

## 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, Revision 1

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### Work Period:

This revised report summarizes work performed for this project at Lake Petit Dam (Dam) for the period of 01 December 2024 through 31 December 2024.

### Summary:

Work during this reporting period (02 December through 21 December 2024) generally consisted of excavating materials and installing the proposed catch basins, perforated drainage pipe, and filter along the western side of the embankment (approximately between Stations 0+12 and 2+32) on Bench Number (No.) 1. Attachment 1 presents a general photograph log of work activities that occurred during this reporting period. Figures 1 through 3 present the general site layout as well as site features located to-date. The primary on-site project activities during this reporting period included:

- Excavation of soil for the new bench drain, along the western half of Bench No. 1.
- Removal of approximately 200 feet (ft) of existing 10-inch (in.) diameter, corrugated metal pipe (CMP) bench drain, along the western half of Bench No. 1.
- Installation of approximately 220 ft fine/coarse filter and installation of proposed ADS N-12 10-in. diameter perforated drainage pipe, along the western half of Bench No. 1.
- Installation of Catch Basin Nos. 1 and 4 (CB1 and CB4).
- 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.
  - Concrete headwall to be placed at the left abutment.

Weather conditions consisted of clear to overcast skies, light to strong winds, mild to cold weather, with one rain event between 09 and 10 December 2024. Total precipitation during this period was approximately 2.3 in. and the daily temperature ranged between approximately 10 and 60°F.

Excavation was delayed on 09 and 10 December 2024 due to the rain event and wet site conditions. Additionally, the Contractor opted to suspend work from 22 December 2024 through 29 December 2024 for the holidays. The Contractor extended this delay to 03 January 2025 due to predicted rain events and wet site conditions. Prior to demobilization, the contractor backfilled all excavations, reinforced existing erosion control measures, and confirmed that no obstructions were present to restrict stormwater flows off the Dam.

### **Work Activities:**

#### Erosion and Sediment Control:

Construction entrances consisting of at least 6 in. of GDOT No. 34 stone were located near the left and right abutments. The construction entrance along the right abutment was maintained. Note, the construction entrance on the left abutment was not being used during the month of December.

The Contractor repaired the double row silt fence on 21 December 2024. An additional section was installed downstream of an irreparable section approximately between approximately Stations 0+55 and 0+85.

CB1 and CB4 were installed, along with approximately 220 ft of perforated pipe (running from approximately Station 0+12 to 2+32). During the installation of the catch basins, 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 Inlet Nos. 2 and 4 (DI2 and DI4), CB1, and CB4 was maintained.

On 20 December 2024, the Contractor placed filter fabric and a plastic trash bag over the exposed end of the last section of installed ADS N-12 pipe at approximately Station 2+32. 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:

Several trees on the left abutment were removed on 23 November 2024. The stumps and root balls of trees that were cut down were not removed during this reporting period.

Subgrade:

Approximately 220 ft of the 10-in. ADS N-12 pipe was installed between approximately Stations 0+12 (CB4) and 2+32. 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 3.5 to 6 ft. The subgrade appeared to be consistent and was made up of fine-grained embankment material.

Drains:

Excavation of the embankment began on 02 December 2024. A 10-in. diameter, CMP was encountered approximately 3 ft below the ground surface (bgs), at approximately Station 3+00 (near proposed CB2). This CMP was not noted in historical construction records of the Dam. A short section of the CMP was exposed, removed, and inspected by the engineering team. The CMP contained perforations and appeared to be part of a previously installed and undocumented internal drainage system. Additionally, the CMP appeared to be approaching the end of its service life. Note, water was not visually observed to be flowing within this section of pipe.

A CCTV drain camera was pushed approximately 80 ft towards the left and right. A couple inches of stagnant water was observed through the camera. The camera could not be pushed further due to an apparent obstruction or joint in the pipe. The Engineer conducted a dye test to determine the locations of the CMP outlets. Water with blue indicator dye was poured into the side of the CMP draining towards the right abutment. The blue indicator dye was observed flowing into DI2. The process was repeated along the side of the CMP draining towards the left abutment. However, the discharge was not identified, as blue indicator dye was not observed at any known outlets.

The Contractor dug potholes approximately every 50 ft along the length of Bench No. 1, between approximately Station 0+50 and 4+50 on 02 December 2024 and west of CB1 on 06 December 2024, in the proposed drainage trench and into the right abutment. The Contractor confirmed the CMP typically followed the orientation of the removed concrete ditch and was located within the planned excavation for the approved bench drain.

The CMP was observed to continue toward the right abutment, past CB1. This pipe was clogged and no flow was observed. The Contractor cleared the observed clog on 07 December 2024, and no additional obstructions, or flow, were observed. The orientation west of CB1 is unknown to the Engineer. The CMP opening was covered with coarse aggregate and connected to the filter surrounding CB1 to allow any discharge from the right abutment to flow into the new bench drain.

While excavating to observe the orientation of the 10-in. CMP, the Contractor uncovered an additional 4-in. high-density polyethylene (HDPE) interceptor drain approximately 1-ft west of the proposed CB1 near Station 0+50. This interceptor drain, labeled Interceptor Drain 0, had not

been identified on the plans but will be added to the inventory of interceptor drains to be removed and backfilled with suitable drainage material, per the project documents.

An existing 4-in. HDPE tee fitting and perforated pipe, located east of CB1 near Station 0+62, was connected to the existing CMP from the north. Due to the depth of the HDPE pipe, the Engineer directed the Contractor to remove the tee fitting and trim the HDPE pipe to daylight into the backfill to allow any discharge from the right abutment to flow into the new bench drain.

An existing CMP tee fitting, located east of CB1 near Station 0+75, connected the existing CMP drain to DI2. The Contractor removed the tee fitting and temporarily placed 3 layers of poly plastic and 1 layer of geomembrane over the pipe leading to DI2, cutting off water flow to the drop inlet. A permanent solution for this CMP is being developed and updates will be provided in the next reporting period report.

On 17 December 2024, the Engineer notified GSDP of the CMP discovery and the intentions to remove the deteriorated pipe as part of the approved installation of the new bench drain system. Since its discovery, the Engineer has determined that the existing CMP was likely installed shortly after Dam construction, based on a recommendation contained in an 18 May 1974 Law Engineering Testing Company report titled “Report of Engineering Evaluation” to address concentrated seepage at the Dam.

During the compilation of this report, the existing CMP was encountered within the excavation footprint for CB3. The CMP extended approximately 4-ft to the east of Station 5+05, where a tee connected with two pipes, one running upstream (north) and the other downstream (south). Further details will be included in the next reporting period report and any major changes to the planned design will be communicated to the GSDP.

During the December reporting period, approximately 200 ft of the existing CMP drain was removed between approximately Stations 0+50 and 2+40 and Stations 3+00 and 3+10, and approximately 220 ft of the 10-in. ADS N-12 pipe and surrounding filter aggregate, including CB1 and CB4, was installed between Stations 0+12 (CB4) and 2+32.

#### Earthwork:

The Contractor excavated at approximately Station 0+12 (05 December 2024) and 0+51 (07 December 2024) for the installation of CB4 and CB1, respectively. Existing embankment material was stockpiled, for use as backfill after the installation. The Contractor performed a hand excavation around the existing 24-in. CMP at CB4. After the subgrade elevation was reached, the Contractor prepared the subgrade using the smooth edge of the excavator bucket. The Contractor placed two lifts of sand bedding within the excavated trench. The lifts consisted of approximately 3-in. of bucket-compacted SM10 Sand. The sand bedding was leveled and CB4 was installed. Per



the drainage basin manufacturer (Manufacturer), the ADS pipe was cut to secure the gasket joining the CMP to the drainage basin.

The Contractor completed the excavation and installation of the proposed perforated pipe and filter aggregates between approximately Stations 0+12 and 2+32. The process was conducted in sections 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 starting at approximately Station 0+90 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. The trench box and stone template were removed from the excavation and the trench was filled with SM10 Sand.

The Contractor installed a sedimentation basin consisting of a filter bag overlaying No. 89 Stone. This was placed at the toe of the dam, approximately aligning with Station 0+70. 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 sump to the filter bag, preventing pooling within the open trench.

The excavation was extended to approximately Station 2+40 and the existing CMP was removed. On 21 December 2024, the Contractor removed the installed trench boxes and backfilled the trench with SM10 Sand, up to the end of the installed section of ADS N-12 pipe. After installing a filter system at the end of the installed ADS N-12 pipe, previously excavated embankment material was used as backfill to bring the area back to the previously existing grade.

#### Instrumentation:

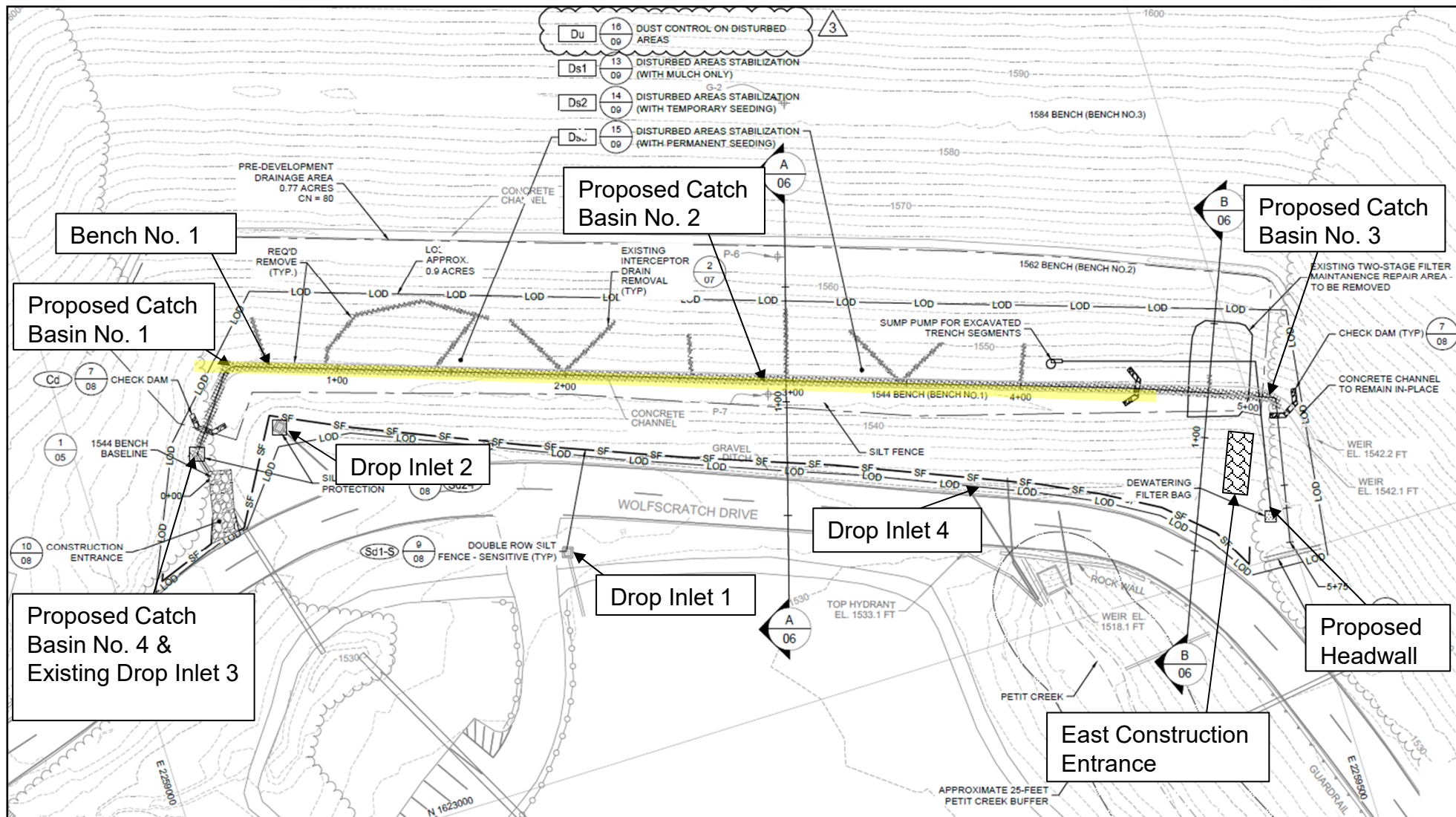
When work was occurring, an Engineer's representative typically recorded twice-daily readings from vibrating wire piezometers located on Bench No. 1 and Bench No. 2, and daily readings from vibrating wire piezometers and open standpipe piezometers located at Bench No. 3, Bench No. 4, Bench No. 5, and 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 elevations were also collected throughout the month and are tabulated in Attachment 2 with the instrumentation readings.

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December 2024

Laboratory Material Certification:

Laboratory testing was not conducted during December 2024. The contractor collected a representative sample of topsoil and submitted it to a lab for pH and organic content testing, prior to its use on Site. Lab results will be presented in a future Monthly Construction Progress Report.

# Figures



**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**

- Yellow highlight: POT HOLE EXPLORATION (CUMULATIVE)

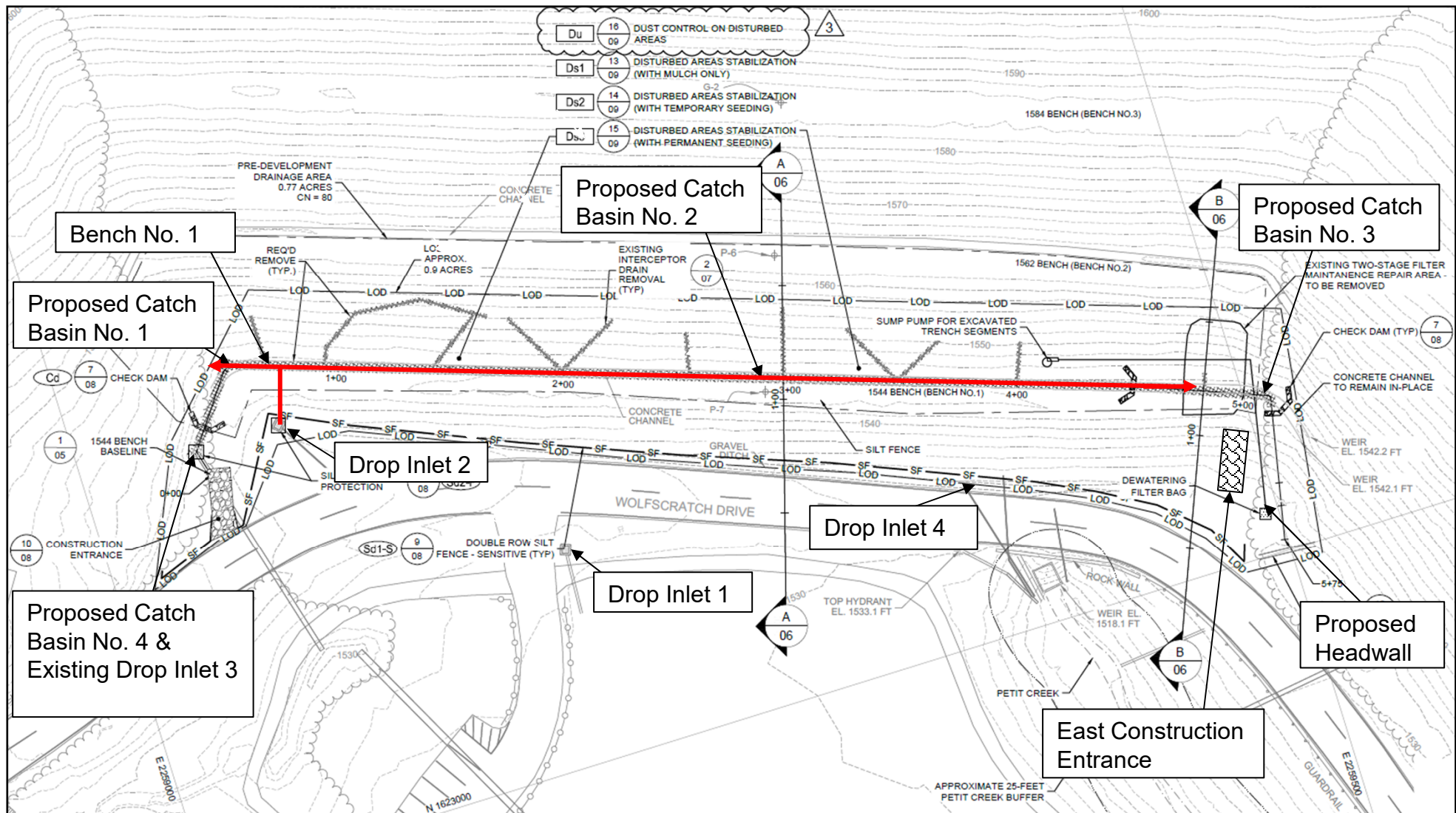
**LAKE PETIT DAM – SEEPAGE COLLECTION  
SYSTEM MODIFICATIONS  
BIG CANOE POA  
JASPER, GA**



**FIGURE 1. SITE LAYOUT**

PROJECT NO: TCG11100

DECEMBER 2024



**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

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

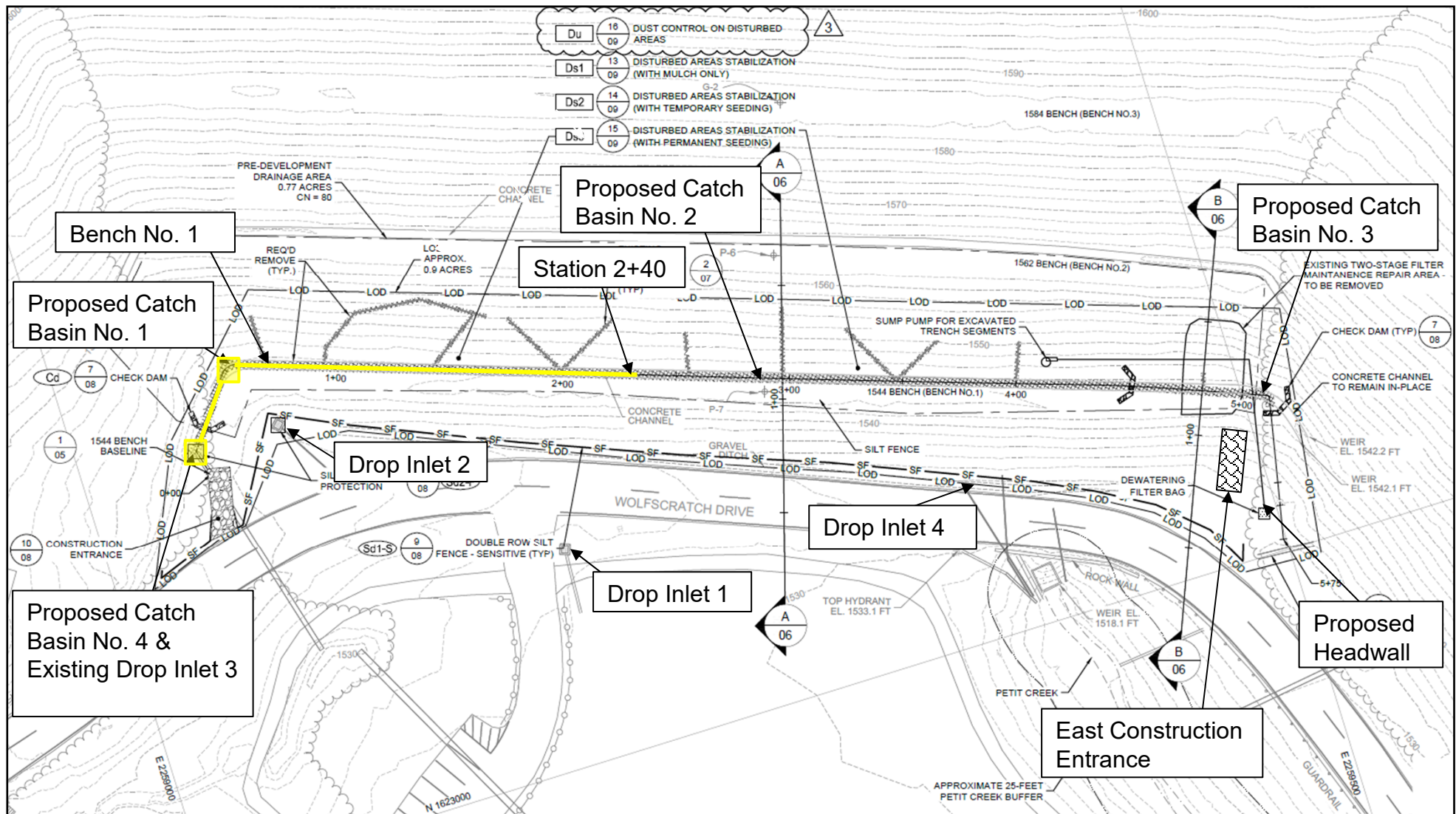


**FIGURE 2. SITE LAYOUT**

PROJECT NO: TCG11100

DECEMBER 2024





**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**

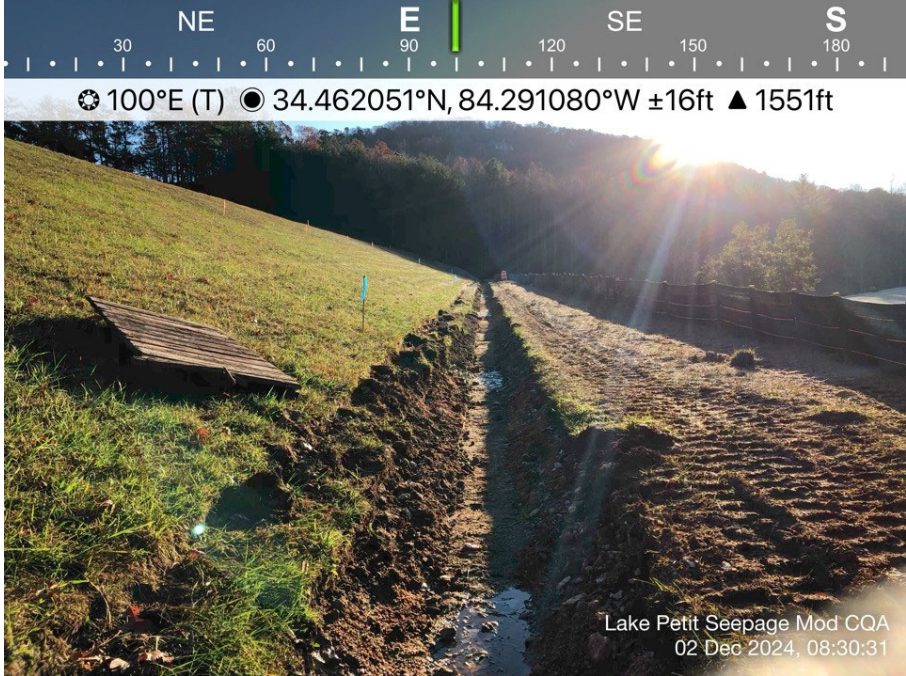

- INSTALLED CATCH BASINS
- INSTALLED FILTER DRAIN (CUMULATIVE)

# Attachment 1

## Photograph Log





Lake Petit Seepage Collection CQA: Monthly Construction Progress Report, Revision 1  
December 2024

PHOTOGRAPH LOG		
PROJECT AND SITE INFORMATION		
<b>PROJECT:</b> Lake Petit Dam Seepage Collection CQA	<b>DATE:</b> December 2024 Reporting Period	
<b>DESCRIPTION:</b> Seepage Collection System Modification	<b>PROJECT NO.:</b> TCG11100	<b>TASK NO.:</b> 01/02
<p>Photograph No. 01</p> <p>Description: Site conditions prior to start of excavation. Photo taken from the right abutment (facing east).</p>		
<p>Photograph No. 02</p> <p>Description: View of existing perforated CMP drain underlaying previously removed concrete drain.</p>		





Lake Petit Seepage Collection CQA: Monthly Construction Progress Report, Revision 1

December 2024

PHOTOGRAPH LOG		
PROJECT AND SITE INFORMATION		
PROJECT: Lake Petit Dam Seepage Collection CQA	DATE: December 2024 Reporting Period	
DESCRIPTION: Seepage Collection System Modification	PROJECT NO.: TCG11100	TASK NO.: 01/02
Photograph No. 03  Description: View of indicator dye.		
Photograph No. 04  Description: View of the removed CMP near Station 3+00. Note perforations in pipe.		





Lake Petit Seepage Collection CQA: Monthly Construction Progress Report, Revision 1  
December 2024

PHOTOGRAPH LOG		
PROJECT AND SITE INFORMATION		
<b>PROJECT:</b> Lake Petit Dam Seepage Collection CQA	<b>DATE:</b> December 2024 Reporting Period	
<b>DESCRIPTION:</b> Seepage Collection System Modification	<b>PROJECT NO.:</b> TCG11100	<b>TASK NO.:</b> 01/02
Photograph No. 05  Description: View of existing DI3 and CMP at the location of proposed CB4.		
Photograph No. 06  Description: View of the installed CB4.		



Lake Petit Seepage Collection CQA: Monthly Construction Progress Report, Revision 1  
December 2024

PHOTOGRAPH LOG			
PROJECT AND SITE INFORMATION			
<b>PROJECT:</b> Lake Petit Dam Seepage Collection CQA		<b>DATE:</b> December 2024 Reporting Period	
<b>DESCRIPTION:</b> Seepage Collection System Modification		<b>PROJECT NO.:</b> TCG11100	<b>TASK NO.:</b> 01/02
Photograph No. 07  Tee fitting connecting an existing 4-in. HDPE to the 10-in. CMP, located east of CB1.			
Photograph No. 08  Description: View trench template being used to control the placement of No. 89 stone over the 10-in. ADS N-12 pipe at CB4.			





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PHOTOGRAPH LOG			
PROJECT AND SITE INFORMATION			
<b>PROJECT:</b> Lake Petit Dam Seepage Collection CQA		<b>DATE:</b> December 2024 Reporting Period	
<b>DESCRIPTION:</b> Seepage Collection System Modification		<b>PROJECT NO.:</b> TCG11100	<b>TASK NO.:</b> 01/02
Photograph No. 09  CMP west of CB1. Note, pipe was clogged and no flow was observed.			
Photograph No. 10  Existing CMP tee fitting located east of CB1 near Station 0+75. The tee fitting connected the existing CMP to DI2.			



Lake Petit Seepage Collection CQA: Monthly Construction Progress Report, Revision 1  
December 2024

PHOTOGRAPH LOG		
PROJECT AND SITE INFORMATION		
PROJECT: Lake Petit Dam Seepage Collection CQA		DATE: December 2024 Reporting Period
DESCRIPTION: Seepage Collection System Modification		PROJECT NO.: TCG11100 TASK NO.: 01/02
Photograph No. 11	<div><div><div>NE</div><div>E</div><div>SE</div><div>S</div></div><div><div>30</div><div>60</div><div>90</div><div>120</div><div>150</div><div>180</div></div></div> <div>☀ 106°E (T) ● 34°27'43"N, 84°17'28"W ±13ft ▲ 1545ft</div>  <div>08 Dec 2024, 13:18:01</div>	
Photograph No. 12	<div>East Elevation</div> <div>☀ 286°W (T) ● 34°27'43"N, 84°17'27"W ±16ft ▲ 1545ft</div>  <div>12 Dec 2024, 14:14:16</div>	



Lake Petit Seepage Collection CQA: Monthly Construction Progress Report, Revision 1  
December 2024

PHOTOGRAPH LOG			
PROJECT AND SITE INFORMATION			
<b>PROJECT:</b> Lake Petit Dam Seepage Collection CQA		<b>DATE:</b> December 2024 Reporting Period	
<b>DESCRIPTION:</b> Seepage Collection System Modification		<b>PROJECT NO.:</b> TCG11100	<b>TASK NO.:</b> 01/02
Photograph No. 13  Description: View of backfilled trench drain, facing west towards the right abutment.			
Photograph No. 14  Description: View of completed trench drain up to approximately Station 1+60.			



Lake Petit Seepage Collection CQA: Monthly Construction Progress Report, Revision 1  
December 2024

PHOTOGRAPH LOG			
PROJECT AND SITE INFORMATION			
<b>PROJECT:</b> Lake Petit Dam Seepage Collection CQA		<b>DATE:</b> December 2024 Reporting Period	
<b>DESCRIPTION:</b> Seepage Collection System Modification		<b>PROJECT NO.:</b> TCG11100	<b>TASK NO.:</b> 01/02
<p>Photograph No. 15</p> <p>Description: View of installed sump pump at approximately Station 2+40.</p>			
<p>Photograph No. 16</p> <p>Description: View of layers of installed trench drain (stone over pipe in foreground, sand over stone in center, and sand backfill at top of photo).</p>			



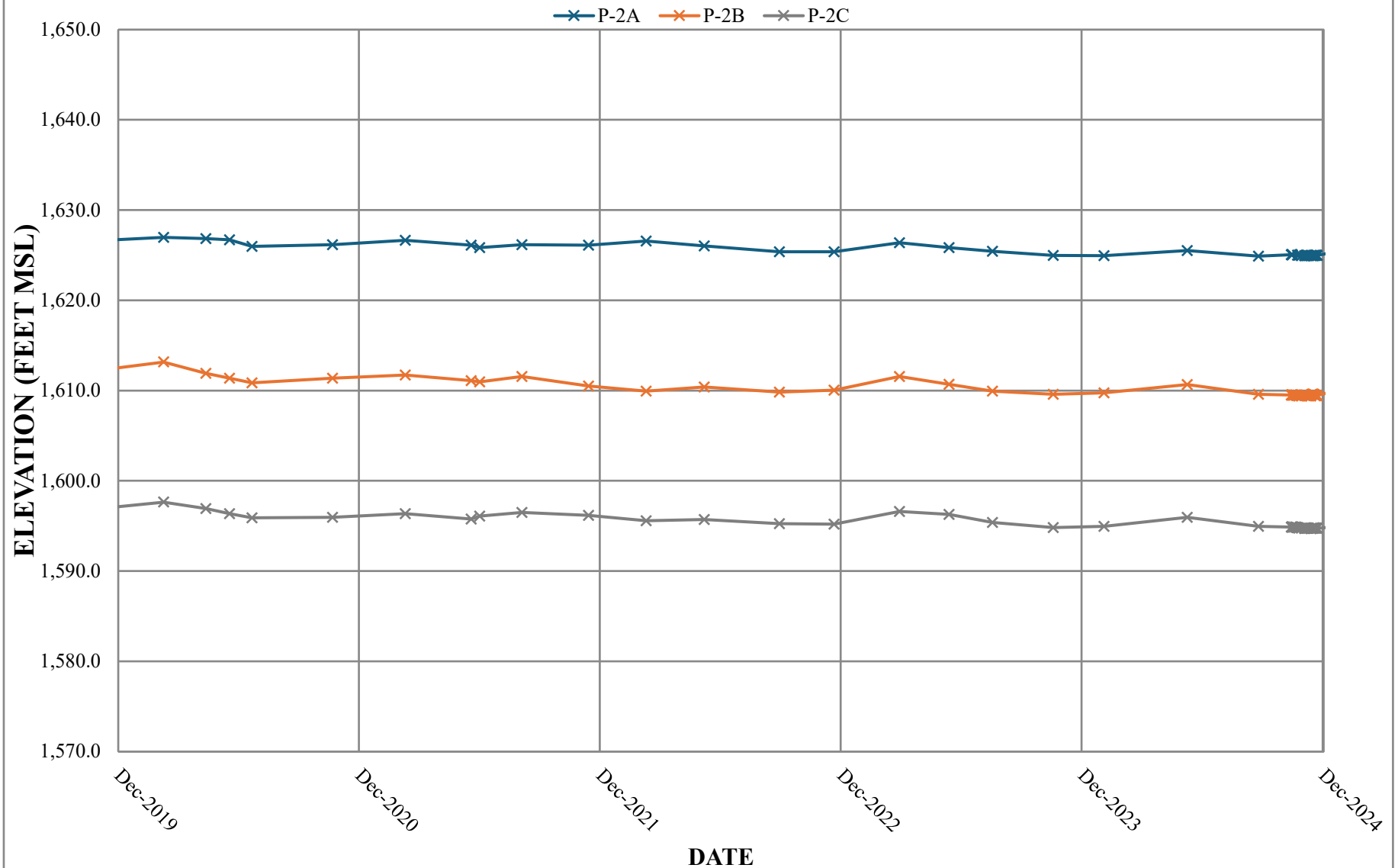
Lake Petit Seepage Collection CQA: Monthly Construction Progress Report, Revision 1  
December 2024

PHOTOGRAPH LOG			
PROJECT AND SITE INFORMATION			
<b>PROJECT:</b> Lake Petit Dam Seepage Collection CQA		<b>DATE:</b> December 2024 Reporting Period	
<b>DESCRIPTION:</b> Seepage Collection System Modification		<b>PROJECT NO.:</b> TCG11100	<b>TASK NO.:</b> 01/02
<p>Photograph No. 17</p> <p>Description: View of subgrade preparation at approximately Station 2+20 to 2+30.</p>			
<p>Photograph No. 18</p> <p>Description: View of stabilized backfill and work area, taken from approximately station 2+40 and facing the right abutment.</p>			

# Attachment 2

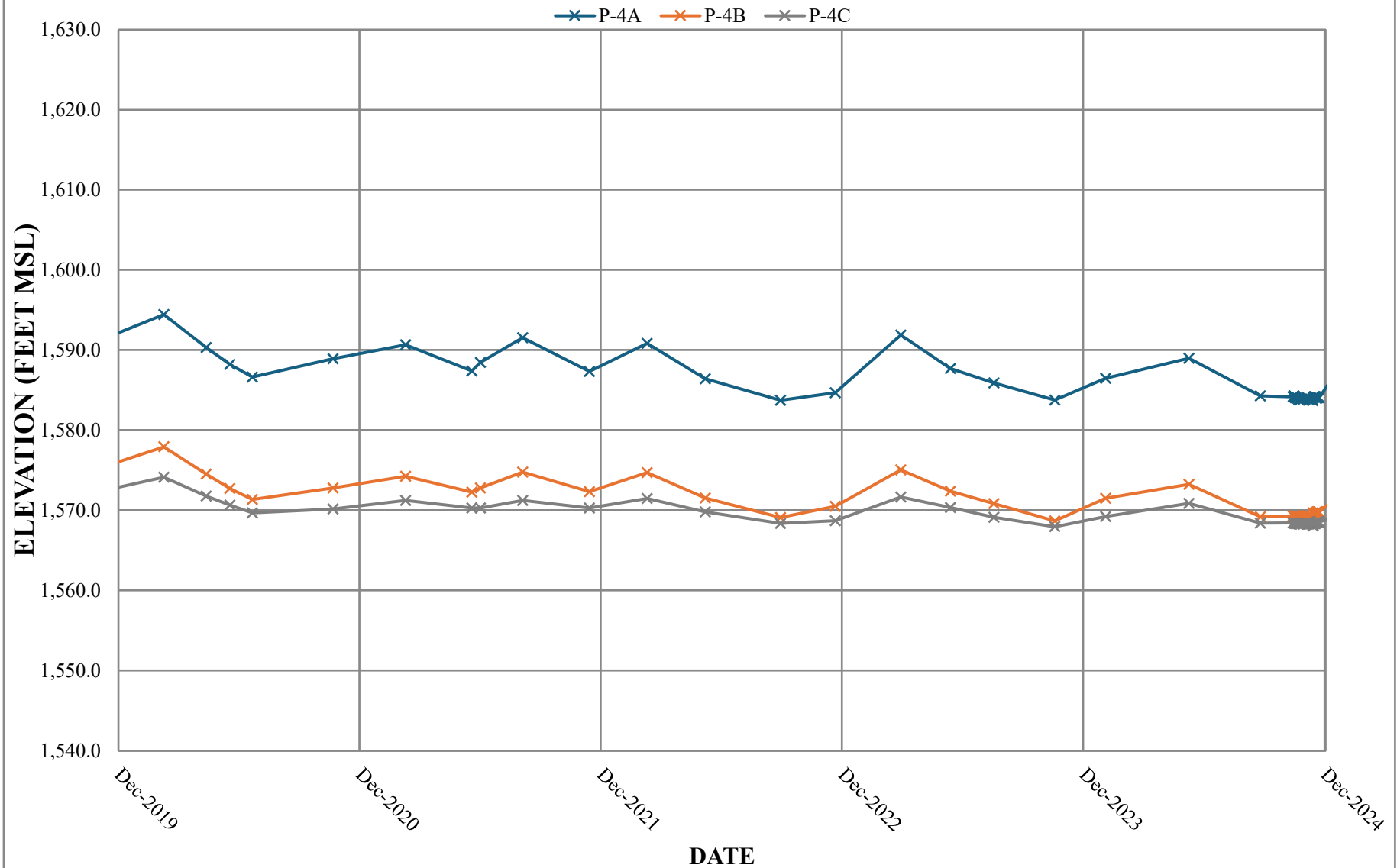
## Instrumentation

## Vibrating Wire Piezometer Water Elevations



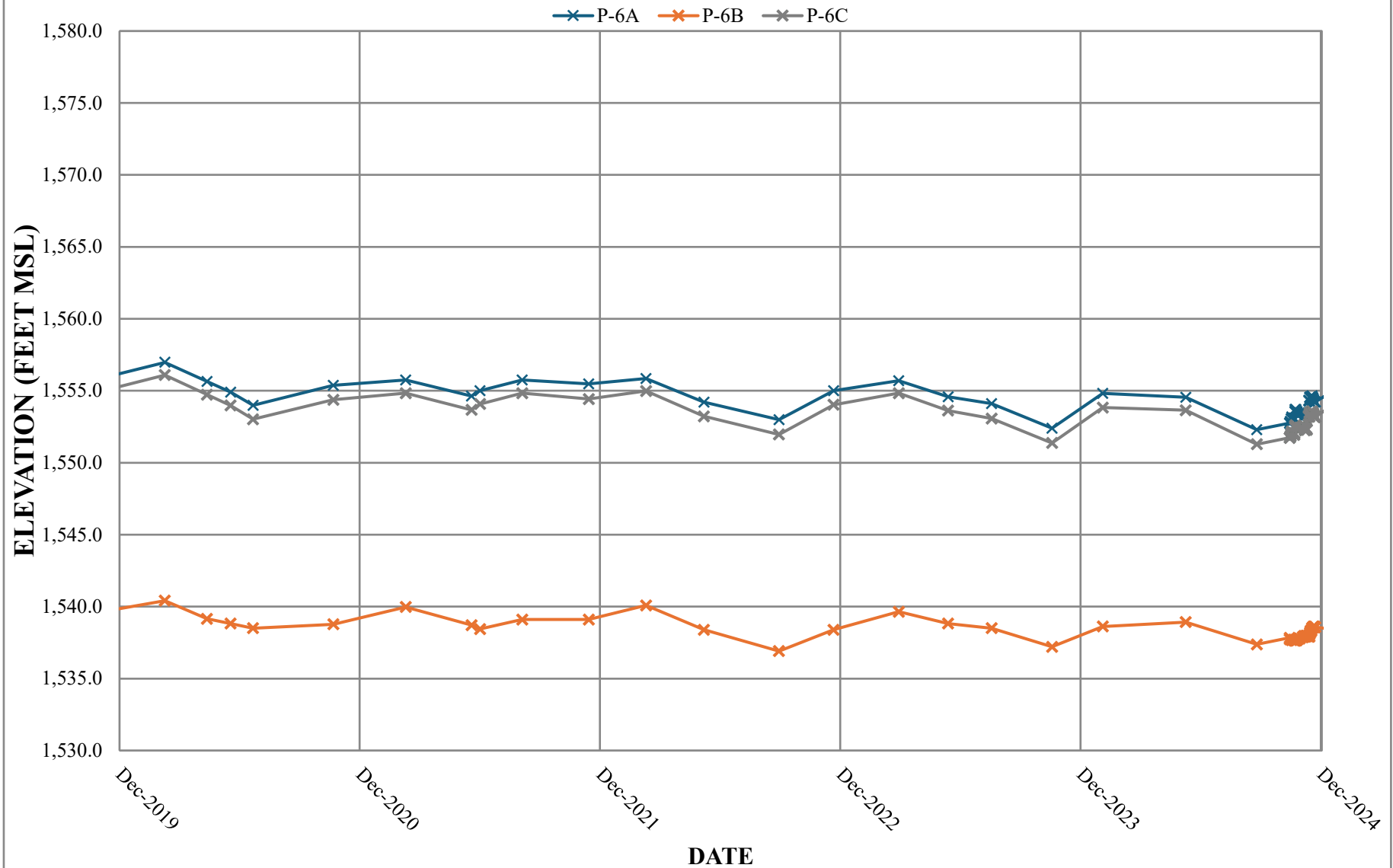
**Figure 1. Summary of Vibrating Wire Piezometer Data, P-2A, B, C (Dec. 2019 through Dec. 2024)**  
**Lake Petit Dam, Big Canoe, GA**

## Vibrating Wire Piezometer Water Elevations



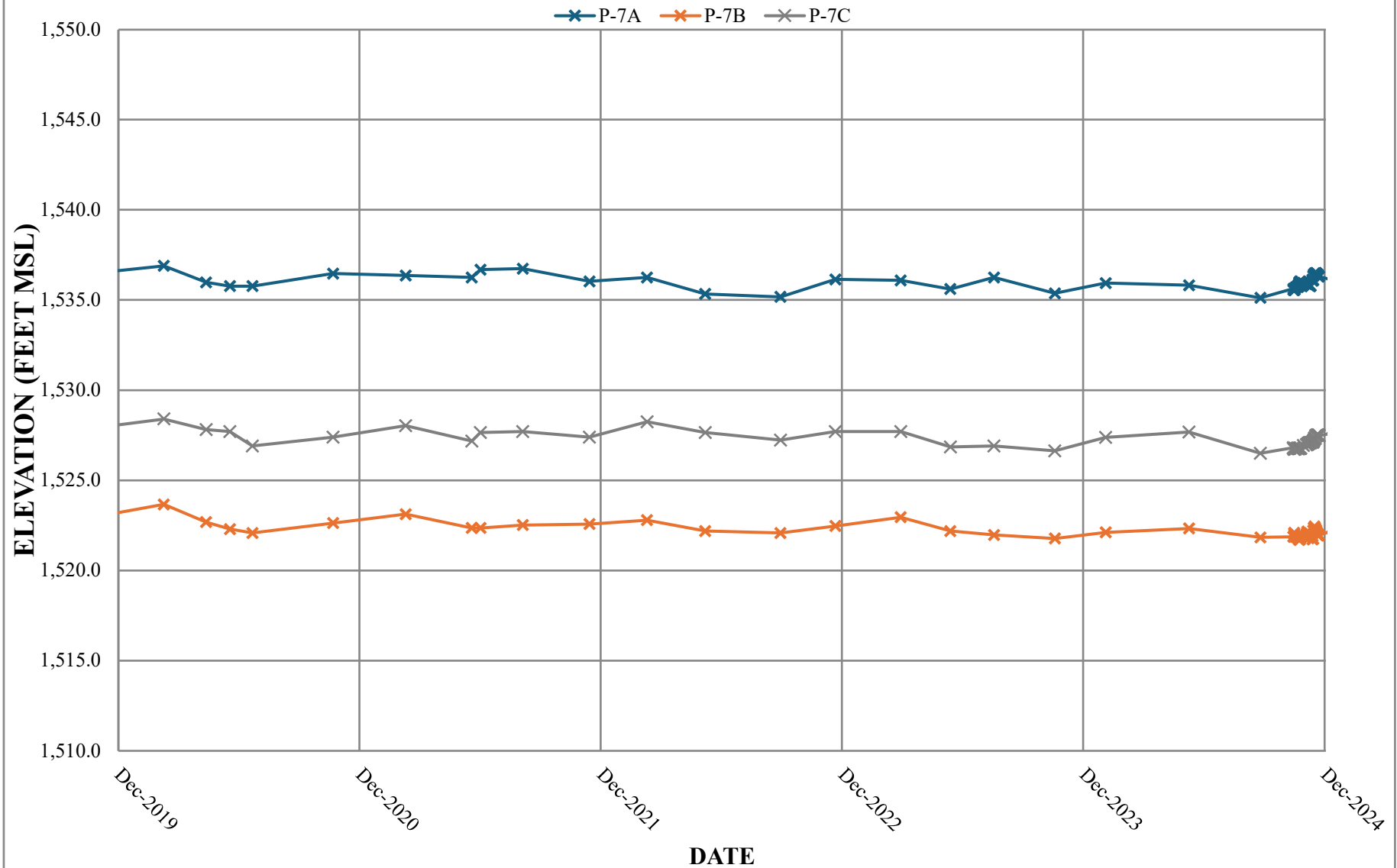
**Figure 2. Summary of Vibrating Wire Piezometer Data, P-4A, B, C (Dec. 2019 through Dec. 2024)**  
**Lake Petit Dam, Big Canoe, GA**

## Vibrating Wire Piezometer Water Elevations



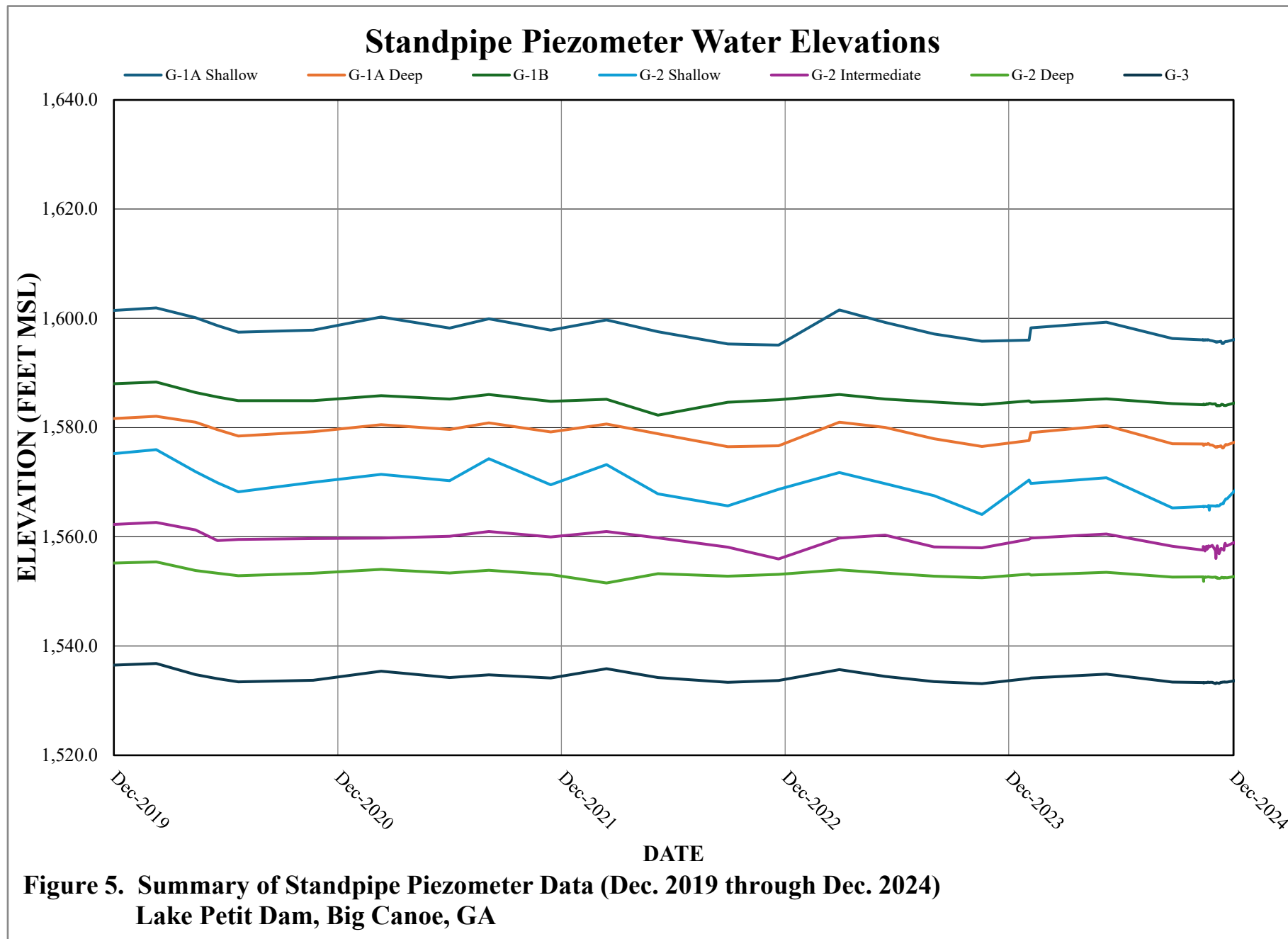
**Figure 3. Summary of Vibrating Wire Piezometer Data, P-6A, B, C (Dec. 2019 through Dec. 2024)**  
**Lake Petit Dam, Big Canoe, GA**

## Vibrating Wire Piezometer Water Elevations

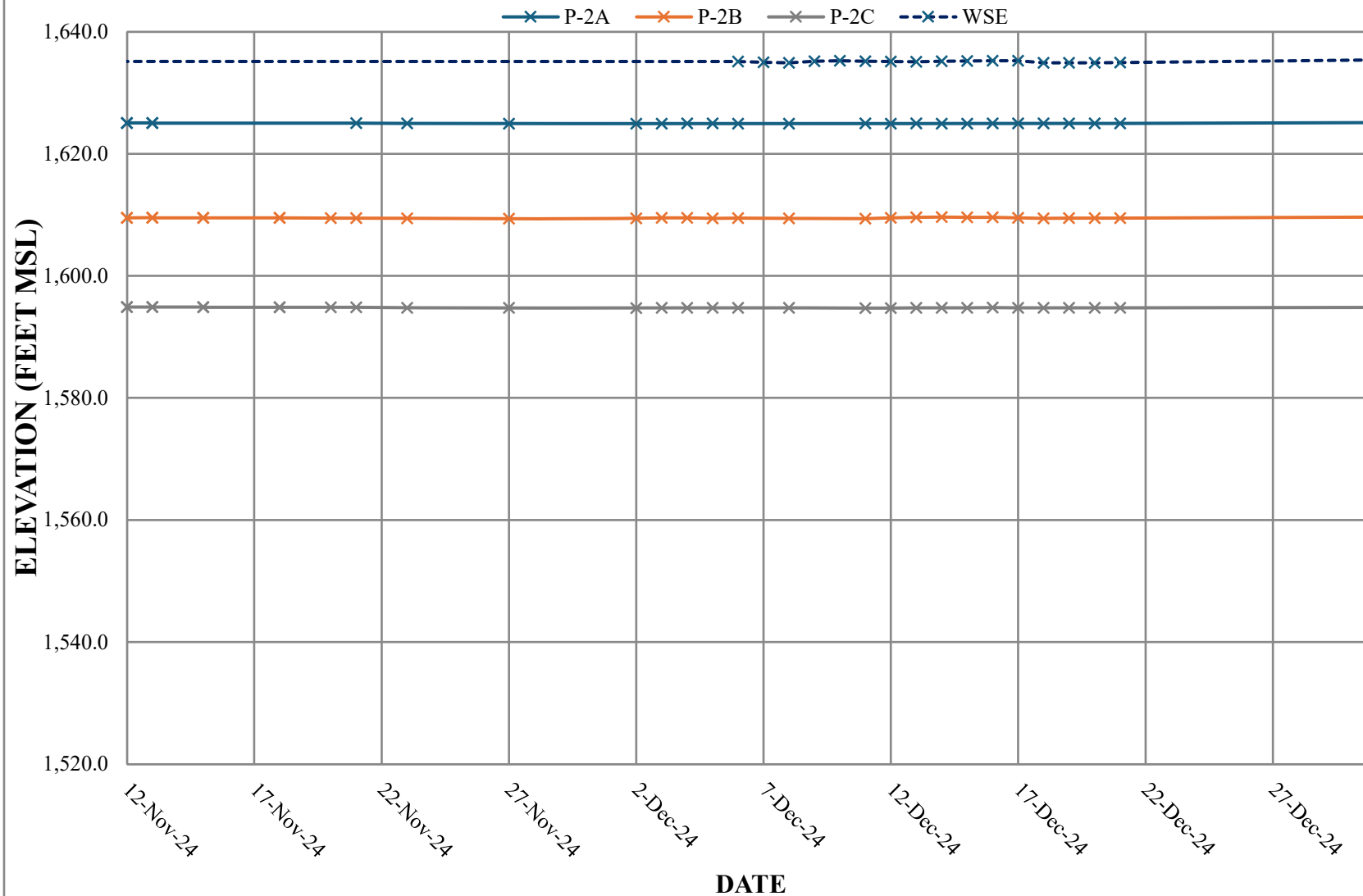


**Figure 4. Summary of Vibrating Wire Piezometer Data, P-7A, B, C (Dec. 2019 through Dec. 2024)**  
**Lake Petit Dam, Big Canoe, GA**





## Vibrating Wire Piezometer Water Elevations

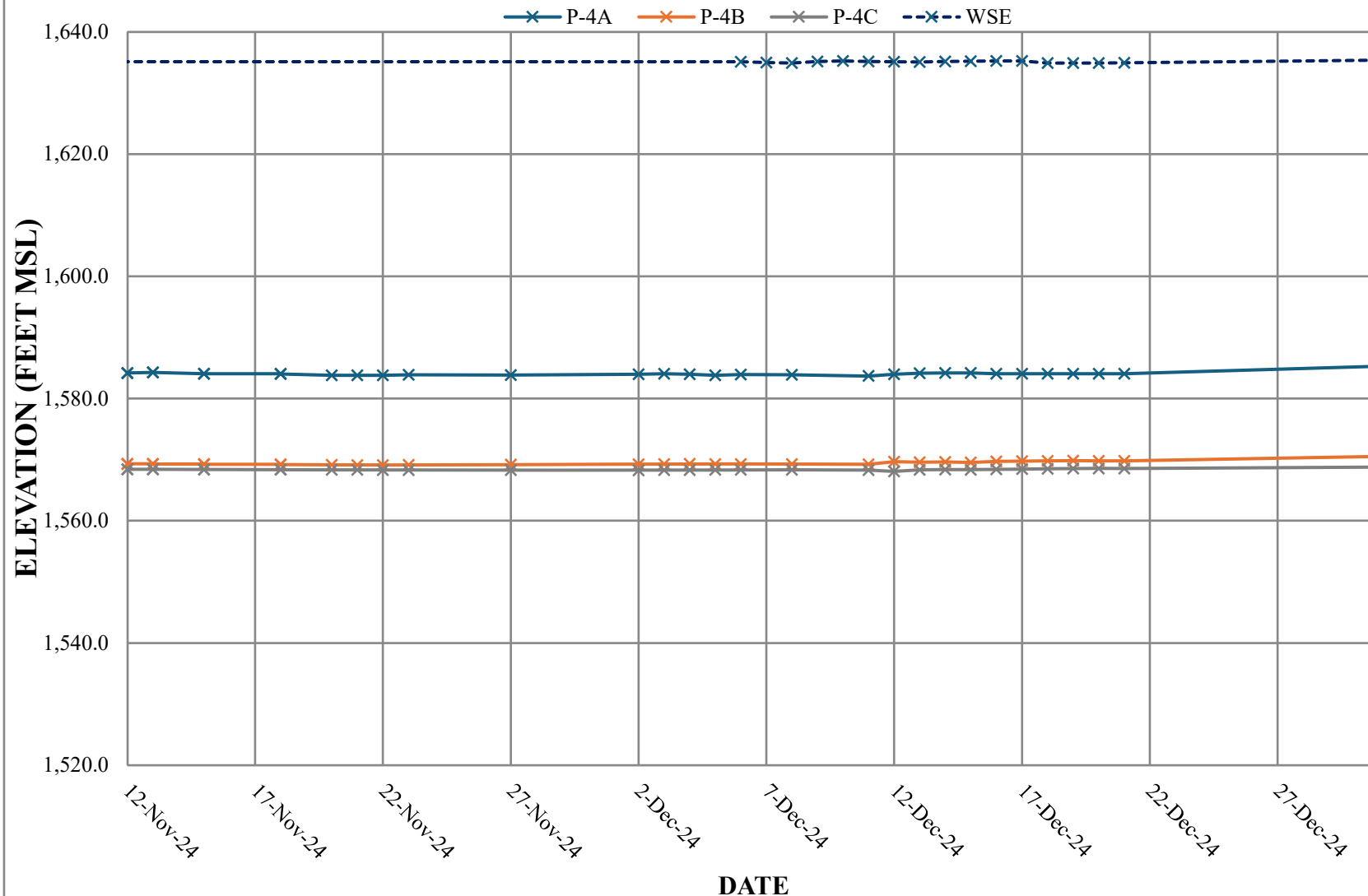


**Figure 6. Summary of Vibrating Wire Piezometer Data, P-2A, B, C (Nov. 2024 through Dec. 2024)**

**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.

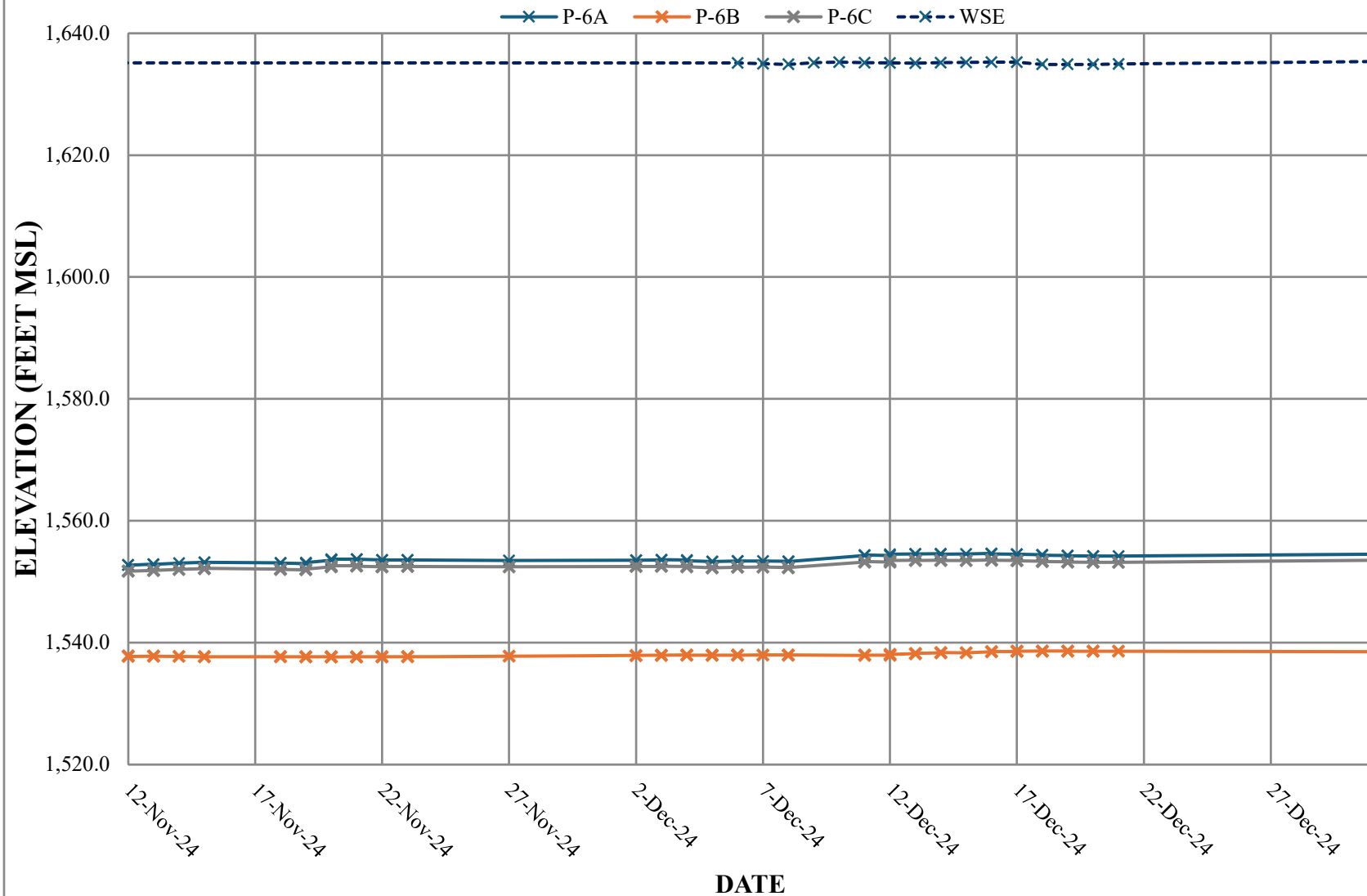
## Vibrating Wire Piezometer Water Elevations



**Figure 7. Summary of Vibrating Wire Piezometer Data, P-4A, B, C (Nov. 2024 through Dec. 2024)**  
**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.

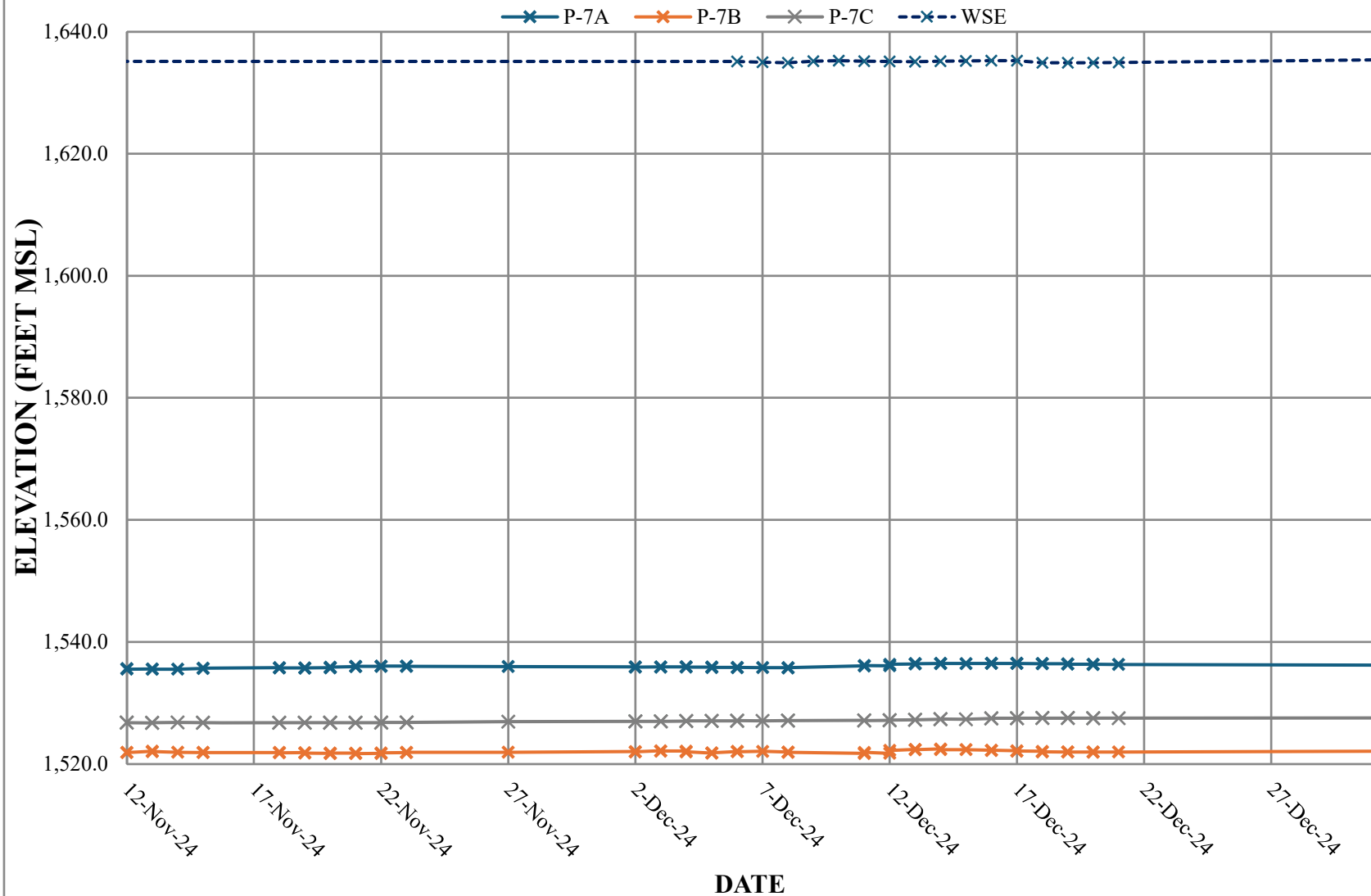
## Vibrating Wire Piezometer Water Elevations



**Figure 8. Summary of Vibrating Wire Piezometer Data, P-6A, B, C (Nov. 2024 through Dec. 2024)**  
**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.

## Vibrating Wire Piezometer Water Elevations



**Figure 9. Summary of Vibrating Wire Piezometer Data, P-7A, B, C (Nov. 2024 through Dec. 2024)**  
**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.

