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Monthly Construction Progress Report

Date: 14 February 2025

To: David Griffin, P.E., Georgia Safe Dams Program (GSDP)

From: Jamey Dotson, P.E., Geosyntec Consultants (Geosyntec)

Subject: Lake Petit Dam Seepage Collection System Modifications CQA

Work Period:

This report summarizes work performed for this project at Lake Petit Dam (Dam) for the period of 01 January 2025 through 31 January 2025.

Summary:

Work during this reporting period (03 January through 30 January 2025) generally consisted of excavating materials and installing the two remaining proposed catch basins, perforated drainage pipe, and filter along the central and eastern portions of the embankment (approximately between Stations 2+32 and 3+12 and Stations 3+58 and 4+98) on Bench Number (No.) 1. Attachment 1 presents a general photograph log of work activities that occurred during this reporting period. Figures 1 and 2 present the general Site layout as well as Site features located and remediated to-date. The primary on-site project activities during this reporting period included:

- Excavation of soil for the new bench drain, along the central and eastern portions of Bench No. 1.
- Removal of approximately 210 feet (ft) of existing 10-inch (in.) diameter, corrugated metal pipe (CMP) bench drain, along the central and eastern portions of Bench No. 1.
- Installation of approximately 220 ft of fine/coarse filter and installation of proposed ADS N-12 10-in. diameter perforated drainage pipe, along the central and eastern portions of Bench No. 1.
- Installation of Catch Basin Nos. 2 and 3 (CB2 and CB3).
- Delivery of materials including:
    - Georgia Department of Transportation (GDOT) SM10 Sand (meeting ASTM C-33 specifications).
    - GDOT No. 89 Stone for use as backfill in the drainage channel around the perforated pipe.
    - Nyoplast collars/risers – two 1-ft sections.

Due to predicted rainfall events and anticipated wet conditions, the Contractor opted to extend the holiday break and the crew resumed work 03 January 2025. Once work resumed, weather conditions consisted of clear to overcast skies, light to strong winds, mild to cold weather, with rain events between: (i) 05 and 06 January 2025; (ii) 17 and 18 January 2025; (iii) 26 and 27 January 2025; and (iv) 30 and 31 January 2025. Total precipitation during this reporting period was approximately 3.5-in. The Site also experienced approximately 5-in. of snowfall on 10 January 2025. Work was not performed between 10 and 13 January due to ice and poor road conditions, which limited access to the Site. The daily temperature during the month typically ranged between approximately 10 and 50°F.

Work Activities:

Erosion and Sediment Control:

The construction entrances consisting of at least 6-in. of GDOT No. 34 stone and located near the left and right abutments were maintained.

The Contractor repaired and maintained the double row silt fence continuously throughout January, including the removal of collected sediment along silt fence at Bench No. 1. On 04 January 2025, the Contractor reinforced the silt fence with an additional row between approximately Stations 0+65 and 0+80, upstream of the previously repaired. Additionally, the Contractor regraded the eastern portion of the bench to direct water into the installed drainage system and repaired rutting which had occurred during construction.

During the installation of CB2 and CB3, filter fabric was placed over the 30-in. diameter openings prior to installing the grate covering. Additionally, filter fabric was placed over the exposed 10-in diameter catch basin inlet/outlet(s) and perforated pipe openings, to prevent aggregate and/or sediment from entering the system during construction. Filter fabric previously placed over the openings of Drop Inlets 2 and 4 (DI2 and DI4), CB1, and CB4 was maintained.

On 17 January 2025, in anticipation of a rain event, the Contractor placed filter fabric and a plastic trash bag over the exposed end of the section of installed ADS N-12 pipe at approximately Station 3+12. The Contractor then placed a piece of plywood in front of the pipe. These actions were taken to prevent soil material from entering the pipe. The Contractor then placed a filter system in front of the installed ADS N-12 pipe. This consisted of approximately 1-ft of No. 89 Stone in front of the end of the pipe, and approximately 1-ft of SM10 Sand over and in front of the placed No. 89 Stone.

Clearing and Grubbing:

No clearing or grubbing was performed during this reporting period.

Subgrade:

Approximately 220 ft of the 10-in. ADS N-12 pipe was installed between approximately Stations 2+32 and 3+12 and Stations 3+58 and 4+98 (CB3). The excavation trench was dug in sections ranging from approximately 10 to 25 ft long, and approximately 4 to 5 ft wide. The depth of the trench varied between approximately 4.5 to 6 ft. The subgrade appeared to be consistent and was made up of fine-grained embankment material.

Drains:

During the January reporting period, approximately 210 ft of the existing CMP drain was removed between approximately Stations 2+40 and 3+00, Stations 3+10 and 3+17, and Stations 3+55 and 4+98 and approximately 220 ft of the 10-in. ADS N-12 pipe and surrounding filter aggregate, including CB2 and CB3, was installed between approximately Stations 2+32 and 3+12 and Stations 3+58 and 4+98 (CB3).

The Contractor capped the existing 10-in. CMP that is planned to remain in place using Fernco caps, attached to the CMP with a clamp, at the following locations: (i) approximately Station 0+75, where the CMP connects to DI2 (15 January 2025) and (ii) immediately east of CB3 (21 January 2025). When capping the CMP near Station 0+75, the Contractor removed an additional 4-ft of the CMP and backfilled with excavated embankment material. The material was placed in approximately 6- to 8-in. lifts and compacted with the excavator bucket. When backfilling near CB3, SM10 Sand was placed in approximately 6-in. thick lifts and compacted with the excavator bucket. The CMP that was left in place immediately west of CB1 will be capped and backfilled at a later date.

Excavation and replacement of ten existing Interceptor Drains (IDs) began on 09 January 2025 (ID3A) and took place through 20 January 2025 (ID8). The Contractor used an excavator with an approximately 2-ft wide bucket and a reach of approximately 20-ft. The Contractor used composite mats to allow them to reach an additional 5-ft up the embankment.

Starting at the west side of Bench No. 1 and following each ID upstream, the Contractor removed approximately 17 to 26 linear feet (LF) of 4-in. HDPE perforated pipe at each location shown below. For any IDs with less than 25 LF of pipe (ID7), the Contractor continued the excavation to a minimum of 25 LF upstream from Bench No. 1. The 4-in. HDPE pipe of the IDs was observed at depths of approximately 22 to 37-in. below ground surface. The pipe was removed, and the excavation was extended approximately 6-in. below the bottom of the observed pipe. The excavated area was then backfilled with SM10 Sand, which was placed in approximately 6-in. thick lifts and compacted with the excavator bucket. At Bench No. 1, the SM10 Sand for the IDs was tied into the SM10 of the bench drain at a minimum of 18-in. of thickness. The table below is a summary of the removal and replacement of each ID.

Interceptor Drain No.	Approx. Station	Excavation & Drain Installation	Depth		Approx. Pipe Flow (gpm)	Pipe Removed (LF)	Installed Drain (LF)
			Top of Pipe (in.)	Excavation (in.)			
ID0	0+50	14 Jan 2025	30	40	< 0.10	26	26
ID1	0+70	14 Jan 2025	26	36	< 0.25	26	26
ID2	0+72	15 Jan 2025	37	47	0.00	25	25
ID3	0+95	15 Jan 2025	26	36	< 0.25	25	25
ID3A	1+40	09 Jan 2025 15 Jan 2025	28	38	< 0.25	25	25
ID4	1+40	15 Jan 2025	26	36	< 0.25	25	25
ID5	2+00	19 Jan 2025	29	39	0.00	25	25
ID6	2+00	19 Jan 2025	24	34	0.00	25	25
ID7	2+55	19 Jan 2025	22	32	0.00	17[1]	25
ID8	3+00	20 Jan 2025	36	45	<1.00	25	25

[1] Interceptor Drain perforated pipe terminated at 17 ft upslope from Bench No. 1.

Earthwork:

The Contractor completed the excavation and installation of the proposed perforated pipe and filter aggregates between approximately Stations 2+32 and 3+12, and Stations 3+58 and 4+98. The process was conducted in sections of excavation of approximately 25 ft. The excavator was used to remove embankment materials and the CMP. The smooth-edged bucket of the excavator was then used to prepare the subgrade. Trench boxes were installed due to the observed depth of the excavation. Two lifts of sand bedding were placed within the excavated trench. The lifts consisted of approximately 3-in. of bucket compacted SM10 Sand. The stone template box was then installed and approximately 6-in. of No. 89 Stone was placed inside of the template structure as pipe bedding. The Contractor then installed the ADS N-12 pipe. Using the stone template structure, approximately 6-in. of No. 89 Stone was placed on either side of the ADS N-12 pipe and approximately 6-in. over the pipe. SM10 Sand was then placed approximately 2-ft over the stone template and around the template. The trench box and stone template were removed from the excavation and the trench was filled with SM10 Sand.

CB2 and CB3 were installed, at approximately Stations 2+88 and 4+98, respectively. The excavator was used to remove embankment materials. The smooth-edged bucket of the excavator was then used to prepare the subgrade. A trench box was installed due to the depth of the

excavation. Two lifts of sand bedding were then placed within the excavated area. The lifts consisted of approximately 3-in. of bucket compacted SM10 Sand.

The Contractor installed a sedimentation basin consisting of a filter bag overlaying No. 89 Stone at the at the toe of the Dam, approximately aligning with Station 4+98. During the trench excavation, the Contractor installed a series of sumps within the trench to control the water inflow from the open CMP drain and any water infiltrating through the embankment. A 2-in. trash pump was used to pump the water collected in the sumps to the filter bag, preventing pooling within the open trench.

The Contractor also installed a second sedimentation basin consisting of a filter bag overlaying No. 89 Stone at the left abutment, east of CB3, within the existing concrete drainage swale. No. 89 Stone and hay bales were also placed east of the sedimentation basin to control turbidity. A 4-in. diesel pump was used to pump water collected in a sump installed directly west of CB3. This pump was operated as-needed, including overnight, to collect flow entering the area from the left abutment and preventing pooling within the open trench.

The excavation was extended to approximately Station 3+17 from the west and to approximately Station 3+55 from the east and the existing CMP was removed.

Instrumentation:

When work was occurring, an Engineer's representative typically recorded twice-daily readings from vibrating wire piezometers located on Bench No. 1 and Bench No. 2, and daily readings from vibrating wire piezometers and open standpipe piezometers located at Bench No. 3, Bench No. 4, Bench No. 5, and the Crest of the Dam. Records of those readings, as well as readings since December 2019, are provided in plots shown in Attachment 2. Lake Petit water surface elevations were also collected throughout the month and are tabulated in Attachment 2 with the instrumentation readings.

Laboratory Material Certification:

The Contractor collected a representative sample of topsoil and submitted it to a lab for pH and organic content testing in December 2024. The Contractor provided a submittal of the test results on 24 January 2025. Geosyntec approved the proposed topsoil to be used on the project.

Ground Penetrating Radar and Electromagnetic Surveys

On 24 January 2025, Ground Penetrating Radar Systems, Inc. (GPRS) performed additional GPR and Electromagnetic (EM) survey work in an attempt to locate and the map the extends of the existing 10- in. CMP. In December 2024, it was determined that the CMP draining towards the

left abutment discharged into DI2. During a rain event in January 2025, it was determined that the CMP draining towards the left abutment discharged at Line 5.

GPRS used GPR to observe the orientation of the 10-in. CMP downstream of Wolfscratch Drive, starting at the Line 5 outlet). The pipe was observed to come up the embankment to Wolfscratch Drive, then turn and cross below the street. The signal of the GPR equipment was interfered with by existing telecommunication lines in the area. GPRS then attempted to use EM methods to locate the line. Similar to the GPR equipment, the pipe location and orientation were observed up to Wolfscratch Drive where the telecommunication lines interfered with the signal. Therefore, exact location of the CMP under Wolfscratch Drive and at the toe of the left abutment were unclear.

GPRS then attached their EM equipment to the existing (capped) 10-in. CMP immediately east of CB3. GPRS was able to observe that the CMP ran: (i) downstream to Wolfscratch Drive for approximately 50-ft and then the signal was lost; and (ii) upstream to Bench No. 2 and then under the existing concrete drainage channel running west along Bench No. 2. GPRS then relocated to the right abutment, entering the existing (capped) 10-in. CMP immediately west of CB1. GPRS confirmed the 10-in. CMP on the right abutment also continued up to Bench No. 2, then under the existing concrete drainage channel running east along Bench No. 2.

GPRS used GPR methods to perform additional transects at the following locations, some of which are not related to this project:

- Right abutment from Wolfscratch Drive to Bench No. 5;
- Left abutment from south of Wolfscratch Drive to Bench No. 5;
- Bench Nos. 3, 4, and 5;
- Two lines across Wilderness Parkway (crest of the Dam) at the right and left abutments;
- Upstream embankment from the right abutment to existing vault behind the flagpole; and
- Slope between Wolfscratch Drive and Bench No. 1 along the length of the toe of the Dam.

GPRS did not observe the 10-in. CMP extending upstream along the abutments beyond Bench No. 2 (i.e., up to Bench Nos. 3, 4, or 5). GPRS marked the locations of the CMP in the field and the Contractor's as-built survey will document these locations. See Figure 2 for approximate locations of the CMP.

Figures

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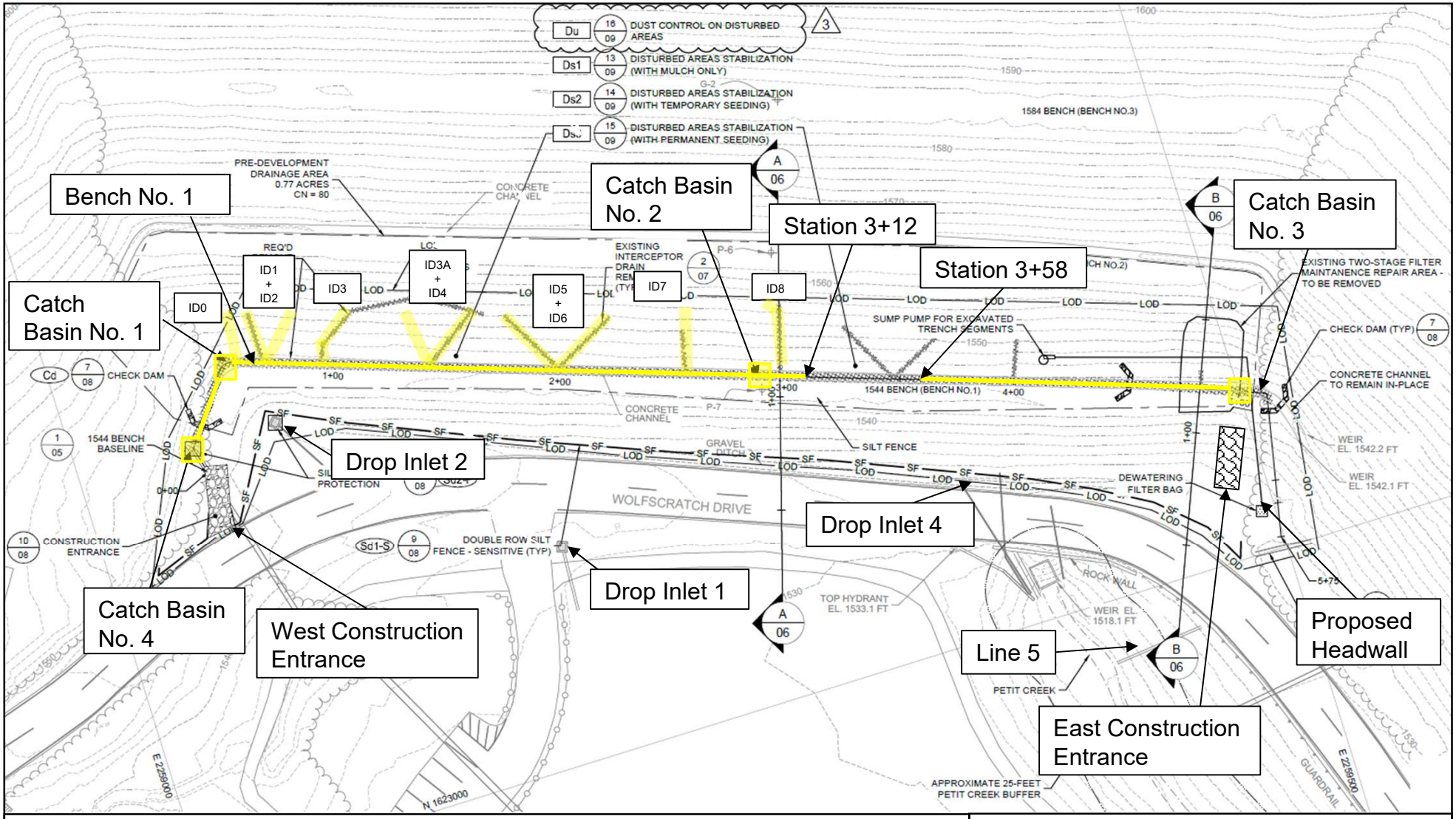


Note:

1. All locations are considered to be approximate.
2. Image obtained from Sheet 3 of Seepage Collection System Modifications Drawing Set, dated June 2024. Drawings have not been updated to reflect field conditions but are used for informational purposes for this report.

LEGEND

- INSTALLED CATCH BASINS AND ADS N-12 10-in. PIPE (CUMULATIVE)
- INSTALLED FILTER AND INTERCEPTOR DRAINS (CUMULATIVE)

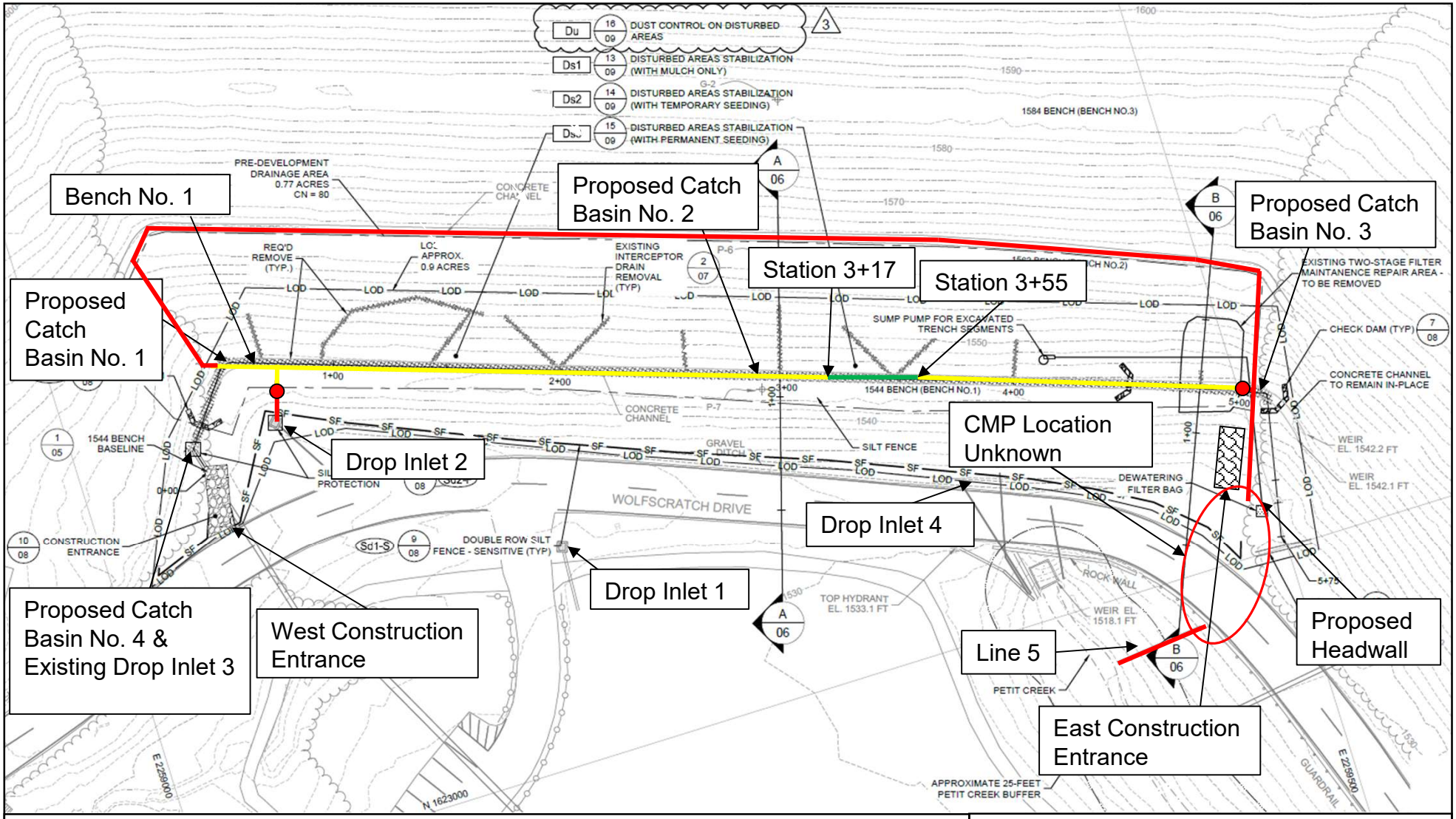
LAKE PETIT DAM – SEEPAGE COLLECTION SYSTEM MODIFICATIONS
BIG CANOE POA
JASPER, GA

Big Canoe POA

Geosyntec consultants

FIGURE 1. SITE LAYOUT

PROJECT NO: TCG11100	JANUARY 2025



Note:
1. All locations are considered to be approximate.
2. Image obtained from Sheet 3 of Seepage Collection System Modifications Drawing Set, dated June 2024. Drawings have not been updated to reflect field conditions but are used for informational purposes for this report.

LEGEND

- EXISTING CORRUGATED METAL PIPE (CMP) DRAIN – REMOVED TO DATE
- EXISTING CMP DRAIN – PLANNED FOR REMOVAL
- EXISTING CMP DRAIN – TO REMAIN IN-PLACE
- EXISTING CMP DRAIN – LOCATION OF FERNCO CAP

LAKE PETIT DAM – SEEPAGE COLLECTION SYSTEM MODIFICATIONS
BIG CANOE POA
JASPER, GA

Big Canoe POA

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FIGURE 2. SITE LAYOUT

PROJECT NO: TCG11100 | JANUARY 2025

Attachment 1

Photograph Log

PHOTOGRAPH LOG		
PROJECT AND SITE INFORMATION		
PROJECT: Lake Petit Dam Seepage Collection CQA	**DATE:** January 2025 Reporting Period	
DESCRIPTION: Seepage Collection System Modification	**PROJECT NO.:** TCG11100	**TASK NO.:** 01/02

Photograph No. 01 Description: Site conditions prior to start of excavation on 03 January 2025. Photo taken from center of Bench No. 1 (facing east).	
Photograph No. 02 Description: View of installed ADS N-12 pipe from approximately Station 2+52 to 2+72.	

PHOTOGRAPH LOG		
PROJECT AND SITE INFORMATION		
PROJECT: Lake Petit Dam Seepage Collection CQA	**DATE:** January 2025 Reporting Period	
DESCRIPTION: Seepage Collection System Modification	**PROJECT NO.:** TCG11100	**TASK NO.:** 01/02

Photograph No. 03 Description: View of installation and backfilling of CB3.	
Photograph No. 04 Description: View of installed CB3.	

PHOTOGRAPH LOG		
PROJECT AND SITE INFORMATION		
PROJECT: Lake Petit Dam Seepage Collection CQA	**DATE:** January 2025 Reporting Period	
DESCRIPTION: Seepage Collection System Modification	**PROJECT NO.:** TCG11100	**TASK NO.:** 01/02

Photograph No. 05 Description: View of replacement of ID0.	
Photograph No. 06 Description: View of ID3A excavation.	

PHOTOGRAPH LOG		
PROJECT AND SITE INFORMATION		
PROJECT: Lake Petit Dam Seepage Collection CQA	**DATE:** January 2025 Reporting Period	
DESCRIPTION: Seepage Collection System Modification	**PROJECT NO.:** TCG11100	**TASK NO.:** 01/02

Photograph No. 07 Description: View of removed section of 4-in. HDPE pipe from ID.	
Photograph No. 08 Description: View of Fernco cap used to cap existing CMP into DI2 (typical for the three CMP caps).	

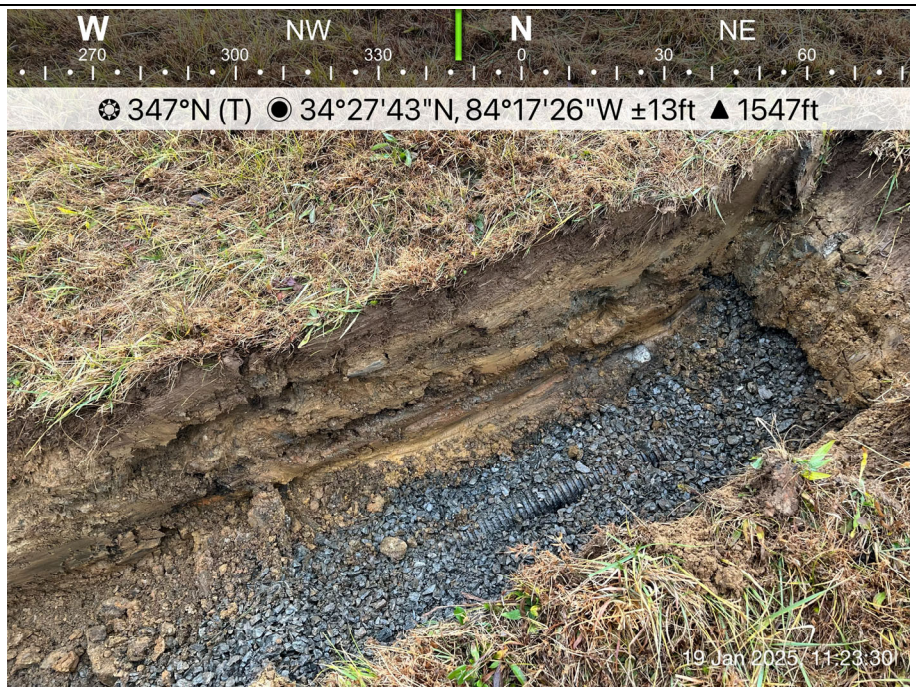
PHOTOGRAPH LOG		
PROJECT AND SITE INFORMATION		
PROJECT: Lake Petit Dam Seepage Collection CQA	**DATE:** January 2025 Reporting Period	
DESCRIPTION: Seepage Collection System Modification	**PROJECT NO.:** TCG11100	**TASK NO.:** 01/02

Photograph No. 09 Description: View of capped CMP running south to DI2.	
Photograph No. 10 Description: View of Site conditions at CB2 after rain event on 18 January 2025.	

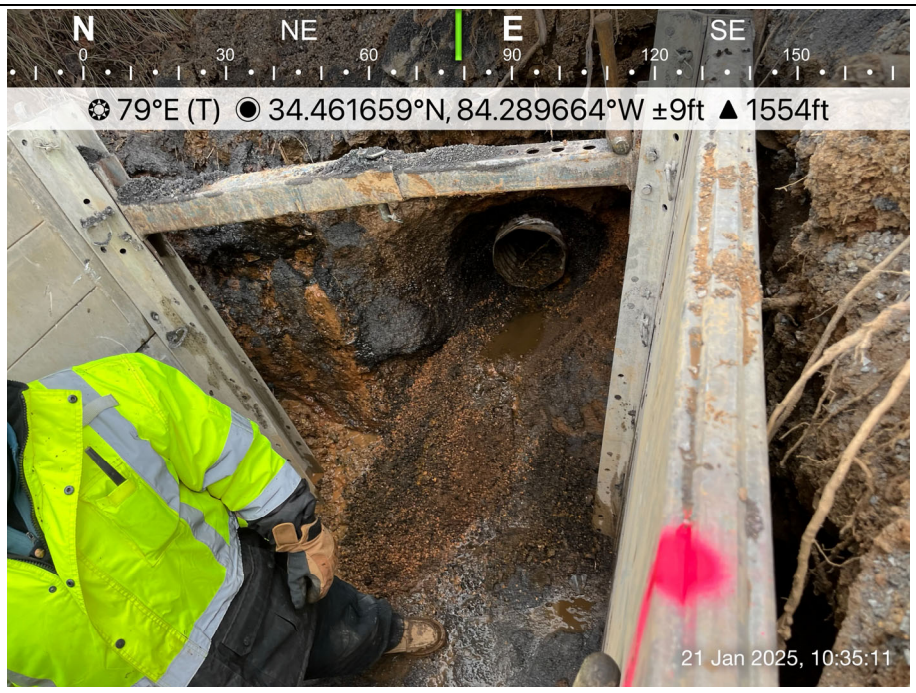
PHOTOGRAPH LOG

PROJECT AND SITE INFORMATION

PROJECT: Lake Petit Dam Seepage Collection CQA	**DATE:** January 2025 Reporting Period	
DESCRIPTION: Seepage Collection System Modification	**PROJECT NO.:** TCG11100	**TASK NO.:** 01/02

Photograph No. 11 Description: View of completed ID5 replacement.	
Photograph No. 12 Description: View of existing ID6.	

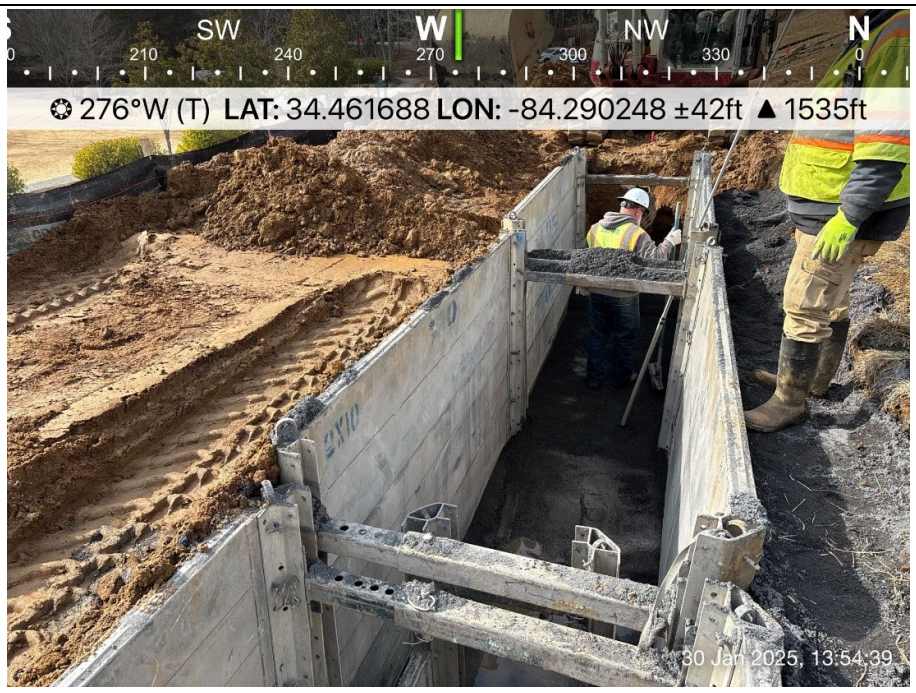
PHOTOGRAPH LOG		
PROJECT AND SITE INFORMATION		
PROJECT: Lake Petit Dam Seepage Collection CQA	**DATE:** January 2025 Reporting Period	
DESCRIPTION: Seepage Collection System Modification	**PROJECT NO.:** TCG11100	**TASK NO.:** 01/02

Photograph No. 13 Description: View of constructed sedimentation basin at left toe of the Dam.	
Photograph No. 14 Description: View of existing 10-in. CMP at the left abutment tee where pipe runs north and south.	

PHOTOGRAPH LOG		
PROJECT AND SITE INFORMATION		
PROJECT: Lake Petit Dam Seepage Collection CQA	**DATE:** January 2025 Reporting Period	
DESCRIPTION: Seepage Collection System Modification	**PROJECT NO.:** TCG11100	**TASK NO.:** 01/02
Photograph No. 15 Description: View of capped 10-in. CMP at the left abutment.		
Photograph No. 16 Description: View of subgrade preparation at approximately Station 4+88, heading west.		

PHOTOGRAPH LOG		
PROJECT AND SITE INFORMATION		
PROJECT: Lake Petit Dam Seepage Collection CQA	**DATE:** January 2025 Reporting Period	
DESCRIPTION: Seepage Collection System Modification	**PROJECT NO.:** TCG11100	**TASK NO.:** 01/02

Photograph No. 17 Description: View of the orientation of the 10-in. CMP at the left abutment (located using GPR and EM methods).	
Photograph No. 18 Description: View of installed and backfilled bench drain from approximately Station 4+18 to 3+78.	

PHOTOGRAPH LOG		
PROJECT AND SITE INFORMATION		
PROJECT: Lake Petit Dam Seepage Collection CQA	**DATE:** January 2025 Reporting Period	
DESCRIPTION: Seepage Collection System Modification	**PROJECT NO.:** TCG11100	**TASK NO.:** 01/02
Photograph No. 19 Description: View of Action placing stone to the top of the aluminum forms between approximately Stations 4+18 and 4+00.		
Photograph No. 20 Description: View of sand bedding being prepared to approximately Station 3+78 to 3+58.		

Attachment 2

Instrumentation

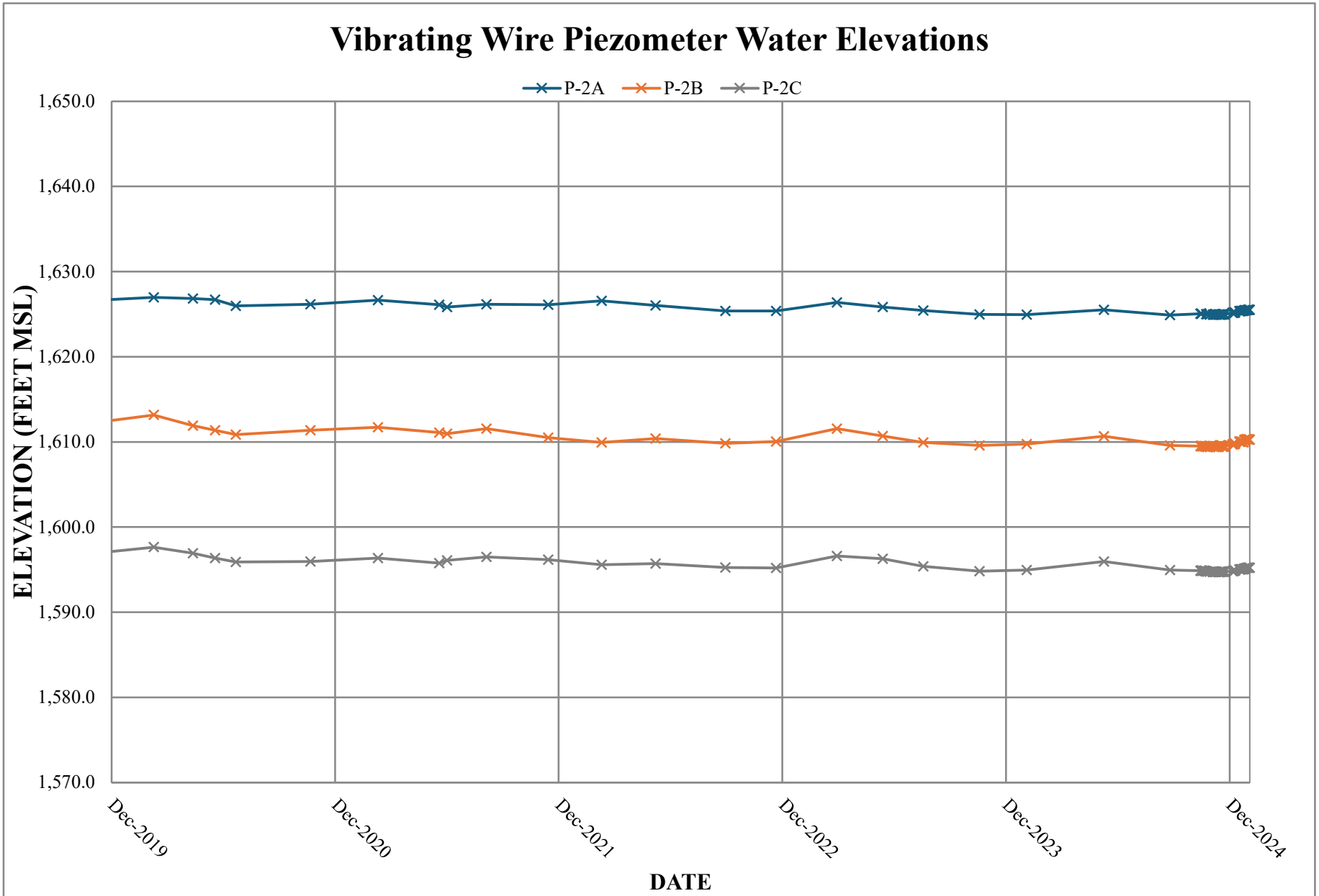


Figure 1. Summary of Vibrating Wire Piezometer Data, P-2A, B, C (Dec. 2019 through Jan. 2025) Lake Petit Dam, Big Canoe, GA

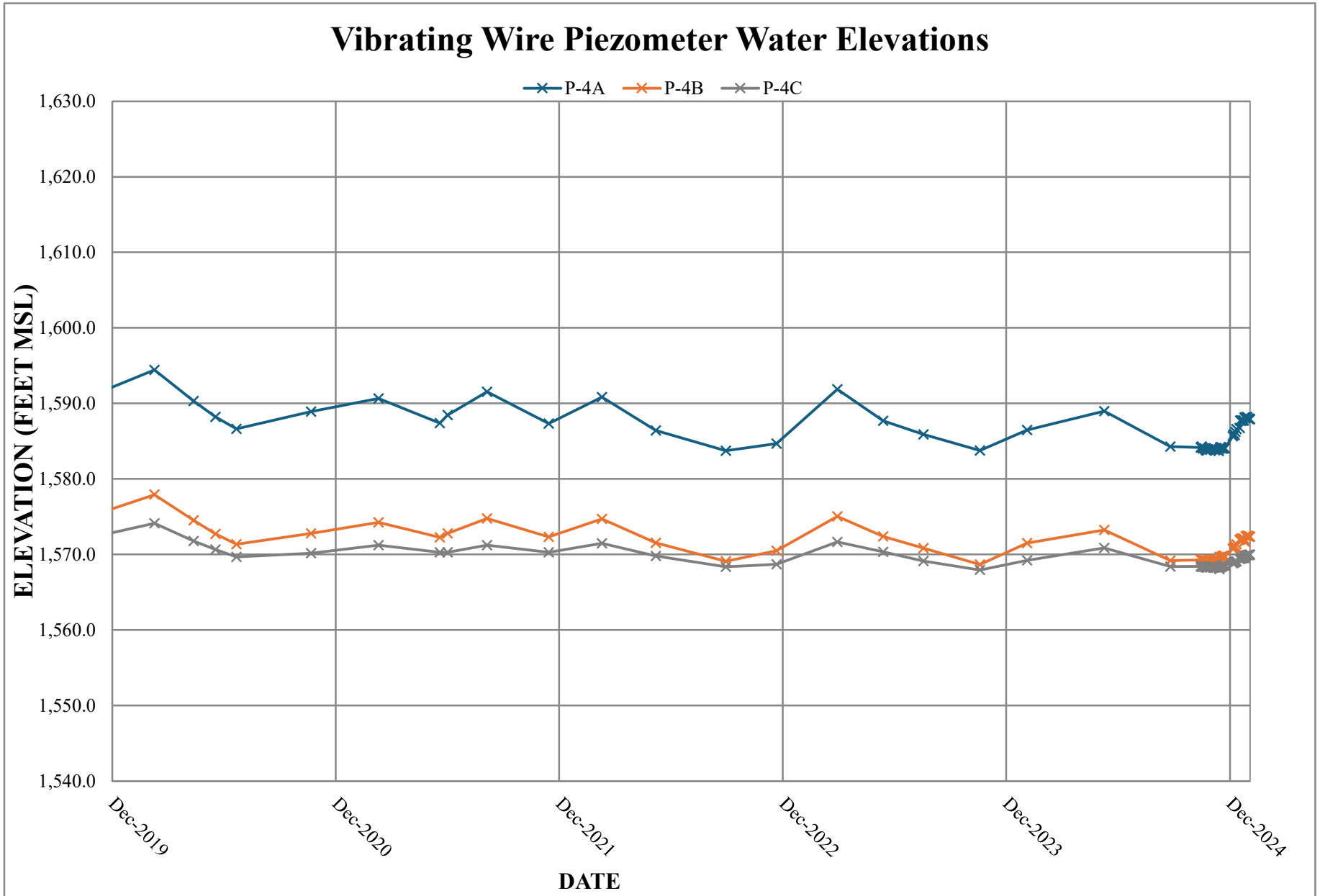


Figure 2. Summary of Vibrating Wire Piezometer Data, P-4A, B, C (Dec. 2019 through Jan. 2025)
Lake Petit Dam, Big Canoe, GA

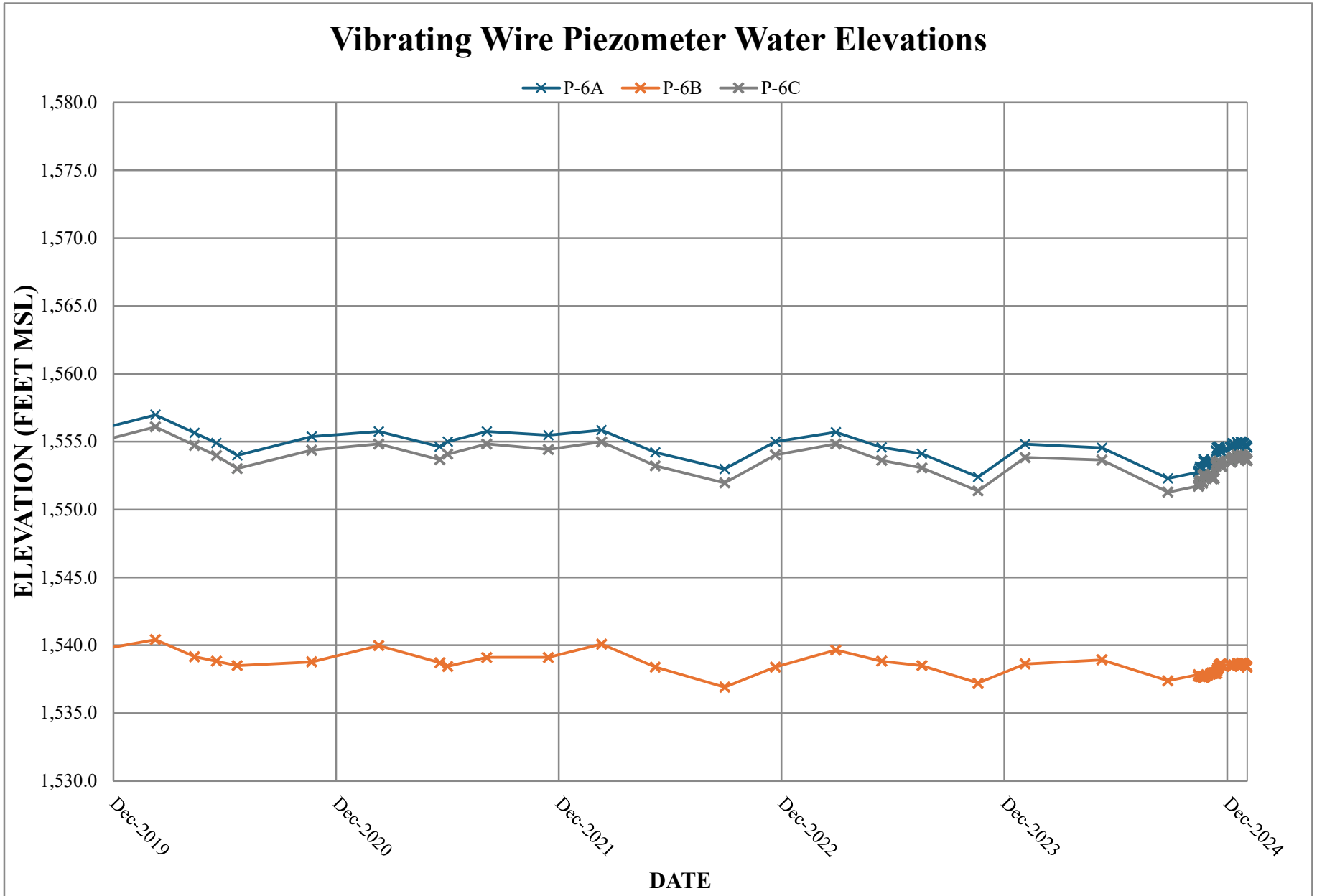


Figure 3. Summary of Vibrating Wire Piezometer Data, P-6A, B, C (Dec. 2019 through Jan. 2025) Lake Petit Dam, Big Canoe, GA

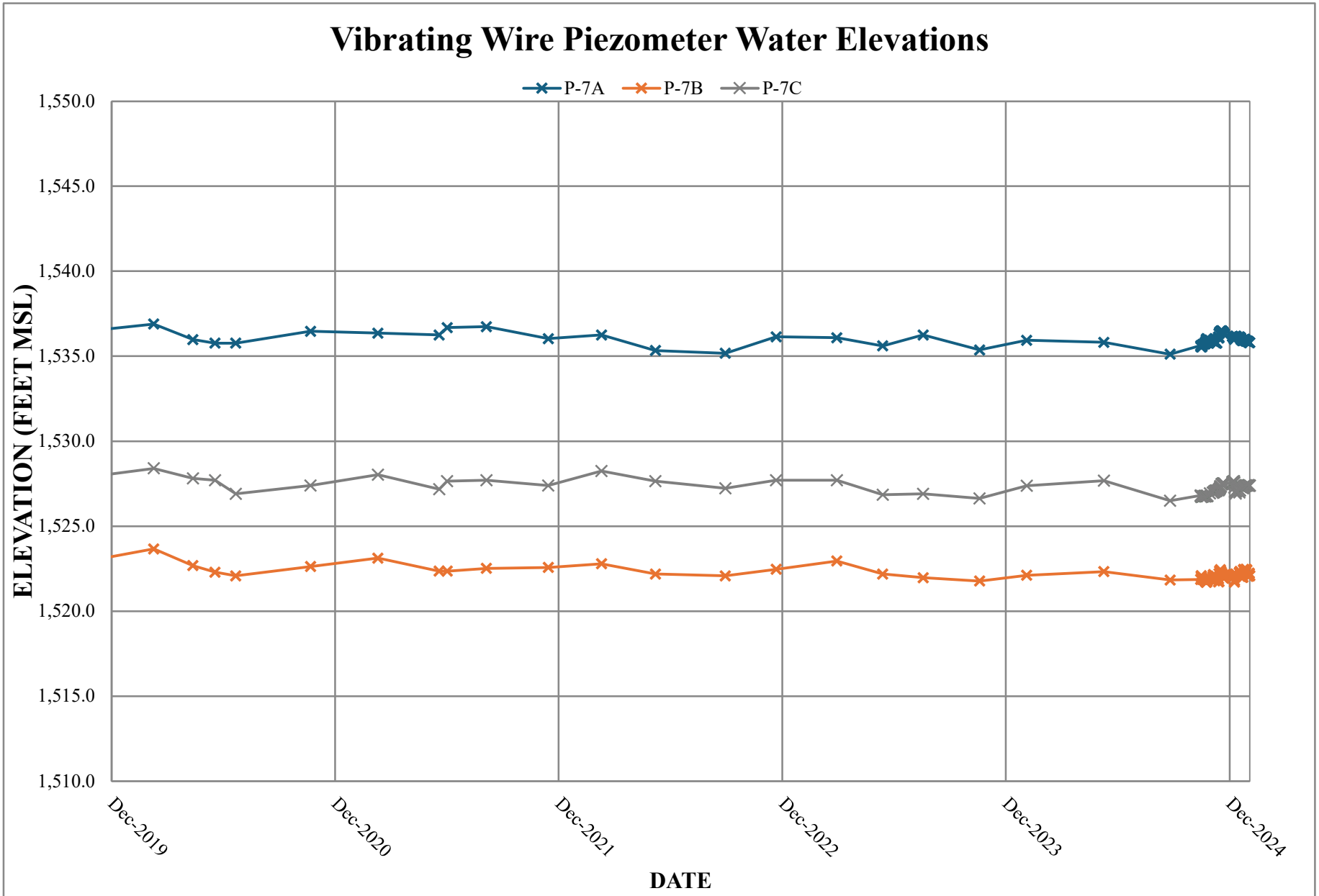


Figure 4. Summary of Vibrating Wire Piezometer Data, P-7A, B, C (Dec. 2019 through Jan. 2025) Lake Petit Dam, Big Canoe, GA

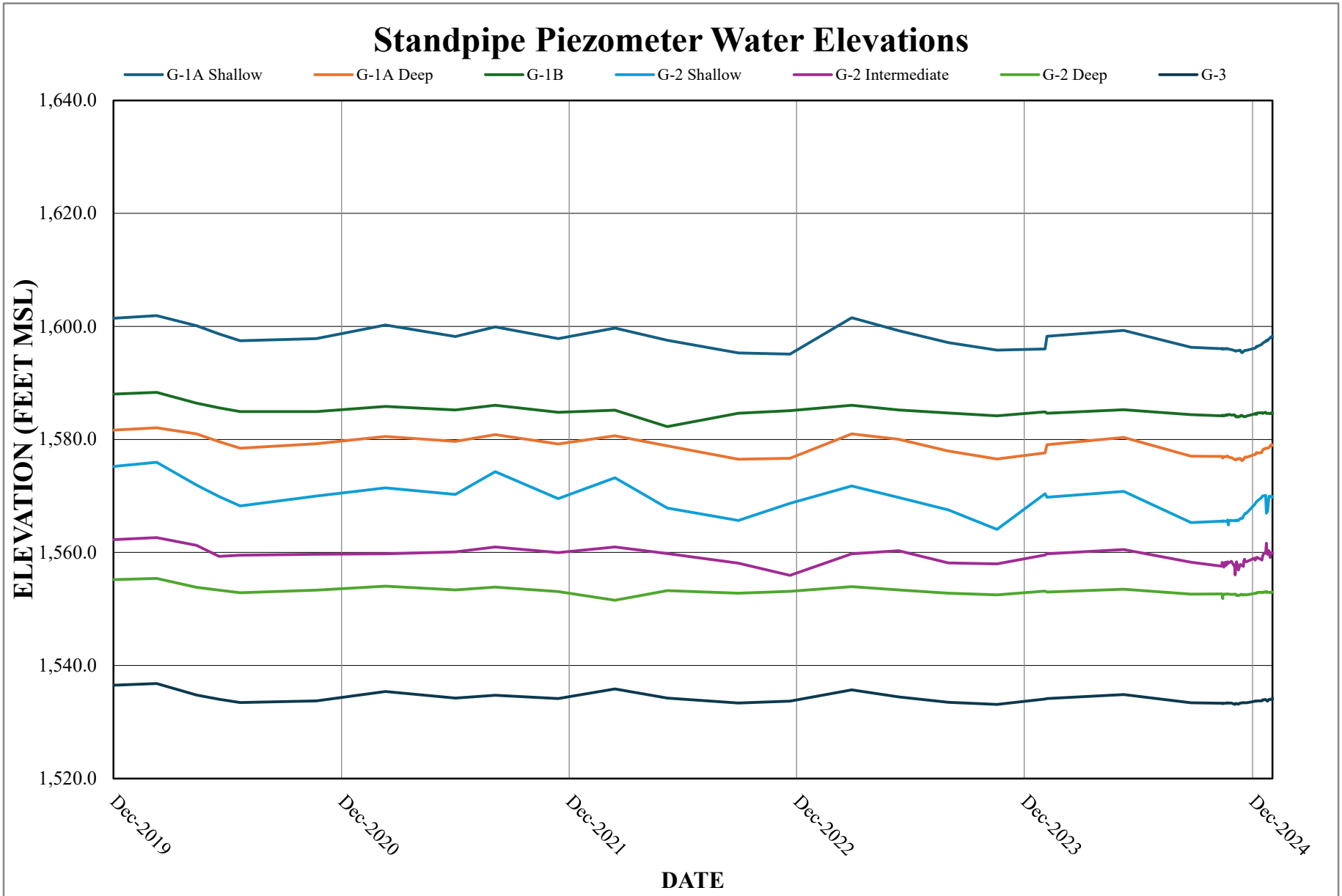


Figure 5. Summary of Standpipe Piezometer Data (Dec. 2019 through Jan. 2025)
Lake Petit Dam, Big Canoe, GA

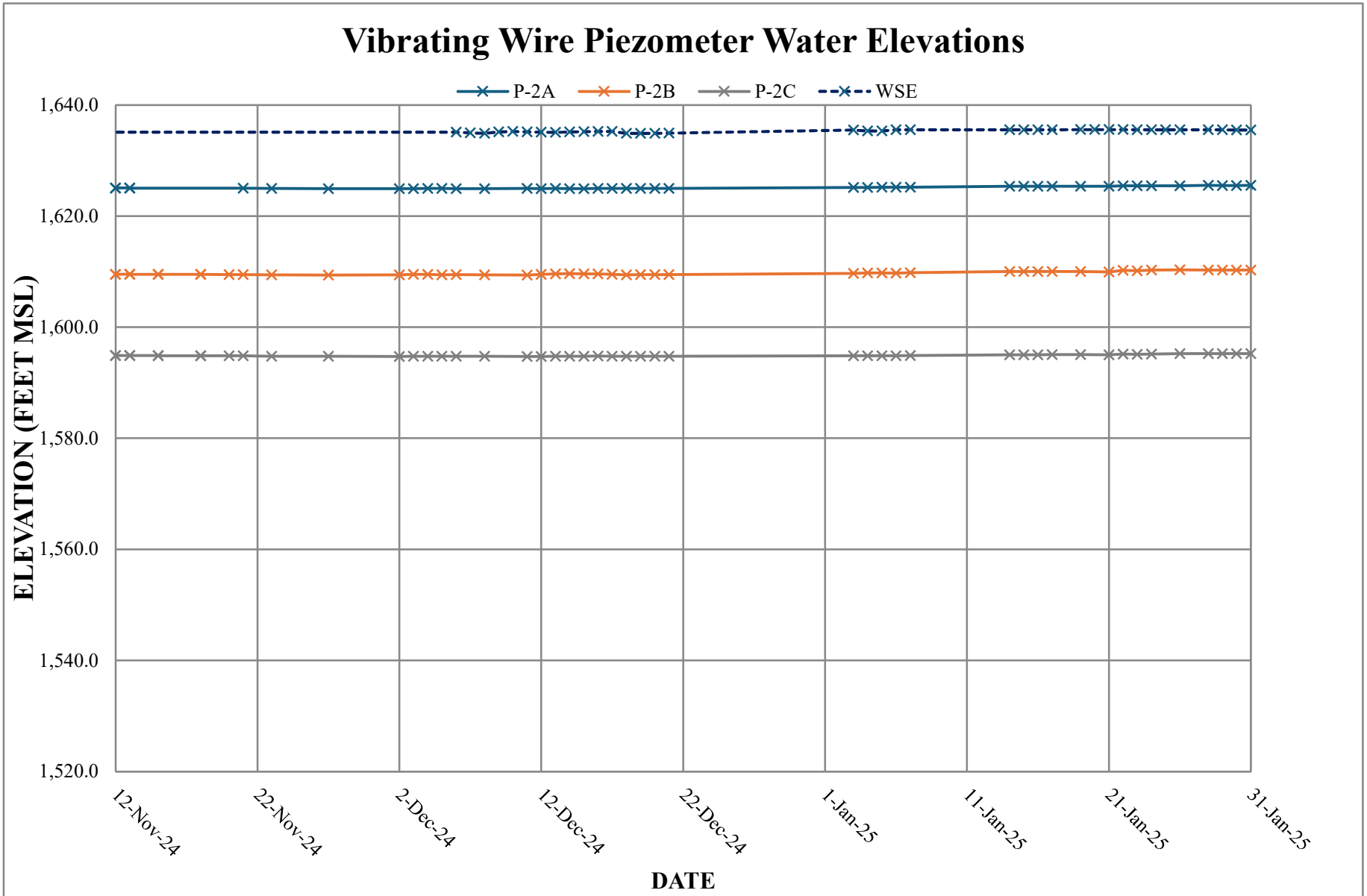


Figure 6. Summary of Vibrating Wire Piezometer Data, P-2A, B, C (Nov. 2024 through Jan. 2025) Lake Petit Dam, Big Canoe, GA

WSE data collection began on 06 December 2024. Piezometer and WSE readings were conducted when construction personnel were onsite.

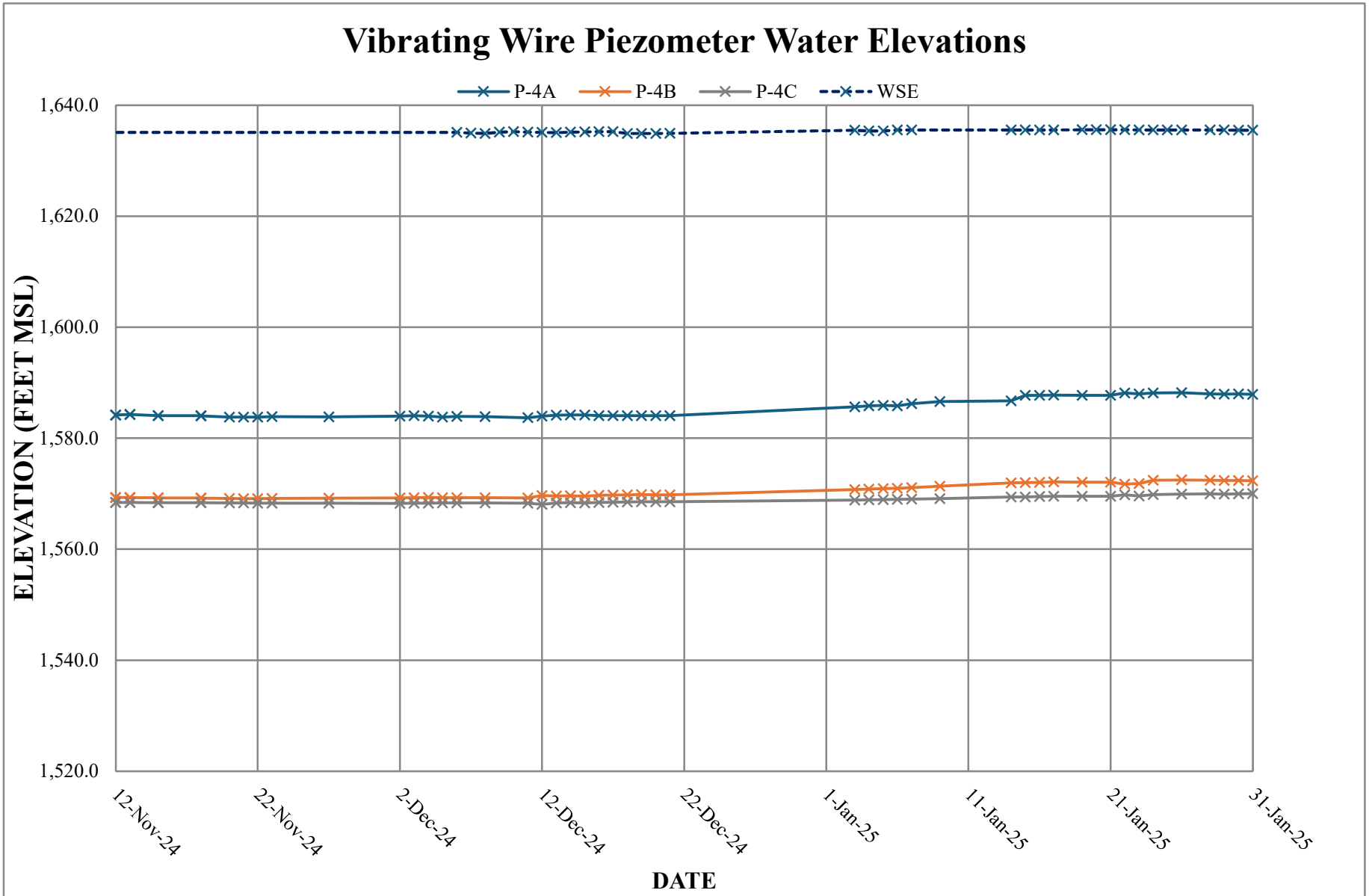


Figure 7. Summary of Vibrating Wire Piezometer Data, P-4A, B, C (Nov. 2024 through Jan. 2025) Lake Petit Dam, Big Canoe, GA

WSE data collection began on 06 December 2024. Piezometer and WSE readings were conducted when construction personnel were onsite.

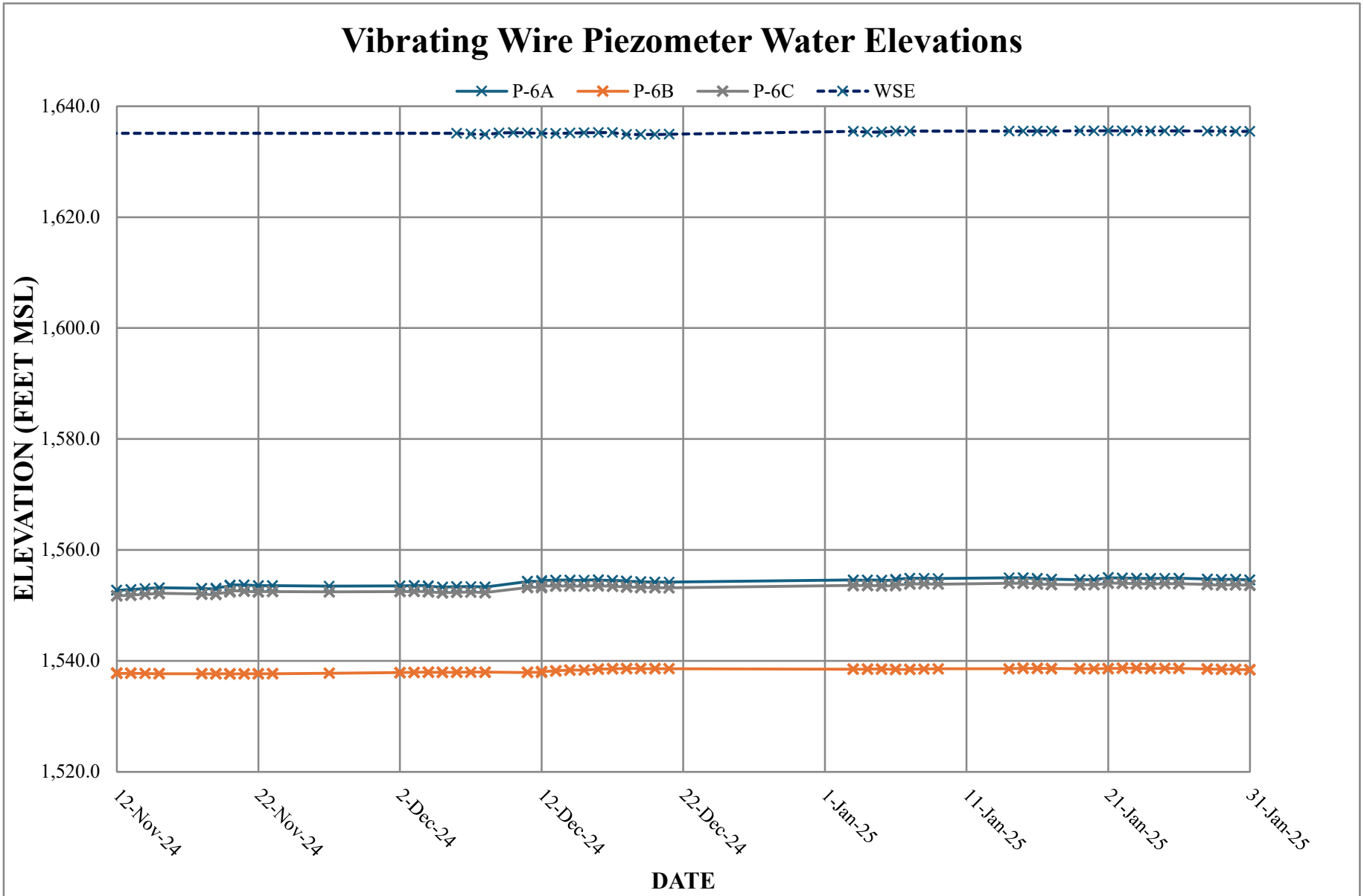


Figure 8. Summary of Vibrating Wire Piezometer Data, P-6A, B, C (Nov. 2024 through Jan. 2025) Lake Petit Dam, Big Canoe, GA

WSE data collection began on 06 December 2024. Piezometer and WSE readings were conducted when construction personnel were onsite.

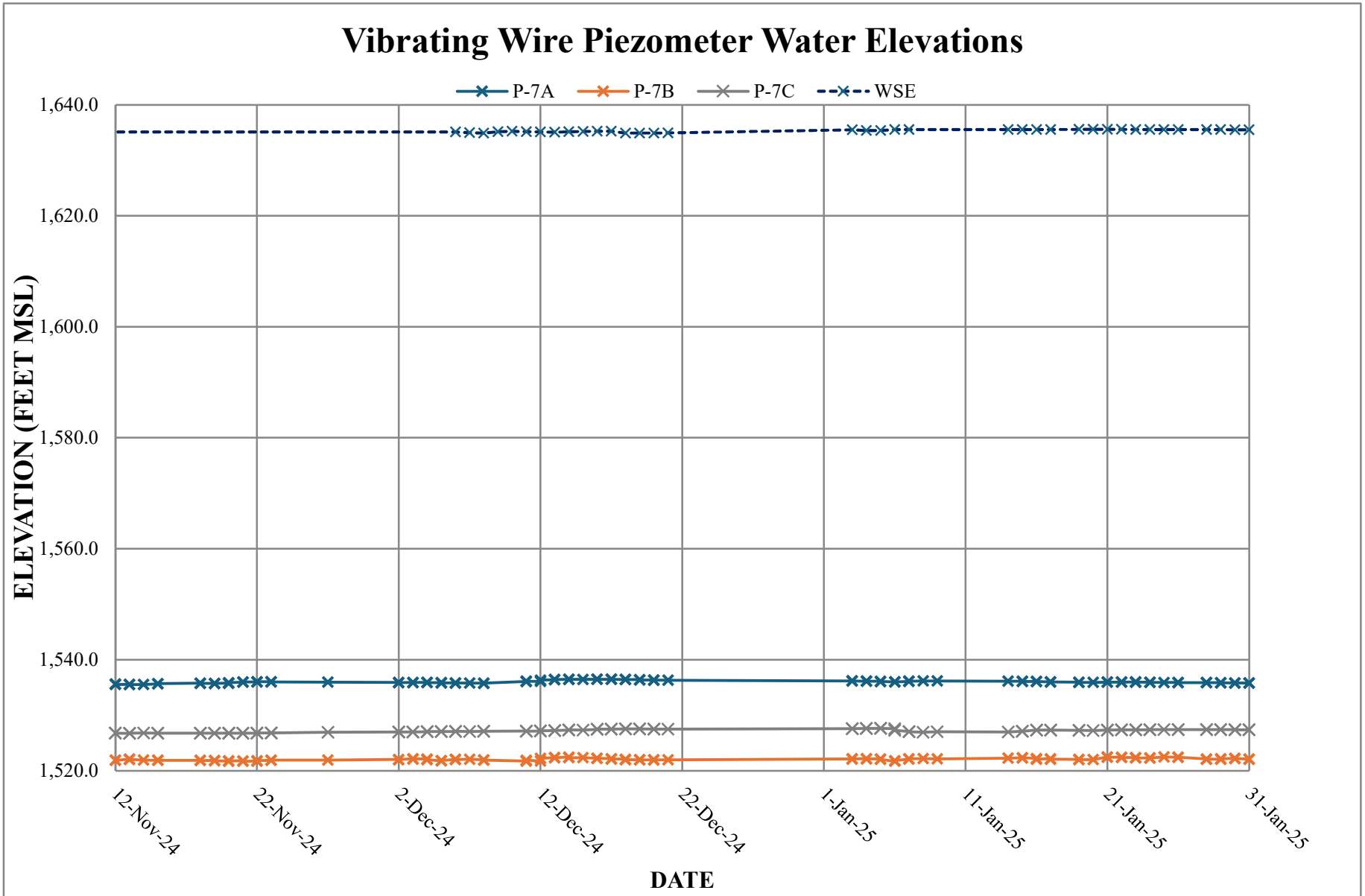


Figure 9. Summary of Vibrating Wire Piezometer Data, P-7A, B, C (Nov. 2024 through Jan. 2025) Lake Petit Dam, Big Canoe, GA

WSE data collection began on 06 December 2024. Piezometer and WSE readings were conducted when construction personnel were onsite.

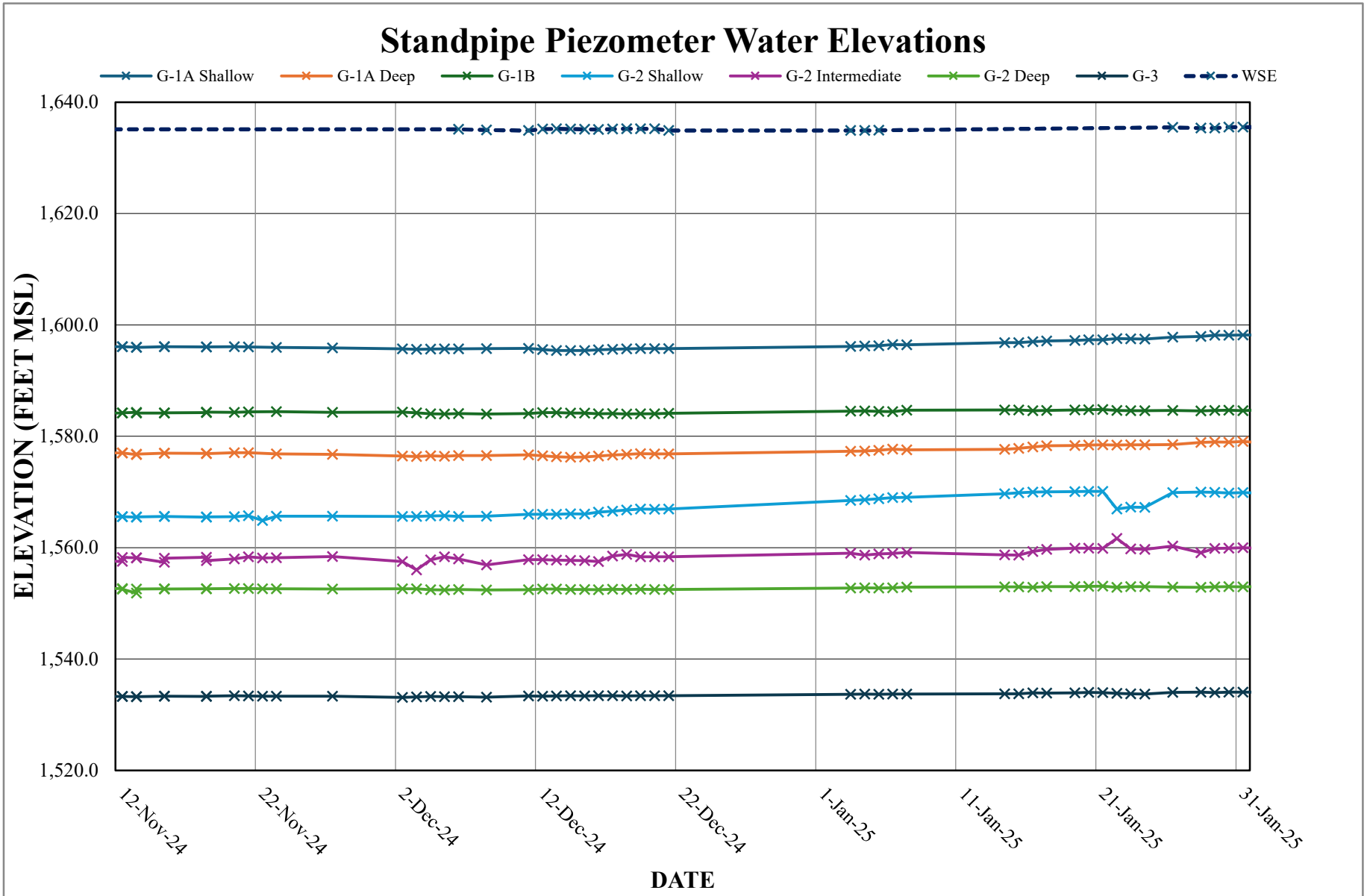


Figure 10. Summary of Standpipe Piezometer Data (Nov. 2024 through Jan. 2025)
Lake Petit Dam, Big Canoe, GA

WSE data collection began on 06 December 2024. Piezometer and WSE readings were conducted when construction personnel were onsite.