Appendix N.2

Packer and Pumping Test Report (RW-2 and RW-3)

August 25, 2025

Version 1

Sunoco Pipeline LP

Packer and Pumping Test Report (RW-2 and RW-3)

Twin Oaks to Newark 14” Diameter Pipeline Release

Glenwood Drive, Washington Crossing, PA 18977
Upper Makefield Township, Bucks County, PA

August 25, 2025

Version 1

Recovery Well Packer and Pumping Test Report (RW-2 and RW-3)

Recovery Wells, Glennwood Drive.
Upper Makefield Township, Bucks County, PA

Prepared for:
Sunoco Pipeline LP
100 Green Street
Marcus Hook, PA 19061

Prepared by:
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Date:
August 25, 2025

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Acronyms

CSM	Conceptual Site Model
EDC	Ethylene dichloride
EDB	Ethylene dibromide
ft bgs	feet below grade surface
ft below TOC	feet below top of casing
ft H_2O	feet of water
GES	Groundwater & Environmental Services, Inc.
gpm	gallons per minute
gpm/ft	gallons per minute per foot
gpd/ft	gallons per day per foot
LNAPL	Light Non-aqueous Phase Liquid
MTBE	Methyl tert-butyl ether
MSC	Medium Specific Concentration
P-W	Parratt-Wolff
PADEP	Pennsylvania Department of Environmental Protection
RW	Recovery Well
SPLP	Sunoco Pipeline LP
T	Transmissivity
VOC	Volatile Organic Compounds
USEPA	US Environmental Protection Agency
VOC	Volatile Organic Compound
µg/L	micrograms per liter

1 Introduction and Objectives

Groundwater & Environmental Services, Inc., (GES), on behalf of Sunoco Pipeline LP (SPLP), has conducted both packer testing and pumping testing activities in two 6-inch diameter, active recovery wells located along Glenwood Drive in Washington Crossing, Pennsylvania 18977. The tested recovery wells are designated RW-2 and RW-3 and were installed on May 21, 2025 and May 22, 2025, respectively. The wells have been utilized since installation to recover light non-aqueous phase liquid (LNAPL).

The objectives of packer and pumping testing at RW-2 and RW-3 were to:

- Isolate targeted fracture zones within the open borehole portion of each well that were identified during a downhole geophysical investigation conducted by RETTEW on June 10 and 11, 2025. A copy of the *RETTEW Borehole Logging Survey* report for the recovery wells is included as **Appendix A**.
- Conduct pumping (and recovery) stages within each target zone to purge the interval and to derive aquifer parameters such as specific capacity and transmissivity.
- Collect discrete water quality measurements and groundwater samples for laboratory analysis from each of the targeted zones where possible.
- Evaluate drawdown in nearby potable and recovery wells that were also monitored (via manual gauging or transducer logger) during the various stages of RW-2 and RW-3 packer and pumping testing that were conducted from June 23 to June 26, 2025.

By isolating and testing predetermined zones within the open borehole well, and evaluating observed magnitude and directional influence in nearby observation wells, to the objective was to identify hydraulically active fracture(s) and preferential flow features which would aid in the development of a conceptual site model (CSM) which would assist with the selection and performance of remedial options.

A **Local Area Map** presenting the location of the recovery wells is attached as **Figure 1**. Lithology and well construction logs for RW-2 and RW-3 are provided as **Appendix B.**

2 Packer Test and Pumping Test Summary

2.1 Packer Testing

Parratt-Wolff, Inc. (P-W), a Pennsylvania-licensed drilling firm, was subcontracted and supervised by GES to: 1) configure and install packer assemblies at predetermined targeted test zones, 2) provide and maintain an electric submersible pump for operation within each isolated test zone, 3) provide pressure transducers to allow for monitoring of heads above, below, and within each test zone, and to 4) lower, inflate, and maintain the packer assembly at each subsequent test zone.

During the packer tests, GES was responsible for: 1) programing/monitoring the water level transducers, 2) maintaining and recording pumping rates, and 3) collecting analytical samples once a stabilized drawdown and pump rate had been achieved. In addition, GES maintained

active transducers and/or performed manual fluid-level gauging at several observation wells in proximity to each pumping well. Wells utilized as observation wells during packer testing included RW-2 and RW-3 (when not actively tested), RW-1, RW-4, [redacted] Walker Road and 108 Spencer Road (potable supply wells).

The targeted zones for both the RW-2 and RW-3 packer tests, as determined from the June 2025 RETTEW downhole geophysical survey, were as follows:

RW-2:

- Shallow Zone = Static Depth-to-Water (DTW)[A] (22.9 feet bgs) to 33 feet bgs[B] (Test #1)
- Mid Zone = 31 – 49 feet bgs[C] (Test #2)
- Deep Zone = 48 – 63 feet bgs[B] (Test #3)

RW-3:

- Shallow Zone = Static DTW[A] (22.7 feet bgs) to 33 feet bgs[B] (Test #4)
- Mid Zone = 30 – 48 feet bgs[C] (Test #6)
- Deep Zone = 47 – 65 feet bgs[B] (Test #5)

[A] = DTW corrected for presence of LNAPL (Density=0.80).

[B] = Single-packer configuration

[C] = Double-packer configuration

A simplified summary of these six isolated interval tests includes:

- Test #1 (RW-2): 28-minute pumping duration ranging from 0.6 – 1.4 gallons per minute (gpm) (average = 0.83 gpm); 23 gallons water removed, maximum drawdown = 13.03 feet, estimated specific capacity = 0.06 gallons per minute per foot (gpm/ft). Completed June 23, 2025.
- Test #2 (RW-2): 29-minute pumping duration ranging from 1.1 – 1.36 gpm (average = 1.2 gpm); 35 gallons water removed, maximum drawdown = 1.11 feet, estimated specific capacity = 1.1 gpm/ft [D]. Completed June 23, 2025.
- Test #3 (RW-2): 58-minute pumping duration ranging from 0.58 – 1.5 gpm (average = 1.1 gpm); 61 gallons water removed, maximum drawdown = 13.20 feet, estimated specific capacity = 0.08 gpm/ft. Completed June 24, 2025.
- Test #4 (RW-3): 22-minute pumping duration ranging from 0.375 – 1.85 gpm (average = 1.0 gpm), 22 gallons water removed, maximum drawdown = 10.72 feet, estimated specific capacity = 0.09 gpm/ft. Completed June 24, 2025.
- Test #5 (RW-3): 31-minute pumping duration ranging from 0.71 – 1.67 gpm (average = 1.1 gpm), 33 gallons water and 2 gallons of light non-aqueous phase liquid (LNAPL) removed, maximum drawdown = 5.57 feet, estimated specific capacity = 0.20 gpm/ft. Completed June 25, 2025.

- Test #6 (RW-3): 68-minute pumping duration ranging from 1.15 – 1.85 gpm (average = 1.2 gpm); 83 gallons water removed, maximum drawdown = 6.11 feet, estimated specific capacity = 0.20 gpm/ft. Completed June 24, 2025*.

[D] = Dewatered to Transducer – Specific Capacity may be biased high

*Note that the initially planned test sequence was altered to allow for continued work on June 24, 2025 with equipment repair taking place after on-site work was completed. Thus, Test #6, a single-packer test, was completed in advance of Test #5, a dual-packer test, due to issues with dual-packer integrity that required replacement parts and extra time to correct.

A schematic drawing of the double-packer assembly similar to what was utilized for the packer test event is included in **Appendix C**.

At the beginning of the packer test event (June 23, 2025), the static depth-to-water was measured in RW-2 at 22.93 feet below top-of-casing (TOC), with a depth-to-LNAPL measured at 22.90 feet below TOC, indicating a 0.03 foot thickness of LNAPL. Static depth-to-water was measured in RW-3 at 23.74 feet below TOC, with a depth-to-LNAPL measured at 23.01 feet below TOC, indicating a 0.73 foot thickness of LNAPL.

A summary of packer test data for each test zone is provided in **Table 1**, which includes pumping duration, total gallons pumped, average pump rate, calculated specific capacity, transmissivity, and observed pressure head changes recorded by the transducers positioned above ("top"), within ("middle"), and below ("bottom") the isolated test intervals. Annotated graphical plots of pressure head changes recorded from the top, middle, and bottom transducers, logged during each of the packer zone tests, are provided in **Appendix D-1.** For the shallow interval tests (Test #1 and Test #4), the fluid levels above the packer were manually measured using an oil/water interface probe and there are no corresponding transducer data files.

2.2 Pump Testing

Following completion of the packer tests, three pumping tests were performed over the full open intervals of RW-2 and RW-3 on June 26, 2025, as noted below. Two tests were conducted at RW-2 and one test was completed at RW-3. A summary of these three pumping tests follows:

RW-2:

- Test #1: Pumping duration = 84 minutes, average rate = 1.55 gpm, specific capacity = 0.35 gpm/ft, maximum drawdown = 4.40 feet
- Test #2: Pumping duration = 74 minutes, average rate = 2.88 gpm, specific capacity = 0.31 gpm/ft, maximum drawdown = 9.26 feet

RW-3:

- Test 1: Pumping duration = 120 minutes, average rate = 1.24 gpm, specific capacity = 0.09 gpm/ft, maximum drawdown = 13.28 feet

The single well pumping tests completed on June 26, 2025, generally yielded higher sustained groundwater flows and comprised longer duration pumping intervals relative to the packer tests completed at these same wells. Annotated transducer plots for the RW-2 and RW-3 pumping

tests are provided as **Appendix D-2**. Annotated graphical plots for nearby observation wells, utilized during both the packer and pumping tests, are provided as **Appendix D-3**.

Review of the observation well plots illustrate no hydraulic influence was noted at RW-3 during pumping testing at RW-2 and vice versa. However, drawdowns on the order of one foot were identified in the supply well at [REDACTED] Walker Road during the RW-2 pumping test. No such influence was noted during pumping at RW-3. Some influence at RW-4 (estimated at 0.18 feet) was noted during pumping at RW-3.

Both RW-2 and RW-3 will likely sustain extraction rates on the order of one to two gpm. It is uncertain whether LNAPL will accumulate in these wells under pumping conditions; no appreciable accumulation or recovery was noted during any of the short-term pumping tests conducted on June 26 and summarized herein.

The specific capacity values calculated for the two open bore pumping tests at RW-2 (0.35 gpm/ft and 0.31 gpm/ft, respectively) are higher than two of three values determined from isolated packer interval testing at that well (0.06 gpm/ft, and 0.08 gpm/ft.) (The third specific capacity value calculated from RW-2 packer test #2, at 1.1 gpm/ft, is likely biased high due to premature transducer dewatering and pump cavitation – resulting in inconsistent output.) As noted, pumping at RW-2 did result in approximately 0.9 feet of drawdown in the supply well at [REDACTED] Walker Road, where the casing depth is 35 feet bgs. This finding, combined with significant drawdown in the shallow (water table) interval during deep zone packer testing (Test #3) suggests the presence of hydraulically active steeply dipping fractures in this vicinity.

The aggregate specific capacity value for RW-3 is similar to the values obtained from each of the three distinct test intervals, suggesting either vertical flow integration at this well or flow around the packers during testing. The likely result is that some vertical flow integration occurs in these relatively shallow wells as a function of steeply dipping fractures, which were identified via geophysical logging at both well bores.

A summary of pumping test data is provided in **Table 2**, which includes pumping duration, total gallons pumped, average pumping rate, calculated specific capacity, transmissivity, and observed pressure head changes recorded by the single transducer deployed during each pumping test.

All groundwater generated during the packer test event was temporarily stored on-site in non-hazardous labeled 55-gallon drums and moved offsite for proper disposal.

3 Groundwater Sample Collection and Laboratory Analysis

Groundwater samples were collected from packer tests #3, #5 and #6 and RW-2 and RW-3 utilizing a Grundfos Redi-Flow electric submersible pump. Groundwater samples were not collected from the shallow test intervals at RW-2 or RW-3 (Tests #1 and #4) due to a persistent layer of LNAPL. Groundwater samples were not collected from the middle interval of RW-2 (Test #2) due to problems with pump cavitation and inadequate sustained flow.

During groundwater sample collection, each groundwater sample was placed into lab-provided bottleware and immediately stored on ice. The samples were shipped under chain-of-custody documentation to Pace Analytical with a requested analysis for volatile organic compounds

(VOCs) (Pennsylvania leaded gasoline / jet fuel parameter list) via United States Environmental Protection Agency (USEPA) Method 524.2, 1,2-dibromomethane (EDB) via USEPA Method 504.1, and dissolved lead (field filtered) via USEPA Method 200.8.

A summary of groundwater analytical results for each tested zone is provided as **Table 3**. The corresponding laboratory analytical report, with chain-of-custody documentation, is provided as **Appendix E**.

4 Observations and Conclusions

Review of recorded field data (**Table 1**) and transducer plots (**Appendix D-1**) from the packer test indicate the following:

- Total pumping time for each of the six packer tests ranged from 22 minutes (Test #4) to 68 minutes (Test #6), with an average pumping time of 34 minutes per zone.
- Overall drawdown (change in pressure head) recorded from the middle transducer in each packer zone ranged from 1.11 feet of water (ft. H_2O) (Test #5) to 13.20 ft. H_2O (Test #3).
- Pumping rates during the packer tests were calculated as an overall average rate, with the total volume of water pumped divided by the total pumping duration.
  - Average pumping rates varied from 0.80 gpm to 1.2 gpm with an average rate of 1.1 gpm.
  - Several tests required periodic increases to the pumping rate to compensate for diminishing flow (likely a function of decreasing head).
- Specific capacity values were calculated for each pumped packer zone by dividing the average pumping rate with the pressure change ("drawdown") observed in the middle transducer (**Table 1**). Specific capacity values ranged from 0.06 gpm/ft (Test #1) to 1.1 gpm/ft (Test #3) noting the Test #3 value is considered to be biased high due to premature transducer dewatering and poor pump performance (cavitation) leading to significant variation in output. Excluding the specific capacity value for Test #3, provides a range of 0.06 to 0.20 gpm/ft. (Test #6).
  - Estimated transmissivity (T) values for each zone, whereby the "T" = 2000 x specific capacity (gpm/ft), for a confined aquifer (Driscoll 1986), ranged from 126 gpd/ft (Test #1) to 2,175 gpd/ft (Test #2). Excluding the T value for Test #2 provides a range of 126.1 to 399.5 gpd/ft.
  - The average pumping rate was estimated for many zone tests; therefore, the calculated specific capacity and transmissivity values should be considered estimated.
- Total drawdown for top transducers ranged from 0.96 ft H_2O (Zone #6) to 17.08 ft H_2O (Zone #3). In summary, Test #6 had good top packer seal, while tests #2, #3 and #5 had moderate to poor top packer seals or flow around the packers due to the presence of vertical fractures.
- Total drawdown for bottom transducers ranged from 0.07 ft H_2O (Test #1) to 9.13 ft H_2O (Test #6). In summary, Test #1 and #4 had good bottom packer seal, test #2 had moderate packer seal and test # 6 had poor bottom packer seal. Drawdown around top and bottom packers

are attributed to either: 1) mechanical leaks through the packer bladders or 2) or fracture flow via steeply dipping fracture planes that intersect the borehole above and below a pumped test zone.

Overall, the series of short duration packer and open-well pumping tests completed at RW-2 and RW-3 from June 23 through June 25, 2025 indicate that each well can produce sustained groundwater withdrawals on the order of 1.0 to 1.5 gpm, with RW-3 capable of slightly greater sustained water production. Appreciable increase in LNAPL thickness was not noted in either pumping well over the course of the four-day test period, but no long-term, stable drawdowns were established in either pumping well in order to make such a determination.

Pumping at RW-2 yielded associated influence (drawdown) of approximately 0.9 feet at the domestic well at [redacted] Walker Road, located approximately 66 feet east of RW-2, suggesting a hydraulic connection consistent with the conceptual site model (specifically, geophysical analysis and interpretation), but did not result in discernable drawdown or influence at any other wells. Pumping at RW-3 produced a modest drawdown of less than 0.2 feet at RW-4, located 66 ft to the north, but no influence at either RW-2 or the [redacted] Walker Road supply well.

Groundwater analytical results (**Table 3**) and packer test hydraulic responses identified via transducer plots (**Appendix D-1**) from RW-3 indicate that there is vertical communication throughout the full saturated well column, indicative of steeply dipping fractures, per the conceptual site model. Absent sufficient analytical data to substantiate such a finding at RW-2, the identified drawdowns outside of the isolated test intervals and communication with the deeper well at [redacted] Walker yields a similar conclusion relative to vertical integration of the shallow aquifer system at this location as well.

Figure

REDACTED

REDACTED

Local Area Map

Sunoco Pipeline
Upper Makefield Township,
Washington Crossing, PA

Drawn
J.B.
Designed
S.G.
Approved
X.X.

Date
6/4/25
Figure
1

Scale In Feet (Approximate)
0 100

Groundwater & Environmental Services, Inc.

Tables

Table 1
Packer Test Data Summary
Washington Crossing, PA
June 23 to 25, 2025

Well	Test/Zone	Test Interval (ft. bgs)	Test Date	Sample Time	Pumping Duration (mins.)	Gallons Pumped	Drawdown Central (Pumping) Transducer (ft. H_2O)	Average Pump Rate (gpm)	Specific Capacity (gpm/ft)	Trans-missivity (gpd/ft)	Drawdown Top Transducer (ft. H_2O)[4]	Drawdown Bottom Transducer (ft. H^2O)[4]	Comments
RW-2	Test #1 Shallow	22.9-33	6/23/2025	NA	28	23	13.0	0.8	0.06	126.1	-	0.07	Single-packer configuration.
	Test #2 Mid	31-49	6/23/2025	NA	29	35	1.11	1.2	1.09	2,175	1.29	2.99	Double-packer configuration. Flow rate decreased naturally during test interval - flow rate subsequently was increased to maintain a constant rate. Frothy sheen removed with purge gallons. Transducer was prematurely dewatered therefore specific capacity and Transmissivity values are suspect.
	Test #3 Deep	48-63	6/24/2025	11:20 AM	58	61	13.20	1.1	0.08	159.4	17.08	-	Single-packer configuration. Flow rate decreased naturally over test interval. Frothy sheen removed with purge gallons. Transducer was dewatered.
RW-3	Test #4 Shallow	22.7-33	6/24/2025	NA	22	22	10.72	1.0	0.09	186.6	-	0.42	Single-packer configuration. Pump stopped producing two(2) times during test interval. ~2 gal of product removed.
	Test #6 Mid	30-48	6/25/2025	10:25 AM	68	83	6.11	1.2	0.20	399.5	0.96	9.13	Double-packer configuration. Packer pressure lost during test. Generator ran out of fuel during test. Flow rate increased after generator shut off.
	Test #5 Deep	47-65	6/24/2025	4:00 PM	31	33	5.57	1.1	0.19	382.2	2.30	-	Single-packer configuration. Flow rate was increased during test stage.

Notes:

Drawdown = Change in Pressure Head (ft of H_2O)
ft bgs = Feet below grade surface
ft of H_2O = feet of water
gpm = Gallons per minute
gpm/ft = Gallons per minute per foot
gpd/ft = Gallons per day per foot

Table 2
Pump Test Data Summary
Washington Crossing, PA
June 26, 2025

Well	Test	Test Date	Pumping Duration (mins.)	Gallons Pumped	Drawdown of Test Well (ft. H_2O)	Average Pump Rate (gpm)	Specific Capacity (gpm/ft)	Trans-missivity (gpd/ft)	Drawdown RW-2 Transducer (ft. H_2O)[4]	Drawdown RW-3 Transducer (ft. H^2O)[4]	Drawdown RW-4 Transducer (ft. H^2O)[4]	Drawdown [redacted] Walker Transducer (ft. H^2O)[4]	Comments
RW-2	1	6/26/2025	84	130.2	4.43	1.55	0.34989	699.774	-	0.02	Nominal	0.89	Drawdown stabilized in approx 30 min, no apparent LNAPL accumulation
	2	6/26/2025	74	213.12	9.41	2.88	0.30606	612.115	-	Nominal	Nominal	0.92	Drawdown never fully stabilized (nearly at 58 min)
RW-3	3	6/26/2025	120	148.8	12.27	1.24	0.10106	202.119	Nominal	-	0.14	-0.65	RW-2 was recharging during test - no conclusions can be drawn to areal influence

Notes:

Drawdown = Change in Pressure Head (ft of H_2O)
ft bgs = Feet below grade surface
ft of H_2O = feet of water
gpm = Gallons per minute
gpm/ft = Gallons per minute per foot
gpd/ft = Gallons per day per foot

Table 3
Packer Test Analytical Summary
Washington Crossing, PA
June 23 to 25, 2025

Well	Sample Interval (ft bgs)	Date	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)	Isopropyl Benzene (µg/L)	Naphthalene (µg/L)	1,2,4-Trimethyl benzene (µg/L)	1,3,5-Trimethyl benzene (µg/L)	1,2-Dichloro-ethane (EDC) (µg/L)	1,2 Dibromo-ethane (EDB) (µg/L)	Lead (µg/L)	Total VOCs
DEP MSCs for a Residential, Used Aquifer			**5**	**1,000**	**700**	**10,000**	**20**	**840**	**100**	**130**	**130**	**5**	**0.05**	**5**	
RW-2	0-33 (Zone 1)	06/23/2025	Not sampled due to LNAPL												
	31-49 (Zone 2)	06/23/2025	Not sampled due to LNAPL												
	48-63 (Zone 3)	06/24/2025	**290**	500	220	1,400	ND <1.7	42	**460**	**1100**	**350**	ND <1.3	ND <0.005	ND <0.3	4362.4
RW-3	0-33 (Zone 4)	06/24/2025	Not sampled due to LNAPL												
	30-48 (Zone 5)	06/25/2025	**100**	200	43	720	ND <0.66	16	**120**	**540**	**210**	ND <0.53	ND <0.005	ND <0.3	1949.5
	47-65 (Zone 6)	06/24/2025	**100**	200	56	830	ND <0.66	15	**130**	**530**	**230**	ND <0.53	ND <0.005	ND <0.3	2091.5

Notes:
ft bgs = Feet Below Grade Surface
J = Approximate value; result is < Reporting Limit (RL) and ≥ Method Detection Limit (MDL)
DEP = Pennsylvania Department of Environmental Protection
MSCs = Medium-Specific Concentrations per 25 Pa. Code Chapter 250
µg/L = Micrograms/Liter
Volatiles Analyzed via EPA Method 524.2
Bold = Exceeds the DEP MSC for a Used, Residential Aquifer < 2,500 mg/L total dissolved solids
NS = Not Sampled

Appendix A – RETTEW Borehole Logging Survey

Note: Included in Appendix B

Appendix B – Recovery Well Construction Logs

MONITORING WELL LOG RW-2

Groundwater and Environmental Services, Inc.

PROJECT:	Washington Crossing, PA	WELL DIAMETER:	6" Open Rock	TOTAL DEPTH:	63.0'
ADDRESS:	108 Spencer Road, Washington Crossing, PA	CASING ELEVATION:	NM	WATER DEPTH:	22.04'
		BOREHOLE DIAMETER:	8" (0-10'); 6" (10'-63.0')		

Logged By:	Michael Haezebrouck	Drilling Method:	Air-Rotary 0'-63.0'
Dates Drilled:	5/21/2025 Augered: 5/19/2025	Sampling Method:	Grab
Drilling Company:	Parratt-Wolff	Soil Class. System:	Unified Soil Classification System (USCS)
Drill Rig Type:	CME 55 HT Air Rotary	Field Screening:	PID 10.6 eV Lamp (ppm)

Depth (feet)	Sample Interval	Field Screen (ppm)	SAMPLE LITHOLOGY (USCS)	Stratigraphy	Comments	COMPLETION DETAILS
0		0.0	Asphalt: (0.0-0.5') Asphalt and subbase	Asphalt	Hand-cleared via hand-auger to 5' bgs	Flush-mounted well vault with locking cap
		0.0	CL: (0.5'-5.0') Orange-brown lean clay with sand and gravel, dry	CL		(0'-0.5') Concrete
5		0.0				
		0.0	ARGILLITE: (5.0'-7.0') Dark gray and orange-brown argillite, interbedded sapprolite partings	ARGILLITE		
		0.0		CH		
		414		ARGILLITE		
10	Lab sample collected at 7'-8'	0.0	CH: (7.0'-8.0') Orange-brown fat clay with angular argillite gravels			(0.5-10') Grout
		0.0	ARGILLITE: (8.0'-25.0') Dark and light gray to orange-brown fractured argillite with interbedded sapprolite partings and impure limestone (water bearing fracture)			(0-10') 5" casing installed to 10' bgs
15						
20		0.0				
			LIMESTONE: (25'-26') Dark gray to light gray impure limestone interbed	LIMESTONE	Water at 22'	
25			ARGILLITE: (26'-55') Red brown-brown argillite with fissle interbeds	ARGILLITE		
30		0.0				
35						
40		0.0				(10'-63') Open rock well
45						
50		0.0				
55			ARGILLITE: (55'-63') Reddish-brown to dark gray argillite		Recovery well installed to 63' bgs	
60		0.0				

General Comments:

ags = Above ground surface

bgs = Below ground surface

ppm = Parts per million

Symbol Key:

Apparent Water Level

Soil Sample Location

MONITORING WELL LOG

RW-3

Groundwater and Environmental Services, Inc.

PROJECT:	Washington Crossing, PA	WELL DIAMETER:	6" Open Rock	TOTAL DEPTH:	65.0'
ADDRESS:	108 Spencer Road, Washington Crossing, PA	CASING ELEVATION:	NM	WATER DEPTH:	20.26'
		BOREHOLE DIAMETER:	8" (0-10'); 6" (10'-65.0')		

Logged By:	Michael Haezebrouck	Drilling Method:	Air-Rotary 0'-65.0'
Dates Drilled:	5/22/2025 Augered: 5/19/2025	Sampling Method:	Grab
Drilling Company:	Parratt-Wolff	Soil Class. System:	Unified Soil Classification System (USCS)
Drill Rig Type:	CME 55 HT Air Rotary	Field Screening:	PID 10.6 eV Lamp (ppm)

Depth (feet)	Sample Interval	Field Screen (ppm)	SAMPLE LITHOLOGY (USCS)	Stratigraphy	Comments	COMPLETION DETAILS
0		0.0	Asphalt: (0.0-1.0') Asphalt and subbase	Asphalt	Hand-cleared via hand-auger to 3' bgs	Flush-mounted well vault with locking cap
5	Lab sample collected at 2'-3'	0.0	CL: (1.0'-3.0') Orange-brown lean clay with gravel and cobbles	CL		(0'-0.5') Concrete
		0.0	LIMESTONE: (3.0'-6.0') Gray to light gray impure limestone	LIMESTONE		
10		0.0	ARGILLITE: (6.0'-10') Dark gray and orange-brown fractured argillite with interbedded sapprolite partings	ARGILLITE		(0.5-10') Grout
		0.0				(0-10') 5" casing installed to 10' bgs
15		0.0	ARGILLITE: (10'-38') Dark to medium gray to reddish brown fractured argillite with impure limestone interbeds (water bearing fractures at 20')			
20	LNAPL sample collected	0.0				
25		0.0			Water at 20'	
30		0.0				
35		0.0				
40		0.0	ARGILLITE: (38'-63') Dark gray to light gray argillite with impure limestone interbeds			(10'-65') Open rock well
45		0.0				
50		0.0				
55		0.0			Recovery well installed to 65' bgs	
60		0.0				
65		0.0	SHALE: (63'-65') Dark gray to black organic shale	SHALE		

General Comments:

ags = Above ground surface

bgs = Below ground surface

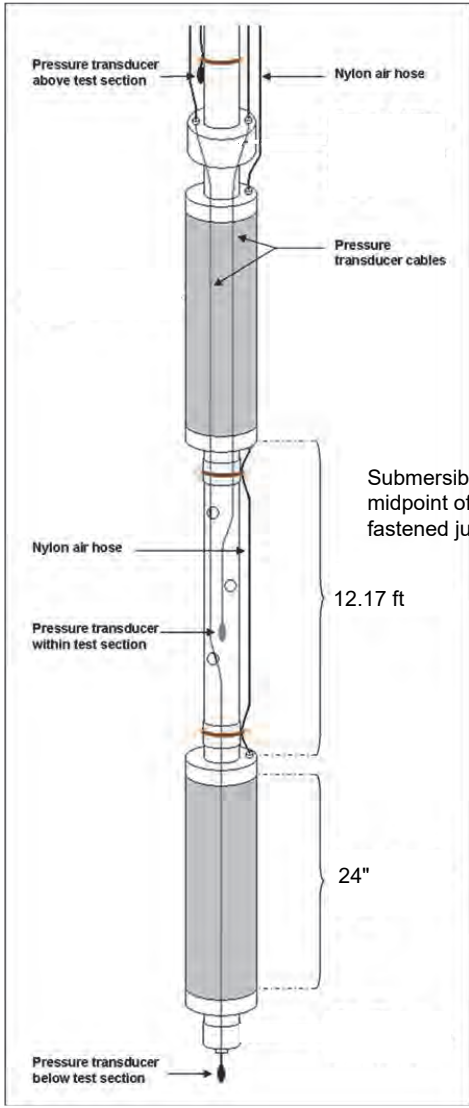
ppm = Parts per million

Symbol Key:

Apparent Water Level

Soil Sample Location

Appendix C - Schematic Drawing – Packer Assembly

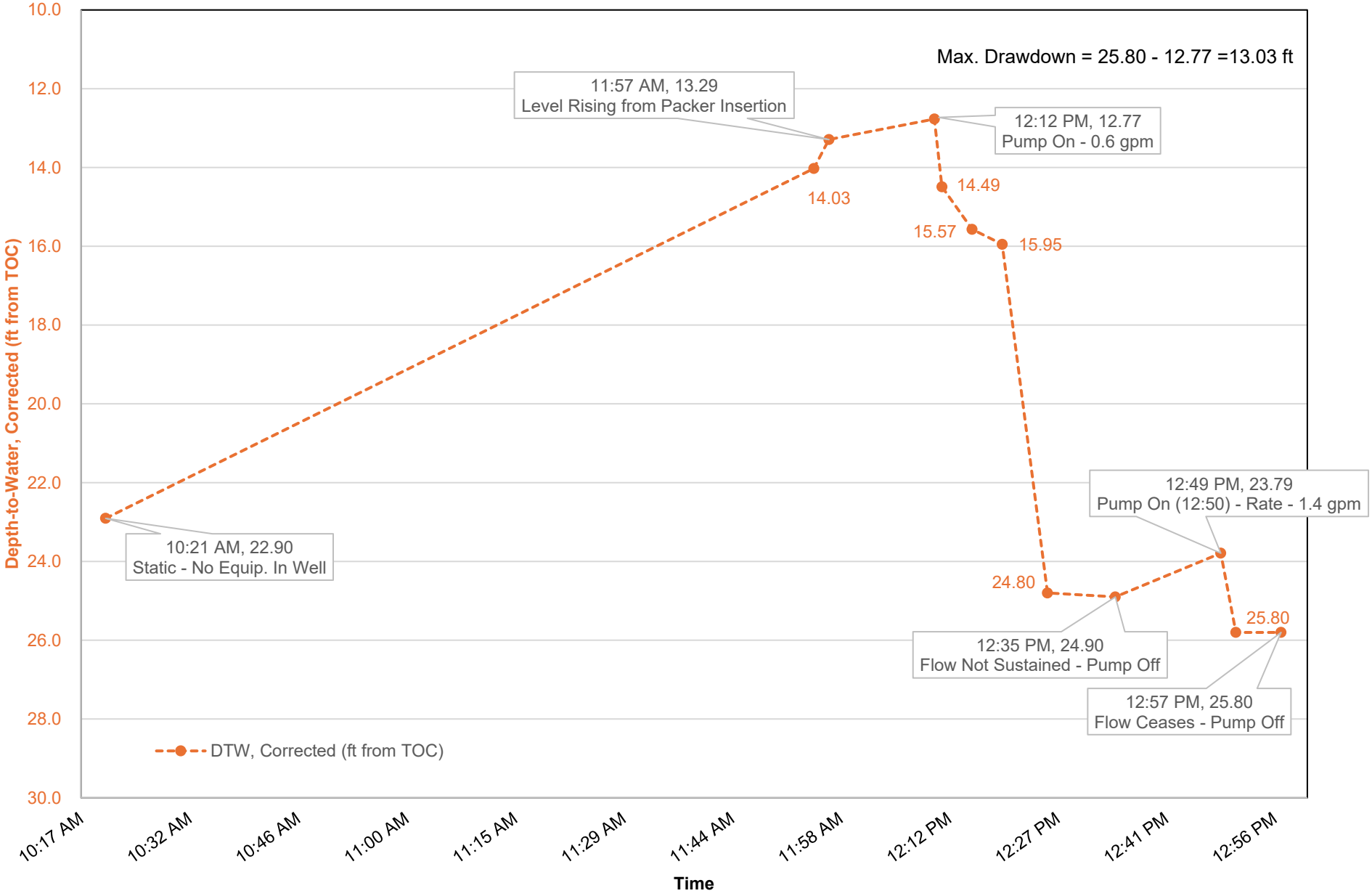


Schematic of Double Packer Assembly

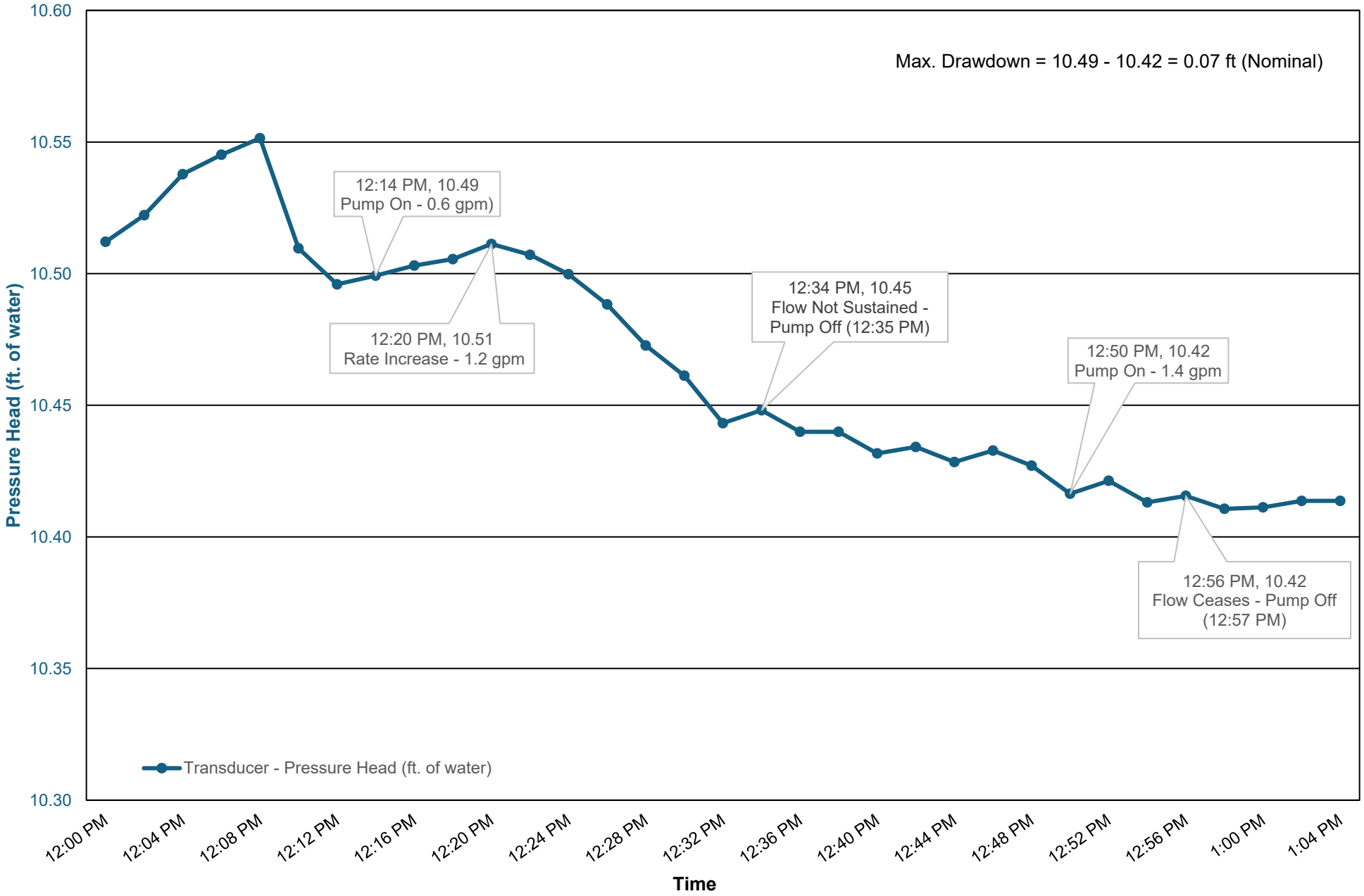
Adapted from: https://www.soils.co.uk/images/downloads/SSL-Packer-Testing-service.pdf

Appendix D-1 – Packer Test Drawdown Plots

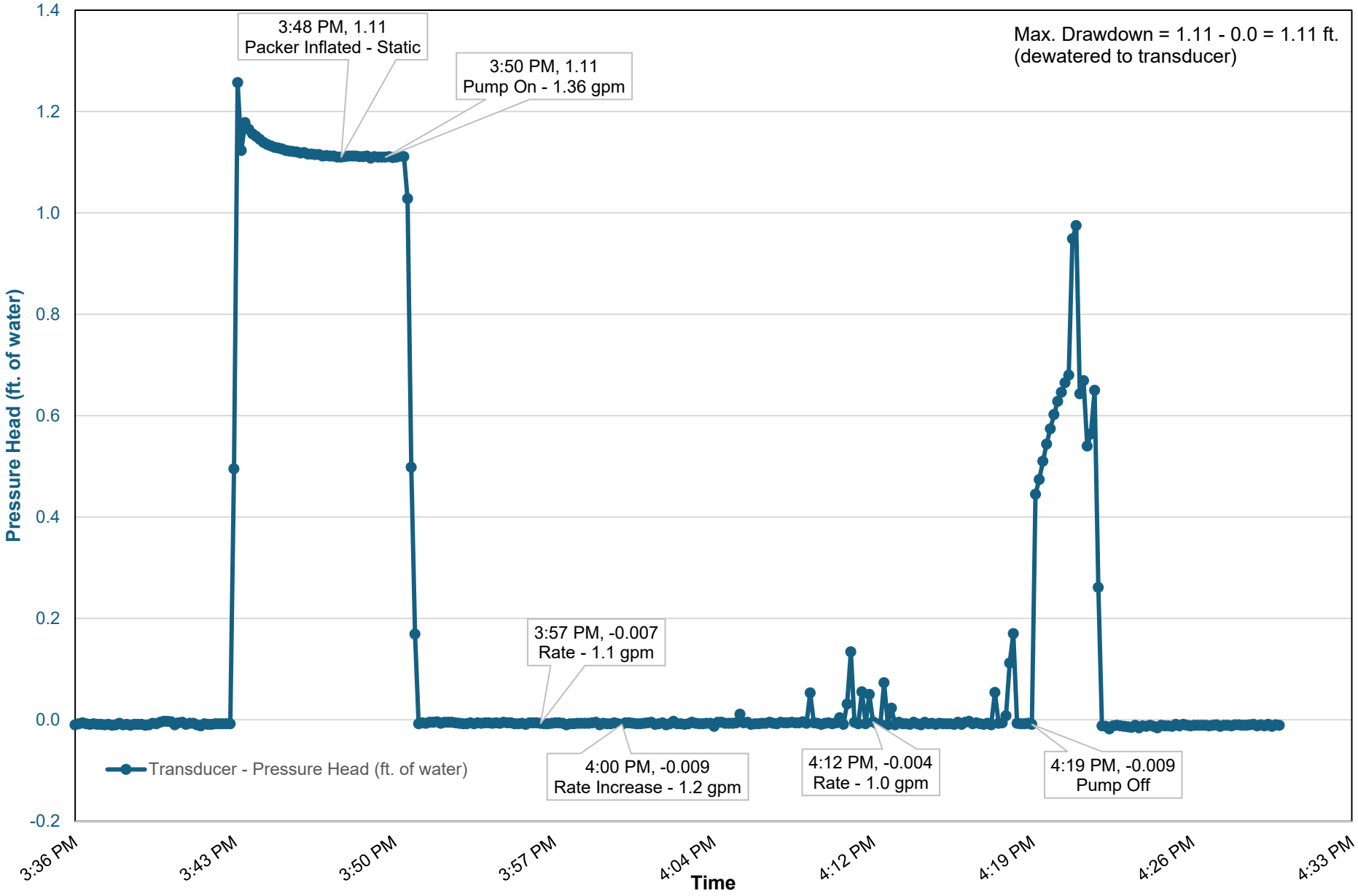
RW-2 Packer Test
Test #1 - Shallow Zone (22.9' to 33')
Top/Pumping Interval - Manual Gauging Measurements
Washington Crossing, PA
June 23, 2025



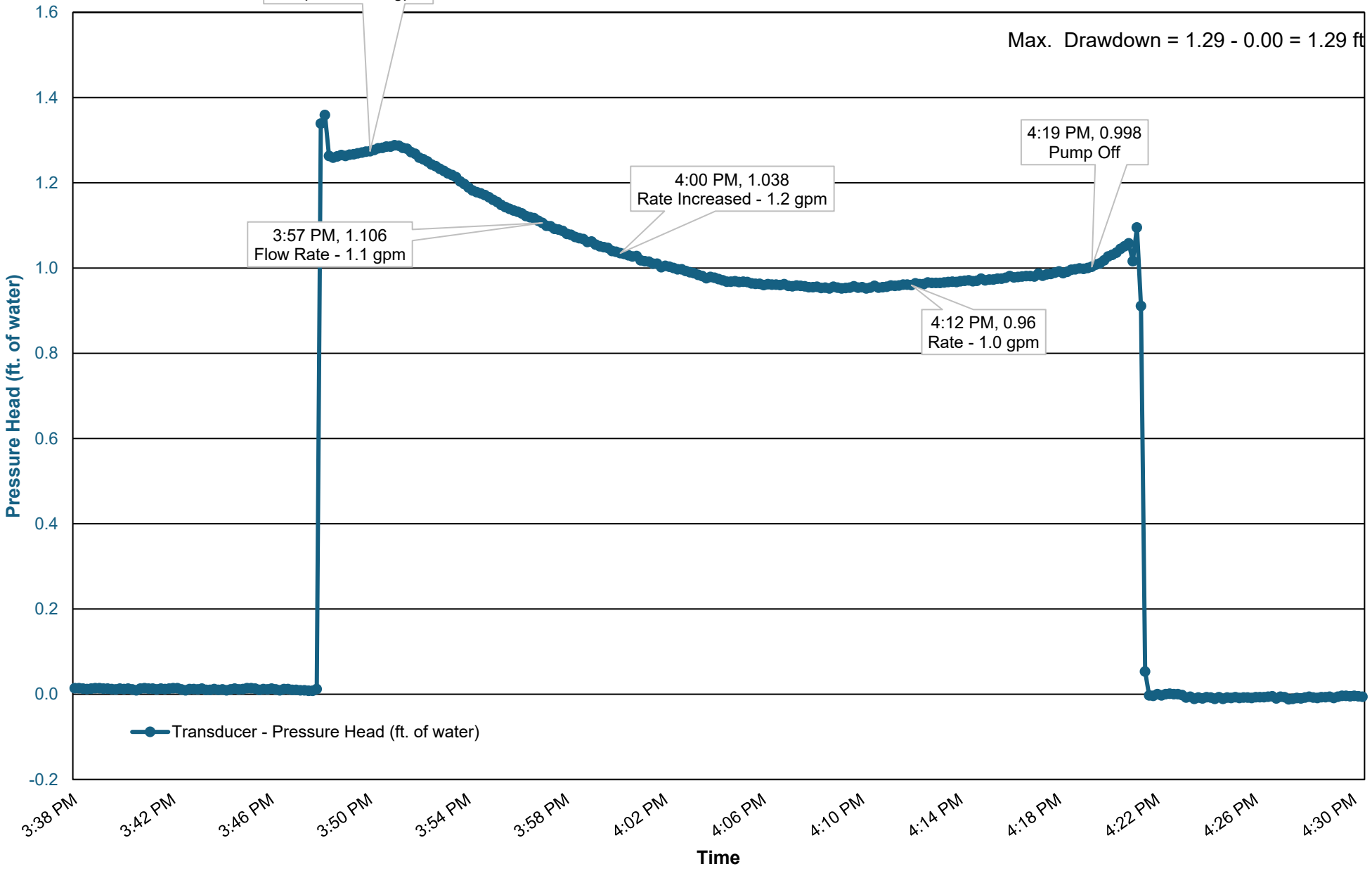
RW-2 Packer Test
Test #1 - Shallow Zone (22.9' to 33')
Bottom Transducer
Washington Crossing, PA
June 23, 2025



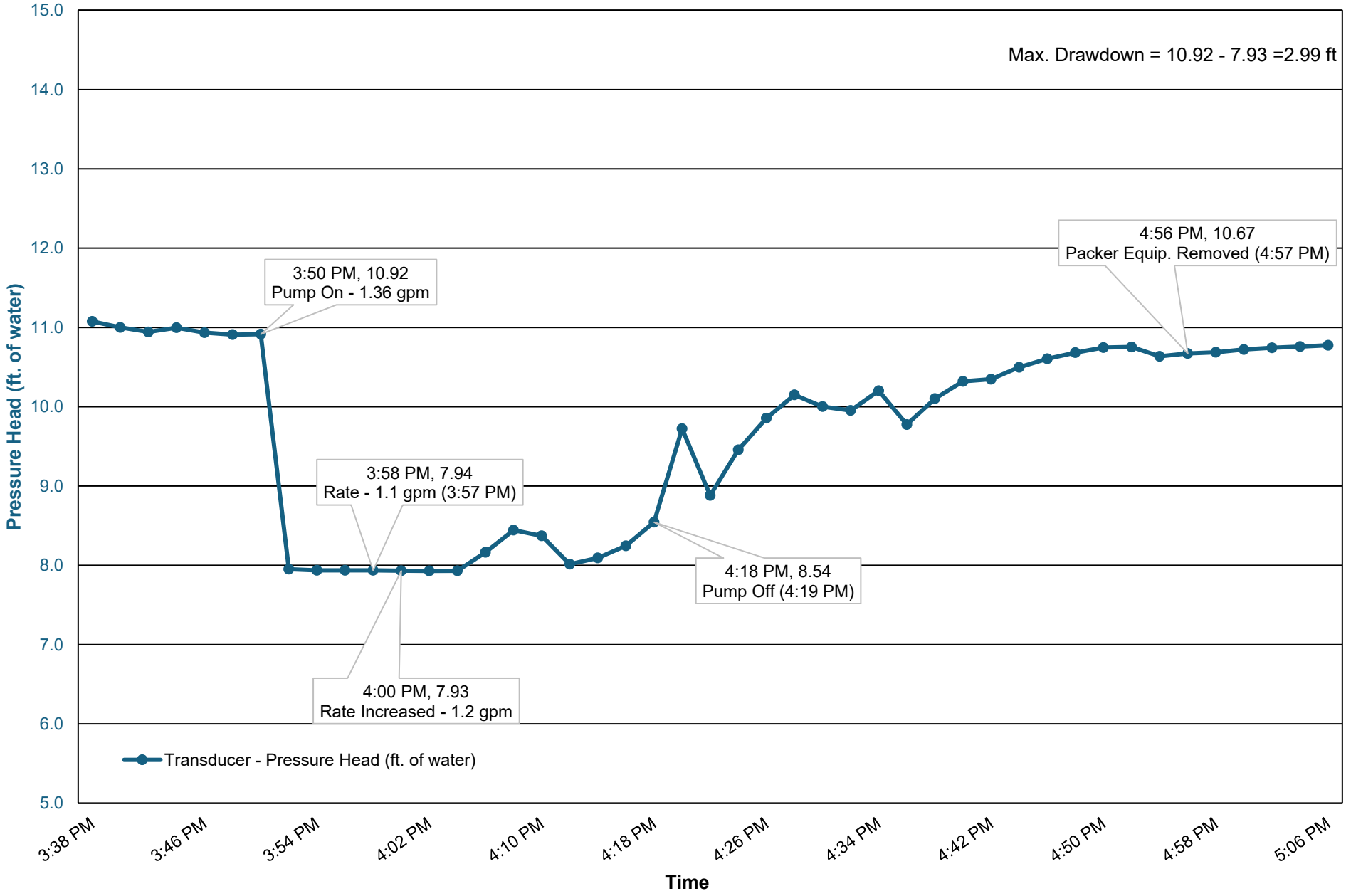
RW-2 Packer Test
Test #2 - Mid Zone (31' to 49')
Middle/Pumping Transducer
Washington Crossing, PA
June 23, 2025



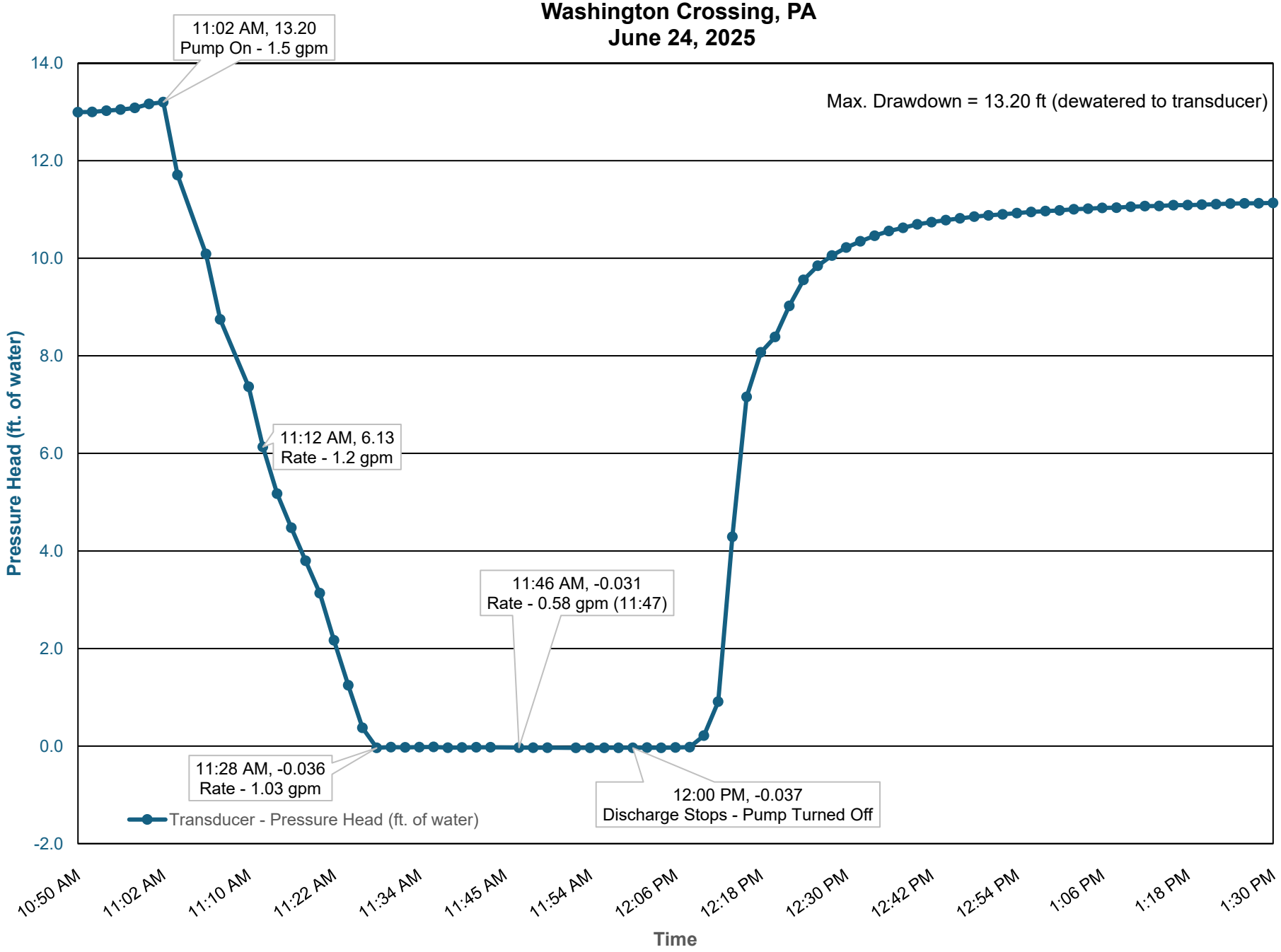
RW-2 Packer Test
Test #2 - Mid Zone (31' to 49')
Top Transducer
Washington Crossing, PA
June 23, 2025



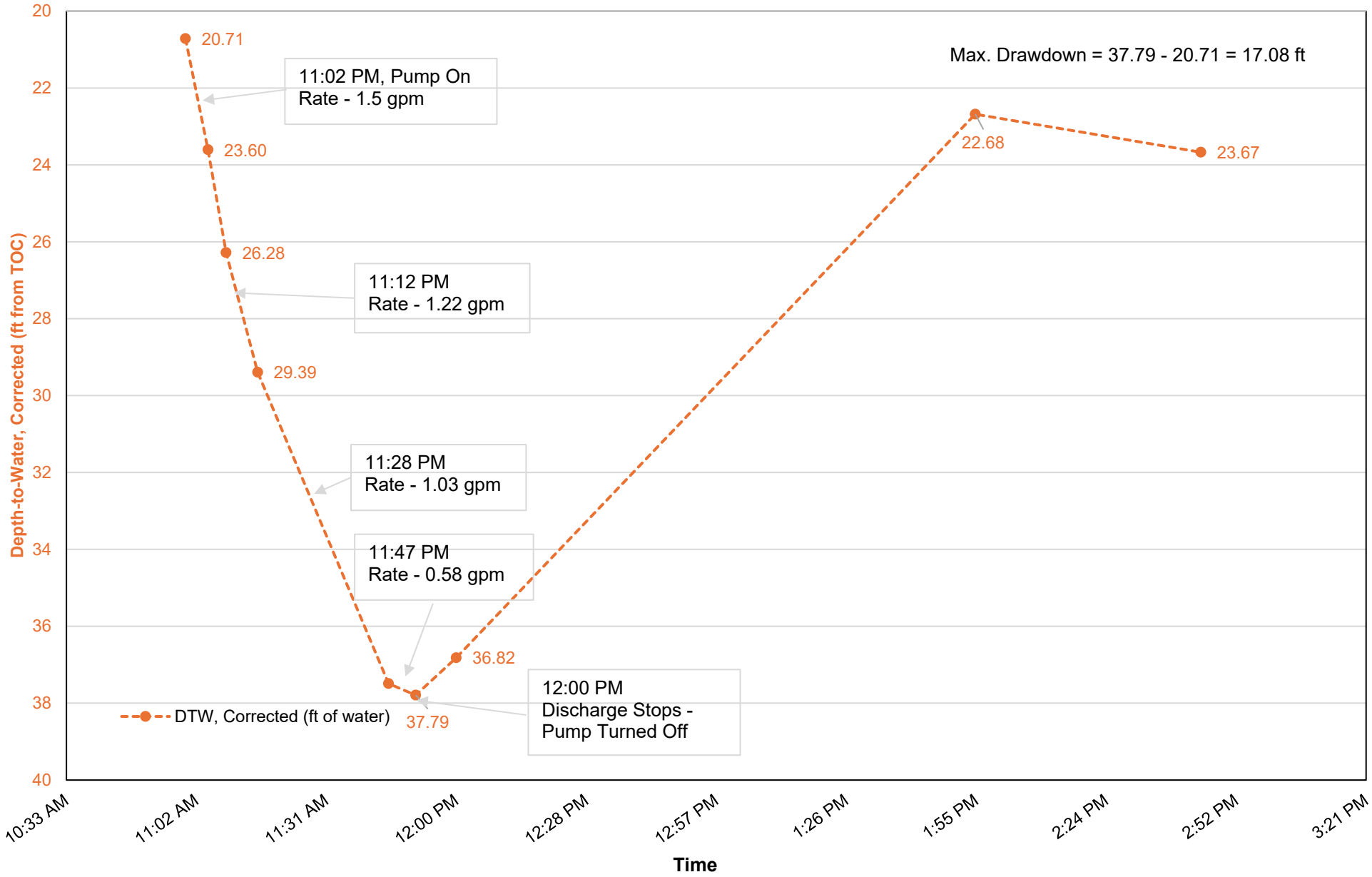
RW-2 Packer Test
Test #2 - Mid Zone (31' to 49')
Bottom Transducer
Washington Crossing, PA
June 23, 2025



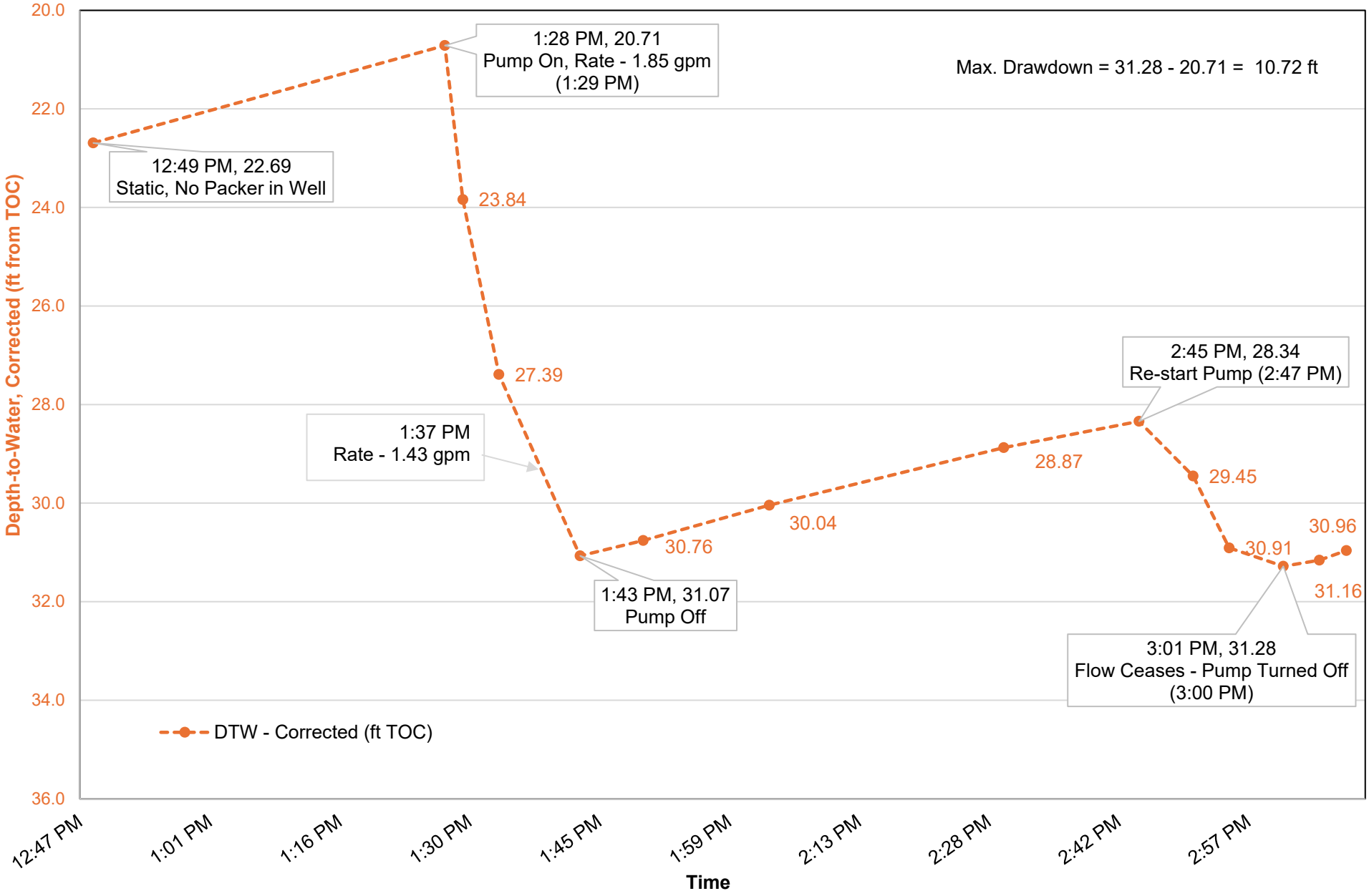
RW-2 Packer Test
Test #3 - Deep Zone (48' to 63')
Bottom (Pumping) Transducer
Washington Crossing, PA
June 24, 2025



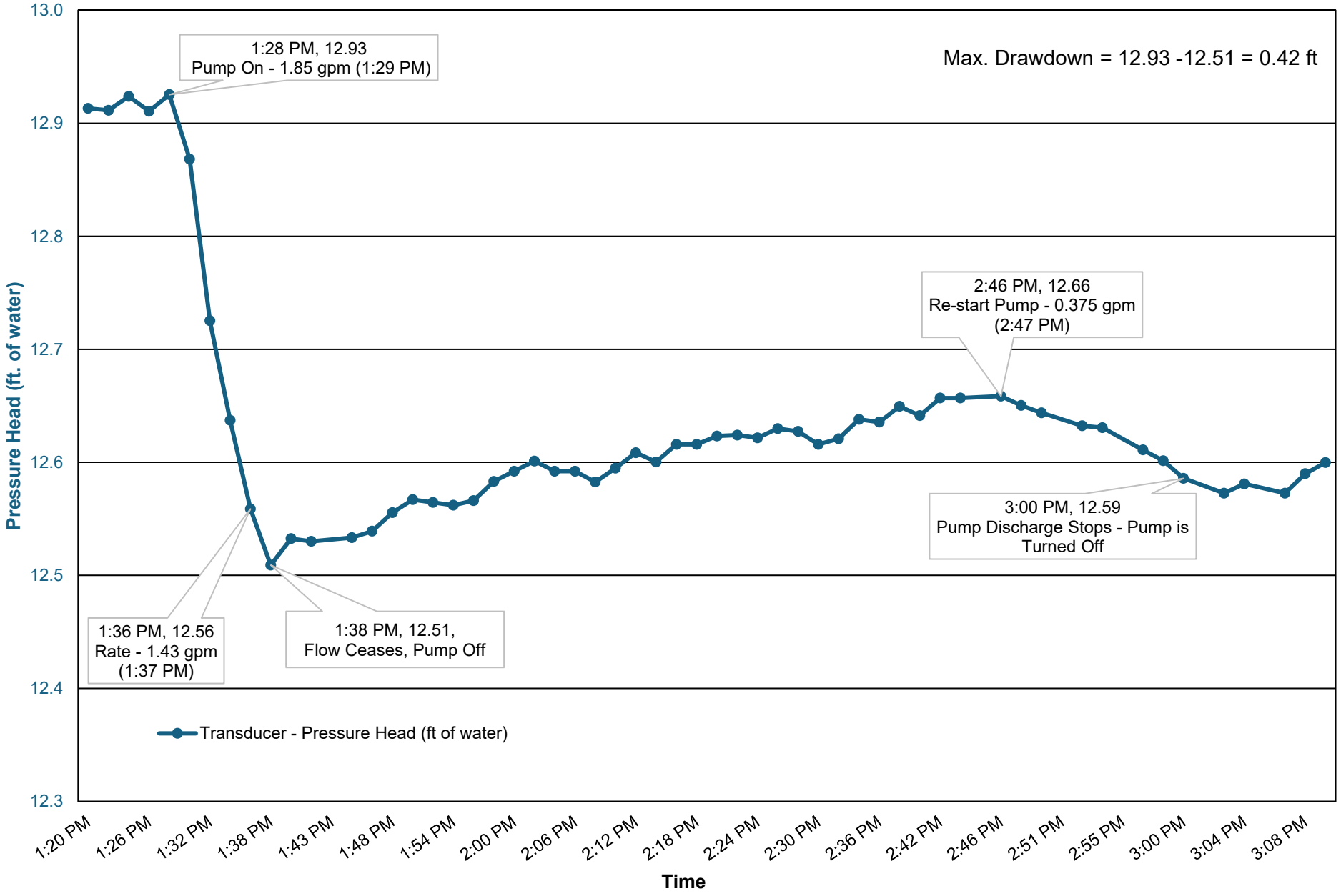
RW-2 Packer Test
Test #3 - Deep Zone (48' to 63')
Top Interval - Manual Gauging Measurements
Washington Crossing, PA
June 24, 2025



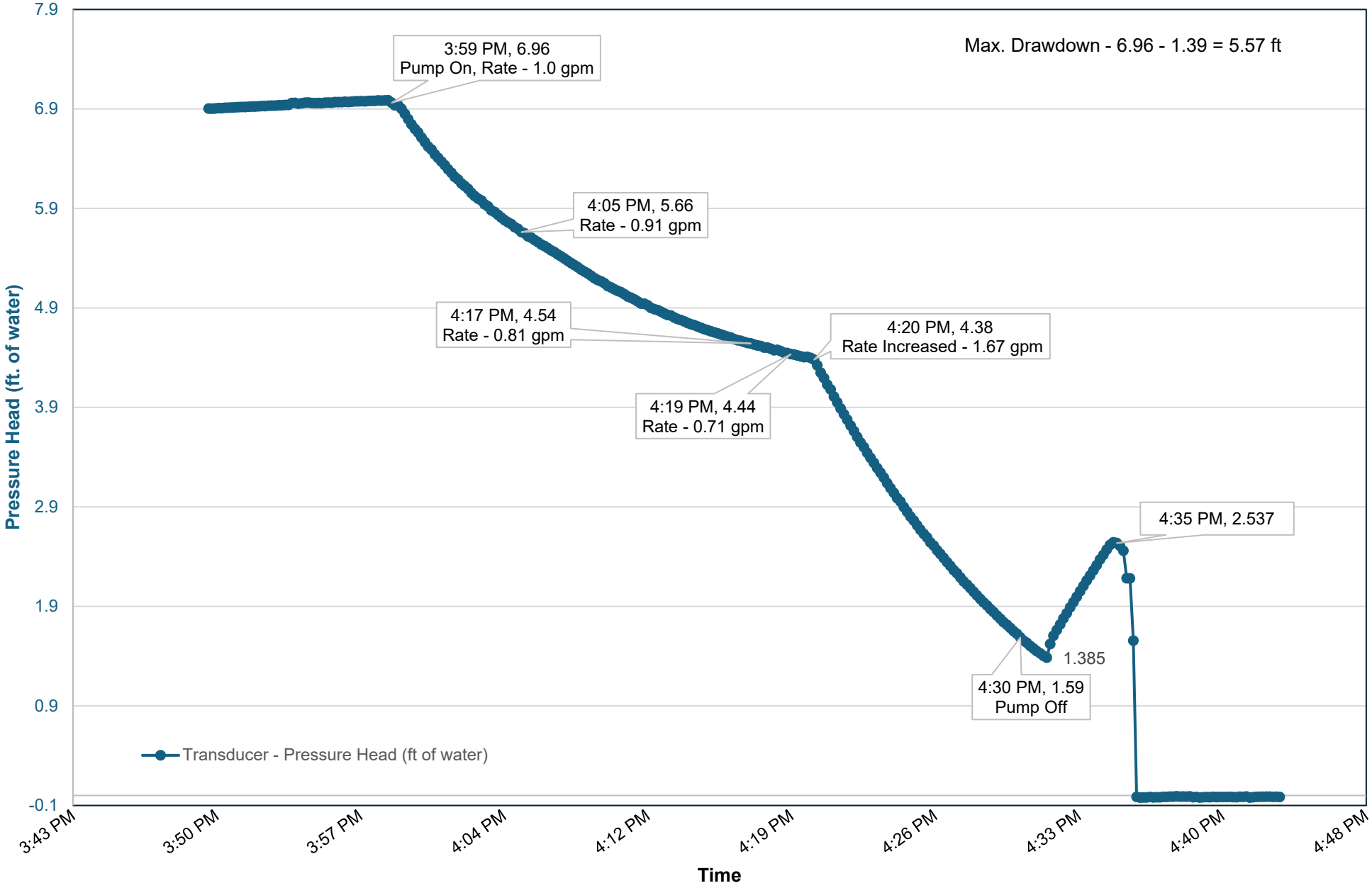
RW-3 Packer Test
Test #4 Shallow Zone (22.7' to 33')
Top/Pumping Interval - Manual Gauging Measurements
Washington Crossing, PA
June 24, 2025



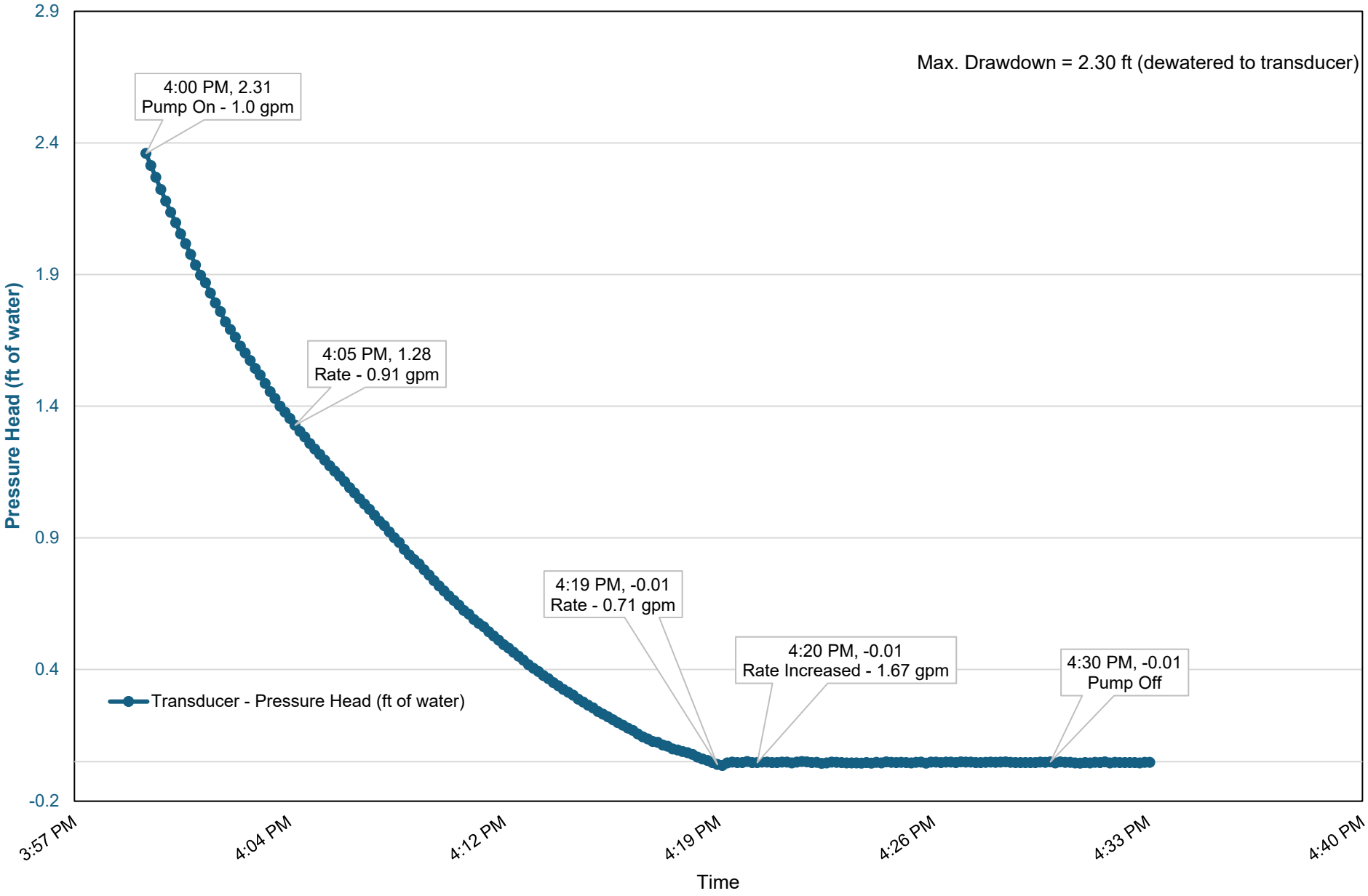
RW-3 Packer Test
Test #4 - Shallow Zone (22.7' to 33')
Bottom Transducer
Washington Crossing, PA
June 24, 2025



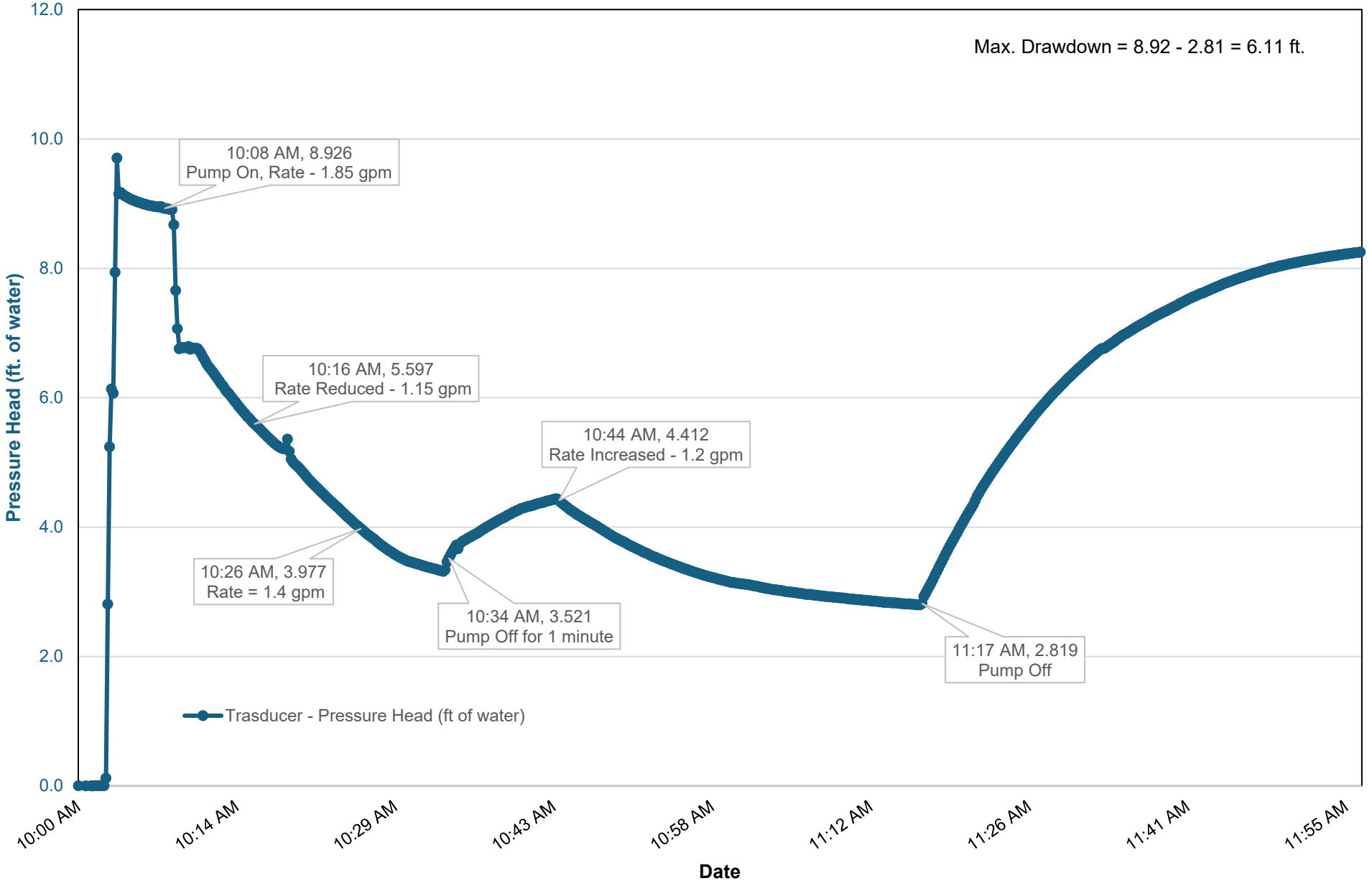
RW-3 Packer Test
Test #5 - Deep Zone (47' to 65')
Bottom (Pumping) Transducer
Washington Crossing, PA
June 24, 2025



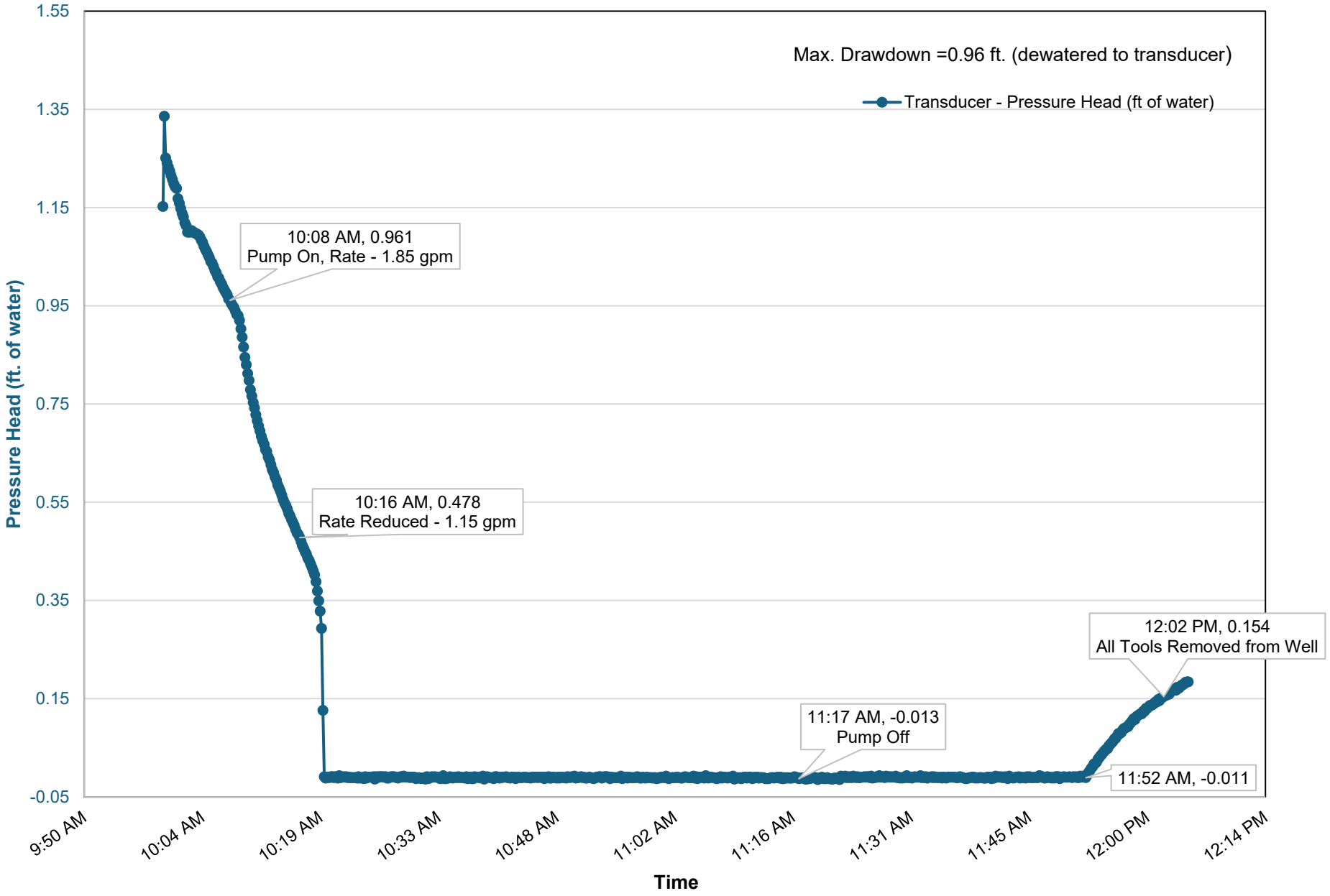
RW-3 Packer Test
Test #5 - Deep Zone (47'- 65')
Top Tranducer
Washington Crossing, PA
June 24, 2025



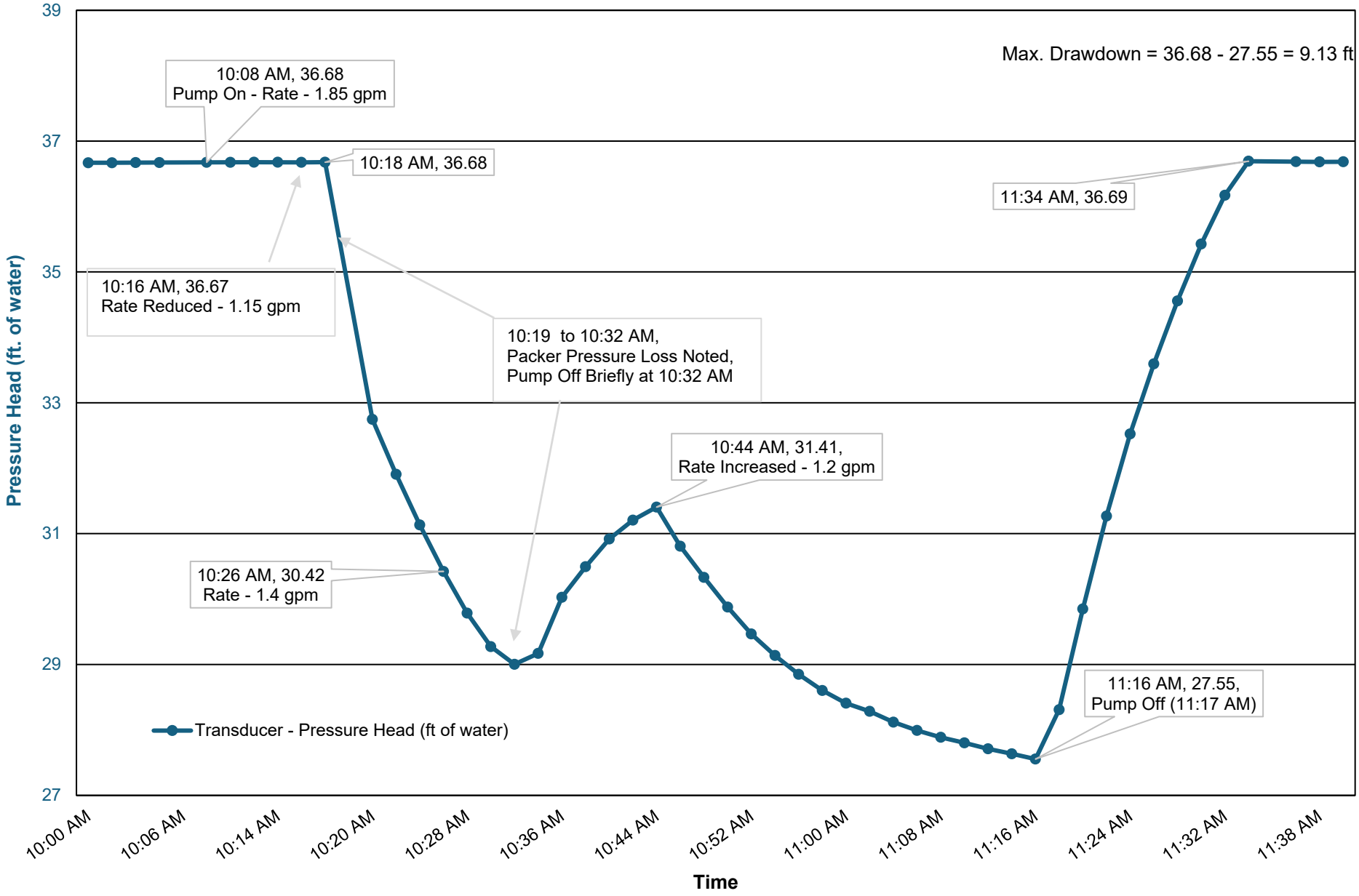
RW-3 Packer Test
Test #6 Mid Zone (30' to 48')
Middle (Pumping) Transducer
Washington Crossing, PA
June 25, 2025



RW-3 Packer Test
Test #6 Mid Zone (30' to 48')
Top Transducer
Washington Crossing, PA
June 25, 2025

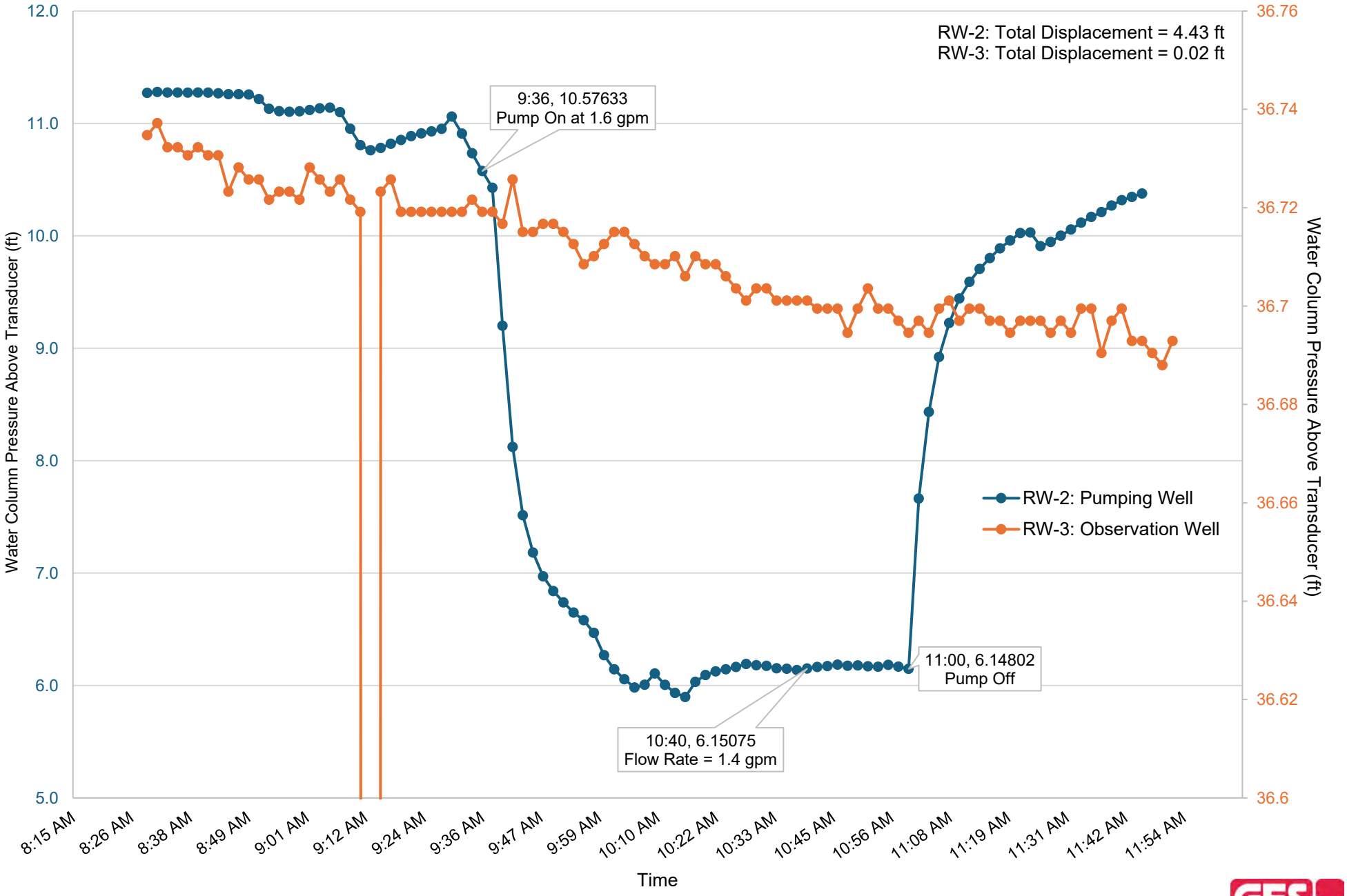


RW-3 Packer Test
Test #6 - Mid Zone (30' to 48')
Bottom Transducer
Washington Crossing, PA
June 25, 2025

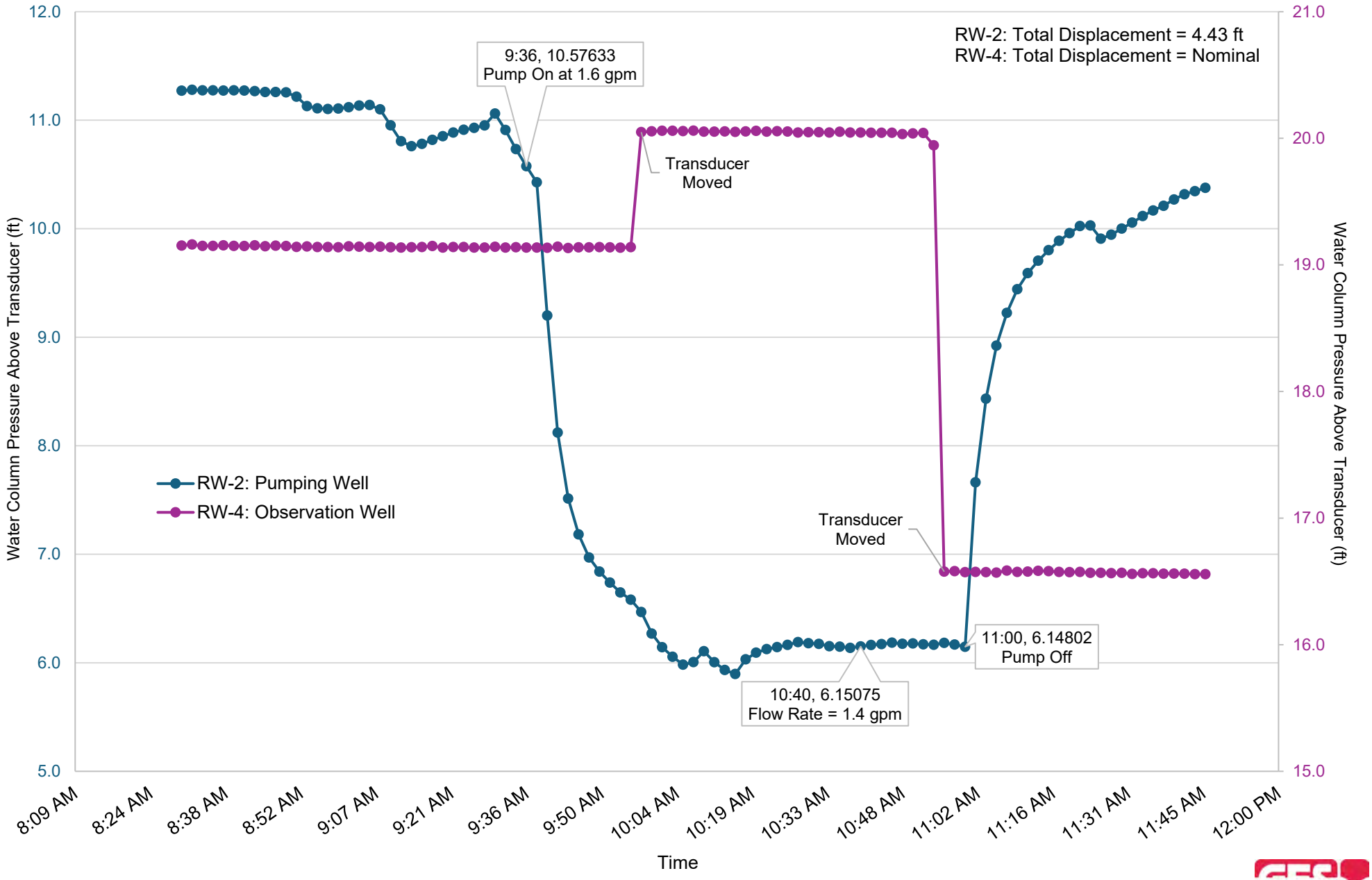


Appendix D-2 – Pump Test Drawdown Plots

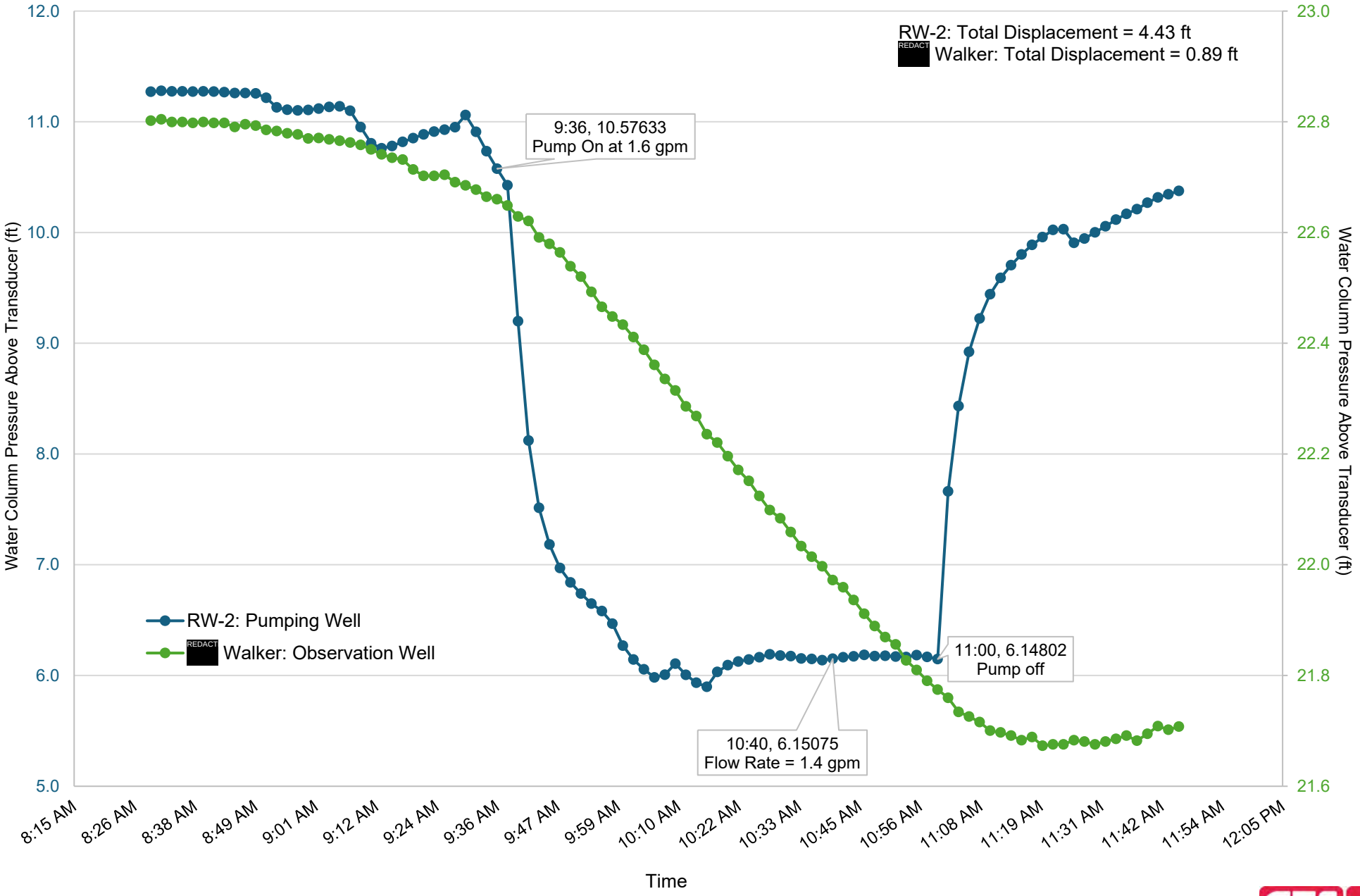
RW-2 Pump Test #1 - RW-3 (Observation Well)
Washington Crossing, PA
June 26, 2025



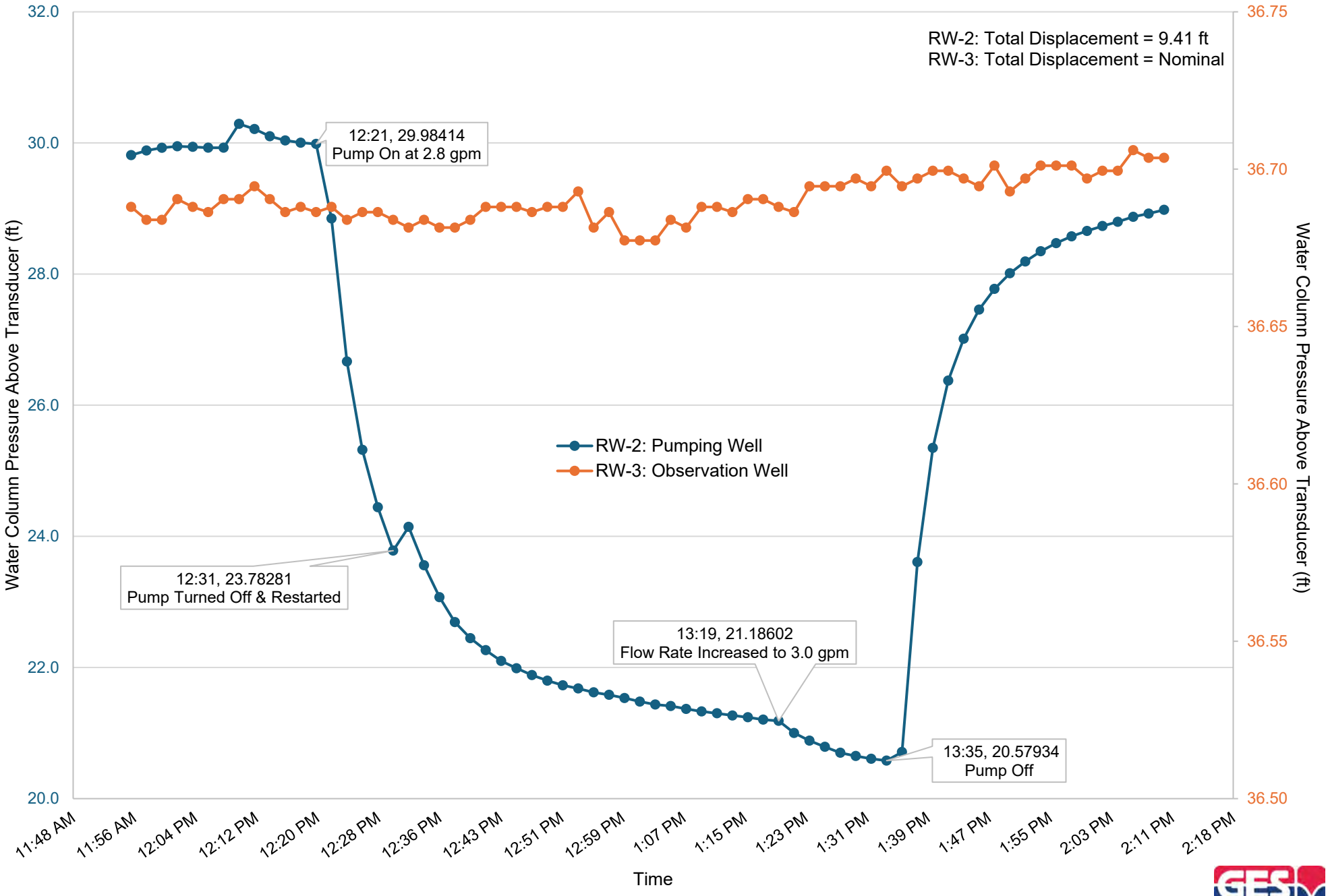
RW-2 Pump Test #1 - RW-4 (Observation Well)
Washington Crossing, PA
June 26, 2025



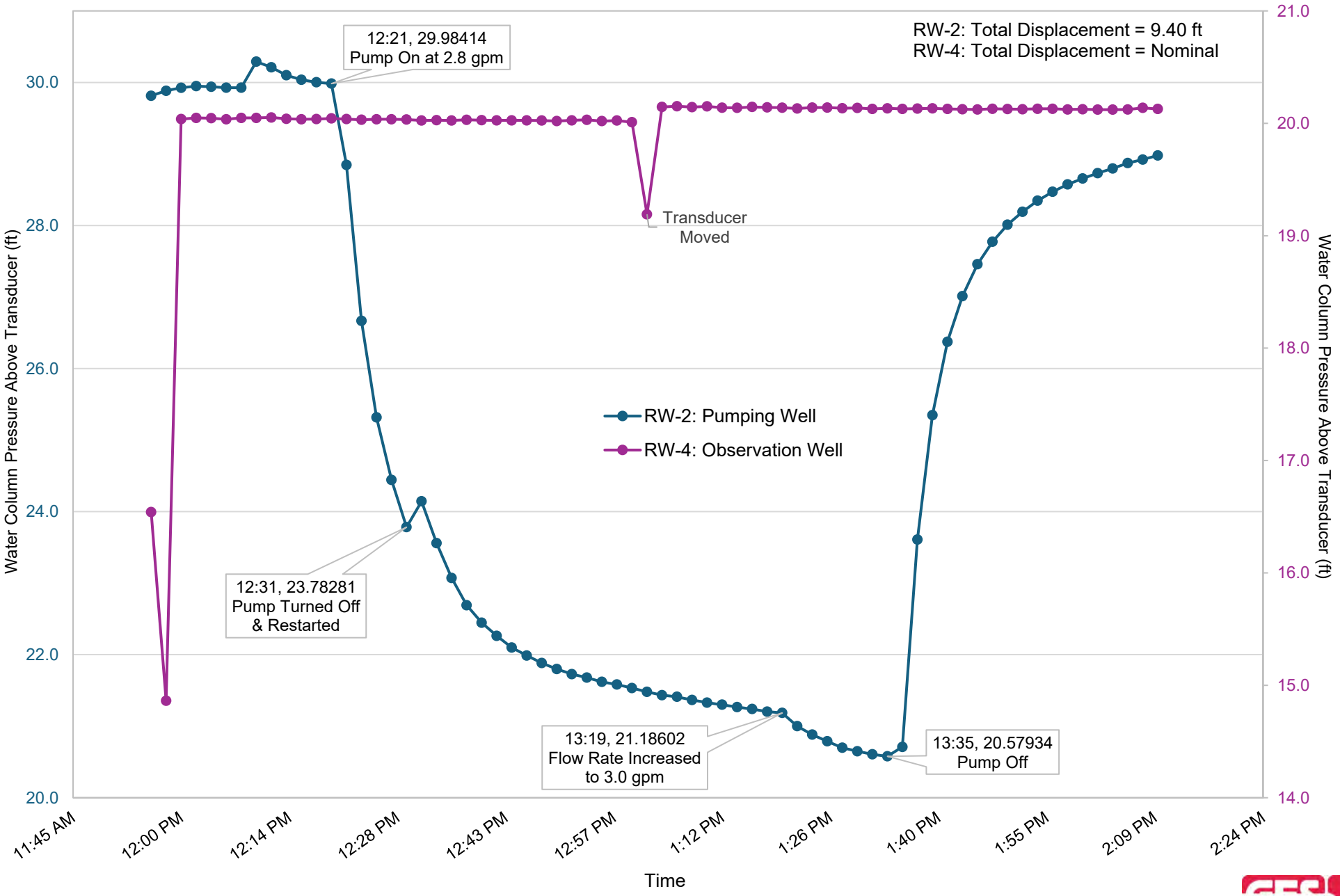
RW-2 Pump Test #1 - [redacted] Walker (Observation Well)
Washington Crossing, PA
June 26, 2025



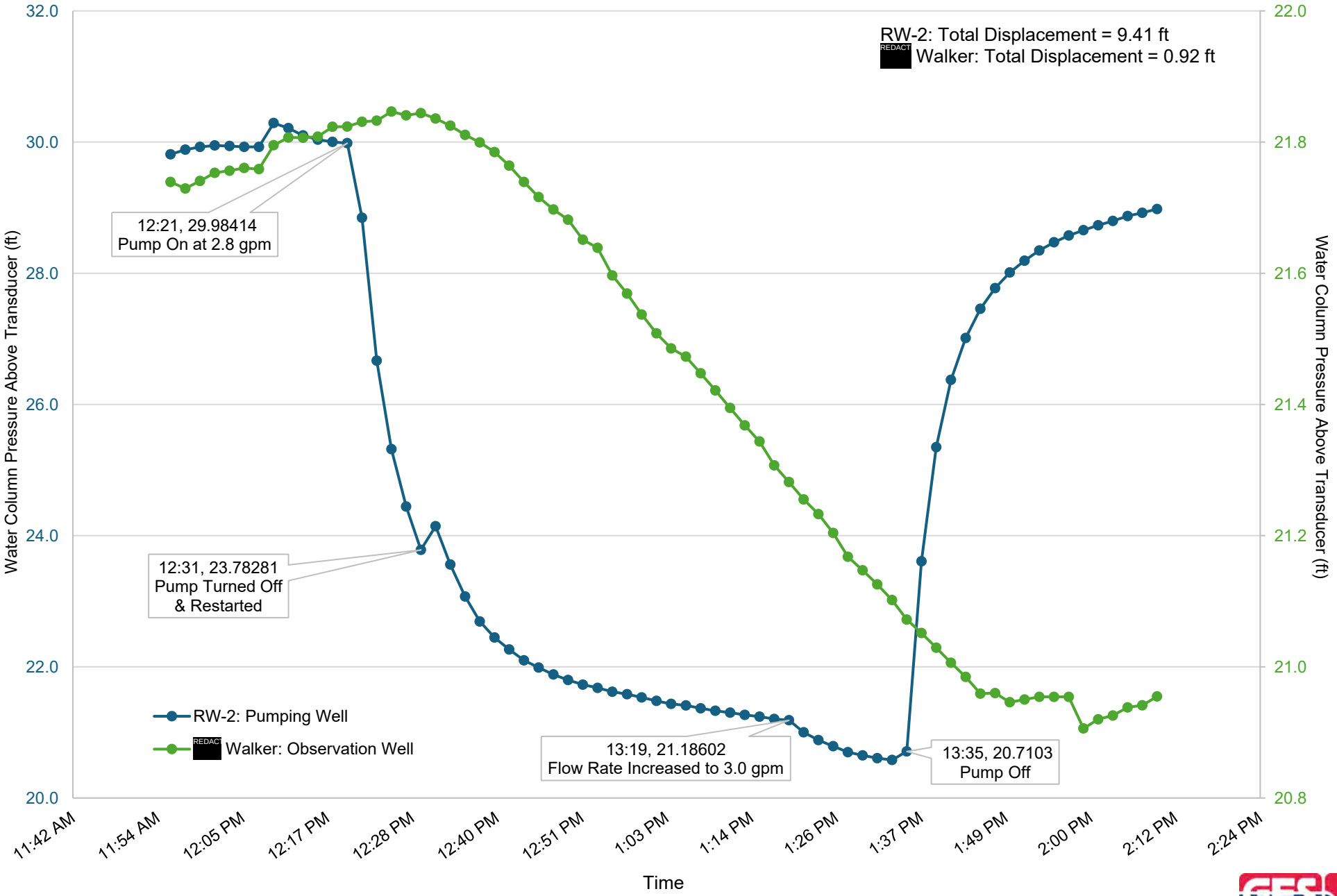
RW-2 Pump Test #2 - RW-3 (Observation Well)
Washington Crossing, PA
June 26, 2025



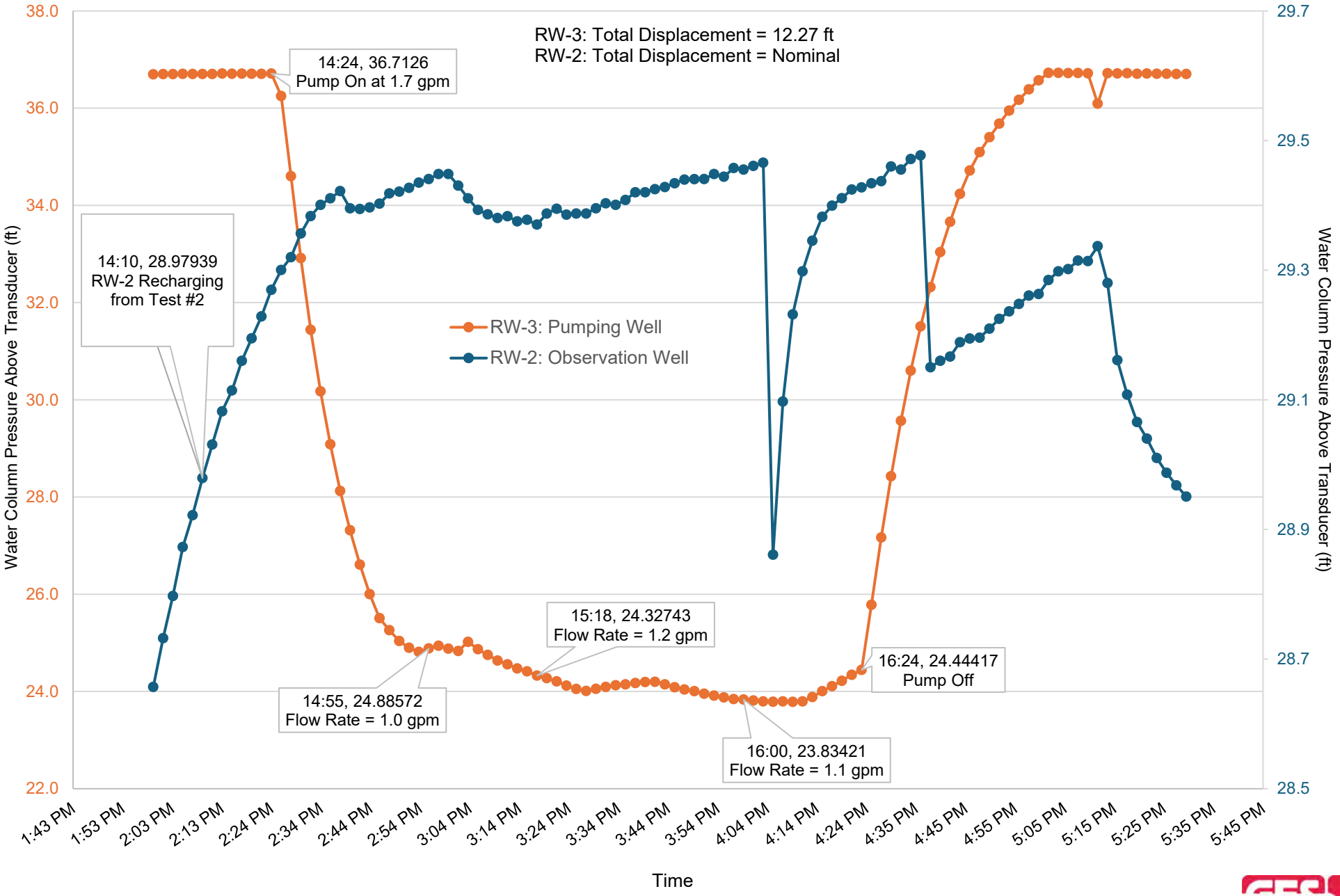
RW-2 Pump Test #2 - RW-4 (Observation Well)
Washington Crossing, PA
June 26, 2025



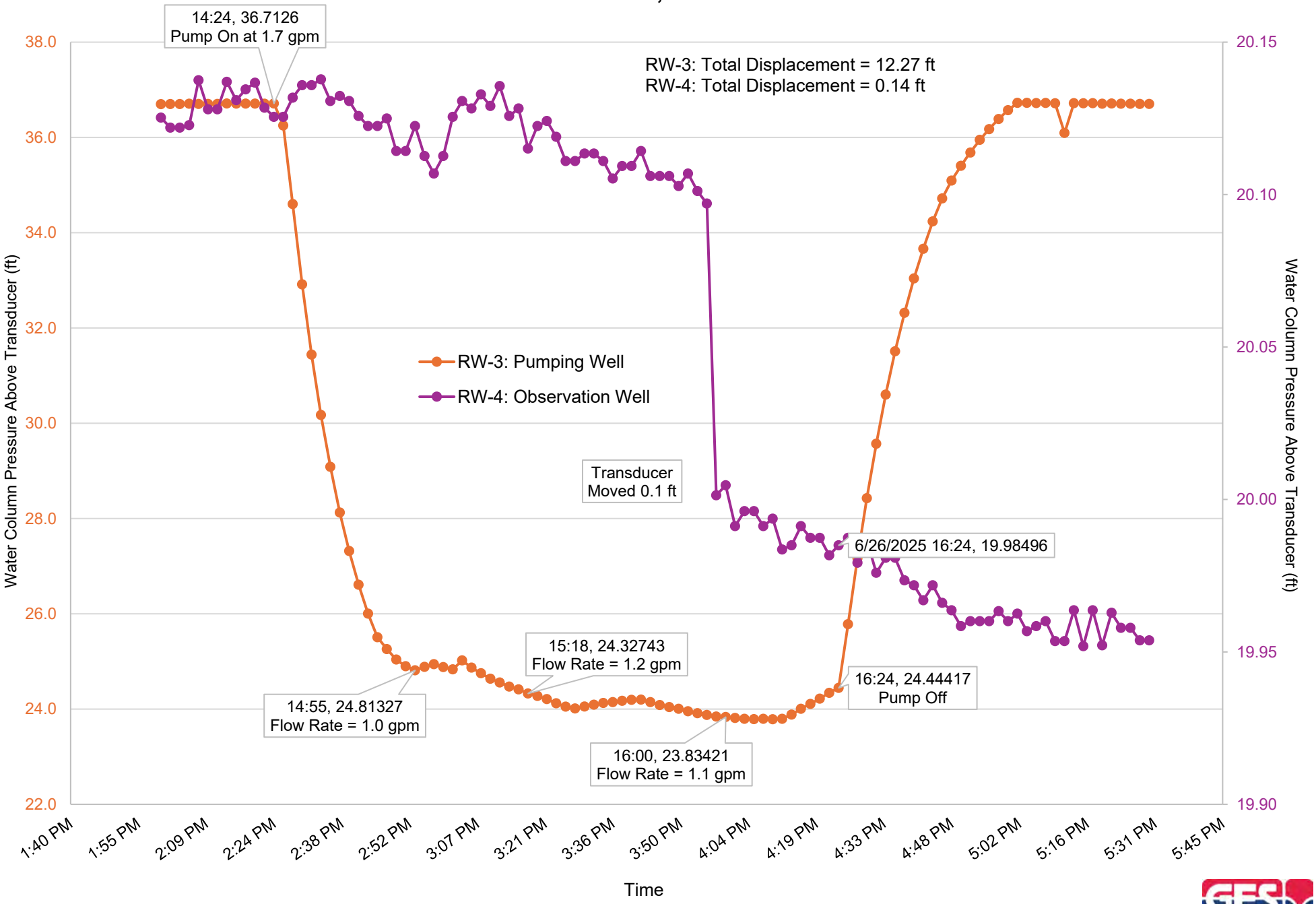
RW-2 Pump Test #2 - [redacted] Walker (Observation Well)
Washington Crossing, PA
June 26, 2025



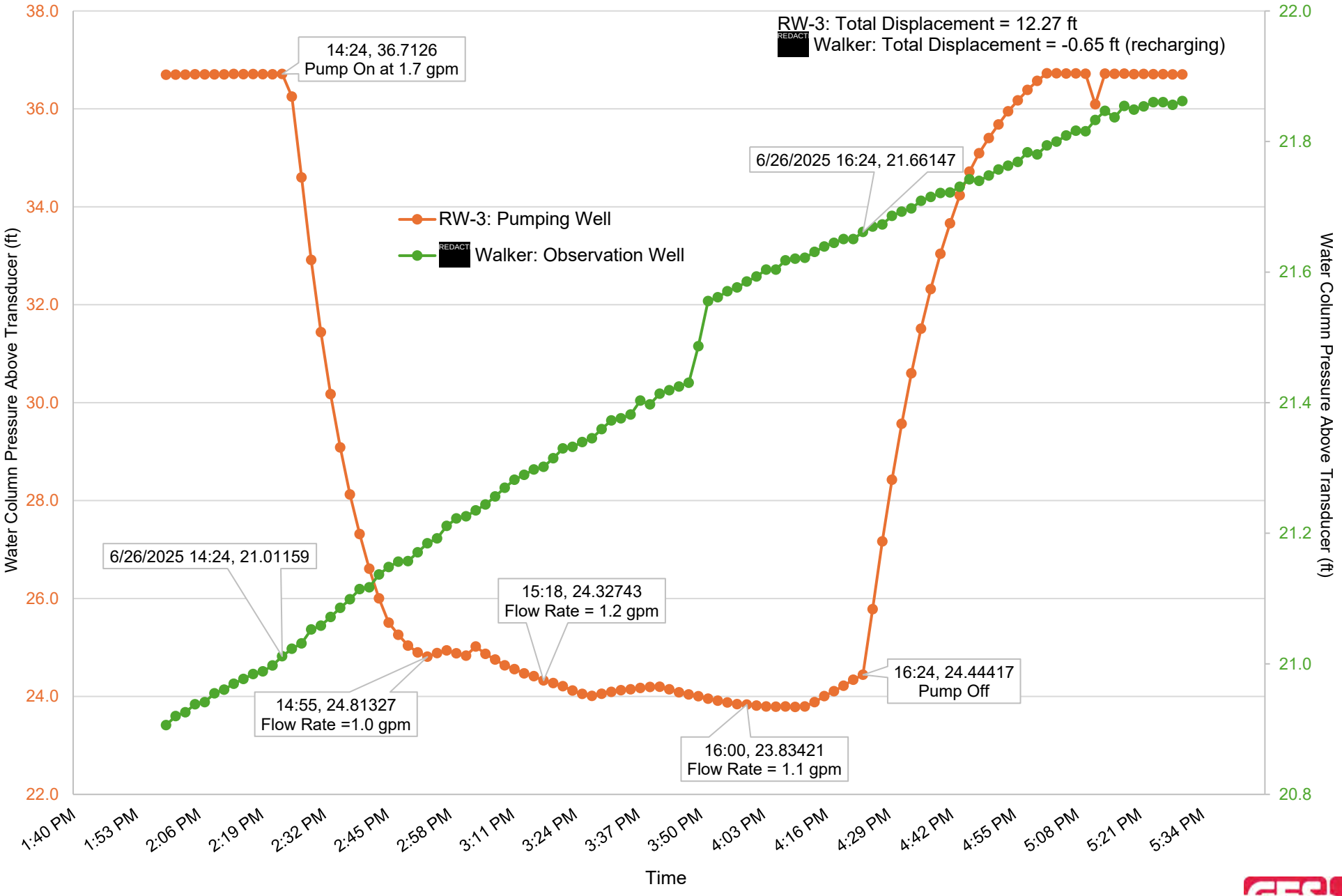
RW-3 Pump Test - RW-2 (Observation Well)
Washington Crossing, PA
June 26, 2025



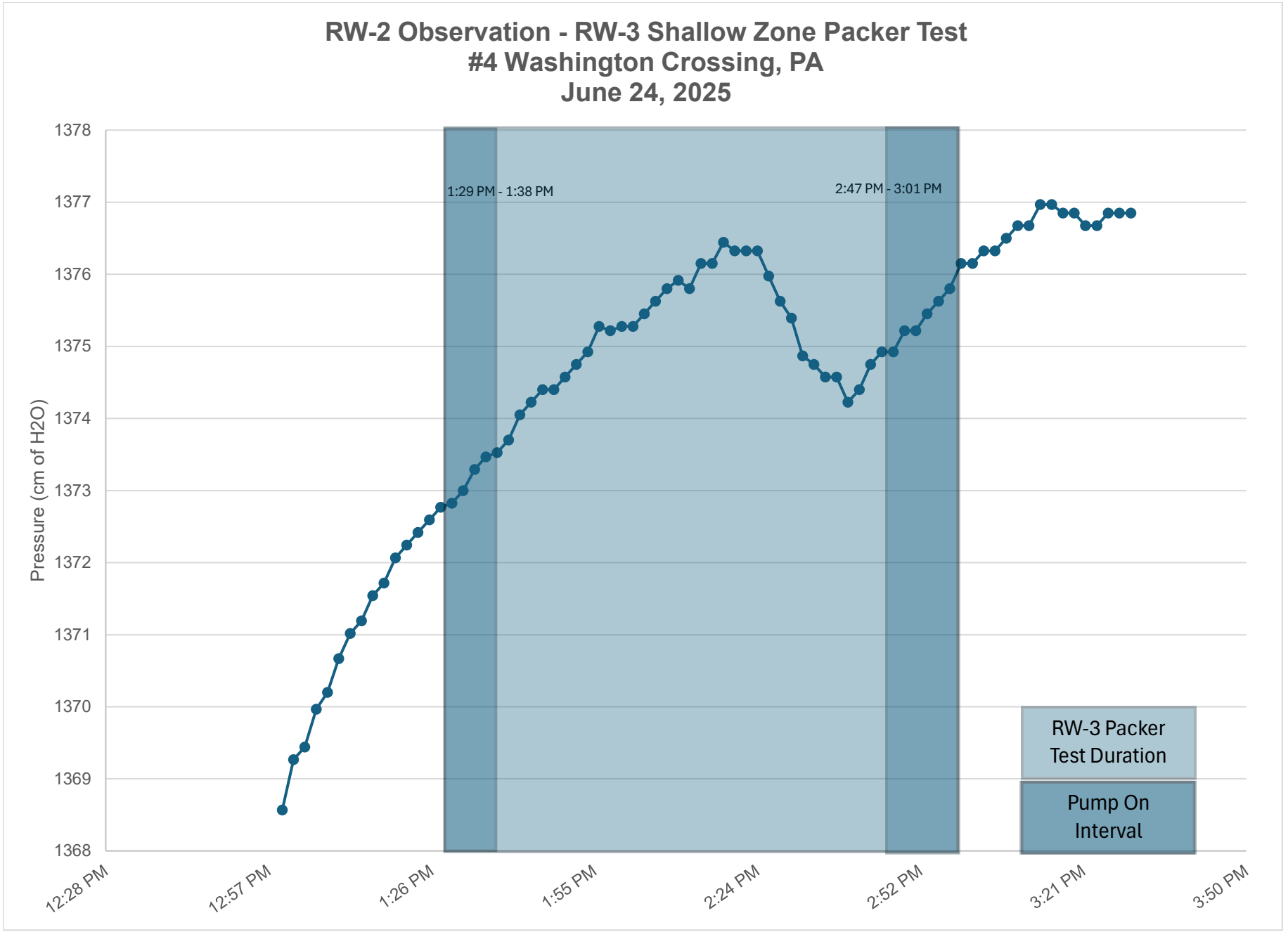
RW-3 Pump Test - RW-4 (Observation Well)
Washington Crossing, PA
June 26, 2025

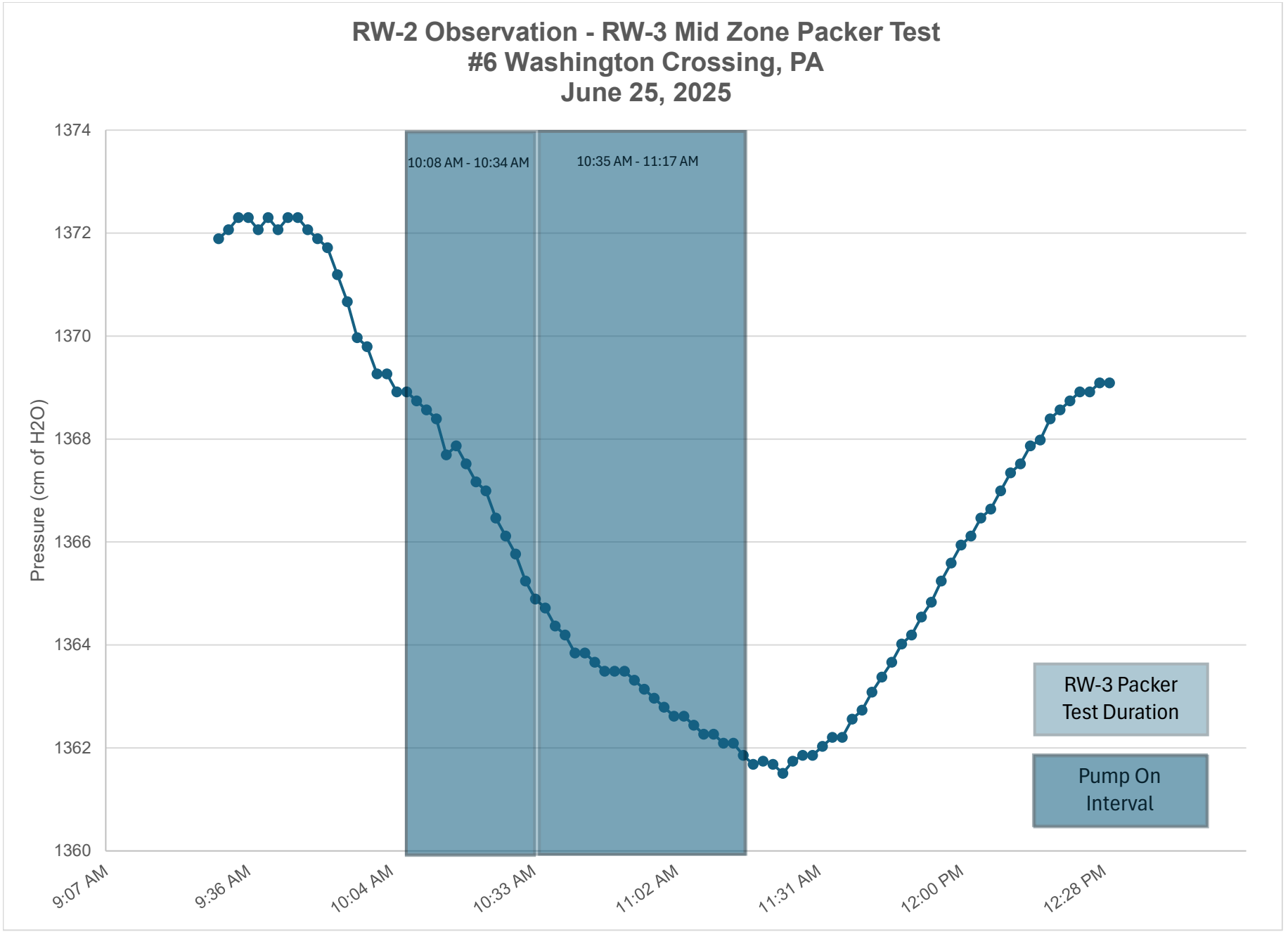


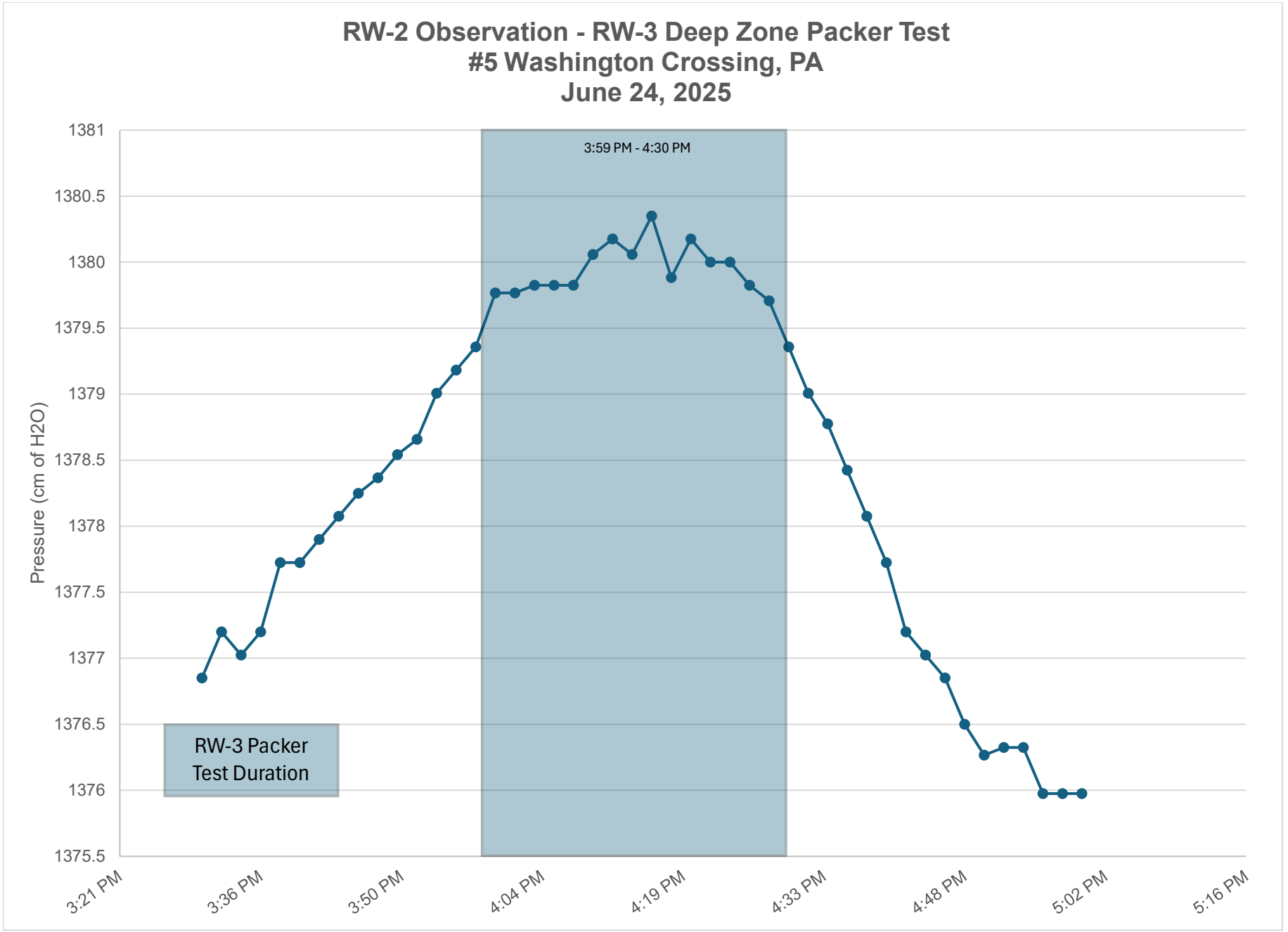
RW-3 Pump Test - [redacted] Walker (Observation Well)
Washington Crossing, PA
June 26, 2025

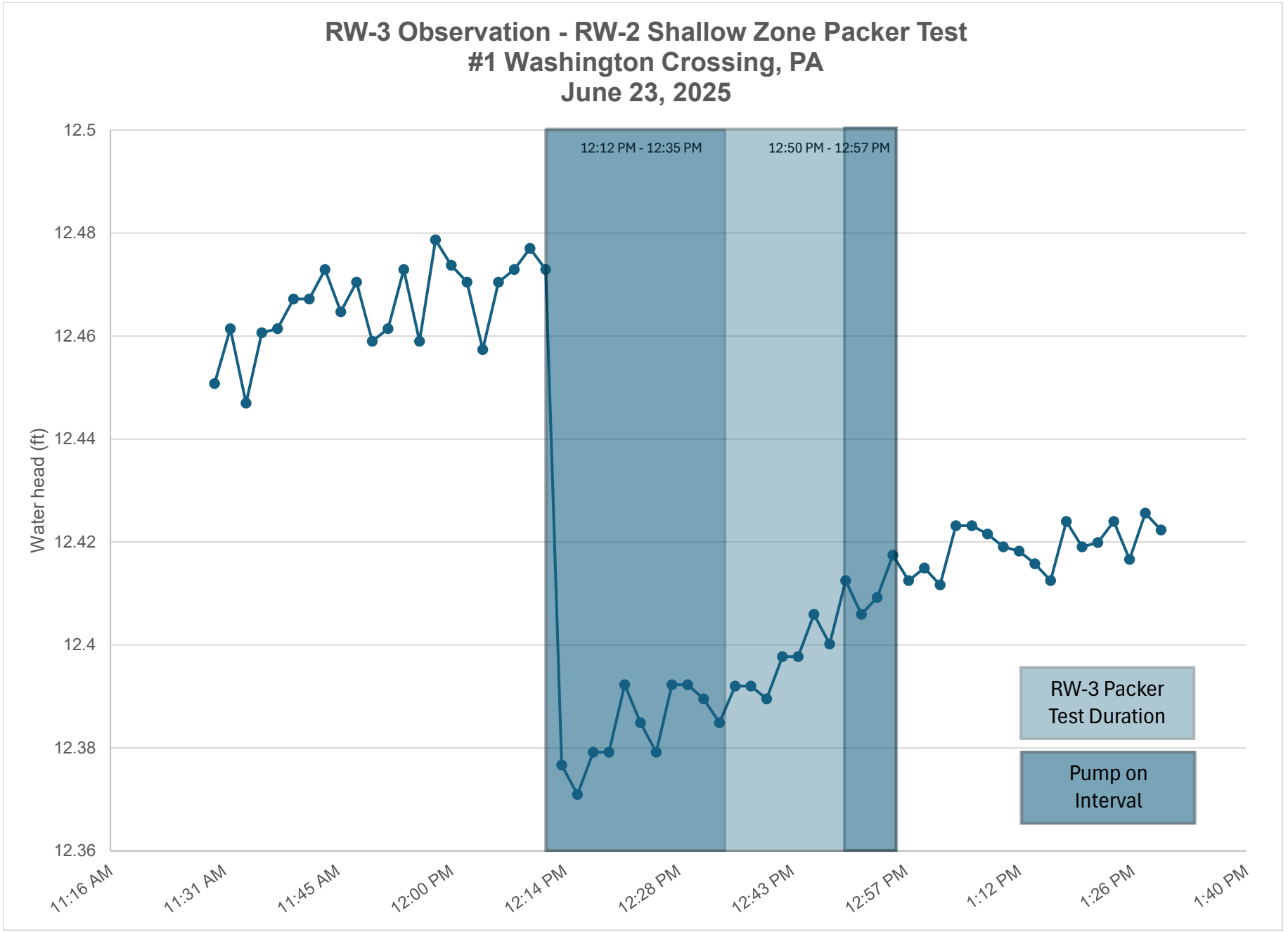


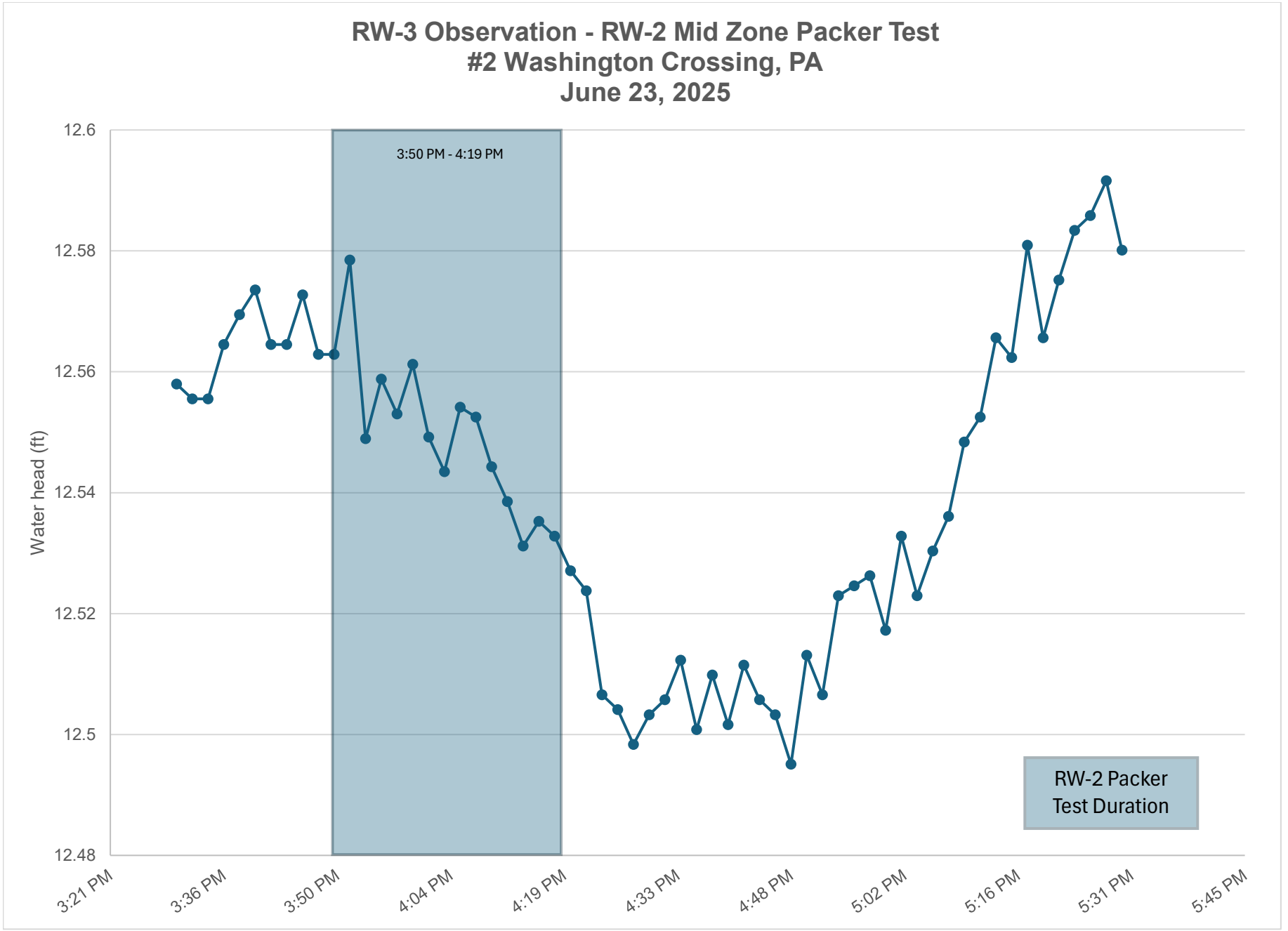
Appendix D-3 – Observation Well Drawdown Plots

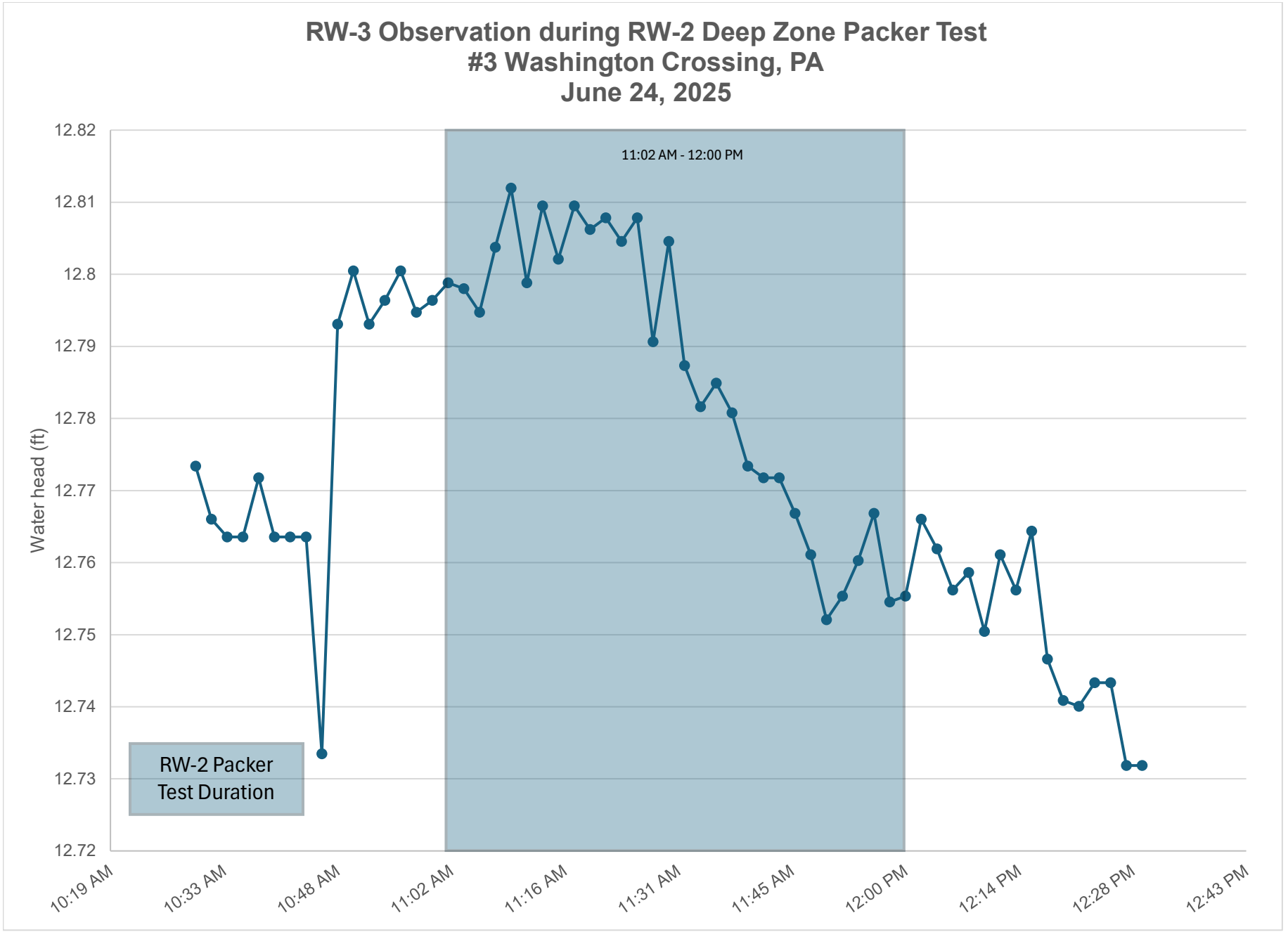

RW-2 Observation - RW-3 Shallow Zone Packer Test
#4 Washington Crossing, PA
June 24, 2025
Pressure (cm of H2O)
1378
1377
1376
1375
1374
1373
1372
1371
1370
1369
1368
1:29 PM - 1:38 PM
2:47 PM - 3:01 PM
RW-3 Packer Test Duration
Pump On Interval
12:28 PM
12:57 PM
1:26 PM
1:55 PM
2:24 PM
2:52 PM
3:21 PM
3:50 PM

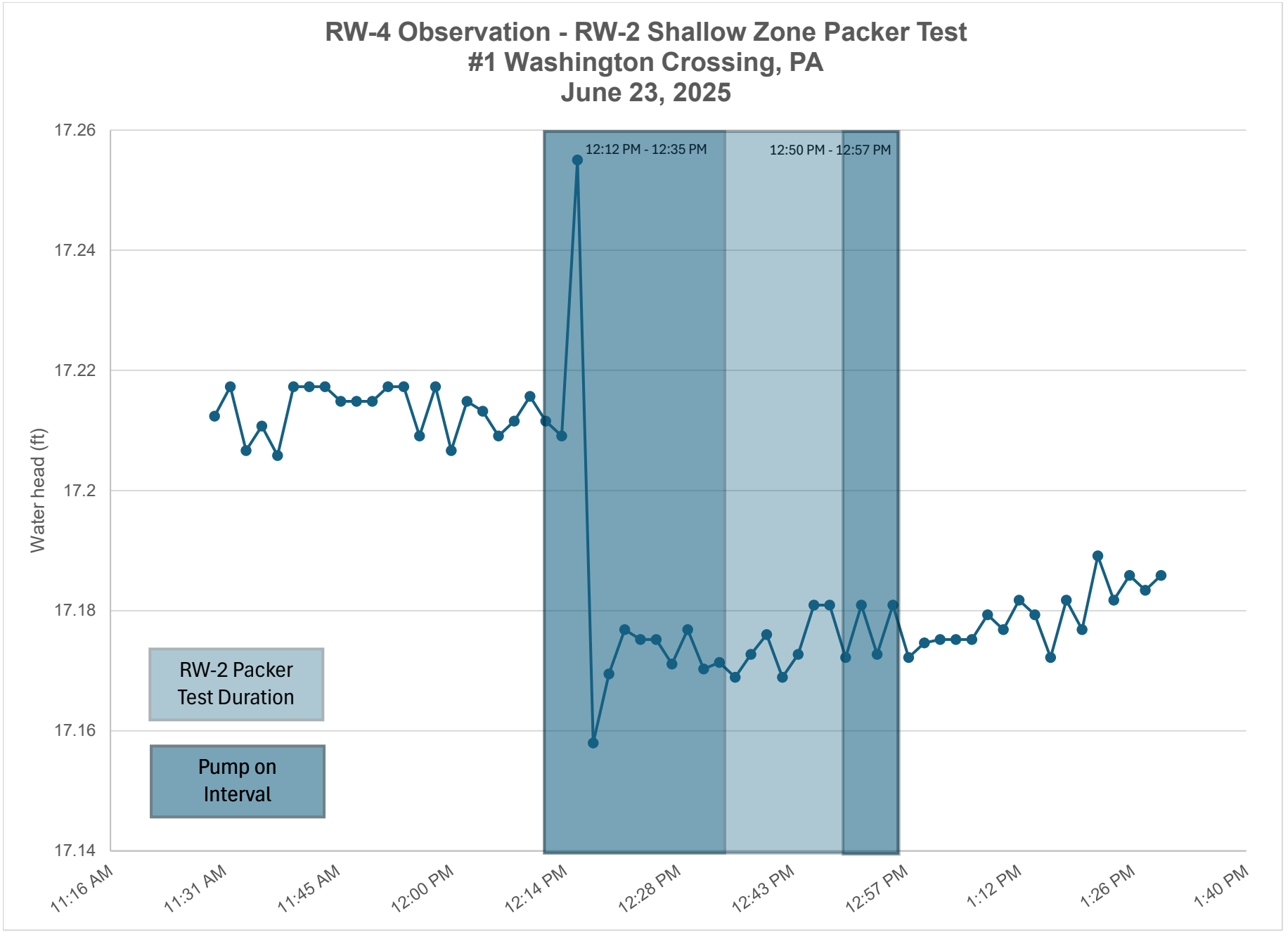

RW-2 Observation - RW-3 Mid Zone Packer Test
#6 Washington Crossing, PA
June 25, 2025
Pressure (cm of H2O)
1374
1372
1370
1368
1366
1364
1362
1360
10:08 AM - 10:34 AM
10:35 AM - 11:17 AM
9:07 AM
9:36 AM
10:04 AM
10:33 AM
11:02 AM
11:31 AM
12:00 PM
12:28 PM
RW-3 Packer Test Duration
Pump On Interval

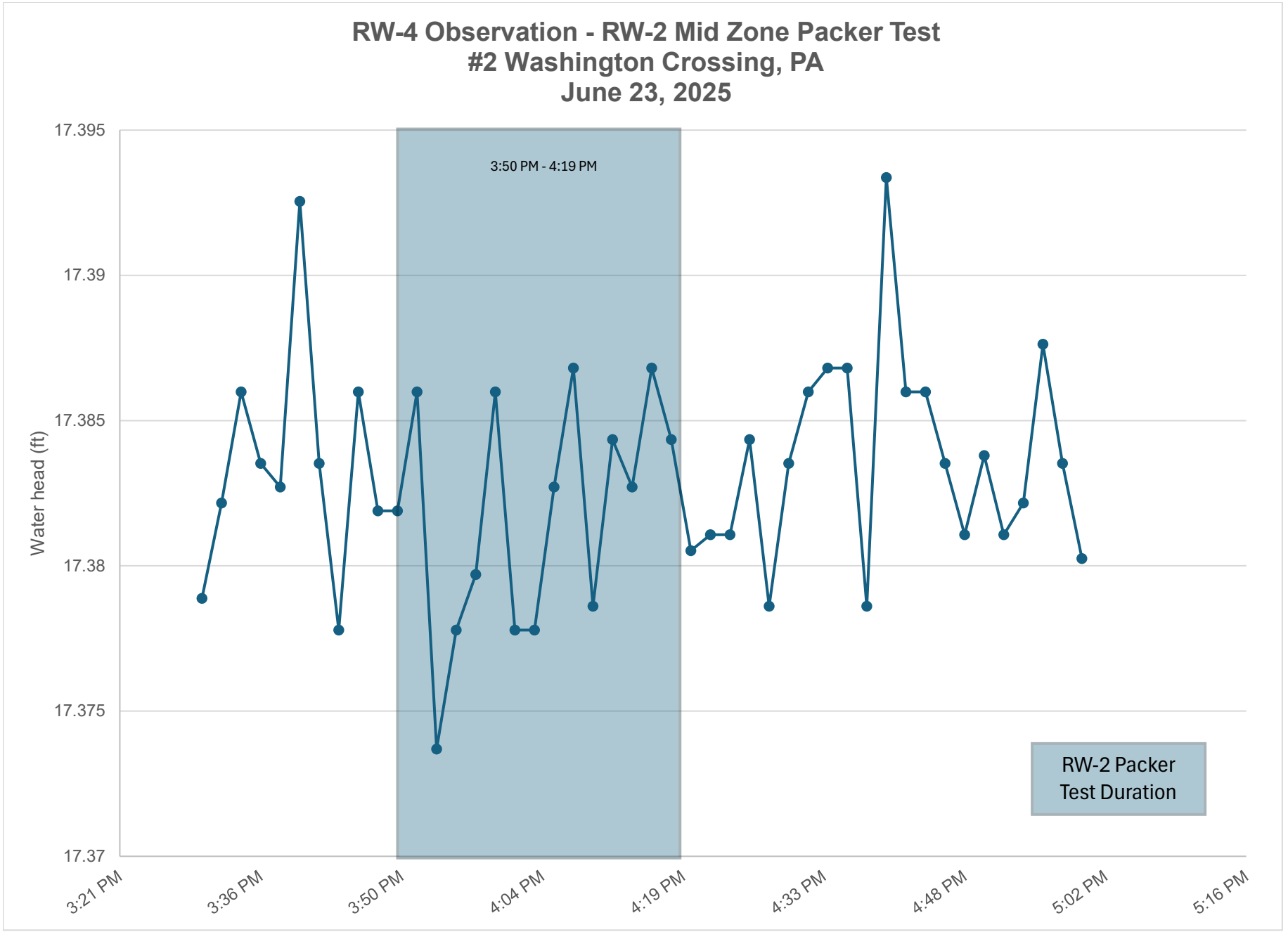

RW-2 Observation - RW-3 Deep Zone Packer Test
#5 Washington Crossing, PA
June 24, 2025
3:59 PM - 4:30 PM
RW-3 Packer Test Duration
Pressure (cm of H2O)
1381
1380.5
1380
1379.5
1379
1378.5
1378
1377.5
1377
1376.5
1376
1375.5
3:21 PM
3:36 PM
3:50 PM
4:04 PM
4:19 PM
4:33 PM
4:48 PM
5:02 PM
5:16 PM

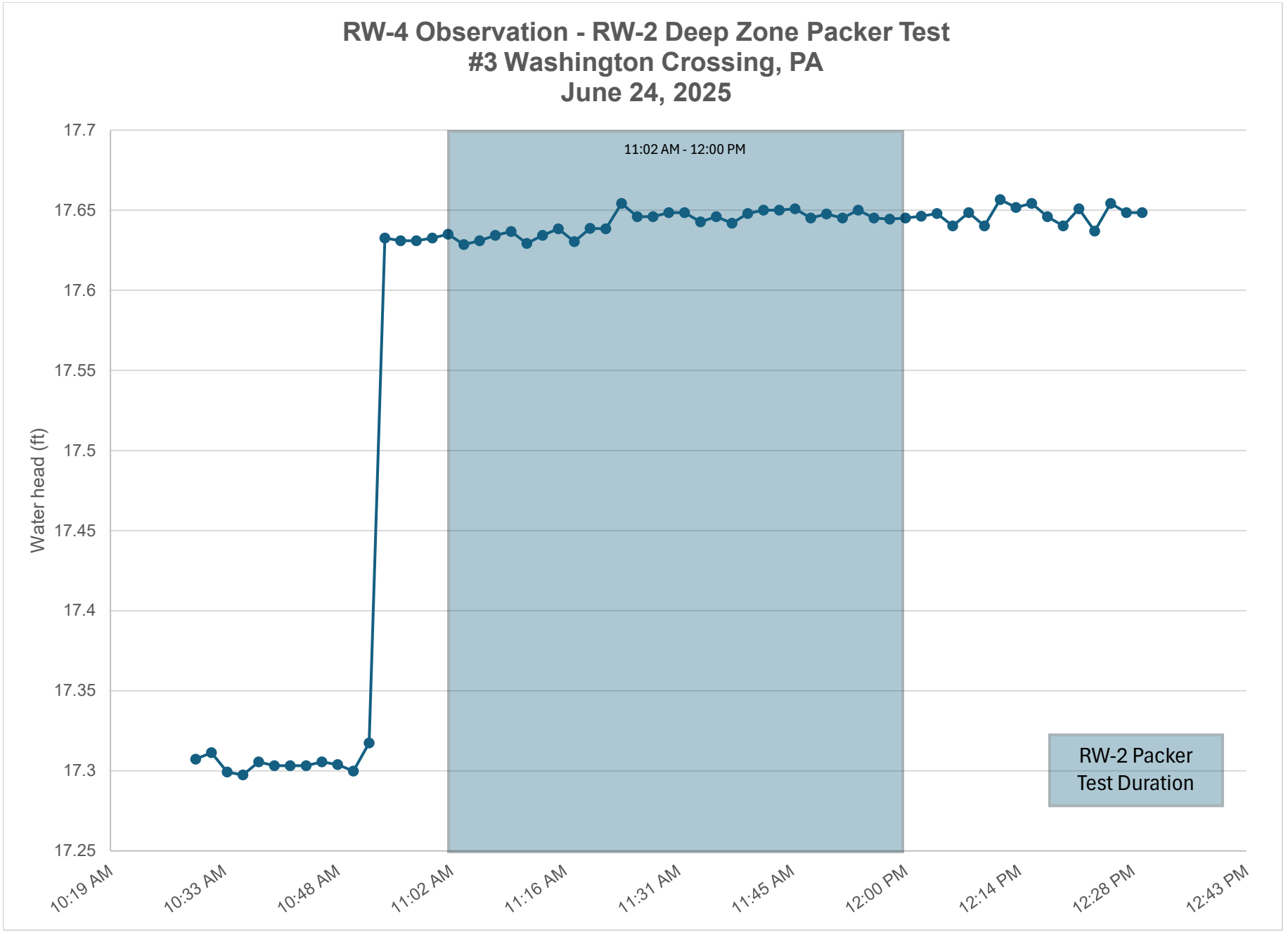

RW-3 Observation - RW-2 Shallow Zone Packer Test
#1 Washington Crossing, PA
June 23, 2025
12:12 PM - 12:35 PM
12:50 PM - 12:57 PM
Water head (ft)
12.5
12.48
12.46
12.44
12.42
12.4
12.38
12.36
11:16 AM
11:31 AM
11:45 AM
12:00 PM
12:14 PM
12:28 PM
12:43 PM
12:57 PM
1:12 PM
1:26 PM
1:40 PM
RW-3 Packer Test Duration
Pump on Interval

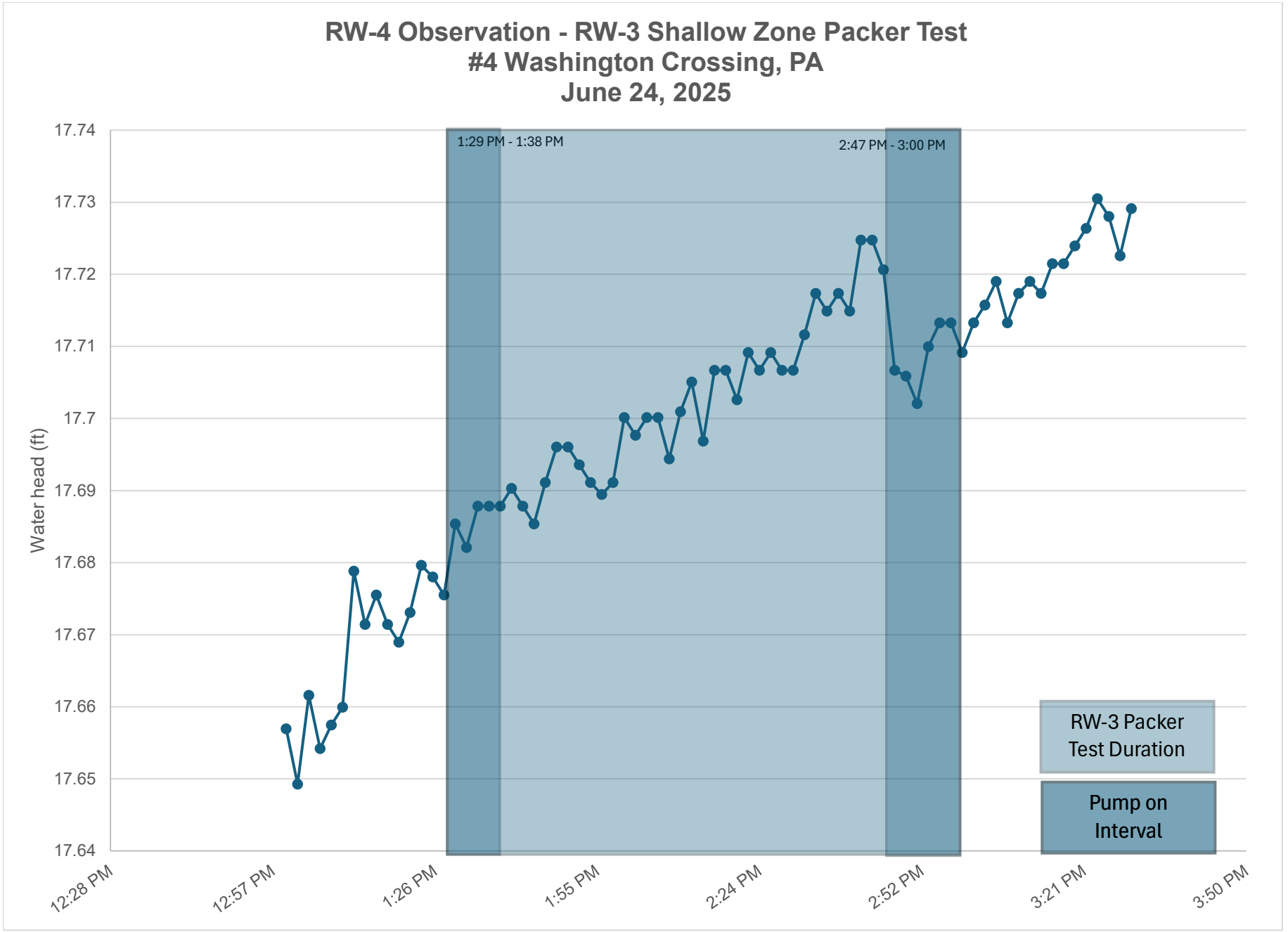

RW-3 Observation - RW-2 Mid Zone Packer Test
#2 Washington Crossing, PA
June 23, 2025
Water head (ft)
12.6
12.58
12.56
12.54
12.52
12.5
12.48
3:50 PM - 4:19 PM
RW-2 Packer Test Duration
3:21 PM
3:36 PM
3:50 PM
4:04 PM
4:19 PM
4:33 PM
4:48 PM
5:02 PM
5:16 PM
5:31 PM
5:45 PM

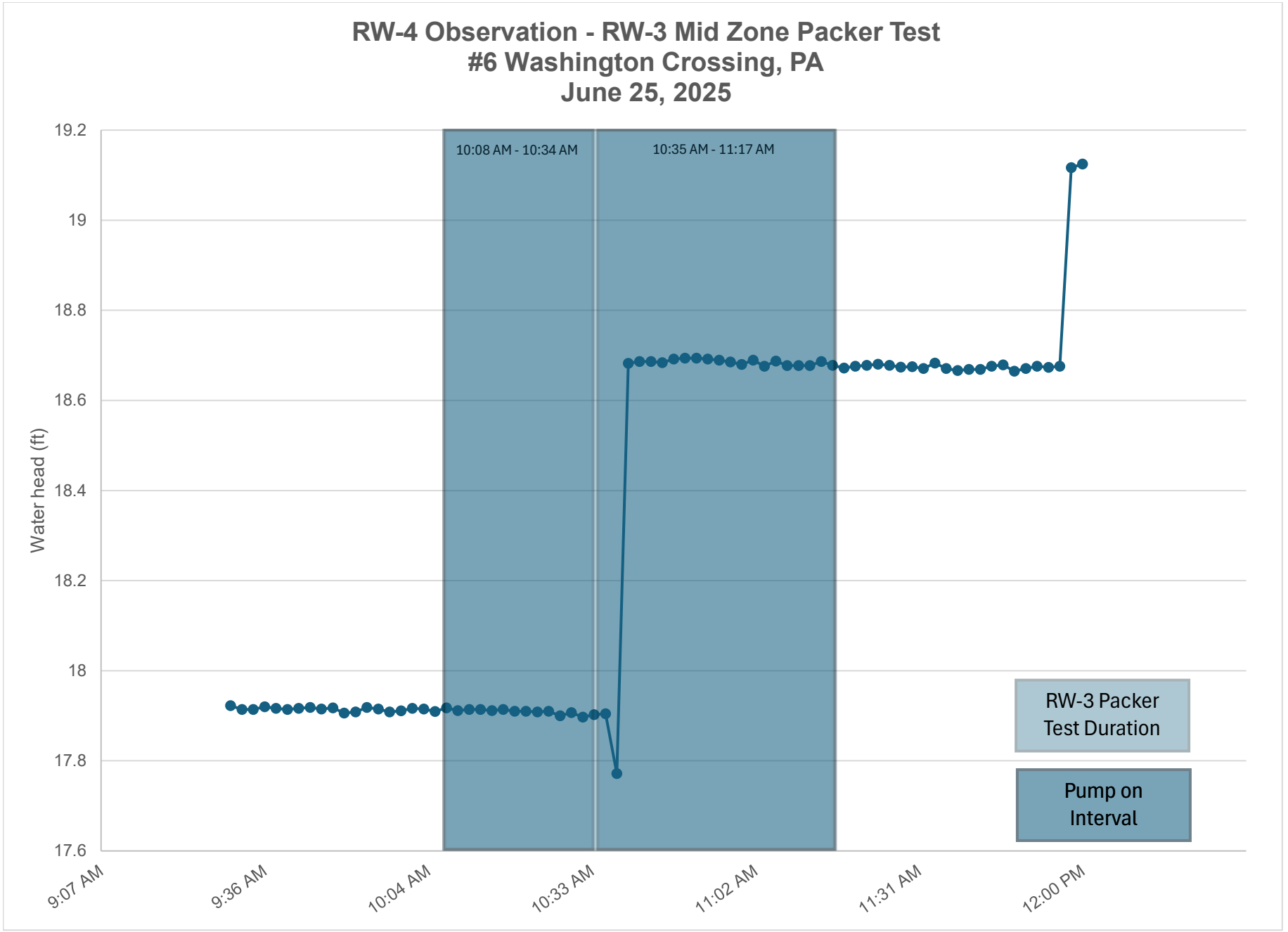

RW-3 Observation during RW-2 Deep Zone Packer Test
#3 Washington Crossing, PA
June 24, 2025
11:02 AM - 12:00 PM
RW-2 Packer Test Duration
Water head (ft)
12.82
12.81
12.8
12.79
12.78
12.77
12.76
12.75
12.74
12.73
12.72
10:19 AM
10:33 AM
10:48 AM
11:02 AM
11:16 AM
11:31 AM
11:45 AM
12:00 PM
12:14 PM
12:28 PM
12:43 PM

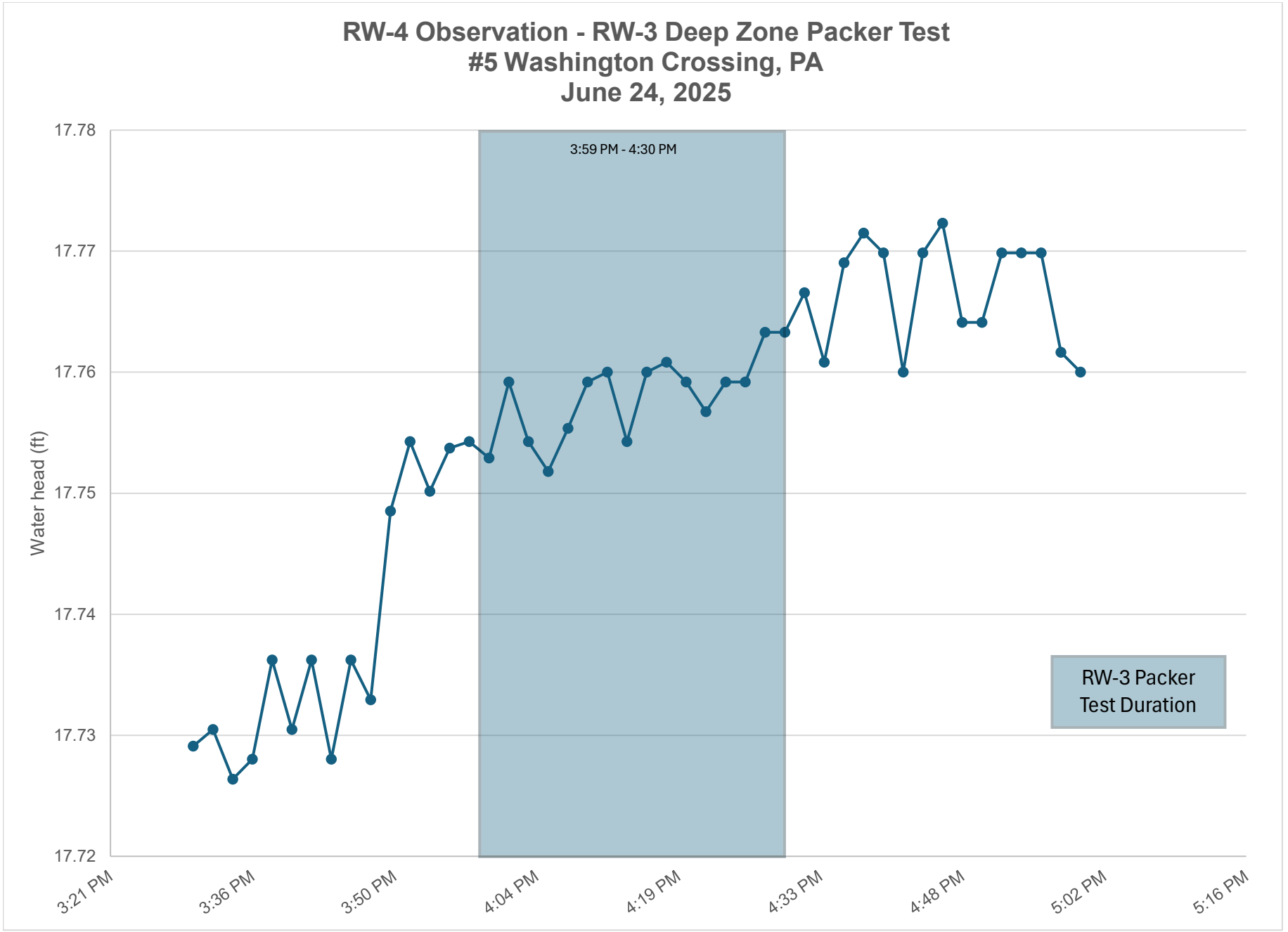

RW-4 Observation - RW-2 Shallow Zone Packer Test
#1 Washington Crossing, PA
June 23, 2025
Water head (ft)
17.26
17.24
17.22
17.2
17.18
17.16
17.14
12:12 PM - 12:35 PM
12:50 PM - 12:57 PM
RW-2 Packer Test Duration
Pump on Interval
11:16 AM
11:31 AM
11:45 AM
12:00 PM
12:14 PM
12:28 PM
12:43 PM
12:57 PM
1:12 PM
1:26 PM
1:40 PM

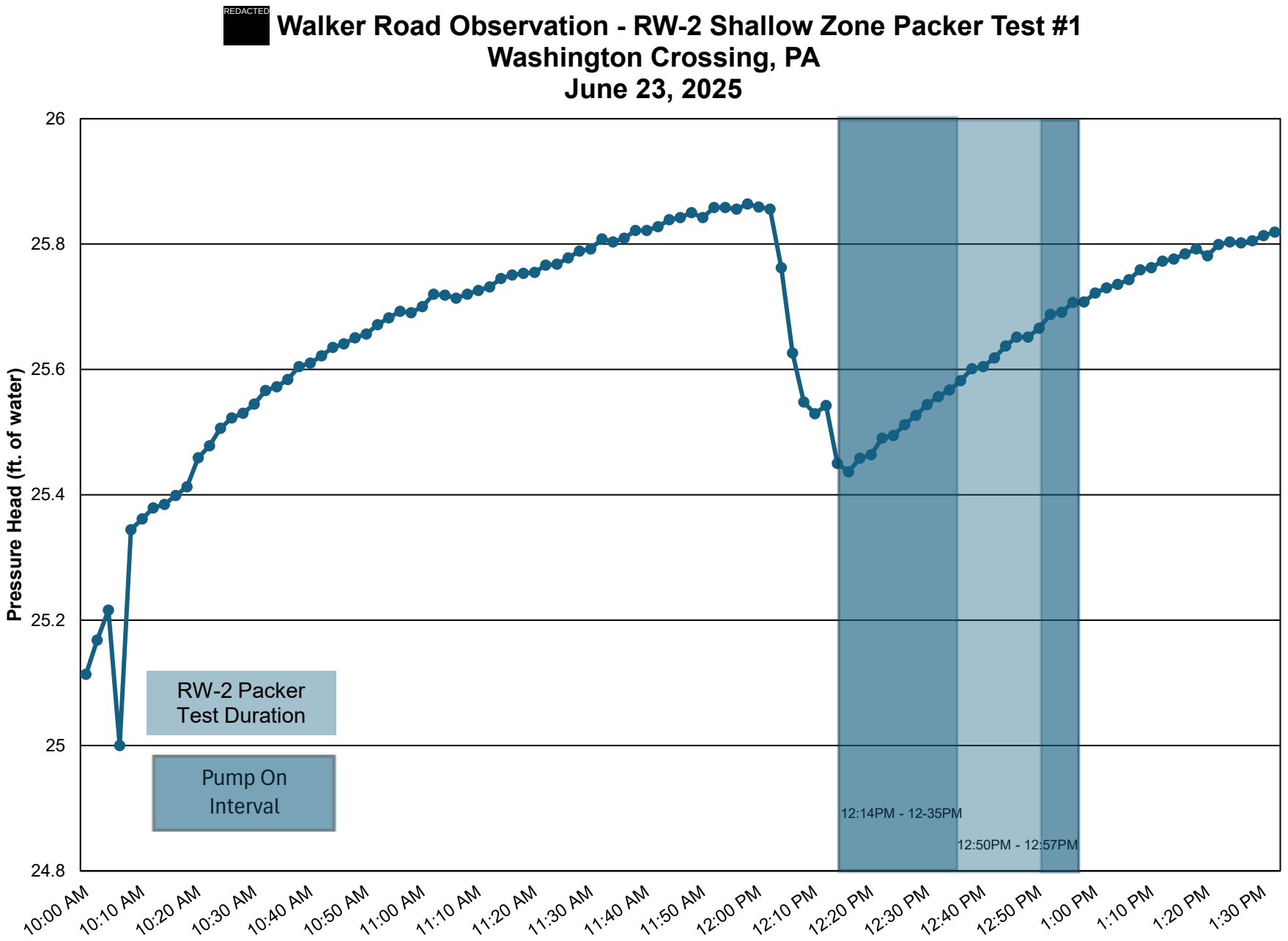

RW-4 Observation - RW-2 Mid Zone Packer Test
#2 Washington Crossing, PA
June 23, 2025
Water head (ft)
17.395
17.39
17.385
17.38
17.375
17.37
3:50 PM - 4:19 PM
RW-2 Packer Test Duration
3:21 PM
3:36 PM
3:50 PM
4:04 PM
4:19 PM
4:33 PM
4:48 PM
5:02 PM
5:16 PM


RW-4 Observation - RW-2 Deep Zone Packer Test
#3 Washington Crossing, PA
June 24, 2025
11:02 AM - 12:00 PM
RW-2 Packer Test Duration
Water head (ft)
17.7
17.65
17.6
17.55
17.5
17.45
17.4
17.35
17.3
17.25
10:19 AM
10:33 AM
10:48 AM
11:02 AM
11:16 AM
11:31 AM
11:45 AM
12:00 PM
12:14 PM
12:28 PM
12:43 PM

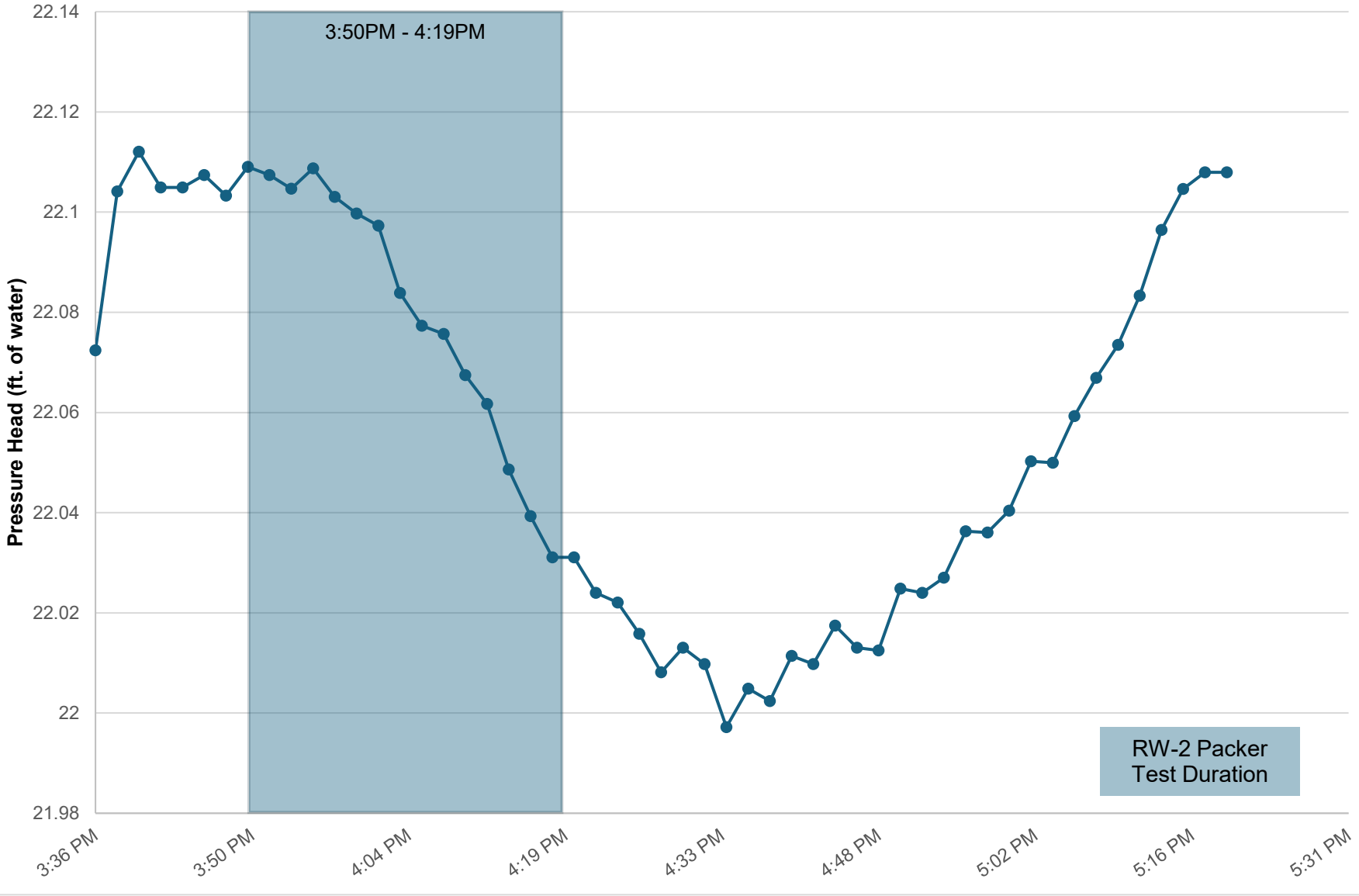

RW-4 Observation - RW-3 Shallow Zone Packer Test
#4 Washington Crossing, PA
June 24, 2025
Water head (ft)
17.74
17.73
17.72
17.71
17.7
17.69
17.68
17.67
17.66
17.65
17.64
12:28 PM
12:57 PM
1:26 PM
1:55 PM
2:24 PM
2:52 PM
3:21 PM
3:50 PM
1:29 PM - 1:38 PM
2:47 PM - 3:00 PM
RW-3 Packer Test Duration
Pump on Interval

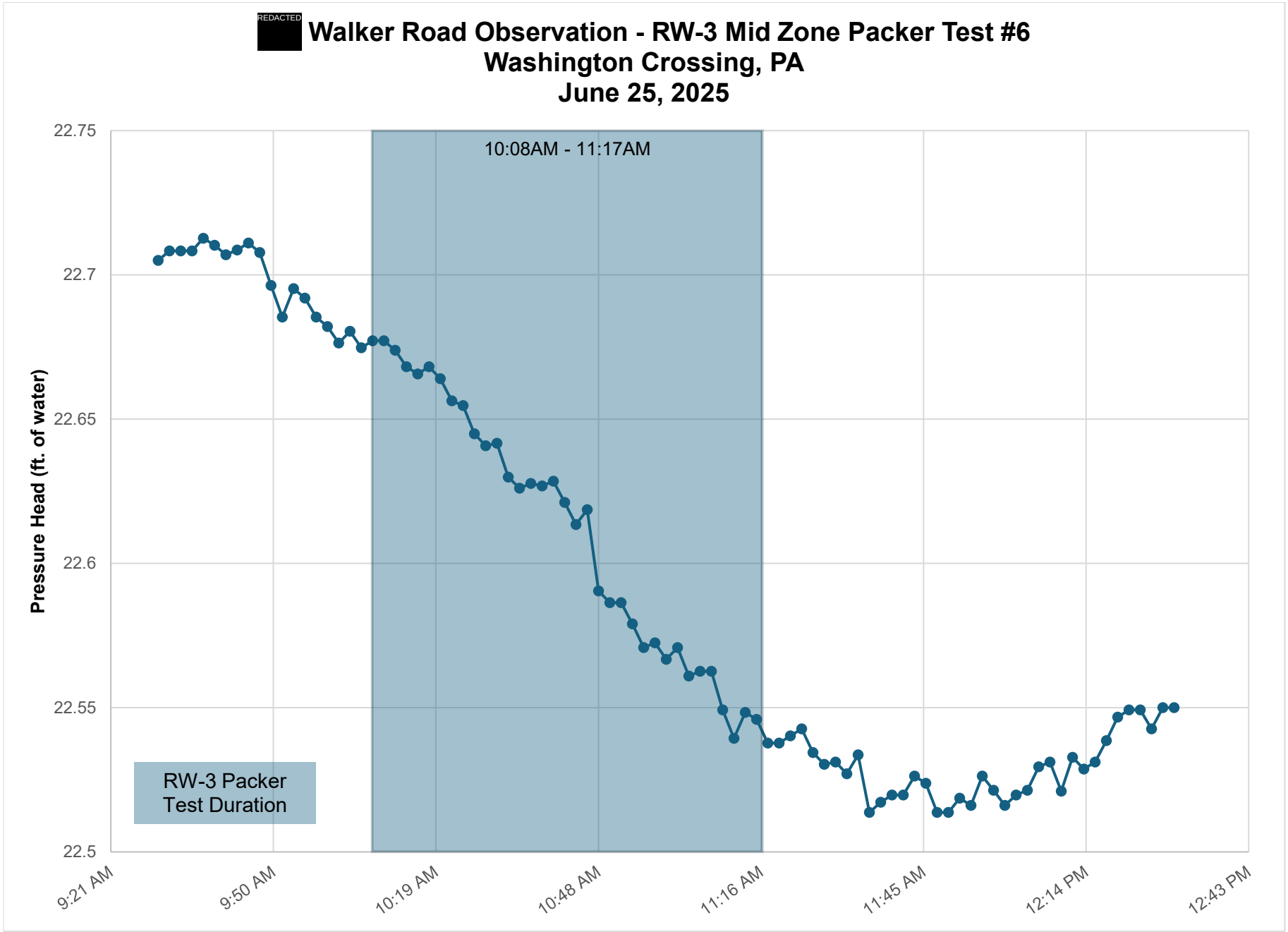

RW-4 Observation - RW-3 Mid Zone Packer Test
#6 Washington Crossing, PA
June 25, 2025
Water head (ft)
19.2
19
18.8
18.6
18.4
18.2
18
17.8
17.6
9:07 AM
9:36 AM
10:04 AM
10:33 AM
11:02 AM
11:31 AM
12:00 PM
10:08 AM - 10:34 AM
10:35 AM - 11:17 AM
RW-3 Packer Test Duration
Pump on Interval


RW-4 Observation - RW-3 Deep Zone Packer Test
#5 Washington Crossing, PA
June 24, 2025
Water head (ft)
17.78
17.77
17.76
17.75
17.74
17.73
17.72
3:59 PM - 4:30 PM
RW-3 Packer Test Duration
3:21 PM
3:36 PM
3:50 PM
4:04 PM
4:19 PM
4:33 PM
4:48 PM
5:02 PM
5:16 PM


REDACTED
Walker Road Observation - RW-2 Shallow Zone Packer Test #1
Washington Crossing, PA
June 23, 2025
Pressure Head (ft. of water)
26
25.8
25.6
25.4
25.2
25
24.8
RW-2 Packer Test Duration
Pump On Interval
12:14PM - 12-35PM
12:50PM - 12:57PM
10:00 AM
10:10 AM
10:20 AM
10:30 AM
10:40 AM
10:50 AM
11:00 AM
11:10 AM
11:20 AM
11:30 AM
11:40 AM
11:50 AM
12:00 PM
12:10 PM
12:20 PM
12:30 PM
12:40 PM
12:50 PM
1:00 PM
1:10 PM
1:20 PM
1:30 PM

[redacted] **Walker Road Observation - RW-2 Mid Zone Packer Test #2**
Washington Crossing, PA
June 23, 2025




REDACTED
Walker Road Observation - RW-3 Mid Zone Packer Test #6
Washington Crossing, PA
June 25, 2025
10:08AM - 11:17AM
RW-3 Packer
Test Duration
Pressure Head (ft. of water)
22.75
22.7
22.65
22.6
22.55
22.5
9:21 AM
9:50 AM
10:19 AM
10:48 AM
11:16 AM
11:45 AM
12:14 PM
12:43 PM

Appendix E – Laboratory Reports and Chain-of-Custody Documentation

ANALYTICAL REPORT

Lab Number:	L2539687
Client:	Groundwater & Environmental Services, In 410 Eagleview Blvd Exton, PA 19341
ATTN:	Stephanie Grillo
Phone:	(641) 458-1077
Project Name:	SUNOCO PIPELINE LP (SPLP)
Project Number:	PROJ-051861
Report Date:	06/26/25

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), CT (PH-0826), IL (200077), IN (C-MA-03), KY (KY98045), ME (MA00086), MD (348), NJ (MA935), NY (11148), NC (25700/666), OR (MA-1316), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #525-23-122-91930A1).

Eight Walkup Drive, Westborough, MA 01581-1019
508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com

Project Name: SUNOCO PIPELINE LP (SPLP)
Project Number: PROJ-051861

Lab Number: L2539687
Report Date: 06/26/25

Lab Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2539687-01	RW-2-48-63FT	WATER	E-25060-RL-25300050	06/24/25 11:20	06/24/25

Project Name:	SUNOCO PIPELINE LP (SPLP)	**Lab Number:**	L2539687
Project Number:	PROJ-051861	**Report Date:**	06/26/25

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Pace Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments and solids are reported on a dry weight basis unless otherwise noted. Tissues are reported "as received" or on a wet weight basis, unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

HOLD POLICY - For samples submitted on hold, Pace's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Pace Project Manager and made arrangements for Pace to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.

Project Name:	SUNOCO PIPELINE LP (SPLP)	**Lab Number:**	L2539687
Project Number:	PROJ-051861	**Report Date:**	06/26/25

Case Narrative (continued)

Report Submission

June 26, 2025: This final report includes the results of all requested analyses.

June 25, 2025: This is a preliminary report.

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Kelly Stenstrom

Title: Technical Director/Representative Date: 06/26/25

ORGANICS

VOLATILES

Project Name: SUNOCO PIPELINE LP (SPLP)
Lab Number: L2539687
Project Number: PROJ-051861
Report Date: 06/26/25

SAMPLE RESULTS

Lab ID: L2539687-01
Client ID: RW-2-48-63FT
Sample Location: E-25060-RL-25300050

Date Collected: 06/24/25 11:20
Date Received: 06/24/25
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 1,8011
Analytical Date: 06/25/25 16:06
Analyst: MHG

Extraction Method: EPA 8011
Extraction Date: 06/25/25 14:43

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Microextractables by GC - Westborough Lab							
1,2-Dibromoethane	ND		ug/l	0.010	0.005	1	A

Project Name: SUNOCO PIPELINE LP (SPLP) **Lab Number:** L2539687

Project Number: PROJ-051861 **Report Date:** 06/26/25

SAMPLE RESULTS

Lab ID: L2539687-01 D
Client ID: RW-2-48-63FT
Sample Location: E-25060-RL-25300050

Date Collected: 06/24/25 11:20
Date Received: 06/24/25
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 06/25/25 12:55
Analyst: AJK

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	ND		ug/l	10	1.7	10
Benzene	290		ug/l	5.0	1.6	10
1,2-Dichloroethane	ND		ug/l	5.0	1.3	10
Toluene	500		ug/l	7.5	2.0	10
Ethylbenzene	220		ug/l	5.0	1.7	10
p/m-Xylene	880		ug/l	10	3.3	10
o-Xylene	500		ug/l	10	3.9	10
Xylenes, Total	1400		ug/l	10	3.3	10
Isopropylbenzene	42		ug/l	5.0	1.9	10
1,3,5-Trimethylbenzene	350		ug/l	25	2.2	10
1,2,4-Trimethylbenzene	1100		ug/l	25	1.9	10
Naphthalene	460		ug/l	10	2.2	10

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	108		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	104		70-130
Dibromofluoromethane	105		70-130

Project Name: SUNOCO PIPELINE LP (SPLP)
Project Number: PROJ-051861

Lab Number: L2539687
Report Date: 06/26/25

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8011
Analytical Date: 06/25/25 15:32
Analyst: MHG

Extraction Method: EPA 8011
Extraction Date: 06/25/25 14:43

Parameter	Result	Qualifier	Units	RL	MDL	
Microextractables by GC - Westborough Lab for sample(s): 01 Batch: WG2083393-1						
1,2-Dibromoethane	ND		ug/l	0.010	0.005	A

Project Name: SUNOCO PIPELINE LP (SPLP) **Lab Number:** L2539687

Project Number: PROJ-051861 **Report Date:** 06/26/25

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 06/25/25 11:41
Analyst: PID

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG2083956-5					
Methyl tert butyl ether	ND		ug/l	1.0	0.17
Benzene	ND		ug/l	0.50	0.16
1,2-Dichloroethane	ND		ug/l	0.50	0.13
Toluene	ND		ug/l	0.75	0.20
Ethylbenzene	ND		ug/l	0.50	0.17
p/m-Xylene	ND		ug/l	1.0	0.33
o-Xylene	ND		ug/l	1.0	0.39
Xylenes, Total	ND		ug/l	1.0	0.33
Isopropylbenzene	ND		ug/l	0.50	0.19
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.19
Naphthalene	ND		ug/l	1.0	0.22

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	114		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	93		70-130
Dibromofluoromethane	114		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: SUNOCO PIPELINE LP (SPLP)
Project Number: PROJ-051861

Lab Number: L2539687
Report Date: 06/26/25

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Microextractables by GC - Westborough Lab Associated sample(s): 01 Batch: WG2083393-2									
1,2-Dibromoethane	102		-		60-140	-		20	A

Lab Control Sample Analysis
Batch Quality Control

Project Name: SUNOCO PIPELINE LP (SPLP)
Project Number: PROJ-051861

Lab Number: L2539687
Report Date: 06/26/25

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 Batch: WG2083956-3 WG2083956-4								
Methyl tert butyl ether	100		80		63-130	**22**	Q	20
Benzene	110		80		70-130	**32**	Q	20
1,2-Dichloroethane	110		87		70-130	**23**	Q	20
Toluene	110		84		70-130	**27**	Q	20
Ethylbenzene	100		82		70-130	20		20
p/m-Xylene	100		80		70-130	**22**	Q	20
o-Xylene	100		80		70-130	**22**	Q	20
Isopropylbenzene	98		75		70-130	**27**	Q	20
1,3,5-Trimethylbenzene	100		78		64-130	**25**	Q	20
1,2,4-Trimethylbenzene	100		80		70-130	**22**	Q	20
Naphthalene	97		74		70-130	**27**	Q	20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	107		109		70-130
Toluene-d8	102		102		70-130
4-Bromofluorobenzene	91		92		70-130
Dibromofluoromethane	99		101		70-130

Matrix Spike Analysis

Batch Quality Control

Project Name: SUNOCO PIPELINE LP (SPLP)

Project Number: PROJ-051861

Lab Number: L2539687

Report Date: 06/26/25

Parameter	*Native Sample*	*MS Added*	*MS Found*	*MS %Recovery*	*Qual*	*MSD Found*	*MSD %Recovery*	*Qual*	*Recovery Limits*	*RPD*	*Qual*	*RPD Limits*	*Column*
Microextractables by GC - Westborough Lab Associated sample(s): 01 QC Batch ID: WG2083393-3 QC Sample: L2539687-01 Client ID: RW-2-48-63FT													
1,2-Dibromoethane	ND	0.25	0.234	94		-	-		60-140	-		20	A

METALS

Project Name: SUNOCO PIPELINE LP (SPLP)
Lab Number: L2539687
Project Number: PROJ-051861
Report Date: 06/26/25

SAMPLE RESULTS

Lab ID: L2539687-01
Client ID: RW-2-48-63FT
Sample Location: E-25060-RL-25300050
Date Collected: 06/24/25 11:20
Date Received: 06/24/25
Field Prep: Refer to COC

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Dissolved Metals - Mansfield Lab											
Lead, Dissolved	ND		mg/l	0.00100	0.00034	1	06/25/25 10:39	06/25/25 14:48	EPA 3005A	1,6020B	BLR

Project Name: SUNOCO PIPELINE LP (SPLP) **Lab Number:** L2539687

Project Number: PROJ-051861 **Report Date:** 06/26/25

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Dissolved Metals - Mansfield Lab for sample(s): 01 Batch: WG2083270-1										
Lead, Dissolved	ND		mg/l	0.00100	0.00034	1	06/25/25 10:39	06/25/25 14:21	1,6020B	BLR

Prep Information

Digestion Method: EPA 3005A

Lab Control Sample Analysis
Batch Quality Control

Project Name: SUNOCO PIPELINE LP (SPLP)
Project Number: PROJ-051861

Lab Number: L2539687
Report Date: 06/26/25

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Dissolved Metals - Mansfield Lab Associated sample(s): 01 Batch: WG2083270-2								
Lead, Dissolved	99		-		80-120	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: SUNOCO PIPELINE LP (SPLP)
Project Number: PROJ-051861

Lab Number: L2539687
Report Date: 06/26/25

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Dissolved Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG2083270-3 QC Sample: L2539687-01 Client ID: RW-2-48-63FT												
Lead, Dissolved	ND	0.53	0.5388	102		-	-		75-125	-		20

Lab Duplicate Analysis

Batch Quality Control

Project Name: SUNOCO PIPELINE LP (SPLP)

Project Number: PROJ-051861

Lab Number: L2539687

Report Date: 06/26/25

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Dissolved Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG2083270-4 QC Sample: L2539687-01 Client ID: RW-2-48-63FT						
Lead, Dissolved	ND	ND	mg/l	NC		20

Project Name: SUNOCO PIPELINE LP (SPLP)
Project Number: PROJ-051861

Lab Number: L2539687
Report Date: 06/26/25

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2539687-01A	Vial HCl preserved	A	NA		3.5	Y	Absent		PA-8260(14)
L2539687-01B	Vial HCl preserved	A	NA		3.5	Y	Absent		PA-8260(14)
L2539687-01C	Vial HCl preserved	A	NA		3.5	Y	Absent		PA-8260(14)
L2539687-01D	Vial Na2S2O3 preserved	A	NA		3.5	Y	Absent		8011(14)
L2539687-01E	Vial Na2S2O3 preserved	A	NA		3.5	Y	Absent		8011(14)
L2539687-01F	Plastic 250ml HNO3 preserved	A	<2	<2	3.5	Y	Absent		PB-6020S(180)

*Values in parentheses indicate holding time in days

Project Name:	SUNOCO PIPELINE LP (SPLP)	**Lab Number:**	L2539687
Project Number:	PROJ-051861	**Report Date:**	06/26/25

GLOSSARY

Acronyms

DL	- Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EMPC	- Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LOD	- Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
LOQ	- Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.) Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NDPA/DPA	- N-Nitrosodiphenylamine/Diphenylamine.
NI	- Not Ignitable.
NP	- Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.
NR	- No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile Organic TIC only requests.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.
STLP	- Semi-dynamic Tank Leaching Procedure per EPA Method 1315.
TEF	- Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.
TEQ	- Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.
TIC	- Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Report Format: DU Report with 'J' Qualifiers

Project Name:	SUNOCO PIPELINE LP (SPLP)	**Lab Number:**	L2539687
Project Number:	PROJ-051861	**Report Date:**	06/26/25

Footnotes

1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Chlordane: The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA,this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Gasoline Range Organics (GRO): Gasoline Range Organics (GRO) results include all chromatographic peaks eluting from Methyl tert butyl ether through Naphthalene, with the exception of GRO analysis in support of State of Ohio programs, which includes all chromatographic peaks eluting from Hexane through Dodecane.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PAH Total: With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benz(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. In addition, the 'PFAS, Total (6)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA, PFDA and PFOS. For MassDEP DW compliance analysis only, the 'PFAS, Total (6)' result is defined as the summation of results at or above the RL. Note: If a 'Total' result is requested, the results of its individual components will also be reported.

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

A - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

F - The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

J - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively

Report Format: DU Report with 'J' Qualifiers

Project Name:	SUNOCO PIPELINE LP (SPLP)	**Lab Number:**	L2539687
Project Number:	PROJ-051861	**Report Date:**	06/26/25

Data Qualifiers

Identified Compounds (TICs). For calculated parameters, this represents that one or more values used in the calculation were estimated.

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

ND - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

V - The surrogate associated with this target analyte has a recovery outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Z - The batch matrix spike and/or duplicate associated with this target analyte has a recovery/RPD outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Project Name: SUNOCO PIPELINE LP (SPLP) **Lab Number:** L2539687

Project Number: PROJ-051861 **Report Date:** 06/26/25

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - VI, 2018.

LIMITATION OF LIABILITIES

Pace Analytical Services performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Pace Analytical Services shall be to re-perform the work at it's own expense. In no event shall Pace Analytical Services be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Pace Analytical Services.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility – 8 Walkup Dr. Westborough, MA 01581
EPA 624.1: m/p-xylene, o-xylene, Naphthalene
EPA 625.1: alpha-Terpineol
EPA 8260D: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol, Azobenzene; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility – 320 Forbes Blvd. Mansfield, MA 02048
SM 2540D: TSS.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
MADEP-APH.
Nonpotable Water: EPA RSK-175 Dissolved Gases
Biological Tissue Matrix: EPA 3050B

Mansfield Facility – 120 Forbes Blvd. Mansfield, MA 02048
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Nonpotable Water: EPA RSK-175 Dissolved Gases

The following test method is not included in our New Jersey Secondary NELAP Scope of Accreditation:

Mansfield Facility – 320 Forbes Blvd. Mansfield, MA 02048
Determination of Selected Perfluorinated Alkyl Substances by Solid Phase Extraction and Liquid Chromatography/Tandem Mass Spectrometry Isotope Dilution (via Alpha SOP 23528)

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility – 8 Walkup Dr. Westborough, MA 01581

Drinking Water
EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B**
EPA 524.2: THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N, **SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables).
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, EPA 1600, EPA 1603, SM9222D.**

Mansfield Facility – 320 Forbes Blvd. Mansfield, MA 02048

Drinking Water
EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522, EPA 537.1.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb, As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.
EPA 245.1 Hg.
SM2340B

Certification IDs:

Westborough Facility – 8 Walkup Dr. Westborough, MA 01581
CT PH-0826, IL 200077, IN C-MA-03, KY JY98045, ME MA00086, MD 348, MA M-MA086, NH 2064, NJ MA935, NY 11148, NC (DW) 25700, NC (NPW/SCM) 666, OR MA-1316, PA 68-03671, RI LAO00065, TX T104704476, VT VT-0935, VA 460195

Mansfield Facility – 320 Forbes Blvd. Mansfield, MA 02048
CT PH-0825, ANAB/DoD L2474, IL 200081, IN C-MA-04, KY KY98046, LA 3090, ME MA00030, MI 9110, MN 025-999-495, NH 2062, NJ MA015, NY 11627, NC (NPW/SCM) 685, OR MA-0262, PA 68-02089, RI LAO00299, TX T-104704419, VT VT-0015, VA 460194, WA C954

Mansfield Facility – 120 Forbes Blvd. Mansfield, MA 02048
ANAB/DoD L2474, ME MA01156, MN 025-999-498, NH 2249, NJ MA025, NY 12191, OR 4203, TX T104704583, VA 460311, WA C1104.

For a complete listing of analytes and methods, please contact your Project Manager.

06/25/25

Pace® Location Requested (City/State): Westborough, MA

CHAIN-OF-CUSTODY Analytical Request Document

Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevant fields

LAB USE ONLY - Affix Workorder/Login Label Here

L2539687

Scan QR Code for instructions

Company Name: GES, Inc.
Street Address: 410 Eagleview Blvd, Suite 110, Exton, PA 19341
Customer Project #:
Project Name: Sunoco Pipeline LP (SPLP) Washington Crossing
Site Collection Info/Facility ID (as applicable): Washington Crossing, PA

Contact/Report To: Stephanie Grillo
Phone #: (610) 458-1077x3064 / (610) 458-2300
E-Mail: SGrillo@gesonline.com; gesinbox@gesonline.com
Cc E-Mail: CTEH_Deliverables@enviid.com; ges@equizonline.com
Invoice to: ges-invoices@gesonline.com
Invoice E-mail: ges-invoices@gesonline.com
Purchase Order # (if applicable): 0225040-06-242
Quote #:

Time Zone Collected: [ ] AK [ ] PT [ ] MT [ ] CT [X] ET
County / State origin of sample(s): PA

Data Deliverables: [ ] Level II [ ] Level III [ ] Level IV [X] EQuIS [ ] Other
Regulatory Program (DW, RCRA, etc.) as applicable: DW
Reportable [ ] Yes [ ] No
Rush (Pre-approval required): [ ] Same Day [ ] 1 Day [ ] 2 Day [ ] 3 Day Other: 24 hour
DW PWSID # or WW Permit # as applicable:
Date Results Requested: ASAP
Field Filtered (if applicable): [X] Yes [ ] No
Analysis: Lead

Specify Container Size**: 6 | 6 | 3
Identify Container Preservative Type***: 4 | 8 | 2

**Container Size: (1) 1L, (2) 500mL, (3) 250mL, (4) 125mL, (5) 100mL, (6) 40mL vial, (7) EnCore, (8) TerraCore, (9) 90mL, (10) Other

***Preservative Types: (1) None, (2) HNO3, (3) H2SO4, (4) HCl, (5) NaOH, (6) Zn Acetate, (7) NaHSO4, (8) Sod. Thiosulfate, (9) Ascorbic Acid, (10) MeOH, (11) Other

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Wastewater (WW), Product (P), Soil/Solid (SS), Oil (OL), Wipe (WP), Tissue (TS), Bioassay (B), Vapor (V), Surface Water (SW), Sediment (SED), Sludge (SL), Caulk (CK), Leachate (LL), Biosolid (BS), Other (OT)

	Customer Sample ID	Matrix *	Comp / Grab	Composite Start Date	Composite Start Time	Collected or Composite End Date	Collected or Composite End Time	# Cont.	Residual Chlorine Result	Residual Chlorine Units	VOCs (list below), EPA 8260D	1,2-Dibromoethane, EPA 8011	Lead (dissolved), EPA 6010	Sample Comment
-01	RW-2 - 48-63 ft	GW	G	6/24/2025	1120			6			X	X	X	

Lab Use Only: Proj. Mgr: / AcctNum / Client ID: / Table #: / Profile / Template: / Prelog / Bottle Ord. ID:

Preservation non-conformance identified for sample.

Additional Instructions from Pace®: VOCs by EPA 524.2 list: BTEX, Isopropylbenzene, MTBE, Naphthalene, 1,2,4-Trimethylbenzene, 1,3,5-Trimethylbenzene, 1,2-Dichloroethane

Collected By: Printed Name: CHRIS MACKEY Signature: [signature]

Customer Remarks / Special Conditions / Possible Hazards:

Coolers: | Thermometer ID: | Correction Factor (°C): | Obs. Temp. (°C): | Corrected Temp. (°C): | [ ] On Ice

Relinquished by/Company: (Signature)	Date/Time	Received by/Company: (Signature)	Date/Time
[signature] / GES	6/24/25 1145	[signature] / GES	6/24/25 1145
[signature] / GES	6/24/25 1450	[signature] PACE	6/24/25 1450
[signature] PACE	6/24/25 1840	[signature]	6/24 1840
		Anthony Green	JUN 24 2025 2300

Tracking Number:
Delivered by: [ ] In-Person [ ] Courier [ ] FedEx [ ] UPS [ ] Other
Page: of

Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace® Terms and Conditions found at https://info.pacelabs.com/hubfs/pas-standard-terms.pdf

ENV-FRM-CORQ-0019_v02-110123 ©

Anthony Green

6/25 0315

06/25/25-0315

ANALYTICAL REPORT

Lab Number:	L2540008
Client:	Groundwater & Environmental Services, In 410 Eagleview Blvd Exton, PA 19341
ATTN:	Stephanie Grillo
Phone:	(641) 458-1077
Project Name:	SUNOCO PIPELINE LP (SPLP)
Project Number:	PROJ-051861
Report Date:	06/26/25

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), CT (PH-0826), IL (200077), IN (C-MA-03), KY (KY98045), ME (MA00086), MD (348), NJ (MA935), NY (11148), NC (25700/666), OR (MA-1316), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #525-23-122-91930A1).

Eight Walkup Drive, Westborough, MA 01581-1019
508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com

Project Name: SUNOCO PIPELINE LP (SPLP)
Project Number: PROJ-051861

Lab Number: L2540008
Report Date: 06/26/25

Lab Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2540008-01	RW-3-47-65FT	WATER	E-25060-RL-25300050	06/24/25 16:00	06/25/25

Project Name:	SUNOCO PIPELINE LP (SPLP)	**Lab Number:**	L2540008
Project Number:	PROJ-051861	**Report Date:**	06/26/25

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Pace Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments and solids are reported on a dry weight basis unless otherwise noted. Tissues are reported "as received" or on a wet weight basis, unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

HOLD POLICY - For samples submitted on hold, Pace's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Pace Project Manager and made arrangements for Pace to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.

Project Name:	SUNOCO PIPELINE LP (SPLP)	**Lab Number:**	L2540008
Project Number:	PROJ-051861	**Report Date:**	06/26/25

Case Narrative (continued)

Report Submission

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Caitlin Walukevich

Caitlin Walukevich

Title: Technical Director/Representative

Date: 06/26/25

ORGANICS

VOLATILES

Project Name: SUNOCO PIPELINE LP (SPLP)
Lab Number: L2540008
Project Number: PROJ-051861
Report Date: 06/26/25

SAMPLE RESULTS

Lab ID: L2540008-01
Client ID: RW-3-47-65FT
Sample Location: E-25060-RL-25300050

Date Collected: 06/24/25 16:00
Date Received: 06/25/25
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 1,8011
Analytical Date: 06/26/25 14:59
Analyst: HNY

Extraction Method: EPA 8011
Extraction Date: 06/26/25 13:05

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Microextractables by GC - Westborough Lab							
1,2-Dibromoethane	ND		ug/l	0.010	0.005	1	A

Project Name: SUNOCO PIPELINE LP (SPLP) **Lab Number:** L2540008

Project Number: PROJ-051861 **Report Date:** 06/26/25

SAMPLE RESULTS

Lab ID: L2540008-01 D
Client ID: RW-3-47-65FT
Sample Location: E-25060-RL-25300050

Date Collected: 06/24/25 16:00
Date Received: 06/25/25
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 06/26/25 13:51
Analyst: PID

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	ND		ug/l	4.0	0.66	4
Benzene	100		ug/l	2.0	0.64	4
1,2-Dichloroethane	ND		ug/l	2.0	0.53	4
Toluene	200		ug/l	3.0	0.81	4
Ethylbenzene	56		ug/l	2.0	0.67	4
p/m-Xylene	500		ug/l	4.0	1.3	4
o-Xylene	330		ug/l	4.0	1.6	4
Xylenes, Total	830		ug/l	4.0	1.3	4
Isopropylbenzene	15		ug/l	2.0	0.75	4
1,3,5-Trimethylbenzene	230		ug/l	10	0.87	4
1,2,4-Trimethylbenzene	530		ug/l	10	0.76	4
Naphthalene	130		ug/l	4.0	0.86	4

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	101		70-130
Toluene-d8	101		70-130
4-Bromofluorobenzene	103		70-130
Dibromofluoromethane	94		70-130

Project Name: SUNOCO PIPELINE LP (SPLP)
Project Number: PROJ-051861

Lab Number: L2540008
Report Date: 06/26/25

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8011
Analytical Date: 06/26/25 14:26
Analyst: HNY

Extraction Method: EPA 8011
Extraction Date: 06/26/25 13:05

Parameter	Result	Qualifier	Units	RL	MDL	
Microextractables by GC - Westborough Lab for sample(s): 01 Batch: WG2083902-1						
1,2-Dibromoethane	ND		ug/l	0.010	0.005	A

Project Name: SUNOCO PIPELINE LP (SPLP) **Lab Number:** L2540008

Project Number: PROJ-051861 **Report Date:** 06/26/25

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 06/26/25 12:07
Analyst: PID

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG2083980-5					
Methyl tert butyl ether	ND		ug/l	1.0	0.17
Benzene	ND		ug/l	0.50	0.16
1,2-Dichloroethane	ND		ug/l	0.50	0.13
Toluene	ND		ug/l	0.75	0.20
Ethylbenzene	ND		ug/l	0.50	0.17
p/m-Xylene	ND		ug/l	1.0	0.33
o-Xylene	ND		ug/l	1.0	0.39
Xylenes, Total	ND		ug/l	1.0	0.33
Isopropylbenzene	ND		ug/l	0.50	0.19
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.19
Naphthalene	ND		ug/l	1.0	0.22

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	102		70-130
Toluene-d8	103		70-130
4-Bromofluorobenzene	104		70-130
Dibromofluoromethane	96		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: SUNOCO PIPELINE LP (SPLP)
Project Number: PROJ-051861

Lab Number: L2540008
Report Date: 06/26/25

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Microextractables by GC - Westborough Lab Associated sample(s): 01 Batch: WG2083902-2									
1,2-Dibromoethane	99		-		60-140	-		20	A

Lab Control Sample Analysis
Batch Quality Control

Project Name: SUNOCO PIPELINE LP (SPLP)
Project Number: PROJ-051861

Lab Number: L2540008
Report Date: 06/26/25

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 Batch: WG2083980-3 WG2083980-4								
Methyl tert butyl ether	81		83		63-130	2		20
Benzene	100		98		70-130	2		20
1,2-Dichloroethane	98		99		70-130	1		20
Toluene	99		96		70-130	3		20
Ethylbenzene	99		96		70-130	3		20
p/m-Xylene	95		95		70-130	0		20
o-Xylene	95		90		70-130	5		20
Isopropylbenzene	100		100		70-130	0		20
1,3,5-Trimethylbenzene	100		97		64-130	3		20
1,2,4-Trimethylbenzene	100		97		70-130	3		20
Naphthalene	75		83		70-130	10		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	101		102		70-130
Toluene-d8	104		103		70-130
4-Bromofluorobenzene	102		102		70-130
Dibromofluoromethane	101		98		70-130

Matrix Spike Analysis

Batch Quality Control

Project Name: SUNOCO PIPELINE LP (SPLP)

Project Number: PROJ-051861

Lab Number: L2540008

Report Date: 06/26/25

Parameter	*Native Sample*	*MS Added*	*MS Found*	*MS %Recovery*	*Qual*	*MSD Found*	*MSD %Recovery*	*Qual*	*Recovery Limits*	*RPD*	*Qual*	*RPD Limits*	*Column*
Microextractables by GC - Westborough Lab Associated sample(s): 01 QC Batch ID: WG2083902-3 QC Sample: L2540008-01 Client ID: RW-3-47-65FT													
1,2-Dibromoethane	ND	0.25	0.246	98		-	-		60-140	-		20	A

METALS

Project Name: SUNOCO PIPELINE LP (SPLP)
Lab Number: L2540008
Project Number: PROJ-051861
Report Date: 06/26/25

SAMPLE RESULTS

Lab ID: L2540008-01
Client ID: RW-3-47-65FT
Sample Location: E-25060-RL-25300050
Date Collected: 06/24/25 16:00
Date Received: 06/25/25
Field Prep: Refer to COC

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Dissolved Metals - Mansfield Lab											
Lead, Dissolved	ND		mg/l	0.00100	0.00034	1	06/26/25 08:15	06/26/25 14:14	EPA 3005A	1,6020B	BLR

Project Name: SUNOCO PIPELINE LP (SPLP) **Lab Number:** L2540008

Project Number: PROJ-051861 **Report Date:** 06/26/25

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Dissolved Metals - Mansfield Lab for sample(s): 01 Batch: WG2083677-1										
Lead, Dissolved	ND		mg/l	0.00100	0.00034	1	06/26/25 08:15	06/26/25 13:46	1,6020B	BLR

Prep Information

Digestion Method: EPA 3005A

Lab Control Sample Analysis
Batch Quality Control

Project Name: SUNOCO PIPELINE LP (SPLP)
Project Number: PROJ-051861

Lab Number: L2540008
Report Date: 06/26/25

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Dissolved Metals - Mansfield Lab Associated sample(s): 01 Batch: WG2083677-2								
Lead, Dissolved	106		-		80-120	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: SUNOCO PIPELINE LP (SPLP)
Project Number: PROJ-051861

Lab Number: L2540008
Report Date: 06/26/25

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Dissolved Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG2083677-3 QC Sample: L2540008-01 Client ID: RW-3-47-65FT												
Lead, Dissolved	ND	0.53	0.5651	107		-	-		75-125	-		20

Lab Duplicate Analysis

Batch Quality Control

Project Name: SUNOCO PIPELINE LP (SPLP)

Project Number: PROJ-051861

Lab Number: L2540008

Report Date: 06/26/25

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Dissolved Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG2083677-4 QC Sample: L2540008-01 Client ID: RW-3-47-65FT						
Lead, Dissolved	ND	ND	mg/l	NC		20

Project Name: SUNOCO PIPELINE LP (SPLP)
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Report Date: 06/26/25

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2540008-01A	Vial HCl preserved	A	NA		3.5	Y	Absent		PA-8260(14)
L2540008-01B	Vial HCl preserved	A	NA		3.5	Y	Absent		PA-8260(14)
L2540008-01C	Vial HCl preserved	A	NA		3.5	Y	Absent		PA-8260(14)
L2540008-01D	Vial Na2S2O3 preserved	A	NA		3.5	Y	Absent		8011(14)
L2540008-01E	Vial Na2S2O3 preserved	A	NA		3.5	Y	Absent		8011(14)
L2540008-01F	Plastic 250ml HNO3 preserved	A	<2	<2	3.5	Y	Absent		PB-6020S(180)

*Values in parentheses indicate holding time in days

Project Name:	SUNOCO PIPELINE LP (SPLP)	**Lab Number:**	L2540008
Project Number:	PROJ-051861	**Report Date:**	06/26/25

GLOSSARY

Acronyms

DL	- Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EMPC	- Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LOD	- Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
LOQ	- Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.) Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NDPA/DPA	- N-Nitrosodiphenylamine/Diphenylamine.
NI	- Not Ignitable.
NP	- Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.
NR	- No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile Organic TIC only requests.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.
STLP	- Semi-dynamic Tank Leaching Procedure per EPA Method 1315.
TEF	- Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.
TEQ	- Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.
TIC	- Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Report Format: DU Report with 'J' Qualifiers

Project Name:	SUNOCO PIPELINE LP (SPLP)	**Lab Number:**	L2540008
Project Number:	PROJ-051861	**Report Date:**	06/26/25

Footnotes

1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Chlordane: The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA,this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Gasoline Range Organics (GRO): Gasoline Range Organics (GRO) results include all chromatographic peaks eluting from Methyl tert butyl ether through Naphthalene, with the exception of GRO analysis in support of State of Ohio programs, which includes all chromatographic peaks eluting from Hexane through Dodecane.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PAH Total: With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benz(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. In addition, the 'PFAS, Total (6)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA, PFDA and PFOS. For MassDEP DW compliance analysis only, the 'PFAS, Total (6)' result is defined as the summation of results at or above the RL. Note: If a 'Total' result is requested, the results of its individual components will also be reported.

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

A - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

F - The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

J - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively

Report Format: DU Report with 'J' Qualifiers

Project Name:	SUNOCO PIPELINE LP (SPLP)	**Lab Number:**	L2540008
Project Number:	PROJ-051861	**Report Date:**	06/26/25

Data Qualifiers

Identified Compounds (TICs). For calculated parameters, this represents that one or more values used in the calculation were estimated.

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

ND - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

V - The surrogate associated with this target analyte has a recovery outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Z - The batch matrix spike and/or duplicate associated with this target analyte has a recovery/RPD outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Project Name: SUNOCO PIPELINE LP (SPLP) **Lab Number:** L2540008

Project Number: PROJ-051861 **Report Date:** 06/26/25

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - VI, 2018.

LIMITATION OF LIABILITIES

Pace Analytical Services performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Pace Analytical Services shall be to re-perform the work at it's own expense. In no event shall Pace Analytical Services be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Pace Analytical Services.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility – 8 Walkup Dr. Westborough, MA 01581
EPA 624.1: m/p-xylene, o-xylene, Naphthalene
EPA 625.1: alpha-Terpineol
EPA 8260D: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol, Azobenzene; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility – 320 Forbes Blvd. Mansfield, MA 02048
SM 2540D: TSS.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
MADEP-APH.
Nonpotable Water: EPA RSK-175 Dissolved Gases
Biological Tissue Matrix: EPA 3050B

Mansfield Facility – 120 Forbes Blvd. Mansfield, MA 02048
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Nonpotable Water: EPA RSK-175 Dissolved Gases

The following test method is not included in our New Jersey Secondary NELAP Scope of Accreditation:

Mansfield Facility – 320 Forbes Blvd. Mansfield, MA 02048
Determination of Selected Perfluorinated Alkyl Substances by Solid Phase Extraction and Liquid Chromatography/Tandem Mass Spectrometry Isotope Dilution (via Alpha SOP 23528)

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility – 8 Walkup Dr. Westborough, MA 01581

Drinking Water
EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B**
EPA 524.2: THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N, **SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables).
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, EPA 1600, EPA 1603, SM9222D.**

Mansfield Facility – 320 Forbes Blvd. Mansfield, MA 02048

Drinking Water
EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522, EPA 537.1.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb, As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.
EPA 245.1 Hg.
SM2340B

Certification IDs:

Westborough Facility – 8 Walkup Dr. Westborough, MA 01581
CT PH-0826, IL 200077, IN C-MA-03, KY JY98045, ME MA00086, MD 348, MA M-MA086, NH 2064, NJ MA935, NY 11148, NC (DW) 25700, NC (NPW/SCM) 666, OR MA-1316, PA 68-03671, RI LAO00065, TX T104704476, VT VT-0935, VA 460195

Mansfield Facility – 320 Forbes Blvd. Mansfield, MA 02048
CT PH-0825, ANAB/DoD L2474, IL 200081, IN C-MA-04, KY KY98046, LA 3090, ME MA00030, MI 9110, MN 025-999-495, NH 2062, NJ MA015, NY 11627, NC (NPW/SCM) 685, OR MA-0262, PA 68-02089, RI LAO00299, TX T-104704419, VT VT-0015, VA 460194, WA C954

Mansfield Facility – 120 Forbes Blvd. Mansfield, MA 02048
ANAB/DoD L2474, ME MA01156, MN 025-999-498, NH 2249, NJ MA025, NY 12191, OR 4203, TX T104704583, VA 460311, WA C1104.

For a complete listing of analytes and methods, please contact your Project Manager.

06/26/25

Pace® Location Requested (City/State): Westborough, MA

CHAIN-OF-CUSTODY Analytical Request Document

Chain-of-Custody is a LEGAL DOCUMENT – Complete all relevant fields

LAB USE ONLY: Affix Workorder/Login Label Here

L2540008

Scan QR Code for instructions

Company Name:	GES, Inc.
Street Address:	410 Eagleview Blvd, Suite 110 Exton, PA 19341
Customer Project #:	
Project Name:	Sunoco Pipeline LP (SPLP) Washington Crossing
Site Collection Info/Facility ID (as applicable):	Washington Crossing, PA
State Where Collected:	[ ] AL [ ] FL [ ] MT [ ] CT [X] PT
Data Deliverables:	[ ] Level II [ ] Level III [ ] Level IV [X] EQUIS [ ] Other:
Contact/Report To:	Stephanie Grillo
Phone #:	(610) 458-1077x3064 / (610) 458-2300
E-Mail:	SGrillo@gesonline.com; gesinbox@gesonline.com
Cc E-Mail:	CTEH_Deliverables@unvaid.com; ges@equisonline.com
Invoice To:	ges-invoices@gesonline.com
Invoice E-mail:	ges-invoices@gesonline.com
Purchase Order # (if applicable):	0225040-08-242
Quote #:	
County / State origin of sample(s):	PA
Regulatory Programs (DW, RCRA, etc.) as applicable:	DW
Reportable:	[ ] Yes [ ] No
Rush (Pre-approval required):	[ ] Same Day [ ] 1 Day [ ] 2 Day [ ] 3 Day Other 24 hour
Date Results Requested:	ASAP
DW PWSID # or WW Permit # as applicable:	
Field Filtered (if applicable):	[X] Yes [ ] No
Analysis:	Lead

Specify Container Size **: 6 6 3

Identify Container Preservative Type***: 4 8 2

Analysis Requested: VOCs (Ref below): EPA 8260D; 1,2-Dibromoethane, EPA 8011; Lead (dissolved) EPA 6010

** Container Size: (1) 1L, (2) 500mL, (3) 250mL, (4) 125mL, (5) 100mL, (6) 40mL vial, (7) EnCore, (8) TerraCore, (9) 80mL, (10) Other

*** Preservative Types: (2) None, (2) HNO3, (3) H2SO4, (4) HCl, (5) NaOH, (6) Zn Acetate, (7) NaHSO4, (8) Sod Thiosulfate, (9) Ascorbic Acid, (10) MeOH, (11) Other

Lab Use Only: Proj. Mgr: | Acct/Mem. / Client ID: | Table #: | Profile / Template: | Prelog / Bottle Ord. ID:

Preservation non-conformance identified for sample.

* Matrix Codes (insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Wastewater (WW), Product (P), Soil/Solid (SS), Oil (OI), Wipe (WP), Tissue (TS), Bioassay (B), Vapor (V), Surface Water (SW), Sediment (SED), Sludge (SL), Caulk (CK), Leachate (LL), Biosolid (BS), Other (OT)

Customer Sample ID	Matrix *	Comp / Grab	Composite Start Date	Composite Start Time	Collected or Composite End Date	Collected or Composite End Time	# Cont.	Residual Chlorine Result	Residual Chlorine Units	VOCs	1,2-Dibromoethane	Lead	Sample Comment
-01 RW-3 - 47-65 ft	GW	G	6/21/25	1600			6			X	X	X	

Additional Instructions from Pace®:
VOCs by EPA 524.2 list: BTEX, Isopropylbenzene, MTBE, Naphthalene, 1,2,4-Trimethylbenzene, 1,3,5-Trimethylbenzene, 1,2-Dichloroethane

Collected By: Printed Name: CHRIS MULRY Signature:

Customer Remarks / Special Conditions / Possible Hazards:

Coolers | Thermometer ID: | Correction Factor (°C): | Obs. Temp. (°C): | Corrected Temp. (°C): | [ ] On Ice

Relinquished by/Company: (Signature)	Date/Time	Received by/Company: (Signature)	Date/Time
GES	6/25/25 1411	PACE	6/25/25 1412
PACE	6/25/25 1840		6.25 1840
	6.25	Anthony Green	JUN 25 2025 2315
Anthony Green	6/26/25		6/26/25

Tracking Number:

Delivered by: [ ] In Person [ ] Courier [ ] FedEx [ ] UPS [ ] Other

Page: of

Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace® Terms and Conditions found at https://info.pacelabs.com/hubfs/pas-standard-terms.pdf

6/26/25 0430

ANALYTICAL REPORT

Lab Number:	L2540009
Client:	Groundwater & Environmental Services, In 410 Eagleview Blvd Exton, PA 19341
ATTN:	Stephanie Grillo
Phone:	(641) 458-1077
Project Name:	SUNOCO PIPELINE LP (SPLP)
Project Number:	PROJ-051861
Report Date:	06/27/25

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), CT (PH-0826), IL (200077), IN (C-MA-03), KY (KY98045), ME (MA00086), MD (348), NJ (MA935), NY (11148), NC (25700/666), OR (MA-1316), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #525-23-122-91930A1).

Eight Walkup Drive, Westborough, MA 01581-1019
508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com

Project Name: SUNOCO PIPELINE LP (SPLP)
Project Number: PROJ-051861

Lab Number: L2540009
Report Date: 06/27/25

Lab Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2540009-01	RW-3-30-48FT	WATER	E-25060-RL-25300050	06/25/25 10:25	06/25/25

Project Name:	SUNOCO PIPELINE LP (SPLP)	**Lab Number:**	L2540009
Project Number:	PROJ-051861	**Report Date:**	06/27/25

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Pace Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments and solids are reported on a dry weight basis unless otherwise noted. Tissues are reported "as received" or on a wet weight basis, unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

HOLD POLICY - For samples submitted on hold, Pace's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Pace Project Manager and made arrangements for Pace to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.

Project Name:	SUNOCO PIPELINE LP (SPLP)	**Lab Number:**	L2540009
Project Number:	PROJ-051861	**Report Date:**	06/27/25

Case Narrative (continued)

Report Submission

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Melissa Sturgis Melissa Sturgis

Title: Technical Director/Representative Date: 06/27/25

ORGANICS

VOLATILES

Project Name: SUNOCO PIPELINE LP (SPLP)
Lab Number: L2540009
Project Number: PROJ-051861
Report Date: 06/27/25

SAMPLE RESULTS

Lab ID: L2540009-01
Client ID: RW-3-30-48FT
Sample Location: E-25060-RL-25300050

Date Collected: 06/25/25 10:25
Date Received: 06/25/25
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 1,8011
Analytical Date: 06/26/25 15:07
Analyst: HNY

Extraction Method: EPA 8011
Extraction Date: 06/26/25 13:05

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Microextractables by GC - Westborough Lab							
1,2-Dibromoethane	ND		ug/l	0.010	0.005	1	A

Project Name: SUNOCO PIPELINE LP (SPLP) **Lab Number:** L2540009

Project Number: PROJ-051861 **Report Date:** 06/27/25

SAMPLE RESULTS

Lab ID: L2540009-01 D
Client ID: RW-3-30-48FT
Sample Location: E-25060-RL-25300050

Date Collected: 06/25/25 10:25
Date Received: 06/25/25
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 06/27/25 10:12
Analyst: PID

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	ND		ug/l	4.0	0.66	4
Benzene	100		ug/l	2.0	0.64	4
1,2-Dichloroethane	ND		ug/l	2.0	0.53	4
Toluene	200		ug/l	3.0	0.81	4
Ethylbenzene	43		ug/l	2.0	0.67	4
p/m-Xylene	440		ug/l	4.0	1.3	4
o-Xylene	280		ug/l	4.0	1.6	4
Xylenes, Total	720		ug/l	4.0	1.3	4
Isopropylbenzene	16		ug/l	2.0	0.75	4
1,3,5-Trimethylbenzene	210		ug/l	10	0.87	4
1,2,4-Trimethylbenzene	540		ug/l	10	0.76	4
Naphthalene	120		ug/l	4.0	0.86	4

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	104		70-130
Toluene-d8	97		70-130
4-Bromofluorobenzene	100		70-130
Dibromofluoromethane	101		70-130

Project Name: SUNOCO PIPELINE LP (SPLP)
Project Number: PROJ-051861

Lab Number: L2540009
Report Date: 06/27/25

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8011
Analytical Date: 06/26/25 14:26
Analyst: HNY

Extraction Method: EPA 8011
Extraction Date: 06/26/25 13:05

Parameter	Result	Qualifier	Units	RL	MDL	
Microextractables by GC - Westborough Lab for sample(s): 01 Batch: WG2083902-1						
1,2-Dibromoethane	ND		ug/l	0.010	0.005	A

Project Name: SUNOCO PIPELINE LP (SPLP) **Lab Number:** L2540009

Project Number: PROJ-051861 **Report Date:** 06/27/25

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 06/27/25 09:46
Analyst: PID

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG2084402-5					
Methyl tert butyl ether	ND		ug/l	1.0	0.17
Benzene	ND		ug/l	0.50	0.16
1,2-Dichloroethane	ND		ug/l	0.50	0.13
Toluene	ND		ug/l	0.75	0.20
Ethylbenzene	ND		ug/l	0.50	0.17
p/m-Xylene	ND		ug/l	1.0	0.33
o-Xylene	ND		ug/l	1.0	0.39
Xylenes, Total	ND		ug/l	1.0	0.33
Isopropylbenzene	ND		ug/l	0.50	0.19
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.19
Naphthalene	ND		ug/l	1.0	0.22

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	100		70-130
Toluene-d8	96		70-130
4-Bromofluorobenzene	96		70-130
Dibromofluoromethane	100		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: SUNOCO PIPELINE LP (SPLP)
Project Number: PROJ-051861

Lab Number: L2540009
Report Date: 06/27/25

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Microextractables by GC - Westborough Lab Associated sample(s): 01 Batch: WG2083902-2									
1,2-Dibromoethane	99		-		60-140	-		20	A

Lab Control Sample Analysis
Batch Quality Control

Project Name: SUNOCO PIPELINE LP (SPLP)
Project Number: PROJ-051861

Lab Number: L2540009
Report Date: 06/27/25

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 Batch: WG2084402-3 WG2084402-4								
Methyl tert butyl ether	90		79		63-130	13		20
Benzene	99		90		70-130	10		20
1,2-Dichloroethane	96		86		70-130	11		20
Toluene	96		89		70-130	8		20
Ethylbenzene	94		87		70-130	8		20
p/m-Xylene	95		90		70-130	5		20
o-Xylene	95		85		70-130	11		20
Isopropylbenzene	95		85		70-130	11		20
1,3,5-Trimethylbenzene	97		86		64-130	12		20
1,2,4-Trimethylbenzene	95		87		70-130	9		20
Naphthalene	82		76		70-130	8		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	106		105		70-130
Toluene-d8	97		98		70-130
4-Bromofluorobenzene	95		96		70-130
Dibromofluoromethane	101		104		70-130

METALS

Project Name: SUNOCO PIPELINE LP (SPLP)
Lab Number: L2540009
Project Number: PROJ-051861
Report Date: 06/27/25

SAMPLE RESULTS

Lab ID: L2540009-01
Client ID: RW-3-30-48FT
Sample Location: E-25060-RL-25300050
Date Collected: 06/25/25 10:25
Date Received: 06/25/25
Field Prep: Refer to COC

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Dissolved Metals - Mansfield Lab											
Lead, Dissolved	ND		mg/l	0.00100	0.00034	1	06/26/25 08:15	06/26/25 15:12	EPA 3005A	1,6020B	BLR

Project Name: SUNOCO PIPELINE LP (SPLP) **Lab Number:** L2540009

Project Number: PROJ-051861 **Report Date:** 06/27/25

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Dissolved Metals - Mansfield Lab for sample(s): 01 Batch: WG2083677-1										
Lead, Dissolved	ND		mg/l	0.00100	0.00034	1	06/26/25 08:15	06/26/25 13:46	1,6020B	BLR

Prep Information

Digestion Method: EPA 3005A

Lab Control Sample Analysis
Batch Quality Control

Project Name: SUNOCO PIPELINE LP (SPLP)
Project Number: PROJ-051861

Lab Number: L2540009
Report Date: 06/27/25

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Dissolved Metals - Mansfield Lab Associated sample(s): 01 Batch: WG2083677-2								
Lead, Dissolved	106		-		80-120	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: SUNOCO PIPELINE LP (SPLP)
Project Number: PROJ-051861

Lab Number: L2540009
Report Date: 06/27/25

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Dissolved Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG2083677-3 QC Sample: L2540008-01 Client ID: MS Sample												
Lead, Dissolved	ND	0.53	0.5651	107		-	-		75-125	-		20

Lab Duplicate Analysis

Batch Quality Control

Project Name: SUNOCO PIPELINE LP (SPLP)

Project Number: PROJ-051861

Lab Number: L2540009

Report Date: 06/27/25

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Dissolved Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG2083677-4 QC Sample: L2540008-01 Client ID: DUP Sample						
Lead, Dissolved	ND	ND	mg/l	NC		20

Project Name: SUNOCO PIPELINE LP (SPLP)
Project Number: PROJ-051861

Lab Number: L2540009
Report Date: 06/27/25

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2540009-01A	Vial HCl preserved	A	NA		3.5	Y	Absent		PA-8260(14)
L2540009-01B	Vial HCl preserved	A	NA		3.5	Y	Absent		PA-8260(14)
L2540009-01C	Vial HCl preserved	A	NA		3.5	Y	Absent		PA-8260(14)
L2540009-01D	Vial Na2S2O3 preserved	A	NA		3.5	Y	Absent		8011(14)
L2540009-01E	Vial Na2S2O3 preserved	A	NA		3.5	Y	Absent		8011(14)
L2540009-01F	Plastic 250ml HNO3 preserved	A	<2	<2	3.5	Y	Absent		PB-6020S(180)

*Values in parentheses indicate holding time in days

Project Name:	SUNOCO PIPELINE LP (SPLP)	**Lab Number:**	L2540009
Project Number:	PROJ-051861	**Report Date:**	06/27/25

GLOSSARY

Acronyms

DL	- Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EMPC	- Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LOD	- Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
LOQ	- Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.) Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NDPA/DPA	- N-Nitrosodiphenylamine/Diphenylamine.
NI	- Not Ignitable.
NP	- Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.
NR	- No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile Organic TIC only requests.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.
STLP	- Semi-dynamic Tank Leaching Procedure per EPA Method 1315.
TEF	- Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.
TEQ	- Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.
TIC	- Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Report Format: DU Report with 'J' Qualifiers

Project Name:	SUNOCO PIPELINE LP (SPLP)	**Lab Number:**	L2540009
Project Number:	PROJ-051861	**Report Date:**	06/27/25

Footnotes

1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Chlordane: The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA,this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Gasoline Range Organics (GRO): Gasoline Range Organics (GRO) results include all chromatographic peaks eluting from Methyl tert butyl ether through Naphthalene, with the exception of GRO analysis in support of State of Ohio programs, which includes all chromatographic peaks eluting from Hexane through Dodecane.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PAH Total: With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benz(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. In addition, the 'PFAS, Total (6)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA, PFDA and PFOS. For MassDEP DW compliance analysis only, the 'PFAS, Total (6)' result is defined as the summation of results at or above the RL. Note: If a 'Total' result is requested, the results of its individual components will also be reported.

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

A - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

F - The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

J - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively

Report Format: DU Report with 'J' Qualifiers

Project Name:	SUNOCO PIPELINE LP (SPLP)	**Lab Number:**	L2540009
Project Number:	PROJ-051861	**Report Date:**	06/27/25

Data Qualifiers

Identified Compounds (TICs). For calculated parameters, this represents that one or more values used in the calculation were estimated.

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

ND - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

V - The surrogate associated with this target analyte has a recovery outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Z - The batch matrix spike and/or duplicate associated with this target analyte has a recovery/RPD outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Project Name: SUNOCO PIPELINE LP (SPLP) **Lab Number:** L2540009

Project Number: PROJ-051861 **Report Date:** 06/27/25

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - VI, 2018.

LIMITATION OF LIABILITIES

Pace Analytical Services performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Pace Analytical Services shall be to re-perform the work at it's own expense. In no event shall Pace Analytical Services be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Pace Analytical Services.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility – 8 Walkup Dr. Westborough, MA 01581
EPA 624.1: m/p-xylene, o-xylene, Naphthalene
EPA 625.1: alpha-Terpineol
EPA 8260D: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol, Azobenzene; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility – 320 Forbes Blvd. Mansfield, MA 02048
SM 2540D: TSS.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
MADEP-APH.
Nonpotable Water: EPA RSK-175 Dissolved Gases
Biological Tissue Matrix: EPA 3050B

Mansfield Facility – 120 Forbes Blvd. Mansfield, MA 02048
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Nonpotable Water: EPA RSK-175 Dissolved Gases

The following test method is not included in our New Jersey Secondary NELAP Scope of Accreditation:

Mansfield Facility – 320 Forbes Blvd. Mansfield, MA 02048
Determination of Selected Perfluorinated Alkyl Substances by Solid Phase Extraction and Liquid Chromatography/Tandem Mass Spectrometry Isotope Dilution (via Alpha SOP 23528)

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility – 8 Walkup Dr. Westborough, MA 01581

Drinking Water
EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B**
EPA 524.2: THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N, **SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables).
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, EPA 1600, EPA 1603, SM9222D.**

Mansfield Facility – 320 Forbes Blvd. Mansfield, MA 02048

Drinking Water
EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522, EPA 537.1.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb, As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.
EPA 245.1 Hg.
SM2340B

Certification IDs:

Westborough Facility – 8 Walkup Dr. Westborough, MA 01581
CT PH-0826, IL 200077, IN C-MA-03, KY JY98045, ME MA00086, MD 348, MA M-MA086, NH 2064, NJ MA935, NY 11148, NC (DW) 25700, NC (NPW/SCM) 666, OR MA-1316, PA 68-03671, RI LAO00065, TX T104704476, VT VT-0935, VA 460195

Mansfield Facility – 320 Forbes Blvd. Mansfield, MA 02048
CT PH-0825, ANAB/DoD L2474, IL 200081, IN C-MA-04, KY KY98046, LA 3090, ME MA00030, MI 9110, MN 025-999-495, NH 2062, NJ MA015, NY 11627, NC (NPW/SCM) 685, OR MA-0262, PA 68-02089, RI LAO00299, TX T-104704419, VT VT-0015, VA 460194, WA C954

Mansfield Facility – 120 Forbes Blvd. Mansfield, MA 02048
ANAB/DoD L2474, ME MA01156, MN 025-999-498, NH 2249, NJ MA025, NY 12191, OR 4203, TX T104704583, VA 460311, WA C1104.

For a complete listing of analytes and methods, please contact your Project Manager.

06/26/25

Pace® Location Requested (City/State): **Westborough, MA**

CHAIN-OF-CUSTODY Analytical Request Document

Chain-of-Custody is a LEGAL DOCUMENT. Complete all relevant fields.

LAB USE ONLY- Affix Workorder/Login Label Here

L2540009

Scan QR Code for instructions

Company Name: GES, Inc.	Contact/Report To: Stephanie Grillo
Street Address: 410 Eagleview Blvd, Suite 110, Exton, PA 19341	Phone #: (610) 458-1077x3064 / (610) 458-2300
Customer Project #	E-Mail: SGrillo@gesonline.com; gesinbox@gesonline.com
Project Name: Sunoco Pipeline LP (SPLP) Washington Crossing	Cc E-Mail: CTEH_Deliverables@envstd.com; ges@equisonline.com
Site Collection Info/Facility ID (as applicable): Washington Crossing, PA	Invoice to: ges-invoices@gesonline.com
Time Zone Collected: [ ] AK [ ] PT [ ] MT [ ] CT [X] ET	Invoice E-mail: ges-invoices@gesonline.com
Data Deliverables: [ ] Level II [ ] Level III [ ] Level IV [X] EQUIS [ ] Other:	Purchase Order # (if applicable): 0225040-06-242
Regulatory Program (DW, RCRA, etc.) as applicable: DW	Quote #:
Rush (Pre-approval required): [ ] Same Day [ ] 1 Day [ ] 2 Day [ ] 3 Day Other 24 hour	County / State origin of sample(s): PA
Date Results Requested: ASAP	Reportable [ ] Yes [ ] No
	DW PWSID # or WW Permit # as applicable:
	Field Filtered (if applicable): [X] Yes [ ] No
	Analysis: Lead

Specify Container Size **: 6 6 3

Specify Container Preservative Type***: 4 8 2

Analysis Requested

** Container Size: (1) 1L, (2) 500mL, (3) 250mL, (4) 125mL, (5) 100mL, (6) 40mL vial, (7) EnCore, (8) TerraCore, (9) 5gmL, (10) Other

*** Preservation Types: (1) None, (2) HNO3, (3) H2SO4, (4) HCl, (5) NaOH, (6) Zn Acetate, (7) NaHSO4, (8) Ice, (9) Thiosulfate, (10) Ascorbic Acid, (11) MeOH, (12) Other

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Wastewater (WW), Product (P), Soil/Solid (SS), Oil (OL), Wipe (WP), Tissue (TS), Bioassay (B), Vapor (V), Surface Water (SW), Sediment (SED), Sludge (SL), Caulk (CK), Leachate (LL), Biosolid (BS), Other (OT)

Customer Sample ID	Matrix *	Comp / Grab	Composite Start Date	Composite Start Time	Collected or Composite End Date	Collected or Composite End Time	# Cont.	Residual Chlorine Result	Residual Chlorine Units	VOCs (list below): EPA 8260C	1,2-Dichloroethane: EPA 8011	Lead (dissolved): EPA 3010	Lab Use Only	Sample Comment	Preservation non-conformance identified for Sample
-01 RW-3 - 30-48 ft	GW	G			6/25/25	1035	6			X	X	X			

Additional Instructions from Pace®:
VOCs by EPA 524.2 list: BTEX, Isopropylbenzene, MTBE, Naphthalene, 1,2,4-Trimethylbenzene, 1,3,5-Trimethylbenzene, 1,2-Dichloroethane

Collected By: Printed Name: KEVIN TROTMAN Signature:

Customer Remarks / Special Conditions / Possible Hazards:

Thermometer ID: Correction Factor (C): Wet Temp (°C): Corrected Temp (C): [ ] On Ice

Relinquished by/Company: (Signature)	Date/Time	Received by/Company: (Signature)	Date/Time	Tracking Number
Kellyanne / GES	6/25/25 14:11	EPALE	6/25/25 14:12	
	6/25/25 1840		6.25 1840	Delivered by: [ ] In Person [ ] Courier [ ] FedEx [ ] UPS [ ] Other
Anthony Green	6/25	Anthony Green	JUN 25 2025 2315	
				Page: of

*Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace® Terms and Conditions found at https://info.pacelabs.com/hubfs/pas-standard-terms.pdf

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