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Butler, NJ 07405
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www.firstenvironment.com

December 9, 2022

Mr. Matthew Hubicki
Project Manager, Remedial Bureau C
Division of Environmental Remediation
New York State Department of Environmental Conservation (NYSDEC)
625 Broadway
Albany, NY 12233-7014

Re: NYSDEC Site No. 360174
November 2022 – December 2022 Monthly Progress Report
Westchester County Airport, 240 Airport Road
White Plains, New York 10604

Dear Mr. Hubicki:

Actions Taken/Accomplishments (November-December 2022)

A schedule of completed and projected activities is included as Appendix A.

1. Following the installation of monitoring wells and temporary piezometers downgradient of the former New York Air National Guard (NYANG) Burn Pit, on November 4, FluxTracer™ was installed in FMW-13R to determine the precise depths of water movement and PFAS concentration within the saturated zone. This information will be used for future targeted treatment of groundwater containing per- and polyfluoroalkyl substance (PFAS). The FluxTracer™ was retrieved for analysis on November 18. Following analysis, results will be presented in the next monthly progress report. A description of the FluxTracer™ is provided in Attachment 1.
2. On November 22 groundwater samples were collected from FMW-13R at discrete depths for PFAS analysis. This information will be examined along with the FluxTracer™ to target discrete depths where PFAS is concentrated.
3. On October 5, 2022, NYSDEC Invited Public Comment for the Draft Plan to Investigate Contamination at Brownfield Site on Airport Road, West Harrison. Upon approval, First Environment will initiate the RIWP.
4. First Environment continued to monitor surface water flow and per- and PFAS concentrations leaving the end-of-pipe at OF-7 as well as New York City Department of Environment Projection (NYCDEP) gauging station (E-10). We concurrently recorded water level measurements in temporary wells along Airport Road and New King Street.
5. In November, groundwater water levels continued to rise due to increased precipitation. Groundwater levels have now returned to what First Environment considers the normal groundwater elevation. In November, the

flow rate at E-10 was approximately four times that at OF-7, indicating that the stream had continued to gain groundwater. Water flow rates measured at OF-7, E-10, Trib 1, and Trib 2 are shown in Table 1. Figure 1 illustrates the locations where the water levels were measured. Hydrographs illustrating measured water-level below ground surface are included in Appendix B.

6. First Environment measured the end-of-pipe flow leaving the OF-7 storm sewer on November 22. The flow rate was approximately 7 gallons per minute (gpm) compared to an average flow of 54 gpm measured from July 8 to 13, 2019. This reduced flow is the result of the new stormwater system installed at OF-7 despite the continued infiltration of groundwater at inlets 7015.1, 7014.2, 7013, 7008, and 7007, as shown in Figure 2. We believe the influent leakage rate to be 1 to 3 gpm during summer months but may slightly increase due to a higher water table associated with the wet season. The continued infiltration of groundwater into the stormwater system will require repairs to obtain watertight seals. First Environment is currently working with the Airport and County to address the leaks and anticipates repairs in December.
7. First Environment attended a meeting between the Airport, County, and Pugni on November 4 coordinated by the Westchester County Public Works & Transportation (WCPWT) to discuss grading and placement of the Fluoro-Sorb mat in the area where daylighting of groundwater occurs. The area highlighted in yellow on Figure 3 is the area being proposed to install the permeable reactive mat. The purpose of the mat is to provide a temporary solution to prevent sediment from re-entering the storm drains and to reduce PFAS concentrations entering the stormwater system.

December & January Activities

1. First Environment is overseeing the installation of the Fluoro-Sorb permeable reactive mat in areas where daylighting of groundwater to the surface is occurring as shown in Figure 3. The work activities began on December 5 are expected to continue through December 13 (see photos in Appendix C). First Environment will provide a complete photolog and results of this work in the January 2023 progress report.
2. In December, Pugni is scheduled to seal groundwater leaks into the storm sewer at inlets 7015.1, 7014.2, 7013, 7008, and 7007, as shown in Figure 2. First Environment will be on-site to observe those activities. First Environment will provide a complete photolog and results of this work once this work is completed..
3. First Environment intends to implement the groundwater pilot test during the 1st quarter of 2023. The test is designed to evaluate the effectiveness of the Regenesis Plume Stop technology in reducing PFAS in groundwater.
4. Continue coordination with Regenesis for the upcoming pilot test mobilization and implementation.

5. Continue monthly performance monitoring for PFAS in surface water at OF-7 and NYCDEP gauging station E-10.
6. First Environment continues to provide environmental technical support to the County's engineering team during the bid process for the construction and installation of a water supply pipeline from Westchester Joint Water Works (WJWW). .
7. Continue to evaluate the larger application of the Fluoro-Sorb mat for use at OF-7 and OF-4 to reduce PFAS in surface water
8. First Environment is working with the WCPWT to develop a permanent solution to correct the daylighting of groundwater to the storm sewer as shown in Figure 3

If you have any questions, please do not hesitate to call.

Regards,

FIRST ENVIRONMENT, INC.

Scott R. Green, P.G.
Director, Insurance Consulting Service Group

David Luer
Project Manager/Field Team Leader

Att.

c: B. Tod Delaney, Ph.D., P.E., BCEE - First Environment, Inc.
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John Inserra - Westchester County Airport (jhi1@westchestergov.com)
John Benvegna - WSP (john.benvegna@wsp.com)
G. Heitzman
S. Crisafulli
M. Murphy
J. Brown
K.Maloney
J. Carpenter
M. Schuck – NYSDOH
K. Kulow – NYSDOH

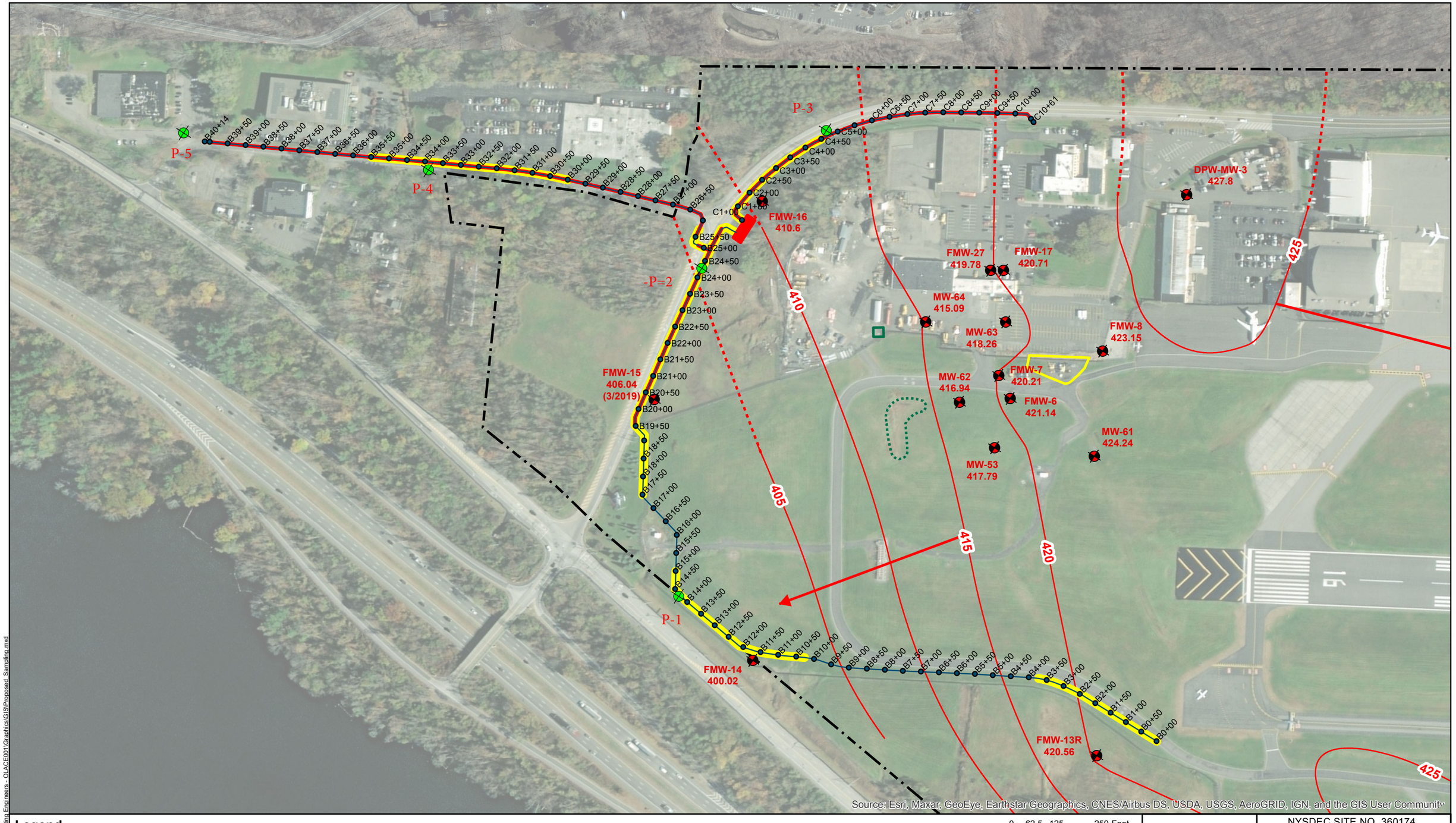
TABLES

TABLE 1
Surface Water Flow

Date/Location	OF-7	E-10	Trib 1	Trib 2
6/17/2022	5	20	2	0.5
6/27/2022	5	17	2	0.5
7/5/2022	1	10	1	0
7/27/2022	1.5	10	1	0
8/15/2022	3	3	0.1	0
8/30/2022	2	2	0	0
9/28/2022	2.6	9	1	0
10/26/2022	9.75	43	5	1
11/18/2022	12	56	4	5
11/22/2022	7	33	5	1

Note - Flow is in gallons per minute

FIGURES



Legend

- Unconsolidated Groundwater Flow Direction
- Unconsolidated Groundwater Elevation Contour (feet) as of 5/20/2020
- Inferred Unconsolidated Groundwater Elevation Contour (feet)
- Unconsolidated Monitoring Well
- 411.82 Unconsolidated Groundwater Elevation (feet) as of 5/20/2020
- Proposed Temp Well
- Station
- Water Line
- Excavation Requiring Removal
- Area Requiring Dewatering & Treatment of Water
- Former AFFF Burn Pit
- Subsurface Catch Basin
- Open Catch Area
- Property Boundary

0 62.5 125 250 Feet

1 inch = 250 feet

N

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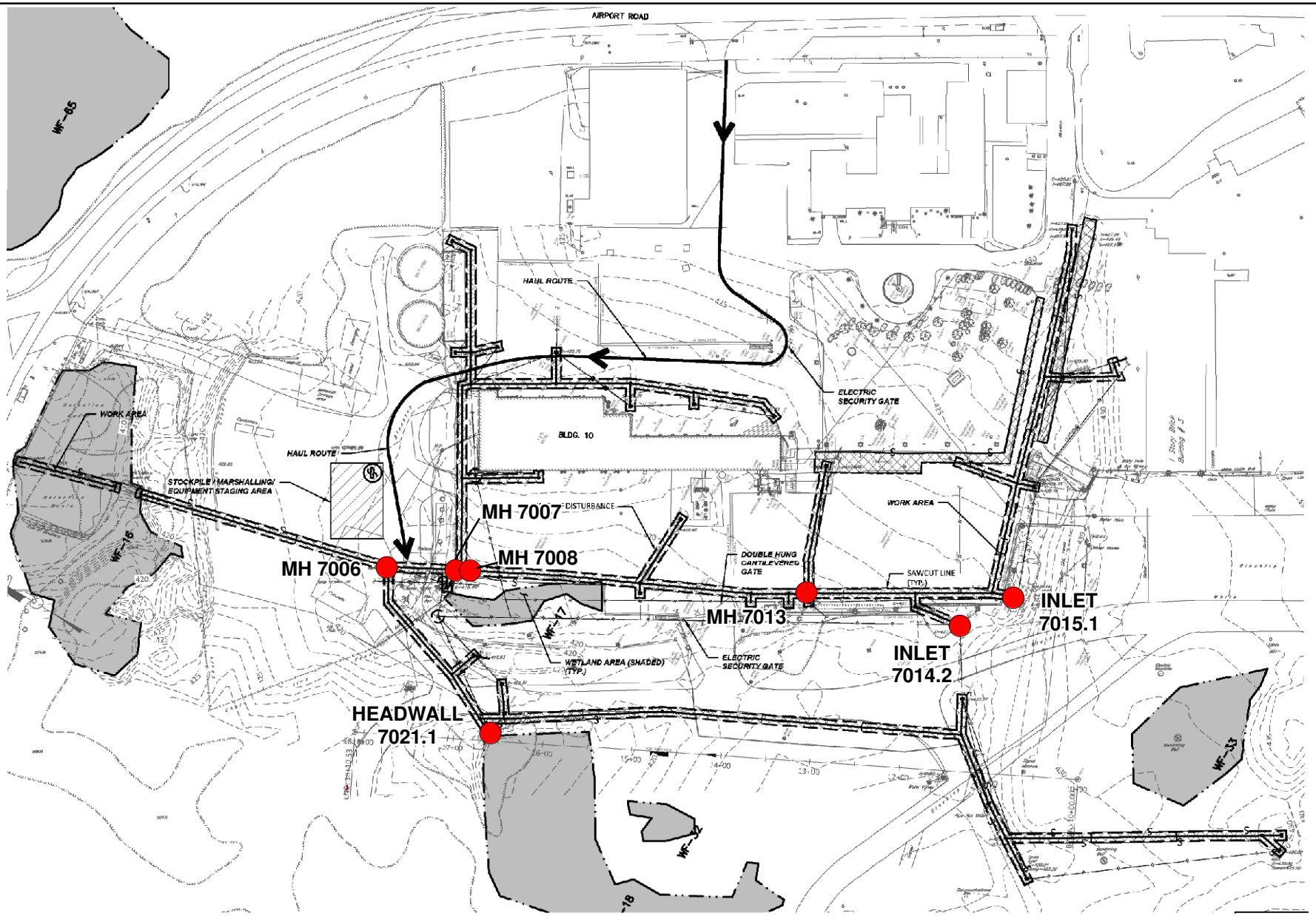
NYSDEC SITE NO. 360174
WESTCHESTER COUNTY AIRPORT
White Plains, Westchester County, New York
FIGURE 1
GROUNDWATER MEASUREMENT LOCATIONS

Revised	Drawn	Checked	Approved	Date
	LS	DL	SG	1/28/2022



Legend

- Leaking Manhole Structures

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WESTCHESTER COUNTY AIRPORT

FIGURE 2
SYSTEM LEAKS AS OF
JULY 28, 2022

Revised	Drawn	Checked	Approved	Date
	CL			8/2/2022

H:\extest\Westchester County Airport - WEST\C028\Graphics\GIS\System_Leak_July28_2022.mxd

MH 7029.4
HAUL ROUTE
MH 7029.1
MH 7029.3
OF-7 TRUCK TRAFFIC
OF-7 TRUCK TRAFFIC
MH 7028
MH 7031
MH 7032
MH 7030
MH 7018
WORK AREA
HW 7001
HW 7003
HW 7002
MW 7004
OF-7
HAUL ROUTE
BLDG. 10
ELECTRIC SECURITY GATE
MH 7017
MH 7017.2
MH 7033
MH 7027.1
MH 7027
KPILE / MARSHALLING/ EQUIPMENT STAGING AREA
Anti Seep Collar
VAULT & VALVE
MW 7005
Anti Seep Collar
LIMIT OF DISTURBANCE (TYP.)
MH 7016
WORK AREA
WF-16
MH 7006
MH 7007
MH 7008
MH 7009
MH 7010
DOUBLE HUNG CANTILEVERED GATE
MH7019
MH 7011
MH 7013
SAWCUT LINE (TYP.)
MH 7012
MH 7014
MH 7015
7013.1
7014.1
7015.1
7014.2
WF-17
WETLAND AREA (SHADED) (TYP.)
ELECTRIC SECURITY GATE
GROUNDWATER DAYLIGHTING
FORMER NYANG BURN PIT
MH7020
MH7021
MH7022
MH7023
MH7024
WF-32
WF-33
MH 7025
MH 7026

Legend

- Section of Pipe Requiring Clearing
- Wetland

0 22.5 45 90 Feet

1 inch = 90 feet

N

Source: Provident Design Engineering PLLC, 2020 100% OF-7 Storm Sewer Design

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NYSDEC SITE NO. 360174
WESTCHESTER COUNTY AIRPORT
White Plains, Westchester County, New York
FIGURE 3
OF-7 STORM SEWER SEDIMENT CLEAN OUT

Revised	Drawn	Checked	Approved	Date
	ES	DL	SG	6/15/2022

K:\WESCHESTER AIRPORT\TRM\Workplan\Replacement Stormwater System_ToBeCleared_062022.mxd

APPENDIX A

APPENDIX A
Work Activity Schedule
2022-2023

Milestone	Estimated Completion Date	Estimated Completion Percentage
OF-7 Storm Sewer Installation	May 13, 2022	100%
OF-7 Performance Monitoring	2nd Quarter 2023	85%
New King Street Workplan – Phase 1	January 24	100%
New King Street Workplan – Phase 2	April 2022	100%
Waterline Workplan	April 2022	100%
Waterline Completion	October 2024	0%
OF-4 IRM Pilot Test[1]	Winter 2022	50%
Remedial Investigation Workplan Submittal	July 2022	100%
GW Pilot Test Scope of Work[2]	Summer 2022	100%
GW Pilot Test	Winter 2022	40%
Execution of RI workplan[3]	Spring 2023	0%
Remedial Action Alternatives Evaluation	2023-2024	0%
Remedial Action Selection Report	TBD	0%
Certificate of Completion	TBD	0%

Estimated task durations and completions are tentative and are subject to modification based on site work, progress, weather delays, and other considerations such as contractor availability or Airport access.

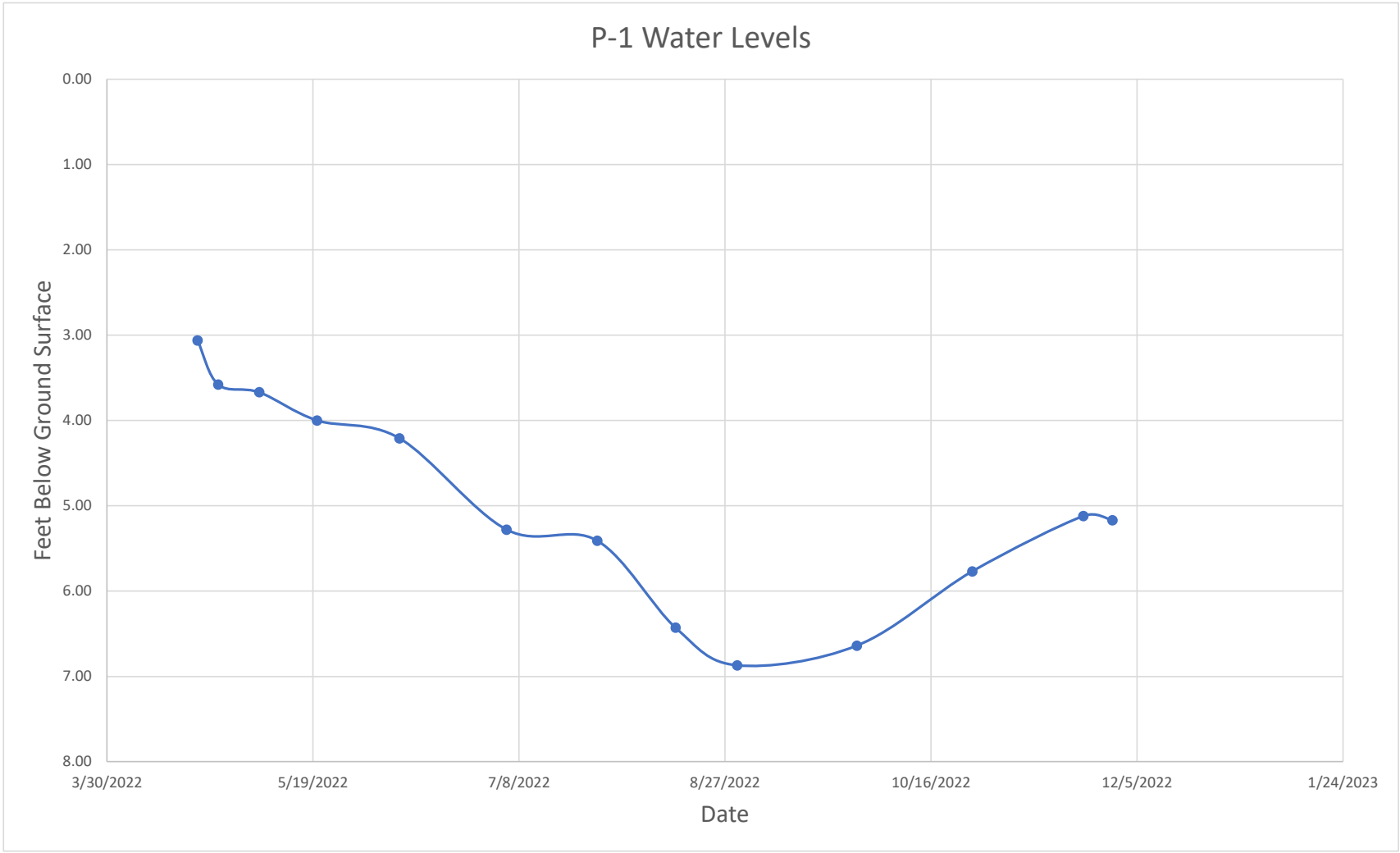
[1] Pilot test CETCO Fluor sorb at OF-7 – Evaluate the effectiveness of Flour sorb reducing PFOS and PFOA in surface water. Pilot test CETCO Fluor sorb at OF-7 before testing at OF-4.

[2] Scope of work submitted to the County approved September 2022

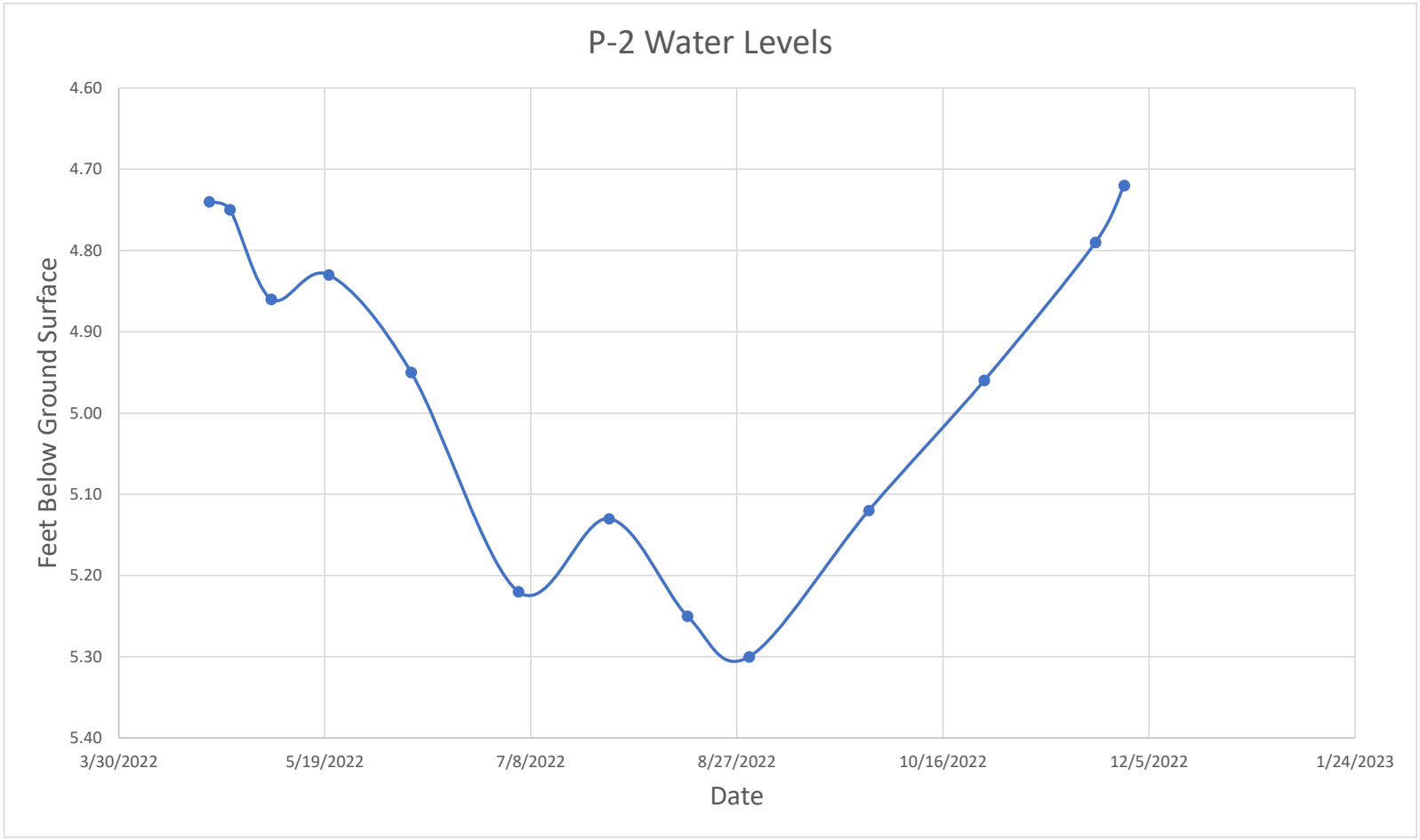
[3] Start date dependent upon workplan approval.

APPENDIX B

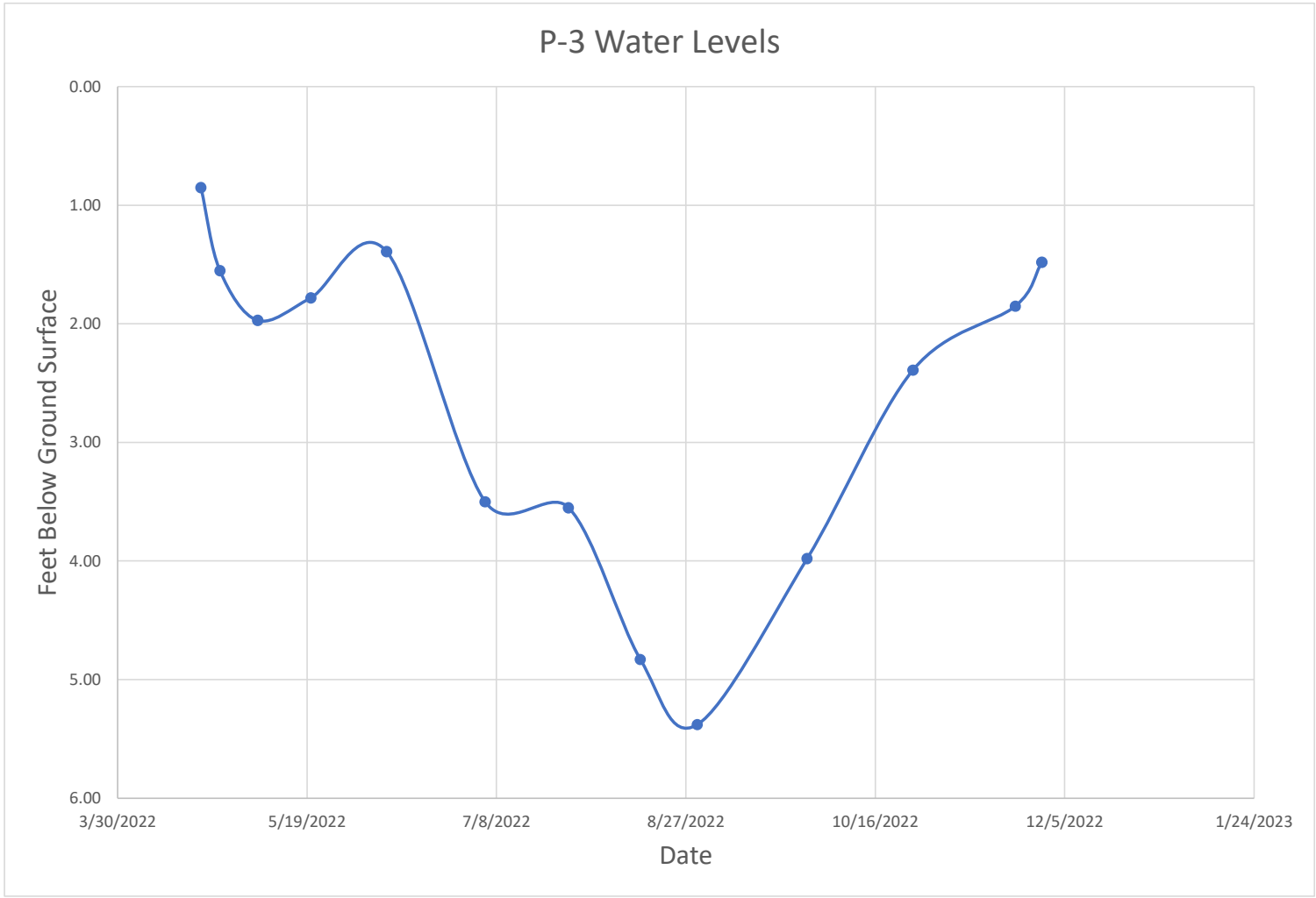
APPENDIX B


P-1 Water Levels
Feet Below Ground Surface
0.00
1.00
2.00
3.00
4.00
5.00
6.00
7.00
8.00
3/30/2022
5/19/2022
7/8/2022
8/27/2022
10/16/2022
12/5/2022
1/24/2023
Date

APPENDIX B


P-2 Water Levels
Feet Below Ground Surface
4.60
4.70
4.80
4.90
5.00
5.10
5.20
5.30
5.40
3/30/2022
5/19/2022
7/8/2022
8/27/2022
10/16/2022
12/5/2022
1/24/2023
Date

APPENDIX B


P-3 Water Levels
Feet Below Ground Surface
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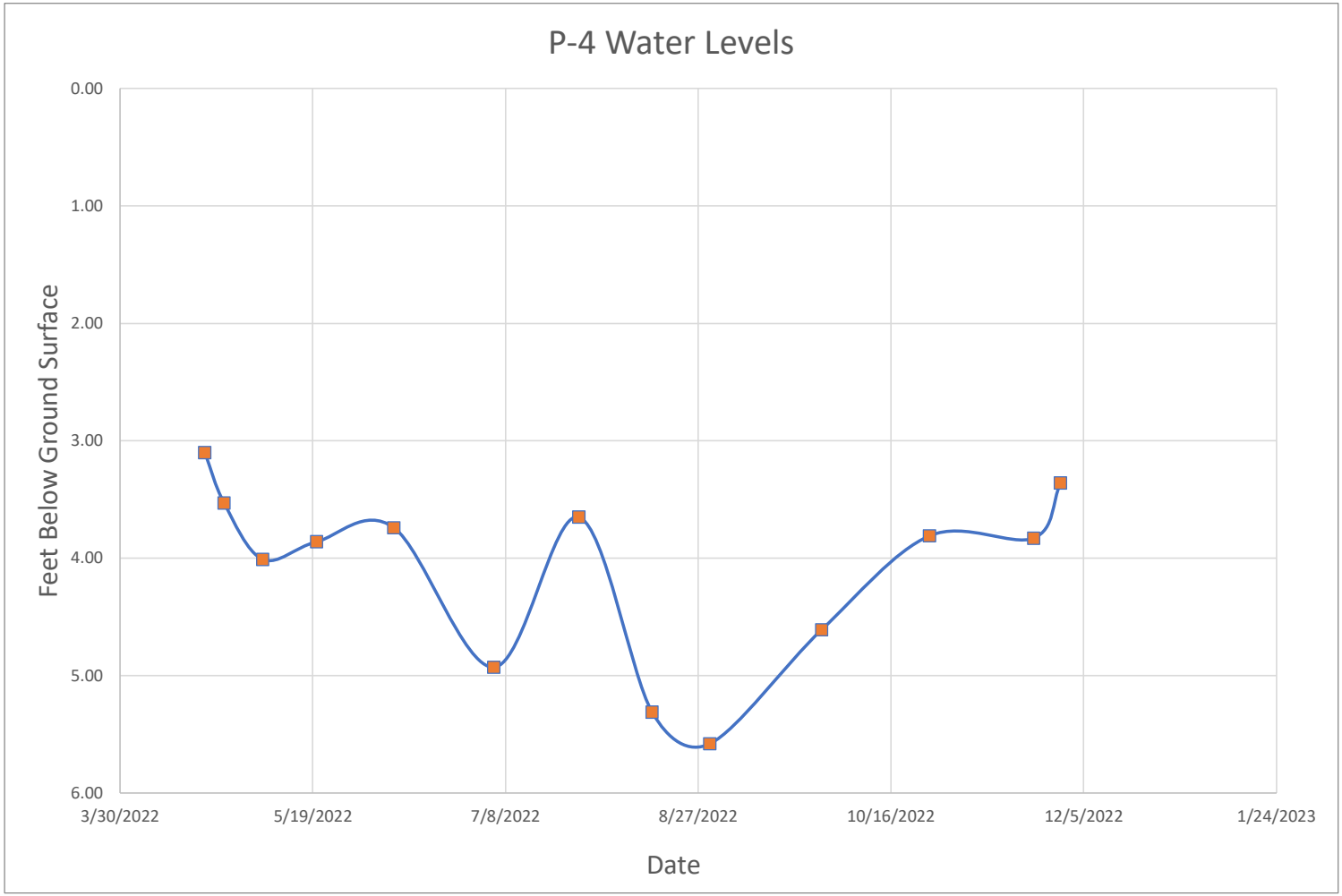
2.00
3.00
4.00
5.00
6.00
3/30/2022
5/19/2022
7/8/2022
8/27/2022
10/16/2022
12/5/2022
1/24/2023
Date

APPENDIX B


P-4 Water Levels
Feet Below Ground Surface
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2.00
3.00
4.00
5.00
6.00
3/30/2022
5/19/2022
7/8/2022
8/27/2022
10/16/2022
12/5/2022
1/24/2023
Date

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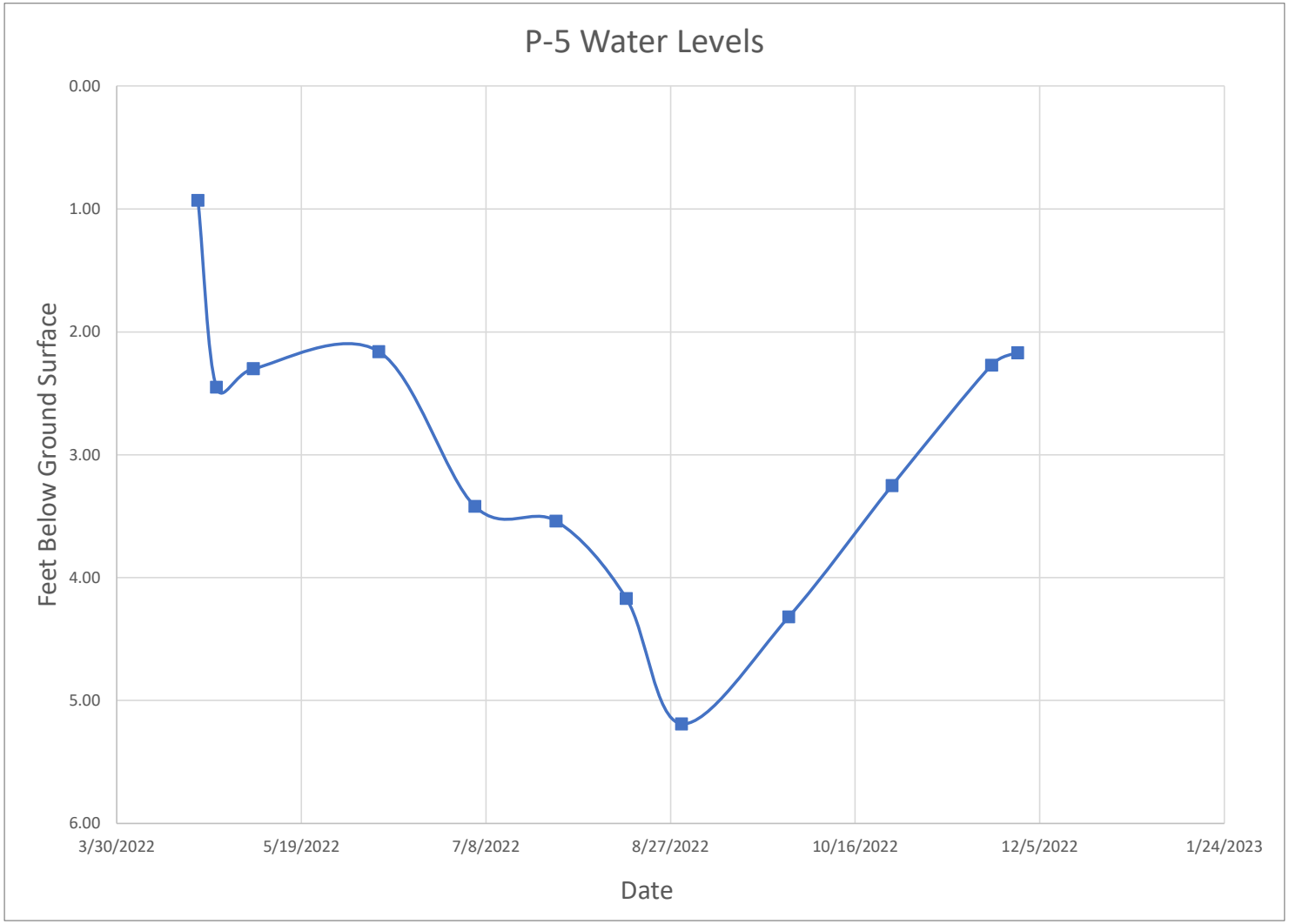
P-5 Water Levels
Feet Below Ground Surface
0.00
1.00
2.00
3.00
4.00
5.00
6.00
3/30/2022
5/19/2022
7/8/2022
8/27/2022
10/16/2022
12/5/2022
1/24/2023
Date

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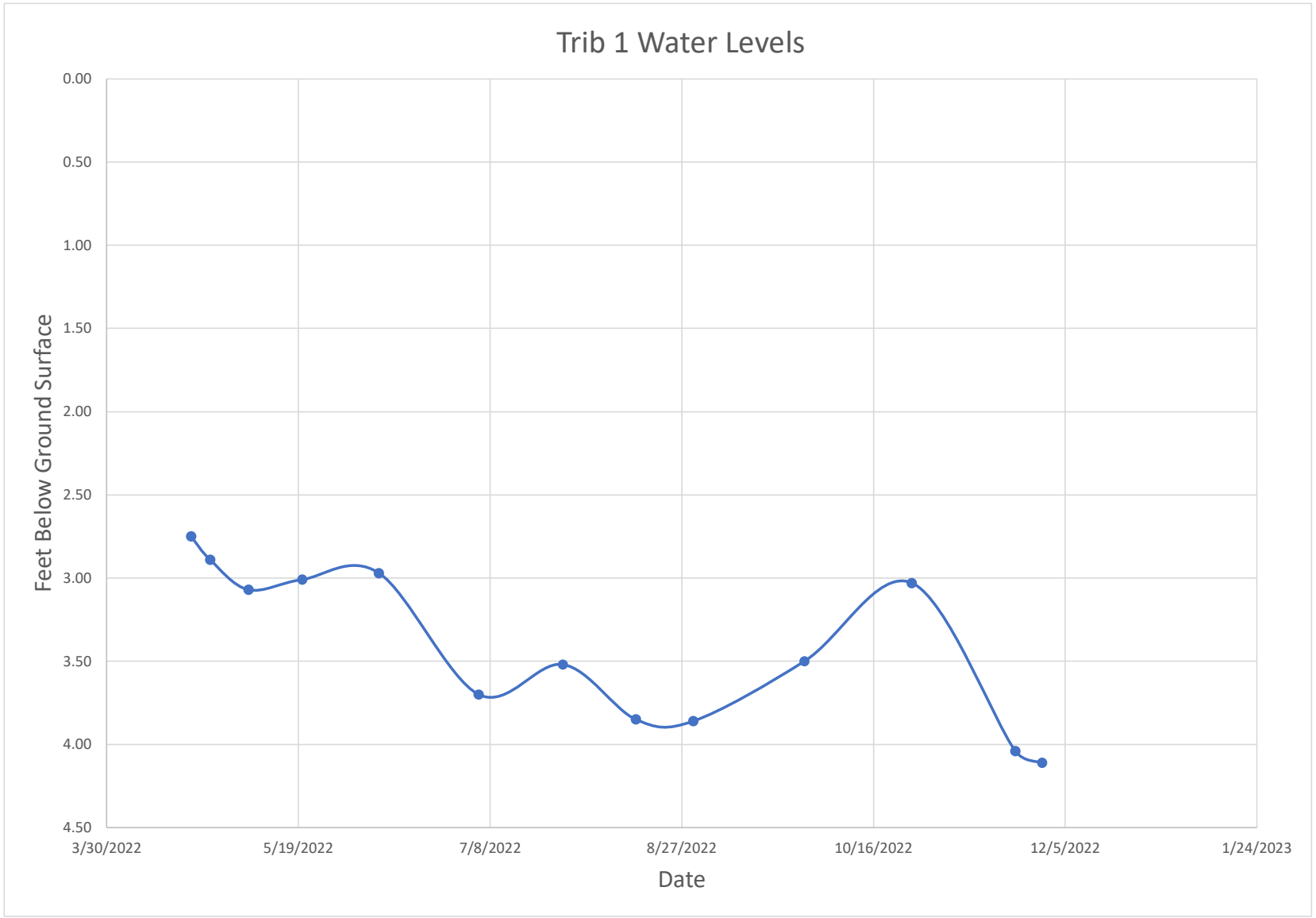
Trib 1 Water Levels
Feet Below Ground Surface
0.00
0.50
1.00
1.50
2.00
2.50
3.00
3.50
4.00
4.50
3/30/2022
5/19/2022
7/8/2022
8/27/2022
10/16/2022
12/5/2022
1/24/2023
Date

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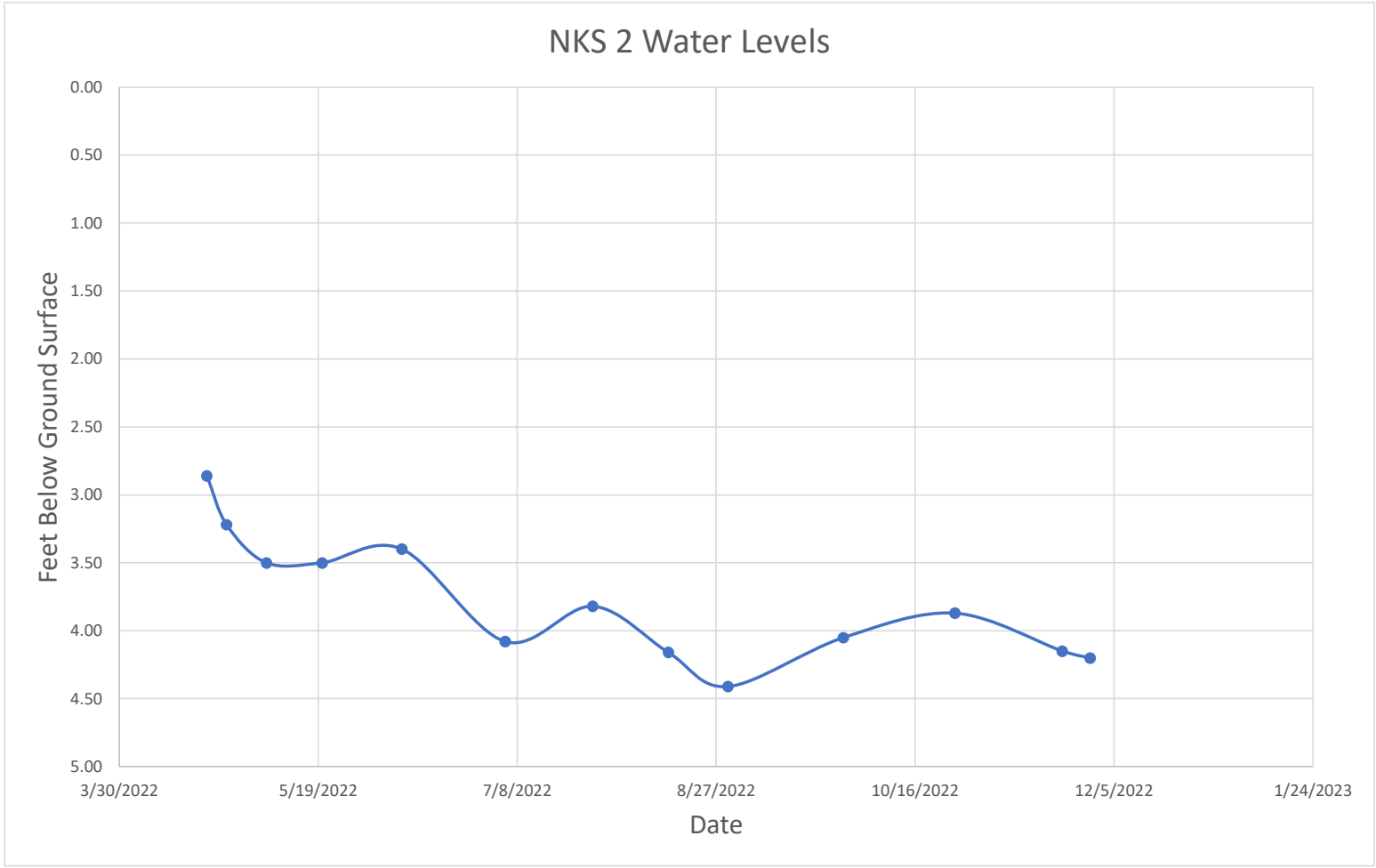
NKS 2 Water Levels
Feet Below Ground Surface
0.00
0.50
1.00
1.50
2.00
2.50
3.00
3.50
4.00
4.50
5.00
3/30/2022
5/19/2022
7/8/2022
8/27/2022
10/16/2022
12/5/2022
1/24/2023
Date

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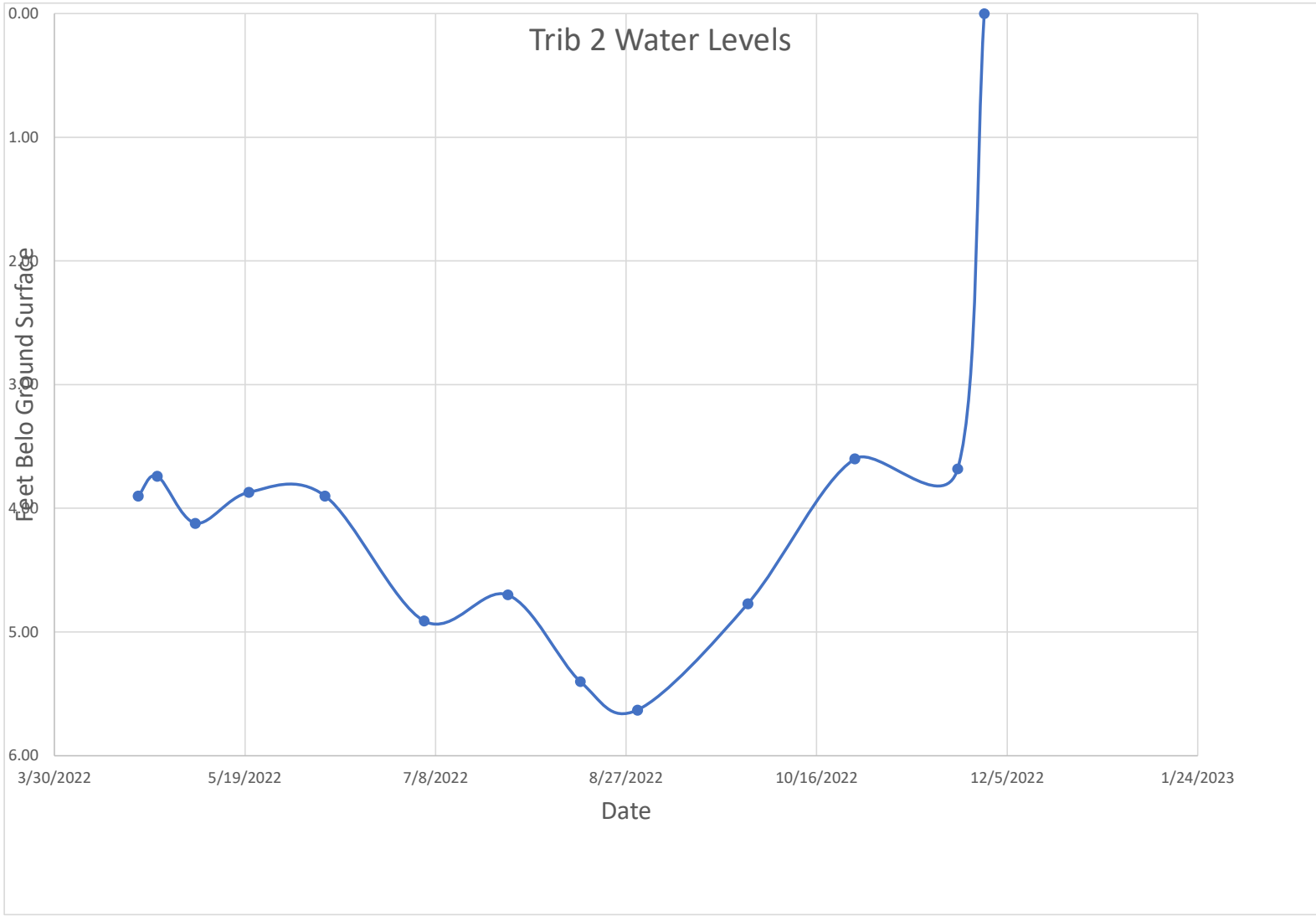
Trib 2 Water Levels
Feet Belo Ground Surface
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1.00
2.00
3.00
4.00
5.00
6.00
3/30/2022
5/19/2022
7/8/2022
8/27/2022
10/16/2022
12/5/2022
1/24/2023
Date

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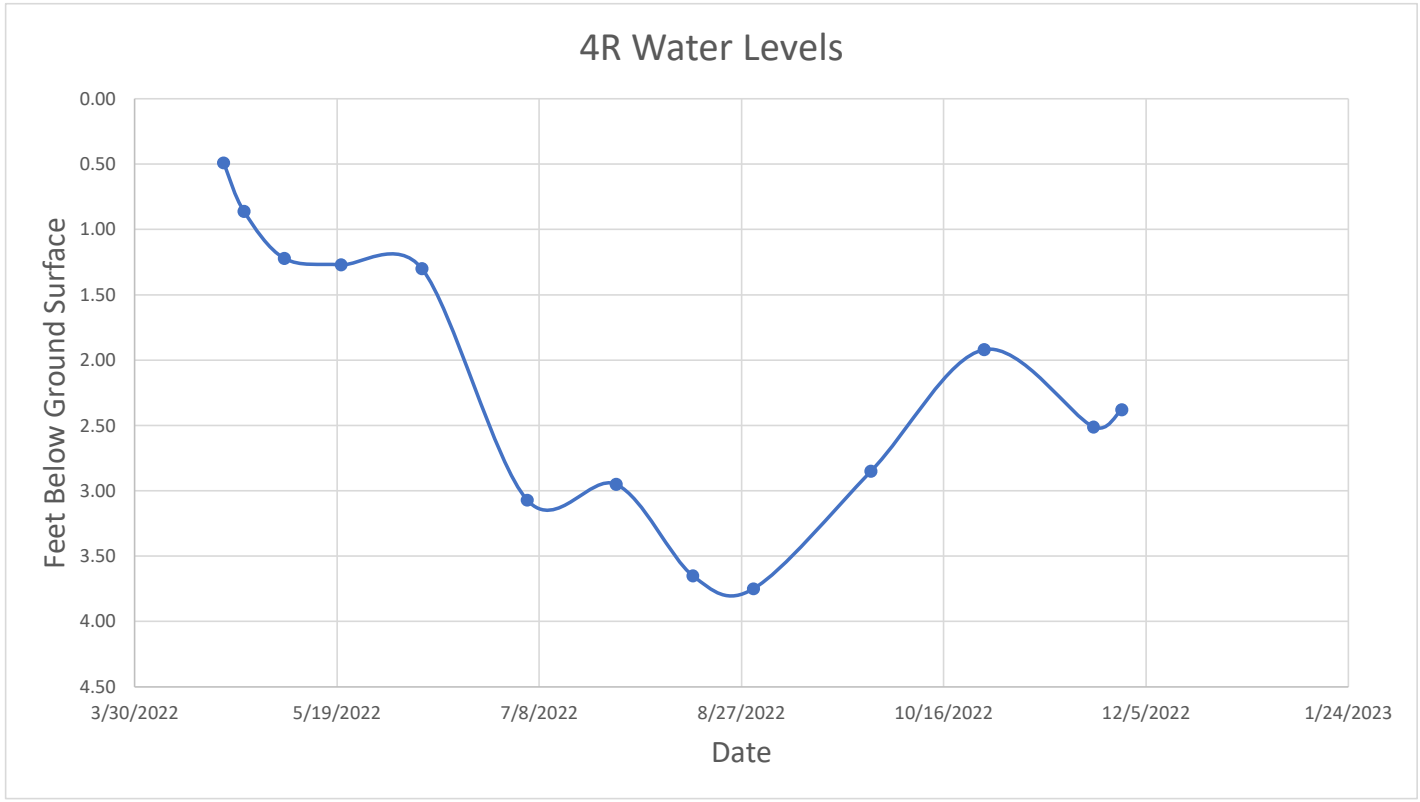
4R Water Levels
Feet Below Ground Surface
0.00
0.50
1.00
1.50
2.00
2.50
3.00
3.50
4.00
4.50
3/30/2022
5/19/2022
7/8/2022
8/27/2022
10/16/2022
12/5/2022
1/24/2023
Date

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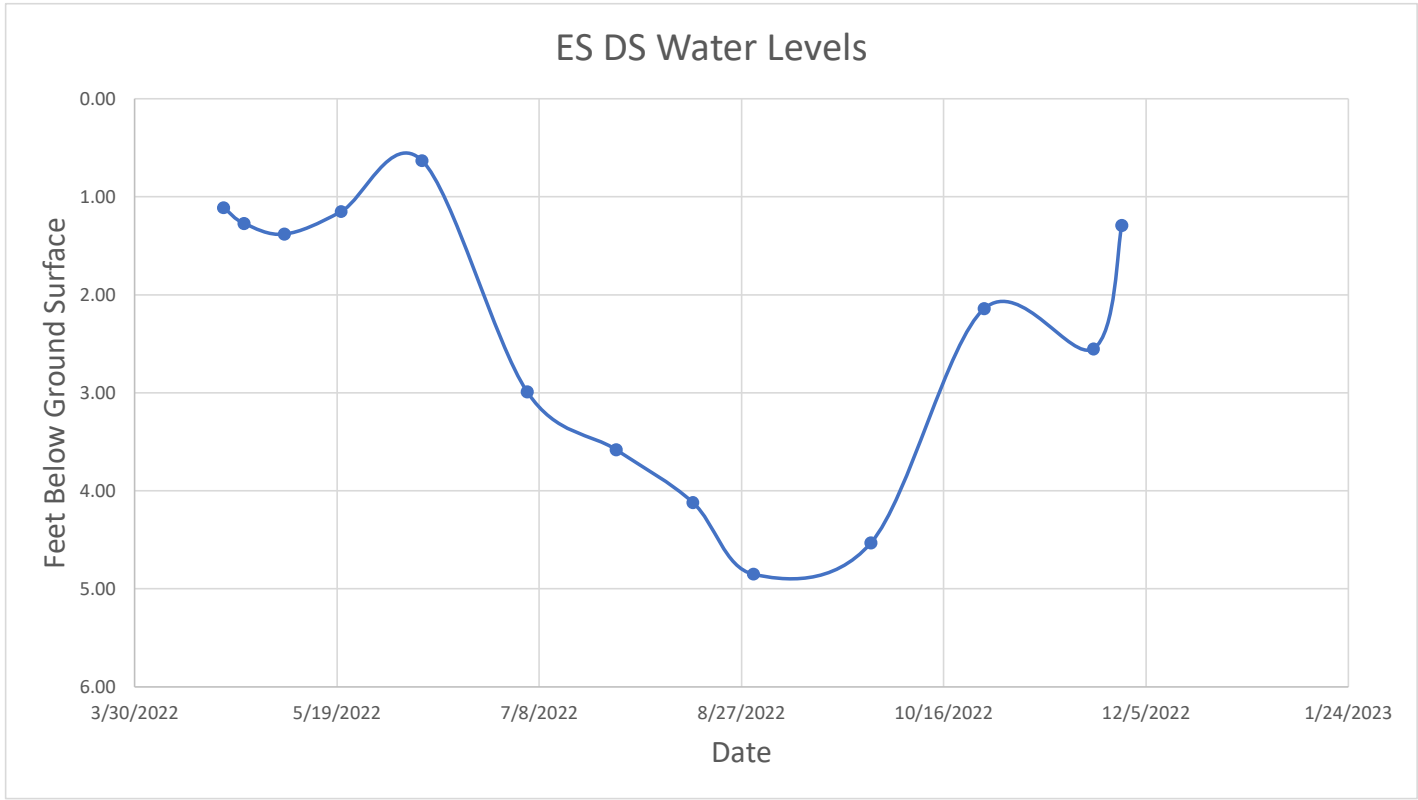
ES DS Water Levels
Feet Below Ground Surface
0.00
1.00
2.00
3.00
4.00
5.00
6.00
3/30/2022
5/19/2022
7/8/2022
8/27/2022
10/16/2022
12/5/2022
1/24/2023
Date

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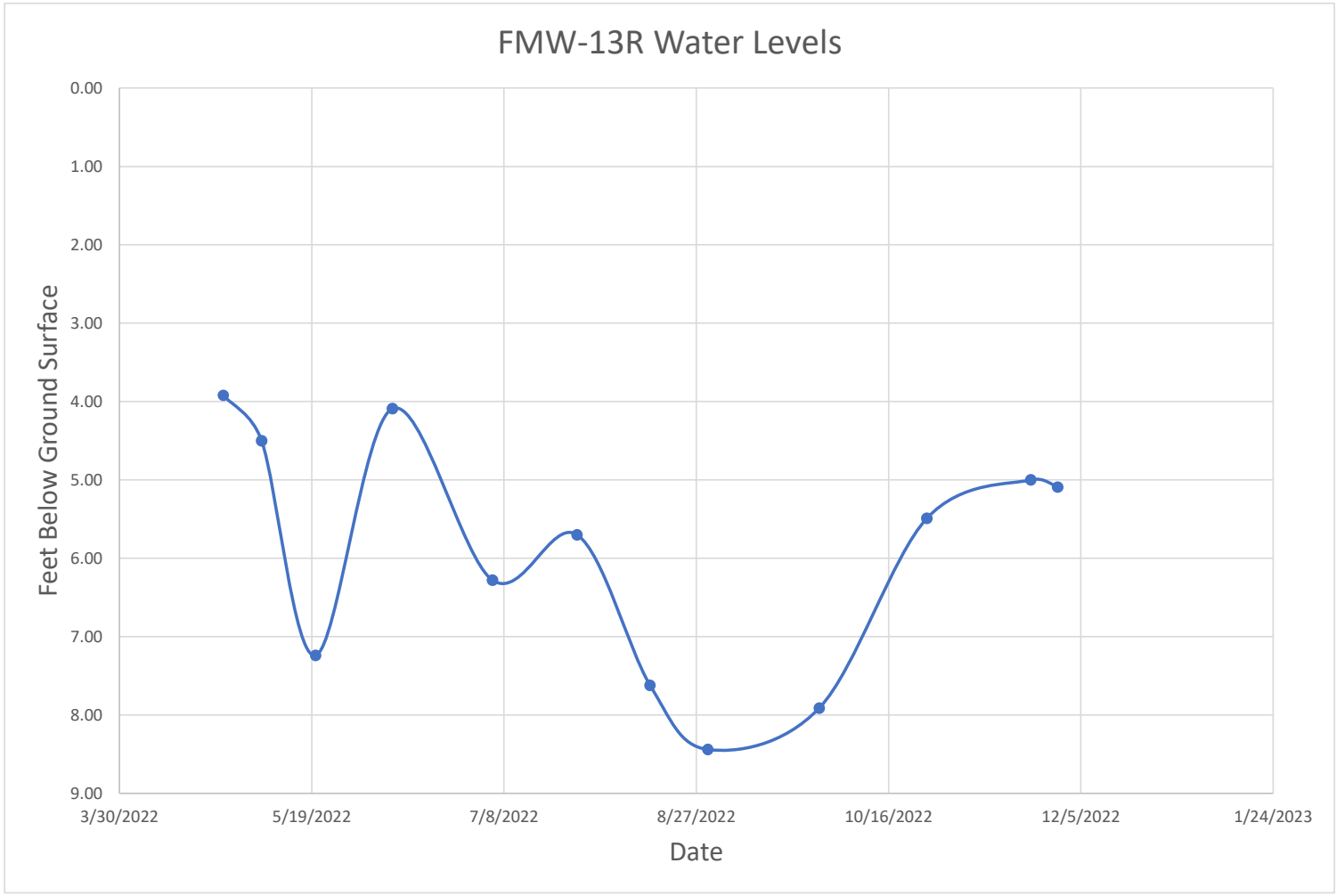
FMW-13R Water Levels
Feet Below Ground Surface
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1.00
2.00
3.00
4.00
5.00
6.00
7.00
8.00
9.00
3/30/2022
5/19/2022
7/8/2022
8/27/2022
10/16/2022
12/5/2022
1/24/2023
Date

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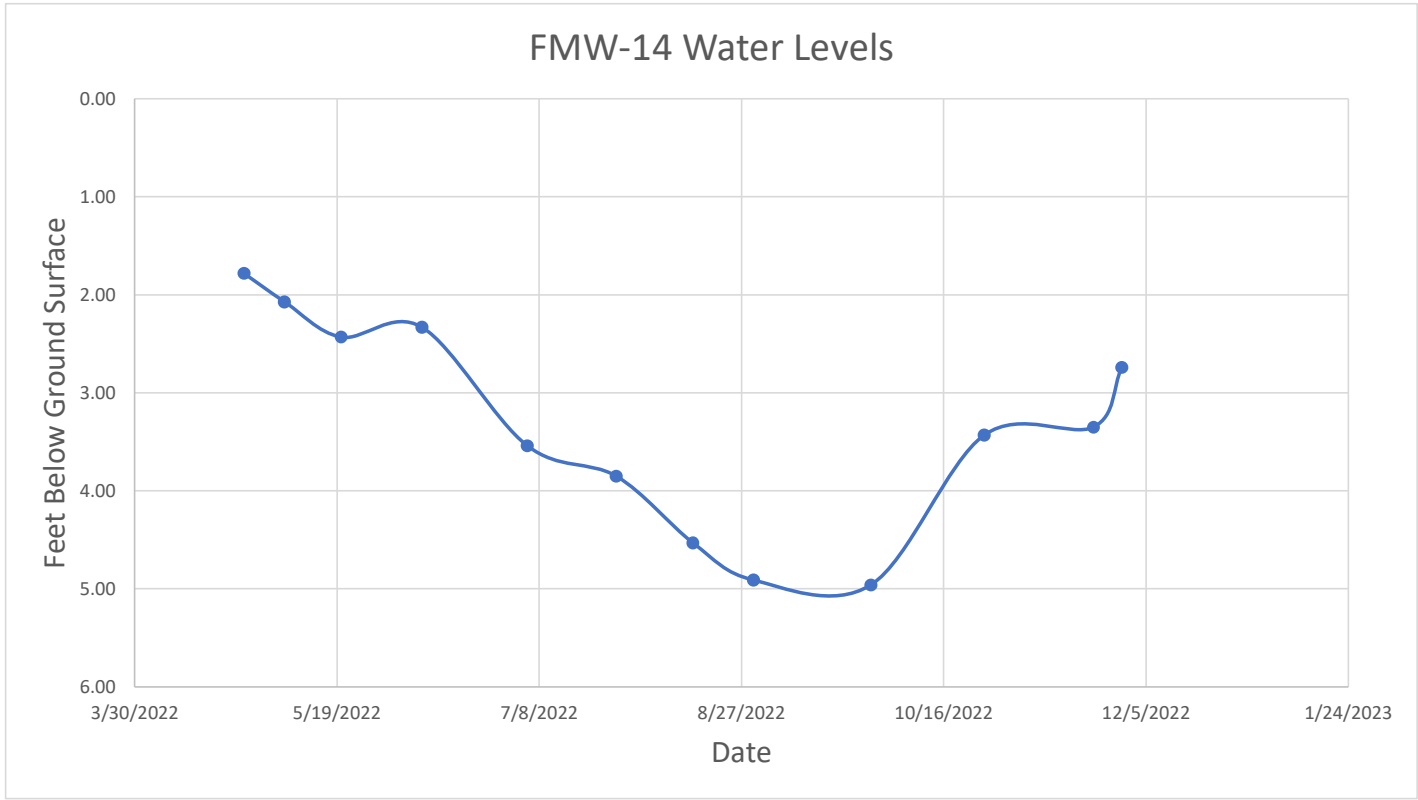
FMW-14 Water Levels
Feet Below Ground Surface
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2.00
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6.00
3/30/2022
5/19/2022
7/8/2022
8/27/2022
10/16/2022
12/5/2022
1/24/2023
Date

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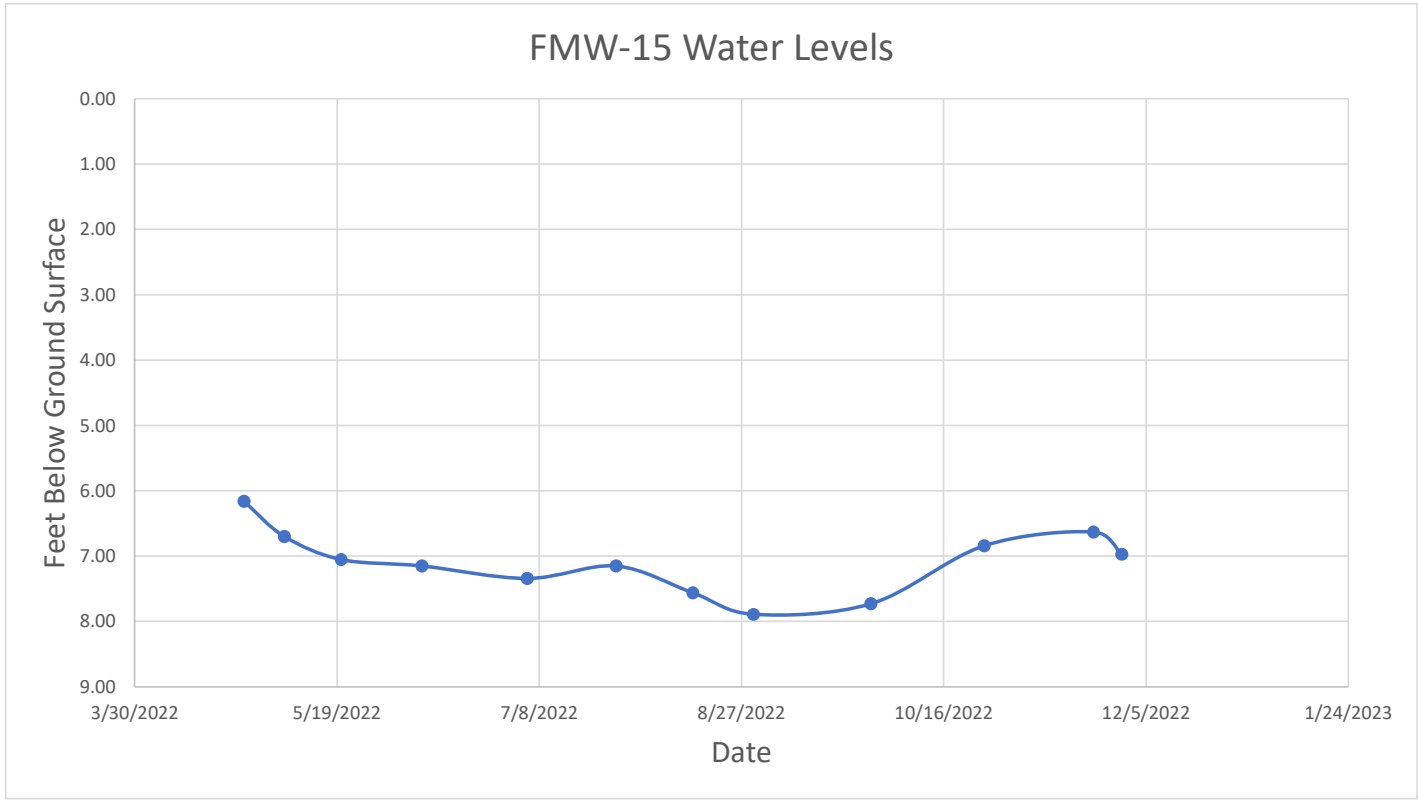
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Feet Below Ground Surface
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1.00
2.00
3.00
4.00
5.00
6.00
7.00
8.00
9.00
3/30/2022
5/19/2022
7/8/2022
8/27/2022
10/16/2022
12/5/2022
1/24/2023
Date

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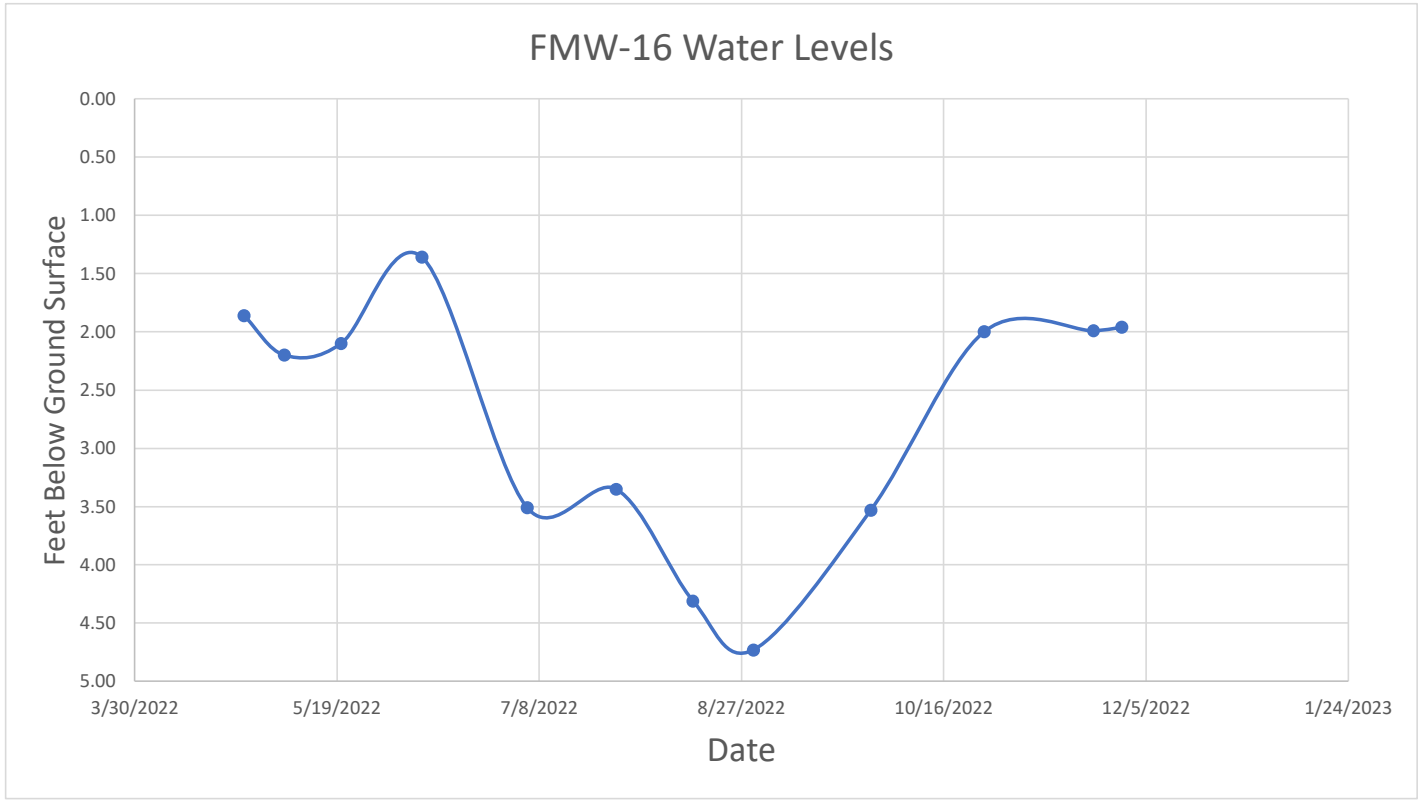
FMW-16 Water Levels
Feet Below Ground Surface
0.00
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1.00
1.50
2.00
2.50
3.00
3.50
4.00
4.50
5.00
3/30/2022
5/19/2022
7/8/2022
8/27/2022
10/16/2022
12/5/2022
1/24/2023
Date

APPENDIX C

APPENDIX C
Site Photos

Permeable Fabric Installation

Photo 1 – Area of installation prior to excavation.

Photo 2 – Post excavation and contouring

APPENDIX C
Site Photos

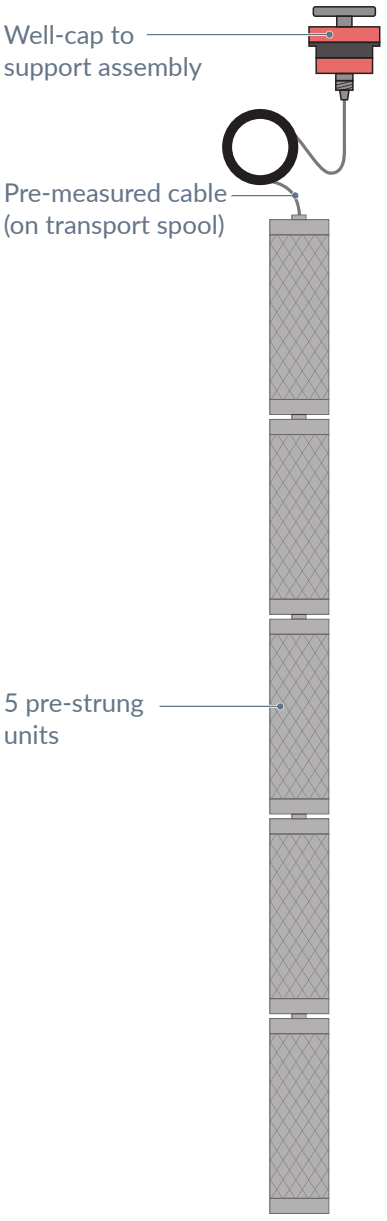
Permeable Fabric Installation

Photo 3 – Fabric Placement

Photo 4 – Post installation with gravel cover, erosion control and traffic control.

ATTACHMENT 1

FluxTracer®
Flux Mapping Tool



Specification Sheet

FluxTracer® Flux Mapping Tools are easy-to-use devices that vertically delineate contaminant mass flux and groundwater speed within an existing monitoring well to aid in site characterization and remedial designs. The FluxTracers consist of five separate two-foot-long stainless-steel screen canisters that are secured in series on a pre-measured central wire line equipped with a modified J-Plug well cap. FluxTracers are always pre-assembled, arriving at your site ready to deploy with no on-site construction required. The unique design provides joint-like flexibility between the closely stacked canisters to easily install and remove from a well.

Each FluxTracer canister is filled with granular activated carbon pre-loaded with biodegradable tracers. The tracers are composed of five different alcohols each having well-known partitioning characteristics with the activated carbon. As groundwater passively flows through a FluxTracer canister over the deployment period, the alcohol tracers are depleted from the activated carbon, with the net loss of the tracers directly correlating to the groundwater speed. At the same time, any contaminants present in the groundwater adsorb to the activated carbon during the deployment period. The total mass of contaminants accumulated on the activated carbon is then quantified and the contaminant mass flux is calculated.

A study consists of a FluxTracer installation into a well across a predetermined vertical interval of the saturated zone. The FluxTracer unit is typically in the well for two weeks and then retrieved. Once removed from the well, the FluxTracer devices are simply repackaged into the provided sleeves with zip ties and returned to the REGENESIS Lab for analysis. No on-site disassembly or sampling is required.

Upon receipt in the REGENESIS lab, each FluxTracer canister's contents will be sampled and analyzed at one-foot intervals. From those analyses, an accurate vertical profile of contaminant mass flux ($mg/m^2/day$) and groundwater Darcy flux (speed) (cm/day) is generated, and the results are provided in a report. The generated data provides remedial designers with important information on the flux zones within the aquifer, which ultimately aids to improve the results of remediation efforts.

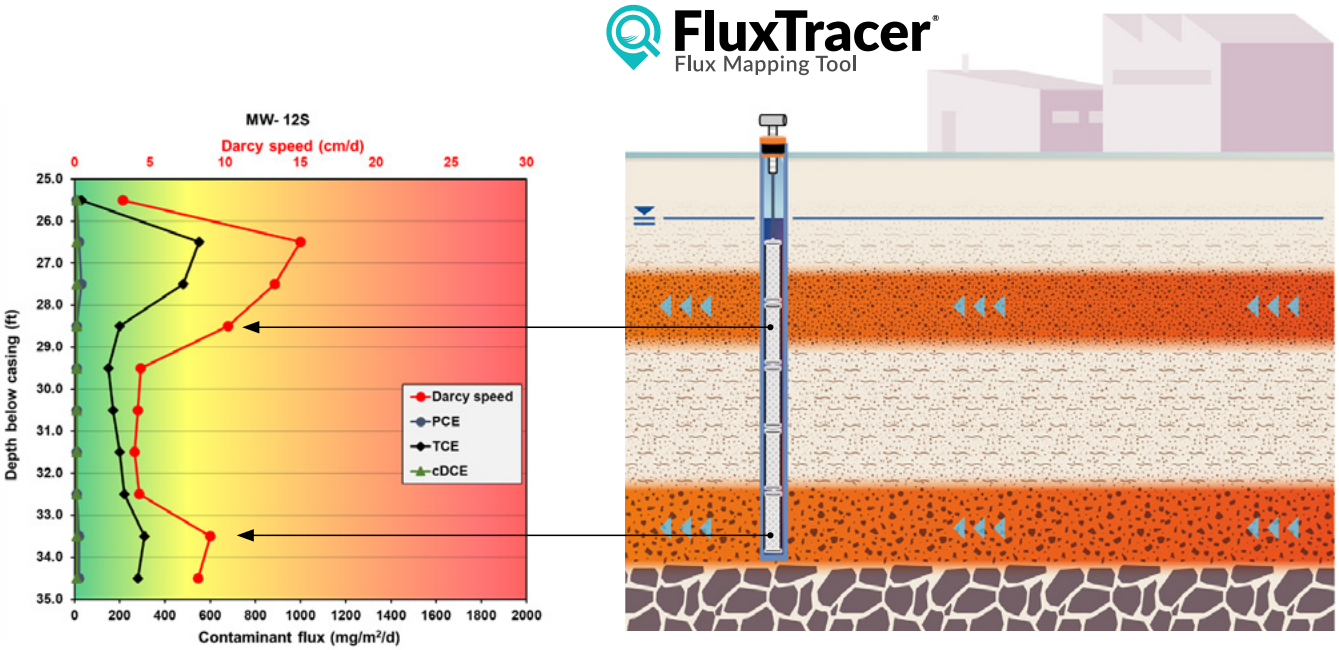


Illustration of a FluxTracer installed in a heterogeneous aquifer, and the ability to identify higher water and contaminant flux zones in an example data set.

FluxTracer®
Flux Mapping Tool

Storage and Handling Guidelines

- Follow all installation and retrieval directions.
- Store the FluxTracers in the original shipping cooler until deployment. The cooler should be stored in a cool, dark location until deployment.
- Do not remove the FluxTracers from the packaging until the time of deployment.
- FluxTracers should be deployed within five days of receipt.
- Wear appropriate personal protective equipment when handling.

Applications

- REGENESIS currently only offers FluxTracer units for 2-inch diameter schedule 40 PVC wells.

1011 Calle Sombra, San Clemente, California 92673 T: (949) 366-8000 www.REGENESIS.com