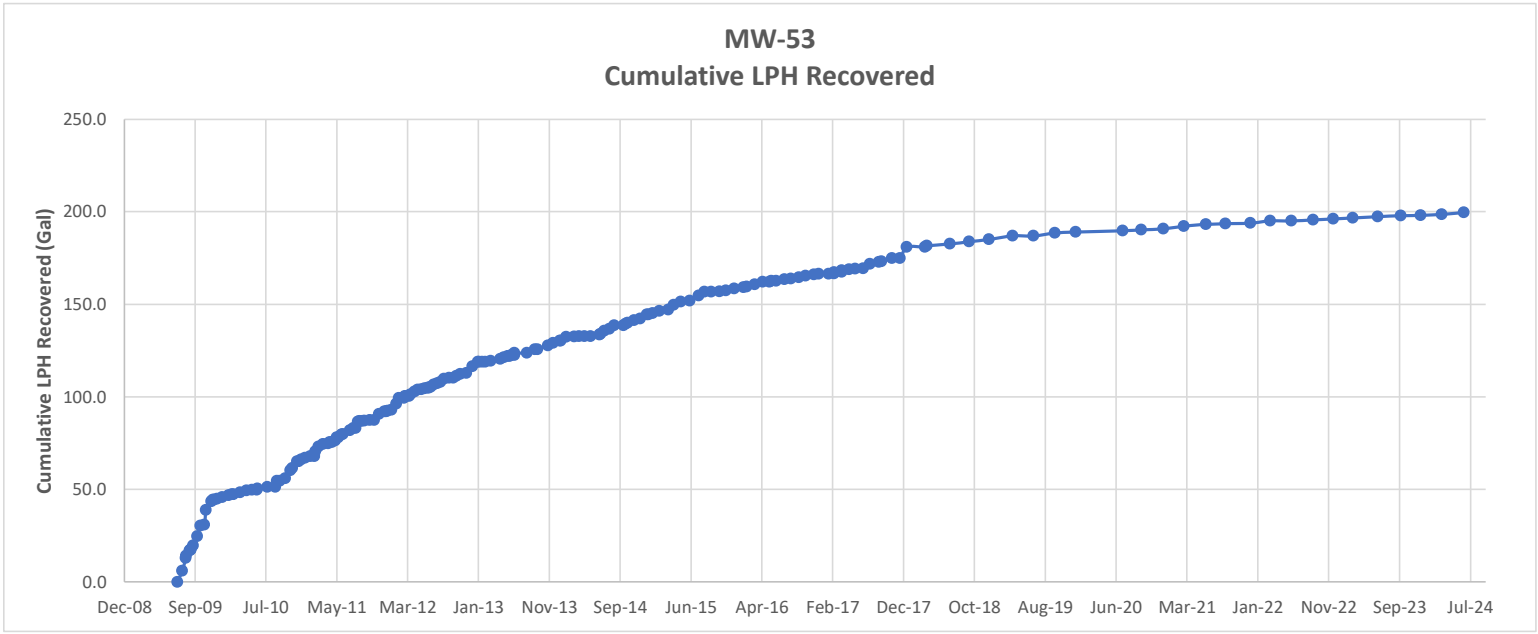

MW-41
LPH Thickness vs. LPH Recovered
LPH Thickness (ft)
LPH Recovered (Gal.)
10.0
9.0
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
Dec-08
Sep-09
Jul-10
May-11
Mar-12
Jan-13
Nov-13
Sep-14
Jun-15
Apr-16
Feb-17
Dec-17
Oct-18
Aug-19
Jun-20
Mar-21
Jan-22
Nov-22
Sep-23
Jul-24
LPH Thickness (ft)
LPH Recovered (gal)

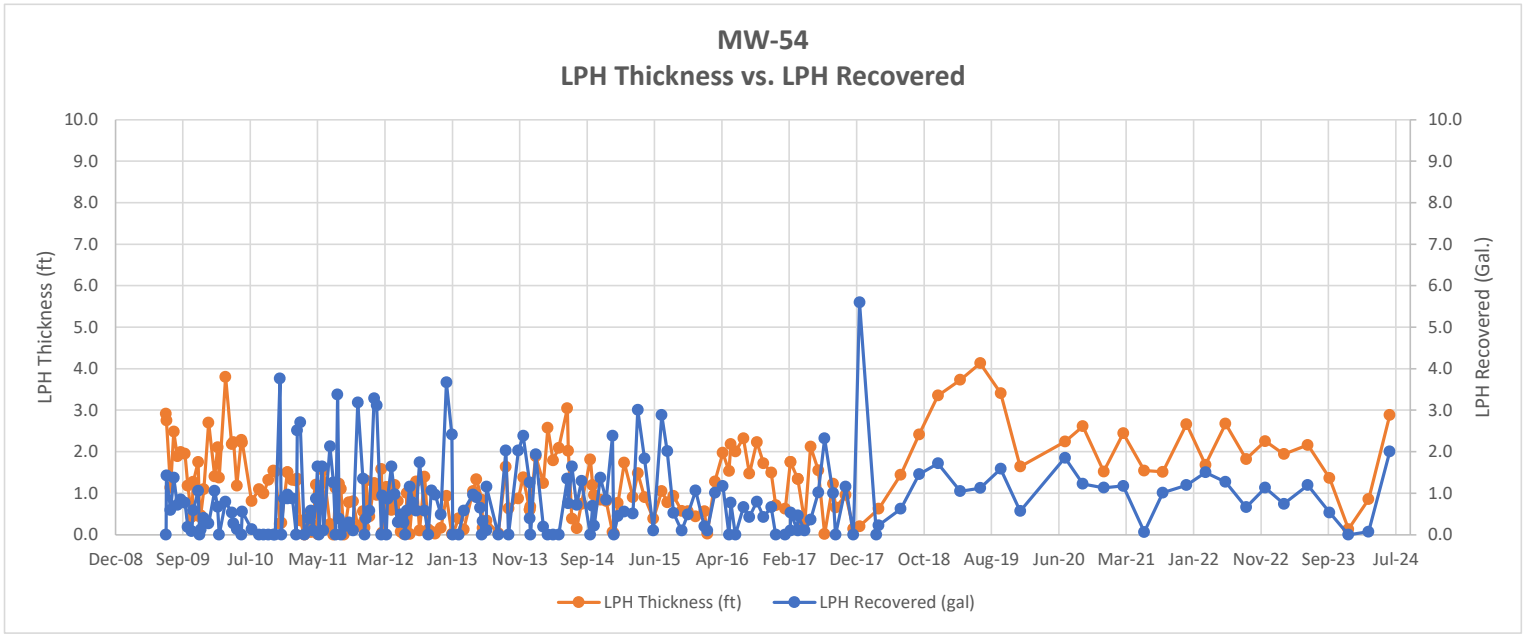

MW-41
Cumulative LPH Recovered
LPH Recovered (Gal)
250.0
200.0
150.0
100.0
50.0
0.0
Dec-08
Sep-09
Jul-10
May-11
Mar-12
Jan-13
Nov-13
Sep-14
Jun-15
Apr-16
Feb-17
Dec-17
Oct-18
Aug-19
Jun-20
Mar-21
Jan-22
Nov-22
Sep-23
Jul-24

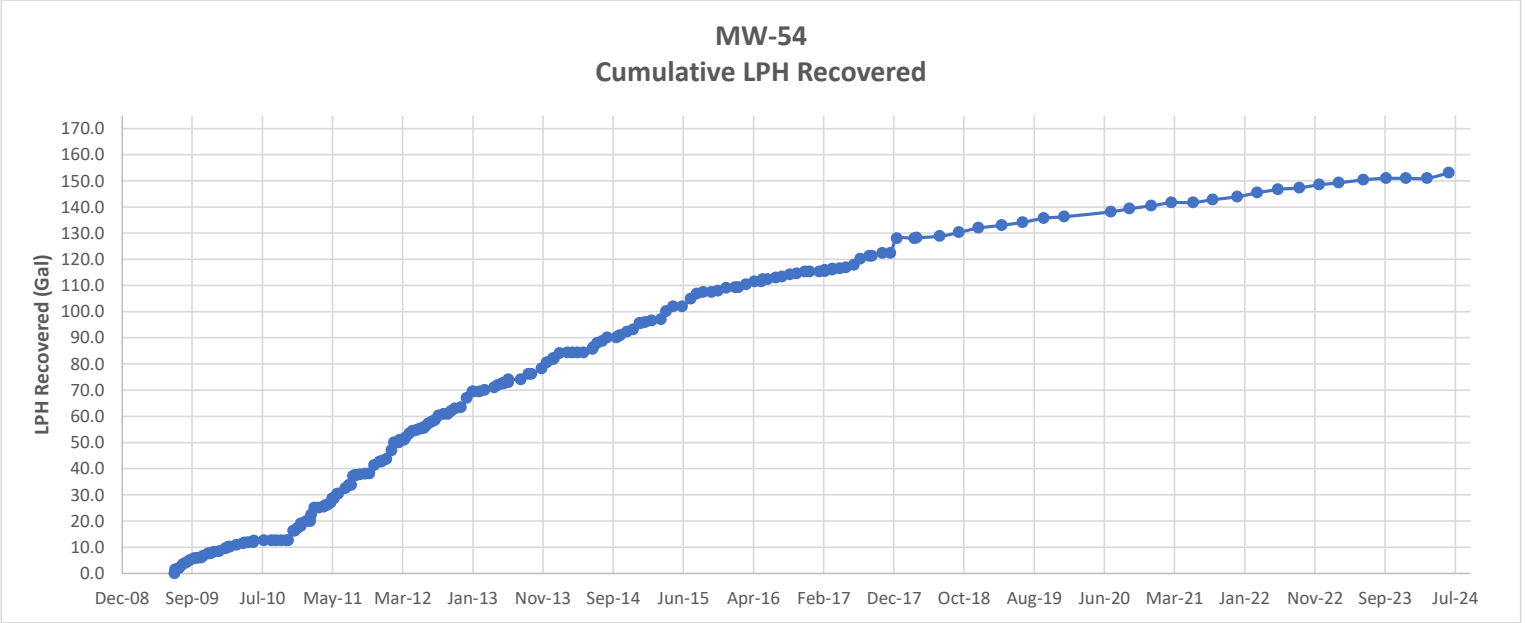

MW-49
LPH Thickness vs. LPH Recovered
LPH Thickness (ft)
LPH Recovered (Gal.)
5.0
4.0
3.0
2.0
1.0
0.0
Dec-08
Sep-09
Jul-10
May-11
Mar-12
Jan-13
Nov-13
Sep-14
Jun-15
Apr-16
Feb-17
Dec-17
Oct-18
Aug-19
Jun-20
Mar-21
Jan-22
Nov-22
Sep-23
Jul-24
LPH Thickness (ft)
LPH Recovered (gal)

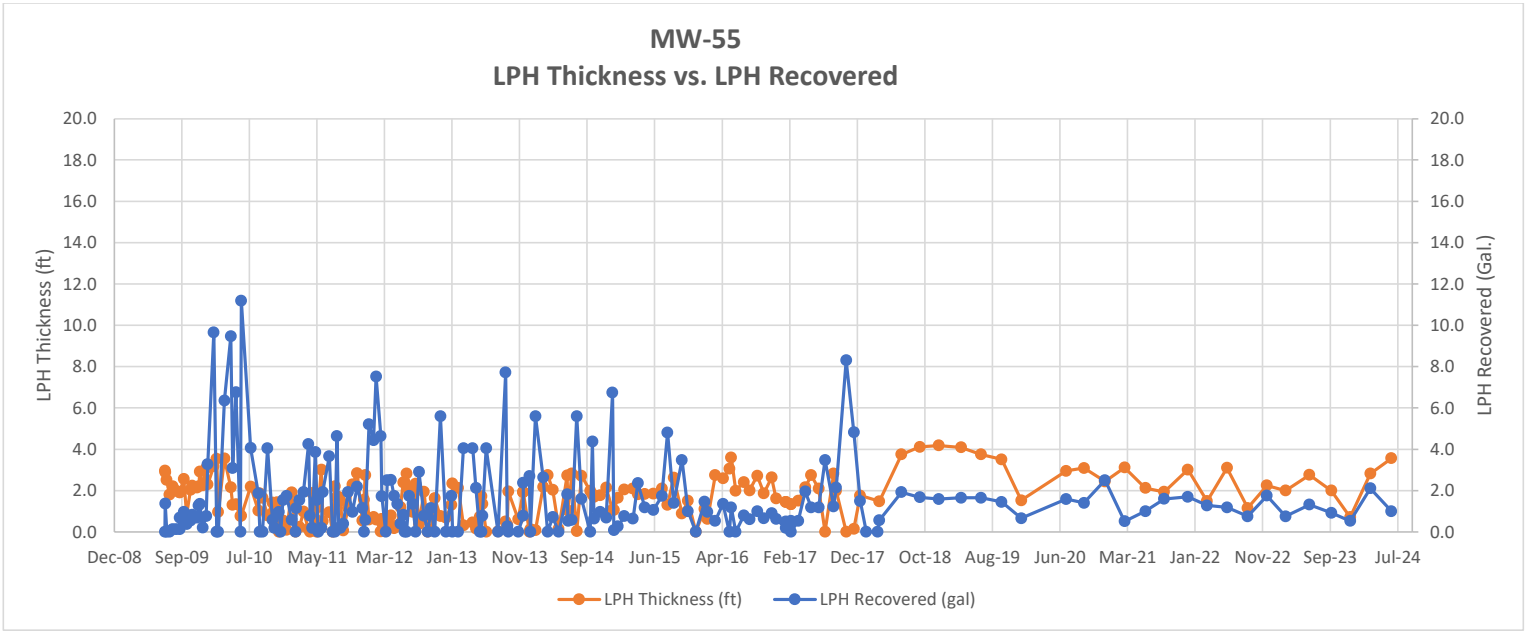

MW-49
Cumulative LPH Recovered
Cumulative LPH Reoovered (Gal)
70.0
60.0
50.0
40.0
30.0
20.0
10.0
0.0
Dec-08
Sep-09
Jul-10
May-11
Mar-12
Jan-13
Nov-13
Sep-14
Jun-15
Apr-16
Feb-17
Dec-17
Oct-18
Aug-19
Jun-20
Mar-21
Jan-22
Nov-22
Sep-23
Jul-24

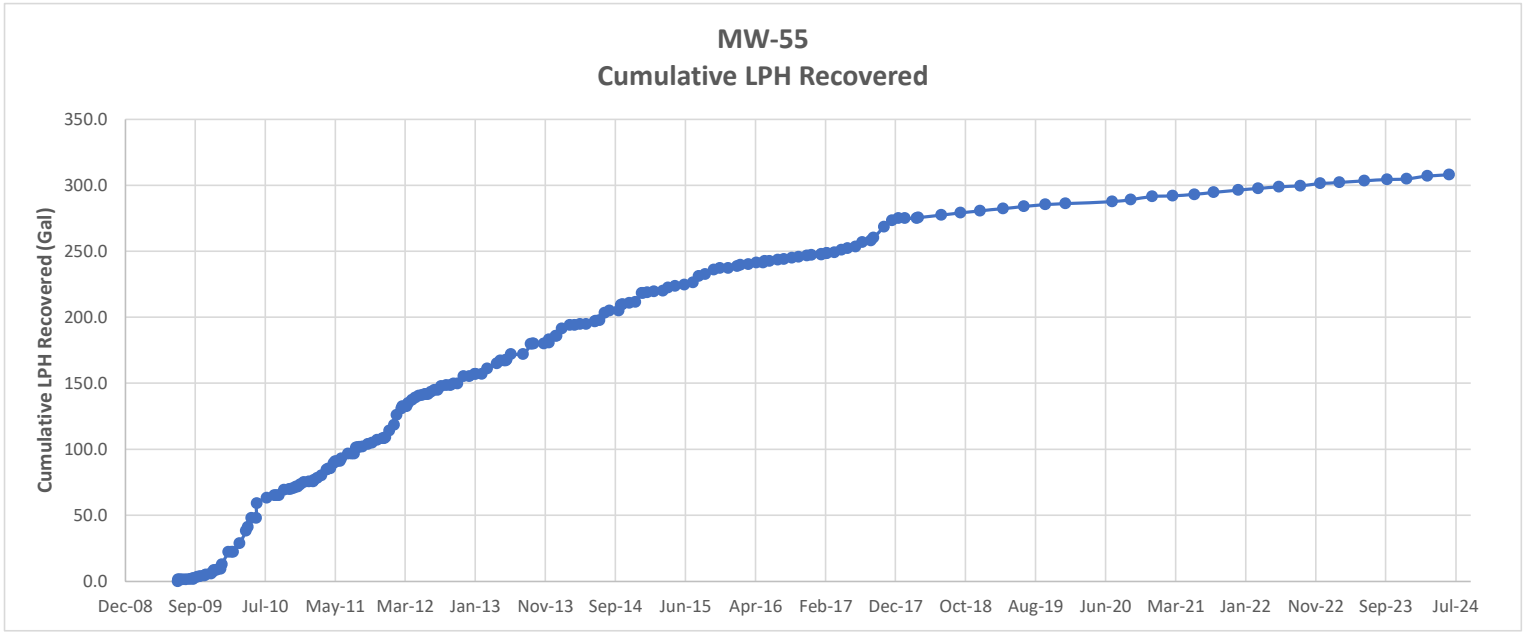

MW-53
LPH Thickness vs. LPH Recovered
LPH Thickness (ft)
LPH Recovered (Gal.)
10.0
9.0
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
Dec-08
Sep-09
Jul-10
May-11
Mar-12
Jan-13
Nov-13
Sep-14
Jun-15
Apr-16
Feb-17
Dec-17
Oct-18
Aug-19
Jun-20
Mar-21
Jan-22
Nov-22
Sep-23
Jul-24
LPH Thickness (ft)
LPH Recovered (gal)

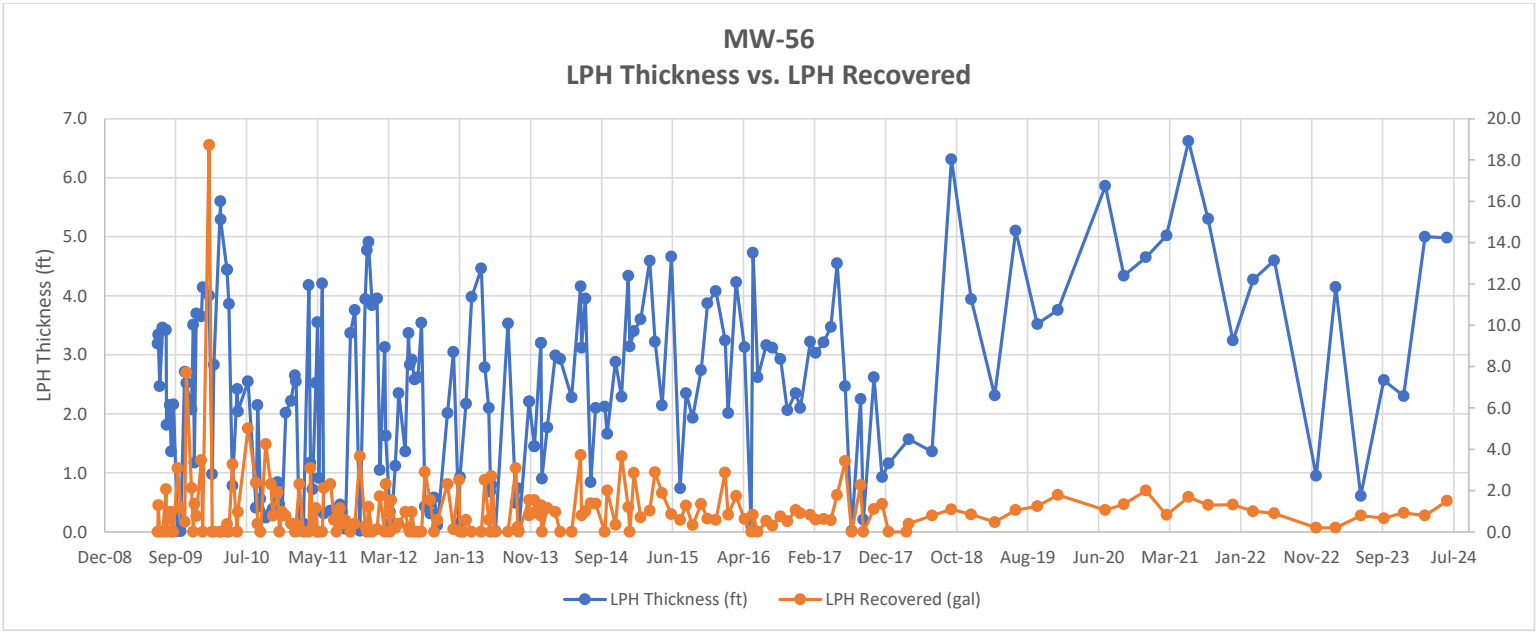

MW-53
Cumulative LPH Recovered
Cumulative LPH Recovered (Gal)
250.0
200.0
150.0
100.0
50.0
0.0
Dec-08
Sep-09
Jul-10
May-11
Mar-12
Jan-13
Nov-13
Sep-14
Jun-15
Apr-16
Feb-17
Dec-17
Oct-18
Aug-19
Jun-20
Mar-21
Jan-22
Nov-22
Sep-23
Jul-24

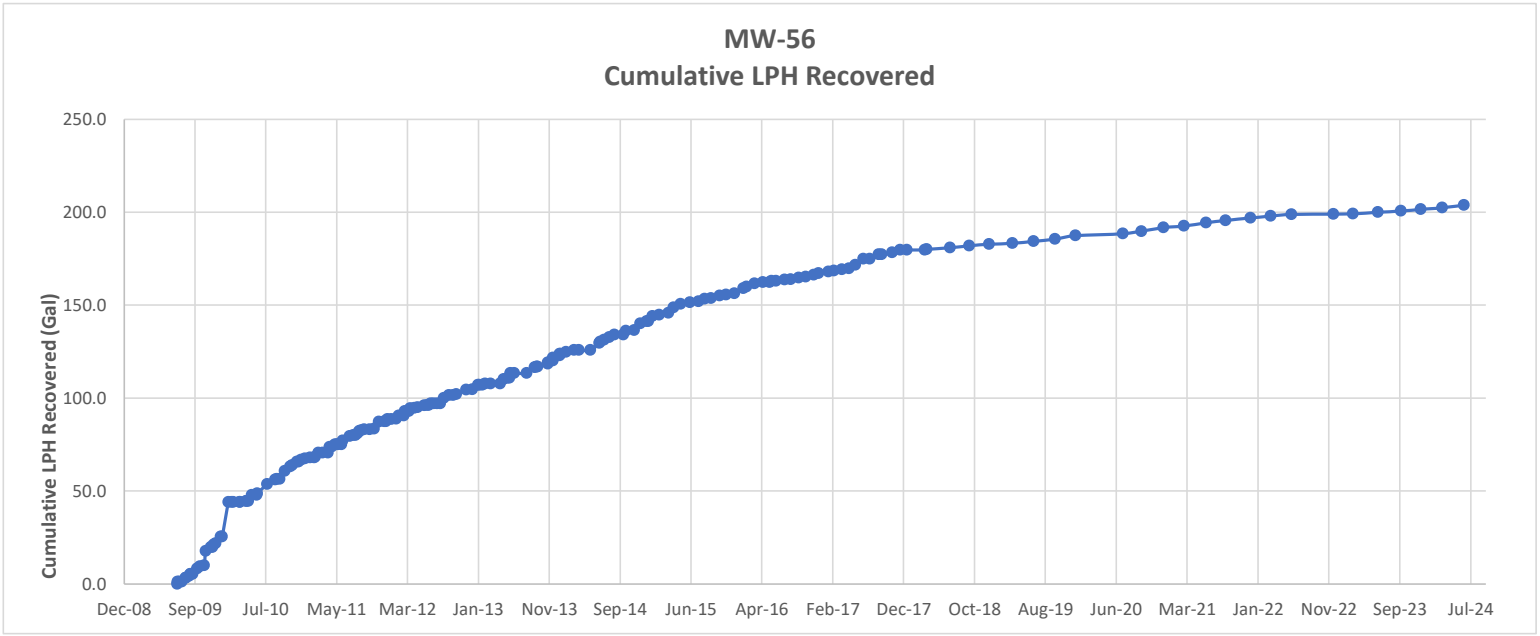

MW-54
LPH Thickness vs. LPH Recovered
LPH Thickness (ft)
LPH Recovered (Gal.)
10.0
9.0
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
Dec-08
Sep-09
Jul-10
May-11
Mar-12
Jan-13
Nov-13
Sep-14
Jun-15
Apr-16
Feb-17
Dec-17
Oct-18
Aug-19
Jun-20
Mar-21
Jan-22
Nov-22
Sep-23
Jul-24
LPH Thickness (ft)
LPH Recovered (gal)

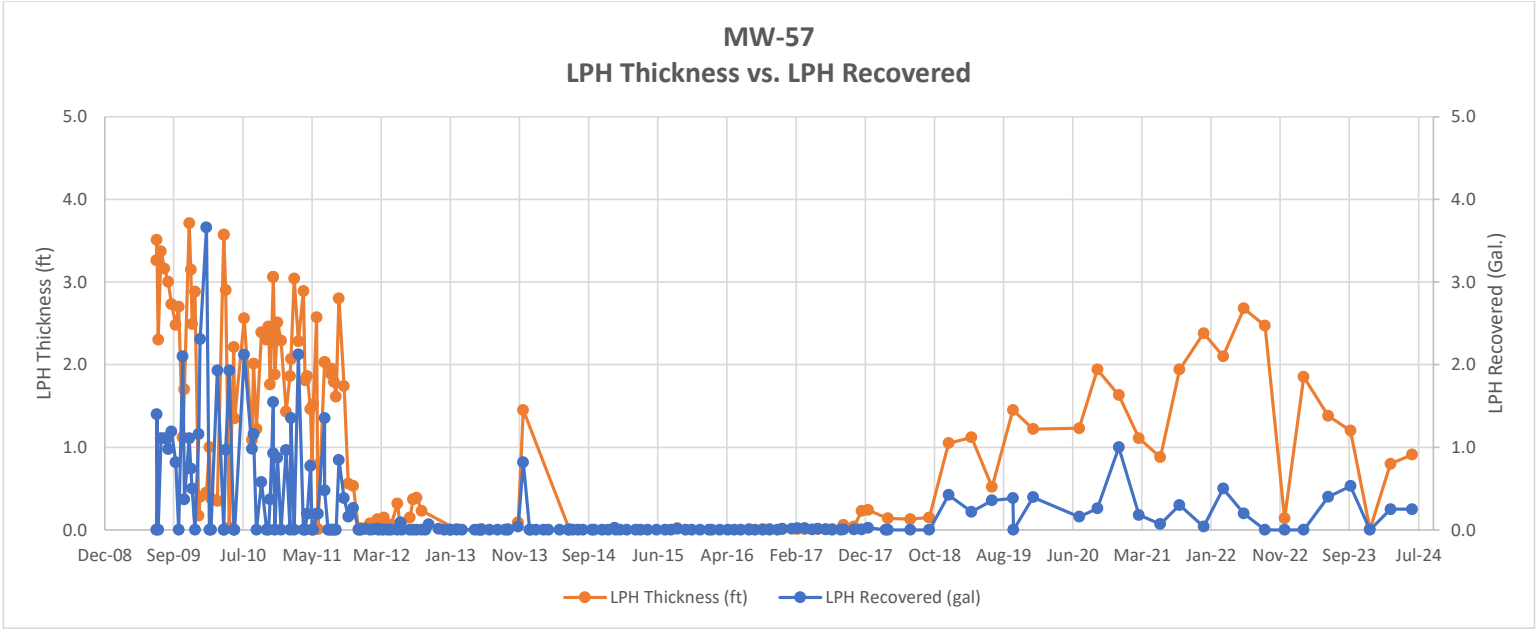

MW-54
Cumulative LPH Recovered
LPH Recovered (Gal)
170.0
160.0
150.0
140.0
130.0
120.0
110.0
100.0
90.0
80.0
70.0
60.0
50.0
40.0
30.0
20.0
10.0
0.0
Dec-08
Sep-09
Jul-10
May-11
Mar-12
Jan-13
Nov-13
Sep-14
Jun-15
Apr-16
Feb-17
Dec-17
Oct-18
Aug-19
Jun-20
Mar-21
Jan-22
Nov-22
Sep-23
Jul-24

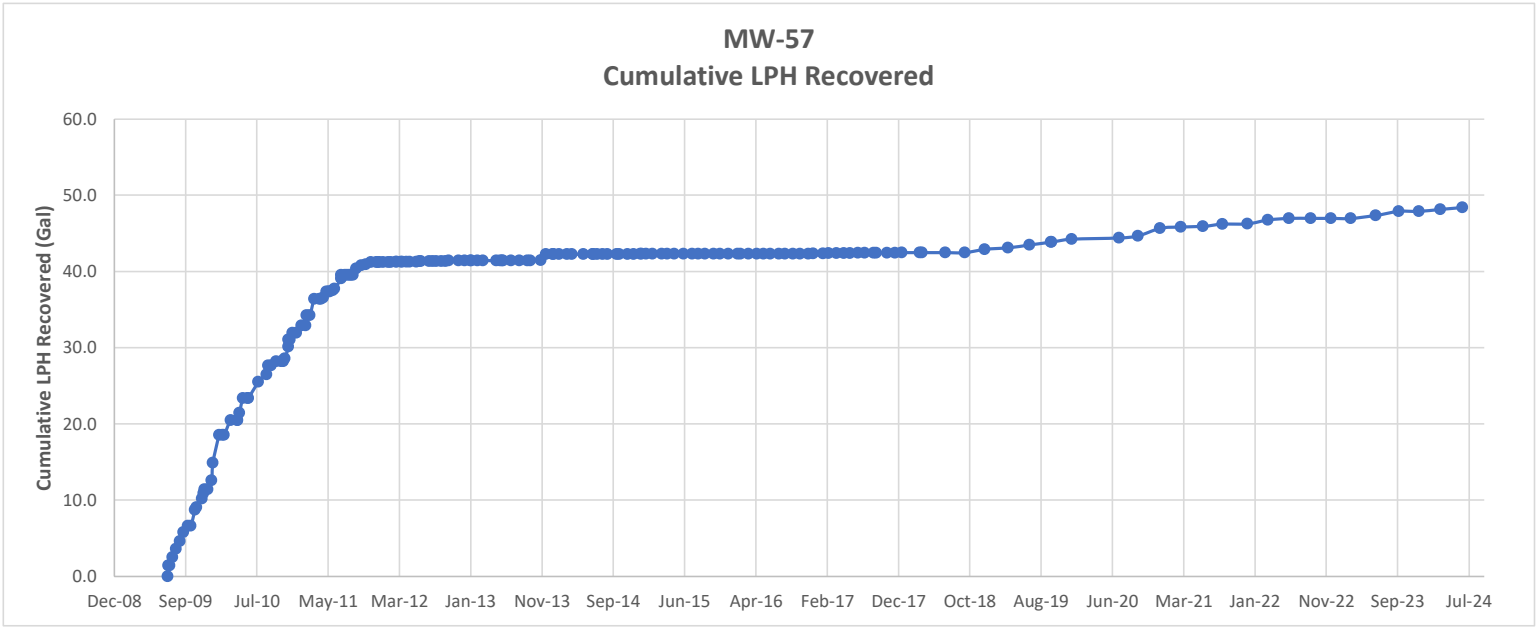

MW-55
LPH Thickness vs. LPH Recovered
LPH Thickness (ft)
LPH Recovered (Gal.)
20.0
18.0
16.0
14.0
12.0
10.0
8.0
6.0
4.0
2.0
0.0
Dec-08
Sep-09
Jul-10
May-11
Mar-12
Jan-13
Nov-13
Sep-14
Jun-15
Apr-16
Feb-17
Dec-17
Oct-18
Aug-19
Jun-20
Mar-21
Jan-22
Nov-22
Sep-23
Jul-24
LPH Thickness (ft)
LPH Recovered (gal)

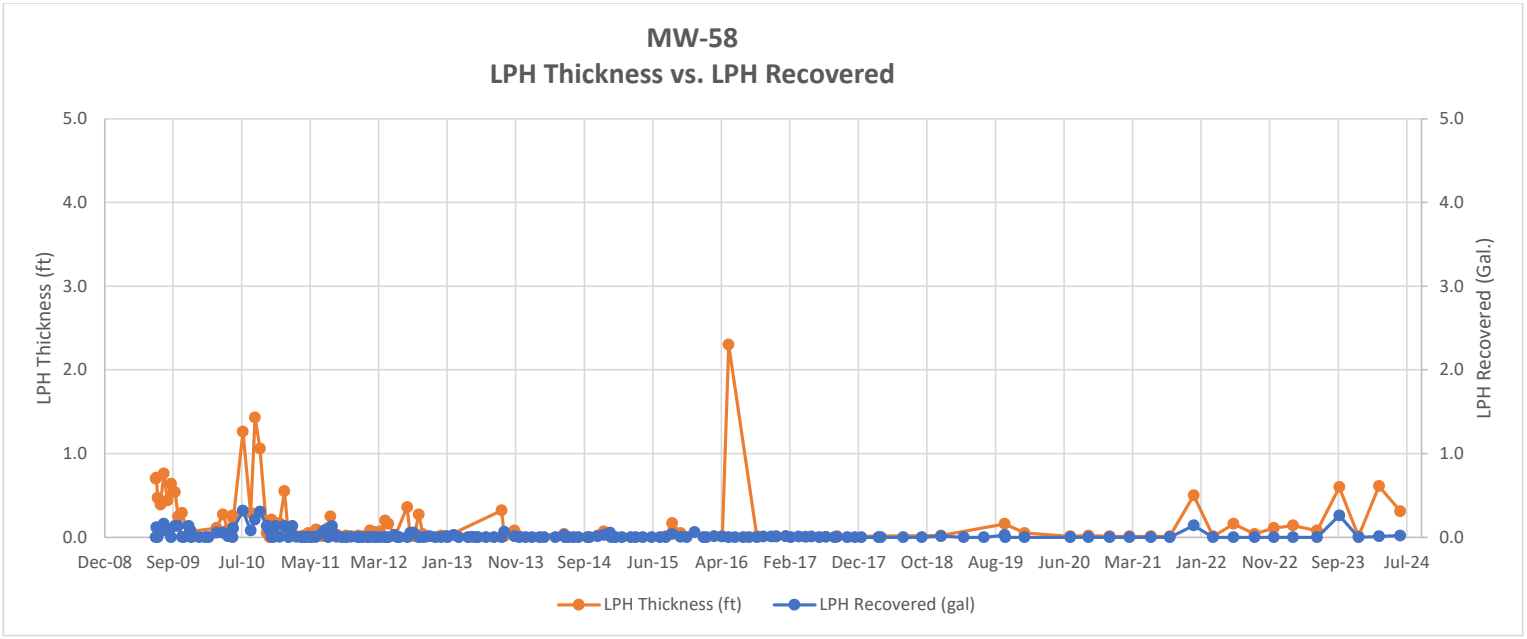

MW-55
Cumulative LPH Recovered
Cumulative LPH Recovered (Gal)
350.0
300.0
250.0
200.0
150.0
100.0
50.0
0.0
Dec-08
Sep-09
Jul-10
May-11
Mar-12
Jan-13
Nov-13
Sep-14
Jun-15
Apr-16
Feb-17
Dec-17
Oct-18
Aug-19
Jun-20
Mar-21
Jan-22
Nov-22
Sep-23
Jul-24

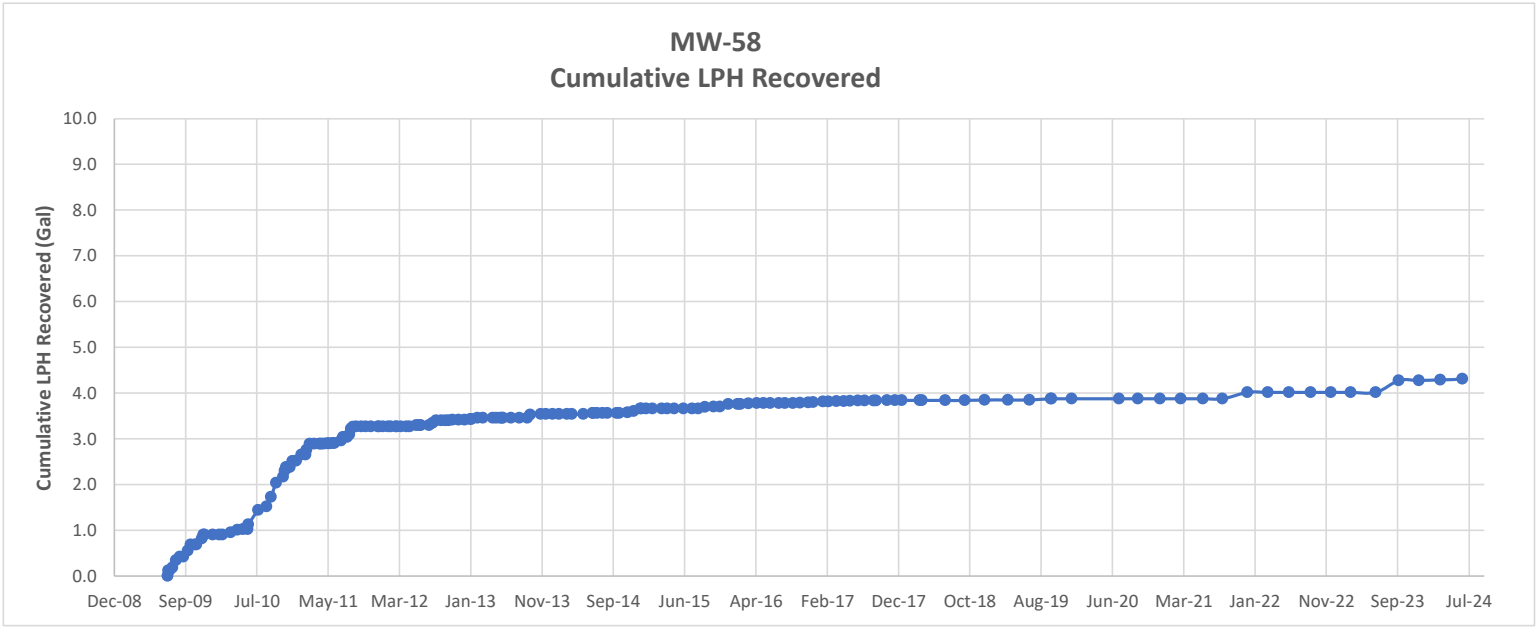

MW-56
LPH Thickness vs. LPH Recovered
LPH Thickness (ft)
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
20.0
18.0
16.0
14.0
12.0
10.0
8.0
6.0
4.0
2.0
0.0
Dec-08
Sep-09
Jul-10
May-11
Mar-12
Jan-13
Nov-13
Sep-14
Jun-15
Apr-16
Feb-17
Dec-17
Oct-18
Aug-19
Jun-20
Mar-21
Jan-22
Nov-22
Sep-23
Jul-24
LPH Thickness (ft)
LPH Recovered (gal)

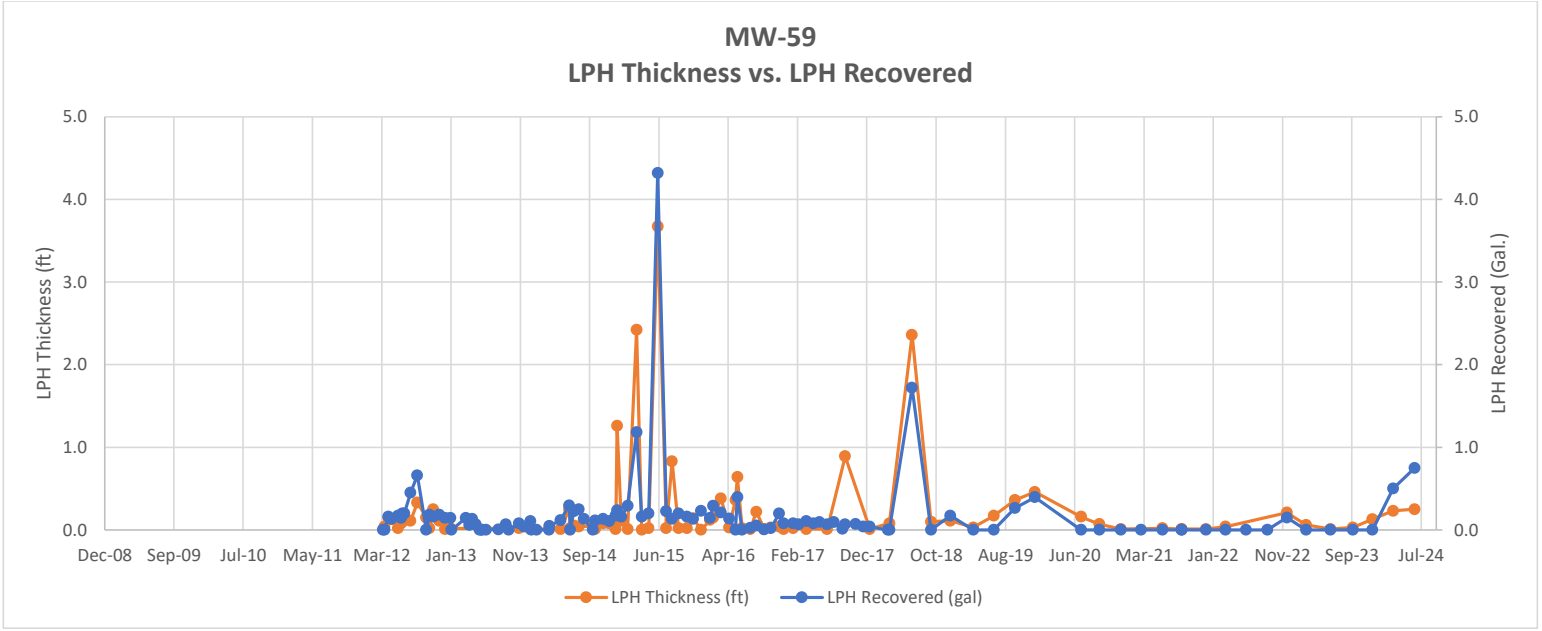

MW-56
Cumulative LPH Recovered
Cumulative LPH Recovered (Gal)
250.0
200.0
150.0
100.0
50.0
0.0
Dec-08
Sep-09
Jul-10
May-11
Mar-12
Jan-13
Nov-13
Sep-14
Jun-15
Apr-16
Feb-17
Dec-17
Oct-18
Aug-19
Jun-20
Mar-21
Jan-22
Nov-22
Sep-23
Jul-24

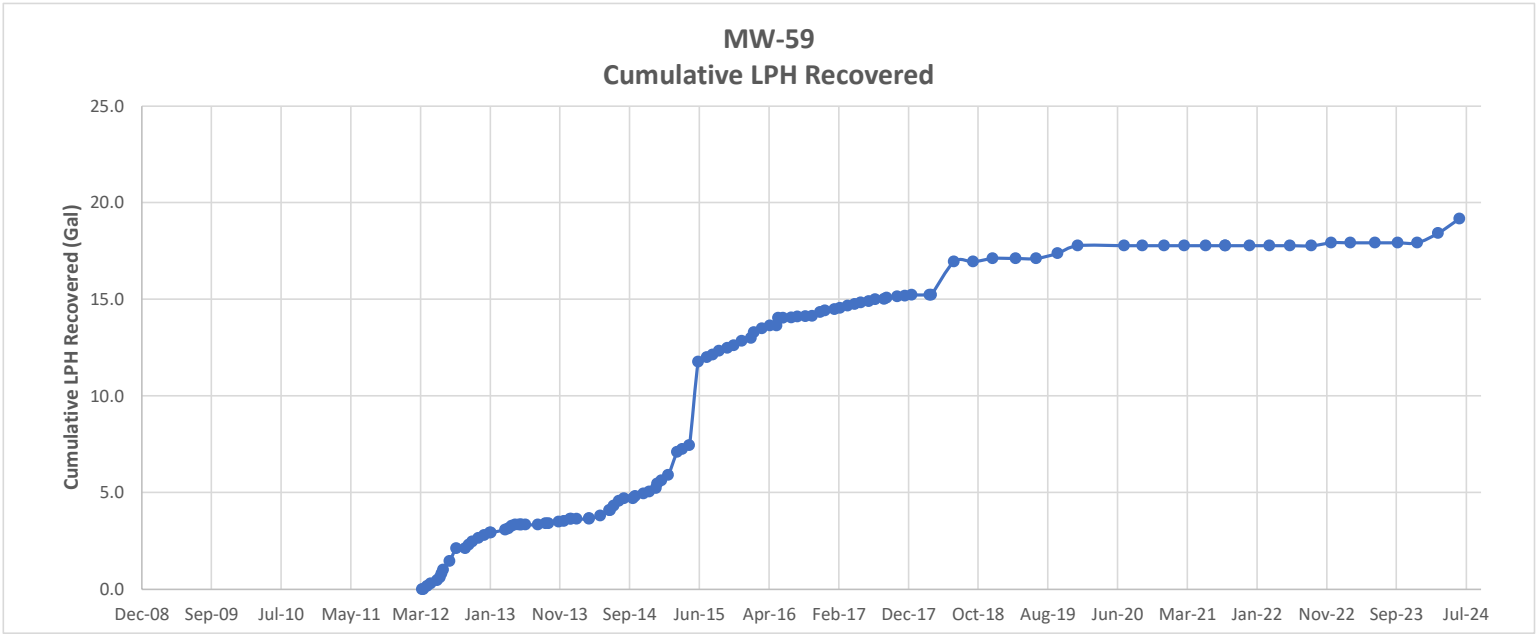

MW-57
LPH Thickness vs. LPH Recovered
LPH Thickness (ft)
LPH Recovered (Gal.)
5.0
4.0
3.0
2.0
1.0
0.0
Dec-08
Sep-09
Jul-10
May-11
Mar-12
Jan-13
Nov-13
Sep-14
Jun-15
Apr-16
Feb-17
Dec-17
Oct-18
Aug-19
Jun-20
Mar-21
Jan-22
Nov-22
Sep-23
Jul-24
LPH Thickness (ft)
LPH Recovered (gal)

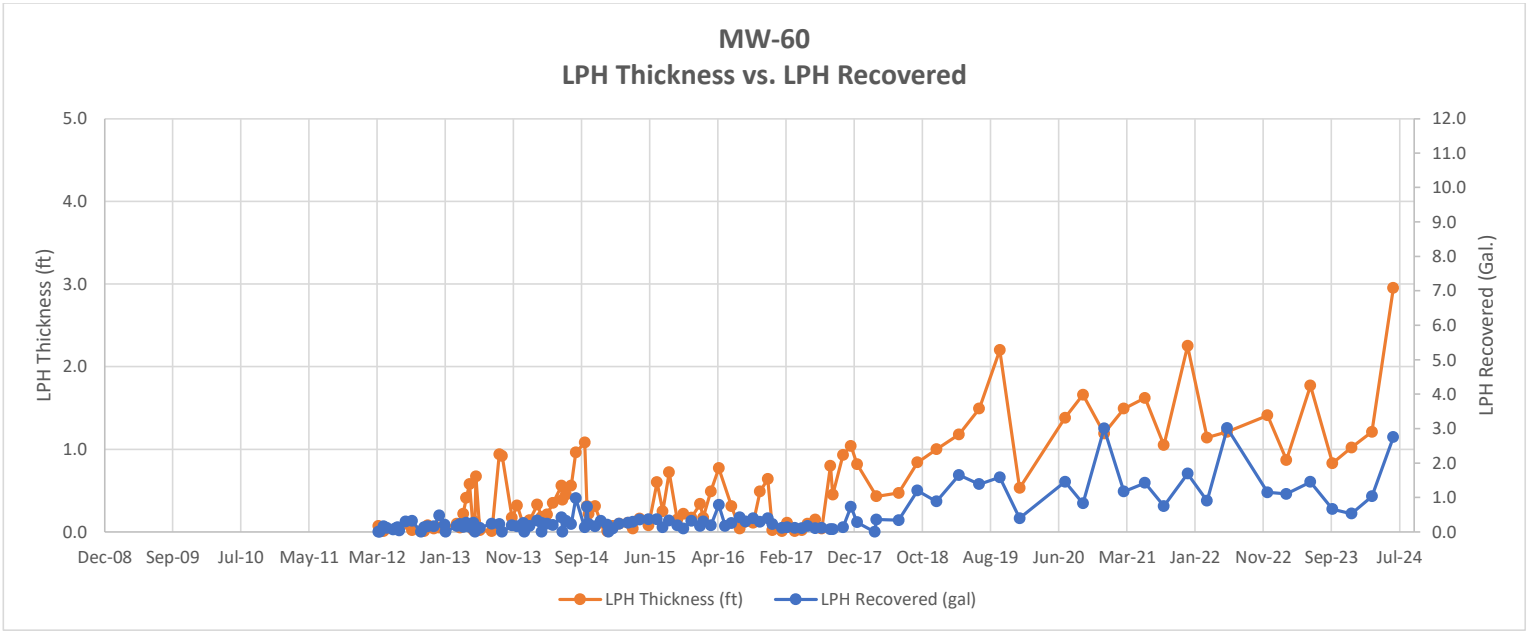

MW-57
Cumulative LPH Recovered
Cumulative LPH Recovered (Gal)
60.0
50.0
40.0
30.0
20.0
10.0
0.0
Dec-08
Sep-09
Jul-10
May-11
Mar-12
Jan-13
Nov-13
Sep-14
Jun-15
Apr-16
Feb-17
Dec-17
Oct-18
Aug-19
Jun-20
Mar-21
Jan-22
Nov-22
Sep-23
Jul-24

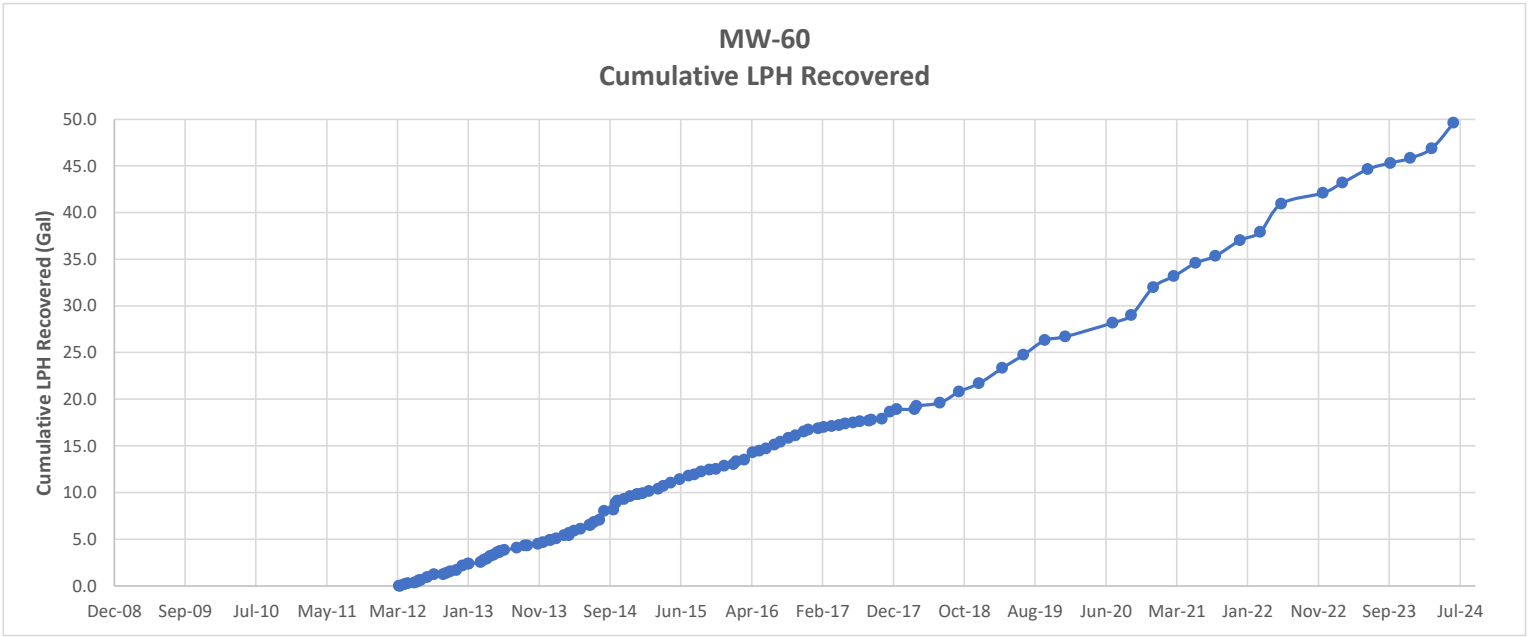

MW-58
LPH Thickness vs. LPH Recovered
LPH Thickness (ft)
LPH Recovered (Gal.)
5.0
4.0
3.0
2.0
1.0
0.0
Dec-08
Sep-09
Jul-10
May-11
Mar-12
Jan-13
Nov-13
Sep-14
Jun-15
Apr-16
Feb-17
Dec-17
Oct-18
Aug-19
Jun-20
Mar-21
Jan-22
Nov-22
Sep-23
Jul-24
LPH Thickness (ft)
LPH Recovered (gal)

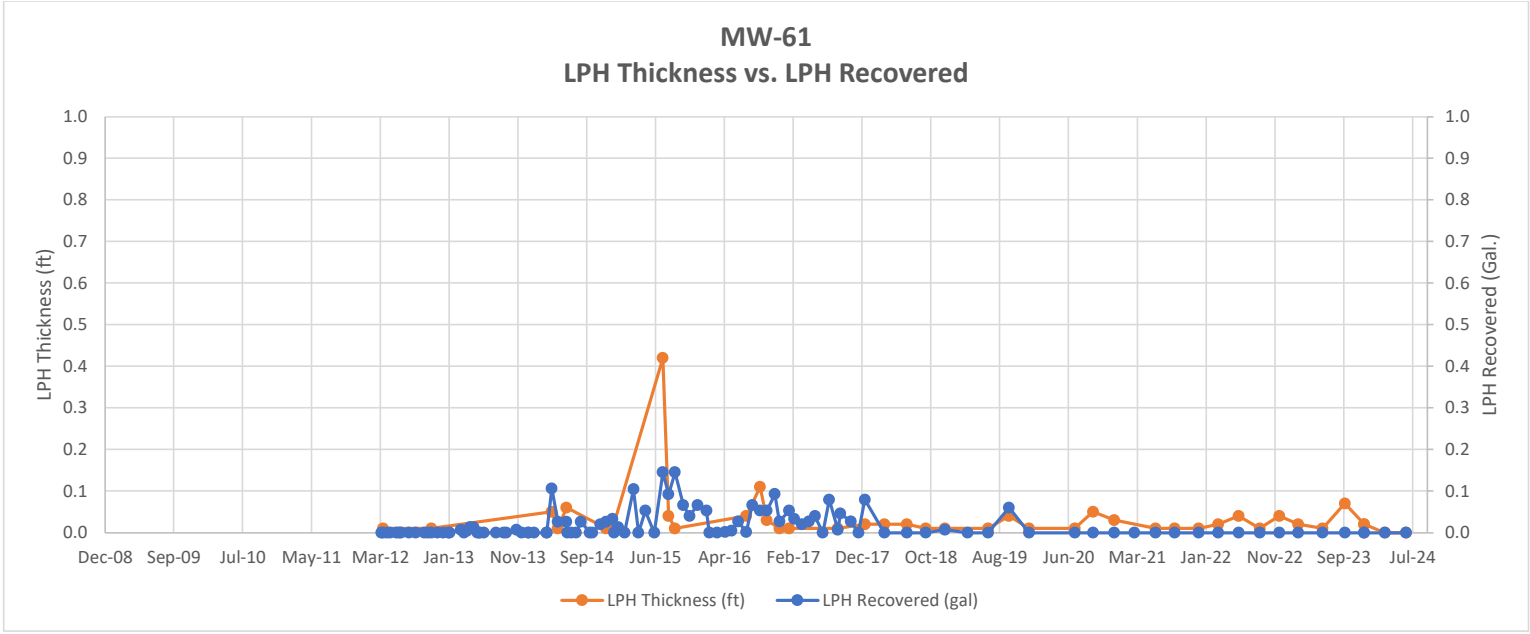

MW-58
Cumulative LPH Recovered
Cumulative LPH Recovered (Gal)
10.0
9.0
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
Dec-08
Sep-09
Jul-10
May-11
Mar-12
Jan-13
Nov-13
Sep-14
Jun-15
Apr-16
Feb-17
Dec-17
Oct-18
Aug-19
Jun-20
Mar-21
Jan-22
Nov-22
Sep-23
Jul-24

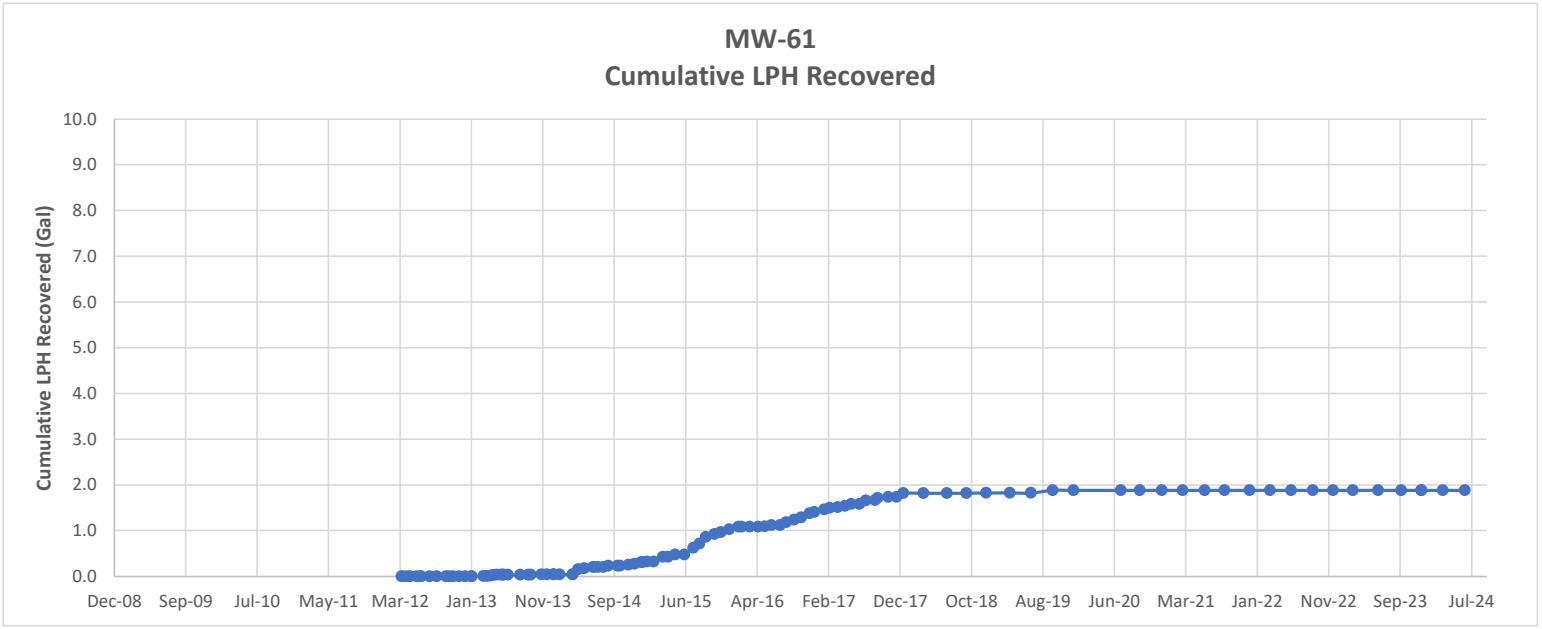

MW-59
LPH Thickness vs. LPH Recovered
LPH Thickness (ft)
LPH Recovered (Gal.)
5.0
4.0
3.0
2.0
1.0
0.0
Dec-08
Sep-09
Jul-10
May-11
Mar-12
Jan-13
Nov-13
Sep-14
Jun-15
Apr-16
Feb-17
Dec-17
Oct-18
Aug-19
Jun-20
Mar-21
Jan-22
Nov-22
Sep-23
Jul-24
LPH Thickness (ft)
LPH Recovered (gal)

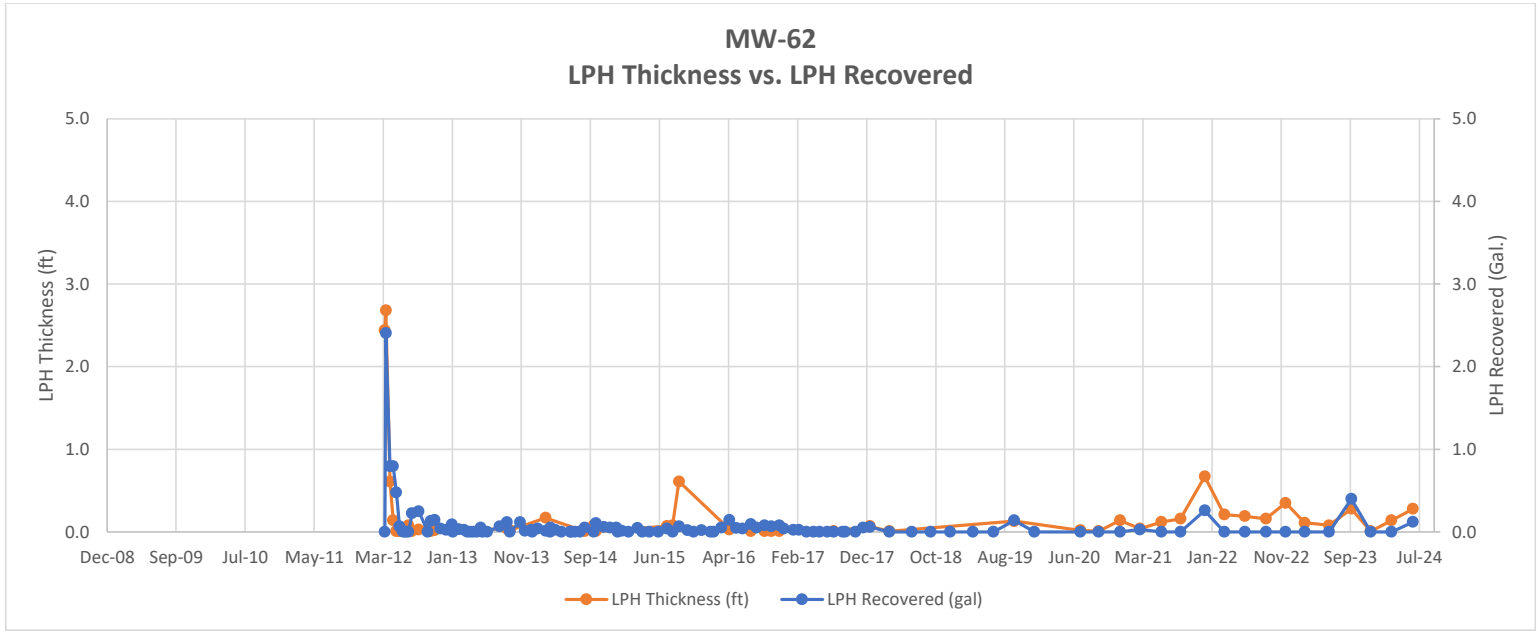

MW-59
Cumulative LPH Recovered
Cumulative LPH Recovered (Gal)
25.0
20.0
15.0
10.0
5.0
0.0
Dec-08
Sep-09
Jul-10
May-11
Mar-12
Jan-13
Nov-13
Sep-14
Jun-15
Apr-16
Feb-17
Dec-17
Oct-18
Aug-19
Jun-20
Mar-21
Jan-22
Nov-22
Sep-23
Jul-24

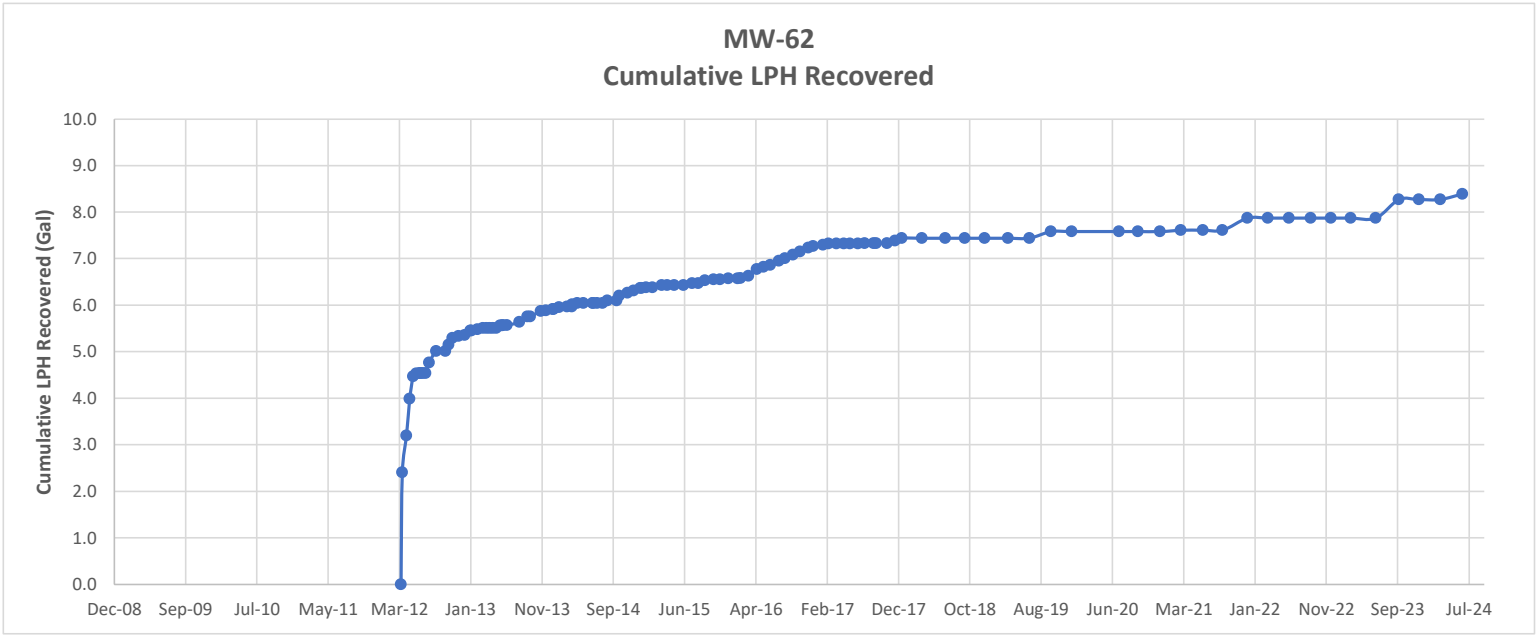

MW-60
LPH Thickness vs. LPH Recovered
LPH Thickness (ft)
LPH Recovered (Gal.)
5.0
4.0
3.0
2.0
1.0
0.0
12.0
11.0
10.0
9.0
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
Dec-08 Sep-09 Jul-10 May-11 Mar-12 Jan-13 Nov-13 Sep-14 Jun-15 Apr-16 Feb-17 Dec-17 Oct-18 Aug-19 Jun-20 Mar-21 Jan-22 Nov-22 Sep-23 Jul-24
LPH Thickness (ft)
LPH Recovered (gal)

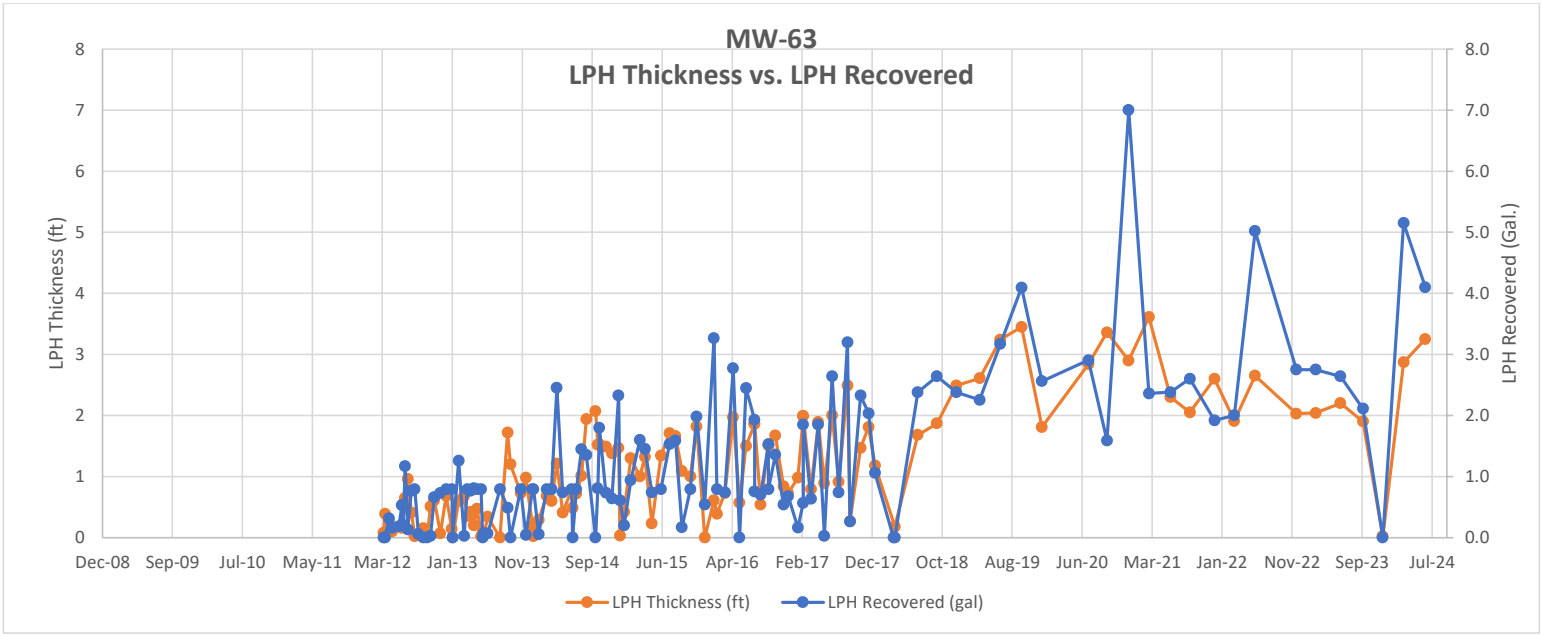

MW-60
Cumulative LPH Recovered
Cumulative LPH Recovered (Gal)
50.0
45.0
40.0
35.0
30.0
25.0
20.0
15.0
10.0
5.0
0.0
Dec-08 Sep-09 Jul-10 May-11 Mar-12 Jan-13 Nov-13 Sep-14 Jun-15 Apr-16 Feb-17 Dec-17 Oct-18 Aug-19 Jun-20 Mar-21 Jan-22 Nov-22 Sep-23 Jul-24

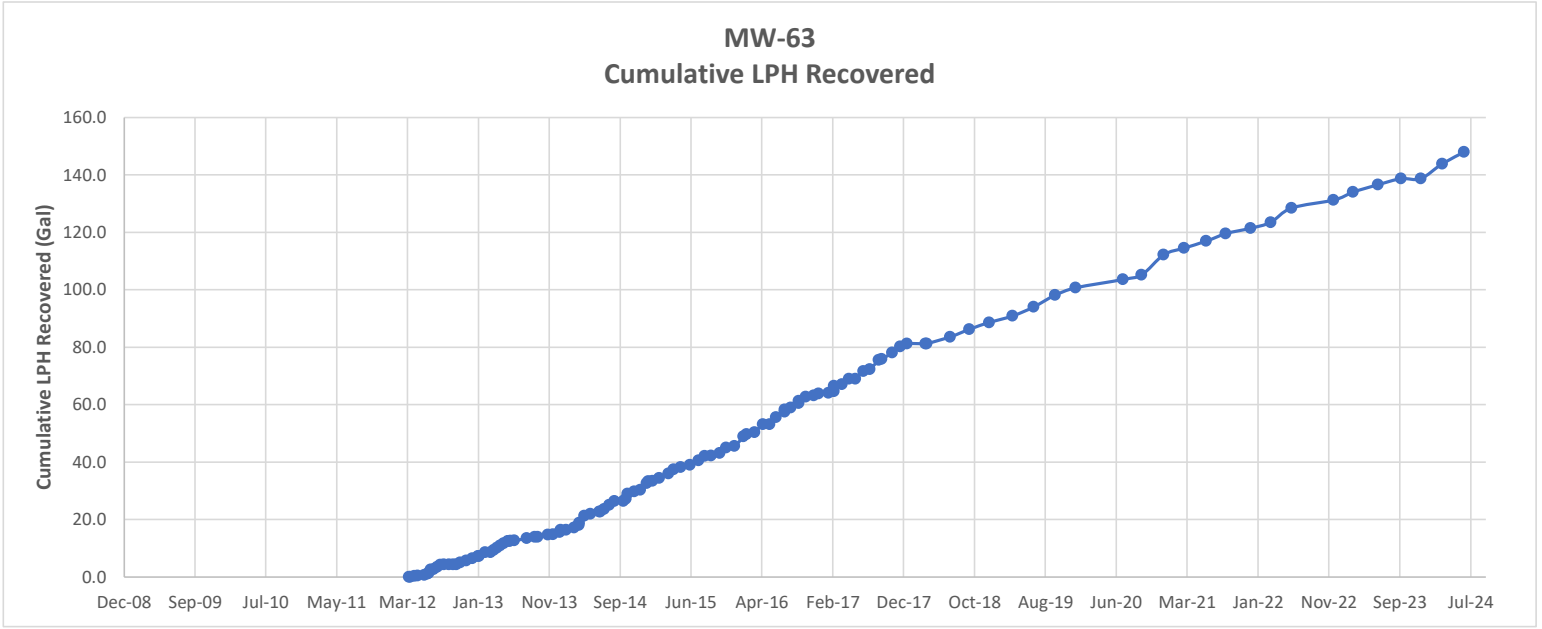

MW-61
LPH Thickness vs. LPH Recovered
LPH Thickness (ft)
LPH Recovered (Gal.)
1.0
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0.0
Dec-08
Sep-09
Jul-10
May-11
Mar-12
Jan-13
Nov-13
Sep-14
Jun-15
Apr-16
Feb-17
Dec-17
Oct-18
Aug-19
Jun-20
Mar-21
Jan-22
Nov-22
Sep-23
Jul-24
LPH Thickness (ft)
LPH Recovered (gal)

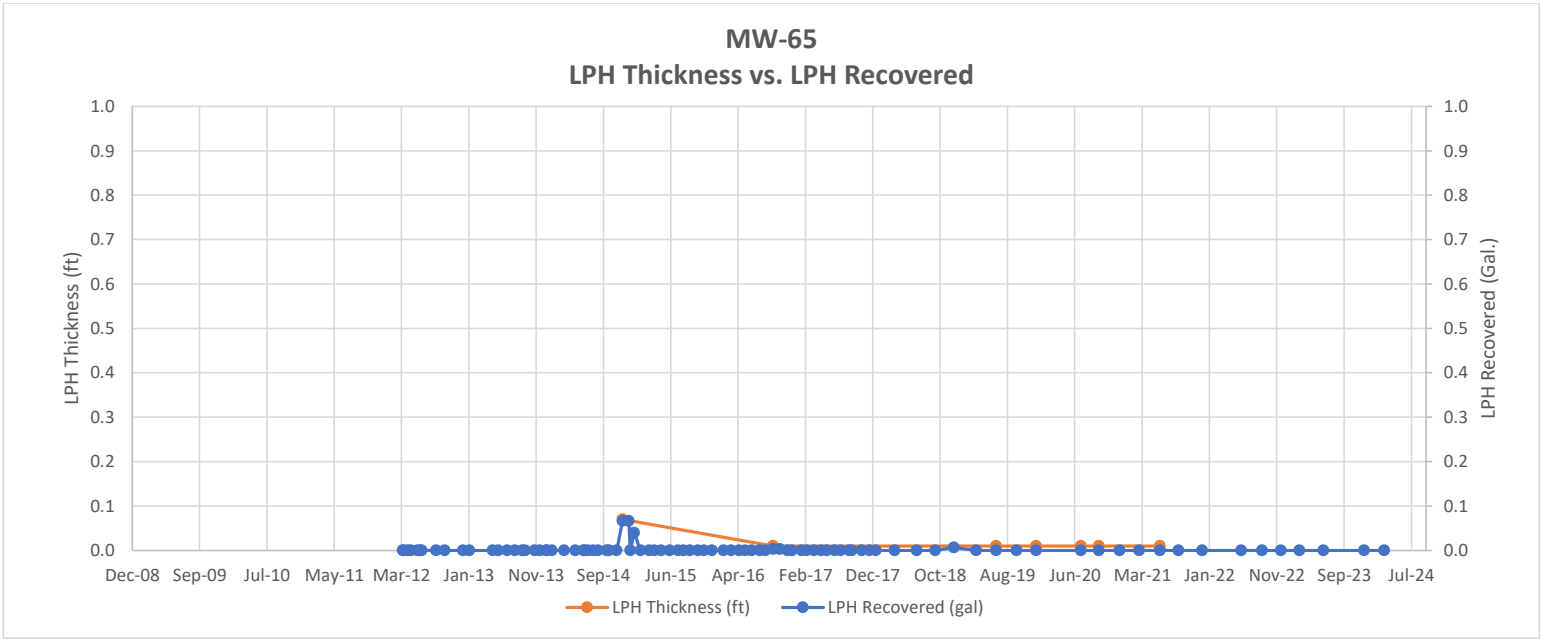

MW-61
Cumulative LPH Recovered
Cumulative LPH Recovered (Gal)
10.0
9.0
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
Dec-08
Sep-09
Jul-10
May-11
Mar-12
Jan-13
Nov-13
Sep-14
Jun-15
Apr-16
Feb-17
Dec-17
Oct-18
Aug-19
Jun-20
Mar-21
Jan-22
Nov-22
Sep-23
Jul-24

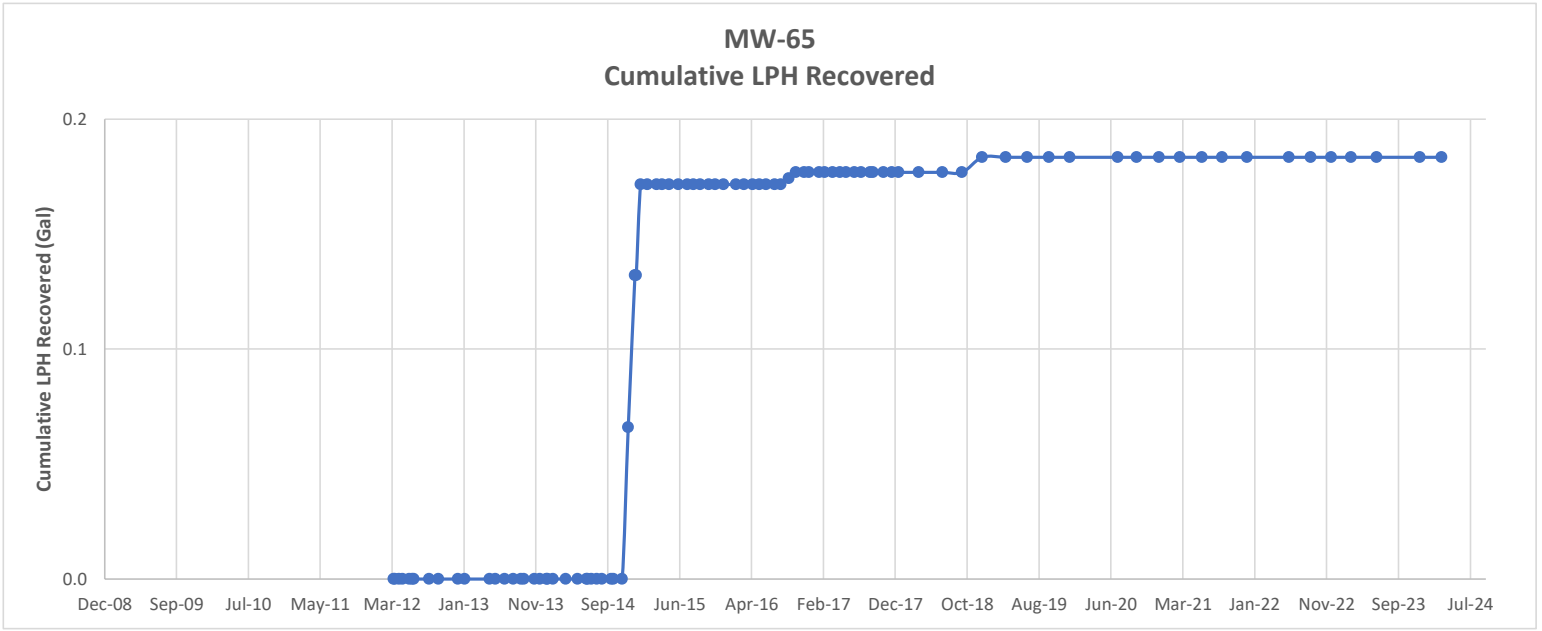

MW-62
LPH Thickness vs. LPH Recovered
LPH Thickness (ft)
LPH Recovered (Gal.)
5.0
4.0
3.0
2.0
1.0
0.0
Dec-08
Sep-09
Jul-10
May-11
Mar-12
Jan-13
Nov-13
Sep-14
Jun-15
Apr-16
Feb-17
Dec-17
Oct-18
Aug-19
Jun-20
Mar-21
Jan-22
Nov-22
Sep-23
Jul-24
LPH Thickness (ft)
LPH Recovered (gal)

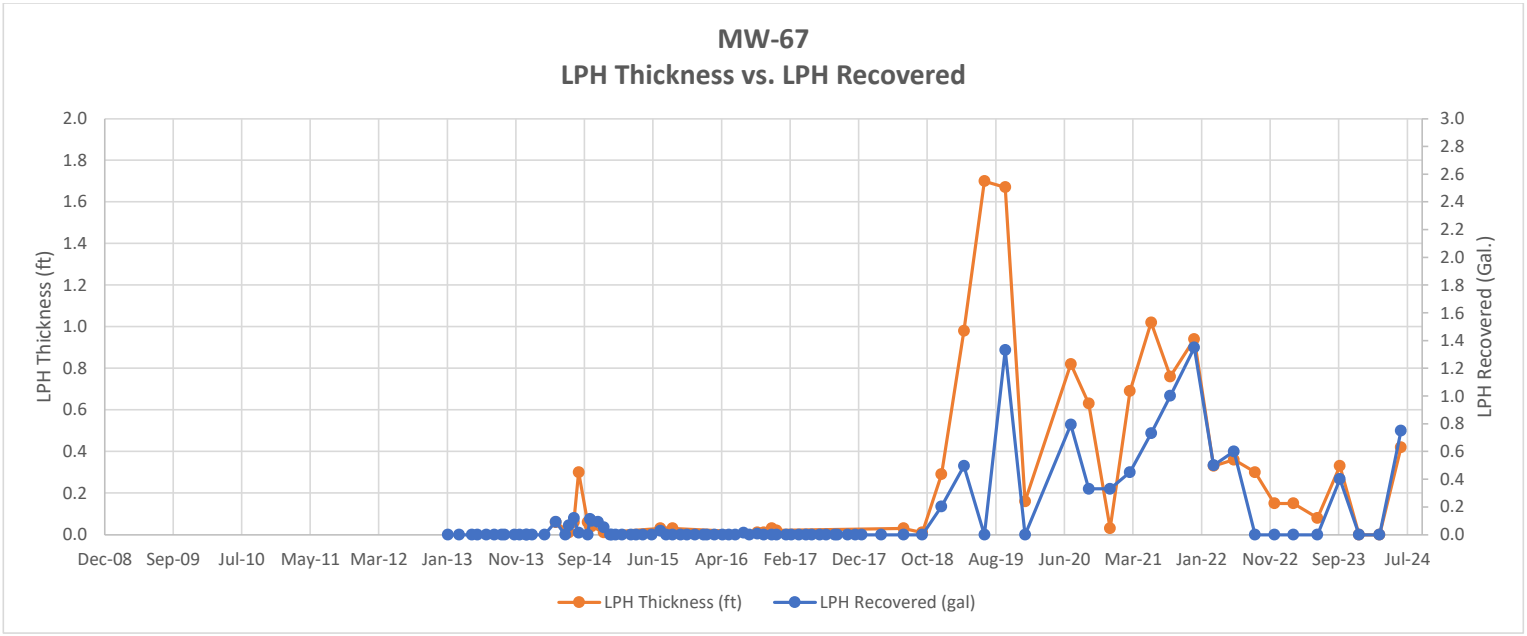

MW-62
Cumulative LPH Recovered
Cumulative LPH Recovered (Gal)
10.0
9.0
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
Dec-08
Sep-09
Jul-10
May-11
Mar-12
Jan-13
Nov-13
Sep-14
Jun-15
Apr-16
Feb-17
Dec-17
Oct-18
Aug-19
Jun-20
Mar-21
Jan-22
Nov-22
Sep-23
Jul-24

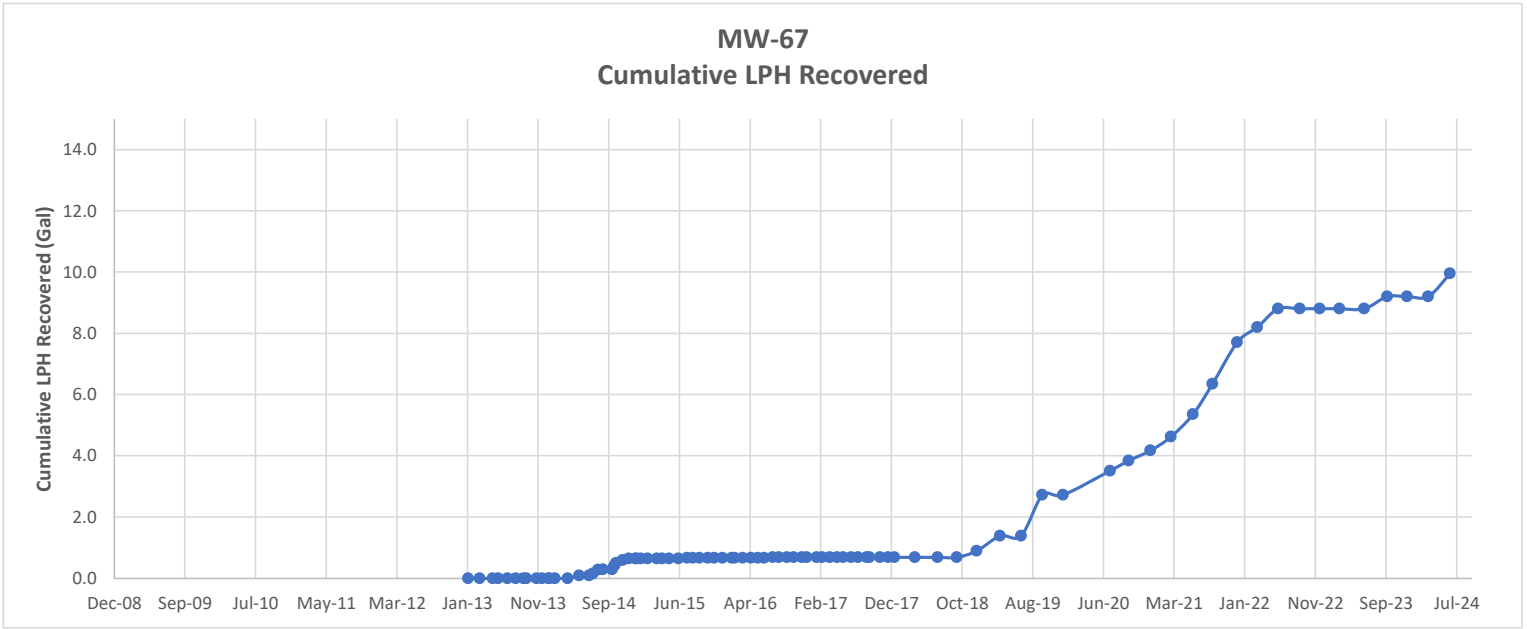

MW-63
LPH Thickness vs. LPH Recovered
LPH Thickness (ft)
LPH Recovered (Gal.)
0
1
2
3
4
5
6
7
8
0.0
1.0
2.0
3.0
4.0
5.0
6.0
7.0
8.0
Dec-08
Sep-09
Jul-10
May-11
Mar-12
Jan-13
Nov-13
Sep-14
Jun-15
Apr-16
Feb-17
Dec-17
Oct-18
Aug-19
Jun-20
Mar-21
Jan-22
Nov-22
Sep-23
Jul-24
LPH Thickness (ft)
LPH Recovered (gal)

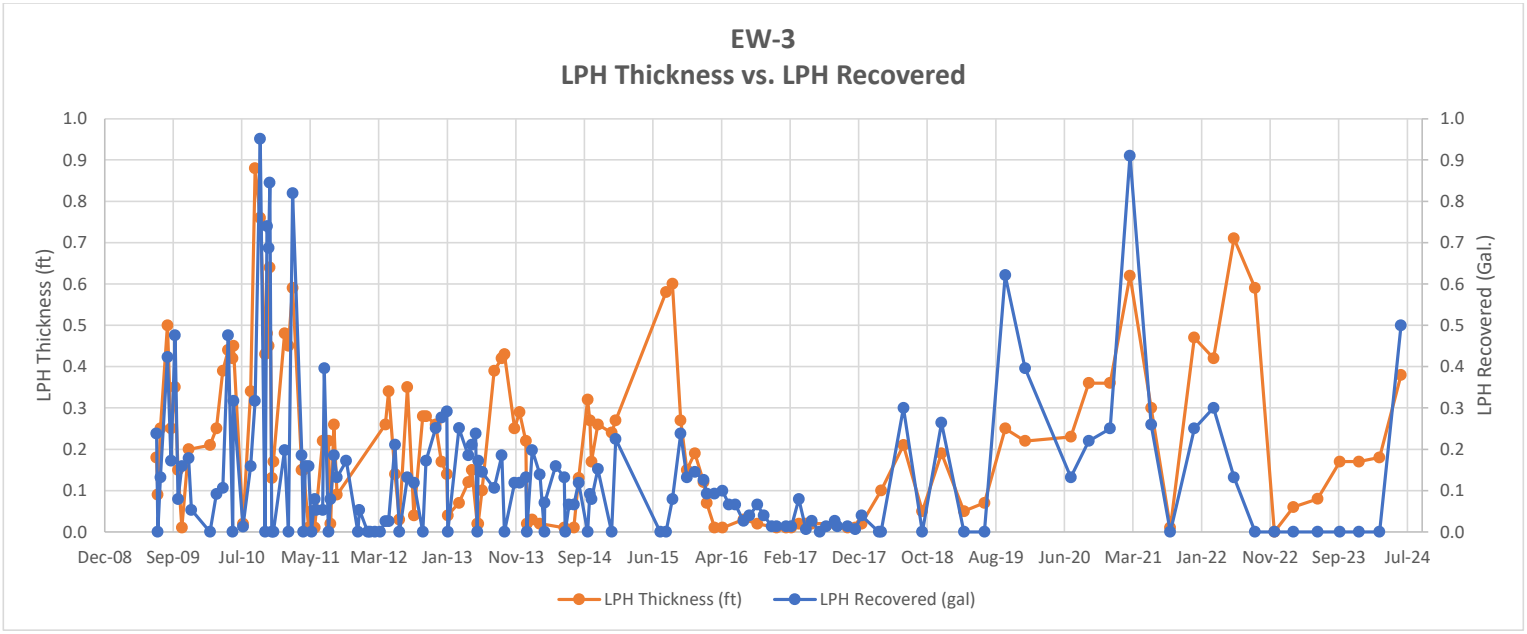

MW-63
Cumulative LPH Recovered
Cumulative LPH Recovered (Gal)
0.0
20.0
40.0
60.0
80.0
100.0
120.0
140.0
160.0
Dec-08
Sep-09
Jul-10
May-11
Mar-12
Jan-13
Nov-13
Sep-14
Jun-15
Apr-16
Feb-17
Dec-17
Oct-18
Aug-19
Jun-20
Mar-21
Jan-22
Nov-22
Sep-23
Jul-24

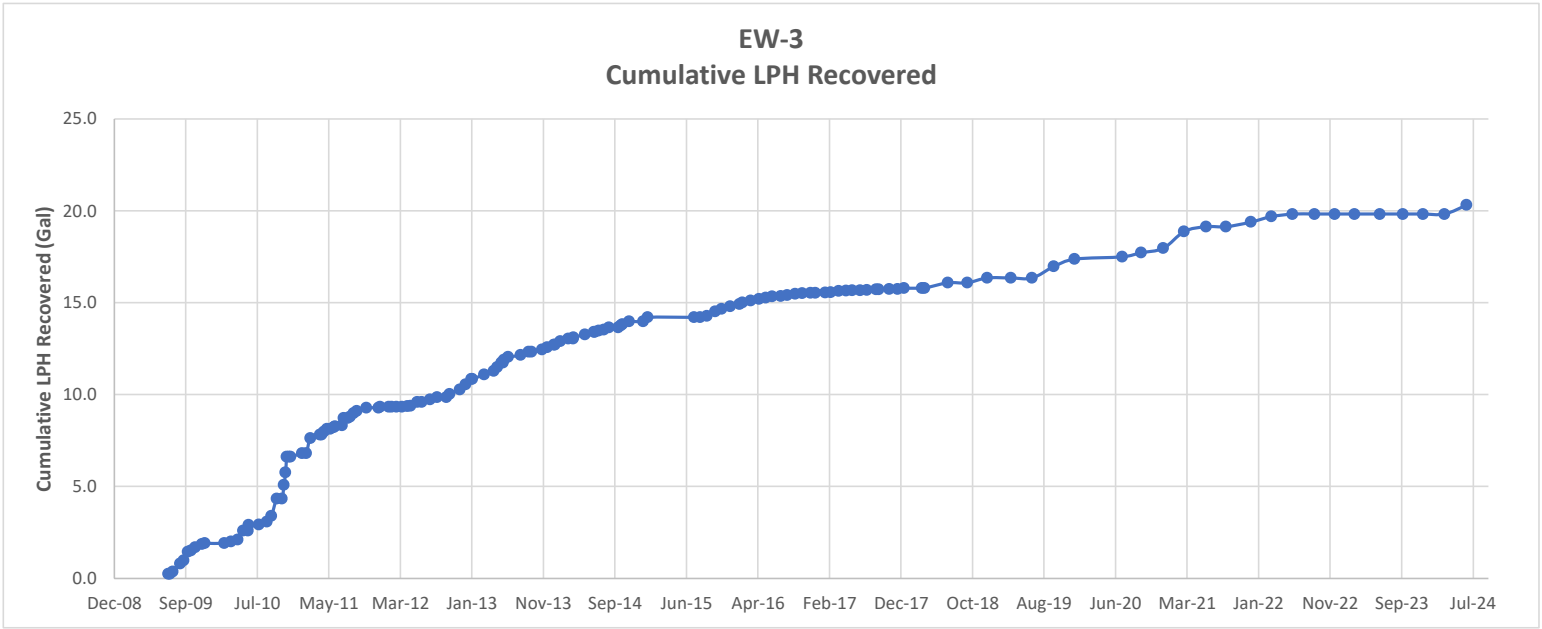

MW-65
LPH Thickness vs. LPH Recovered
LPH Thickness (ft)
LPH Recovered (Gal.)
1.0
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0.0
Dec-08
Sep-09
Jul-10
May-11
Mar-12
Jan-13
Nov-13
Sep-14
Jun-15
Apr-16
Feb-17
Dec-17
Oct-18
Aug-19
Jun-20
Mar-21
Jan-22
Nov-22
Sep-23
Jul-24
LPH Thickness (ft)
LPH Recovered (gal)

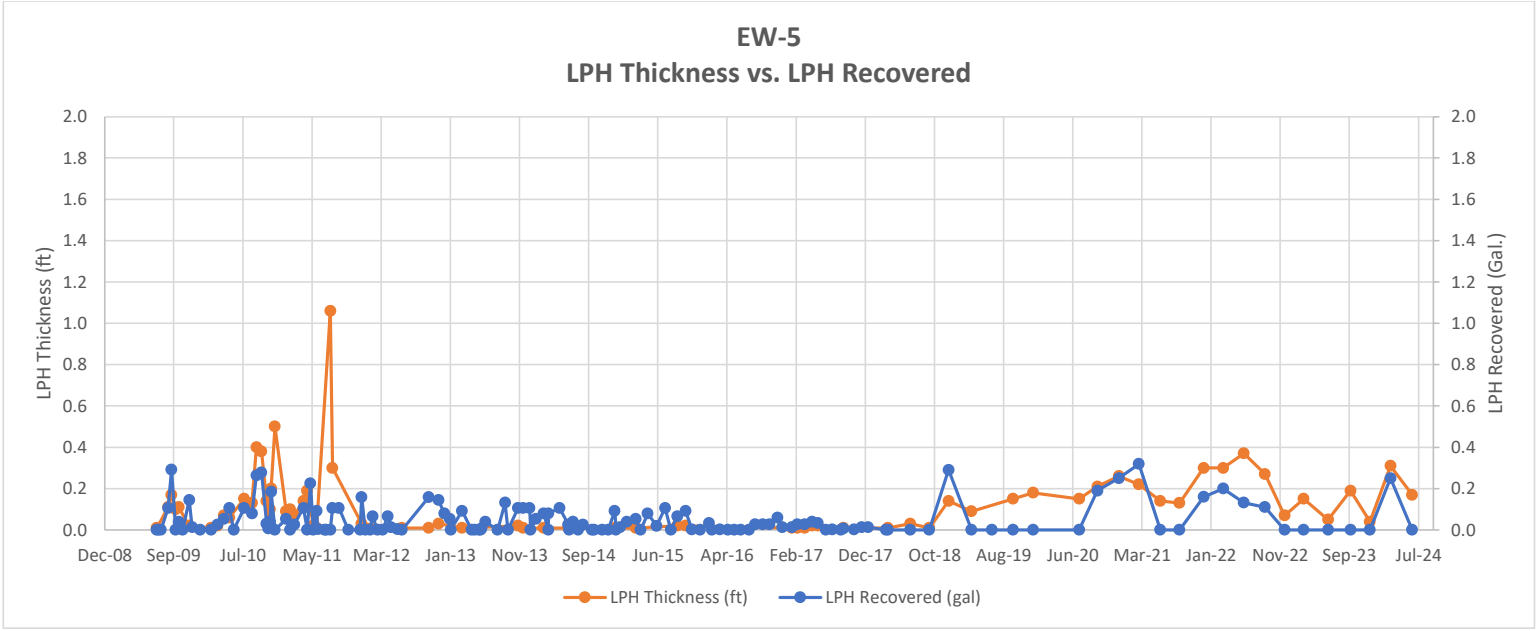

MW-65
Cumulative LPH Recovered
Cumulative LPH Recovered (Gal)
0.2
0.1
0.0
Dec-08
Sep-09
Jul-10
May-11
Mar-12
Jan-13
Nov-13
Sep-14
Jun-15
Apr-16
Feb-17
Dec-17
Oct-18
Aug-19
Jun-20
Mar-21
Jan-22
Nov-22
Sep-23
Jul-24

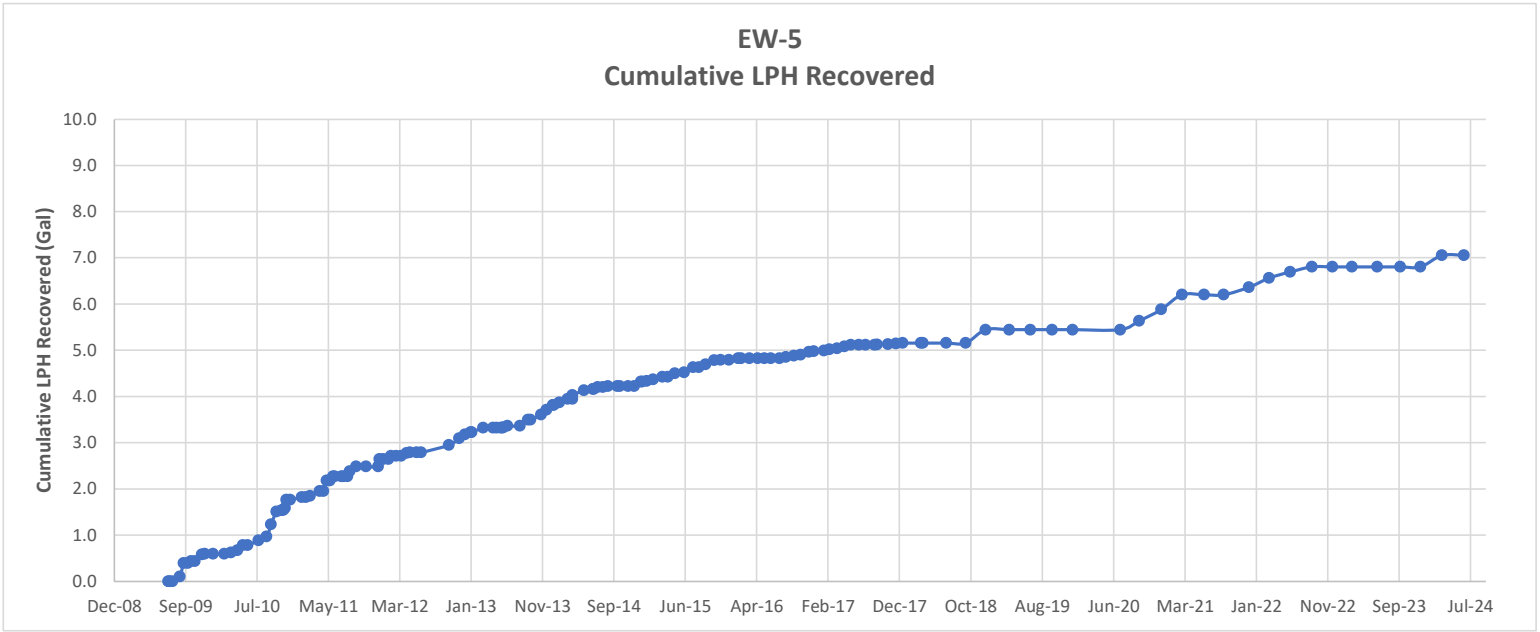

MW-67
LPH Thickness vs. LPH Recovered
LPH Thickness (ft)
LPH Recovered (Gal.)
2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
3.0
2.8
2.6
2.4
2.2
2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
Dec-08
Sep-09
Jul-10
May-11
Mar-12
Jan-13
Nov-13
Sep-14
Jun-15
Apr-16
Feb-17
Dec-17
Oct-18
Aug-19
Jun-20
Mar-21
Jan-22
Nov-22
Sep-23
Jul-24
LPH Thickness (ft)
LPH Recovered (gal)

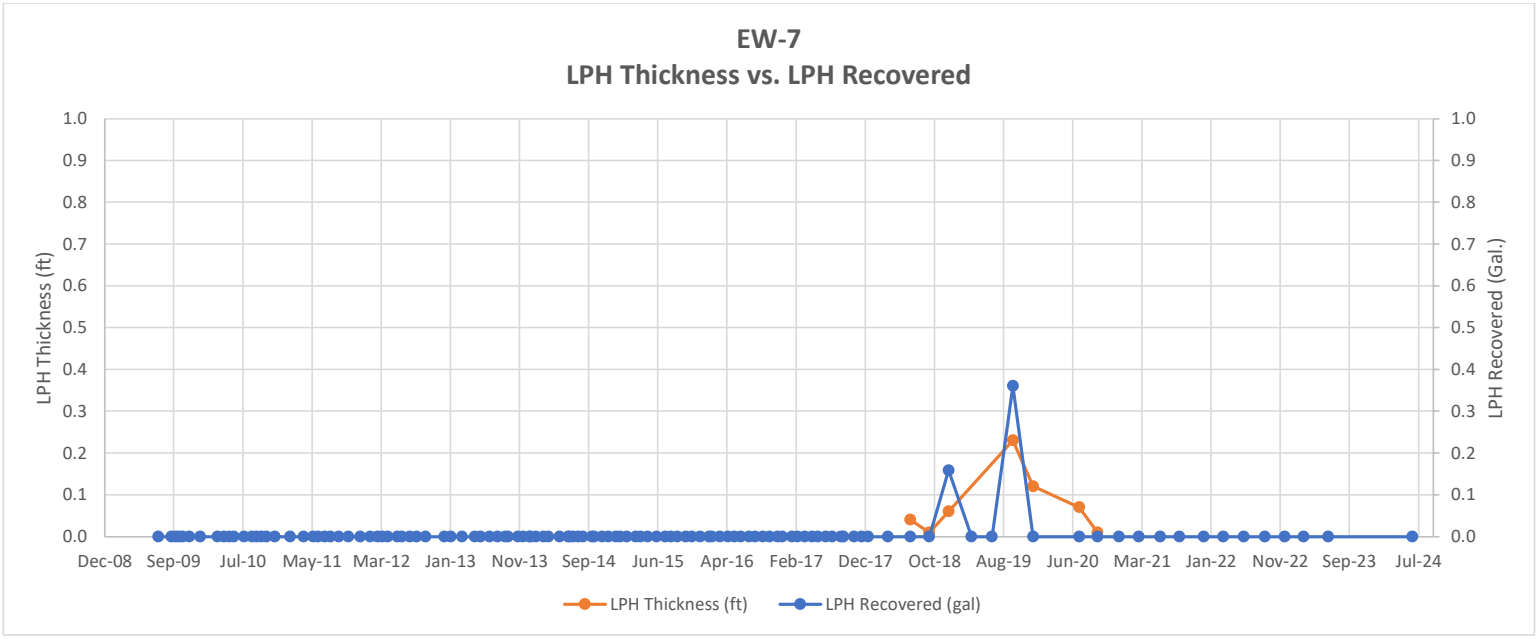

MW-67
Cumulative LPH Recovered
Cumulative LPH Recovered (Gal)
14.0
12.0
10.0
8.0
6.0
4.0
2.0
0.0
Dec-08
Sep-09
Jul-10
May-11
Mar-12
Jan-13
Nov-13
Sep-14
Jun-15
Apr-16
Feb-17
Dec-17
Oct-18
Aug-19
Jun-20
Mar-21
Jan-22
Nov-22
Sep-23
Jul-24

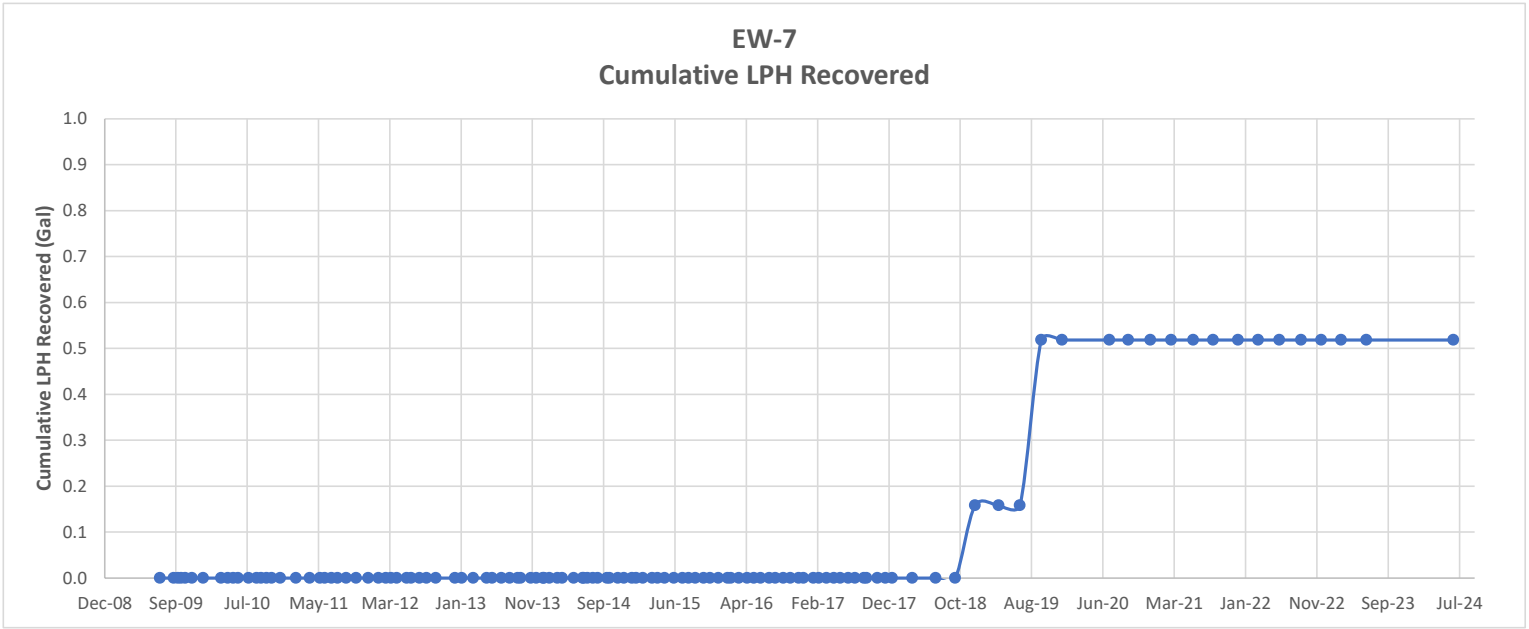

EW-3
LPH Thickness vs. LPH Recovered
LPH Thickness (ft)
LPH Recovered (Gal.)
1.0
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0.0
Dec-08
Sep-09
Jul-10
May-11
Mar-12
Jan-13
Nov-13
Sep-14
Jun-15
Apr-16
Feb-17
Dec-17
Oct-18
Aug-19
Jun-20
Mar-21
Jan-22
Nov-22
Sep-23
Jul-24
LPH Thickness (ft)
LPH Recovered (gal)


EW-3
Cumulative LPH Recovered
Cumulative LPH Recovered (Gal)
25.0
20.0
15.0
10.0
5.0
0.0
Dec-08
Sep-09
Jul-10
May-11
Mar-12
Jan-13
Nov-13
Sep-14
Jun-15
Apr-16
Feb-17
Dec-17
Oct-18
Aug-19
Jun-20
Mar-21
Jan-22
Nov-22
Sep-23
Jul-24


EW-5
LPH Thickness vs. LPH Recovered
LPH Thickness (ft)
LPH Recovered (Gal.)
2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
Dec-08
Sep-09
Jul-10
May-11
Mar-12
Jan-13
Nov-13
Sep-14
Jun-15
Apr-16
Feb-17
Dec-17
Oct-18
Aug-19
Jun-20
Mar-21
Jan-22
Nov-22
Sep-23
Jul-24
LPH Thickness (ft)
LPH Recovered (gal)


EW-5
Cumulative LPH Recovered
Cumulative LPH Recovered (Gal)
10.0
9.0
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
Dec-08
Sep-09
Jul-10
May-11
Mar-12
Jan-13
Nov-13
Sep-14
Jun-15
Apr-16
Feb-17
Dec-17
Oct-18
Aug-19
Jun-20
Mar-21
Jan-22
Nov-22
Sep-23
Jul-24


EW-7
LPH Thickness vs. LPH Recovered
LPH Thickness (ft)
LPH Recovered (Gal.)
1.0
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0.0
Dec-08
Sep-09
Jul-10
May-11
Mar-12
Jan-13
Nov-13
Sep-14
Jun-15
Apr-16
Feb-17
Dec-17
Oct-18
Aug-19
Jun-20
Mar-21
Jan-22
Nov-22
Sep-23
Jul-24
LPH Thickness (ft)
LPH Recovered (gal)


EW-7
Cumulative LPH Recovered
Cumulative LPH Recovered (Gal)
1.0
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0.0
Dec-08
Sep-09
Jul-10
May-11
Mar-12
Jan-13
Nov-13
Sep-14
Jun-15
Apr-16
Feb-17
Dec-17
Oct-18
Aug-19
Jun-20
Mar-21
Jan-22
Nov-22
Sep-23
Jul-24