

Annual Surveillance Report January 2022 to December 2022 for Rattlesnake Canyon Dam DSOD Dam No. 1029-003

Irvine, California

Submitted to:
Irvine Ranch Water District
Dams & Storage
15600 Sand Canyon Avenue
Irvine, CA 92618



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May 2, 2023
GEI Project No. 1901888



Consulting May 2, 2023
Engineers and GEI Project No. 1901888
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Ms. Danielle Drake,
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Irvine Ranch Water District
15600 Sand Canyon Avenue
Irvine, CA 92618

**Re: Rattlesnake Canyon Dam, DSOD Dam No. 1029-003,
Annual Surveillance Report from January 2022 to December 2022**

Dear Ms. Drake:

GEI Consultants, Inc. (GEI) is pleased to submit this Annual Surveillance Report for Rattlesnake Canyon Dam covering January 2022 to December 2022. This report is part of the scope of work described under our Professional Service Agreement between Irvine Ranch Water District (District) and GEI Consultants Inc. (GEI) dated February 11, 2019.

We appreciate this opportunity to provide the District with our services. Please contact Emerson Revolorio at erevolorio@geiconsultants.com or Rich Sanchez at rsanchez@geiconsultants.com with any questions.

Sincerely,

GEI CONSULTANTS, INC.



Richard Sanchez, P.E.
Principal Engineer



Emerson Revolorio, P.E.
Project Engineer

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Inspection Photographs of Rattlesnake Canyon Dam - December 13, 2022

Reservoir Dam Valve Exercising Table

CNC Survey Report

Acronyms and Abbreviations

AC	asphalt concrete
AF	acre-feet
CML&C	cement-mortar-lined and coated
District	Irvine Ranch Water District
DSOD	State of California, Department of Water Resources, Division of Safety of Dams
El, EL, Elev	elevation
ft	feet
GEI	GEI Consultants, Inc.
gpm	gallons per minute
gal/min	gallons per minute
H:V	Horizontal to Vertical
ID	identification
in.	inches
liter/min	liters per min
MW	monitoring well
NAVD 88	North American Vertical Datum of 1988
NGVD 29	National Geodetic Vertical Datum of 1929
No.	number
NOAA	National Oceanic and Atmospheric Administration
P.E.	Professional Engineer
P or Piez	Piezometer
RCP	reinforced concrete pipe
Res.	Reservoir
TIC	The Irvine Company
VW or VB	Vibrating Wire
W.S.	water surface
YR	year

1.0 Introduction and Background

1.1 General

This report presents the results of the dam safety monitoring and surveillance program for Rattlesnake Canyon Dam conducted by the Irvine Ranch Water District (District) and GEI Consultants, Inc. (GEI) between January 2022 and December 2022. It includes a review of previous surveillance reports, a compilation of the field measurements, observations, and conclusions related to the general condition and safety of the dam. In addition, recommendations are provided for continued operation, surveillance, and monitoring of the dam. This report is submitted as part of the jurisdictional requirements of the State of California, Department of Water Resources, Division of Safety of Dams (DSOD).

Table 3 provides details of active and abandoned piezometers, observation wells, and seepage flow points. Tables 4 through 9 present field measurements of piezometer water levels, reservoir water surface elevations, seepage flow rates, and horizontal and vertical movement based on survey data collected at Rattlesnake Canyon Dam. Piezometric levels and seepage flow rates with respect to reservoir water surface elevations are shown in the figures for the two-year period (January 2021 through December 2022), as well as for a 10 year historical period (January 2012 through December 2022). The historical plots reflect long-term trends and overall performance of the dam and reservoir. The use of long-term and short-term plots help to identify any adverse trends or significant deviations more easily in the data. Tables and graphs are also presented to show the results of horizontal and vertical movement surveys from 1985 through 2022. No surveys were conducted in calendar years 2017 and 2021. The survey for the 2022 review period was performed in October 2022.

The vertical datum indicated on the as-built plans and project documents for Rattlesnake Canyon Dam is National Geodetic Vertical Datum of 1929 (NGVD 29). The reservoir water surface elevation, piezometer instrumentation data and vertical survey data are currently based on NGVD 29.

1.2 Dam and Reservoir

Rattlesnake Canyon Dam is a homogeneous earthfill dam with a chimney drain. It is located on Rattlesnake Canyon Wash in Irvine, California. The dam was completed in 1959.

Modifications to the dam have occurred over the years. Currently, the height of the dam is 79 ft with a crest length of 980 ft and a crest width of 15 ft. The crest of the dam is at Elevation 418.0 ft. Asphalt Concrete (AC) covers the crest of the dam.

The upstream face of the dam has a slope gradient of 3H:1V (Horizontal: Vertical) and a 20-foot-wide bench at approximate Elevation 385.0 ft, per AECOM's 2015 annual surveillance report. The upper portion of the upstream slope is lined with 2-inch-thick AC for erosion protection extending from the crest of the dam to the inside edge of the bench (i.e., not including the bench).

The downstream face of the dam has a slope gradient of 2.5H:1V and also has a 20-foot-wide bench at approximate Elevation 385.0 ft, per AECOM's 2015 annual surveillance report. The downstream slope is covered with grass.

The channel section of the dam is founded on alluvium which overlies the bedrock. An upstream blanket and seepage drains along the downstream toe of the dam were installed to help control and monitor seepage.

The reservoir has a watershed drainage area of about two square miles. The reservoir has a maximum storage capacity of 1,480 acre-feet at the spillway crest Elevation of 412 ft. Due to concerns regarding the stability of the dam under seismic loading conditions, the maximum reservoir level is currently restricted by DSOD to Elevation 406.0 ft, which is 6.0 ft below the spillway crest. Therefore, total freeboard under the DSOD restriction is 12 ft.

1.3 Spillway

Located on the right abutment, the spillway consists of an AC lined approach section, an ungated ogee weir, and a concrete lined side channel. The open concrete lined trapezoidal channel has a 15-foot-wide bottom with 1H:1V side slopes. The spillway channel conveys the water to a stilling basin at the bottom of the spillway chute which then flows into an unlined spillway channel. As noted above the spillway crest is at Elevation 412.0 ft (NGVD 29), which provides 6 ft of freeboard without the restriction.

1.4 Outlet Works

The outlet works, located near the left abutment, consist of an inclined intake pipe supported on the upstream face of the dam with four intake valves (identified as "Main, Middle, Top, and Bottom") at various elevations. The inlet valves are manually operated by the hand wheel controls located at the upstream edge of the crest of the dam. The intake pipe connects to a 24-inch-diameter steel outlet pipe near the upstream toe. The outlet pipe extends approximately 460 ft under the left portion of the dam to a 24-inch-diameter gate valve located in the Outlet Meter Vault near the downstream toe of the dam. Adjacent to the access road and approximately 15 ft downstream of the Outlet Meter Vault is the Outlet Valve Vault where the 24-inch-diameter line has a 24-inch-diameter butterfly valve that serves as an emergency blowoff valve (Figure 1).

The District provided a Reservoir Dam Valve Exercising summary table which notes 5/9/2022, as the date the valves were exercised during 2022. The table is provided in the Appendix of this report.

2.0 Instrumentation Measurements

2.1 General

There are 16 piezometers, eight seepage subdrains, and seven survey monuments that are being monitored at Rattlesnake Canyon Dam. The piezometer count includes Observation Well VBW/OW-3 which was discontinued in August 2016 due to adjacent construction next to the spillway, but the District resumed readings of this observation well in June 2018.

District personnel measure the water levels in the piezometer, observation wells, and reservoir, and seepage flow rates from the eight subdrains monthly and immediately following significant seismic events. The survey monuments are surveyed annually by a licensed surveyor under contract with the District. Precipitation is measured at an on-site rain gauge.

Figure 1 is a Site and Instrumentation Plan showing the layout of the dam and appurtenances, as well as the locations of the piezometers, seepage collection subdrains, and survey monuments. The left and right designations are as viewed looking downstream.

Throughout this report, instrumentation measurements and readings that remained within historical limits and followed historical trends are considered normal. Historical limit is classified as the range between maximum and minimum water levels within the past ten years.

Based on the ten-year historical data from January 2012 through December 2022, the reservoir water surface elevation varied from a minimum Elevation of 358.7 ft to a maximum Elevation of 403 ft. During the review period (2022), the reservoir water surface elevation varied from a minimum Elevation of 382 ft to a maximum Elevation of 393.2 ft (18.8 ft below the spillway). The reservoir elevations that were read on the same dates as the instrumentation are shown in Tables 4 and 5. The reservoir water surface elevations during the 2022 review period remained within historical limits.

2.2 Piezometers

There are 16 open-well piezometers currently being monitored at Rattlesnake Canyon Dam (P-1A, P-2, P-3A, P-30B, P-35A/B/C, P-52, P-61, P-62, P-63, P-64, P-65, P-66, P-67, and VBW/OW-3). An open-well piezometer is a small-diameter (~2-inches in diameter) well used mainly to measure water levels. It is typically installed as a casing in a vertical borehole and has a discrete perforated zone near its bottom to enable monitoring of changes in groundwater levels within that zone. More than one piezometer can be installed within a single, larger-diameter (~4-inches in diameter) outer well casing. These groups of piezometers are often referred to as multi-stage or nested piezometers. At Rattlesnake Canyon Dam, currently Piezometers P-30A & B and

P-35A, B & C are nested, each having two or three piezometers in them, designated as A, B, or C. Piezometers P-1A & B are also nested, but Piezometer P-1B has been abandoned. The tip of each piezometer is generally placed at its own discrete depth range within the outer well casing. The outer well casing is perforated along the vertical zones corresponding to the depths of the piezometer tips.

Table 3 lists information about each piezometer and observation well indicating whether they are operational or abandoned. The location of each piezometer and observation well is shown on Figure 1. Table 4 provides the reservoir water surface elevation and piezometer water levels since January 2007. Figures 3 through 7 are graphical presentations of piezometer water levels and reservoir water surface elevations during the two-year period from January 2021 through December 2022. Figures 8 through 12 are graphical presentations that cover a historical period from January 2012 through December 2022.

Presented below for each piezometer is a summary of the water level measurements during 2022 and a discussion of the historical trends and changes that were noted in the reported measurements.

Table 1 provides the ranges between maximum and minimum water levels in each piezometer based on trends from the ten-year historical data from January 2011 through December 2021, the ranges between maximum and minimum water levels during the 2021 review period, and the ranges between maximum and minimum water levels during the 2022 review period. Outlier readings with isolated spikes or drops were not considered reliable (erroneous reading) and were not included in the maximum and minimum water level range.

Table 1. Piezometers – Maximum and Minimum Water Level Ranges

Piezometer	2011-2021 10-year Maximum and Minimum Range (ft)	2021 Review Period Maximum and Minimum Range (ft)	2022 Review Period Maximum and Minimum Range (ft)	Comment
P-1A	5.3	0.3	0.5	
P-2	N/A	N/A	N/A	Considered dry and could have some blockage. It was verified as dry during inspection.
P-3A	9.3	5.2	11.6	Reading on 5/24/2022 was 3.2 ft above historical max. Piezometer water level returned back to trend and historic range values.
P-30A	N/A	N/A	N/A	Abandoned.
P-30B	3.7	1.9	3.4	There were 5 readings during the 2022 review period that were above the historical max by 0.4 to 1.4 ft. Piezometer water level returned back to trend and historic range values.
P-35A	1.0	0.3	0.3	Readings reported have been near the record bottom of piezometer tip elevation or below the record bottom of piezometer tip elevation.
P-35B	8.5	4.6	4.1	Reading on 8/25/2022 was 13.9 ft above the historical max. This was an isolated reading and the piezometer water level returned back to within historic range values.
P-35C	3.6	0.9	0.9	Readings reported have been near the record bottom of piezometer tip elevation.
P-52	21.6	10.9	11.7	Reading on 7/26/2022 was 7.1 ft below the historical min and near the record bottom of piezometer tip elevation. Reading was omitted because this was an isolated reading and the piezometer water level returned back to within historic range values.
P-61	10.8	4.7	2.2	
P-62	21.7	8.2	10.7	
P-63	9.8	0.9	1.4	Water levels have been gradually increasing and stabilizing. Reading on 10/25/2022 omitted due to isolated drop. Reading was taken during inspection to verify the piezometer water level.
P-64	9.4	5.2	4.6	
P-65	10.6	3.1	4.9	Reading on 8/25/2022 omitted due to isolated spike. Water level returned back to trend and historic range values.
P-66	7.4	4.3	3.8	
P-67	6.4	3.2	3.0	
VBW/OW-3	14.7	0.4	0.7	

Piezometer P-1A is located on the crest of the dam, near the maximum section of the dam. The tip of Piezometer P-1A is located near the underlying bedrock below the dam, and measures water surface levels in the alluvium. The length of the piezometer was extended in January 2005 by about two ft. The water levels observed in Piezometer P-1A during 2022 were within historical levels (Figure 4). The water level in Piezometer P-1A has gradually dropped by approximately 5 ft over the last 10 years due to the reservoir level now being operated 5 to 10 ft lower than its 2011 levels.

Piezometer P-2 is located on the crest of the dam, near the maximum section of the dam and has its tip located in the upper embankment fill noted at El 363.4. The piezometer was cleaned in 2015 but levels returned to the same levels prior to cleaning, see Figure 9. In 2022, Piezometer P-2 levels did not have any significant changes. Based on prior measurement notes, see Table 3, P-2 is considered dry but could have some blockage at approximately El 403 (Figure 4). A resurvey of the piezometer's elevations (top and tip) and examination of any blockage is recommended. Piezometer P-3A is located on the downstream bench at El 385 ft and its tip is located in the foundation bedrock. The piezometer was cleaned in 2008 and again in 2015. Piezometer P-3A tracked the reservoir level in 2022. Water levels recorded in Piezometer P-3A during the report period were within historical limits (Figure 10).

Piezometer P-30A is located on the crest of the dam and its tip located within the embankment material at El 371.7. Several attempts were made to clean blockage from this piezometer in 2008 and the District confirmed in 2015 that the standpipe is blocked at a shallow depth. In April 2016, AECOM recommended Piezometer P-30A be abandoned due to long-term blockage. GENTERRA previously recommended another attempt to clear the blockage in Piezometer P-30A before deciding to abandon it altogether. GEI concurs it should be abandoned due to its blockage at a shallow depth and having other functional piezometers in the vicinity and along the maximum section of the dam.

Piezometer P-30B is located on the crest of the dam and its tip is located within the embankment material at El 337.1. The piezometer was cleaned in 2008 which successfully unblocked it. In July 2015, the piezometer was cleaned again. Piezometer P-30B responded to the reservoir level changes in 2022 (Figure 5). During the 2022 review period, there were five reported readings that were above the historical max by 0.4 to 1.4 ft. The piezometer water levels returned back to within historical limits and continued to respond to the reservoir level changes (Figure 10).

Piezometers P-35A, P-35B, and P-35C are located on the downstream bench at Elevation 385 ft. Piezometer P-35A measures water levels in the embankment material downstream of and above the inclined chimney drain. The water levels did not fluctuate much throughout 2022 and remained generally "dry", registering only 0.3 ft of water depth at Elevation 357.6 ft. Piezometers P-35B and P-35C are located in the sand drain and chimney drain, respectively. Both showed minor fluctuations throughout the review period responding to reservoir level changes. For Piezometer P-35B, the range between maximum (339.65 ft) and minimum (335.55 ft) levels was 4.1 ft. The exception was on 8/25/2022, which is explained in Table 1. GEI believes this was an isolated drop. The water levels observed in Piezometers P-35A, B, and C during the 2022 review period were within historical levels (Figure 8).

Piezometer P-52 is located on the crest of the dam with its tip in the foundation bedrock near the right abutment. The District cleaned this piezometer in 2008 and succeeded in unblocking the piezometer to a depth of 58.5 ft. Piezometer P-52 tracked the reservoir level closely in 2022 (Figure 7). The exception was on 7/26/2022, which is explained in Table 1. Water levels

recorded in Piezometer P-52 during the 2022 report period were within historical limits (Figure 12).

Piezometer P-61 is located near the downstream toe of the dam at the contact with the left abutment, with its tip in the foundation bedrock. Piezometer P-61 was installed in late 2004 and readings began on January 18, 2005. Piezometer P-61 tracked the reservoir level slightly in 2022 (Figure 7). Water levels recorded in Piezometer P-61 during the 2022 report period were within historical limits (Figure 12).

Piezometer P-62 is located in the right abutment stability berm with its tip in the foundation bedrock. Piezometer P-62 tracked the reservoir level closely in 2022 (Figure 7). Water levels recorded in Piezometer P-62 during the 2022 report period were within historical limits (Figure 12).

Piezometer P-63 is located on the crest of the dam with its tip in the left abutment bedrock at El 335. The piezometer was cleaned in 2008 and again in 2015 but the water level readings did not show any response as a result of the cleaning. In April 2016, AECOM recommended that Piezometer P-63 be abandoned due to long-term blockage. In November 2018, GENTERRA recommended a maintenance cleaning to further evaluate the condition of Piezometer P-63. GENTERRA also recommended the elevation of top of casing be surveyed and to measure the depth to the bottom of piezometer periodically to verify that the casing was not blocked, (Genterra, 2018). The water level of Piezometer P-63 did drop by about 17 ft following a 25-ft drop in the reservoir water level during February 2018. Water levels recorded in Piezometer P-63 during the 2022 report period stabilized at about El 362 with the reservoir level averaging near El 386 versus a reservoir level near El 400 in prior years (Figure 12). A reading was taken during the inspection to verify the piezometer water level. Continue monthly monitoring of this piezometer.

Piezometer P-64 is located on the downstream bench at Elevation 385 ft with its tip in foundation alluvium at El 302. Piezometer P-64 was installed in late 2004 and readings began on January 18, 2005. Piezometer water levels continue to be responsive to reservoir water level changes. Piezometer P-64 tracked the reservoir levels in 2022 (Figure 4). Water levels recorded in Piezometer P-64 during the 2022 report period were within historical limits (Figure 9).

Piezometer P-65 is located in the southern portion of the right abutment stability berm, to the south of P-62 and further away from the reservoir. Piezometer P-65 was installed in late 2004 and readings began on January 18, 2005. P-65 tracked and was responsive to the reservoir levels changes in 2022 (Figure 7). The exception was on 8/25/2022, which is explained in Table 1. Water levels recorded in Piezometer P-65 during the 2022 report period were within historical limits (Figure 12).

Piezometer P-66 is located at the downstream toe of the dam with its tip in the foundation bedrock. Piezometer P-66 was installed in late 2004 and readings began on January 18, 2005. Piezometer P-66 tracked and was responsive to the reservoir levels changes in 2022 (Figure 4). Water levels recorded in Piezometer P-66 during the 2021 report period were within historical limits and responsive to reservoir level changes. (Figure 9).

Piezometer P-67 is located at the downstream toe of the dam with its tip in the foundation. Piezometer P-67 was installed in late 2004 and readings began on January 18, 2005. Piezometer P-67 was responsive to reservoir level changes in 2022 (Figure 3). Water levels recorded in Piezometer P-67 during the 2022 report period were within historical limits and responsive to reservoir level changes (Figure 8).

Observation Wells VBW/OW-1, VBW/OW-2, and VBW/OW-3 (formerly identified as OW97-3, OW97-2, and OW97-1, respectively) are located to the north of the spillway. OW-1 and OW-2 were removed in August 2016 due to grading on a residential development in the area where the wells were located. Readings were discontinued at OW-3 in August 2016 due to the construction and were resumed on June 28, 2018. The bottom of OW-3 is noted at El 386.27. Based on the location of OW-3 (right abutment/north of the spillway) and its bottom tip El 386.27, Observation Well OW-3 is mostly considered dry. According to IRWD, OW-3 has been dry since the grading performed in August 2016. OW-3 is considered dry and shall be abandoned. Measured levels in Observation Well OW-3 during the 2022 report period are shown in Figure 11.

Based on GEI's review of the piezometer data, there are no indications of any dam safety concerns at the dam embankment, abutments, right abutment stability berm, or foundation. It is recommended that for those piezometers showing erratic readings in the future the District have the top elevations of the casings re-surveyed and re-measure the depth to the bottom of each piezometer to verify that the piezometers are not blocked to their as-built depth. GEI will continue to assist the District and closely monitor the water levels in each piezometer.

2.3 Seepage Flows

Several modifications to the seepage monitoring system have occurred over the years. Seepage flow rates from seven subdrains are currently being measured monthly at eight flow points by the District. Six subdrains (2, 3, 4, 5, 8 and 11) are monitored at six flow points (FP-2, FP-3, FP-4, FP-5, FP-8 and FP-11), which are assigned the same identification number as the drain. These six flow points are located downstream of the dam in the Seepage Vault shown on Figure 1. The remaining two flow points, FP-1 North and FP-1 South (or FP-1N and FP-1S), are read in Manhole No. 1, which is located about 600 ft downstream of the Seepage Vault structure.

The previously existing Manholes 2, 3, and 4, and Flow Points FP-9 and FP-10 were removed as part of the alterations to the dam. The existing Seepage Vault structure was constructed to replace the three manholes that were removed.

Flow Points FP-2, FP-3, and FP-4 collect seepage from the chimney drain within the dam. Flow Point FP-5 collects seepage from the Longitudinal Drain along the right portion of the downstream bench, as well as seepage from the Groin Drain along the right abutment contact. Flow Point FP-8 collects seepage from the toe drain (Subdrain 8). Flow Point FP-11 collects seepage from Subdrain 11 in the downstream right abutment contact.

Prior to April 2008, the seepage flow rate measured from Flow Point FP-1 was sometimes recorded as a combined measurement of Flow Points FP-9 and FP-10, and no record was kept of the individual readings. Since April 2008, the measurements of Flow Points FP-9 and FP-10 have been recorded separately as Flow Points FP-1 South and FP-1 North, respectively. Flow Point FP-1 North measures the seepage from the spillway stilling basin in Subdrain 10, and Flow Point FP-1 South represents the combined seepage from the Seepage Vault, which contains Subdrains 2, 3, 4, 5, 8, and now 11.

Historical seepage flow rates since 2007 at the subdrain flow points are listed in Table 4. Figures 13, 14, and 15 present the 2-year period seepage rates from January 2021 through December 2022, and Figures 16, 17, and 18 present the historical seepage rates since 2012.

Table 2 provides maximum and minimum flow rates from each drain based on trends from the ten-year historical data from January 2011 through December 2021, maximum and minimum flow rates during the 2021 review period, and maximum and minimum flow rates during the 2022 review period.

Table 2. Subdrain Flow Rates – Maximum and Minimum Flow Rate Ranges

Subdrain	2011-2021 10-year Maximum and Minimum (gpm)	2021 Review Maximum and Minimum (gpm)	2022 Review Period Maximum and Minimum (gpm)
FP-1 South	17.4 (3/29/2011) to 0	1.4 (10/27/2021) to 1.0 (2/25/2021)	2.2 (12/22/2022) to 0.71 (2/22/2022)
FP-1 North	9.3 (1/26/2016) to 0	1.9 (3/23/2021) to 0	2.0 (5/24/2022) to 0
FP-2	0.34 (8/21/2013) to 0	Dry	Dry
FP-3	1.9 (2/21/2019) to 0.35 (10/29/2013)	1.1 (6/30/2021) to 0.6 (10/27/2021)	1.1 (8/25/2022) to 0.54 (4/27/2022)
FP-4	1.3 (1/29/2020) to 0.23 (7/29/2021)	0.51 (10/27/2021) to 0.23 (7/29/2021)	0.51 (6/28/2022) to 0.3 (4/27/2022)

FP-5	1.3 (3/29/2011) to 0 (7/26/2011)	Dry	Dry
FP-8	0.08 (3/2/2016) to 0	Dry	Dry
FP-11	Dry	Dry	Dry

All seepage flows tracked the reservoir levels closely and were within historical ranges. There was no reported or observed signs of increased turbidity or suspended solids in the subdrain flows. Based on GEI’s review of the subdrain data, the seepage flow rates appeared to follow historical rates with no indications of any adverse conditions.

2.4 Movement Surveys

A total of seven survey monuments (A, B, B-1, C, D, E, and E-1) are being surveyed at Rattlesnake Canyon Dam. All seven survey monuments and three benchmarks (BM-1, BM-3 and BM-4) are located on the crest of the dam spanning from left abutment to right abutment (Figure 1).

There were originally four benchmarks, BM-1, BM-2, BM-3, and BM-4. Benchmarks BM-1 and BM-3 are located on the left abutment of the dam. Benchmarks BM-2 and BM-4 were both located on the right abutment of the dam, to the right of the spillway channel. Benchmark BM-2 was destroyed in 1996, and BM-4 was destroyed between 2015 and 2016. BM-4 was re-established by 2018. The re-established BM-4 has been used as the new control point on the right side of the dam to develop the control line for the horizontal surveys since 2018. The District informed GEI that BM-3 was destroyed on 10/7/2022 due to The Irvine Company’s (TIC) grading operations for new developments. When TIC completes grading in December or January, a certified surveyor will re-build BM-3. Since BM-3 was destroyed, Point A was held as the offset point in place for the 2022 review period survey.

Survey monuments A, C, D, and E were initially read on October 19, 1985, Survey Monument B-1 was initially read on October 5, 1990; and Survey Monuments B and E-1 were initially read on May 3, 2001. It is highlighted that crest monuments E and E-1 are within two feet of each other and crest monuments B and B-1 are less than a foot apart.

The survey monuments are surveyed annually by a licensed surveyor under contract with the District. No surveys were conducted in calendar year 2017 and 2021. A survey was performed on 10/27/2022, that has been included into this report. The survey report is provided in the Appendix of this report.

Table 6 presents the horizontal movement of the survey monuments relative to their baseline measurements, and Table 7 presents the cumulative horizontal displacement of the survey monuments. Table 8 presents the elevations of the survey monuments, whereas Table 9 presents

the cumulative vertical movement of the survey monuments. Tables 6 through 9 cover a date range from 1985 through 2022. Figures 19 and 20 are graphical presentations of the cumulative horizontal displacement and cumulative vertical movement of the survey monuments since 1985. Initial movement of Monuments B and E do show a trend but in recent years these same monuments have had minor movement of only ¼-inch or less.

The 2022 survey data has been evaluated and found to be within historical limits by GEI. Previous movement trends for B, B-1, E, and E-1 have stabilized since 2019 (Figure 20). Survey Monuments C and E showed downstream horizontal movement of 0.36 and 0.3 inches. The Survey Monuments had settlement between 0.1 to 0.29 inches with an average of 0.23 inches. These small measure amount of movement have been observed in the past and appear to be within historical changes due to accuracy survey, reservoir water level changes and temperature changes Based on GEI's review of the historical data, the 2022 horizontal and vertical movement measurements are judged to be minor with no significant changes since 2019. There are no unusual movements or dam safety issues based on the current data.

3.0 Field Evaluations

3.1 Field Evaluation of December 13, 2023

A field evaluation and inspection were performed by Richard Sanchez and Emerson Revolorio of GEI, Danielle Drake and Steve Habiger Jr. of the District on December 13, 2022. The reservoir level was noted at Elevation 395 ft. Weather conditions were cool and partly cloudy with temperature in high 50s to lows 60s. Photos taken by GEI are included in the Appendix of this report.

3.1.1 Dam

The crest of dam was walked, and the asphalt concrete surface was observed to have no visible signs of dam safety related concerns or instability, see Photos 1 and 2. The shrinkage-expansion temperature type cracking on the asphalt surfacing is not a problem to the safety of the dam. The upstream slope asphalt concrete lining and unlined areas above the reservoir water level appeared unchanged from previous inspection observations, see Photos 1 and 2. No signs of slope instability were seen. The upstream slope AC-liner also had several long-standing shrinkage-expansion cracks. During the inspection, GEI noticed that the minor vegetation growing on the left upstream groin area was cleared, see Photo 3. The downstream embankment slope, and both groin areas were inspected, and no signs of instability or erosion were seen. Rodent activity was encountered along the spillway and throughout the dam. There was little to no poison in the rodent control feeder boxes. There were multiple locations that were marked with flags by the District where rodent activity was significant. No signs of surficial slope movement or instability were observed on the slopes or abutments of the dam. The downstream slope face had recently been mowed, see Photo 4. The downstream toe area of the dam was walked, and no visual signs of slope instability, unusual movement, or erosion were seen. No unusual signs of seepage or wet spots were seen on the downstream face of the dam.

Overall, the condition of the dam remains largely unchanged from the conditions observed during the 4/19/2022, inspection. Overall, the dam was well maintained with no signs of instability, or distress. No dam safety related issues or concerns were found during the inspection.

3.1.2 Spillway

The approach and ungated control spillway sections were clear, see Photo 5. The open channel spillway was clear, see Photo 6. GEI noticed transverse hairline cracking on the right spillway wall and concrete spalling at previous line joint repairs, see Photos 6-8. The stilling basin area had small trees and brush growth, see Photo 9. GEI inspected the separation between the crest

AC pavement and the spillway concrete liner joint, see Photos 10 and 11. The separation was approximately 1-inch and visually was unchanged from previous observations. GEI also observed multiple active rodent holes near the spillway. GEI did not find any rodent control feeder boxes along the spillway area. The spillway was found to be operable to pass spillway flows.

3.1.3 Outlet Works

DSOD requires the outlet and emergency blowoff valves to be exercised periodically. The four upstream outlet gates and controls were not exercised during this inspection because it requires two operators to be on site. Only one operator was available during the inspection. According to the District, the upstream valves were fully exercised on 5/9/2022. It was reported the outlets were fully operational. No deficiencies were seen at the downstream 24-inch blowoff valve and operator at the left downstream toe area of the dam.

3.1.4 Seepage

Seepage flow rates continue to be monitored and measured monthly by District staff. The downstream seepage vault was inspected, and no unusual conditions or safety deficiencies were found. Small seepage flow observations were estimated as follows: #2 (dry), #3 (2-3 gpm), #4 (0.75 gpm), and others (#11, #5, and #8) were dry, see Photo 12. Total seepage at FP-1 South was estimated at 1.5-2 gpm and FP-1 North was dry. The observed seepage conditions were within past seepage flow levels and observations. No signs of sediment were seen on the floor of the seepage vault from above the vault.

4.0 Conclusions and Recommendations

4.1 Conclusions

- 1) Based on the review of available instrumentation data and the field inspection, the dam does not appear to have signs of structural deficiencies, seepage, and instability.
- 2) Overall piezometer water levels during the report period are within historical limits.
- 3) Piezometer P-30A has had long term blockage.
- 4) Observation well OW-3 has been dry since the grading for the residential development was performed in August 2016.
- 5) Seepage flow rates during this review period were within historical limits and trends.
- 6) Horizontal and vertical movement were found to be minimal and within historical values and trends since 2019.
- 7) The AC pavement on the dam crest has minor temperature related cracking that is not a problem to the safety of the dam.
- 8) The upstream slope AC-liner had long-standing shrinkage-expansion cracks.
- 9) Vegetation on the left upstream groin area was recently cleared.
- 10) The downstream slope face had recently been mowed.
- 11) There was little to no poison in the rodent control feeder boxes. There were multiple locations throughout the dam and spillway that were marked with flags by the District where rodent activity was significant.
- 12) GEI inspected the minor separation between the crest AC pavement and the spillway concrete liner joint. The separation was approximately 1-inch and visually was unchanged from previous observations.
- 13) Minor transverse hairline cracking on the right spillway wall and concrete spalling at previous line joints repairs was observed.
- 14) Brush and small trees have grown in the stilling basin since the last inspection.
- 15) The four upstream outlet gates and controls were not exercised during this inspection because it requires two operators to be on site. Only one operator was available during

the inspection. According to the District, the upstream valves were fully exercised on 5/9/2022.

4.2 Recommendations

- 1) Surveyor needs to provide reservoir elevation, air temperature and weather conditions for each survey.
- 2) GEI recommends re-surveying the top elevations of the casings and re-measure the depth to the bottom of piezometers P-2 and P-63 to verify they are not blocked. Piezometers shall be cleaned out if blocked. Piezometers shall continue to be monitored monthly.
- 3) GEI recommends abandoning piezometer P-30A and observation well OW-3.
- 4) Hairline cracks on the AC pavement on the dam crest need be monitored and filled with a liquid AC paving repair product when opened.
- 5) The upstream slope AC-liner cracks need to be monitored and filled with a liquid AC paving repair product when opened.
- 6) The District needs to fill the rodent control feeder boxes with poison and backfill any new rodent holes observed along the dam. The District needs to add rodent control feeder boxes near the spillway area.
- 7) The District to clear the trees and brush growth at the spillway stilling basin and cut when appropriate to avoid any damage to spillway concrete or impacts to spillway operability.
- 8) The District to monitor the spillway concrete transverse hairline cracking and fill in with concrete if the crack grows more than ¼-inch.
- 9) The District to repair the concrete spalling at the previous liner joint repairs. A smooth and continuous surface shall be created along the area of repair to prevent future spalling.
- 10) The separation between the crest AC pavement and the spillway concrete liner joint needs to be filled with a flexible sealant.
- 11) During normal inspection and operation of the dam and its appurtenances, the District personnel shall continue to observe the condition of the dam and appurtenances, looking for any signs of distress or movement, increased seepage, or other unusual conditions, and verifying that the critical facilities are functional. Any unusual observations shall be reported immediately to the Dam Safety Engineer.
- 12) GEI recommends continuing following IRWD's Dam Safety Program Guidelines after a 4.0 earthquake.

Rattlesnake Canyon Dam Action Item Summary

Item	Location	Maintenance	Measures
Rodent control feeder boxes	Throughout dam	Lack of poison in rodent control feeder boxes	Place poison in all the rodent control feeder boxes.
Rodent control feeder boxes	Along spillway	Lack of rodent control feeder boxes	Add rodent control feeder boxes.
Movement Surveys	Throughout dam	Need additional information	Provide reservoir elevation, air temperature and weather conditions for each survey.
AC pavement	Dam crest	Shrinkage-expansion temperature cracking	Monitor cracks and fill in cracks with a liquid AC Paving repair product when opened.
AC Liner	Upstream face	Shrinkage-expansion temperature cracking	Monitor cracks and fill in cracks with a liquid AC Paving repair product when opened.
AC pavement and spillway concrete liner	Joint between the right end of crest AC pavement and spillway concrete liner	Separation between the crest AC pavement and the spillway concrete liner	Fill separation with a flexible sealant.
Piezometers	P-2 and P-63	Providing erratic readings	Re-survey the top of casing elevations and re-measure the depth to the bottom. Clean out piezometer if blocked. Monitor monthly.
Piezometer	P-30A	Providing erratic readings	Abandon.
Observation well	OW-3	Dry	Abandon.
Stilling basin	Spillway stilling basin	Trees and brush growth	Cut and maintain.
Spillway channel	Previous liner joint repairs	Concrete spalling	Repair the concrete spalling. Provide a smooth and continuous surface along the area of repair.
Spillway channel	Channel walls	Transverse hairline cracking	Monitor cracking and fill in with concrete if the cracks grow more than ¼-inch.

5.0 Limitations

This report presents observations made, conclusions drawn, and opinions formed from (1) a visual inspection of the Rattlesnake Canyon Dam and its appurtenant structures, and (2) a review of instrumentation data, including piezometer levels, survey data and seepage rates, collected by the District and reported since 2007. The purpose of the inspection and review is to assess the safety of the structure for continuing operation. Reuse of this report for any other purposes, in part or in whole, is at the sole risk of the user.

In the context intended above, the term "safety" is interpreted to be restricted specifically to major structural and control features of the project in regard to their adequacy against possible catastrophic failure due to natural or operational events. No consideration is given herein to those public safety aspects related to voluntary occupancy or use of project features in such manner as to result in personal mishaps.

The undersigned who performed the inspection and reviewed the instrumentation data and prepared this report, desire that it be clearly understood that the conclusions regarding the condition and safety of the dam and related facilities are not guaranteed but do represent our best judgment. Inevitably, such judgment must be recognized to be affected to an uncertain degree by the practical limitations that affect all dam evaluations, relative principally to approximate knowledge of the existing properties of the structures and their foundations, the potential for storm or seismic damage, and the uncertainties that are known to exist in estimating margins of report represents the results of our surveillance program for Rattlesnake Canyon Dam, covering safety.

The conclusions and professional opinions presented herein were developed by GEI Consultants, Inc. for the Irvine Ranch Water District in accordance with generally accepted engineering principles and practices. We make no other warranty, either expressed or implied.

6.0 References

DSOD (California Department of Water Resources, Division of Safety of Dams), Inspection of Dam and Reservoir in Certified Status October 20, 2020.

Genterra, 2018, Annual Surveillance Report January 2017 through December 2017 Rattlesnake Canyon Dam DSOD Dam No. 1029-003, Irvine, CA, by Genterra Consultants Inc., November 26, 2018.

Tables

**TABLE 3
RATTLESNAKE CANYON DAM
DETAILS FOR PIEZOMETERS, OBSERVATION WELLS, AND SEEPAGE FLOW POINTS**

ID	Location	Original Reference Data			Current (2005) Reference Data			Material at Tip (if known)	Installation or First Reading	Final Reading
		Top Elev. (ft)	Tip Elev. (ft)	Depth (ft)	Top Elev. (ft)	Tip Elev. (ft)	Depth (ft)			
Active Operating Piezometers										
P-1A	Dam Crest	418.50	287.40	131.10	420.43	287.40	133.00	Foundation Alluvium	4/1965	--
P-2	Dam Crest	418.70	363.40	55.30	420.62	363.40	57.20	Embankment	4/1965	--
P-3A	Downstream Bench Elev. 385	385.40	303.70	81.70	385.40	303.70	81.70	Foundation Bedrock	4/1965	--
P-30A	Dam Crest	417.90	371.70	46.20	420.81	371.70	49.10	Embankment	1966	--
P-30B	Dam Crest	417.90	337.10	80.80	420.81	337.1	83.70	Embankment	1966	--
P-35A	Downstream Slope just above Bench Elev. 385	385.30	357.30	28.00	388.73	357.30	31.40	Embankment D/S of and above Chimney Drain	1966	--
P-35B	Downstream Slope just above Bench Elev. 385	385.50	313.40	72.10	388.45	313.40	75.10	Chimney Drain	1966	--
P-35C	Downstream Slope just above Bench Elev. 385	385.30	343.20	42.10	388.34	343.20	45.10	Chimney Drain	1966	--
P-52	Dam Crest near Right Abutment	418.60	361.20	57.40	421.03	361.20	59.80	Foundation Bedrock	1976	--
P-61	Downstream Left Groin	354.00	311.00	43.00	357.01	311.00	46.00	-Data Not Provided-	9/28/2004	--
P-62	On Right Abutment Stability Berm	419.00	365.50	53.50	412.03	365.50	46.50	-Data Not Provided-	1/18/2005	--
P-63	Dam Crest at Left Abutment	418.00	335.00	83.00	422.08	335.00	87.10	Abutment Bedrock	9/28/2004	--
P-64	Downstream Bench Elev. 385	385.00	302.00	83.00	388.00	302.00	86.00	Foundation Alluvium	9/28/2004	--
P-65	On Right Abutment Stability Berm	370.00	325.50	44.50	374.72	325.50	49.20	-Data Not Provided-	1/18/2005	--
P-66	Downstream near Toe of Dam	352.00	301.00	51.00	359.31	301.00	58.30	Foundation Bedrock	9/28/2004	--
P-67	Downstream near Toe of Dam	352.00	282.50	69.50	355.04	282.50	72.50	Foundation Bedrock	1/18/2005	--
OW-3	Right Abutment just above Spillway Inlet	--	--	--	418.87	386.27	32.60	Abutment Bedrock	3/29/2001	--
Abandoned Piezometers										
P-1B	Dam Crest	385.4	--	--	--	--	--	Foundation Alluvium	4/1965	12/1969
P-3B	Downstream Bench Elev. 385	385.4	345.2	40.2	--	--	--	Data Not Provided	4/1965	3/30/2004
P-4	Downstream Bench Elev. 385	385.3	286.8	98.5	--	--	--	Foundation Bedrock	4/1965	3/30/2004
P-5	Downstream Bench Elev. 385	385.2	345.2	40.0	--	--	--	Embankment	4/1965	3/30/2004
P-6A	Downstream near Toe of Dam	350.6	333.3	17.3	--	--	--	Foundation Alluvium	4/1965	3/30/2004
P-6B	Downstream near Toe of Dam	350.6	292	58.6	--	--	--	Foundation Bedrock	4/1965	3/30/2004
P-7A	Downstream Toe of Dam	343.5	334.6	8.9	--	--	--	-Data Not Provided-	9/1965	Unknown
P-7B	Downstream Toe of Dam	343.5	283.2	60.3	--	--	--	-Data Not Provided-	9/1965	Unknown
P-8A	Downstream Toe of Dam	340.6	295.9	44.7	--	--	--	Alluvium	9/1965	3/30/2004
P-8B	Downstream Toe of Dam	340.5	325.2	15.3	--	--	--	Alluvium	9/1965	3/30/2004
P-9A	Downstream Toe of Dam	341.4	318.8	22.6	--	--	--	Alluvium	9/1965	3/30/2004
P-9B	Downstream Toe of Dam	341.4	331.1	10.3	--	--	--	Alluvium	9/1965	3/30/2004
P-21	Downstream near Toe of Dam	354.3	328.7	25.6	--	--	--	Abutment Bedrock	6/16/1967	3/30/2004
P-22	Downstream near Toe of Dam	354.2	328.9	25.3	--	--	--	-Data Not Provided-	6/16/1967	Unknown
P-23	Downstream Bench Elev. 385	385.8	357.9	27.9	--	--	--	Abutment Bedrock	6/16/1967	3/30/2004
P-27	Right Abutment Stability Berm at Bench Elev. 385	386.7	367.1	19.6	--	--	--	Abutment Sand	6/16/1967	3/30/2004
P-29	Right Abutment Stability Berm above Bench Elev. 385	397.7	382.8	14.9	--	--	--	Abutment Sand	6/16/1967	3/30/2004
P-31A	Dam Crest near Right Abutment	418.3	390	28.3	--	--	--	Embankment	1966	3/30/2004
P-31B	Dam Crest near Right Abutment	418.3	364.7	53.6	--	--	--	Embankment	1966	3/30/2004
P-32A	Dam Crest near Right Abutment	417.8	397.7	20.1	--	--	--	Embankment	1966	3/30/2004
P-32B	Dam Crest near Right Abutment	417.8	380.2	37.6	--	--	--	Foundation Bedrock	1966	3/30/2004
P-33	Dam Crest near Left Abutment	417.8	390	27.8	--	--	--	Abutment Bedrock	1966	3/30/2004
P-34	Right Abutment in line with crest	--	--	--	--	--	--	Abutment Bedrock	1966	3/30/2004
P-36A	Downstream near Toe of Dam	351	338.3	12.7	--	--	--	Embankment	1966	3/30/2004
P-36B	Downstream near Toe of Dam	351	307.3	43.7	--	--	--	Foundation Alluvium	1966	3/30/2004
P-37	Right Abutment (downstream)	370.8	346.9	23.9	--	--	--	Abutment	1966 (?)	Unknown
P-38	Downstream of Dam	328.5	292.9	35.6	--	--	--	-Data Not Provided-	1966 (?)	3/30/2004
P-42	Downstream of Dam	341.7	321.9	19.8	--	--	--	-Data Not Provided-	1966	3/30/2004
P-51	Dam Crest	417.9	--	--	--	--	--	-Data Not Provided-	1976	3/30/2004
P-53A	Downstream Bench Elev. 385	384.7	--	--	--	--	--	-Data Not Provided-	1976	3/30/2004
P-53B	Downstream Bench Elev. 385	384.9	--	--	--	--	--	-Data Not Provided-	1976	3/30/2004
P-54	Right Abutment Stability Berm above Bench Elev. 385	390.4	--	--	--	--	--	Abutment Bedrock	1976	3/30/2004
P-55	Right Abutment Stability Berm below Bench Elev. 385	356	--	--	--	--	--	Abutment Bedrock	1976	3/30/2004
P-82	Right Abutment near Spillway Inlet	442	--	--	--	--	--	-Data Not Provided-	12/28/1993	3/30/2004
P-83	Unknown	426	--	--	--	--	--	-Data Not Provided-	1/31/1994	3/30/2004
P-89	Right Abutment (North of Spillway Chute)	431	--	--	--	--	--	-Data Not Provided-	12/28/1993	3/30/2004
P-91	Right Abutment just below Dam Crest	439	--	--	--	--	--	-Data Not Provided-	12/28/1993	3/30/2004
P-92	Right Abutment above Bench Elev. 385	400	--	--	--	--	--	-Data Not Provided-	12/28/1993	3/30/2004
OW-1	Right Abutment just above Spillway Inlet	--	--	--	468.16	433.46	34.7	Abutment Bedrock	3/29/2001	7/26/2016
OW-2	Right Abutment just above Spillway Inlet	--	--	--	442.91	407.91	35	Abutment Bedrock	3/29/2001	7/26/2016
Flow Points										
FP-1	Combined discharge from Subdrains 9 & 10	--	--	--	--	--	--	--	--	3/27/2008
FP-2	Right part of Chimney Drain	--	--	--	--	--	--	--	1960	--
FP-3	Center part of Chimney Drain	--	--	--	--	--	--	--	1960	--
FP-4	Left part of Chimney Drain	--	--	--	--	--	--	--	1960	--
FP-5	Right Abutment contact	--	--	--	--	--	--	--	1969	--
FP-8	Downstream Toe of Dam	--	--	--	--	--	--	--	1966	--
FP-9	Carries discharge from Subdrains 2, 3, 4, 5 & 8 (replaced by FP--1S)	--	--	--	--	--	--	--	1966	4/28/2008
FP-10	Stilling Basin (replaced by FP--1N)	--	--	--	--	--	--	--	1966	4/28/2008
FP-11	Right Abutment Stability Berm	--	--	--	--	--	--	--	1/6/2005	--
FP-1N	Stilling Basin (former FP--10)	--	--	--	--	--	--	--	4/28/2008	--
FP-1S	Carries discharge from Subdrains 2, 3, 4, 5, 8 & 11 (former FP--9)	--	--	--	--	--	--	--	4/28/2008	--

Note:

1. Piezometer data based on NGVD 29 datum.

**TABLE 4
RATTLESNAKE CANYON DAM
PIEZOMETER WATER LEVEL MEASUREMENTS
JANUARY 2007 THROUGH DECEMBER 2022**

Monitoring Well -->			P-1A			P-2		
Top of Well Elevation -->			420.43			420.62		
Bottom of Well Elevation -->			287.40			363.40		
Depth of Well			133.0			57.2		
Date	Reservoir Elevation (ft)	Monthly Rainfall (in.)	Reading (ft)	Elevation (ft)	Comment	Reading (ft)	Elevation (ft)	Comment
1/31/2007	376.90		61.6	358.8		15.9	404.7	
2/28/2007	380.90		63.3	357.1		16.0	404.6	
3/29/2007	397.00		61.7	358.7		15.9	404.7	
4/27/2007	405.60		61.4	359.0		16.0	404.6	
5/24/2007	404.40		61.4	359.0		15.9	404.7	
6/28/2007	396.90		61.9	358.5		16.1	404.5	
7/31/2007	392.60		61.5	358.9		16.0	404.6	
8/29/2007	388.60		61.3	359.1		16.0	404.6	
9/2/2007	387.40		61.4	359.0		16.0	404.6	
9/26/2007	387.90		61.8	358.6		16.0	404.6	
10/25/2007	382.00		61.8	358.6		16.1	404.5	
11/27/2007	380.30		61.4	359.0		16.0	404.6	
12/27/2007	381.40		61.7	358.7		16.0	404.6	
1/31/2008	381.20		61.5	359.0	Dry	16.0	404.6	Dry
2/28/2008	393.10		61.8	358.6	Dry	15.6	405.0	
3/27/2008	387.90		31.2	389.2	Cleaning	17.4	403.2	
4/28/2008	404.70		34.2	386.2	Blocked	17.4	403.2	
5/28/2008	404.00		36.6	383.8	Blocked	17.4	403.2	Dry
6/25/2008	400.20		38.2	382.2	Blocked	17.4	403.2	
7/29/2008	398.70		39.4	381.0	Blocked	17.4	403.2	
7/30/2008	398.70	0.00	39.5	380.9	Blocked	17.5	403.1	
8/29/2008	395.00	0.00	7.7	412.7	Cleaning	17.6	403.0	Dry
9/25/2008	391.70	0.00	15.6	404.8		17.7	402.9	Dry
10/28/2008	384.05	0.00	23.0	397.4		17.7	403.0	
11/26/2008	391.10	1.94	28.2	392.2		17.7	402.9	
12/31/2008	397.90	3.20	32.2	388.2		17.7	402.9	
1/29/2009	393.40	0.34	34.8	385.6		16.8	403.8	
2/25/2009	398.60	3.91	36.8	383.6		17.7	402.9	
3/31/2009	393.40	0.16	38.6	381.8		17.6	403.0	
4/28/2009	400.70	0.10	40.1	380.3		17.7	402.9	

Note:

1. Readings in red are classified as erroneous
2. Piezometer data based on NGVD 29 datum

TABLE 4
RATTLESNAKE CANYON DAM
PIEZOMETER WATER LEVEL MEASUREMENTS
JANUARY 2007 THROUGH DECEMBER 2022

Monitoring Well -->			P-1A			P-2		
Top of Well Elevation -->			420.43			420.62		
Bottom of Well Elevation -->			287.40			363.40		
Depth of Well			133.0			57.2		
Date	Reservoir Elevation (ft)	Monthly Rainfall (in.)	Reading (ft)	Elevation (ft)	Comment	Reading (ft)	Elevation (ft)	Comment
5/18/2009	400.80	0.00	40.8	379.6		17.7	402.9	
5/27/2009	400.10	0.00	61.6	358.8		17.6	403.0	Dry
6/29/2009	403.00	0.15	61.0	359.4		17.7	402.9	
7/28/2009	396.53	0.00	60.9	359.5		17.7	402.9	
8/25/2009	396.60	0.00	60.8	359.6		17.6	403.0	
9/30/2009	393.10	0.00	61.1	359.3		17.6	403.0	
10/28/2009	401.60	0.42	61.0	359.4		17.7	402.9	
11/30/2009	402.50	0.00	60.9	359.5		17.7	402.9	
12/29/2009	399.90	2.80	60.8	359.6		17.7	402.9	
1/26/2010	401.10	6.75	60.8	359.6		17.6	403.0	
2/23/2010	402.50	2.66	60.8	359.6		17.7	402.9	Dry
3/30/2010	400.00	1.25	60.6	359.8		17.7	402.9	
4/4/2010	399.60		60.6	359.8		17.7	402.9	Dry
4/27/2010	403.80	1.32	60.6	359.8		17.6	403.0	
5/26/2010	403.60	0.03	60.5	359.9		17.6	403.0	Dry
6/29/2010	397.70	0.00	59.4	361.0		17.6	403.0	
7/27/2010	396.30	0.00	60.4	360.0		17.6	403.0	
8/26/2010	390.70	0.00	60.6	359.8		17.4	403.2	
9/28/2010	390.30	0.00	60.6	359.8		17.6	403.0	
10/26/2010	403.20	1.56	60.6	359.8		17.2	403.4	
11/30/2010	397.10	1.34	60.6	359.8		17.6	403.0	
12/28/2010	401.40	9.03	60.6	359.8		17.7	402.9	Dry
1/27/2011	393.80	1.10	60.6	359.8		17.6	403.0	Dry
2/23/2011	391.70	1.17	60.6	359.8		17.7	402.9	
3/29/2011	403.00	3.10	60.7	359.7		17.5	403.1	
4/27/2011	401.20	0.33	60.7	359.8		17.6	403.0	
5/26/2011	399.50	0.48	60.6	359.8		17.8	402.8	
6/28/2011	391.00	0.02	60.6	359.8		17.6	403.0	
7/26/2011	384.00	0.00	60.8	359.6		17.5	403.1	
8/24/2011	382.80	0.00	60.9	359.5		17.5	403.1	

Note:

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TABLE 4
RATTLESNAKE CANYON DAM
PIEZOMETER WATER LEVEL MEASUREMENTS
JANUARY 2007 THROUGH DECEMBER 2022

Monitoring Well -->			P-1A			P-2		
Top of Well Elevation -->			420.43			420.62		
Bottom of Well Elevation -->			287.40			363.40		
Depth of Well			133.0			57.2		
Date	Reservoir Elevation (ft)	Monthly Rainfall (in.)	Reading (ft)	Elevation (ft)	Comment	Reading (ft)	Elevation (ft)	Comment
9/27/2011	381.80	0.08	61.2	359.2		17.6	403.0	
10/26/2011	383.90	0.98	61.2	359.2		17.7	402.9	
11/22/2011	389.80	1.46	61.4	359.0		17.6	403.0	
12/28/2011	382.30	0.35	61.5	358.9		17.7	402.9	
1/25/2012	387.50	1.17	61.7	358.7		17.7	402.9	
2/28/2012	381.10	0.79	61.8	358.6		17.6	403.0	
3/27/2012	387.70	1.61	62.0	358.4		17.6	403.0	
4/23/2012	392.30	1.51	62.0	358.4		17.7	403.0	
5/25/2012	388.30	0.06	62.3	358.1		17.7	402.9	
6/13/2012	385.10	0.06	62.1	358.3		17.6	403.0	
6/26/2012	386.90	0.00	62.2	358.2		17.6	403.0	
7/24/2012	378.00	0.10	62.3	358.1		17.6	403.0	
8/8/2012	382.90	0.10	62.4	358.0		17.6	403.0	
8/29/2012	382.70	0.00	62.5	357.9		17.6	403.0	
8/29/2012	382.70	0.00	62.5	357.9		17.6	403.0	
9/25/2012	381.90	0.00	62.7	357.7		17.6	403.0	
10/24/2012	384.40	0.08	62.8	357.6		17.7	402.9	
11/27/2012	389.60	0.86	63.1	357.3		17.6	403.0	
12/18/2012	394.70	1.96	63.1	357.3		17.6	403.0	
1/23/2013	393.00	1.53	63.1	357.3		17.7	402.9	
2/26/2013	391.50	0.49	63.1	357.3		17.7	402.9	
3/26/2013	394.40	1.00	63.1	357.3		17.6	403.0	
4/25/2013	391.00	0.01	63.0	357.4		17.7	402.9	
5/22/2013	392.00	0.00	63.2	357.2		17.7	402.9	
6/25/2013	380.60	0.00	63.1	357.3		17.6	403.0	
7/23/2013	380.20	0.00	63.2	357.2		17.7	402.9	Dry
8/21/2013	379.60	0.00	63.4	357.0		17.6	403.0	Wet
9/25/2013	382.20	0.00	63.5	356.9		17.6	403.0	Dry
10/29/2013	382.00	0.00	63.7	356.7		17.7	402.9	Wet
11/26/2013	390.10	0.44	63.7	356.7		17.6	403.0	Wet

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TABLE 4
RATTLESNAKE CANYON DAM
PIEZOMETER WATER LEVEL MEASUREMENTS
JANUARY 2007 THROUGH DECEMBER 2022

Monitoring Well -->			P-1A			P-2		
Top of Well Elevation -->			420.43			420.62		
Bottom of Well Elevation -->			287.40			363.40		
Depth of Well			133.0			57.2		
Date	Reservoir Elevation (ft)	Monthly Rainfall (in.)	Reading (ft)	Elevation (ft)	Comment	Reading (ft)	Elevation (ft)	Comment
12/17/2013	394.70	1.10	63.8	356.6		17.6	403.0	Wet
1/28/2014	392.30	0.00	63.8	356.6		17.6	403.0	Wet
2/26/2014	389.90	0.72	63.7	356.7		17.2	403.4	Wet
3/26/2014	387.20		63.8	356.6		17.6	403.0	Wet
3/28/2014	387.20	1.78	63.7	356.7		17.7	402.9	Wet
4/23/2014	393.00	0.34	63.9	356.5		17.6	403.0	Dry
5/28/2014	387.50	0.00	63.9	356.5		17.6	403.0	Dry
6/25/2014	388.70	0.00	63.9	356.5		17.7	402.9	Wet
7/29/2014	382.80	0.00	64.0	356.4		17.6	403.0	Wet
8/28/2014	386.80	0.04	64.0	356.4		17.6	403.0	Wet
9/24/2014	387.90	0.00	64.1	356.3		17.6	403.0	Wet
10/29/2014	383.90	0.00	64.2	356.2		17.3	403.3	Wet
11/21/2014	388.30	0.35	64.2	356.2		17.6	403.0	Wet
12/22/2014	399.80	4.75	64.2	356.2		17.2	403.4	Wet
1/28/2015	396.90	1.28	64.3	356.1		17.7	402.9	Wet
2/24/2015	392.70	0.34	64.2	356.2		17.6	403.0	Wet
3/31/2015	388.90	0.67	64.1	356.3		17.6	403.0	Wet
4/23/2015	390.30	0.20	64.1	356.3		17.7	402.9	Wet
5/28/2015	400.30	1.87	64.1	356.3		17.6	403.0	Wet
6/24/2015	400.70	0.00	64.0	356.4		17.6	403.0	Wet
7/30/2015	400.20	0.00	64.0	356.4		3.8	416.8	Cleaning
8/25/2015	384.00	0.00	63.0	357.4		5.7	414.9	
9/23/2015	388.60	2.17	64.0	356.4		8.0	412.6	
10/29/2015	387.60	0.16	64.0	356.4		10.4	410.2	
11/25/2015	386.90	0.15	64.1	356.3		12.7	407.9	
12/23/2015	395.90	1.55	64.1	356.3		13.6	407.0	
1/26/2016	401.20	2.86	64.0	356.4		15.0	405.6	
2/24/2016	393.60	0.39	64.0	356.4		15.3	405.3	
3/29/2016	397.10	1.55	63.9	356.5		16.1	404.5	
4/29/2016	391.60	0.04	63.9	356.5		16.5	404.1	

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TABLE 4
RATTLESNAKE CANYON DAM
PIEZOMETER WATER LEVEL MEASUREMENTS
JANUARY 2007 THROUGH DECEMBER 2022

Monitoring Well -->			P-1A			P-2		
Top of Well Elevation -->			420.43			420.62		
Bottom of Well Elevation -->			287.40			363.40		
Depth of Well			133.0			57.2		
Date	Reservoir Elevation (ft)	Monthly Rainfall (in.)	Reading (ft)	Elevation (ft)	Comment	Reading (ft)	Elevation (ft)	Comment
5/24/2016	401.60	0.13	63.8	356.6		16.5	404.1	
6/29/2016	392.50	0.00	63.8	356.6		17.0	403.6	
7/26/2016	377.70	0.00	63.8	356.6		17.5	403.1	
8/24/2016	388.10	0.00	63.9	356.5		17.7	402.9	
9/29/2016	388.20	0.00	64.0	356.4		17.7	402.9	
10/26/2016	392.10	0.96	64.0	356.4		17.7	402.9	
11/22/2016	395.70	1.42	64.2	356.2		17.7	402.9	
12/28/2016	400.70	4.11	64.2	356.2		17.8	402.8	
1/26/2017	402.40	6.70	64.0	356.4		17.8	402.8	
2/28/2017	389.60	4.01	63.9	356.5		17.6	403.0	
3/29/2017	391.80	0.14	63.9	356.5		17.6	403.0	
4/26/2017	387.00	0.04	63.9	356.5		17.7	402.9	
5/23/2017	399.40	0.30	63.9	356.5		17.7	402.9	Dry
6/21/2017	392.60	0.00	63.8	356.6		17.7	402.9	Dry
7/26/2017	384.60	0.00	63.8	356.6		17.7	402.9	Dry
8/30/2017	383.00	0.00	54.1	366.3	Erroneous	17.8	402.8	Dry
9/27/2017	382.00	0.00	64.0	356.4		17.7	402.9	
10/27/2017	375.00	0.00	64.1	356.3		17.8	402.8	
11/30/2017	382.80	0.14	64.2	356.2		17.8	402.8	
12/21/2017	380.50	0.00	64.3	356.1		17.7	402.9	
1/24/2018	397.80	1.43	64.3	356.1		17.7	402.9	
2/21/2018	382.40	0.17	64.4	356.0		16.7	403.9	
3/29/2018	392.10	0.00	64.4	356.0		16.7	403.9	
4/25/2018	388.00	0.05	64.5	355.9		16.8	403.8	
5/30/2018	399.50	0.21	64.5	355.9		16.9	403.7	
6/28/2018	398.90	0.00	64.5	355.9		16.9	403.7	
7/25/2018	388.60	0.00	64.6	355.8		16.3	404.3	
8/24/2018	378.60	0.00	64.5	355.9		16.6	404.0	
9/27/2018	381.40	0.00	64.6	355.8		17.7	402.9	
10/18/2018	385.20	1.45	64.6	355.8		17.7	402.9	

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**TABLE 4
RATTLESNAKE CANYON DAM
PIEZOMETER WATER LEVEL MEASUREMENTS
JANUARY 2007 THROUGH DECEMBER 2022**

Monitoring Well -->			P-1A			P-2		
Top of Well Elevation -->			420.43			420.62		
Bottom of Well Elevation -->			287.40			363.40		
Depth of Well			133.0			57.2		
Date	Reservoir Elevation (ft)	Monthly Rainfall (in.)	Reading (ft)	Elevation (ft)	Comment	Reading (ft)	Elevation (ft)	Comment
11/28/2018	389.10	1.32	64.7	355.7		17.7	402.9	
12/20/2018	394.20	2.12	64.7	355.7		17.6	403.0	
2/21/2019	396.00	8.26	64.70	355.7		17.70	402.9	Dry
3/27/2019	376.00	1.88	65.00	355.4		17.70	402.9	Dry
4/25/2019	377.70	0.03	64.70	355.7		17.70	402.9	Dry
5/30/2019	395.30	0.92	64.80	355.6		17.50	403.1	Dry
6/26/2019	388.40	0.01	64.80	355.6		17.70	402.9	Dry
7/5/2019	385.50	0.00	64.90	355.5		17.70	402.9	Dry
7/30/2019	385.20	0.00	64.90	355.5		17.70	402.9	Dry
8/27/2019	387.90	0.00	65.00	355.4		17.70	402.9	Dry
9/26/2019	380.00	0.00	65.00	355.4		17.60	403.0	Dry
10/23/2019	378.90	0.00	65.00	355.4		17.60	403.0	Dry
11/26/2019	383.80	2.60	65.20	355.2		17.80	402.8	Dry
12/18/2019	389.20	4.63	65.30	355.1		17.80	402.8	Dry
1/29/2020	388.20	0.15	65.20	355.2		16.30	404.3	
2/25/2020	384.70	0.33	65.20	355.2		17.60	403.0	
3/24/2020	391.70	3.91	65.20	355.2		17.60	403.0	
4/23/2020	399.40	4.05	65.20	355.2		17.50	403.1	
5/27/2020	388.50	0.40	65.10	355.3		17.10	403.5	
6/24/2020	388.00	0.01	65.20	355.2		17.70	402.9	
7/29/2020	358.70	0.00	65.20	355.2		17.60	403.0	
8/26/2020	379.30	0.00	65.40	355.0		17.40	403.2	
9/29/2020	381.30	0.00	65.40	355.0		17.70	402.9	
10/28/2020	376.50	0.00	65.40	355.0		17.60	403.0	
11/24/2020	380.70	0.25	65.60	354.8		17.70	402.9	
12/23/2020	384.10	1.40	65.50	354.9		17.00	403.6	
1/26/2021	386.2	2.42	65.6	354.83		17.7	402.92	
2/25/2021	385.4	0.07	65.6	354.83		17.5	403.12	
3/23/2021	394.8	1.35	65.6	354.83		17.5	403.12	
4/27/2021	384.1	0.04	65.6	354.83		17.6	403.02	

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**TABLE 4
RATTLESNAKE CANYON DAM
PIEZOMETER WATER LEVEL MEASUREMENTS
JANUARY 2007 THROUGH DECEMBER 2022**

Monitoring Well -->			P-1A			P-2		
Top of Well Elevation -->			420.43			420.62		
Bottom of Well Elevation -->			287.40			363.40		
Depth of Well			133.0			57.2		
Date	Reservoir Elevation (ft)	Monthly Rainfall (in.)	Reading (ft)	Elevation (ft)	Comment	Reading (ft)	Elevation (ft)	Comment
5/27/2021	383.5	0.04	65.6	354.83		17.6	403.02	
6/30/2021	385.4	0	65.8	354.63		17.8	402.82	
7/29/2021	381.7	0.03	65.7	354.73		17.1	403.52	
8/24/2021	383.4	0	65.8	354.63		17.6	403.02	
9/28/2021	381.3	0.06	65.7	354.73		17.7	402.92	
10/27/2021	382.7	0.71	65.8	354.63		17.6	403.02	
11/23/2021	381	0	65.9	354.53		17.6	403.02	
12/21/2021	386.3	6.1	65.9	354.53		17.6	403.02	
1/25/2022	382	0.05	65.9	354.53		17.5	403.12	
2/22/2022	382.3	0.36	66.1	354.33		17.2	403.42	
3/29/2022	390.6	1.33	66.1	354.33		17.7	402.92	
4/27/2022	393.2	0.02	66	354.43		17.6	403.02	
5/24/2022	391.4	0.05	66.2	354.23		17.7	402.92	
6/28/2022	392.7	0	66.4	354.03		17.7	402.92	
7/26/2022	386.1	0	66.1	354.33		17.4	403.22	
8/25/2022	382.2	0.02	66.1	354.33		17.6	403.02	
9/29/2022	392.7	0.36	66.4	354.03		17.7	402.92	
10/25/2022	390	0.32	66.2	354.23		17.6	403.02	
11/17/2022	391.4	2.12	66.3	354.13		17.6	403.02	
12/22/2022	386.4	2.28	66.3	354.13		17.6	403.02	

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TABLE 4
RATTLESNAKE CANYON DAM
PIEZOMETER WATER LEVEL MEASUREMENTS
JANUARY 2007 THROUGH DECEMBER 2022

Monitoring Well -->			P-3A			P-30A		
Top of Well Elevation -->			385.40			420.81		
Bottom of Well Elevation -->			303.70			371.70		
Depth of Well			81.7			49.1		
Date	Reservoir Elevation (ft)	Monthly Rainfall (in.)	Reading (ft)	Elevation (ft)	Comment	Reading (ft)	Elevation (ft)	Comment
1/31/2007	376.90		38.4	347.0				Blocked,NotRead
2/28/2007	380.90		38.5	346.9				Blocked,NotRead
3/29/2007	397.00		38.5	346.9				Blocked,NotRead
4/27/2007	405.60		38.5	346.9				Blocked,NotRead
5/24/2007	404.40		38.4	347.0				Blocked,NotRead
6/28/2007	396.90		38.6	346.8				Blocked,NotRead
7/31/2007	392.60		38.5	346.9				Blocked,NotRead
8/29/2007	388.60		38.5	346.9				Blocked,NotRead
9/2/2007	387.40		38.5	346.9				Blocked,NotRead
9/26/2007	387.90		38.6	346.8				Blocked,NotRead
10/25/2007	382.00		38.5	346.9				Blocked,NotRead
11/27/2007	380.30		38.5	346.9				Blocked,NotRead
12/27/2007	381.40		38.5	346.9				Blocked,NotRead
1/31/2008	381.20		38.5	346.9				Blocked,NotRead
2/28/2008	393.10		38.5	346.9				Blocked,NotRead
3/27/2008	387.90		45.5	339.9				Blocked,NotRead
4/28/2008	404.70		39.7	345.7				Blocked,NotRead
5/28/2008	404.00		39.5	345.9				Blocked,NotRead
6/25/2008	400.20		40.1	345.3				Blocked,NotRead
7/29/2008	398.70		40.8	344.6				Blocked,NotRead
7/30/2008	398.70	0.00	41.0	344.4				Blocked,NotRead
8/29/2008	395.00	0.00	42.7	342.7				Blocked,NotRead
9/25/2008	391.70	0.00	43.9	341.5				Blocked,NotRead
10/28/2008	384.05	0.00	47.0	338.5				Blocked,NotRead
11/26/2008	391.10	1.94	45.8	339.6				Blocked,NotRead
12/31/2008	397.90	3.20	42.4	343.0				Blocked,NotRead
1/29/2009	393.40	0.34	43.5	341.9				Blocked,NotRead
2/25/2009	398.60	3.91	42.2	343.2				Blocked,NotRead
3/31/2009	393.40	0.16	43.0	342.4				Blocked,NotRead
4/28/2009	400.70	0.10	41.1	344.3				Blocked,NotRead

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TABLE 4
RATTLESNAKE CANYON DAM
PIEZOMETER WATER LEVEL MEASUREMENTS
JANUARY 2007 THROUGH DECEMBER 2022

Monitoring Well -->			P-3A			P-30A		
Top of Well Elevation -->			385.40			420.81		
Bottom of Well Elevation -->			303.70			371.70		
Depth of Well			81.7			49.1		
Date	Reservoir Elevation (ft)	Monthly Rainfall (in.)	Reading (ft)	Elevation (ft)	Comment	Reading (ft)	Elevation (ft)	Comment
5/18/2009	400.80	0.00	40.8	344.6				Blocked,NotRead
5/27/2009	400.10	0.00	41.0	344.4				Blocked,NotRead
6/29/2009	403.00	0.15	39.9	345.5				Blocked,NotRead
7/28/2009	396.53	0.00	41.9	343.6				Blocked,NotRead
8/25/2009	396.60	0.00	42.2	343.2				Blocked,NotRead
9/30/2009	393.10	0.00	43.7	341.7				Blocked,NotRead
10/28/2009	401.60	0.42	40.9	344.5				Blocked,NotRead
11/30/2009	402.50	0.00	40.1	345.3				Blocked,NotRead
12/29/2009	399.90	2.80	40.8	344.6				Blocked,NotRead
1/26/2010	401.10	6.75	40.8	344.6				Blocked,NotRead
2/23/2010	402.50	2.66	40.0	345.4				Blocked,NotRead
3/30/2010	400.00	1.25	40.7	344.7				Blocked,NotRead
4/4/2010	399.60		40.9	344.5				Blocked,NotRead
4/27/2010	403.80	1.32	39.8	345.6				Blocked,NotRead
5/26/2010	403.60	0.03	39.7	345.7				Blocked,NotRead
6/29/2010	397.70	0.00	41.6	343.8				Blocked,NotRead
7/27/2010	396.30	0.00	42.3	343.1				Blocked,NotRead
8/26/2010	390.70	0.00	44.2	341.2				Blocked,NotRead
9/28/2010	390.30	0.00	45.0	340.4				Blocked,NotRead
10/26/2010	403.20	1.56	41.0	344.4				Blocked,NotRead
11/30/2010	397.10	1.34	42.0	343.4				Blocked,NotRead
12/28/2010	401.40	9.03	40.9	344.5				Blocked,NotRead
1/27/2011	393.80	1.10	42.7	342.7				Blocked,NotRead
2/23/2011	391.70	1.17	44.0	341.4				Blocked,NotRead
3/29/2011	403.00	3.10	40.6	344.8				Blocked,NotRead
4/27/2011	401.20	0.33	40.9	344.5				Blocked,NotRead
5/26/2011	399.50	0.48	41.4	344.0				Blocked,NotRead
6/28/2011	391.00	0.02	44.0	341.4				Blocked,NotRead
7/26/2011	384.00	0.00	47.0	338.4				Blocked,NotRead
8/24/2011	382.80	0.00	47.6	337.8				Blocked,NotRead

Note:

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2. Piezometer data based on NGVD 29 datum

TABLE 4
RATTLESNAKE CANYON DAM
PIEZOMETER WATER LEVEL MEASUREMENTS
JANUARY 2007 THROUGH DECEMBER 2022

Monitoring Well -->			P-3A			P-30A		
Top of Well Elevation -->			385.40			420.81		
Bottom of Well Elevation -->			303.70			371.70		
Depth of Well			81.7			49.1		
Date	Reservoir Elevation (ft)	Monthly Rainfall (in.)	Reading (ft)	Elevation (ft)	Comment	Reading (ft)	Elevation (ft)	Comment
9/27/2011	381.80	0.08	48.2	337.2				Blocked,NotRead
10/26/2011	383.90	0.98	47.5	337.9				Blocked,NotRead
11/22/2011	389.80	1.46	45.8	339.6				Blocked,NotRead
12/28/2011	382.30	0.35	47.5	337.9				Blocked,NotRead
1/25/2012	387.50	1.17	47.6	337.8				Blocked,NotRead
2/28/2012	381.10	0.79	48.8	336.6				Blocked,NotRead
3/27/2012	387.70	1.61	47.1	338.3				Blocked,NotRead
4/23/2012	392.30	1.51			Bees nest in can			Blocked,NotRead
5/25/2012	388.30	0.06	45.6	339.8				Blocked,NotRead
6/13/2012	385.10	0.06	46.6	338.8				Blocked,NotRead
6/26/2012	386.90	0.00	46.3	339.1				Blocked,NotRead
7/24/2012	378.00	0.10	49.0	336.4				Blocked,NotRead
8/8/2012	382.90	0.10	47.9	337.5				Blocked,NotRead
8/29/2012	382.70	0.00	48.4	337.0				Blocked,NotRead
8/29/2012	382.70	0.00	48.4	337.0				Blocked,NotRead
9/25/2012	381.90	0.00	48.0	337.4				Blocked,NotRead
10/24/2012	384.40	0.08	48.1	337.3				Blocked,NotRead
11/27/2012	389.60	0.86	45.8	339.6				Blocked,NotRead
12/18/2012	394.70	1.96	43.9	341.5				Blocked,NotRead
1/23/2013	393.00	1.53	43.5	341.9				Blocked,NotRead
2/26/2013	391.50	0.49	44.2	341.2				Blocked,NotRead
3/26/2013	394.40	1.00	44.1	341.3				Blocked,NotRead
4/25/2013	391.00	0.01	44.4	341.0				Blocked,NotRead
5/22/2013	392.00	0.00	43.9	341.5				Blocked,NotRead
6/25/2013	380.60	0.00	47.4	338.0				Blocked,NotRead
7/23/2013	380.20	0.00	48.6	336.8				Blocked,NotRead
8/21/2013	379.60	0.00	48.6	336.8				Blocked,NotRead
9/25/2013	382.20	0.00	48.4	337.0				Blocked,NotRead
10/29/2013	382.00	0.00	48.9	336.5				Blocked,NotRead
11/26/2013	390.10	0.44	46.5	338.9				Blocked,NotRead

Note:

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TABLE 4
RATTLESNAKE CANYON DAM
PIEZOMETER WATER LEVEL MEASUREMENTS
JANUARY 2007 THROUGH DECEMBER 2022

Monitoring Well -->			P-3A			P-30A		
Top of Well Elevation -->			385.40			420.81		
Bottom of Well Elevation -->			303.70			371.70		
Depth of Well			81.7			49.1		
Date	Reservoir Elevation (ft)	Monthly Rainfall (in.)	Reading (ft)	Elevation (ft)	Comment	Reading (ft)	Elevation (ft)	Comment
12/17/2013	394.70	1.10	44.1	341.3				Blocked,NotRead
1/28/2014	392.30	0.00	43.9	341.5				Blocked,NotRead
2/26/2014	389.90	0.72	44.7	340.7				Blocked,NotRead
3/26/2014	387.20		45.6	339.8				Blocked,NotRead
3/28/2014	387.20	1.78	45.8	339.6				Blocked,NotRead
4/23/2014	393.00	0.34	44.4	341.0				Blocked,NotRead
5/28/2014	387.50	0.00	45.7	339.7				Blocked,NotRead
6/25/2014	388.70	0.00	45.5	339.9				Blocked,NotRead
7/29/2014	382.80	0.00	47.4	338.0				Blocked,NotRead
8/28/2014	386.80	0.04	46.9	338.5				Blocked,NotRead
9/24/2014	387.90	0.00	45.9	339.5				Blocked,NotRead
10/29/2014	383.90	0.00	47.4	338.0				Blocked,NotRead
11/21/2014	388.30	0.35	46.0	339.4				Blocked,NotRead
12/22/2014	399.80	4.75	42.1	343.3				Blocked,NotRead
1/28/2015	396.90	1.28	42.5	342.9				Blocked,NotRead
2/24/2015	392.70	0.34	43.6	341.8				Blocked,NotRead
3/31/2015	388.90	0.67	44.3	341.1				Blocked,NotRead
4/23/2015	390.30	0.20	44.6	340.8				Blocked,NotRead
5/28/2015	400.30	1.87	41.2	344.2				Blocked,NotRead
6/24/2015	400.70	0.00	40.9	344.5				Blocked,NotRead
7/30/2015	400.20	0.00	41.0	344.4				Blocked,NotRead
8/25/2015	384.00	0.00	45.1	340.3				Blocked,NotRead
9/23/2015	388.60	2.17	45.2	340.2				Blocked,NotRead
10/29/2015	387.60	0.16	45.8	339.6				Blocked,NotRead
11/25/2015	386.90	0.15	46.0	339.4				Blocked,NotRead
12/23/2015	395.90	1.55	44.4	341.0				Blocked,NotRead
1/26/2016	401.20	2.86	41.2	344.2				Blocked,NotRead
2/24/2016	393.60	0.39	43.3	342.1				Blocked,NotRead
3/29/2016	397.10	1.55	42.2	343.2				Blocked,NotRead
4/29/2016	391.60	0.04	43.8	341.6				Blocked,NotRead

Note:

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2. Piezometer data based on NGVD 29 datum

**TABLE 4
RATTLESNAKE CANYON DAM
PIEZOMETER WATER LEVEL MEASUREMENTS
JANUARY 2007 THROUGH DECEMBER 2022**

Monitoring Well -->			P-3A			P-30A		
Top of Well Elevation -->			385.40			420.81		
Bottom of Well Elevation -->			303.70			371.70		
Depth of Well			81.7			49.1		
Date	Reservoir Elevation (ft)	Monthly Rainfall (in.)	Reading (ft)	Elevation (ft)	Comment	Reading (ft)	Elevation (ft)	Comment
5/24/2016	401.60	0.13	41.3	344.1				Blocked,NotRead
6/29/2016	392.50	0.00	43.3	342.1				Blocked,NotRead
7/26/2016	377.70	0.00	47.8	337.6				Blocked,NotRead
8/24/2016	388.10	0.00	46.1	339.3				Blocked,NotRead
9/29/2016	388.20	0.00	45.7	339.7				Blocked,NotRead
10/26/2016	392.10	0.96	45.1	340.3				Blocked,NotRead
11/22/2016	395.70	1.42	43.3	342.1				Blocked,NotRead
12/28/2016	400.70	4.11	41.1	344.3				Blocked,NotRead
1/26/2017	402.40	6.70	40.5	344.9				Blocked,NotRead
2/28/2017	389.60	4.01	44.4	341.0				Blocked,NotRead
3/29/2017	391.80	0.14	44.3	341.1				Blocked,NotRead
4/26/2017	387.00	0.04	45.5	340.0				Blocked,NotRead
5/23/2017	399.40	0.30	41.9	343.5				Blocked,NotRead
6/21/2017	392.60	0.00	43.5	341.9				Blocked,NotRead
7/26/2017	384.60	0.00	46.4	339.0				Blocked,NotRead
8/30/2017	383.00	0.00	47.1	338.3				Blocked,NotRead
9/27/2017	382.00	0.00	48.1	337.3				Blocked,NotRead
10/27/2017	375.00	0.00	49.5	335.9				Blocked,NotRead
11/30/2017	382.80	0.14	48.1	337.3				Blocked,NotRead
12/21/2017	380.50	0.00	48.6	336.8				Blocked,NotRead
1/24/2018	397.80	1.43	43.5	341.9				Blocked,NotRead
2/21/2018	382.40	0.17	46.7	338.7				Blocked,NotRead
3/29/2018	392.10	0.00	44.5	340.9				Blocked,NotRead
4/25/2018	388.00	0.05	46.3	339.1				Blocked,NotRead
5/30/2018	399.50	0.21	42.5	342.9				Blocked,NotRead
6/28/2018	398.90	0.00	41.6	343.8				Blocked,NotRead
7/25/2018	388.60	0.00	44.5	340.9				Blocked,NotRead
8/24/2018	378.60	0.00	48.4	337.0				Blocked,NotRead
9/27/2018	381.40	0.00	48.3	337.1				Blocked,NotRead
10/18/2018	385.20	1.45	47.3	338.1				Blocked,NotRead

Note:

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TABLE 4
RATTLESNAKE CANYON DAM
PIEZOMETER WATER LEVEL MEASUREMENTS
JANUARY 2007 THROUGH DECEMBER 2022

Monitoring Well -->			P-3A			P-30A		
Top of Well Elevation -->			385.40			420.81		
Bottom of Well Elevation -->			303.70			371.70		
Depth of Well			81.7			49.1		
Date	Reservoir Elevation (ft)	monthly Rainfall (in.)	Reading (ft)	Elevation (ft)	Comment	Reading (ft)	Elevation (ft)	Comment
11/28/2018	389.10	1.32	48.9	336.5				Blocked,NotRead
12/20/2018	394.20	2.12	44.5	340.9				Blocked,NotRead
2/21/2019	396.00	8.26	42.20	343.2				Blocked,NotRead
3/27/2019	376.00	1.88	47.40	338.0				Blocked,NotRead
4/25/2019	377.70	0.03	48.04	337.4				Blocked,NotRead
5/30/2019	395.30	0.92	47.40	338.0				Blocked,NotRead
6/26/2019	388.40	0.01	45.00	340.4		31.10	389.71	
7/5/2019	385.50	0.00	47.60	337.8		37.20	383.61	
7/30/2019	385.20	0.00	47.60	337.8		37.30	383.51	
8/27/2019	387.90	0.00	45.60	339.8		37.30	383.51	
9/26/2019	380.00	0.00	48.20	337.2		37.20	383.61	
10/23/2019	378.90	0.00	49.20	336.2		37.30	383.51	
11/26/2019	383.80	2.60	48.30	337.1		37.30	383.51	
12/18/2019	389.20	4.63	46.10	339.3		37.40	383.41	
1/29/2020	388.20	0.15	45.60	339.8		37.30	383.51	
2/25/2020	384.70	0.33	46.80	338.6		37.30	383.51	
3/24/2020	391.70	3.91	45.00	340.4		37.30	383.51	
4/23/2020	399.40	4.05	41.60	343.8		37.30	383.51	
5/27/2020	388.50	0.40	45.00	340.4		37.20	383.61	
6/24/2020	388.00	0.01	45.30	340.1		39.30	381.51	
7/29/2020	358.70	0.00	46.10	339.3		41.20	379.61	
8/26/2020	379.30	0.00	48.80	336.6		37.40	383.41	
9/29/2020	381.30	0.00	48.40	337.0		37.30	383.51	
10/28/2020	376.50	0.00	49.80	335.6		37.20	383.61	
11/24/2020	380.70	0.25	49.20	336.2		37.30	383.51	
12/23/2020	384.10	1.40	47.90	337.5		37.20	383.61	
1/26/2021	386.2	2.42	46.9	338.5		37.3	383.51	
2/25/2021	385.4	0.07	46.5	338.9		37.3	383.51	
3/23/2021	394.8	1.35	43.9	341.5		37.3	383.51	
4/27/2021	384.1	0.04	46.6	338.8		37.5	383.31	

Note:

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**TABLE 4
RATTLESNAKE CANYON DAM
PIEZOMETER WATER LEVEL MEASUREMENTS
JANUARY 2007 THROUGH DECEMBER 2022**

Monitoring Well -->			P-3A			P-30A		
Top of Well Elevation -->			385.40			420.81		
Bottom of Well Elevation -->			303.70			371.70		
Depth of Well			81.7			49.1		
Date	Reservoir Elevation (ft)	monthly Rainfall (in.)	Reading (ft)	Elevation (ft)	Comment	Reading (ft)	Elevation (ft)	Comment
5/27/2021	383.5	0.04	46.9	338.5		37.3	383.51	
6/30/2021	385.4	0	47.1	338.3		37.5	383.31	
7/29/2021	381.7	0.03	48.7	336.7		37.3	383.51	
8/24/2021	383.4	0	48.3	337.1		37.3	383.51	
9/28/2021	381.3	0.06	48	337.4		37.4	383.41	
10/27/2021	382.7	0.71	48.8	336.6		37.3	383.51	
11/23/2021	381	0	49.1	336.3		37.4	383.41	
12/21/2021	386.3	6.1	47.5	337.9		37.4	383.41	
1/25/2022	382	0.05	48.1	337.3		37.2	383.61	
2/22/2022	382.3	0.36	48.9	336.5		37.3	383.51	
3/29/2022	390.6	1.33	46.3	339.1		37.5	383.31	
4/27/2022	393.2	0.02	44.5	340.9		37.4	383.41	
5/24/2022	391.4	0.05	37.3	348.1		44.4	376.41	
6/28/2022	392.7	0	44.1	341.3		37.4	383.41	
7/26/2022	386.1	0	45.9	339.5		37.2	383.61	
8/25/2022	382.2	0.02	47.5	337.9		37.4	383.41	
9/29/2022	392.7	0.36	44.1	341.3		37.4	383.41	
10/25/2022	390	0.32	46.1	339.3		37.4	383.41	
11/17/2022	391.4	2.12	44.8	340.6		37.3	383.51	
12/22/2022	386.4	2.28	46.9	338.5		37.3	383.51	

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TABLE 4
RATTLESNAKE CANYON DAM
PIEZOMETER WATER LEVEL MEASUREMENTS
JANUARY 2007 THROUGH DECEMBER 2022

Monitoring Well -->			P-30B			P-35A		
Top of Well Elevation -->			420.81			388.73		
Bottom of Well Elevation -->			337.10			357.30		
Depth of Well			83.7			31.4		
Date	Reservoir Elevation (ft)	Monthly Rainfall (in.)	Reading (ft)	Elevation (ft)	Comment	Reading (ft)	Elevation (ft)	Comment
1/31/2007	376.90		47.5	373.3		31.1	357.6	
2/28/2007	380.90		37.5	383.3		31.3	357.4	
3/29/2007	397.00		47.5	373.3		31.2	357.5	
4/27/2007	405.60		47.5	373.3		31.3	357.4	
5/24/2007	404.40		46.6	374.2		35.3	353.4	
6/28/2007	396.90		45.8	375.0		31.3	357.4	
7/31/2007	392.60		45.0	375.8		31.2	357.5	
8/29/2007	388.60		45.3	375.5		31.3	357.4	
9/2/2007	387.40		47.5	373.3		31.3	357.4	
9/26/2007	387.90		47.0	373.8		31.2	357.5	
10/25/2007	382.00		47.9	372.9		31.2	357.5	
11/27/2007	380.30		47.5	373.3		31.3	357.4	
12/27/2007	381.40		47.6	373.2		31.4	357.3	
1/31/2008	381.20		47.5	373.3	Dry	31.3	357.4	
2/28/2008	393.10		46.7	374.1	Dry	33.3	355.4	
3/27/2008	387.90		48.3	372.5		31.4	357.3	Dry
4/28/2008	404.70		48.3	372.5	Dry	31.3	357.4	Dry
5/28/2008	404.00		46.6	374.2		31.4	357.3	Dry
6/25/2008	400.20		46.0	374.8		31.4	357.3	Dry
7/29/2008	398.70		44.0	376.8		31.3	357.4	Dry
7/30/2008	398.70	0.00	46.0	374.8		31.3	357.4	Dry
8/29/2008	395.00	0.00	47.1	373.7	Cleaning	31.3	357.4	Dry
9/25/2008	391.70	0.00	48.6	372.2		31.3	357.4	Dry
10/28/2008	384.05	0.00	51.0	369.8		31.3	357.4	Dry
11/26/2008	391.10	1.94	53.1	367.7		31.4	357.3	Dry
12/31/2008	397.90	3.20	48.6	372.2		31.3	357.4	Dry
1/29/2009	393.40	0.34	49.0	371.8		31.3	357.4	Dry
2/25/2009	398.60	3.91	48.6	372.2		31.3	357.4	Dry
3/31/2009	393.40	0.16	47.3	373.5		31.4	357.3	Dry
4/28/2009	400.70	0.10	47.1	373.7		31.2	357.5	

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**TABLE 4
RATTLESNAKE CANYON DAM
PIEZOMETER WATER LEVEL MEASUREMENTS
JANUARY 2007 THROUGH DECEMBER 2022**

Monitoring Well -->			P-30B			P-35A		
Top of Well Elevation -->			420.81			388.73		
Bottom of Well Elevation -->			337.10			357.30		
Depth of Well			83.7			31.4		
Date	Reservoir Elevation (ft)	Monthly Rainfall (in.)	Reading (ft)	Elevation (ft)	Comment	Reading (ft)	Elevation (ft)	Comment
5/18/2009	400.80	0.00	45.5	375.3		30.3	358.4	
5/27/2009	400.10	0.00	45.6	375.2		31.1	357.6	Dry
6/29/2009	403.00	0.15	43.6	377.2		31.3	357.4	
7/28/2009	396.53	0.00	44.7	376.1		30.8	357.9	
8/25/2009	396.60	0.00	46.5	374.3		31.0	357.7	
9/30/2009	393.10	0.00	48.4	372.4		31.3	357.4	
10/28/2009	401.60	0.42	46.6	374.2		31.3	357.4	
11/30/2009	402.50	0.00	44.0	376.8		31.3	357.4	
12/29/2009	399.90	2.80	44.7	376.1		31.3	357.4	
1/26/2010	401.10	6.75	46.0	374.8		28.3	360.4	
2/23/2010	402.50	2.66	44.7	376.1		30.5	358.2	
3/30/2010	400.00	1.25	44.5	376.3		30.0	358.7	
4/4/2010	399.60		44.8	376.0		30.1	358.6	
4/27/2010	403.80	1.32	44.1	376.7		30.2	358.5	
5/26/2010	403.60	0.03	43.5	377.3		29.7	359.0	
6/29/2010	397.70	0.00	43.0	377.8		29.5	359.2	
7/27/2010	396.30	0.00	43.0	377.8		30.3	358.4	
8/26/2010	390.70	0.00	42.9	377.9		31.3	357.4	
9/28/2010	390.30	0.00	42.8	378.0		31.1	357.6	
10/26/2010	403.20	1.56	43.0	377.8		31.5	357.2	
11/30/2010	397.10	1.34	43.0	377.8		31.3	357.4	
12/28/2010	401.40	9.03	43.1	377.7		22.5	366.2	
1/27/2011	393.80	1.10	43.0	377.8		30.6	358.1	
2/23/2011	391.70	1.17	43.2	377.6		31.3	357.4	
3/29/2011	403.00	3.10	43.0	377.8		31.2	357.5	
4/27/2011	401.20	0.33	43.2	377.6	Dry	31.0	357.7	
5/26/2011	399.50	0.48	43.0	377.9	Dry	30.7	358.1	
6/28/2011	391.00	0.02	43.0	377.8		31.0	357.7	
7/26/2011	384.00	0.00	43.0	377.8		31.2	357.5	
8/24/2011	382.80	0.00	43.2	377.6		31.3	357.4	

Note:

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2. Piezometer data based on NGVD 29 datum

TABLE 4
RATTLESNAKE CANYON DAM
PIEZOMETER WATER LEVEL MEASUREMENTS
JANUARY 2007 THROUGH DECEMBER 2022

Monitoring Well -->			P-30B			P-35A		
Top of Well Elevation -->			420.81			388.73		
Bottom of Well Elevation -->			337.10			357.30		
Depth of Well			83.7			31.4		
Date	Reservoir Elevation (ft)	Monthly Rainfall (in.)	Reading (ft)	Elevation (ft)	Comment	Reading (ft)	Elevation (ft)	Comment
9/27/2011	381.80	0.08	43.0	377.8		31.3	357.4	
10/26/2011	383.90	0.98	42.9	377.9		31.3	357.4	
11/22/2011	389.80	1.46	43.0	377.8		31.3	357.4	
12/28/2011	382.30	0.35	43.0	377.8		31.4	357.3	
1/25/2012	387.50	1.17	43.0	377.8		31.4	357.3	
2/28/2012	381.10	0.79	43.0	377.8		31.4	357.3	
3/27/2012	387.70	1.61	43.0	377.8		31.3	357.4	
4/23/2012	392.30	1.51	43.1	377.7		31.4	357.4	
5/25/2012	388.30	0.06	43.1	377.7		31.5	357.2	
6/13/2012	385.10	0.06	43.1	377.7		31.2	357.5	
6/26/2012	386.90	0.00	43.1	377.7		31.3	357.4	
7/24/2012	378.00	0.10	43.1	377.7		31.3	357.4	
8/8/2012	382.90	0.10	43.1	377.7		31.3	357.4	
8/29/2012	382.70	0.00	43.1	377.7		31.3	357.4	
8/29/2012	382.70	0.00	43.1	377.7		31.3	357.4	
9/25/2012	381.90	0.00	43.1	377.7		31.3	357.4	
10/24/2012	384.40	0.08	43.0	377.8		31.0	357.7	
11/27/2012	389.60	0.86	43.1	377.7		31.3	357.4	
12/18/2012	394.70	1.96	43.1	377.7		31.3	357.4	
1/23/2013	393.00	1.53	43.2	377.6		31.5	357.2	
2/26/2013	391.50	0.49	43.2	377.6		31.3	357.4	
3/26/2013	394.40	1.00	43.1	377.7		31.3	357.4	
4/25/2013	391.00	0.01	42.9	377.9		31.5	357.2	
5/22/2013	392.00	0.00	43.0	377.8		31.4	357.3	
6/25/2013	380.60	0.00	42.8	378.0		31.3	357.4	
7/23/2013	380.20	0.00	43.3	377.5		31.3	357.4	Dry
8/21/2013	379.60	0.00	43.0	377.8		31.3	357.4	Dry
9/25/2013	382.20	0.00	43.0	377.8	Dry	31.3	357.4	Dry
10/29/2013	382.00	0.00	43.2	377.6	Wet	31.2	357.5	Dry
11/26/2013	390.10	0.44	43.0	377.8		31.3	357.4	Dry

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TABLE 4
RATTLESNAKE CANYON DAM
PIEZOMETER WATER LEVEL MEASUREMENTS
JANUARY 2007 THROUGH DECEMBER 2022

Monitoring Well -->			P-30B			P-35A		
Top of Well Elevation -->			420.81			388.73		
Bottom of Well Elevation -->			337.10			357.30		
Depth of Well			83.7			31.4		
Date	Reservoir Elevation (ft)	Monthly Rainfall (in.)	Reading (ft)	Elevation (ft)	Comment	Reading (ft)	Elevation (ft)	Comment
12/17/2013	394.70	1.10	43.0	377.8		31.4	357.3	Dry
1/28/2014	392.30	0.00	43.0	377.8		31.4	357.3	Dry
2/26/2014	389.90	0.72	43.0	377.8		31.4	357.3	Dry
3/26/2014	387.20		43.2	377.6	Wet	31.4	357.3	Dry
3/28/2014	387.20	1.78	43.0	377.8		31.3	357.4	
4/23/2014	393.00	0.34	43.1	377.7		31.3	357.4	
5/28/2014	387.50	0.00	42.9	377.9		31.5	357.2	
6/25/2014	388.70	0.00	43.2	377.6		31.3	357.4	Dry
7/29/2014	382.80	0.00	43.1	377.7		31.3	357.4	Dry
8/28/2014	386.80	0.04	43.1	377.7		31.2	357.5	
9/24/2014	387.90	0.00	43.0	377.8		31.2	357.5	Dry
10/29/2014	383.90	0.00	43.1	377.7		31.4	357.3	Dry
11/21/2014	388.30	0.35	43.0	377.8		31.2	357.5	
12/22/2014	399.80	4.75	42.7	378.1		31.3	357.4	Dry
1/28/2015	396.90	1.28	43.1	377.7		31.4	357.3	Dry
2/24/2015	392.70	0.34	43.0	377.8		31.4	357.3	Dry
3/31/2015	388.90	0.67	43.1	377.7		31.5	357.2	Dry
4/23/2015	390.30	0.20	43.1	377.7		31.3	357.4	Dry
5/28/2015	400.30	1.87	42.9	377.9		31.4	357.3	Dry
6/24/2015	400.70	0.00	43.0	377.8		31.4	357.3	Dry
7/30/2015	400.20	0.00	43.1	377.7		31.4	357.3	Dry
8/25/2015	384.00	0.00	38.6	382.2	Omitted	31.3	357.4	Dry
9/23/2015	388.60	2.17	43.1	377.7		31.3	357.4	Dry
10/29/2015	387.60	0.16	43.2	377.6		31.5	357.2	Dry
11/25/2015	386.90	0.15	43.2	377.6		31.4	357.3	Dry
12/23/2015	395.90	1.55	43.0	377.8		31.4	357.3	Dry
1/26/2016	401.20	2.86	43.2	377.6		31.3	357.4	Dry
2/24/2016	393.60	0.39	43.1	377.7		31.4	357.3	Dry
3/29/2016	397.10	1.55	43.2	377.6		31.4	357.3	Dry
4/29/2016	391.60	0.04	43.0	377.8		31.4	357.3	Dry

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TABLE 4
RATTLESNAKE CANYON DAM
PIEZOMETER WATER LEVEL MEASUREMENTS
JANUARY 2007 THROUGH DECEMBER 2022

Monitoring Well -->			P-30B			P-35A		
Top of Well Elevation -->			420.81			388.73		
Bottom of Well Elevation -->			337.10			357.30		
Depth of Well			83.7			31.4		
Date	Reservoir Elevation (ft)	Monthly Rainfall (in.)	Reading (ft)	Elevation (ft)	Comment	Reading (ft)	Elevation (ft)	Comment
5/24/2016	401.60	0.13	44.3	376.5		31.4	357.3	Dry
6/29/2016	392.50	0.00	43.1	377.7		31.3	357.4	Dry
7/26/2016	377.70	0.00	52.2	368.6		31.3	357.4	Dry
8/24/2016	388.10	0.00	53.3	367.5		30.4	358.3	Dry
9/29/2016	388.20	0.00	52.5	368.3		31.4	357.3	Dry
10/26/2016	392.10	0.96	53.1	367.7		31.3	357.4	Dry
11/22/2016	395.70	1.42	43.1	377.7		31.3	357.4	Dry
12/28/2016	400.70	4.11	41.2	379.6		31.4	357.3	Dry
1/26/2017	402.40	6.70	43.2	377.6		31.4	357.3	Dry
2/28/2017	389.60	4.01	48.1	372.7		31.4	357.3	Dry
3/29/2017	391.80	0.14	50.6	370.2		31.3	357.4	
4/26/2017	387.00	0.04	43.0	377.8		31.3	357.4	
5/23/2017	399.40	0.30	43.3	377.5		31.4	357.3	Dry
6/21/2017	392.60	0.00	47.6	373.2		31.3	357.4	Dry
7/26/2017	384.60	0.00	50.6	370.2	Dry	31.4	357.3	Dry
8/30/2017	383.00	0.00	50.8	370.0	Dry	31.4	357.3	Dry
9/27/2017	382.00	0.00	50.6	370.2	Dry	31.3	357.4	Dry
10/27/2017	375.00	0.00	43.2	377.6	Omitted	31.4	357.3	
11/30/2017	382.80	0.14	53.4	367.4	Omitted	31.3	357.4	
12/21/2017	380.50	0.00	53.6	367.2	Dry	31.3	357.4	Dry
1/24/2018	397.80	1.43	53.4	367.4	Omitted	31.3	357.4	Dry
2/21/2018	382.40	0.17	43.3	377.5	Omitted	31.3	357.4	Dry
3/29/2018	392.10	0.00	52.3	368.5	Omitted	31.3	357.4	Dry
4/25/2018	388.00	0.05	50.7	370.1	Omitted	31.2	357.5	Dry
5/30/2018	399.50	0.21	50.5	370.3	Omitted	31.2	357.5	Dry
6/28/2018	398.90	0.00	47.0	373.8	Omitted	31.3	357.4	Dry
7/25/2018	388.60	0.00	49.1	371.7	Omitted	31.4	357.3	Dry
8/24/2018	378.60	0.00	43.2	377.6	Omitted	31.1	357.6	Dry
9/27/2018	381.40	0.00	50.5	370.3	Omitted	31.2	357.5	
10/18/2018	385.20	1.45	50.6	370.2	Omitted	31.3	357.4	Dry

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TABLE 4
RATTLESNAKE CANYON DAM
PIEZOMETER WATER LEVEL MEASUREMENTS
JANUARY 2007 THROUGH DECEMBER 2022

Monitoring Well -->			P-30B			P-35A		
Top of Well Elevation -->			420.81			388.73		
Bottom of Well Elevation -->			337.10			357.30		
Depth of Well			83.7			31.4		
Date	Reservoir Elevation (ft)	Monthly Rainfall (in.)	Reading (ft)	Elevation (ft)	Comment	Reading (ft)	Elevation (ft)	Comment
11/28/2018	389.10	1.32	43.4	377.4	Omitted	31.3	357.4	
12/20/2018	394.20	2.12	50.5	370.3	Omitted	31.1	357.6	Dry
2/21/2019	396.00	8.26	47.70	373.1	Omitted	30.90	357.8	
3/27/2019	376.00	1.88			Blocked,NotRead	31.30	357.4	
4/25/2019	377.70	0.03			Blocked,NotRead	31.30	357.4	Dry
5/30/2019	395.30	0.92	52.60	368.2		31.20	357.5	Dry
6/26/2019	388.40	0.01	53.20	367.6		31.30	357.4	Dry
7/5/2019	385.50	0.00	51.70	369.1		31.30	357.4	Dry
7/30/2019	385.20	0.00	53.22	367.6		31.30	357.4	
8/27/2019	387.90	0.00	52.90	367.9		31.20	357.5	Dry
9/26/2019	380.00	0.00	54.30	366.5		31.30	357.4	
10/23/2019	378.90	0.00	53.20	367.6		31.20	357.5	
11/26/2019	383.80	2.60	53.20	367.6		31.20	357.5	
12/18/2019	389.20	4.63	53.50	367.3		31.40	357.3	
1/29/2020	388.20	0.15	53.30	367.5		31.20	357.5	
2/25/2020	384.70	0.33	53.20	367.6		31.20	357.5	
3/24/2020	391.70	3.91	53.30	367.5		31.30	357.4	
4/23/2020	399.40	4.05	53.30	367.5		31.30	357.4	
5/27/2020	388.50	0.40	53.20	367.6		31.20	357.5	
6/24/2020	388.00	0.01	52.20	368.6		31.30	357.4	
7/29/2020	358.70	0.00	52.40	368.4		31.20	357.5	
8/26/2020	379.30	0.00	53.40	367.4		31.30	357.4	
9/29/2020	381.30	0.00	53.40	367.4		31.30	357.4	
10/28/2020	376.50	0.00	53.60	367.2		31.30	357.4	
11/24/2020	380.70	0.25	53.60	367.2		31.20	357.5	
12/23/2020	384.10	1.40	55.40	365.4		31.30	357.4	
1/26/2021	386.2	2.42	53.6	367.21		31.3	357.43	
2/25/2021	385.4	0.07	53.4	367.41		31.2	357.53	
3/23/2021	394.8	1.35	51.9	368.91		31.1	357.63	
4/27/2021	384.1	0.04	53.2	367.61		31.3	357.43	

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**TABLE 4
RATTLESNAKE CANYON DAM
PIEZOMETER WATER LEVEL MEASUREMENTS
JANUARY 2007 THROUGH DECEMBER 2022**

Monitoring Well -->			P-30B			P-35A		
Top of Well Elevation -->			420.81			388.73		
Bottom of Well Elevation -->			337.10			357.30		
Depth of Well			83.7			31.4		
Date	Reservoir Elevation (ft)	Monthly Rainfall (in.)	Reading (ft)	Elevation (ft)	Comment	Reading (ft)	Elevation (ft)	Comment
5/27/2021	383.5	0.04	53.6	367.21		31.3	357.43	
6/30/2021	385.4	0	53.8	367.01		31.3	357.43	
7/29/2021	381.7	0.03	53.5	367.31		31.3	357.43	
8/24/2021	383.4	0	53.6	367.21		31.3	357.43	
9/28/2021	381.3	0.06	53.7	367.11		31.4	357.33	
10/27/2021	382.7	0.71	53.5	367.31		31.3	357.43	
11/23/2021	381	0	53.6	367.21		31.3	357.43	
12/21/2021	386.3	6.1	53.6	367.21		31.3	357.43	
1/25/2022	382	0.05	53.4	367.41		31.2	357.53	
2/22/2022	382.3	0.36	53.4	367.41		31.3	357.43	
3/29/2022	390.6	1.33	53.7	367.11		31.3	357.43	
4/27/2022	393.2	0.02	52	368.81		31.3	357.43	
5/24/2022	391.4	0.05	50.9	369.91		31.3	357.43	
6/28/2022	392.7	0	50.7	370.11		31.4	357.33	
7/26/2022	386.1	0	51.3	369.51		31.1	357.63	
8/25/2022	382.2	0.02	53.5	367.31		31.1	357.63	
9/29/2022	392.7	0.36	50.7	370.11		31.4	357.33	
10/25/2022	390	0.32	53.5	367.31		31.2	357.53	
11/17/2022	391.4	2.12	52	368.81		33.1	355.63	
12/22/2022	386.4	2.28	53.6	367.21		31.2	357.53	

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**TABLE 4
RATTLESNAKE CANYON DAM
PIEZOMETER WATER LEVEL MEASUREMENTS
JANUARY 2007 THROUGH DECEMBER 2022**

Monitoring Well -->			P-35B			P-35C		
Top of Well Elevation -->			388.45			388.34		
Bottom of Well Elevation -->			313.40			343.20		
Depth of Well			75.1			45.1		
Date	Reservoir Elevation (ft)	Monthly Rainfall (in.)	Reading (ft)	Elevation (ft)	Comment	Reading (ft)	Elevation (ft)	Comment
1/31/2007	376.90		44.1	344.4		44.3	344.0	
2/28/2007	380.90		44.1	344.4		44.6	343.7	
3/29/2007	397.00		46.1	342.4		44.7	343.6	
4/27/2007	405.60		44.1	344.4		43.9	344.4	
5/24/2007	404.40		44.3	344.2		43.0	345.3	
6/28/2007	396.90		44.4	344.1		42.8	345.5	
7/31/2007	392.60		44.3	344.2		43.1	345.2	
8/29/2007	388.60		44.1	344.4		43.4	344.9	
9/2/2007	387.40		44.1	344.4		43.3	345.0	
9/26/2007	387.90		44.1	344.4		43.5	344.8	
10/25/2007	382.00		44.2	344.3		44.0	344.3	
11/27/2007	380.30		44.1	344.4		44.4	343.9	
12/27/2007	381.40		44.2	344.3		44.7	343.6	
1/31/2008	381.20		44.2	344.3		44.7	343.7	Dry
2/28/2008	393.10		44.1	344.4		44.8	343.5	Dry
3/27/2008	387.90		49.6	338.9		44.6	343.7	Dry
4/28/2008	404.70		44.3	344.2		44.1	344.2	
5/28/2008	404.00		44.0	344.5		43.1	345.2	
6/25/2008	400.20		44.5	344.0		42.5	345.8	
7/29/2008	398.70		45.4	343.1		42.5	345.8	
7/30/2008	398.70	0.00	45.5	343.0		42.5	345.8	
8/29/2008	395.00	0.00	46.8	341.7		42.5	345.8	
9/25/2008	391.70	0.00	47.9	340.6		43.5	344.8	
10/28/2008	384.05	0.00	50.8	337.7		43.3	345.0	
11/26/2008	391.10	1.94	49.7	338.8		43.7	344.6	
12/31/2008	397.90	3.20	46.7	341.8		43.3	345.0	
1/29/2009	393.40	0.34	47.6	340.9		43.1	345.2	
2/25/2009	398.60	3.91	46.1	342.4		43.1	345.2	
3/31/2009	393.40	0.16	47.1	341.4		42.8	345.5	
4/28/2009	400.70	0.10	45.5	343.0		42.8	345.5	

Note:

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**TABLE 4
RATTLESNAKE CANYON DAM
PIEZOMETER WATER LEVEL MEASUREMENTS
JANUARY 2007 THROUGH DECEMBER 2022**

Monitoring Well -->			P-35B			P-35C		
Top of Well Elevation -->			388.45			388.34		
Bottom of Well Elevation -->			313.40			343.20		
Depth of Well			75.1			45.1		
Date	Reservoir Elevation (ft)	Monthly Rainfall (in.)	Reading (ft)	Elevation (ft)	Comment	Reading (ft)	Elevation (ft)	Comment
5/18/2009	400.80	0.00	45.2	343.3		42.4	345.9	
5/27/2009	400.10	0.00	45.4	343.1		42.4	345.9	
6/29/2009	403.00	0.15	44.4	344.1		41.9	346.4	
7/28/2009	396.53	0.00	46.2	342.3		41.9	346.5	
8/25/2009	396.60	0.00	46.5	342.0		42.1	346.2	
9/30/2009	393.10	0.00	47.9	340.6		42.7	345.6	
10/28/2009	401.60	0.42	45.4	343.1		42.6	345.7	
11/30/2009	402.50	0.00	44.6	343.9		41.8	346.5	
12/29/2009	399.90	2.80	45.3	343.2		41.7	346.6	
1/26/2010	401.10	6.75	45.2	343.3		41.9	346.4	
2/23/2010	402.50	2.66	44.6	343.9		41.8	346.5	
3/30/2010	400.00	1.25	45.1	343.4		41.3	347.0	
4/4/2010	399.60		45.3	343.2		41.5	346.8	
4/27/2010	403.80	1.32	44.4	344.1		41.4	346.9	
5/26/2010	403.60	0.03	44.3	344.2		41.2	347.1	
6/29/2010	397.70	0.00	46.0	342.5		40.3	348.0	
7/27/2010	396.30	0.00	46.7	341.8		41.8	346.5	
8/26/2010	390.70	0.00	48.3	340.2		41.9	346.4	
9/28/2010	390.30	0.00	48.7	339.8		42.9	345.4	
10/26/2010	403.20	1.56	45.7	342.8		42.7	345.6	
11/30/2010	397.10	1.34	46.5	342.0		47.9	340.4	Erroneous
12/28/2010	401.40	9.03	45.5	343.0		42.0	346.3	
1/27/2011	393.80	1.10	47.1	341.4		41.8	346.5	
2/23/2011	391.70	1.17	48.3	340.2		42.4	345.9	
3/29/2011	403.00	3.10	45.2	343.3		42.1	346.2	
4/27/2011	401.20	0.33	45.5	343.0		41.5	346.8	
5/26/2011	399.50	0.48	46.0	342.5		41.7	346.6	
6/28/2011	391.00	0.02	48.4	340.1		42.0	346.3	
7/26/2011	384.00	0.00	50.9	337.6		42.8	345.5	
8/24/2011	382.80	0.00	51.6	336.9		43.5	344.8	

Note:

1. Readings in red are classified as erroneous
2. Piezometer data based on NGVD 29 datum

TABLE 4
RATTLESNAKE CANYON DAM
PIEZOMETER WATER LEVEL MEASUREMENTS
JANUARY 2007 THROUGH DECEMBER 2022

Monitoring Well -->			P-35B			P-35C		
Top of Well Elevation -->			388.45			388.34		
Bottom of Well Elevation -->			313.40			343.20		
Depth of Well			75.1			45.1		
Date	Reservoir Elevation (ft)	Monthly Rainfall (in.)	Reading (ft)	Elevation (ft)	Comment	Reading (ft)	Elevation (ft)	Comment
9/27/2011	381.80	0.08	52.2	336.3		44.0	344.3	
10/26/2011	383.90	0.98	51.5	337.0		44.2	344.1	
11/22/2011	389.80	1.46	50.1	338.4		44.4	343.9	
12/28/2011	382.30	0.35	51.5	337.0		44.1	344.2	
1/25/2012	387.50	1.17	51.5	337.0		44.5	343.8	
2/28/2012	381.10	0.79	52.6	335.9		44.7	343.6	
3/27/2012	387.70	1.61	51.2	337.3		44.7	343.6	
4/23/2012	392.30	1.51	49.3	339.2		44.7	343.6	
5/25/2012	388.30	0.06	49.6	338.9		44.4	343.9	
6/13/2012	385.10	0.06	50.8	337.7		44.4	343.9	
6/26/2012	386.90	0.00	50.4	338.1		44.2	344.1	
7/24/2012	378.00	0.10	52.8	335.7		44.5	343.8	
8/8/2012	382.90	0.10	51.9	336.6		44.7	343.6	
8/29/2012	382.70	0.00	52.3	336.2		44.7	343.6	
8/29/2012	382.70	0.00	52.3	336.2		44.7	343.6	
9/25/2012	381.90	0.00	52.9	335.6		44.7	343.6	
10/24/2012	384.40	0.08	52.1	336.4		44.6	343.7	
11/27/2012	389.60	0.86	50.0	338.5		44.5	343.8	
12/18/2012	394.70	1.96	48.4	340.1		44.6	343.7	
1/23/2013	393.00	1.53	47.9	340.6		43.8	344.5	
2/26/2013	391.50	0.49	48.4	340.1		43.6	344.7	
3/26/2013	394.40	1.00	48.5	340.0		43.7	344.6	
4/25/2013	391.00	0.01	48.8	339.7		43.7	344.6	
5/22/2013	392.00	0.00	48.4	340.1		43.5	344.8	
6/25/2013	380.60	0.00	51.4	337.1		43.8	344.5	
7/23/2013	380.20	0.00	52.5	336.0		44.3	344.0	
8/21/2013	379.60	0.00	52.5	336.0		44.6	343.7	Wet
9/25/2013	382.20	0.00	52.4	336.1		44.7	343.6	Dry
10/29/2013	382.00	0.00	52.8	335.7		44.7	343.6	Dry
11/26/2013	390.10	0.44	50.8	337.7		44.7	343.6	Dry

Note:

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**TABLE 4
RATTLESNAKE CANYON DAM
PIEZOMETER WATER LEVEL MEASUREMENTS
JANUARY 2007 THROUGH DECEMBER 2022**

Monitoring Well -->			P-35B			P-35C		
Top of Well Elevation -->			388.45			388.34		
Bottom of Well Elevation -->			313.40			343.20		
Depth of Well			75.1			45.1		
Date	Reservoir Elevation (ft)	Monthly Rainfall (in.)	Reading (ft)	Elevation (ft)	Comment	Reading (ft)	Elevation (ft)	Comment
12/17/2013	394.70	1.10	48.6	339.9		44.7	343.6	Dry
1/28/2014	392.30	0.00	48.3	340.2		43.9	344.4	
2/26/2014	389.90	0.72	49.0	339.5		43.8	344.5	
3/26/2014	387.20		49.1	339.4		43.8	344.5	
3/28/2014	387.20	1.78	49.9	338.6		43.9	344.4	
4/23/2014	393.00	0.34	48.8	339.7		43.9	344.4	
5/28/2014	387.50	0.00	49.9	338.6		43.8	344.5	
6/25/2014	388.70	0.00	49.8	338.7		44.7	343.6	
7/29/2014	382.80	0.00	51.5	337.0		43.8	344.5	
8/28/2014	386.80	0.04	51.1	337.4		44.4	343.9	
9/24/2014	387.90	0.00	50.2	338.3		44.4	343.9	Wet
10/29/2014	383.90	0.00	51.5	337.0		44.5	343.8	
11/21/2014	388.30	0.35	50.3	338.2		44.5	343.8	
12/22/2014	399.80	4.75	46.8	341.7		44.0	344.3	
1/28/2015	396.90	1.28	47.1	341.4		43.3	345.0	
2/24/2015	392.70	0.34	48.1	340.4		43.3	345.0	
3/31/2015	388.90	0.67	48.6	339.9		43.0	345.3	
4/23/2015	390.30	0.20	49.0	339.5		43.3	345.0	
5/28/2015	400.30	1.87	46.0	342.5		43.0	345.3	
6/24/2015	400.70	0.00	45.8	342.7		42.5	345.8	
7/30/2015	400.20	0.00	45.9	342.6		42.5	345.8	
8/25/2015	384.00	0.00	49.4	339.1		42.6	345.7	
9/23/2015	388.60	2.17	49.6	338.9		43.3	345.0	
10/29/2015	387.60	0.16	50.1	338.4		43.5	344.8	
11/25/2015	386.90	0.15	50.4	338.1		43.7	344.6	
12/23/2015	395.90	1.55	48.8	339.7		43.9	344.4	
1/26/2016	401.20	2.86	46.1	342.4		43.0	345.3	
2/24/2016	393.60	0.39	47.9	340.6		42.8	345.5	
3/29/2016	397.10	1.55	47.0	341.5		42.9	345.4	
4/29/2016	391.60	0.04	47.2	341.3		42.9	345.4	

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**TABLE 4
RATTLESNAKE CANYON DAM
PIEZOMETER WATER LEVEL MEASUREMENTS
JANUARY 2007 THROUGH DECEMBER 2022**

Monitoring Well -->			P-35B			P-35C		
Top of Well Elevation -->			388.45			388.34		
Bottom of Well Elevation -->			313.40			343.20		
Depth of Well			75.1			45.1		
Date	Reservoir Elevation (ft)	Monthly Rainfall (in.)	Reading (ft)	Elevation (ft)	Comment	Reading (ft)	Elevation (ft)	Comment
5/24/2016	401.60	0.13	46.2	342.3		43.0	345.3	
6/29/2016	392.50	0.00	48.0	340.5		42.5	345.8	
7/26/2016	377.70	0.00	51.8	336.7		43.2	345.1	
8/24/2016	388.10	0.00	50.5	338.0		44.8	343.5	
9/29/2016	388.20	0.00	50.7	337.8		44.7	343.6	
10/26/2016	392.10	0.96	49.6	338.9		43.9	344.4	
11/22/2016	395.70	1.42	47.9	340.6		43.7	344.6	
12/28/2016	400.70	4.11	46.0	342.5		43.0	345.3	
1/26/2017	402.40	6.70	45.4	343.1		42.7	345.6	
2/28/2017	389.60	4.01	48.8	339.7		42.5	345.8	
3/29/2017	391.80	0.14	48.9	339.6		43.4	344.9	
4/26/2017	387.00	0.04	49.9	338.6		43.5	344.8	
5/23/2017	399.40	0.30	46.8	341.7		43.5	344.8	
6/21/2017	392.60	0.00	48.2	340.3		43.2	345.1	
7/26/2017	384.60	0.00	50.6	337.9		43.4	344.9	
8/30/2017	383.00	0.00	51.5	337.0		43.8	344.5	
9/27/2017	382.00	0.00	52.3	336.2		44.4	343.9	
10/27/2017	375.00	0.00	53.6	334.9		44.8	343.5	Dry
11/30/2017	382.80	0.14	52.4	336.1		44.8	343.5	Dry
12/21/2017	380.50	0.00	52.8	335.7		44.7	343.6	Dry
1/24/2018	397.80	1.43	48.4	340.1		44.8	343.5	
2/21/2018	382.40	0.17	50.9	337.6		44.1	344.2	
3/29/2018	392.10	0.00	49.1	339.4		44.5	343.8	
4/25/2018	388.00	0.05	50.6	337.9		44.4	343.9	
5/30/2018	399.50	0.21	47.3	341.2		44.3	344.0	
6/28/2018	398.90	0.00	46.5	342.0		43.5	344.8	
7/25/2018	388.60	0.00	48.9	339.6		43.3	345.0	
8/24/2018	378.60	0.00	52.4	336.1		43.9	344.4	
9/27/2018	381.40	0.00	52.4	336.1		44.7	343.6	
10/18/2018	385.20	1.45	51.5	337.0		44.6	343.7	

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**TABLE 4
RATTLESNAKE CANYON DAM
PIEZOMETER WATER LEVEL MEASUREMENTS
JANUARY 2007 THROUGH DECEMBER 2022**

Monitoring Well -->			P-35B			P-35C		
Top of Well Elevation -->			388.45			388.34		
Bottom of Well Elevation -->			313.40			343.20		
Depth of Well			75.1			45.1		
Date	Reservoir Elevation (ft)	Monthly Rainfall (in.)	Reading (ft)	Elevation (ft)	Comment	Reading (ft)	Elevation (ft)	Comment
11/28/2018	389.10	1.32	53.1	335.4		44.7	343.6	
12/20/2018	394.20	2.12	49.0	339.5		44.8	343.5	
2/21/2019	396.00	8.26	46.90	341.6		43.50	344.8	
3/27/2019	376.00	1.88	52.30	336.2		46.60	341.7	
4/25/2019	377.70	0.03	52.03	336.4		44.30	344.0	
5/30/2019	395.30	0.92	48.30	340.2		44.50	343.8	
6/26/2019	388.40	0.01	49.40	339.1		44.10	344.2	
7/5/2019	385.50	0.00	51.10	337.4		44.10	344.2	
7/30/2019	385.20	0.00	51.40	337.1		44.30	344.0	
8/27/2019	387.90	0.00	50.00	338.5		44.50	343.8	
9/26/2019	380.00	0.00	52.10	336.4		44.60	343.7	
10/23/2019	378.90	0.00	53.10	335.4		44.60	343.7	
11/26/2019	383.80	2.60	52.50	336.0		44.70	343.6	
12/18/2019	389.20	4.63	51.40	337.1		44.10	344.2	
1/29/2020	388.20	0.15	49.90	338.6		44.60	343.7	
2/25/2020	384.70	0.33	51.00	337.5		44.60	343.7	
3/24/2020	391.70	3.91	49.40	339.1		44.70	343.6	
4/23/2020	399.40	4.05	47.80	340.7		44.70	343.6	
5/27/2020	388.50	0.40	49.30	339.2		43.70	344.6	
6/24/2020	388.00	0.01	49.60	338.9		43.90	344.4	
7/29/2020	358.70	0.00	50.30	338.2		44.00	344.3	
8/26/2020	379.30	0.00	52.30	336.2		44.30	344.0	
9/29/2020	381.30	0.00	52.50	336.0		44.70	343.6	
10/28/2020	376.50	0.00	53.70	334.8		44.70	343.6	
11/24/2020	380.70	0.25	53.10	335.4		44.80	343.5	
12/23/2020	384.10	1.40	52.20	336.3		44.60	343.7	
1/26/2021	386.2	2.42	51.2	337.25		44	344.34	
2/25/2021	385.4	0.07	74.7		Omitted	44.6	343.74	
3/23/2021	394.8	1.35	48.5	339.95		44.6	343.74	
4/27/2021	384.1	0.04	50.9	337.55		44.3	344.04	

Note:

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**TABLE 4
RATTLESNAKE CANYON DAM
PIEZOMETER WATER LEVEL MEASUREMENTS
JANUARY 2007 THROUGH DECEMBER 2022**

Monitoring Well -->			P-35B			P-35C		
Top of Well Elevation -->			388.45			388.34		
Bottom of Well Elevation -->			313.40			343.20		
Depth of Well			75.1			45.1		
Date	Reservoir Elevation (ft)	Monthly Rainfall (in.)	Reading (ft)	Elevation (ft)	Comment	Reading (ft)	Elevation (ft)	Comment
5/27/2021	383.5	0.04	51.2	337.25		44.6	343.74	
6/30/2021	385.4	0	51.4	337.05		44.9	343.44	
7/29/2021	381.7	0.03	52.6	335.85		44.5	343.84	
8/24/2021	383.4	0	52.4	336.05		44.8	343.54	
9/28/2021	381.3	0.06	52.2	336.25		44.8	343.54	
10/27/2021	382.7	0.71	52.9	335.55		44.6	343.74	
11/23/2021	381	0	53.1	335.35		44.8	343.54	
12/21/2021	386.3	6.1	51.7	336.75		44.7	343.64	
1/25/2022	382	0.05	52.2	336.25		44.6	343.74	
2/22/2022	382.3	0.36	52.9	335.55		44.7	343.64	
3/29/2022	390.6	1.33	50.7	337.75		44.9	343.44	
4/27/2022	393.2	0.02	49	339.45		44.7	343.64	
5/24/2022	391.4	0.05	48.9	339.55		44.2	344.14	
6/28/2022	392.7	0	48.8	339.65		44.1	344.24	
7/26/2022	386.1	0	50.3	338.15		44	344.34	
8/25/2022	382.2	0.02	31.3		Omitted	44.3	344.04	
9/29/2022	392.7	0.36	48.8	339.65		44.1	344.24	
10/25/2022	390	0.32	50.3	338.15		44.6	343.74	
11/17/2022	391.4	2.12	49.2	339.25		44.5	343.84	
12/22/2022	386.4	2.28	51.1	337.35		44.7	343.64	

Note:

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**TABLE 4
RATTLESNAKE CANYON DAM
PIEZOMETER WATER LEVEL MEASUREMENTS
JANUARY 2007 THROUGH DECEMBER 2022**

Monitoring Well -->			P-52			P-61		
Top of Well Elevation -->			421.03			357.01		
Bottom of Well Elevation -->			361.20			311.00		
Depth of Well			59.8			46.0		
Date	Reservoir Elevation (ft)	Monthly Rainfall (in.)	Reading (ft)	Elevation (ft)	Comment	Reading (ft)	Elevation (ft)	Comment
1/31/2007	376.90		35.3	385.7		27.5	329.5	
2/28/2007	380.90		35.2	385.8		28.3	328.7	
3/29/2007	397.00		35.2	385.8		28.5	328.5	
4/27/2007	405.60		28.7	392.3		24.3	332.7	
5/24/2007	404.40		28.1	392.9		21.4	335.6	
6/28/2007	396.90		35.3	385.7		20.8	336.2	
7/31/2007	392.60		33.3	387.7		22.9	334.1	
8/29/2007	388.60		34.5	386.5		24.3	332.7	
9/2/2007	387.40		35.1	385.9		24.6	332.4	
9/26/2007	387.90		35.1	385.9		25.2	331.8	
10/25/2007	382.00		35.6	385.4		26.5	330.5	
11/27/2007	380.30		35.0	386.0		27.8	329.2	
12/27/2007	381.40		35.3	385.7		33.3	323.7	
1/31/2008	381.20		35.1	385.9	Dry	29.3	327.7	
2/28/2008	393.10		35.1	385.9	Dry	28.7	328.3	
3/27/2008	387.90		40.9	380.1		27.6	329.4	
4/28/2008	404.70		29.2	391.8		23.7	333.3	
5/28/2008	404.00		28.1	392.9		22.1	334.9	
6/25/2008	400.20		27.3	393.7	Dry	21.2	335.8	
7/29/2008	398.70		27.5	393.5	Dry	21.6	335.4	
7/30/2008	398.70	0.00	27.8	393.2	Dry	21.6	335.4	
8/29/2008	395.00	0.00	33.2	387.8		22.4	334.6	
9/25/2008	391.70	0.00	35.3	385.7		23.1	333.9	
10/28/2008	384.05	0.00	42.0	379.1		25.5	331.6	
11/26/2008	391.10	1.94	40.7	380.3		27.0	330.0	
12/31/2008	397.90	3.20	33.7	387.3		25.3	331.7	
1/29/2009	393.40	0.34	34.9	386.1		22.7	334.3	
2/25/2009	398.60	3.91	33.3	387.7		21.0	336.0	
3/31/2009	393.40	0.16	35.2	385.8		20.1	336.9	
4/28/2009	400.70	0.10	31.5	389.5		20.8	336.2	

Note:

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2. Piezometer data based on NGVD 29 datum

TABLE 4
RATTLESNAKE CANYON DAM
PIEZOMETER WATER LEVEL MEASUREMENTS
JANUARY 2007 THROUGH DECEMBER 2022

Monitoring Well -->			P-52			P-61		
Top of Well Elevation -->			421.03			357.01		
Bottom of Well Elevation -->			361.20			311.00		
Depth of Well			59.8			46.0		
Date	Reservoir Elevation (ft)	Monthly Rainfall (in.)	Reading (ft)	Elevation (ft)	Comment	Reading (ft)	Elevation (ft)	Comment
5/18/2009	400.80	0.00	30.6	390.4		20.6	336.4	
5/27/2009	400.10	0.00	30.8	390.2		20.7	336.3	
6/29/2009	403.00	0.15	28.3	392.7		20.4	336.6	
7/28/2009	396.53	0.00	32.3	388.7		20.0	337.0	
8/25/2009	396.60	0.00	33.0	388.0		21.1	335.9	
9/30/2009	393.10	0.00	36.4	384.6		22.7	334.3	
10/28/2009	401.60	0.42	30.9	390.1		22.4	334.6	
11/30/2009	402.50	0.00	29.0	392.0		19.6	337.4	
12/29/2009	399.90	2.80	30.5	390.5		19.4	337.6	
1/26/2010	401.10	6.75	30.0	391.0		19.8	337.2	
2/23/2010	402.50	2.66	28.8	392.2		18.7	338.3	
3/30/2010	400.00	1.25	30.2	390.8		18.2	338.8	
4/4/2010	399.60		30.4	390.6		18.4	338.6	
4/27/2010	403.80	1.32	28.7	392.3		18.8	338.2	
5/26/2010	403.60	0.03	27.8	393.2		18.4	338.6	
6/29/2010	397.70	0.00	31.4	389.6		18.9	338.1	
7/27/2010	396.30	0.00	32.9	388.1		20.4	336.6	
8/26/2010	390.70	0.00	41.6	379.4		22.0	335.0	
9/28/2010	390.30	0.00	38.9	382.1		24.5	332.5	
10/26/2010	403.20	1.56	29.5	391.5		25.0	332.0	
11/30/2010	397.10	1.34	32.8	388.2		23.4	333.6	
12/28/2010	401.40	9.03	29.7	391.3		23.5	333.5	
1/27/2011	393.80	1.10	33.4	387.6		23.2	333.8	
2/23/2011	391.70	1.17	36.7	384.3		24.3	332.7	
3/29/2011	403.00	3.10	29.7	391.3		24.3	332.7	
4/27/2011	401.20	0.33	30.3	390.7		23.3	333.7	
5/26/2011	399.50	0.48	31.3	389.7		23.1	333.9	
6/28/2011	391.00	0.02	36.6	384.4		23.8	333.2	
7/26/2011	384.00	0.00	43.6	377.4		25.3	331.7	
8/24/2011	382.80	0.00	45.9	375.1		26.7	330.3	

Note:

1. Readings in red are classified as erroneous
2. Piezometer data based on NGVD 29 datum

TABLE 4
RATTLESNAKE CANYON DAM
PIEZOMETER WATER LEVEL MEASUREMENTS
JANUARY 2007 THROUGH DECEMBER 2022

Monitoring Well -->			P-52			P-61		
Top of Well Elevation -->			421.03			357.01		
Bottom of Well Elevation -->			361.20			311.00		
Depth of Well			59.8			46.0		
Date	Reservoir Elevation (ft)	Monthly Rainfall (in.)	Reading (ft)	Elevation (ft)	Comment	Reading (ft)	Elevation (ft)	Comment
9/27/2011	381.80	0.08	47.4	373.6		25.9	331.1	
10/26/2011	383.90	0.98	46.2	374.8		28.2	328.8	
11/22/2011	389.80	1.46	42.9	378.1		28.3	328.7	
12/28/2011	382.30	0.35	45.8	375.2		28.2	328.8	
1/25/2012	387.50	1.17	47.3	373.8		28.7	328.3	
2/28/2012	381.10	0.79	49.0	372.0		29.0	328.0	
3/27/2012	387.70	1.61	46.6	374.4		29.3	327.7	
4/23/2012	392.30	1.51	42.0	379.0		28.9	328.1	
5/25/2012	388.30	0.06	41.8	379.2		28.2	328.8	
6/13/2012	385.10	0.06	44.4	376.6		27.9	329.1	
6/26/2012	386.90	0.00	43.9	377.1		25.9	331.1	
7/24/2012	378.00	0.10	49.1	371.9		28.3	328.7	
8/8/2012	382.90	0.10	47.5	373.5		28.7	328.3	
8/29/2012	382.70	0.00	48.3	372.7		29.0	328.0	
8/29/2012	382.70	0.00	48.3	372.7		29.0	328.0	
9/25/2012	381.90	0.00	49.7	371.3		29.3	327.7	
10/24/2012	384.40	0.08	48.1	372.9		29.7	327.3	
11/27/2012	389.60	0.86	43.4	377.6		29.1	327.9	
12/18/2012	394.70	1.96	39.5	381.5		28.5	328.5	
1/23/2013	393.00	1.53	37.4	383.6		27.4	329.6	
2/26/2013	391.50	0.49	38.2	382.8		26.8	330.2	
3/26/2013	394.40	1.00	39.0	382.0		27.3	329.7	
4/25/2013	391.00	0.01	39.3	381.7		26.8	330.2	
5/22/2013	392.00	0.00	38.2	382.8		26.8	330.2	
6/25/2013	380.60	0.00	44.7	376.3		27.0	330.0	
7/23/2013	380.20	0.00	47.9	373.1		27.9	329.1	
8/21/2013	379.60	0.00	47.8	373.2		28.5	328.5	
9/25/2013	382.20	0.00	47.8	373.2		29.2	327.8	
10/29/2013	382.00	0.00	48.8	372.2		29.8	327.2	
11/26/2013	390.10	0.44	46.1	374.9		29.7	327.3	

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**TABLE 4
RATTLESNAKE CANYON DAM
PIEZOMETER WATER LEVEL MEASUREMENTS
JANUARY 2007 THROUGH DECEMBER 2022**

Monitoring Well -->			P-52			P-61		
Top of Well Elevation -->			421.03			357.01		
Bottom of Well Elevation -->			361.20			311.00		
Depth of Well			59.8			46.0		
Date	Reservoir Elevation (ft)	Monthly Rainfall (in.)	Reading (ft)	Elevation (ft)	Comment	Reading (ft)	Elevation (ft)	Comment
12/17/2013	394.70	1.10	39.5	381.5		29.3	327.7	
1/28/2014	392.30	0.00	38.5	382.5		28.2	328.8	
2/26/2014	389.90	0.72	39.6	381.4		27.4	329.6	
3/26/2014	387.20		41.3	379.7		27.5	329.5	
3/28/2014	387.20	1.78	41.7	379.3		22.5	334.5	
4/23/2014	393.00	0.34	39.5	381.5		27.7	329.3	
5/28/2014	387.50	0.00	41.0	380.0		27.5	329.5	
6/25/2014	388.70	0.00	40.8	380.2		28.7	328.3	
7/29/2014	382.80	0.00	44.8	376.2		27.9	329.1	
8/28/2014	386.80	0.04	44.0	377.0		28.4	328.6	
9/24/2014	387.90	0.00	41.8	379.2		28.5	328.5	
10/29/2014	383.90	0.00	44.4	376.6		28.7	328.3	
11/21/2014	388.30	0.35	41.7	379.3		28.8	328.2	
12/22/2014	399.80	4.75	34.0	387.0		28.5	328.5	
1/28/2015	396.90	1.28	34.4	386.6		27.5	329.5	
2/24/2015	392.70	0.34	36.7	384.3		27.2	329.8	
3/31/2015	388.90	0.67	37.7	383.3		26.8	330.2	
4/23/2015	390.30	0.20	38.7	382.3		27.0	330.0	
5/28/2015	400.30	1.87	31.7	389.3		27.0	330.0	
6/24/2015	400.70	0.00	31.1	389.9		26.5	330.5	
7/30/2015	400.20	0.00	30.8	390.2		26.3	330.7	
8/25/2015	384.00	0.00	38.9	382.1		26.1	330.9	
9/23/2015	388.60	2.17	40.7	380.3		27.0	330.0	
10/29/2015	387.60	0.16	41.6	379.4		27.5	329.5	
11/25/2015	386.90	0.15	42.0	379.0		27.9	329.1	
12/23/2015	395.90	1.55	37.7	383.3		27.4	329.6	
1/26/2016	401.20	2.86	31.7	389.3		32.7	324.3	
2/24/2016	393.60	0.39	35.7	385.3		27.0	330.0	
3/29/2016	397.10	1.55	33.8	387.2		26.8	330.2	
4/29/2016	391.60	0.04	36.4	384.6		27.0	330.0	

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**TABLE 4
RATTLESNAKE CANYON DAM
PIEZOMETER WATER LEVEL MEASUREMENTS
JANUARY 2007 THROUGH DECEMBER 2022**

Monitoring Well -->			P-52			P-61		
Top of Well Elevation -->			421.03			357.01		
Bottom of Well Elevation -->			361.20			311.00		
Depth of Well			59.8			46.0		
Date	Reservoir Elevation (ft)	Monthly Rainfall (in.)	Reading (ft)	Elevation (ft)	Comment	Reading (ft)	Elevation (ft)	Comment
5/24/2016	401.60	0.13	32.1	388.9		26.8	330.2	
6/29/2016	392.50	0.00	35.6	385.4		26.6	330.4	
7/26/2016	377.70	0.00	45.2	375.8		27.2	329.8	
8/24/2016	388.10	0.00	43.9	377.1		27.9	329.1	
9/29/2016	388.20	0.00	42.6	378.4		28.3	328.7	
10/26/2016	392.10	0.96	41.8	379.2		28.4	328.6	
11/22/2016	395.70	1.42	37.4	383.6		28.2	328.8	
12/28/2016	400.70	4.11	33.8	387.2		27.6	329.4	
1/26/2017	402.40	6.70	30.3	390.7		26.8	330.2	
2/28/2017	389.60	4.01	37.7	383.3		26.6	330.4	
3/29/2017	391.80	0.14	38.9	382.1		27.0	330.0	
4/26/2017	387.00	0.04	40.9	380.1		27.3	329.7	
5/23/2017	399.40	0.30	34.0	387.0		27.5	329.5	
6/21/2017	392.60	0.00	36.6	384.4		27.2	329.8	
7/26/2017	384.60	0.00	42.3	378.7		24.2	332.8	
8/30/2017	383.00	0.00	45.1	375.9		28.1	328.9	
9/27/2017	382.00	0.00	47.9	373.1		28.6	328.4	
10/27/2017	375.00	0.00	50.9	370.1		29.2	327.8	
11/30/2017	382.80	0.14	48.7	372.3		29.8	327.2	
12/21/2017	380.50	0.00	49.5	371.5		29.8	327.2	
1/24/2018	397.80	1.43	39.3	381.7		30.1	326.9	
2/21/2018	382.40	0.17	44.4	376.6		29.0	328.0	
3/29/2018	392.10	0.00	40.7	380.3		28.7	328.3	
4/25/2018	388.00	0.05	45.0	376.0		28.6	328.4	
5/30/2018	399.50	0.21	36.2	384.8		28.6	328.4	
6/28/2018	398.90	0.00	33.2	387.8		27.8	329.2	
7/25/2018	388.60	0.00	38.7	382.3		27.3	329.7	
8/24/2018	378.60	0.00	47.8	373.2		27.8	329.2	
9/27/2018	381.40	0.00	48.3	372.7		28.7	328.3	
10/18/2018	385.20	1.45	46.6	374.4		29.1	327.9	

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**TABLE 4
RATTLESNAKE CANYON DAM
PIEZOMETER WATER LEVEL MEASUREMENTS
JANUARY 2007 THROUGH DECEMBER 2022**

Monitoring Well -->			P-52			P-61		
Top of Well Elevation -->			421.03			357.01		
Bottom of Well Elevation -->			361.20			311.00		
Depth of Well			59.8			46.0		
Date	Reservoir Elevation (ft)	Monthly Rainfall (in.)	Reading (ft)	Elevation (ft)	Comment	Reading (ft)	Elevation (ft)	Comment
11/28/2018	389.10	1.32	50.2	370.8		29.7	327.3	
12/20/2018	394.20	2.12	41.1	379.9		29.7	327.3	
2/21/2019	396.00	8.26	34.70	386.3		27.90	329.1	
3/27/2019	376.00	1.88	43.80	377.2		27.40	329.6	
4/25/2019	377.70	0.03	47.00	374.0		27.90	329.1	
5/30/2019	395.30	0.92	39.10	381.9		28.50	328.5	
6/26/2019	388.40	0.01	40.70	380.3		28.10	328.9	
7/5/2019	385.50	0.00	42.50	378.5		32.90	324.1	
7/30/2019	385.20	0.00	46.20	374.8		28.30	328.7	
8/27/2019	387.90	0.00	42.40	378.6		28.60	328.4	
9/26/2019	380.00	0.00	47.90	373.1		28.80	328.2	
10/23/2019	378.90	0.00	50.30	370.7		29.20	327.8	
11/26/2019	383.80	2.60	49.10	371.9		29.80	327.2	
12/18/2019	389.20	4.63	44.50	376.5		29.90	327.1	
1/29/2020	388.20	0.15	43.00	378.0		29.10	327.9	
2/25/2020	384.70	0.33	45.10	375.9		28.90	328.1	
3/24/2020	391.70	3.91	41.90	379.1		28.90	328.1	
4/23/2020	399.40	4.05	34.40	386.6		28.50	328.5	
5/27/2020	388.50	0.40	58.50	362.5	Omitted	27.70	329.3	
6/24/2020	388.00	0.01	41.40	379.6		27.80	329.2	
7/29/2020	358.70	0.00	42.50	378.5		27.90	329.1	
8/26/2020	379.30	0.00	47.90	373.1		28.30	328.7	
9/29/2020	381.30	0.00	48.50	372.5		28.90	328.1	
10/28/2020	376.50	0.00	51.30	369.7		29.60	327.4	
11/24/2020	380.70	0.25	50.20	370.8		30.00	327.0	
12/23/2020	384.10	1.40	48.00	373.0		30.20	326.8	
1/26/2021	386.2	2.42	45.6	375.43		31.4	325.61	
2/25/2021	385.4	0.07	44.6	376.43		29.3	327.71	
3/23/2021	394.8	1.35	39.2	381.83		29	328.01	
4/27/2021	384.1	0.04	44.2	376.83		28.7	328.31	

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**TABLE 4
RATTLESNAKE CANYON DAM
PIEZOMETER WATER LEVEL MEASUREMENTS
JANUARY 2007 THROUGH DECEMBER 2022**

Monitoring Well -->			P-52			P-61		
Top of Well Elevation -->			421.03			357.01		
Bottom of Well Elevation -->			361.20			311.00		
Depth of Well			59.8			46.0		
Date	Reservoir Elevation (ft)	Monthly Rainfall (in.)	Reading (ft)	Elevation (ft)	Comment	Reading (ft)	Elevation (ft)	Comment
5/27/2021	383.5	0.04	44.9	376.13		28.6	328.41	
6/30/2021	385.4	0	45.6	375.43		29.2	327.81	
7/29/2021	381.7	0.03	49.1	371.93		29.3	327.71	
8/24/2021	383.4	0	48.6	372.43		33.3	323.71	
9/28/2021	381.3	0.06	47.2	373.83		29.8	327.21	
10/27/2021	382.7	0.71	49.9	371.13		30	327.01	
11/23/2021	381	0	50.1	370.93		30.3	326.71	
12/21/2021	386.3	6.1	47.2	373.83		30.5	326.51	
1/25/2022	382	0.05	48	373.03		30.1	326.91	
2/22/2022	382.3	0.36	50.2	370.83		30.2	326.81	
3/29/2022	390.6	1.33	45.2	375.83		30.2	326.81	
4/27/2022	393.2	0.02	40.1	380.93		29.6	327.41	
5/24/2022	391.4	0.05	39.8	381.23		28.8	328.21	
6/28/2022	392.7	0	38.5	382.53		28.4	328.61	
7/26/2022	386.1	0	58.4			28	329.01	
8/25/2022	382.2	0.02	45.3	375.73		28.2	328.81	
9/29/2022	392.7	0.36	38.5	382.53		28.4	328.61	
10/25/2022	390	0.32	43.2	377.83		29.4	327.61	
11/17/2022	391.4	2.12	40.2	380.83		29.1	327.91	
12/22/2022	386.4	2.28	45.6	375.43		29.2	327.81	

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**TABLE 4
RATTLESNAKE CANYON DAM
PIEZOMETER WATER LEVEL MEASUREMENTS
JANUARY 2007 THROUGH DECEMBER 2022**

Monitoring Well -->			P-62			P-63		
Top of Well Elevation -->			412.03			422.08		
Bottom of Well Elevation -->			365.50			335.00		
Depth of Well			46.5			87.1		
Date	Reservoir Elevation (ft)	Monthly Rainfall (in.)	Reading (ft)	Elevation (ft)	Comment	Reading (ft)	Elevation (ft)	Comment
1/31/2007	376.90		26.8	385.2		44.9	377.2	
2/28/2007	380.90		30.5	381.5		45.5	376.6	
3/29/2007	397.00		27.3	384.7		45.8	376.3	
4/27/2007	405.60		17.6	394.4		46.0	376.1	
5/24/2007	404.40		15.9	396.1		46.1	376.0	
6/28/2007	396.90		17.8	394.2		46.0	376.1	
7/31/2007	392.60		21.7	390.3		46.2	375.9	
8/29/2007	388.60		24.5	387.5		46.7	375.4	
9/2/2007	387.40		24.0	388.0		46.7	375.4	
9/26/2007	387.90		25.3	386.7		46.8	375.3	
10/25/2007	382.00		27.3	384.7		47.4	374.7	
11/27/2007	380.30		30.6	381.4		47.8	374.3	
12/27/2007	381.40		32.0	380.0		48.2	373.9	
1/31/2008	381.20		31.8	380.3		48.8	373.3	
2/28/2008	393.10		26.3	385.7		49.0	373.1	
3/27/2008	387.90		23.5	388.5		49.3	372.8	
4/28/2008	404.70		15.8	396.2		49.5	372.6	
5/28/2008	404.00		14.3	397.7		44.5	377.6	
6/25/2008	400.20		15.5	396.5		49.3	372.8	
7/29/2008	398.70		16.3	395.7		49.1	373.0	
7/30/2008	398.70	0.00	16.3	395.7		49.2	372.9	
8/29/2008	395.00	0.00	18.7	393.3		4.2	417.9	Cleaning
9/25/2008	391.70	0.00	18.8	393.2		11.0	411.1	
10/28/2008	384.05	0.00	26.4	385.6		15.8	406.3	
11/26/2008	391.10	1.94	27.5	384.5		17.8	404.3	
12/31/2008	397.90	3.20	21.6	390.4		18.7	403.4	
1/29/2009	393.40	0.34	23.2	388.8		19.6	402.5	
2/25/2009	398.60	3.91	21.5	390.5		20.1	402.0	
3/31/2009	393.40	0.16	21.9	390.1		20.6	401.5	
4/28/2009	400.70	0.10	20.3	391.7		21.2	400.9	

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**TABLE 4
RATTLESNAKE CANYON DAM
PIEZOMETER WATER LEVEL MEASUREMENTS
JANUARY 2007 THROUGH DECEMBER 2022**

Monitoring Well -->			P-62			P-63		
Top of Well Elevation -->			412.03			422.08		
Bottom of Well Elevation -->			365.50			335.00		
Depth of Well			46.5			87.1		
Date	Reservoir Elevation (ft)	Monthly Rainfall (in.)	Reading (ft)	Elevation (ft)	Comment	Reading (ft)	Elevation (ft)	Comment
5/18/2009	400.80	0.00	18.7	393.3		21.5	400.6	
5/27/2009	400.10	0.00	18.8	393.2		48.8	373.3	
6/29/2009	403.00	0.15	15.9	396.1		48.6	373.5	
7/28/2009	396.53	0.00	19.2	392.8		48.5	373.6	
8/25/2009	396.60	0.00	20.4	391.6		48.4	373.7	
9/30/2009	393.10	0.00	23.6	388.4		48.5	373.6	
10/28/2009	401.60	0.42	19.6	392.4		48.5	373.6	
11/30/2009	402.50	0.00	16.7	395.3		48.3	373.8	
12/29/2009	399.90	2.80	17.3	394.7		48.3	373.8	
1/26/2010	401.10	6.75	15.7	396.3		48.3	373.8	
2/23/2010	402.50	2.66	14.6	397.4		48.2	373.9	
3/30/2010	400.00	1.25	16.5	395.5		48.0	374.1	
4/4/2010	399.60		16.9	395.1		48.0	374.1	
4/27/2010	403.80	1.32	15.7	396.3		48.0	374.1	
5/26/2010	403.60	0.03	15.4	396.6		47.8	374.3	
6/29/2010	397.70	0.00	17.7	394.3		47.6	374.5	
7/27/2010	396.30	0.00	18.9	393.1		47.5	374.6	
8/26/2010	390.70	0.00	20.8	391.2		47.5	374.6	
9/28/2010	390.30	0.00	24.8	387.2		47.8	374.3	
10/26/2010	403.20	1.56	19.8	392.2		47.9	374.2	
11/30/2010	397.10	1.34	19.5	392.5		47.7	374.4	
12/28/2010	401.40	9.03	12.0	400.0		47.7	374.4	
1/27/2011	393.80	1.10	17.2	394.8		47.7	374.4	
2/23/2011	391.70	1.17	22.0	390.0		47.8	374.3	
3/29/2011	403.00	3.10	17.6	394.4		47.8	374.3	
4/27/2011	401.20	0.33	17.2	394.8		47.7	374.4	
5/26/2011	399.50	0.48	18.2	393.8		47.7	374.4	
6/28/2011	391.00	0.02	22.6	389.4		47.7	374.4	
7/26/2011	384.00	0.00	26.2	385.8		47.8	374.3	
8/24/2011	382.80	0.00	30.6	381.4		48.1	374.0	

Note:

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2. Piezometer data based on NGVD 29 datum

**TABLE 4
RATTLESNAKE CANYON DAM
PIEZOMETER WATER LEVEL MEASUREMENTS
JANUARY 2007 THROUGH DECEMBER 2022**

Monitoring Well -->			P-62			P-63		
Top of Well Elevation -->			412.03			422.08		
Bottom of Well Elevation -->			365.50			335.00		
Depth of Well			46.5			87.1		
Date	Reservoir Elevation (ft)	Monthly Rainfall (in.)	Reading (ft)	Elevation (ft)	Comment	Reading (ft)	Elevation (ft)	Comment
9/27/2011	381.80	0.08	32.0	380.0		48.6	373.5	
10/26/2011	383.90	0.98	31.9	380.1		48.6	373.5	
11/22/2011	389.80	1.46	29.9	382.1		48.9	373.2	
12/28/2011	382.30	0.35	31.5	380.5		49.0	373.1	
1/25/2012	387.50	1.17	34.0	378.0		49.4	372.7	
2/28/2012	381.10	0.79	34.6	377.4		49.6	372.5	
3/27/2012	387.70	1.61	34.2	377.8		49.8	372.3	
4/23/2012	392.30	1.51	31.1	380.9		50.0	372.1	
5/25/2012	388.30	0.06	28.9	383.1		50.2	371.9	
6/13/2012	385.10	0.06	30.7	381.3		50.2	371.9	
6/26/2012	386.90	0.00	30.9	381.1		50.3	371.8	
7/24/2012	378.00	0.10	33.6	378.4		50.4	371.7	
8/8/2012	382.90	0.10	30.6	381.4		50.6	371.5	
8/29/2012	382.70	0.00	33.8	378.2		50.8	371.3	
8/29/2012	382.70	0.00	33.8	378.2		50.8	371.3	
9/25/2012	381.90	0.00	33.8	378.2		50.9	371.2	
10/24/2012	384.40	0.08	33.0	379.0		51.2	370.9	
11/27/2012	389.60	0.86	30.8	381.2		51.4	370.7	
12/18/2012	394.70	1.96	28.6	383.4		51.4	370.7	
1/23/2013	393.00	1.53	25.0	387.0		51.5	370.6	
2/26/2013	391.50	0.49	25.7	386.3		51.4	370.7	
3/26/2013	394.40	1.00	27.0	385.0		51.6	370.5	
4/25/2013	391.00	0.01	26.4	385.6		51.6	370.5	
5/22/2013	392.00	0.00	25.0	387.0		51.6	370.5	
6/25/2013	380.60	0.00	28.4	383.6		51.8	370.3	
7/23/2013	380.20	0.00	30.5	381.5		51.9	370.2	
8/21/2013	379.60	0.00	30.8	381.2		52.1	370.0	
9/25/2013	382.20	0.00	30.9	381.1		52.4	369.7	
10/29/2013	382.00	0.00	32.4	379.6		52.6	369.5	
11/26/2013	390.10	0.44	31.6	380.4		52.7	369.4	

Note:

1. Readings in red are classified as erroneous
2. Piezometer data based on NGVD 29 datum

**TABLE 4
RATTLESNAKE CANYON DAM
PIEZOMETER WATER LEVEL MEASUREMENTS
JANUARY 2007 THROUGH DECEMBER 2022**

Monitoring Well -->			P-62			P-63		
Top of Well Elevation -->			412.03			422.08		
Bottom of Well Elevation -->			365.50			335.00		
Depth of Well			46.5			87.1		
Date	Reservoir Elevation (ft)	Monthly Rainfall (in.)	Reading (ft)	Elevation (ft)	Comment	Reading (ft)	Elevation (ft)	Comment
12/17/2013	394.70	1.10	28.0	384.0		52.8	369.3	
1/28/2014	392.30	0.00	24.5	387.5		52.8	369.3	
2/26/2014	389.90	0.72	25.5	386.5		52.8	369.3	
3/26/2014	387.20		26.8	385.2		52.9	369.2	
3/28/2014	387.20	1.78	27.0	385.0		52.9	369.2	
4/23/2014	393.00	0.34	26.8	385.2		52.9	369.2	
5/28/2014	387.50	0.00	24.9	387.1		53.0	369.1	
6/25/2014	388.70	0.00	25.8	386.2		53.0	369.1	
7/29/2014	382.80	0.00	28.6	383.4		53.2	368.9	
8/28/2014	386.80	0.04	28.6	383.4		53.3	368.8	
9/24/2014	387.90	0.00	27.2	384.8		53.3	368.8	
10/29/2014	383.90	0.00	28.4	383.6		53.5	368.6	
11/21/2014	388.30	0.35	26.7	385.3		53.6	368.5	
12/22/2014	399.80	4.75	22.2	389.8		53.5	368.6	
1/28/2015	396.90	1.28	21.6	390.4		53.7	368.4	
2/24/2015	392.70	0.34	22.8	389.2		53.5	368.6	
3/31/2015	388.90	0.67	23.1	388.9		53.4	368.7	
4/23/2015	390.30	0.20	24.2	387.8		53.4	368.7	
5/28/2015	400.30	1.87	19.9	392.1		53.5	368.6	
6/24/2015	400.70	0.00	19.5	392.5		53.3	368.8	
7/30/2015	400.20	0.00	19.0	393.0		53.2	368.9	
8/25/2015	384.00	0.00	23.8	388.2		52.9	369.2	
9/23/2015	388.60	2.17	28.1	383.9		53.2	368.9	
10/29/2015	387.60	0.16	29.1	382.9		53.2	368.9	
11/25/2015	386.90	0.15	29.6	382.4		53.3	368.8	
12/23/2015	395.90	1.55	27.8	384.3		53.2	368.9	
1/26/2016	401.20	2.86	21.4	390.7		53.2	368.9	
2/24/2016	393.60	0.39	23.3	388.7		53.1	369.0	
3/29/2016	397.10	1.55	22.5	389.5		53.1	369.0	
4/29/2016	391.60	0.04	24.4	387.7		52.9	369.2	

Note:

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**TABLE 4
RATTLESNAKE CANYON DAM
PIEZOMETER WATER LEVEL MEASUREMENTS
JANUARY 2007 THROUGH DECEMBER 2022**

Monitoring Well -->			P-62			P-63		
Top of Well Elevation -->			412.03			422.08		
Bottom of Well Elevation -->			365.50			335.00		
Depth of Well			46.5			87.1		
Date	Reservoir Elevation (ft)	Monthly Rainfall (in.)	Reading (ft)	Elevation (ft)	Comment	Reading (ft)	Elevation (ft)	Comment
5/24/2016	401.60	0.13	22.5	389.5		52.9	369.2	
6/29/2016	392.50	0.00	22.9	389.1		52.8	369.3	
7/26/2016	377.70	0.00	30.0	382.0		52.9	369.2	
8/24/2016	388.10	0.00	32.9	379.1		52.9	369.2	
9/29/2016	388.20	0.00	31.9	380.1		52.9	369.2	
10/26/2016	392.10	0.96	32.5	379.5		53.0	369.1	
11/22/2016	395.70	1.42	28.3	383.7		53.1	369.0	
12/28/2016	400.70	4.11	24.2	387.8		53.1	369.0	
1/26/2017	402.40	6.70	19.3	392.7		52.8	369.3	
2/28/2017	389.60	4.01	24.5	387.5		52.8	369.3	
3/29/2017	391.80	0.14	27.6	384.4		52.8	369.3	
4/26/2017	387.00	0.04	28.7	383.3		52.8	369.3	
5/23/2017	399.40	0.30	24.9	387.1		52.9	369.2	
6/21/2017	392.60	0.00	25.0	387.0		52.7	369.4	
7/26/2017	384.60	0.00	29.6	382.4		52.7	369.4	
8/30/2017	383.00	0.00	32.9	379.1		52.7	369.4	
9/27/2017	382.00	0.00	35.6	376.4		52.9	369.2	
10/27/2017	375.00	0.00	37.5	374.5		53.2	368.9	
11/30/2017	382.80	0.14	37.7	374.3		53.2	368.9	
12/21/2017	380.50	0.00	37.7	374.3		53.3	368.8	
1/24/2018	397.80	1.43	33.2	378.8		53.5	368.6	
2/21/2018	382.40	0.17	32.0	380.0		70.6	351.5	
3/29/2018	392.10	0.00	30.7	381.3		70.2	351.9	
4/25/2018	388.00	0.05	34.0	378.0		69.8	352.3	
5/30/2018	399.50	0.21	29.5	382.5		69.4	352.7	
6/28/2018	398.90	0.00	24.1	387.9		68.9	353.2	
7/25/2018	388.60	0.00	26.3	385.7		68.5	353.6	
8/24/2018	378.60	0.00	33.4	378.6		68.1	354.0	
9/27/2018	381.40	0.00	36.0	376.0		67.8	354.3	
10/18/2018	385.20	1.45	35.7	376.3		67.7	354.4	

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**TABLE 4
RATTLESNAKE CANYON DAM
PIEZOMETER WATER LEVEL MEASUREMENTS
JANUARY 2007 THROUGH DECEMBER 2022**

Monitoring Well -->			P-62			P-63		
Top of Well Elevation -->			412.03			422.08		
Bottom of Well Elevation -->			365.50			335.00		
Depth of Well			46.5			87.1		
Date	Reservoir Elevation (ft)	Monthly Rainfall (in.)	Reading (ft)	Elevation (ft)	Comment	Reading (ft)	Elevation (ft)	Comment
11/28/2018	389.10	1.32	38.1	373.9		67.4	354.7	
12/20/2018	394.20	2.12	33.3	378.7		67.3	354.8	
2/21/2019	396.00	8.26	23.50	388.5		66.50	355.6	
3/27/2019	376.00	1.88	54.70	357.3	Omitted	66.00	356.1	
4/25/2019	377.70	0.03	32.30	379.7				Blocked,NotRead
5/30/2019	395.30	0.92	30.20	381.8		65.10	357.0	
6/26/2019	388.40	0.01	28.80	383.2		64.80	357.3	
7/5/2019	385.50	0.00	29.80	382.2		64.70	357.4	
7/30/2019	385.20	0.00	33.50	378.5		64.20	357.9	
8/27/2019	387.90	0.00	31.40	380.6		64.40	357.7	
9/26/2019	380.00	0.00	35.30	376.7		64.10	358.0	
10/23/2019	378.90	0.00	36.90	375.1		64.00	358.1	
11/26/2019	383.80	2.60	38.20	373.8		71.20	350.9	Omitted
12/18/2019	389.20	4.63	35.20	376.8		63.80	358.3	
1/29/2020	388.20	0.15	32.10	379.9		63.60	358.5	
2/25/2020	384.70	0.33	33.30	378.7		63.40	358.7	
3/24/2020	391.70	3.91	32.40	379.6		63.30	358.8	
4/23/2020	399.40	4.05	26.30	385.7		63.00	359.1	
5/27/2020	388.50	0.40	28.10	383.9		70.50	351.6	Omitted
6/24/2020	388.00	0.01	29.60	382.4		62.50	359.6	
7/29/2020	358.70	0.00	30.30	381.7		62.00	360.1	
8/26/2020	379.30	0.00	33.80	378.2		62.10	360.0	
9/29/2020	381.30	0.00	36.00	376.0		61.90	360.2	
10/28/2020	376.50	0.00	38.20	373.8		62.20	359.9	
11/24/2020	380.70	0.25	38.50	373.5		62.00	360.1	
12/23/2020	384.10	1.40	37.50	374.5		61.80	360.3	
1/26/2021	386.2	2.42	34.7	377.33		61.7	360.38	
2/25/2021	385.4	0.07	32.6	379.43		61.6	360.48	
3/23/2021	394.8	1.35	30.7	381.33		61.5	360.58	
4/27/2021	384.1	0.04	32	380.03		61.2	360.88	

Note:

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**TABLE 4
RATTLESNAKE CANYON DAM
PIEZOMETER WATER LEVEL MEASUREMENTS
JANUARY 2007 THROUGH DECEMBER 2022**

Monitoring Well -->			P-62			P-63		
Top of Well Elevation -->			412.03			422.08		
Bottom of Well Elevation -->			365.50			335.00		
Depth of Well			46.5			87.1		
Date	Reservoir Elevation (ft)	Monthly Rainfall (in.)	Reading (ft)	Elevation (ft)	Comment	Reading (ft)	Elevation (ft)	Comment
5/27/2021	383.5	0.04	33.3	378.73		61.1	360.98	
6/30/2021	385.4	0	34.7	377.33		61.1	360.98	
7/29/2021	381.7	0.03	37.4	374.63		61	361.08	
8/24/2021	383.4	0	37.9	374.13		60.9	361.18	
9/28/2021	381.3	0.06	36	376.03		60.9	361.18	
10/27/2021	382.7	0.71	38.8	373.23		60.8	361.28	
11/23/2021	381	0	38.9	373.13		60.8	361.28	
12/21/2021	386.3	6.1	37.8	374.23		60.8	361.28	
1/25/2022	382	0.05	36.8	375.23		60.7	361.38	
2/22/2022	382.3	0.36	39.1	372.93		61	361.08	
3/29/2022	390.6	1.33	36.6	375.43		60.3	361.78	
4/27/2022	393.2	0.02	31.7	380.33		60.5	361.58	
5/24/2022	391.4	0.05	29.4	382.63		60.4	361.68	
6/28/2022	392.7	0	28.4	383.63		60.2	361.88	
7/26/2022	386.1	0	28.5	383.53		59.8	362.28	
8/25/2022	382.2	0.02	33	379.03		59.7	362.38	
9/29/2022	392.7	0.36	28.4	383.63		60.2	361.88	
10/25/2022	390	0.32	34.6	377.43		71.3		Omitted
11/17/2022	391.4	2.12	31.1	380.93		59.6	362.48	
12/22/2022	386.4	2.28	34.9	377.13		59.6	362.48	

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**TABLE 4
RATTLESNAKE CANYON DAM
PIEZOMETER WATER LEVEL MEASUREMENTS
JANUARY 2007 THROUGH DECEMBER 2022**

Monitoring Well -->			P-64			P-65		
Top of Well Elevation -->			388.00			374.72		
Bottom of Well Elevation -->			302.00			325.50		
Depth of Well			86.0			49.2		
Date	Reservoir Elevation (ft)	Monthly Rainfall (in.)	Reading (ft)	Elevation (ft)	Comment	Reading (ft)	Elevation (ft)	Comment
1/31/2007	376.90		46.7	341.3		31.6	343.1	
2/28/2007	380.90		48.5	339.5		33.2	341.5	
3/29/2007	397.00		43.9	344.1		32.1	342.6	
4/27/2007	405.60		40.0	348.0		29.0	345.7	
5/24/2007	404.40		39.7	348.3		27.4	347.3	
6/28/2007	396.90		41.6	346.4		27.0	347.7	
7/31/2007	392.60		34.5	353.5		27.1	347.6	
8/29/2007	388.60		45.0	343.0		28.6	346.1	
9/2/2007	387.40		45.3	342.7		28.8	345.9	
9/26/2007	387.90		45.6	342.4		29.6	345.1	
10/25/2007	382.00		47.4	340.6		30.8	343.9	
11/27/2007	380.30		48.7	339.3		32.5	342.2	
12/27/2007	381.40		48.5	339.5		33.5	341.2	
1/31/2008	381.20		49.2	338.8		34.5	340.2	
2/28/2008	393.10		44.9	343.1		32.8	341.9	
3/27/2008	387.90		45.8	342.2		32.3	342.4	
4/28/2008	404.70		40.1	347.9		29.1	345.6	
5/28/2008	404.00		39.9	348.1		27.1	347.6	
6/25/2008	400.20		40.5	347.5		26.3	348.4	
7/29/2008	398.70		41.3	346.7		26.2	348.5	
7/30/2008	398.70	0.00	41.3	346.7		26.1	348.6	
8/29/2008	395.00	0.00	43.0	345.0		26.9	347.8	
9/25/2008	391.70	0.00	44.0	344.0		28.1	346.6	
10/28/2008	384.05	0.00	47.2	340.8		29.9	344.8	
11/26/2008	391.10	1.94	46.0	342.0		31.0	343.7	
12/31/2008	397.90	3.20	42.7	345.3		29.2	345.5	
1/29/2009	393.40	0.34	43.8	344.2		29.4	345.3	
2/25/2009	398.60	3.91	42.3	345.7		28.8	345.9	
3/31/2009	393.40	0.16	43.4	344.6		28.4	346.3	
4/28/2009	400.70	0.10	41.4	346.6		27.8	346.9	

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TABLE 4
RATTLESNAKE CANYON DAM
PIEZOMETER WATER LEVEL MEASUREMENTS
JANUARY 2007 THROUGH DECEMBER 2022

Monitoring Well -->			P-64			P-65		
Top of Well Elevation -->			388.00			374.72		
Bottom of Well Elevation -->			302.00			325.50		
Depth of Well			86.0			49.2		
Date	Reservoir Elevation (ft)	Monthly Rainfall (in.)	Reading (ft)	Elevation (ft)	Comment	Reading (ft)	Elevation (ft)	Comment
5/18/2009	400.80	0.00	41.1	346.9		27.3	347.4	
5/27/2009	400.10	0.00	41.2	346.8		27.3	347.4	
6/29/2009	403.00	0.15	40.1	347.9		26.2	348.5	
7/28/2009	396.53	0.00	42.1	345.9		26.9	347.8	
8/25/2009	396.60	0.00	42.4	345.6		27.5	347.2	
9/30/2009	393.10	0.00	44.0	344.0		28.6	346.1	
10/28/2009	401.60	0.42	41.2	346.8		27.6	347.1	
11/30/2009	402.50	0.00	40.5	347.5		26.2	348.5	
12/29/2009	399.90	2.80	41.3	346.7		26.3	348.4	
1/26/2010	401.10	6.75	41.0	347.0		26.7	348.0	
2/23/2010	402.50	2.66	40.5	347.5		25.5	349.2	
3/30/2010	400.00	1.25	41.1	346.9		24.9	349.8	
4/4/2010	399.60		41.4	346.6		25.1	349.6	
4/27/2010	403.80	1.32	40.2	347.8		25.0	349.7	
5/26/2010	403.60	0.03	40.1	347.9		24.8	349.9	
6/29/2010	397.70	0.00	41.9	346.1		25.7	349.0	
7/27/2010	396.30	0.00	42.7	345.3		26.5	348.2	
8/26/2010	390.70	0.00	44.7	343.3		27.6	347.1	
9/28/2010	390.30	0.00	45.5	342.5		29.1	345.6	
10/26/2010	403.20	1.56	41.6	346.4		28.1	346.6	
11/30/2010	397.10	1.34	42.5	345.5		27.6	347.1	
12/28/2010	401.40	9.03	41.4	346.6		27.1	347.6	
1/27/2011	393.80	1.10	43.2	344.8		25.7	349.0	
2/23/2011	391.70	1.17	44.5	343.5		27.0	347.7	
3/29/2011	403.00	3.10	41.0	347.0		26.2	348.5	
4/27/2011	401.20	0.33	41.3	346.7		25.9	348.8	
5/26/2011	399.50	0.48	41.9	346.1		26.5	348.3	
6/28/2011	391.00	0.02	43.6	344.4		27.8	346.9	
7/26/2011	384.00	0.00	47.3	340.7		30.0	344.7	
8/24/2011	382.80	0.00	47.9	340.1		31.5	343.2	

Note:

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2. Piezometer data based on NGVD 29 datum

TABLE 4
RATTLESNAKE CANYON DAM
PIEZOMETER WATER LEVEL MEASUREMENTS
JANUARY 2007 THROUGH DECEMBER 2022

Monitoring Well -->			P-64			P-65		
Top of Well Elevation -->			388.00			374.72		
Bottom of Well Elevation -->			302.00			325.50		
Depth of Well			86.0			49.2		
Date	Reservoir Elevation (ft)	Monthly Rainfall (in.)	Reading (ft)	Elevation (ft)	Comment	Reading (ft)	Elevation (ft)	Comment
9/27/2011	381.80	0.08	48.6	339.4		32.8	341.9	
10/26/2011	383.90	0.98	47.9	340.1		33.0	341.7	
11/22/2011	389.80	1.46	46.1	341.9		32.7	342.0	
12/28/2011	382.30	0.35	47.9	340.1		33.2	341.5	
1/25/2012	387.50	1.17	47.8	340.2		34.1	340.6	
2/28/2012	381.10	0.79	49.2	338.8		34.6	340.1	
3/27/2012	387.70	1.61	47.4	340.6		34.7	340.0	
4/23/2012	392.30	1.51	45.4	342.6		33.4	341.4	
5/25/2012	388.30	0.06	46.3	341.7		32.9	341.8	
6/13/2012	385.10	0.06	47.1	340.9		33.3	341.4	
6/26/2012	386.90	0.00	46.7	341.3		33.4	341.3	
7/24/2012	378.00	0.10	49.4	338.6		34.6	340.1	
8/8/2012	382.90	0.10	48.3	339.7		34.6	340.1	
8/29/2012	382.70	0.00	48.8	339.2		34.8	339.9	
8/29/2012	382.70	0.00	48.7	339.3		34.8	339.9	
9/25/2012	381.90	0.00	49.4	338.6		35.0	339.7	
10/24/2012	384.40	0.08	48.4	339.6		35.0	339.7	
11/27/2012	389.60	0.86	46.3	341.7		33.7	341.0	
12/18/2012	394.70	1.96	44.4	343.6		32.7	342.0	
1/23/2013	393.00	1.53	44.0	344.0		31.3	343.4	
2/26/2013	391.50	0.49	44.6	343.4		31.2	343.5	
3/26/2013	394.40	1.00	44.7	343.3		31.7	343.0	
4/25/2013	391.00	0.01	44.9	343.1		31.3	343.4	
5/22/2013	392.00	0.00	44.5	343.5		30.9	343.8	
6/25/2013	380.60	0.00	47.9	340.1		32.4	342.3	
7/23/2013	380.20	0.00	49.0	339.0		33.6	341.1	
8/21/2013	379.60	0.00	49.1	338.9		34.2	340.5	
9/25/2013	382.20	0.00	48.8	339.2		34.5	340.2	
10/29/2013	382.00	0.00	49.4	338.6		35.4	339.3	
11/26/2013	390.10	0.44	46.9	341.1		34.6	340.1	

Note:

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2. Piezometer data based on NGVD 29 datum

TABLE 4
RATTLESNAKE CANYON DAM
PIEZOMETER WATER LEVEL MEASUREMENTS
JANUARY 2007 THROUGH DECEMBER 2022

Monitoring Well -->			P-64			P-65		
Top of Well Elevation -->			388.00			374.72		
Bottom of Well Elevation -->			302.00			325.50		
Depth of Well			86.0			49.2		
Date	Reservoir Elevation (ft)	Monthly Rainfall (in.)	Reading (ft)	Elevation (ft)	Comment	Reading (ft)	Elevation (ft)	Comment
12/17/2013	394.70	1.10	44.5	343.5		32.9	341.8	
1/28/2014	392.30	0.00	44.4	343.6		31.8	342.9	
2/26/2014	389.90	0.72	45.2	342.8		31.5	343.2	
3/26/2014	387.20		46.0	342.0		31.7	343.0	
3/28/2014	387.20	1.78	46.2	341.8		31.9	342.8	
4/23/2014	393.00	0.34	44.8	343.2		32.3	342.4	
5/28/2014	387.50	0.00	46.2	341.8		31.8	342.9	
6/25/2014	388.70	0.00	46.0	342.0		32.2	342.5	
7/29/2014	382.80	0.00	47.9	340.1		33.1	341.6	
8/28/2014	386.80	0.04	47.3	340.7		33.5	341.2	
9/24/2014	387.90	0.00	46.4	341.6		32.8	341.9	
10/29/2014	383.90	0.00	47.8	340.2		33.6	341.1	
11/21/2014	388.30	0.35	46.5	341.5		33.0	341.7	
12/22/2014	399.80	4.75	42.6	345.4		31.1	343.6	
1/28/2015	396.90	1.28	43.0	345.0		30.0	344.7	
2/24/2015	392.70	0.34	44.2	343.8		29.9	344.8	
3/31/2015	388.90	0.67	44.8	343.2		29.3	345.4	
4/23/2015	390.30	0.20	45.2	342.8		29.9	344.8	
5/28/2015	400.30	1.87	41.9	346.1		28.5	346.2	
6/24/2015	400.70	0.00	41.5	346.5		27.9	346.8	
7/30/2015	400.20	0.00	41.6	346.4		27.4	347.3	
8/25/2015	384.00	0.00	45.9	342.1		28.5	346.2	
9/23/2015	388.60	2.17	45.8	342.2		30.4	344.3	
10/29/2015	387.60	0.16	46.3	341.7		31.3	343.4	
11/25/2015	386.90	0.15	46.5	341.5		31.7	343.0	
12/23/2015	395.90	1.55	44.8	343.2		31.7	343.0	
1/26/2016	401.20	2.86	41.8	346.2		29.4	345.4	
2/24/2016	393.60	0.39	44.0	344.0		29.5	345.2	
3/29/2016	397.10	1.55	42.7	345.3		28.9	345.8	
4/29/2016	391.60	0.04	44.3	343.7		26.2	348.5	

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**TABLE 4
RATTLESNAKE CANYON DAM
PIEZOMETER WATER LEVEL MEASUREMENTS
JANUARY 2007 THROUGH DECEMBER 2022**

Monitoring Well -->			P-64			P-65		
Top of Well Elevation -->			388.00			374.72		
Bottom of Well Elevation -->			302.00			325.50		
Depth of Well			86.0			49.2		
Date	Reservoir Elevation (ft)	Monthly Rainfall (in.)	Reading (ft)	Elevation (ft)	Comment	Reading (ft)	Elevation (ft)	Comment
5/24/2016	401.60	0.13	42.0	346.0		28.7	346.0	
6/29/2016	392.50	0.00	44.1	343.9		28.7	346.0	
7/26/2016	377.70	0.00	48.5	339.5		31.1	343.6	
8/24/2016	388.10	0.00	46.7	341.3		32.4	342.3	
9/29/2016	388.20	0.00	46.3	341.7		32.5	342.2	
10/26/2016	392.10	0.96	46.4	341.6		32.7	342.0	
11/22/2016	395.70	1.42	43.9	344.1		31.5	343.2	
12/28/2016	400.70	4.11	40.9	347.1		30.0	344.7	
1/26/2017	402.40	6.70	41.0	347.0		28.3	346.4	
2/28/2017	389.60	4.01	44.9	343.1		29.3	345.4	
3/29/2017	391.80	0.14	44.9	343.1		30.2	344.5	
4/26/2017	387.00	0.04	46.1	341.9		30.7	344.0	
5/23/2017	399.40	0.30	42.7	345.3		29.8	344.9	
6/21/2017	392.60	0.00	44.2	343.8		29.6	345.1	
7/26/2017	384.60	0.00	46.9	341.1		31.1	343.6	
8/30/2017	383.00	0.00	47.9	340.1		32.6	342.1	
9/27/2017	382.00	0.00	48.7	339.3		33.9	340.8	
10/27/2017	375.00	0.00	50.0	338.0		34.8	339.9	
11/30/2017	382.80	0.14	48.6	339.4		35.0	339.7	
12/21/2017	380.50	0.00	49.2	338.8		35.1	339.6	
1/24/2018	397.80	1.43	44.0	344.0		33.4	341.3	
2/21/2018	382.40	0.17	47.3	340.7		33.2	341.5	
3/29/2018	392.10	0.00	45.2	342.8		32.8	341.9	
4/25/2018	388.00	0.05	46.8	341.2		34.0	340.7	
5/30/2018	399.50	0.21	43.1	344.9		32.3	342.4	
6/28/2018	398.90	0.00	42.3	345.7		30.6	344.1	
7/25/2018	388.60	0.00	45.2	342.8		30.9	343.8	
8/24/2018	378.60	0.00	49.0	339.0		33.4	341.3	
9/27/2018	381.40	0.00	48.8	339.2		34.6	340.1	
10/18/2018	385.20	1.45	47.9	340.1		34.6	340.1	

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**TABLE 4
RATTLESNAKE CANYON DAM
PIEZOMETER WATER LEVEL MEASUREMENTS
JANUARY 2007 THROUGH DECEMBER 2022**

Monitoring Well -->			P-64			P-65		
Top of Well Elevation -->			388.00			374.72		
Bottom of Well Elevation -->			302.00			325.50		
Depth of Well			86.0			49.2		
Date	Reservoir Elevation (ft)	Monthly Rainfall (in.)	Reading (ft)	Elevation (ft)	Comment	Reading (ft)	Elevation (ft)	Comment
11/28/2018	389.10	1.32	49.4	338.6		35.2	339.5	
12/20/2018	394.20	2.12	45.1	342.9		33.8	340.9	
2/21/2019	396.00	8.26	44.20	343.8		31.80	342.9	
3/27/2019	376.00	1.88	46.50	341.5		31.80	342.9	
4/25/2019	377.70	0.03	48.60	339.4		33.00	341.7	
5/30/2019	395.30	0.92	44.30	343.7		32.30	342.4	
6/26/2019	388.40	0.01	45.60	342.4		31.90	342.8	
7/5/2019	385.50	0.00	46.50	341.5		32.10	342.6	
7/30/2019	385.20	0.00	47.70	340.3		33.60	341.1	
8/27/2019	387.90	0.00	46.20	341.8		34.10	340.6	
9/26/2019	380.00	0.00	48.60	339.4		34.40	340.3	
10/23/2019	378.90	0.00	49.70	338.3		34.90	339.8	
11/26/2019	383.80	2.60	48.80	339.2		35.40	339.3	
12/18/2019	389.20	4.63	49.70	338.3		42.50		Omitted
1/29/2020	388.20	0.15	46.20	341.8		33.30	341.4	
2/25/2020	384.70	0.33	47.30	340.7		33.90	340.8	
3/24/2020	391.70	3.91	45.60	342.4		33.30	341.4	
4/23/2020	399.40	4.05	76.50		Omitted	31.60	343.1	
5/27/2020	388.50	0.40	45.60	342.4		31.90	342.8	
6/24/2020	388.00	0.01	45.90	342.1		32.60	342.1	
7/29/2020	358.70	0.00	46.70	341.3		32.60	342.1	
8/26/2020	379.30	0.00	49.00	339.0		33.90	340.8	
9/29/2020	381.30	0.00	49.00	339.0		35.80	338.9	
10/28/2020	376.50	0.00	50.30	337.7		35.80	338.9	
11/24/2020	380.70	0.25	49.80	338.2		36.00	338.7	
12/23/2020	384.10	1.40	48.50	339.5		35.60	339.1	
1/26/2021	386.2	2.42	47.5	340.5		34.6	340.12	
2/25/2021	385.4	0.07	47.1	340.9		33.8	340.92	
3/23/2021	394.8	1.35	44.6	343.4		33.2	341.52	
4/27/2021	384.1	0.04	47.3	340.7		33.8	340.92	

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**TABLE 4
RATTLESNAKE CANYON DAM
PIEZOMETER WATER LEVEL MEASUREMENTS
JANUARY 2007 THROUGH DECEMBER 2022**

Monitoring Well -->			P-64			P-65		
Top of Well Elevation -->			388.00			374.72		
Bottom of Well Elevation -->			302.00			325.50		
Depth of Well			86.0			49.2		
Date	Reservoir Elevation (ft)	Monthly Rainfall (in.)	Reading (ft)	Elevation (ft)	Comment	Reading (ft)	Elevation (ft)	Comment
5/27/2021	383.5	0.04	47.6	340.4		34.1	340.62	
6/30/2021	385.4	0	47.7	340.3		34.8	339.92	
7/29/2021	381.7	0.03	47.2	340.8		35.7	339.02	
8/24/2021	383.4	0	48.8	339.2		35.9	338.82	
9/28/2021	381.3	0.06	48.6	339.4		35.2	339.52	
10/27/2021	382.7	0.71	49.3	338.7		36.2	338.52	
11/23/2021	381	0	49.8	338.2		36.3	338.42	
12/21/2021	386.3	6.1	48	340		35.9	338.82	
1/25/2022	382	0.05	48.7	339.3		35.5	339.22	
2/22/2022	382.3	0.36	49.4	338.6		36.4	338.32	
3/29/2022	390.6	1.33	46.9	341.1		35.5	339.22	
4/27/2022	393.2	0.02	45.1	342.9		33.7	341.02	
5/24/2022	391.4	0.05	45.1	342.9		34.5	340.22	
6/28/2022	392.7	0	44.8	343.2		32.3	342.42	
7/26/2022	386.1	0	46.6	341.4		32.6	342.12	
8/25/2022	382.2	0.02	48.1	339.9		23.8		Omitted
9/29/2022	392.7	0.36	44.8	343.2		32.3	342.42	
10/25/2022	390	0.32	46.5	341.5		31.5	343.22	
11/17/2022	391.4	2.12	45.5	342.5		33.3	341.42	
12/22/2022	386.4	2.28	47.6	340.4		34.6	340.12	

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TABLE 4
RATTLESNAKE CANYON DAM
PIEZOMETER WATER LEVEL MEASUREMENTS
JANUARY 2007 THROUGH DECEMBER 2022

Monitoring Well -->			P-66			P-67		
Top of Well Elevation -->			359.31			355.04		
Bottom of Well Elevation -->			301.00			282.50		
Depth of Well			58.3			72.5		
Date	Reservoir Elevation (ft)	Monthly Rainfall (in.)	Reading (ft)	Elevation (ft)	Comment	Reading (ft)	Elevation (ft)	Comment
1/31/2007	376.90		23.5	335.8		24.7	330.3	
2/28/2007	380.90		25.2	334.1		26.1	328.9	
3/29/2007	397.00		21.6	337.7		24.3	330.7	
4/27/2007	405.60		18.5	340.8		21.6	333.4	
5/24/2007	404.40		18.0	341.3		21.0	334.0	
6/28/2007	396.90		19.6	339.7		21.6	333.4	
7/31/2007	392.60		20.9	338.4		22.8	332.2	
8/29/2007	388.60		22.2	337.1		23.7	331.3	
9/2/2007	387.40		22.4	336.9		23.9	331.1	
9/26/2007	387.90		22.7	336.6		24.6	330.4	
10/25/2007	382.00		24.2	335.1		25.5	329.5	
11/27/2007	380.30		25.3	334.0		26.3	328.7	
12/27/2007	381.40		25.3	334.0		26.3	328.7	
1/31/2008	381.20		25.8	333.5		27.0	328.0	
2/28/2008	393.10		22.4	336.9		24.6	330.4	
3/27/2008	387.90		22.9	336.4		24.6	330.4	Dry
4/28/2008	404.70		18.4	340.9		21.5	333.5	Dry
5/28/2008	404.00		18.0	341.3		21.5	333.5	Dry
6/25/2008	400.20		18.6	340.7		20.8	334.2	Dry
7/29/2008	398.70		19.2	340.1		21.6	333.4	Dry
7/30/2008	398.70	0.00	19.5	339.9		21.6	333.4	Dry
8/29/2008	395.00	0.00	20.7	338.6		22.6	332.4	Dry
9/25/2008	391.70	0.00	21.7	337.6		23.4	331.6	
10/28/2008	384.05	0.00	24.2	335.1		24.6	330.4	Dry
11/26/2008	391.10	1.94	23.5	335.8		24.5	330.5	Dry
12/31/2008	397.90	3.20	20.7	338.6		23.2	331.8	Dry
1/29/2009	393.40	0.34	21.4	337.9		23.2	331.8	
2/25/2009	398.60	3.91	20.2	339.1		22.6	332.4	Dry
3/31/2009	393.40	0.16	20.9	338.4		22.6	332.4	
4/28/2009	400.70	0.10	19.6	339.7		22.2	332.8	

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TABLE 4
RATTLESNAKE CANYON DAM
PIEZOMETER WATER LEVEL MEASUREMENTS
JANUARY 2007 THROUGH DECEMBER 2022

Monitoring Well -->			P-66			P-67		
Top of Well Elevation -->			359.31			355.04		
Bottom of Well Elevation -->			301.00			282.50		
Depth of Well			58.3			72.5		
Date	Reservoir Elevation (ft)	Monthly Rainfall (in.)	Reading (ft)	Elevation (ft)	Comment	Reading (ft)	Elevation (ft)	Comment
5/18/2009	400.80	0.00	19.3	340.0		21.8	333.2	
5/27/2009	400.10	0.00	19.5	339.8		21.6	333.4	
6/29/2009	403.00	0.15	18.6	340.7		21.6	333.4	
7/28/2009	396.53	0.00	20.1	339.2		21.8	333.2	
8/25/2009	396.60	0.00	20.4	338.9		22.6	332.4	
9/30/2009	393.10	0.00	21.7	337.6		23.7	331.3	
10/28/2009	401.60	0.42	19.5	339.8		22.3	332.7	
11/30/2009	402.50	0.00	18.9	340.4		21.4	333.6	
12/29/2009	399.90	2.80	19.3	340.0		21.5	333.5	
1/26/2010	401.10	6.75	19.3	340.0		21.8	333.2	
2/23/2010	402.50	2.66	18.7	340.6		21.4	333.6	
3/30/2010	400.00	1.25	19.2	340.1		21.5	333.5	Dry
4/4/2010	399.60		19.4	339.9		21.6	333.4	Dry
4/27/2010	403.80	1.32	18.6	340.7		20.5	334.5	
5/26/2010	403.60	0.03	18.5	340.8		21.3	333.7	
6/29/2010	397.70	0.00	19.9	339.4		22.0	333.0	
7/27/2010	396.30	0.00	20.6	338.7		22.6	332.4	
8/26/2010	390.70	0.00	22.0	337.3		23.6	331.4	
9/28/2010	390.30	0.00	22.7	336.6		24.6	330.4	Dry
10/26/2010	403.20	1.56	19.8	339.5		22.8	332.2	
11/30/2010	397.10	1.34	20.4	338.9		22.4	332.6	
12/28/2010	401.40	9.03	19.5	339.8		22.3	332.7	
1/27/2011	393.80	1.10	20.8	338.5		22.4	332.6	
2/23/2011	391.70	1.17	21.9	337.4		23.9	331.1	Dry
3/29/2011	403.00	3.10	19.4	339.9		22.0	333.0	
4/27/2011	401.20	0.33	19.5	339.9		22.1	332.9	
5/26/2011	399.50	0.48	19.9	339.4		22.4	332.7	
6/28/2011	391.00	0.02	22.0	337.3		23.8	331.2	
7/26/2011	384.00	0.00	24.3	335.0		25.8	329.2	
8/24/2011	382.80	0.00	24.9	334.4		26.5	328.5	

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2. Piezometer data based on NGVD 29 datum

TABLE 4
RATTLESNAKE CANYON DAM
PIEZOMETER WATER LEVEL MEASUREMENTS
JANUARY 2007 THROUGH DECEMBER 2022

Monitoring Well -->			P-66			P-67		
Top of Well Elevation -->			359.31			355.04		
Bottom of Well Elevation -->			301.00			282.50		
Depth of Well			58.3			72.5		
Date	Reservoir Elevation (ft)	Monthly Rainfall (in.)	Reading (ft)	Elevation (ft)	Comment	Reading (ft)	Elevation (ft)	Comment
9/27/2011	381.80	0.08	25.4	333.9		26.6	328.4	
10/26/2011	383.90	0.98	24.8	334.5		26.2	328.8	
11/22/2011	389.80	1.46	23.5	335.8		25.5	329.5	
12/28/2011	382.30	0.35	24.8	334.5		25.9	329.1	
1/25/2012	387.50	1.17	25.0	334.3		26.8	328.2	
2/28/2012	381.10	0.79	25.9	333.4		26.9	328.1	
3/27/2012	387.70	1.61	24.9	334.4		26.2	328.8	
4/23/2012	392.30	1.51	23.0	336.3		25.3	329.8	
5/25/2012	388.30	0.06	23.2	336.1		25.3	329.7	
6/13/2012	385.10	0.06	24.1	335.2		25.3	329.7	
6/26/2012	386.90	0.00	25.4	333.9		23.9	331.1	
7/24/2012	378.00	0.10	25.9	333.4		26.8	328.2	
8/8/2012	382.90	0.10	25.5	333.8		26.7	328.3	
8/29/2012	382.70	0.00	25.7	333.6		27.1	327.9	
8/29/2012	382.70	0.00	25.7	333.6		27.1	327.9	
9/25/2012	381.90	0.00	26.1	333.2		27.2	327.8	
10/24/2012	384.40	0.08	25.5	333.8		27.0	328.0	
11/27/2012	389.60	0.86	23.7	335.6		25.6	329.4	
12/18/2012	394.70	1.96	22.2	337.1		24.4	330.6	
1/23/2013	393.00	1.53	21.5	337.8		23.6	331.4	
2/26/2013	391.50	0.49	21.9	337.4		23.9	331.1	
3/26/2013	394.40	1.00	22.2	337.1		24.6	330.4	
4/25/2013	391.00	0.01	22.3	337.0		24.2	330.8	
5/22/2013	392.00	0.00	22.0	337.3		24.0	331.0	
6/25/2013	380.60	0.00	24.5	334.8		25.6	329.4	
7/23/2013	380.20	0.00	25.7	333.6		26.6	328.4	
8/21/2013	379.60	0.00	25.7	333.6		26.7	328.3	
9/25/2013	382.20	0.00	25.7	333.6		26.7	328.3	
10/29/2013	382.00	0.00	26.2	333.1		27.4	327.6	
11/26/2013	390.10	0.44	24.4	334.9		26.4	328.6	

Note:

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TABLE 4
RATTLESNAKE CANYON DAM
PIEZOMETER WATER LEVEL MEASUREMENTS
JANUARY 2007 THROUGH DECEMBER 2022

Monitoring Well -->			P-66			P-67		
Top of Well Elevation -->			359.31			355.04		
Bottom of Well Elevation -->			301.00			282.50		
Depth of Well			58.3			72.5		
Date	Reservoir Elevation (ft)	Monthly Rainfall (in.)	Reading (ft)	Elevation (ft)	Comment	Reading (ft)	Elevation (ft)	Comment
12/17/2013	394.70	1.10	22.3	337.0		25.1	329.9	
1/28/2014	392.30	0.00	21.9	337.4		24.4	330.6	
2/26/2014	389.90	0.72	22.5	336.8		24.4	330.6	
3/26/2014	387.20		23.2	336.1		24.7	330.3	
3/28/2014	387.20	1.78	23.3	336.0		24.7	330.3	
4/23/2014	393.00	0.34	22.4	336.9		25.0	330.0	
5/28/2014	387.50	0.00	23.3	336.0		24.6	330.4	
6/25/2014	388.70	0.00	23.3	336.0		25.2	329.8	
7/29/2014	382.80	0.00	24.8	334.5		25.8	329.2	
8/28/2014	386.80	0.04	24.5	334.8		25.8	329.2	
9/24/2014	387.90	0.00	23.6	335.7		25.8	329.2	
10/29/2014	383.90	0.00	24.8	334.5		26.4	328.6	Dry
11/21/2014	388.30	0.35	23.7	335.6		25.5	329.5	
12/22/2014	399.80	4.75	20.7	338.6		23.4	331.6	
1/28/2015	396.90	1.28	20.8	338.5		23.2	331.8	Dry
2/24/2015	392.70	0.34	21.7	337.6		23.5	331.5	Dry
3/31/2015	388.90	0.67	22.1	337.2		23.9	331.1	Dry
4/23/2015	390.30	0.20	22.5	336.8		24.0	331.0	
5/28/2015	400.30	1.87	19.9	339.4		22.7	332.3	
6/24/2015	400.70	0.00	19.7	339.6		22.5	332.5	Wet
7/30/2015	400.20	0.00	19.8	339.5		22.4	332.6	Wet
8/25/2015	384.00	0.00	22.8	336.5		22.5	332.5	
9/23/2015	388.60	2.17	23.2	336.1		25.2	329.8	Wet
10/29/2015	387.60	0.16	23.6	335.7		25.2	329.8	
11/25/2015	386.90	0.15	23.8	335.5		25.3	329.7	
12/23/2015	395.90	1.55	22.4	336.9		24.7	330.3	
1/26/2016	401.20	2.86	20.8	338.5		22.8	332.2	
2/24/2016	393.60	0.39	21.6	337.7		22.8	332.2	Dry
3/29/2016	397.10	1.55	20.9	338.5		22.9	332.1	Wet
4/29/2016	391.60	0.04	22.1	337.2		23.5	331.5	

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TABLE 4
RATTLESNAKE CANYON DAM
PIEZOMETER WATER LEVEL MEASUREMENTS
JANUARY 2007 THROUGH DECEMBER 2022

Monitoring Well -->			P-66			P-67		
Top of Well Elevation -->			359.31			355.04		
Bottom of Well Elevation -->			301.00			282.50		
Depth of Well			58.3			72.5		
Date	Reservoir Elevation (ft)	Monthly Rainfall (in.)	Reading (ft)	Elevation (ft)	Comment	Reading (ft)	Elevation (ft)	Comment
5/24/2016	401.60	0.13	20.3	339.0		23.1	331.9	
6/29/2016	392.50	0.00	21.6	337.7		23.5	331.5	
7/26/2016	377.70	0.00	25.1	334.2		25.5	329.5	
8/24/2016	388.10	0.00	24.0	335.3		26.0	329.0	
9/29/2016	388.20	0.00	23.6	335.7		25.5	329.5	
10/26/2016	392.10	0.96	23.2	336.1		25.3	329.7	
11/22/2016	395.70	1.42	21.7	337.6		24.2	330.8	
12/28/2016	400.70	4.11	20.0	339.3		23.0	332.0	
1/26/2017	402.40	6.70	19.5	339.8		22.0	333.0	
2/28/2017	389.60	4.01	22.2	337.1		22.8	332.2	
3/29/2017	391.80	0.14	22.4	336.9		24.4	330.6	
4/26/2017	387.00	0.04	23.2	336.1		24.8	330.2	
5/23/2017	399.40	0.30	20.8	338.5		23.5	331.5	
6/21/2017	392.60	0.00	21.8	337.5		23.3	331.7	
7/26/2017	384.60	0.00	23.9	335.4		23.7	331.3	Dry
8/30/2017	383.00	0.00	24.8	334.5		23.7	331.3	Dry
9/27/2017	382.00	0.00	25.6	333.7		23.4	331.6	
10/27/2017	375.00	0.00	26.5	332.8		23.5	331.5	
11/30/2017	382.80	0.14	25.7	333.6		23.2	331.8	
12/21/2017	380.50	0.00	26.0	333.3		23.6	331.4	
1/24/2018	397.80	1.43	22.2	337.1		23.5	331.5	
2/21/2018	382.40	0.17	24.2	335.1		24.5	330.5	
3/29/2018	392.10	0.00	22.7	336.6		28.1	326.9	
4/25/2018	388.00	0.05	24.1	335.2		24.6	330.4	
5/30/2018	399.50	0.21	21.3	338.0		23.8	331.2	
6/28/2018	398.90	0.00	20.4	338.9		23.0	332.0	
7/25/2018	388.60	0.00	22.4	336.9		22.9	332.1	
8/24/2018	378.60	0.00	25.5	333.8		22.9	332.1	
9/27/2018	381.40	0.00	25.7	333.6		26.9	328.1	
10/18/2018	385.20	1.45	25.0	334.3		26.8	328.2	

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TABLE 4
RATTLESNAKE CANYON DAM
PIEZOMETER WATER LEVEL MEASUREMENTS
JANUARY 2007 THROUGH DECEMBER 2022

Monitoring Well -->			P-66			P-67		
Top of Well Elevation -->			359.31			355.04		
Bottom of Well Elevation -->			301.00			282.50		
Depth of Well			58.3			72.5		
Date	Reservoir Elevation (ft)	Monthly Rainfall (in.)	Reading (ft)	Elevation (ft)	Comment	Reading (ft)	Elevation (ft)	Comment
11/28/2018	389.10	1.32	26.3	333.0		27.4	327.6	
12/20/2018	394.20	2.12	22.8	336.5		25.2	329.8	
2/21/2019	396.00	8.26	20.70	338.6		23.00	332.0	
3/27/2019	376.00	1.88	24.40	334.9		23.00	332.0	
4/25/2019	377.70	0.03	25.00	334.3		23.00	332.0	Dry
5/30/2019	395.30	0.92	22.10	337.2		23.00	332.0	Dry
6/26/2019	388.40	0.01	22.80	336.5		23.00	332.0	Dry
7/5/2019	385.50	0.00	23.40	335.9		23.30	331.7	
7/30/2019	385.20	0.00	24.60	334.7		23.40	331.6	
8/27/2019	387.90	0.00	23.40	335.9		23.40	331.6	
9/26/2019	380.00	0.00	25.50	333.8		23.30	331.7	
10/23/2019	378.90	0.00	26.20	333.1		24.20	330.8	
11/26/2019	383.80	2.60	25.70	333.6		24.30	330.7	
12/18/2019	389.20	4.63	23.90	335.4		24.30	330.7	
1/29/2020	388.20	0.15	23.40	335.9		25.30	329.7	
2/25/2020	384.70	0.33	24.30	335.0		26.00	329.0	
3/24/2020	391.70	3.91	50.70		Omitted	71.80		Omitted
4/23/2020	399.40	4.05	20.40	338.9		23.30	331.7	
5/27/2020	388.50	0.40	22.80	336.5		24.70	330.3	
6/24/2020	388.00	0.01	23.10	336.2		25.10	329.9	
7/29/2020	358.70	0.00	23.70	335.6		25.50	329.5	
8/26/2020	379.30	0.00	25.60	333.7		26.90	328.1	
9/29/2020	381.30	0.00	25.70	333.6		27.30	327.7	
10/28/2020	376.50	0.00	26.80	332.5		28.40	326.6	
11/24/2020	380.70	0.25	26.40	332.9		28.00	327.0	
12/23/2020	384.10	1.40	25.50	333.8		27.30	327.7	
1/26/2021	386.2	2.42	25.2	334.11		26.7	328.34	
2/25/2021	385.4	0.07	24.1	335.21		25.9	329.14	
3/23/2021	394.8	1.35	22.3	337.01		24.8	330.24	
4/27/2021	384.1	0.04	24.1	335.21		25.9	329.14	

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**TABLE 4
RATTLESNAKE CANYON DAM
PIEZOMETER WATER LEVEL MEASUREMENTS
JANUARY 2007 THROUGH DECEMBER 2022**

Monitoring Well -->			P-66			P-67		
Top of Well Elevation -->			359.31			355.04		
Bottom of Well Elevation -->			301.00			282.50		
Depth of Well			58.3			72.5		
Date	Reservoir Elevation (ft)	Monthly Rainfall (in.)	Reading (ft)	Elevation (ft)	Comment	Reading (ft)	Elevation (ft)	Comment
5/27/2021	383.5	0.04	24.4	334.91		26.1	328.94	
6/30/2021	385.4	0	24.7	334.61		25.8	329.24	
7/29/2021	381.7	0.03	25.8	333.51		27.4	327.64	
8/24/2021	383.4	0	25.8	333.51		27.5	327.54	
9/28/2021	381.3	0.06	25.4	333.91		27	328.04	
10/27/2021	382.7	0.71	26.2	333.11		27.3	327.74	
11/23/2021	381	0	26.6	332.71		28	327.04	
12/21/2021	386.3	6.1	25.2	334.11		27.1	327.94	
1/25/2022	382	0.05	25.4	333.91		27.3	327.74	
2/22/2022	382.3	0.36	26.2	333.11		27.7	327.34	
3/29/2022	390.6	1.33	24.4	334.91		26.5	328.54	
4/27/2022	393.2	0.02	22.7	336.61		25.1	329.94	
5/24/2022	391.4	0.05	22.8	336.51		24.7	330.34	
6/28/2022	392.7	0	22.7	336.61		24.8	330.24	
7/26/2022	386.1	0	23.6	335.71		25.5	329.54	
8/25/2022	382.2	0.02	24.9	334.41		26.5	328.54	
9/29/2022	392.7	0.36	22.7	336.61		24.8	330.24	
10/25/2022	390	0.32	24.2	335.11		26.3	328.74	
11/17/2022	391.4	2.12	23	336.31		25.2	329.84	
12/22/2022	386.4	2.28	26.5	332.81		25.3	329.74	

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TABLE 4
RATTLESNAKE CANYON DAM
PIEZOMETER WATER LEVEL MEASUREMENTS
JANUARY 2007 THROUGH DECEMBER 2022

Monitoring Well -->			VBW/OW-1			VBW/OW-2		
Top of Well Elevation -->			468.16			442.91		
Bottom of Well Elevation -->			433.46			407.91		
Depth of Well			34.7			35.0		
Date	Reservoir Elevation (ft)	Monthly Rainfall (in.)	Reading (ft)	Elevation (ft)	Comment	Reading (ft)	Elevation (ft)	Comment
1/31/2007	376.90		35.5	432.7		35.0	407.9	
2/28/2007	380.90		34.4	433.8		34.2	408.7	
3/29/2007	397.00		34.6	433.6		34.4	408.5	442.9
4/27/2007	405.60		34.6	433.6		34.4	408.5	
5/24/2007	404.40		35.2	433.0		34.5	408.4	
6/28/2007	396.90		34.6	433.6		34.5	408.4	
7/31/2007	392.60		35.4	432.8		34.5	408.4	
8/29/2007	388.60		34.5	433.7		34.4	408.5	
9/2/2007	387.40		34.5	433.7		34.4	408.5	
9/26/2007	387.90		34.6	433.6		34.4	408.5	
10/25/2007	382.00		35.4	432.8		35.4	407.5	
11/27/2007	380.30		34.5	433.7		34.4	408.5	
12/27/2007	381.40		34.8	433.4		34.4	408.5	
1/31/2008	381.20		34.4	433.8		34.3	408.6	Dry
2/28/2008	393.10		33.4	434.8		34.4	408.5	Dry
3/27/2008	387.90		33.2	435.0		34.4	408.5	Dry
4/28/2008	404.70		31.2	437.0		33.6	409.3	
5/28/2008	404.00		34.0	434.2		33.8	409.1	
6/25/2008	400.20		34.6	433.6	Dry	34.7	408.2	Dry
7/29/2008	398.70		34.5	433.7	Dry	34.4	408.5	Dry
7/30/2008	398.70	0.00	34.5	433.7	Dry	34.5	408.4	Dry
8/29/2008	395.00	0.00	34.5	433.7	Dry	34.4	408.5	Dry
9/25/2008	391.70	0.00	34.7	433.5	Dry	34.8	408.1	Dry
10/28/2008	384.05	0.00	34.5	433.7	Dry	34.4	408.5	Dry
11/26/2008	391.10	1.94	34.7	433.5	Dry	34.6	408.3	Dry
12/31/2008	397.90	3.20	34.5	433.7	Dry	34.4	408.5	Dry
1/29/2009	393.40	0.34	34.5	433.7	Dry	34.4	408.5	Dry
2/25/2009	398.60	3.91	34.8	433.4	Dry	34.4	408.5	Dry
3/31/2009	393.40	0.16	34.5	433.7	Dry	34.4	408.5	Dry
4/28/2009	400.70	0.10	34.6	433.6	Dry	34.5	408.4	Dry

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RATTLESNAKE CANYON DAM
PIEZOMETER WATER LEVEL MEASUREMENTS
JANUARY 2007 THROUGH DECEMBER 2022**

Monitoring Well -->			VBW/OW-1			VBW/OW-2		
Top of Well Elevation -->			468.16			442.91		
Bottom of Well Elevation -->			433.46			407.91		
Depth of Well			34.7			35.0		
Date	Reservoir Elevation (ft)	Monthly Rainfall (in.)	Reading (ft)	Elevation (ft)	Comment	Reading (ft)	Elevation (ft)	Comment
5/18/2009	400.80	0.00	34.5	433.7	Dry	34.4	408.5	Dry
5/27/2009	400.10	0.00	34.5	433.7		34.4	408.6	
6/29/2009	403.00	0.15	34.5	433.7	Dry	34.3	408.6	Dry
7/28/2009	396.53	0.00	34.5	433.7	Dry	34.4	408.5	Dry
8/25/2009	396.60	0.00	34.5	433.7	Dry	34.4	408.5	Dry
9/30/2009	393.10	0.00	34.5	433.7	Dry	34.3	408.6	Dry
10/28/2009	401.60	0.42	34.5	433.7	Dry	34.4	408.5	Dry
11/30/2009	402.50	0.00	34.5	433.7	Dry	34.4	408.5	Dry
12/29/2009	399.90	2.80	34.5	433.7	Dry	34.4	408.5	Dry
1/26/2010	401.10	6.75	33.1	435.1		34.3	408.6	Dry
2/23/2010	402.50	2.66	34.2	434.0		34.4	408.5	Dry
3/30/2010	400.00	1.25	34.5	433.7	Dry	34.4	408.5	Dry
4/4/2010	399.60		34.6	433.6	Dry	34.2	408.7	Dry
4/27/2010	403.80	1.32	34.6	433.6	Dry	34.4	408.5	Dry
5/26/2010	403.60	0.03	34.6	433.6	Dry	34.4	408.5	Dry
6/29/2010	397.70	0.00	34.5	433.7	Dry	34.2	408.7	Dry
7/27/2010	396.30	0.00	34.5	433.7	Dry	34.3	408.6	Dry
8/26/2010	390.70	0.00	34.6	433.6	Dry	34.5	408.4	Dry
9/28/2010	390.30	0.00	34.5	433.7	Dry	34.4	408.5	Dry
10/26/2010	403.20	1.56	34.6	433.6	Dry	34.3	408.6	Dry
11/30/2010	397.10	1.34	34.5	433.7		34.3	408.6	Dry
12/28/2010	401.40	9.03	23.3	444.9	Dry	34.4	408.5	Dry
1/27/2011	393.80	1.10	34.0	434.2	Dry	34.3	408.6	
2/23/2011	391.70	1.17	34.5	433.7	Dry	34.4	408.5	Dry
3/29/2011	403.00	3.10	34.4	433.8	Dry	34.3	408.6	Dry
4/27/2011	401.20	0.33	34.5	433.7	Dry	34.4	408.5	Dry
5/26/2011	399.50	0.48	34.5	433.7	Dry	34.4	408.5	Dry
6/28/2011	391.00	0.02	34.6	433.6	Dry	34.5	408.4	Dry
7/26/2011	384.00	0.00	34.6	433.6	Dry	34.4	408.5	Dry
8/24/2011	382.80	0.00	34.5	433.7	Dry	34.9	408.0	Dry

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TABLE 4
RATTLESNAKE CANYON DAM
PIEZOMETER WATER LEVEL MEASUREMENTS
JANUARY 2007 THROUGH DECEMBER 2022

Monitoring Well -->			VBW/OW-1			VBW/OW-2		
Top of Well Elevation -->			468.16			442.91		
Bottom of Well Elevation -->			433.46			407.91		
Depth of Well			34.7			35.0		
Date	Reservoir Elevation (ft)	Monthly Rainfall (in.)	Reading (ft)	Elevation (ft)	Comment	Reading (ft)	Elevation (ft)	Comment
9/27/2011	381.80	0.08	34.5	433.7	Dry	34.4	408.5	Dry
10/26/2011	383.90	0.98	34.5	433.7	Dry	34.4	408.5	Dry
11/22/2011	389.80	1.46	32.9	435.3		34.2	408.7	
12/28/2011	382.30	0.35	34.5	433.7		34.4	408.5	
1/25/2012	387.50	1.17	34.5	433.7		34.3	408.6	
2/28/2012	381.10	0.79	34.5	433.7		34.3	408.6	
3/27/2012	387.70	1.61	35.1	433.1		35.3	407.6	Erroneous
4/23/2012	392.30	1.51	34.8	433.4		34.4	408.5	
5/25/2012	388.30	0.06	35.5	432.7	Erroneous	35.8	407.1	Erroneous
6/13/2012	385.10	0.06	34.5	433.7		34.3	408.6	
6/26/2012	386.90	0.00	34.5	433.7		34.4	408.5	
7/24/2012	378.00	0.10	34.5	433.7		34.4	408.5	
8/8/2012	382.90	0.10	34.4	433.8		34.3	408.6	
8/29/2012	382.70	0.00	34.5	433.7		34.3	408.6	
8/29/2012	382.70	0.00	34.5	433.7		34.3	408.6	
9/25/2012	381.90	0.00	34.6	433.6		34.4	408.5	
10/24/2012	384.40	0.08	34.5	433.7		34.4	408.5	
11/27/2012	389.60	0.86	34.4	433.8		34.3	408.6	
12/18/2012	394.70	1.96	34.4	433.8		34.3	408.6	
1/23/2013	393.00	1.53	35.7	432.5	Erroneous	35.8	407.1	Erroneous
2/26/2013	391.50	0.49	34.5	433.7		34.2	408.7	
3/26/2013	394.40	1.00	34.4	433.8		35.3	407.6	
4/25/2013	391.00	0.01	34.8	433.4		34.3	408.6	
5/22/2013	392.00	0.00	34.5	433.7		34.4	408.5	
6/25/2013	380.60	0.00	34.5	433.7		34.4	408.5	
7/23/2013	380.20	0.00	34.5	433.7		34.4	408.5	
8/21/2013	379.60	0.00	34.5	433.7	Dry	34.4	408.5	Dry
9/25/2013	382.20	0.00	34.5	433.7	Dry	34.6	408.3	Dry
10/29/2013	382.00	0.00	34.5	433.7	Dry	34.6	408.3	Dry
11/26/2013	390.10	0.44	34.5	433.7	Dry	34.3	408.6	Dry

Note:

1. Readings in red are classified as erroneous
2. Piezometer data based on NGVD 29 datum

TABLE 4
RATTLESNAKE CANYON DAM
PIEZOMETER WATER LEVEL MEASUREMENTS
JANUARY 2007 THROUGH DECEMBER 2022

Monitoring Well -->			VBW/OW-1			VBW/OW-2		
Top of Well Elevation -->			468.16			442.91		
Bottom of Well Elevation -->			433.46			407.91		
Depth of Well			34.7			35.0		
Date	Reservoir Elevation (ft)	Monthly Rainfall (in.)	Reading (ft)	Elevation (ft)	Comment	Reading (ft)	Elevation (ft)	Comment
12/17/2013	394.70	1.10	34.6	433.6	Dry	34.3	408.6	Dry
1/28/2014	392.30	0.00	34.4	433.8	Dry	34.3	408.6	Dry
2/26/2014	389.90	0.72	34.5	433.7	Dry	34.3	408.6	Dry
3/26/2014	387.20		34.5	433.7	Dry	34.4	408.5	Dry
3/28/2014	387.20	1.78	34.5	433.7	Dry	34.4	408.5	Dry
4/23/2014	393.00	0.34	34.5	433.7	Dry	34.3	408.6	Dry
5/28/2014	387.50	0.00	34.5	433.7	Dry	34.4	408.5	Dry
6/25/2014	388.70	0.00	34.5	433.7	Dry	34.3	408.6	Dry
7/29/2014	382.80	0.00	34.5	433.7	Dry	34.3	408.6	Dry
8/28/2014	386.80	0.04	34.4	433.8		34.3	408.6	Dry
9/24/2014	387.90	0.00	34.5	433.7	Dry	34.3	408.6	Dry
10/29/2014	383.90	0.00	34.8	433.4	Dry	34.4	408.5	Dry
11/21/2014	388.30	0.35	34.5	433.7	Dry	34.3	408.6	Dry
12/22/2014	399.80	4.75	34.5	433.7	Dry	34.3	408.6	Dry
1/28/2015	396.90	1.28	34.5	433.7	Dry	34.3	408.6	Dry
2/24/2015	392.70	0.34	34.4	433.8	Dry	34.2	408.7	Dry
3/31/2015	388.90	0.67	34.5	433.7	Dry	34.3	408.6	Dry
4/23/2015	390.30	0.20	34.5	433.7	Dry	34.3	408.6	Dry
5/28/2015	400.30	1.87	34.5	433.7	Dry	34.4	408.5	Dry
6/24/2015	400.70	0.00	35.0	433.2	Dry	34.8	408.1	Dry
7/30/2015	400.20	0.00	34.4	433.8	Dry	35.3	407.6	Dry
8/25/2015	384.00	0.00	34.4	433.8	Dry	34.6	408.3	Dry
9/23/2015	388.60	2.17	34.5	433.7	Dry	34.4	408.5	Dry
10/29/2015	387.60	0.16	34.5	433.7	Dry	34.4	408.5	Dry
11/25/2015	386.90	0.15	34.6	433.6	Dry	34.4	408.5	Dry
12/23/2015	395.90	1.55	33.8	434.4	Dry	33.4	409.5	Dry
1/26/2016	401.20	2.86	33.8	434.4	Dry	33.4	409.5	Dry
2/24/2016	393.60	0.39	33.8	434.4	Dry	33.4	409.5	Dry
3/29/2016	397.10	1.55	34.5	433.7		34.5	408.4	
4/29/2016	391.60	0.04	34.5	433.7		34.5	408.4	

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TABLE 4
RATTLESNAKE CANYON DAM
PIEZOMETER WATER LEVEL MEASUREMENTS
JANUARY 2007 THROUGH DECEMBER 2022

Monitoring Well -->			VBW/OW-1			VBW/OW-2		
Top of Well Elevation -->			468.16			442.91		
Bottom of Well Elevation -->			433.46			407.91		
Depth of Well			34.7			35.0		
Date	Reservoir Elevation (ft)	Monthly Rainfall (in.)	Reading (ft)	Elevation (ft)	Comment	Reading (ft)	Elevation (ft)	Comment
5/24/2016	401.60	0.13	34.5	433.7		34.5	408.4	
6/29/2016	392.50	0.00	34.5	433.7		34.5	408.4	
7/26/2016	377.70	0.00	34.5	433.7		34.5	408.4	
8/24/2016	388.10	0.00			Abandoned			Abandoned
9/29/2016	388.20	0.00			Abandoned			Abandoned
10/26/2016	392.10	0.96			Abandoned			Abandoned
11/22/2016	395.70	1.42			Abandoned			Abandoned
12/28/2016	400.70	4.11			Abandoned			Abandoned
1/26/2017	402.40	6.70			Abandoned			Abandoned
2/28/2017	389.60	4.01			Abandoned			Abandoned
3/29/2017	391.80	0.14			Abandoned			Abandoned
4/26/2017	387.00	0.04			Abandoned			Abandoned
5/23/2017	399.40	0.30			Abandoned			Abandoned
6/21/2017	392.60	0.00			Abandoned			Abandoned
7/26/2017	384.60	0.00			Abandoned			Abandoned
8/30/2017	383.00	0.00			Abandoned			Abandoned
9/27/2017	382.00	0.00			Abandoned			Abandoned
10/27/2017	375.00	0.00			Abandoned			Abandoned
11/30/2017	382.80	0.14			Abandoned			Abandoned
12/21/2017	380.50	0.00			Abandoned			Abandoned
1/24/2018	397.80	1.43			Abandoned			Abandoned
2/21/2018	382.40	0.17			Abandoned			Abandoned
3/29/2018	392.10	0.00			Abandoned			Abandoned
4/25/2018	388.00	0.05			Abandoned			Abandoned
5/30/2018	399.50	0.21			Abandoned			Abandoned
6/28/2018	398.90	0.00			Abandoned			Abandoned
7/25/2018	388.60	0.00			Abandoned			Abandoned
8/24/2018	378.60	0.00			Abandoned			Abandoned
9/27/2018	381.40	0.00			Abandoned			Abandoned
10/18/2018	385.20	1.45			Abandoned			Abandoned

Note:

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2. Piezometer data based on NGVD 29 datum

**TABLE 4
RATTLESNAKE CANYON DAM
PIEZOMETER WATER LEVEL MEASUREMENTS
JANUARY 2007 THROUGH DECEMBER 2022**

Monitoring Well -->			VBW/OW-1			VBW/OW-2		
Top of Well Elevation -->			468.16			442.91		
Bottom of Well Elevation -->			433.46			407.91		
Depth of Well			34.7			35.0		
Date	Reservoir Elevation (ft)	Monthly Rainfall (in.)	Reading (ft)	Elevation (ft)	Comment	Reading (ft)	Elevation (ft)	Comment
11/28/2018	389.10	1.32			Abandoned			Abandoned
12/20/2018	394.20	2.12			Abandoned			Abandoned
2/21/2019	396.00	8.26			Abandoned			Abandoned
3/27/2019	376.00	1.88			Abandoned			Abandoned
4/25/2019	377.70	0.03			Abandoned			Abandoned
5/30/2019	395.30	0.92			Abandoned			Abandoned
6/26/2019	388.40	0.01			Abandoned			Abandoned
7/5/2019	385.50	0.00			Abandoned			Abandoned
7/30/2019	385.20	0.00			Abandoned			Abandoned
8/27/2019	387.90	0.00			Abandoned			Abandoned
9/26/2019	380.00	0.00			Abandoned			Abandoned
10/23/2019	378.90	0.00			Abandoned			Abandoned
11/26/2019	383.80	2.60			Abandoned			Abandoned
12/18/2019	389.20	4.63			Abandoned			Abandoned
1/29/2020	388.20	0.15			Abandoned			Abandoned
2/25/2020	384.70	0.33			Abandoned			Abandoned
3/24/2020	391.70	3.91			Abandoned			Abandoned
4/23/2020	399.40	4.05			Abandoned			Abandoned
5/27/2020	388.50	0.40			Abandoned			Abandoned
6/24/2020	388.00	0.01			Abandoned			Abandoned
7/29/2020	358.70	0.00			Abandoned			Abandoned
8/26/2020	379.30	0.00			Abandoned			Abandoned
9/29/2020	381.30	0.00			Abandoned			Abandoned
10/28/2020	376.50	0.00			Abandoned			Abandoned
11/24/2020	380.70	0.25			Abandoned			Abandoned
12/23/2020	384.10	1.40			Abandoned			Abandoned
1/26/2021	386.2	2.42			Abandoned			Abandoned
2/25/2021	385.4	0.07			Abandoned			Abandoned
3/23/2021	394.8	1.35			Abandoned			Abandoned
4/27/2021	384.1	0.04			Abandoned			Abandoned

Note:

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2. Piezometer data based on NGVD 29 datum

TABLE 4
RATTLESNAKE CANYON DAM
PIEZOMETER WATER LEVEL MEASUREMENTS
JANUARY 2007 THROUGH DECEMBER 2022

Monitoring Well -->			VBW/OW-1			VBW/OW-2		
Top of Well Elevation -->			468.16			442.91		
Bottom of Well Elevation -->			433.46			407.91		
Depth of Well			34.7			35.0		
Date	Reservoir Elevation (ft)	Monthly Rainfall (in.)	Reading (ft)	Elevation (ft)	Comment	Reading (ft)	Elevation (ft)	Comment
5/27/2021	383.5	0.04			Abandoned			Abandoned
6/30/2021	385.4	0			Abandoned			Abandoned
7/29/2021	381.7	0.03			Abandoned			Abandoned
8/24/2021	383.4	0			Abandoned			Abandoned
9/28/2021	381.3	0.06			Abandoned			Abandoned
10/27/2021	382.7	0.71			Abandoned			Abandoned
11/23/2021	381	0			Abandoned			Abandoned
12/21/2021	386.3	6.1			Abandoned			Abandoned
1/25/2022	382	0.05			Abandoned			Abandoned
2/22/2022	382.3	0.36			Abandoned			Abandoned
3/29/2022	390.6	1.33			Abandoned			Abandoned
4/27/2022	393.2	0.02			Abandoned			Abandoned
5/24/2022	391.4	0.05			Abandoned			Abandoned
6/28/2022	392.7	0			Abandoned			Abandoned
7/26/2022	386.1	0			Abandoned			Abandoned
8/25/2022	382.2	0.02			Abandoned			Abandoned
9/29/2022	392.7	0.36			Abandoned			Abandoned
10/25/2022	390	0.32			Abandoned			Abandoned
11/17/2022	391.4	2.12			Abandoned			Abandoned
12/22/2022	386.4	2.28			Abandoned			Abandoned

Note:

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**TABLE 4
RATTLESNAKE CANYON DAM
PIEZOMETER WATER LEVEL MEASUREMENTS
JANUARY 2007 THROUGH DECEMBER 2022**

Monitoring Well -->			VBW/OW-3		
Top of Well Elevation -->			418.87		
Bottom of Well Elevation -->			386.27		
Depth of Well			32.6		
Date	Reservoir Elevation (ft)	Monthly Rainfall (in.)	Reading (ft)	Elevation (ft)	Comment
1/31/2007	376.90		25.3	393.6	
2/28/2007	380.90		27.3	391.6	
3/29/2007	397.00		26.3	392.6	
4/27/2007	405.60		21.0	397.9	
5/24/2007	404.40		18.5	400.4	
6/28/2007	396.90		19.5	399.4	
7/31/2007	392.60		21.9	397.0	
8/29/2007	388.60		23.3	395.6	
9/2/2007	387.40		21.9	397.0	
9/26/2007	387.90		23.1	395.8	
10/25/2007	382.00		26.1	392.8	
11/27/2007	380.30		26.6	392.3	
12/27/2007	381.40		29.1	389.8	
1/31/2008	381.20		25.2	393.7	
2/28/2008	393.10		22.3	396.6	
3/27/2008	387.90		19.1	399.8	
4/28/2008	404.70		17.6	401.3	
5/28/2008	404.00		17.1	401.8	
6/25/2008	400.20		17.6	401.3	
7/29/2008	398.70		19.1	399.8	
7/30/2008	398.70	0.00	19.1	399.8	
8/29/2008	395.00	0.00	21.3	397.6	
9/25/2008	391.70	0.00	23.5	395.4	
10/28/2008	384.05	0.00	27.0	391.9	Dry
11/26/2008	391.10	1.94	26.8	392.1	
12/31/2008	397.90	3.20	24.6	394.3	
1/29/2009	393.40	0.34	25.6	393.3	
2/25/2009	398.60	3.91	25.1	393.8	
3/31/2009	393.40	0.16	24.6	394.3	
4/28/2009	400.70	0.10	24.2	394.7	

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**TABLE 4
RATTLESNAKE CANYON DAM
PIEZOMETER WATER LEVEL MEASUREMENTS
JANUARY 2007 THROUGH DECEMBER 2022**

Monitoring Well -->			VBW/OW-3		
Top of Well Elevation -->			418.87		
Bottom of Well Elevation -->			386.27		
Depth of Well			32.6		
Date	Reservoir Elevation (ft)	Monthly Rainfall (in.)	Reading (ft)	Elevation (ft)	Comment
5/18/2009	400.80	0.00	22.3	396.6	
5/27/2009	400.10	0.00	22.4	396.5	
6/29/2009	403.00	0.15	19.6	399.3	
7/28/2009	396.53	0.00	22.3	396.6	
8/25/2009	396.60	0.00	23.8	395.1	
9/30/2009	393.10	0.00	25.5	393.4	
10/28/2009	401.60	0.42	23.5	395.4	
11/30/2009	402.50	0.00	19.8	399.1	
12/29/2009	399.90	2.80	20.5	398.4	
1/26/2010	401.10	6.75	19.7	399.2	
2/23/2010	402.50	2.66	18.7	400.2	
3/30/2010	400.00	1.25	19.4	399.5	
4/4/2010	399.60		19.6	399.3	
4/27/2010	403.80	1.32	19.2	399.7	
5/26/2010	403.60	0.03	19.0	399.9	
6/29/2010	397.70	0.00	20.6	398.3	
7/27/2010	396.30	0.00	21.6	397.3	
8/26/2010	390.70	0.00	22.8	396.1	
9/28/2010	390.30	0.00	22.4	396.5	
10/26/2010	403.20	1.56	22.9	396.0	
11/30/2010	397.10	1.34	21.7	397.2	
12/28/2010	401.40	9.03	18.2	400.7	
1/27/2011	393.80	1.10	19.4	399.5	
2/23/2011	391.70	1.17	22.9	396.0	
3/29/2011	403.00	3.10	20.2	398.7	
4/27/2011	401.20	0.33	20.2	398.7	
5/26/2011	399.50	0.48	20.8	398.1	
6/28/2011	391.00	0.02	23.0	395.9	
7/26/2011	384.00	0.00	27.1	391.8	
8/24/2011	382.80	0.00	28.5	390.4	

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**TABLE 4
RATTLESNAKE CANYON DAM
PIEZOMETER WATER LEVEL MEASUREMENTS
JANUARY 2007 THROUGH DECEMBER 2022**

Monitoring Well -->			VBW/OW-3		
Top of Well Elevation -->			418.87		
Bottom of Well Elevation -->			386.27		
Depth of Well			32.6		
Date	Reservoir Elevation (ft)	Monthly Rainfall (in.)	Reading (ft)	Elevation (ft)	Comment
9/27/2011	381.80	0.08	29.7	389.2	
10/26/2011	383.90	0.98	29.8	389.1	
11/22/2011	389.80	1.46	34.1	384.8	Erroneous
12/28/2011	382.30	0.35	29.2	389.7	
1/25/2012	387.50	1.17	32.0	386.9	
2/28/2012	381.10	0.79	32.3	386.6	
3/27/2012	387.70	1.61	32.2	386.7	
4/23/2012	392.30	1.51	31.4	387.5	
5/25/2012	388.30	0.06	27.4	391.5	
6/13/2012	385.10	0.06	28.9	390.0	
6/26/2012	386.90	0.00	28.7	390.2	
7/24/2012	378.00	0.10	29.4	389.5	
8/8/2012	382.90	0.10	30.7	388.2	
8/29/2012	382.70	0.00	28.4	390.5	
8/29/2012	382.70	0.00	28.4	390.5	
9/25/2012	381.90	0.00	26.6	392.3	
10/24/2012	384.40	0.08	30.3	388.6	
11/27/2012	389.60	0.86	29.0	389.9	
12/18/2012	394.70	1.96	29.0	389.9	
1/23/2013	393.00	1.53	25.8	393.1	
2/26/2013	391.50	0.49	26.9	392.0	
3/26/2013	394.40	1.00	27.7	391.2	
4/25/2013	391.00	0.01	26.9	392.0	
5/22/2013	392.00	0.00	26.1	392.8	
6/25/2013	380.60	0.00	27.2	391.7	
7/23/2013	380.20	0.00	27.6	391.3	
8/21/2013	379.60	0.00	28.3	390.6	
9/25/2013	382.20	0.00	27.9	391.0	
10/29/2013	382.00	0.00	29.9	389.0	
11/26/2013	390.10	0.44	30.0	388.9	

Note:

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2. Piezometer data based on NGVD 29 datum

**TABLE 4
RATTLESNAKE CANYON DAM
PIEZOMETER WATER LEVEL MEASUREMENTS
JANUARY 2007 THROUGH DECEMBER 2022**

Monitoring Well -->			VBW/OW-3		
Top of Well Elevation -->			418.87		
Bottom of Well Elevation -->			386.27		
Depth of Well			32.6		
Date	Reservoir Elevation (ft)	Monthly Rainfall (in.)	Reading (ft)	Elevation (ft)	Comment
12/17/2013	394.70	1.10	29.4	389.5	
1/28/2014	392.30	0.00	25.6	393.3	
2/26/2014	389.90	0.72	26.3	392.6	
3/26/2014	387.20		26.8	392.1	Dry
3/28/2014	387.20	1.78	26.8	392.1	Dry
4/23/2014	393.00	0.34	27.0	391.9	
5/28/2014	387.50	0.00	25.8	393.1	
6/25/2014	388.70	0.00	26.2	392.7	
7/29/2014	382.80	0.00	26.5	392.4	
8/28/2014	386.80	0.04	27.6	391.3	
9/24/2014	387.90	0.00	27.3	391.6	
10/29/2014	383.90	0.00	28.3	390.6	
11/21/2014	388.30	0.35	26.3	392.6	
12/22/2014	399.80	4.75	26.7	392.2	
1/28/2015	396.90	1.28	24.4	394.5	
2/24/2015	392.70	0.34	24.7	394.2	
3/31/2015	388.90	0.67	22.0	396.9	
4/23/2015	390.30	0.20	26.4	392.5	
5/28/2015	400.30	1.87	24.4	394.5	
6/24/2015	400.70	0.00	23.3	395.6	
7/30/2015	400.20	0.00	21.5	397.4	
8/25/2015	384.00	0.00	25.0	393.9	
9/23/2015	388.60	2.17	29.7	389.2	
10/29/2015	387.60	0.16	32.4	386.5	Dry
11/25/2015	386.90	0.15	31.9	387.0	
12/23/2015	395.90	1.55	31.7	387.2	OW-1,2 and 3 are read by VB wire
1/26/2016	401.20	2.86	24.1	394.7	
2/24/2016	393.60	0.39	23.9	395.0	
3/29/2016	397.10	1.55	24.7	394.2	
4/29/2016	391.60	0.04	24.7	394.2	

Note:

1. Readings in red are classified as erroneous
2. Piezometer data based on NGVD 29 datum

**TABLE 4
RATTLESNAKE CANYON DAM
PIEZOMETER WATER LEVEL MEASUREMENTS
JANUARY 2007 THROUGH DECEMBER 2022**

Monitoring Well -->			VBW/OW-3		
Top of Well Elevation -->			418.87		
Bottom of Well Elevation -->			386.27		
Depth of Well			32.6		
Date	Reservoir Elevation (ft)	Monthly Rainfall (in.)	Reading (ft)	Elevation (ft)	Comment
5/24/2016	401.60	0.13	25.2	393.7	
6/29/2016	392.50	0.00	24.0	394.9	
7/26/2016	377.70	0.00	29.0	389.9	
8/24/2016	388.10	0.00			Not Read, Construction
9/29/2016	388.20	0.00			Not Read, Construction
10/26/2016	392.10	0.96			Not Read, Construction
11/22/2016	395.70	1.42			Not Read, Construction
12/28/2016	400.70	4.11			Not Read, Construction
1/26/2017	402.40	6.70			Not Read, Construction
2/28/2017	389.60	4.01			Not Read, Construction
3/29/2017	391.80	0.14			Not Read, Construction
4/26/2017	387.00	0.04			Not Read, Construction
5/23/2017	399.40	0.30			Not Read, Construction
6/21/2017	392.60	0.00			Not Read, Construction
7/26/2017	384.60	0.00			Not Read, Construction
8/30/2017	383.00	0.00			Not Read, Construction
9/27/2017	382.00	0.00			Not Read, Construction
10/27/2017	375.00	0.00			Not Read, Construction
11/30/2017	382.80	0.14			Not Read, Construction
12/21/2017	380.50	0.00			Not Read, Construction
1/24/2018	397.80	1.43			Not Read, Construction
2/21/2018	382.40	0.17			Not Read, Construction
3/29/2018	392.10	0.00			Not Read, Construction
4/25/2018	388.00	0.05			Not Read, Construction
5/30/2018	399.50	0.21			Not Read, Construction
6/28/2018	398.90	0.00	28.5	390.4	
7/25/2018	388.60	0.00	28.5	390.4	
8/24/2018	378.60	0.00	28.5	390.4	
9/27/2018	381.40	0.00	28.5	390.4	
10/18/2018	385.20	1.45	28.5	390.4	

Note:

1. Readings in red are classified as erroneous
2. Piezometer data based on NGVD 29 datum

TABLE 4
RATTLESNAKE CANYON DAM
PIEZOMETER WATER LEVEL MEASUREMENTS
JANUARY 2007 THROUGH DECEMBER 2022

Monitoring Well -->			VBW/OW-3		
Top of Well Elevation -->			418.87		
Bottom of Well Elevation -->			386.27		
Depth of Well			32.6		
Date	Reservoir Elevation (ft)	Monthly Rainfall (in.)	Reading (ft)	Elevation (ft)	Comment
11/28/2018	389.10	1.32	28.5	390.4	
12/20/2018	394.20	2.12	28.5	390.4	
2/21/2019	396.00	8.26	21.30	397.6	
3/27/2019	376.00	1.88	26.01	392.9	
4/25/2019	377.70	0.03	29.20	389.7	
5/30/2019	395.30	0.92	29.50	389.4	
6/26/2019	388.40	0.01	29.40	389.5	
7/5/2019	385.50	0.00	29.50	389.4	
7/30/2019	385.20	0.00	29.50	389.4	
8/27/2019	387.90	0.00	29.50	389.4	
9/26/2019	380.00	0.00	29.50	389.4	
10/23/2019	378.90	0.00	29.50	389.4	
11/26/2019	383.80	2.60	29.50	389.4	
12/18/2019	389.20	4.63	29.50	389.4	
1/29/2020	388.20	0.15	29.50	389.4	
2/25/2020	384.70	0.33	29.50	389.4	
3/24/2020	391.70	3.91	29.50	389.4	
4/23/2020	399.40	4.05	26.70	392.2	
5/27/2020	388.50	0.40	27.80	391.1	
6/24/2020	388.00	0.01	29.50	389.4	
7/29/2020	358.70	0.00	29.50	389.4	
8/26/2020	379.30	0.00	29.50	389.4	
9/29/2020	381.30	0.00	29.50	389.4	
10/28/2020	376.50	0.00	29.50	389.4	
11/24/2020	380.70	0.25	29.50	389.4	
12/23/2020	384.10	1.40	29.50	389.4	
1/26/2021	386.2	2.42	29.5	389.37	
2/25/2021	385.4	0.07	29.5	389.37	
3/23/2021	394.8	1.35	29.5	389.37	
4/27/2021	384.1	0.04	29.5	389.37	

Note:

1. Readings in red are classified as erroneous
2. Piezometer data based on NGVD 29 datum

TABLE 4
RATTLESNAKE CANYON DAM
PIEZOMETER WATER LEVEL MEASUREMENTS
JANUARY 2007 THROUGH DECEMBER 2022

Monitoring Well -->			VBW/OW-3		
Top of Well Elevation -->			418.87		
Bottom of Well Elevation -->			386.27		
Depth of Well			32.6		
Date	Reservoir Elevation (ft)	Monthly Rainfall (in.)	Reading (ft)	Elevation (ft)	Comment
5/27/2021	383.5	0.04	29.5	389.37	
6/30/2021	385.4	0	29.5	389.37	
7/29/2021	381.7	0.03	29.5	389.37	
8/24/2021	383.4	0	29.5	389.37	
9/28/2021	381.3	0.06	29.5	389.37	
10/27/2021	382.7	0.71	29.5	389.37	
11/23/2021	381	0	29.5	389.37	
12/21/2021	386.3	6.1	29.9	388.97	
1/25/2022	382	0.05	29.5	389.37	Temp 23.4
2/22/2022	382.3	0.36	29.5	389.37	Temp 23.4
3/29/2022	390.6	1.33	29.5	389.37	Temp 23.3
4/27/2022	393.2	0.02	29.5	389.37	Temp 23.2
5/24/2022	391.4	0.05	29.5	389.37	Temp 23.1
6/28/2022	392.7	0	29.5	389.37	Temp 23.15
7/26/2022	386.1	0	28.8	390.07	Temp 22.9
8/25/2022	382.2	0.02	29.4	389.47	Temp 25.3
9/29/2022	392.7	0.36	29.5	389.37	Temp 23.2
10/25/2022	390	0.32	29.5	389.37	Temp 23.2
11/17/2022	391.4	2.12	29.42	389.45	Temp 23.0
12/22/2022	386.4	2.28	29.5	389.37	Temp 23.5

Note:

1. Readings in red are classified as erroneous
2. Piezometer data based on NGVD 29 datum

**TABLE 5
RATTLESNAKE CANYON DAM
SEEPAGE FLOW RATE MEASUREMENTS
JANUARY 2007 THROUGH DECEMBER 2022**

Flow Point ID -->			FP-1 South		FP-1 North		FP-2		FP-3	
Date	Reservoir Elevation (ft)	Monthly Rainfall (in.)	Reading (gpm)	Comment	Reading (gpm)	Comment	Reading (gpm)	Comment	Reading (gpm)	Comment
1/31/2007	376.90						0.05		0.79	
2/28/2007	380.90						0.06		0.85	
3/29/2007	397.00						0.06		0.51	
4/27/2007	405.60						0.08		0.89	
5/24/2007	404.40						0.08		1.11	
6/28/2007	396.90		21.13				0.11		1.06	
7/31/2007	392.60		19.02				0.11		0.10	
8/29/2007	388.60		17.96				0.08		0.97	
9/2/2007	387.40		17.17				0.12		0.97	
9/26/2007	387.90		4.36				0.08		0.97	
10/25/2007	382.00		4.70				0.08		0.99	
11/27/2007	380.30		4.20				0.06		0.74	
12/27/2007	381.40		4.16				0.05		0.71	
1/31/2008	381.20		0.75				0.06		0.67	
2/28/2008	393.10		2.39				0.06		0.66	
3/27/2008	387.90		4.24				0.06		0.74	
4/28/2008	404.70		6.66			11.73	0.09		0.86	
5/28/2008	404.00		17.12			8.01	0.10		1.14	
6/25/2008	400.20		15.85			12.10	0.10		0.99	
7/29/2008	398.70			Not Read		Not Read		Not Read		Not Read
7/30/2008	398.70	0.00	19.02			8.45	0.14		1.30	
8/29/2008	395.00	0.00	3.49			13.08	0.09		1.13	
9/25/2008	391.70	0.00	0.61			4.06	0.00		0.30	
10/28/2008	384.05	0.00	2.00			5.00	0.09		1.00	
11/26/2008	391.10	1.94	6.45			1.59	0.07		0.98	
12/31/2008	397.90	3.20	4.68			14.13	0.10		1.01	
1/29/2009	393.40	0.34	2.59			9.03	0.08		1.08	
2/25/2009	398.60	3.91	4.50			11.42	0.30		0.94	
3/31/2009	393.40	0.16	3.17			7.93	0.11		1.20	
4/28/2009	400.70	0.10	7.19			10.09	0.09		0.05	
5/18/2009	400.80	0.00	8.24			11.10	0.10		1.11	
5/27/2009	400.10	0.00	7.50			11.31	0.10		0.32	
6/29/2009	403.00	0.15	10.65			12.47	0.10		1.20	
7/28/2009	396.53	0.00	7.93			13.20	0.09		1.10	

TABLE 5
RATTLESNAKE CANYON DAM
SEEPAGE FLOW RATE MEASUREMENTS
JANUARY 2007 THROUGH DECEMBER 2022

Flow Point ID -->			FP-1 South		FP-1 North		FP-2		FP-3	
Date	Reservoir Elevation (ft)	Monthly Rainfall (in.)	Reading (gpm)	Comment	Reading (gpm)	Comment	Reading (gpm)	Comment	Reading (gpm)	Comment
8/25/2009	396.60	0.00	5.39		10.46		0.08		1.19	
9/30/2009	393.10	0.00	3.60		9.60		0.07		1.00	
10/28/2009	401.60	0.42	6.00		9.20		0.10		1.06	
11/30/2009	402.50	0.00	13.63		8.69		0.16		1.30	
12/29/2009	399.90	2.80	11.10		15.37		0.10		1.06	
1/26/2010	401.10	6.75	12.68		12.68		0.09		1.22	
2/23/2010	402.50	2.66	15.85		12.68		0.09		1.16	
3/30/2010	400.00	1.25	12.68		12.92		0.10		1.27	
4/4/2010	399.60		14.47		11.32		0.11		1.19	
4/27/2010	403.80	1.32	5.28		12.94		0.13		1.35	
5/26/2010	403.60	0.03	17.70		11.78		0.11		1.29	
6/29/2010	397.70	0.00	14.27		11.10		0.11		1.06	
7/27/2010	396.30	0.00	8.72		15.85		0.08		1.16	
8/26/2010	390.70	0.00	5.86		7.13		0.08		1.16	
9/28/2010	390.30	0.00	2.64		5.28		0.08		0.99	
10/26/2010	403.20	1.56	3.57		7.50		0.09		1.06	
11/30/2010	397.10	1.34	11.10		3.96		0.09		1.16	
12/28/2010	401.40	9.03	15.32		2.64		0.10		0.99	
1/27/2011	393.80	1.10	11.60		4.02		0.16		1.36	
2/23/2011	391.70	1.17	6.74		2.48		0.31		1.06	
3/29/2011	403.00	3.10	17.44		2.11		0.10		1.15	
4/27/2011	401.20	0.33	13.00		1.66		0.13		1.16	
5/26/2011	399.50	0.48	12.13		1.66		0.11		1.26	
6/28/2011	391.00	0.02	6.18		1.39		0.07		1.08	
7/26/2011	384.00	0.00	6.34		0.12		0.05		0.93	
8/24/2011	382.80	0.00	1.32		0.08		0.04		0.44	
9/27/2011	381.80	0.08	1.30		0.00		0.06		0.74	
10/26/2011	383.90	0.98	1.06		0.00		0.02		0.79	
11/22/2011	389.80	1.46	1.55		0.00		0.02		0.81	
12/28/2011	382.30	0.35	1.24		0.10		0.03		0.79	
1/25/2012	387.50	1.17	1.11		0.00		0.02		0.74	
2/28/2012	381.10	0.79	0.95		0.00		0.02		0.69	
3/27/2012	387.70	1.61	0.94		0.00		0.02		0.71	
4/23/2012	392.30	1.51	1.18		0.00		0.02		0.76	

**TABLE 5
RATTLESNAKE CANYON DAM
SEEPAGE FLOW RATE MEASUREMENTS
JANUARY 2007 THROUGH DECEMBER 2022**

Flow Point ID -->			FP-1 South		FP-1 North		FP-2		FP-3	
Date	Reservoir Elevation (ft)	Monthly Rainfall (in.)	Reading (gpm)	Comment	Reading (gpm)	Comment	Reading (gpm)	Comment	Reading (gpm)	Comment
5/25/2012	388.30	0.06	1.84		0.74		0.03		0.89	
6/13/2012	385.10	0.06	0.74		0.74		0.03		0.85	
6/26/2012	386.90	0.00	1.45		1.56		0.01		0.86	
7/24/2012	378.00	0.10	0.97		0.16		0.02		0.65	
8/8/2012	382.90	0.10	0.88		0.01		0.03		0.66	
8/29/2012	382.70	0.00	0.96		0.00		0.02		0.73	
8/29.5/2012	382.70	0.00	0.96		0.00		0.02		0.73	
9/25/2012	381.90	0.00	0.91		0.00		0.02		0.94	
10/24/2012	384.40	0.08	0.82		0.00		0.02		0.64	
11/27/2012	389.60	0.86	0.73		1.29		0.07		0.71	
12/18/2012	394.70	1.96	1.27		1.74		0.03		0.82	
1/23/2013	393.00	1.53	1.27		1.77		0.05		1.03	
2/26/2013	391.50	0.49	2.77		4.91		0.04		0.98	
3/26/2013	394.40	1.00	2.25		3.41		0.08		0.87	
4/25/2013	391.00	0.01	2.50		3.53		0.06		0.95	
5/22/2013	392.00	0.00	2.38		4.07		0.06		0.86	
6/25/2013	380.60	0.00	1.33		1.90		0.07		0.86	
7/23/2013	380.20	0.00	1.17		0.45		0.05		0.51	
8/21/2013	379.60	0.00	0.77		0.06		0.34		0.77	
9/25/2013	382.20	0.00	0.91		0.00		0.03		0.73	
10/29/2013	382.00	0.00	0.83		0.00		0.03		0.35	
11/26/2013	390.10	0.44	0.85		0.00		0.03		0.69	
12/17/2013	394.70	1.10	1.24		1.00		0.04		0.85	
1/28/2014	392.30	0.00	2.36		3.41		0.05		0.90	
2/26/2014	389.90	0.72	2.27		2.69		0.04		0.92	
3/26/2014	387.20		1.98		2.93		0.04		0.94	
3/28/2014	387.20	1.78	1.98		2.93		0.04		0.74	
4/23/2014	393.00	0.34	1.66		2.67		0.23		0.87	
5/28/2014	387.50	0.00	1.98		2.73		0.02		0.90	
6/25/2014	388.70	0.00	1.29		2.69		0.01		0.92	
7/29/2014	382.80	0.00	1.20		0.85		0.03		0.89	
8/28/2014	386.80	0.04	1.12		0.62		0.04		0.82	
9/24/2014	387.90	0.00	1.22		1.27		0.02		0.85	
10/29/2014	383.90	0.00	0.79		0.32		0.04		0.78	

**TABLE 5
RATTLESNAKE CANYON DAM
SEEPAGE FLOW RATE MEASUREMENTS
JANUARY 2007 THROUGH DECEMBER 2022**

Flow Point ID -->			FP-1 South		FP-1 North		FP-2		FP-3	
Date	Reservoir Elevation (ft)	Monthly Rainfall (in.)	Reading (gpm)	Comment	Reading (gpm)	Comment	Reading (gpm)	Comment	Reading (gpm)	Comment
11/21/2014	388.30	0.35	1.19		1.19		0.02		0.82	
12/22/2014	399.80	4.75	1.48		1.31		0.04		0.81	
1/28/2015	396.90	1.28	2.71		5.31		0.05		1.06	
2/24/2015	392.70	0.34	3.33		4.36		0.06		1.10	
3/31/2015	388.90	0.67	2.79		5.55		0.04		1.10	
4/23/2015	390.30	0.20	2.54		3.80		0.03		1.11	
5/28/2015	400.30	1.87	3.28		4.62		0.04		1.09	
6/24/2015	400.70	0.00	3.09		4.31		0.16		1.06	
7/30/2015	400.20	0.00	3.78		4.95		0.09		1.19	
8/25/2015	384.00	0.00	3.50		7.77		0.02		0.90	
9/23/2015	388.60	2.17	1.95		3.67		0.04		1.00	
10/29/2015	387.60	0.16	1.60		2.22		0.04		0.95	
11/25/2015	386.90	0.15	1.43		1.78		0.03		0.97	
12/23/2015	395.90	1.55	1.80		2.54		0.08		0.95	
1/26/2016	401.20	2.86	3.87		9.27		0.04		1.06	
2/24/2016	393.60	0.39	3.01		6.58		0.05		1.16	
3/29/2016	397.10	1.55	3.60		6.34		0.05		1.15	
4/29/2016	391.60	0.04	3.17		5.26		0.06		1.08	
5/24/2016	401.60	0.13	4.04		5.47		0.10		1.22	
6/29/2016	392.50	0.00	3.61		5.61		0.07		1.13	
7/26/2016	377.70	0.00	1.69		1.51		0.06		1.10	
8/24/2016	388.10	0.00	0.72		0.00		0.06		1.22	
9/29/2016	388.20	0.00	0.58		0.00		0.03		0.89	
10/26/2016	392.10	0.96	1.53		0.00		0.05		1.03	
11/22/2016	395.70	1.42	2.12		0.00		0.17		0.97	
12/28/2016	400.70	4.11	6.18		0.32		0.06		1.66	
1/26/2017	402.40	6.70	5.23		7.29		0.08		1.24	
2/28/2017	389.60	4.01	2.38		3.01		0.10		1.16	
3/29/2017	391.80	0.14	4.28		3.17		0.04		0.95	
4/26/2017	387.00	0.04	1.74		3.72		0.04		0.98	
5/23/2017	399.40	0.30	2.36		4.47		0.06		0.98	
6/21/2017	392.60	0.00	2.85		5.39		0.04		1.18	
7/26/2017	384.60	0.00	1.64		2.85		0.08		1.00	
8/30/2017	383.00	0.00	1.05		0.63		0.06		0.94	

**TABLE 5
RATTLESNAKE CANYON DAM
SEEPAGE FLOW RATE MEASUREMENTS
JANUARY 2007 THROUGH DECEMBER 2022**

Flow Point ID -->			FP-1 South		FP-1 North		FP-2		FP-3	
Date	Reservoir Elevation (ft)	Monthly Rainfall (in.)	Reading (gpm)	Comment	Reading (gpm)	Comment	Reading (gpm)	Comment	Reading (gpm)	Comment
9/27/2017	382.00	0.00	0.84		0.00		0.04		0.65	
10/27/2017	375.00	0.00	0.73		0.00		0.05		0.78	
11/30/2017	382.80	0.14	0.69		0.00		0.05		0.79	
12/21/2017	380.50	0.00	0.69		0.00		0.02		0.77	
1/24/2018	397.80	1.43	0.84		0.00		0.06		0.71	
2/21/2018	382.40	0.17	1.53		0.00		0.09		0.92	
3/29/2018	392.10	0.00	1.59		0.50		0.03		0.83	
4/25/2018	388.00	0.05	0.97		0.00		0.07		0.86	
5/30/2018	399.50	0.21	1.02		1.52		0.04		0.89	
6/28/2018	398.90	0.00	1.74		3.49		0.12		1.19	
7/25/2018	388.60	0.00	0.82		3.82		0.06		1.16	
8/24/2018	378.60	0.00	0.17		0.21		0.07		0.79	
9/27/2018	381.40	0.00	0.05		0.00		0.06		0.85	
10/18/2018	385.20	1.45	0.05		0.00		0.03		0.87	
11/28/2018	389.10	1.32	0.04		0.00		0.03		0.71	
12/20/2018	394.20	2.12	0.07		0.00		0.05		0.68	
1/30/2019	394.90	4.31	0.04		4.83		0.06		0.82	
2/21/2019	396.00	8.26	2.22		6.34		0.08		1.90	
3/27/2019	376.00	1.88	1.00		4.12		0.11		0.95	
4/25/2019	377.70	0.03	0.74		1.06		0.07		0.85	
5/30/2019	395.30	0.92	0.10		2.46		0.07		0.82	
6/26/2019	388.40	0.01	0.06		3.06		0.04		1.00	
7/5/2019	385.50	0.00	0.10		2.80		0.04		1.00	
7/30/2019	385.20	0.00	0.03		0.32		0.02		0.74	
8/27/2019	387.90	0.00	0.08		0.92		0.04		0.87	
9/26/2019	380.00	0.00	0.06		0.00		0.03		0.88	
10/23/2019	378.90	0.00	0.04		0.00		0.03		0.89	
11/26/2019	383.80	2.60	0.04		0.00		0.03		0.77	
12/18/2019	389.20	4.63	0.04		0.00		0.03		0.59	
1/29/2020	388.20	0.15	1.90		1.66		0.00		0.42	
2/25/2020	384.70	0.33	1.43		1.22		0.00		1.19	
3/24/2020	391.70	3.91	1.90		2.85		0.04		0.85	
4/23/2020	399.40	4.05	2.27		3.59		0.09		1.32	
5/27/2020	388.50	0.40	1.90		4.18		0.00		1.27	

**TABLE 5
RATTLESNAKE CANYON DAM
SEEPAGE FLOW RATE MEASUREMENTS
JANUARY 2007 THROUGH DECEMBER 2022**

Flow Point ID -->			FP-1 South		FP-1 North		FP-2		FP-3	
Date	Reservoir Elevation (ft)	Monthly Rainfall (in.)	Reading (gpm)	Comment	Reading (gpm)	Comment	Reading (gpm)	Comment	Reading (gpm)	Comment
6/24/2020	388.00	0.01	1.90		2.85		0.00		0.79	
7/29/2020	358.70	0.00	1.77		1.98		0.00		1.16	
8/26/2020	379.30	0.00	1.90		0.30		0.00		1.27	
9/29/2020	381.30	0.00	0.99		0.11		0.02		0.95	
10/28/2020	376.50	0.00	1.15		0.00		0.00		0.87	
11/24/2020	380.70	0.25	0.90		0.00		0.01		0.90	
12/23/2020	384.10	1.40	0.93		0.00		0.00		0.68	
1/26/2021	386.20	2.42	1.03		0.24		0.00		0.76	
2/25/2021	385.40	0.07	0.99		0.32		0.00		0.78	
3/23/2021	394.80	1.35	1.30		1.90		0.00		1.01	
4/27/2021	384.10	0.04	1.14		0.76		0.00		0.68	
5/27/2021	383.50	0.04	1.15		0.52		0.00		0.77	
6/30/2021	385.40	0.00	1.35		0.34		0.00		1.08	
7/29/2021	381.70	0.03	1.32		0.00		0.00		1.05	
8/24/2021	383.40	0.00	1.11		0.00		0.00		0.85	
9/28/2021	381.30	0.06	1.03		0.05		0.00		0.82	
10/27/2021	382.70	0.71	1.43		0.00		0.00		0.63	
11/23/2021	381.00	0.00	1.19		0.00		0.00		0.95	
12/21/2021	386.30	6.10	1.12		0.00		0.00		0.97	
1/25/2022	382.00	0.05	1.03		0.00		0.00		0.82	
2/22/2022	382.30	0.36	0.71		0.00		0.00		0.79	
3/29/2022	390.60	1.33	0.91		0.00		0.01		0.81	
4/27/2022	393.20	0.02	1.16		0.64		0.00		0.54	
5/24/2022	391.40	0.05	1.61		1.98		0.00		0.85	
6/28/2022	392.70	0.00	1.49		1.55		0.02		0.91	
7/26/2022	386.10	0.00	1.72		0.87		0.00		1.00	
8/25/2022	382.20	0.02	1.11		0.22		0.00		1.08	
9/29/2022	392.70	0.36	1.47		1.55		0.02		0.91	
10/25/2022	390.00	0.32	1.03		0.00		0.01		0.87	
11/17/2022	391.40	2.12	1.03		1.19		0.00		0.95	
12/22/2022	386.40	2.28	2.22		0.00		0.00		0.95	

**TABLE 5
RATTLESNAKE CANYON DAM
SEEPAGE FLOW RATE MEASUREMENTS
JANUARY 2007 THROUGH DECEMBER 2022**

Flow Point ID -->			FP-4		FP-5		FP-8		FP-11	
Date	Reservoir Elevation (ft)	Monthly Rainfall (in.)	Reading (gpm)	Comment	Reading (gpm)	Comment	Reading (gpm)	Comment	Reading (gpm)	Comment
1/31/2007	376.90		0.48		0.00	dry	0.00	dry	0.00	dry
2/28/2007	380.90		0.42		0.00	dry	0.00	dry	0.00	dry
3/29/2007	397.00		0.69		0.00	dry	0.00	dry	0.00	dry
4/27/2007	405.60		0.48		0.25		0.00	dry	0.00	dry
5/24/2007	404.40		0.62		1.35		0.26		0.00	dry
6/28/2007	396.90		0.66		0.74		0.00	dry	0.00	dry
7/31/2007	392.60		0.61		0.25		0.00	dry	0.00	dry
8/29/2007	388.60		0.55		0.00	dry	0.00	dry	0.00	dry
9/2/2007	387.40		0.53		0.00	dry	0.00	dry	0.00	dry
9/26/2007	387.90		0.50		0.00	dry	0.00	dry	0.00	dry
10/25/2007	382.00		0.53		0.00	dry	0.00	dry	0.00	dry
11/27/2007	380.30		0.45		0.00	dry	0.00	dry	0.00	dry
12/27/2007	381.40		0.37		0.00	dry	0.00	dry	0.00	dry
1/31/2008	381.20		0.35		0.00	dry	0.00	dry	0.00	dry
2/28/2008	393.10		0.33		0.00	dry	0.00	dry	0.00	dry
3/27/2008	387.90		0.38		0.00	dry	0.00	dry	0.00	dry
4/28/2008	404.70		0.48		0.95		0.00	dry	0.00	dry
5/28/2008	404.00		0.63		1.35		0.13		0.00	dry
6/25/2008	400.20		0.66		1.06		0.00	dry	0.00	dry
7/29/2008	398.70			Not Read		Not Read				
7/30/2008	398.70	0.00	0.98		1.09		0.00	dry	0.00	dry
8/29/2008	395.00	0.00	0.63		0.61		0.00	dry	0.00	dry
9/25/2008	391.70	0.00	0.19		0.10		0.00	dry	0.00	dry
10/28/2008	384.05	0.00	0.53		0.00		0.00	dry	0.00	dry
11/26/2008	391.10	1.94	0.51		0.00		0.00	dry	0.00	dry
12/31/2008	397.90	3.20	0.59		0.26		0.00	dry	0.00	dry
1/29/2009	393.40	0.34	0.63		0.29		0.00	dry	0.00	dry
2/25/2009	398.60	3.91	0.59		0.46		0.00	dry	0.00	dry
3/31/2009	393.40	0.16	0.67		0.37		0.00	dry	0.00	dry
4/28/2009	400.70	0.10	0.32		0.36		0.00	dry	0.00	dry
5/18/2009	400.80	0.00	0.69		0.95		0.00	dry	0.00	dry
5/27/2009	400.10	0.00	0.73		0.97		0.00	dry	0.00	dry
6/29/2009	403.00	0.15	0.80		1.59		0.00	dry	0.00	dry
7/28/2009	396.53	0.00	0.79		1.05		0.00	dry	0.00	dry

TABLE 5
RATTLESNAKE CANYON DAM
SEEPAGE FLOW RATE MEASUREMENTS
JANUARY 2007 THROUGH DECEMBER 2022

Flow Point ID -->			FP-4		FP-5		FP-8		FP-11	
Date	Reservoir Elevation (ft)	Monthly Rainfall (in.)	Reading (gpm)	Comment	Reading (gpm)	Comment	Reading (gpm)	Comment	Reading (gpm)	Comment
8/25/2009	396.60	0.00	0.69		0.62		0.00	dry	0.00	dry
9/30/2009	393.10	0.00	0.75		0.25		0.00	dry	0.00	dry
10/28/2009	401.60	0.42	0.71		0.85		0.00	dry	0.00	dry
11/30/2009	402.50	0.00	0.87		1.45		0.00	dry	0.00	dry
12/29/2009	399.90	2.80	0.85		1.19		0.00	dry	0.00	dry
1/26/2010	401.10	6.75	0.84		1.33		0.00	dry	0.00	dry
2/23/2010	402.50	2.66	0.85		1.59		0.00	dry	0.00	dry
3/30/2010	400.00	1.25	0.88		1.32		0.00	dry	0.00	dry
4/4/2010	399.60		0.79		1.29		0.00	dry	0.00	dry
4/27/2010	403.80	1.32	0.92		1.72		0.00	dry	0.00	dry
5/26/2010	403.60	0.03	0.90		1.80		0.00	dry	0.00	dry
6/29/2010	397.70	0.00	0.90		1.37		0.00	dry	0.00	dry
7/27/2010	396.30	0.00	0.79		0.79		0.00	dry	0.00	dry
8/26/2010	390.70	0.00	0.74		0.42		0.00	dry	0.00	dry
9/28/2010	390.30	0.00	0.66		0.06		0.00	dry	0.00	dry
10/26/2010	403.20	1.56	0.71		0.79		0.00	dry	0.00	dry
11/30/2010	397.10	1.34	0.79		0.92		0.00	dry	0.00	dry
12/28/2010	401.40	9.03	0.79		1.71		0.00	dry	0.00	dry
1/27/2011	393.80	1.10	0.83		1.00		0.00	dry	0.00	dry
2/23/2011	391.70	1.17	0.74		0.36		0.00	dry	0.00	dry
3/29/2011	403.00	3.10	0.79		1.32		0.00	dry	0.00	dry
4/27/2011	401.20	0.33	0.79		1.14		0.00	dry	0.00	dry
5/26/2011	399.50	0.48	0.86		1.06		0.00	dry	0.00	dry
6/28/2011	391.00	0.02	0.76		0.30		0.00	dry	0.00	dry
7/26/2011	384.00	0.00	0.97		0.00	dry	0.00	dry	0.00	dry
8/24/2011	382.80	0.00	0.27		0.00	dry	0.00	dry	0.00	dry
9/27/2011	381.80	0.08	0.46		0.00	dry	0.00	dry	0.00	dry
10/26/2011	383.90	0.98	0.52		0.00	dry	0.00	dry	0.00	dry
11/22/2011	389.80	1.46	0.50		0.00	dry	0.00	dry	0.00	dry
12/28/2011	382.30	0.35	0.45		0.00	dry	0.00	dry	0.00	dry
1/25/2012	387.50	1.17	0.45		0.00	dry	0.00	dry	0.00	dry
2/28/2012	381.10	0.79	0.37		0.00	dry	0.00	dry	0.00	dry
3/27/2012	387.70	1.61	0.37		0.00	dry	0.00	dry	0.00	dry
4/23/2012	392.30	1.51	0.39		0.00	dry	0.00	dry	0.00	dry

**TABLE 5
RATTLESNAKE CANYON DAM
SEEPAGE FLOW RATE MEASUREMENTS
JANUARY 2007 THROUGH DECEMBER 2022**

Flow Point ID -->			FP-4		FP-5		FP-8		FP-11	
Date	Reservoir Elevation (ft)	Monthly Rainfall (in.)	Reading (gpm)	Comment	Reading (gpm)	Comment	Reading (gpm)	Comment	Reading (gpm)	Comment
5/25/2012	388.30	0.06	0.46		0.00	dry	0.00	dry	0.00	dry
6/13/2012	385.10	0.06	0.48		0.00	dry	0.00	dry	0.00	dry
6/26/2012	386.90	0.00	0.61		0.00	dry	0.00	dry	0.00	dry
7/24/2012	378.00	0.10	0.40		0.00	dry	0.00	dry	0.00	dry
8/8/2012	382.90	0.10	0.34		0.00	dry	0.00	dry	0.00	dry
8/29/2012	382.70	0.00	0.40		0.00	dry	0.00	dry	0.00	dry
8/29.5/2012	382.70	0.00	0.40		0.00	dry	0.00	dry	0.00	dry
9/25/2012	381.90	0.00	0.35		0.00	dry	0.00	dry	0.00	dry
10/24/2012	384.40	0.08	0.32		0.00	dry	0.00	dry	0.00	dry
11/27/2012	389.60	0.86	0.38		0.00	dry	0.00	dry	0.00	dry
12/18/2012	394.70	1.96	0.40		0.00	dry	0.00	dry	0.00	dry
1/23/2013	393.00	1.53	0.55		0.02		0.00	dry	0.00	dry
2/26/2013	391.50	0.49	0.55		0.00		0.00	dry	0.00	dry
3/26/2013	394.40	1.00	0.49		0.00		0.00	dry	0.00	dry
4/25/2013	391.00	0.01	0.50		0.00	dry	0.00	dry	0.00	dry
5/22/2013	392.00	0.00	0.55		0.00	dry	0.00	dry	0.00	dry
6/25/2013	380.60	0.00	0.46		0.00	dry	0.00	dry	0.00	dry
7/23/2013	380.20	0.00	0.43		0.00	dry	0.00	dry	0.00	dry
8/21/2013	379.60	0.00	0.45		0.00	dry	0.00	dry	0.00	dry
9/25/2013	382.20	0.00	0.37		0.00	dry	0.00	dry	0.00	dry
10/29/2013	382.00	0.00	0.33		0.00	dry	0.00	dry	0.00	dry
11/26/2013	390.10	0.44	0.33		0.00	dry	0.00	dry	0.00	dry
12/17/2013	394.70	1.10	0.41		0.00	dry	0.00	dry	0.00	dry
1/28/2014	392.30	0.00	0.48		0.00	dry	0.00	dry	0.00	dry
2/26/2014	389.90	0.72	0.48		0.00	dry	0.00	dry	0.00	dry
3/26/2014	387.20		0.48		0.00	dry	0.00	dry	0.00	dry
3/28/2014	387.20	1.78	0.42		0.00	dry	0.00	dry	0.00	dry
4/23/2014	393.00	0.34	0.45		0.00	dry	0.00	dry	0.00	dry
5/28/2014	387.50	0.00	0.49		0.00	dry	0.00	dry	0.00	dry
6/25/2014	388.70	0.00	0.48		0.00	dry	0.00	dry	0.00	dry
7/29/2014	382.80	0.00	0.45		0.00	dry	0.00	dry	0.00	dry
8/28/2014	386.80	0.04	0.40		0.00	dry	0.00	dry	0.00	dry
9/24/2014	387.90	0.00	0.41		0.00	dry	0.00	dry	0.00	dry
10/29/2014	383.90	0.00	0.36		0.00	dry	0.00	dry	0.00	dry

**TABLE 5
RATTLESNAKE CANYON DAM
SEEPAGE FLOW RATE MEASUREMENTS
JANUARY 2007 THROUGH DECEMBER 2022**

Flow Point ID -->			FP-4		FP-5		FP-8		FP-11	
Date	Reservoir Elevation (ft)	Monthly Rainfall (in.)	Reading (gpm)	Comment	Reading (gpm)	Comment	Reading (gpm)	Comment	Reading (gpm)	Comment
11/21/2014	388.30	0.35	0.43		0.00	dry	0.00	dry	0.00	dry
12/22/2014	399.80	4.75	0.41		0.00	dry	0.00	dry	0.00	dry
1/28/2015	396.90	1.28	0.55		0.30		0.00	dry	0.00	dry
2/24/2015	392.70	0.34	0.50		0.10		0.00	dry	0.00	dry
3/31/2015	388.90	0.67	0.58		0.04		0.00	dry	0.00	dry
4/23/2015	390.30	0.20	0.61		0.00	dry	0.00	dry	0.00	dry
5/28/2015	400.30	1.87	0.60		0.55		0.00	dry	0.00	dry
6/24/2015	400.70	0.00	0.69		0.63		0.00	dry	0.00	dry
7/30/2015	400.20	0.00	0.69		0.87		0.00	dry	0.00	dry
8/25/2015	384.00	0.00	0.71		0.01		0.00	dry	0.00	dry
9/23/2015	388.60	2.17	0.55		0.00		0.00	dry	0.00	dry
10/29/2015	387.60	0.16	0.58		0.00		0.00	dry	0.00	dry
11/25/2015	386.90	0.15	0.52		0.00		0.00		0.00	dry
12/23/2015	395.90	1.55	0.50		0.04		0.01		0.00	dry
1/26/2016	401.20	2.86	0.62		0.63		0.00	dry	0.00	dry
2/24/2016	393.60	0.39	0.62		0.24		0.00	dry	0.00	dry
3/29/2016	397.10	1.55	0.71		0.36		0.08		0.00	dry
4/29/2016	391.60	0.04	0.81		0.16		0.00		0.00	dry
5/24/2016	401.60	0.13	0.55		0.46		0.00		0.00	dry
6/29/2016	392.50	0.00	0.69		0.25		0.00		0.00	dry
7/26/2016	377.70	0.00	0.64		0.00		0.00		0.00	dry
8/24/2016	388.10	0.00	0.59		0.00		0.00		0.00	dry
9/29/2016	388.20	0.00	0.55		0.00		0.00		0.00	dry
10/26/2016	392.10	0.96	0.53		0.00		0.00		0.00	dry
11/22/2016	395.70	1.42	0.78		0.09		0.00		0.00	dry
12/28/2016	400.70	4.11	0.63		0.55		0.00		0.00	dry
1/26/2017	402.40	6.70	0.56		1.25		0.00		0.00	dry
2/28/2017	389.60	4.01	0.66		0.13		0.00		0.00	dry
3/29/2017	391.80	0.14	0.55		0.00		0.00		0.00	dry
4/26/2017	387.00	0.04	0.53		0.00		0.00		0.00	dry
5/23/2017	399.40	0.30	0.59		0.60		0.00		0.00	dry
6/21/2017	392.60	0.00	0.62		0.12		0.00		0.00	dry
7/26/2017	384.60	0.00	0.58		0.00		0.00		0.00	dry
8/30/2017	383.00	0.00	0.48		0.00		0.00		0.00	dry

**TABLE 5
RATTLESNAKE CANYON DAM
SEEPAGE FLOW RATE MEASUREMENTS
JANUARY 2007 THROUGH DECEMBER 2022**

Flow Point ID -->			FP-4		FP-5		FP-8		FP-11	
Date	Reservoir Elevation (ft)	Monthly Rainfall (in.)	Reading (gpm)	Comment	Reading (gpm)	Comment	Reading (gpm)	Comment	Reading (gpm)	Comment
9/27/2017	382.00	0.00	0.44		0.00		0.00		0.00	dry
10/27/2017	375.00	0.00	0.40		0.00		0.00		0.00	dry
11/30/2017	382.80	0.14	0.37		0.01		0.00		0.00	dry
12/21/2017	380.50	0.00	0.36		0.00		0.00		0.00	dry
1/24/2018	397.80	1.43	0.34		0.00		0.00		0.00	dry
2/21/2018	382.40	0.17	0.51		0.00		0.00		0.00	dry
3/29/2018	392.10	0.00	0.42		0.00		0.00		0.00	dry
4/25/2018	388.00	0.05	0.44		0.00		0.00		0.00	dry
5/30/2018	399.50	0.21	0.48		0.00		0.00		0.00	dry
6/28/2018	398.90	0.00	0.48		0.40		0.00		0.00	dry
7/25/2018	388.60	0.00	0.60		0.00		0.00		0.00	dry
8/24/2018	378.60	0.00	0.44		0.00		0.00		0.00	dry
9/27/2018	381.40	0.00	0.48		0.00		0.00		0.00	dry
10/18/2018	385.20	1.45	0.37		0.00		0.00		0.00	dry
11/28/2018	389.10	1.32	0.37		0.00		0.00		0.00	dry
12/20/2018	394.20	2.12	0.35		0.00		0.00		0.00	dry
1/30/2019	394.90	4.31	0.45		0.00		0.00		0.00	dry
2/21/2019	396.00	8.26	0.87		0.26		0.00		0.00	dry
3/27/2019	376.00	1.88	0.55		0.00		0.00		0.00	dry
4/25/2019	377.70	0.03	0.45		0.00		0.00		0.00	dry
5/30/2019	395.30	0.92	0.54		0.00		0.00		0.00	dry
6/26/2019	388.40	0.01	0.57		0.00		0.00		0.00	dry
7/5/2019	385.50	0.00	0.48		0.00		0.00		0.00	dry
7/30/2019	385.20	0.00	0.55		0.00		0.00		0.00	dry
8/27/2019	387.90	0.00	0.47		0.00		0.00		0.00	dry
9/26/2019	380.00	0.00	0.36		0.00		0.00		0.00	dry
10/23/2019	378.90	0.00	0.39		0.00		0.00		0.00	dry
11/26/2019	383.80	2.60	0.34		0.00		0.00		0.00	dry
12/18/2019	389.20	4.63	0.33		0.00		0.00		0.00	dry
1/29/2020	388.20	0.15	1.27		0.00		0.00		0.00	dry
2/25/2020	384.70	0.33	0.55		0.00		0.00		0.00	
3/24/2020	391.70	3.91	0.42		0.00		0.00		0.00	
4/23/2020	399.40	4.05	0.58		0.17		0.00		0.00	
5/27/2020	388.50	0.40	0.63		0.00		0.00		0.00	

**TABLE 5
RATTLESNAKE CANYON DAM
SEEPAGE FLOW RATE MEASUREMENTS
JANUARY 2007 THROUGH DECEMBER 2022**

Flow Point ID -->			FP-4		FP-5		FP-8		FP-11	
Date	Reservoir Elevation (ft)	Monthly Rainfall (in.)	Reading (gpm)	Comment	Reading (gpm)	Comment	Reading (gpm)	Comment	Reading (gpm)	Comment
6/24/2020	388.00	0.01	0.61		0.00		0.00		0.00	
7/29/2020	358.70	0.00	0.67		0.00		0.00		0.00	
8/26/2020	379.30	0.00	0.75		0.00		0.00		0.00	
9/29/2020	381.30	0.00	0.43		0.00		0.00		0.00	
10/28/2020	376.50	0.00	0.40		0.00		0.00		0.00	
11/24/2020	380.70	0.25	0.40		0.00		0.00		0.00	
12/23/2020	384.10	1.40	0.28		0.00		0.00		0.00	
1/26/2021	386.20	2.42	0.35		0.00		0.00		0.00	
2/25/2021	385.40	0.07	0.39		0.00		0.00		0.00	
3/23/2021	394.80	1.35	0.48		0.00		0.00		0.00	
4/27/2021	384.10	0.04	0.35		0.00		0.00		0.00	
5/27/2021	383.50	0.04	0.40		0.00		0.00		0.00	
6/30/2021	385.40	0.00	0.24		0.00		0.00		0.00	
7/29/2021	381.70	0.03	0.23		0.00		0.00		0.00	
8/24/2021	383.40	0.00	0.40		0.00		0.00		0.00	
9/28/2021	381.30	0.06	0.38		0.00		0.00		0.00	
10/27/2021	382.70	0.71	0.51		0.00		0.00		0.00	
11/23/2021	381.00	0.00	0.44		0.00		0.00		0.00	
12/21/2021	386.30	6.10	0.40		0.00		0.00		0.00	
1/25/2022	382.00	0.05	0.34		0.00		0.00		0.00	
2/22/2022	382.30	0.36	0.32		0.00		0.00		0.00	
3/29/2022	390.60	1.33	0.31		0.00		0.00		0.00	
4/27/2022	393.20	0.02	0.30		0.00		0.00		0.00	
5/24/2022	391.40	0.05	0.43		0.00		0.00		0.00	
6/28/2022	392.70	0.00	0.51		0.00		0.00		0.00	
7/26/2022	386.10	0.00	0.48		0.00		0.00		0.00	
8/25/2022	382.20	0.02	0.51		0.00		0.00		0.00	
9/29/2022	392.70	0.36	0.51		0.00		0.00		0.00	
10/25/2022	390.00	0.32	0.40		0.00		0.00		0.00	
11/17/2022	391.40	2.12	0.41		0.00		0.00		0.00	
12/22/2022	386.40	2.28	0.40		0.00		0.00		0.00	

**TABLE 6
RATTLESNAKE CANYON DAM
HORIZONTAL MOVEMENT OF SURVEY MONUMENTS
1985 THROUGH 2022**

HORIZONTAL MOVEMENT OF SURVEY MONUMENTS 1985 THROUGH 2022																
Monument ID		A		B		B-1		C		D		E		E-1		Comment
Approx. Station		2+14.8		2+74.7		2+77.7		5+74.6		8+74.6		11+74.7		11+75.1		
Year	Date	(feet)	(inches)	(feet)	(inches)	(feet)	(inches)	(feet)	(inches)	(feet)	(inches)	(feet)	(inches)	(feet)	(inches)	
1985	10/19/1985	-0.090	-1.080					0.010	0.120	0.000	0.000	-0.010	-0.100			Initial Reading for A,C,D & E
1986																Data was not found
1987	8/19/1987	-0.100	-1.200					0.020	0.240	0.000	0.000	-0.010	-0.120			
1990	10/5/1990	-0.050	-0.600			0.000	0.000	0.060	0.720	0.020	0.240	0.000	0.000			Initial Reading for B-1
1991	6/12/1991	-0.020	-0.240			0.000	0.000	0.080	0.960	0.050	0.600	0.010	0.120			
1992																Data was not found
1993																Data was not found
1994	5/11/1994	-0.040	-0.480			0.020	0.240	0.080	0.960	0.060	0.720	0.020	0.240			BM-2 was destroyed
1995																Data was not found
1996	5/2/1996	-0.050	-0.600			0.000	0.000	0.040	0.480	0.050	0.600	0.020	0.240			
1997	5/28/1997	-0.050	-0.600			0.000	0.000	0.050	0.600	0.050	0.600	0.020	0.240			
1998	5/1/1998	-0.060	-0.720			-0.020	-0.240	0.050	0.600	0.050	0.600	0.020	0.240			
1999	4/28/1999	-0.065	-0.780			0.010	0.120	0.070	0.840	0.050	0.600					Monument E was caved over
2000	6/28/2000	-0.065	-0.780			0.005	0.060	0.065	0.780	0.050	0.600	0.080	0.960			Monument E was reestablished
2001	5/3/2001	-0.070	-0.840	0.060	0.720	0.020	0.240	0.080	0.960	0.050	0.600	0.085	1.020	0.000	0.000	Initial Reading for Band E-1
2002	5/20/2002	-0.075	-0.900	0.070	0.840	0.020	0.240	0.085	1.020	0.060	0.720	0.090	1.080	-0.005	-0.060	
2003	5/22/2003	-0.070	-0.840	0.085	1.020	0.030	0.360	0.090	1.080	0.055	0.660	0.100	1.200	0.000	0.000	
2004	5/18/2004	-0.070	-0.840	0.085	1.020	0.030	0.360	0.095	1.140	0.060	0.720	0.100	1.200	0.000	0.000	
2005	5/31/2005	-0.070	-0.840	0.080	0.960	0.030	0.360	0.095	1.140	0.060	0.720	0.105	1.260	0.000	0.000	
2006	5/31/2006	-0.065	-0.780	0.085	1.020	0.040	0.480	0.095	1.140	0.060	0.720	0.100	1.200	0.000	0.000	
2007	5/16/2007	-0.065	-0.780	0.090	1.080	0.040	0.480	0.090	1.080	0.065	0.780	0.100	1.200	0.000	0.000	
2008	5/23/2008	-0.065	-0.780	0.095	1.140	0.045	0.540	0.100	1.200	0.065	0.780	0.115	1.380	0.000	0.000	
2009	6/10/2009	-0.075	-0.900	0.115	1.380	0.060	0.720	0.110	1.320	0.070	0.840	0.120	1.440	0.000	0.000	
2010	5/19/2010	-0.065	-0.780	0.105	1.260	0.055	0.660	0.100	1.200	0.075	0.900	0.105	1.260	0.000	0.000	
2011	5/18/2011	-0.065	-0.780	0.115	1.380	0.065	0.780	0.100	1.200	0.075	0.900	0.110	1.320	0.015	0.180	
2012	5/18/2012	-0.070	-0.840	0.115	1.380	0.065	0.780	0.095	1.140	0.075	0.900	0.095	1.140	0.010	0.120	
2013	6/6/2013	-0.075	-0.900	0.120	1.440	0.070	0.840	0.095	1.140	0.075	0.900	0.115	1.380	0.005	0.060	
2014	4/21/2014	-0.075	-0.900	0.120	1.440	0.080	0.960	0.110	1.320	0.090	1.080	0.125	1.500	0.010	0.120	
2015	6/4/2015	-0.080	-0.960	0.120	1.440	0.080	0.960	0.110	1.320	0.085	1.020	0.115	1.380	0.010	0.120	
2016	7/25/2016	-0.085	-1.020	0.125	1.500	0.080	0.960	0.110	1.320	0.085	1.020	0.115	1.380	0.010	0.120	BM-4 was destroyed
2017																No survey was done in 2017
2018	5/31/2018	-0.087	-1.044	0.125	1.500	0.075	0.900	0.105	1.260	0.075	0.900	0.100	1.200	0.000	0.000	
2019	5/31/2019	-0.085	-1.020	0.125	1.500	0.080	0.960	0.105	1.260	0.075	0.900	0.095	1.140	0.000	0.000	
2020	7/18/2020	-0.080	-0.960	0.120	1.440	0.080	0.960	0.110	1.320	0.080	0.960	0.090	1.080	0.000	0.000	
2022	4/26/2022	-0.075	-0.900	0.140	1.680	0.080	0.960	0.130	1.560	0.070	0.840	0.110	1.320	0.000	0.000	Survey for 2021 Review Period
2022	10/27/2022	-0.075	-0.900	0.125	1.500	0.075	0.900	0.100	1.200	0.060	0.720	0.085	1.020	0.000	0.000	Survey for 2022 Review Period

**TABLE 7
RATTLESNAKE CANYON DAM
CUMULATIVE HORIZONTAL DISPLACEMENT OF SURVEY MONUMENTS
1985 THROUGH 2022**

Monument ID		CUMULATIVE HORIZONTAL DISPLACEMENT OF SURVEY MONUMENTS 1985 THROUGH 2022														Comment
Approx . Station	Date	A 2+14.8		B 2+74.7		B-1 2+77.7		C 5+74.6		D 8+74.6		E 11+74.7		E-1 11+75.1		
Year		(feet)	(inches)	(feet)	(inches)	(feet)	(inches)	(feet)	(inches)	(feet)	(inches)	(feet)	(inches)	(feet)	(inches)	
1985	10/19/1985	0.000	0.000					0.000	0.000	0.000	0.000	0.000	0.000			Initial Reading for A, C, D & E
1986																Data was not found
1987	8/19/1987	-0.010	-0.120					0.010	0.120	0.000	0.000	0.000	0.000			
1988																Data was not found
1989																Data was not found
1990	10/5/1990	0.040	0.480			0.000	0.000	0.050	0.600	0.020	0.240	0.010	0.120			Initial Reading for 8-1
1991	6/12/1991	0.070	0.840			0.000	0.000	0.070	0.840	0.050	0.600	0.020	0.240			
1992																Data was not found
1993																Data was not found
1994	5/11/1994	0.050	0.600			0.020	0.240	0.070	0.840	0.060	0.720	0.030	0.360			BM-2 was destroyed
1995												0.000	0.000			Data was not found
1996	5/2/1996	0.040	0.480			0.000	0.000	0.030	0.360	0.050	0.600	0.030	0.360			
1997	5/28/1997	0.040	0.480			0.000	0.000	0.040	0.480	0.050	0.600	0.030	0.360			
1998	5/1/1998	0.030	0.360			-0.020	-0.240	0.040	0.480	0.050	0.600	0.030	0.360			
1999	4/28/1999	0.025	0.300			0.010	0.120	0.060	0.720	0.050	0.600					Monument E was paved over
2000	6/28/2000	0.025	0.300			0.005	0.060	0.055	0.660	0.050	0.600	0.030	0.360			Monument E was reestablished
2001	5/3/2001	0.020	0.240	0.000	0.000	0.020	0.240	0.070	0.840	0.050	0.600	0.035	0.420	0.000	0.000	Initial Reading for Band E-1
2002	5/20/2002	0.015	0.180	0.010	0.120	0.020	0.240	0.075	0.900	0.060	0.720	0.040	0.480	-0.005	-0.060	
2003	5/22/2003	0.020	0.240	0.025	0.300	0.030	0.360	0.080	0.960	0.055	0.660	0.050	0.600	0.000	0.000	
2004	5/18/2004	0.020	0.240	0.025	0.300	0.030	0.360	0.085	1.020	0.060	0.720	0.050	0.600	0.000	0.000	
2005	5/31/2005	0.020	0.240	0.020	0.240	0.030	0.360	0.085	1.020	0.060	0.720	0.055	0.660	0.000	0.000	
2006	5/31/2006	0.025	0.300	0.025	0.300	0.040	0.480	0.085	1.020	0.060	0.720	0.050	0.600	0.000	0.000	
2007	5/16/2007	0.025	0.300	0.030	0.360	0.040	0.480	0.080	0.960	0.065	0.780	0.050	0.600	0.000	0.000	
2008	5/23/2008	0.025	0.300	0.035	0.420	0.045	0.540	0.090	1.080	0.065	0.780	0.065	0.780	0.000	0.000	
2009	6/10/2009	0.015	0.180	0.055	0.660	0.060	0.720	0.100	1.200	0.070	0.840	0.070	0.840	0.000	0.000	
2010	5/19/2010	0.025	0.300	0.045	0.540	0.055	0.660	0.090	1.080	0.075	0.900	0.055	0.660	0.000	0.000	
2011	5/18/2011	0.025	0.300	0.055	0.660	0.065	0.780	0.090	1.080	0.075	0.900	0.060	0.720	0.015	0.180	
2012	5/18/2012	0.020	0.240	0.055	0.660	0.065	0.780	0.085	1.020	0.075	0.900	0.045	0.540	0.010	0.120	
2013	6/6/2013	0.015	0.180	0.060	0.720	0.070	0.840	0.085	1.020	0.075	0.900	0.065	0.780	0.005	0.060	
2014	4/21/2014	0.015	0.180	0.060	0.720	0.080	0.960	0.100	1.200	0.090	0.080	0.075	0.900	0.010	0.120	
2015	6/4/2015	0.010	0.120	0.060	0.720	0.080	0.960	0.100	1.200	0.085	0.020	0.065	0.780	0.010	0.120	
2016	7/25/2016	0.005	0.060	0.065	0.780	0.080	0.960	0.100	1.200	0.085	0.020	0.065	0.780	0.010	0.120	BM-4 was destroyed
2017																No survey was done in 2017
2018	5/31/2018	0.003	0.036	0.065	0.780	0.075	0.900	0.095	1.140	0.075	0.900	0.110	1.320	0.000	0.000	
2019	5/31/2019	0.005	0.060	0.065	0.780	0.080	0.960	0.095	1.140	0.075	0.900	0.105	1.260	0.000	0.000	
2020	7/18/2020	0.010	0.120	0.060	0.720	0.080	0.960	0.100	1.200	0.080	0.960	0.100	1.200	0.000	0.000	
2022	4/26/2022	0.015	0.180	0.080	0.960	0.080	0.960	0.120	1.440	0.070	0.840	0.120	1.440	0.000	0.000	Survey for 2021 Review Period
2022	10/27/2022	0.015	0.180	0.065	0.780	0.075	0.900	0.090	1.080	0.060	0.720	0.095	1.140	0.000	0.000	Survey for 2021 Review Period

**TABLE 8
RATTLESNAKE CANYON DAM
ELEVATIONS OF SURVEY MONUMENTS
1985 THROUGH 2022**

ELEVATIONS OF SURVEY MONUMENTS 1985 THROUGH 2022									
Monument ID		A	B	B-1	C	D	E	E-1	Comment
Approx. Station		2+14.8	2+74.7	2+77.7	5+74.6	8+74.6	11+74.7	11+75.1	
Year	Date	(feet)	(feet)	(feet)	(feet)	{feet}	{feet}	(feet)	
1985	10/19/1985	419.320			417.980	418.280	418.530		Initial Reading for AC.D & E
1986									Data were not found
1987	8/19/1987	419.280			417.970	418.260	418.560		
1988									Data was not found
1989									Data was not found
1990	10/5/1990	419.200		417.980	417.930	418.250	418.530		Initial Reading for B-1
1991	6/12/1991	419.190		417.980	417.910	418.210	418.530		
1992									Data was not found
1993									Data was not found
1994	5/11/1994	419.180		417.950	417.910	418.220	418.530		BM-2 was destroyed
1995									Data was not found
1996	5/2/1996	419.180		417.940	417.900	418.220	418.530		
1997	5/28/1997	419.180		417.940	417.910	418.230	418.530		
1998	5/1/1998	419.180		417.930	417.900	418.220	418.530		
1999	4/28/1999	419.180		417.925	417.905	418.230			Monument E was paved over
2000	6/28/2000	419.180		417.920	417.900	418.225	418.065		Monument E was reestablished
2001	5/3/2001	419.185	418.015	417.925	417.915	418.250	418.090	418.745	Initial Reading for Band E-1
2002	5/21/2002	419.185	418.005	417.915	417.915	418.245	418.090	418.745	
2003	5/22/2003	419.105	418.000	417.915	417.910	418.245	418.090	418.750	
2004	5/18/2004	419.185	418.000	417.915	417.910	418.250	418.100	418.750	
2005	5/31/2005	419.180	417.995	417.905	417.915	418.245	418.095	418.750	
2006	5/31/2006	419.185	417.990	417.900	417.920	418.250	418.095	418.755	
2007	5/16/2007	419.182	417.987	417.898	417.921	418.254	418.106	418.759	
2008	5/23/2008	419.185	417.985	417.900	417.925	418.260	418.115	418.770	
2009	6/10/2009	419.180	417.980	417.895	417.925	418.260	418.100	418.760	
2010	5/19/2010	419.180	417.980	417.890	417.920	418.255	418.100	418.755	
2011	5/18/2011	419.180	417.975	417.885	417.925	418.260	418.110	418.760	
2012	5/24/2012	419.175	417.970	417.880	417.930	418.265	418.115	418.765	
2013	6/6/2013	419.170	417.970	417.880	417.935	418.270	418.120	418.775	
2014	4/21/2014	419.170	417.970	417.885	417.940	418.275	418.125	418.780	
2015	6/4/2015	419.165	417.975	417.890	417.945	418.280	418.135	418.790	
2016	7/25/2016	419.160	417.975	417.890	417.950	418.290	418.145	418.800	BM-4 was destroyed
2017									No survey was done in 2017
2018	5/31/2018	419.160	417.980	417.890	417.950	418.290	418.160	418.815	
2019	5/31/2019	419.160	417.970	417.885	417.950	418.295	418.165	418.815	
2020	7/18/2020	419.159	417.966	417.878	417.940	418.277	418.152	418.810	
2022	4/26/2022	419.158	417.959	417.871	417.93	418.273	418.151	418.806	Survey for 2021 Review Period
2022	10/27/2022	419.149	417.941	417.853	417.909	418.251	418.127	418.782	Survey for 2022 Review Period

Note:

1. Vertical data is referenced in NGVD 29 datum.

**TABLE 9
RATTLESNAKE CANYON DAM
CUMULATIVE VERTICAL MOVEMENT OF SURVEY MONUMENTS
1985 THROUGH 2022**

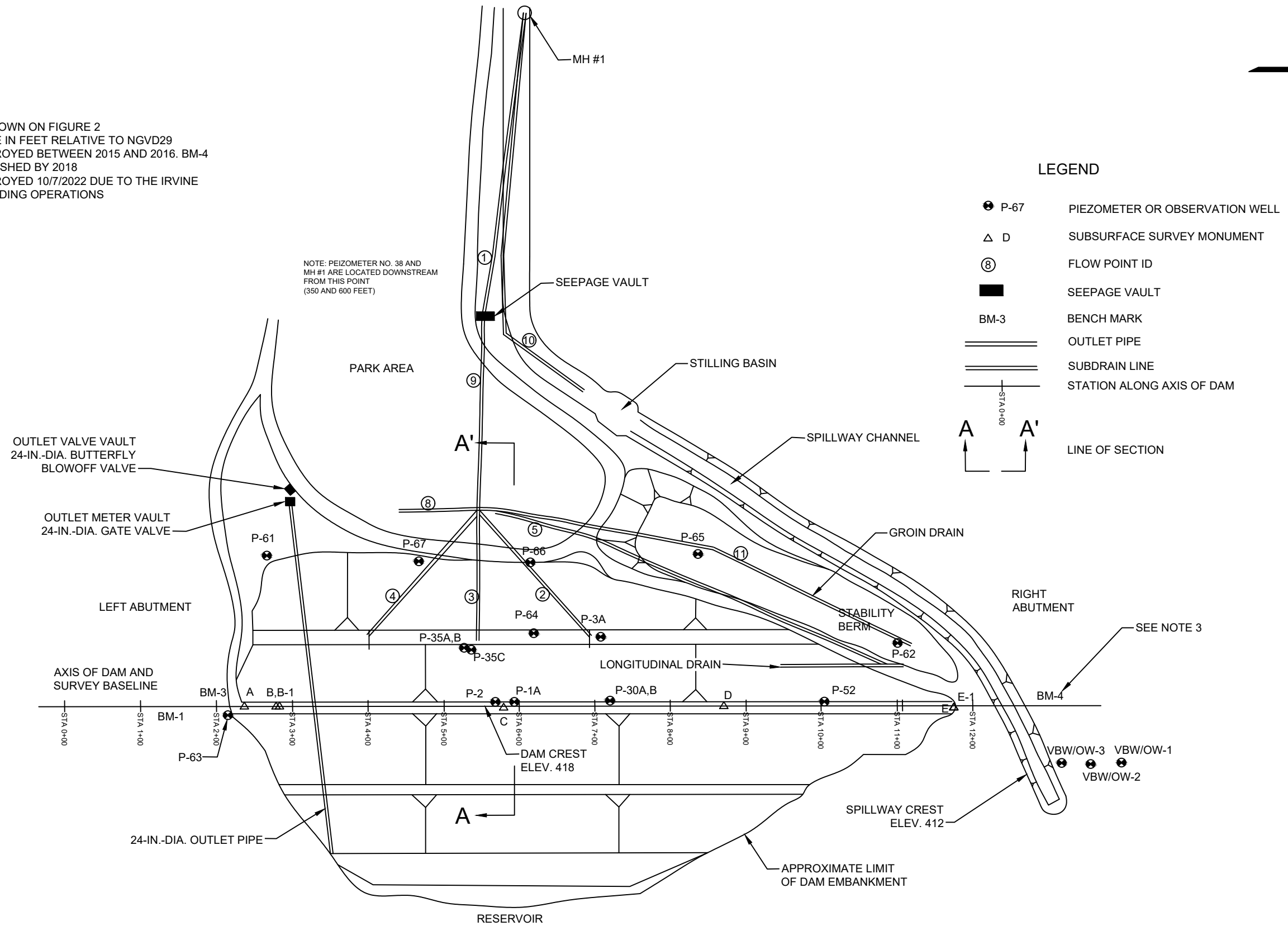
CUMULATIVE VERTICAL MOVEMENT OF SURVEY MONUMENTS 1985 THROUGH 2022																
Monument ID		A		B		B-1		C		D		E		E-1		Comment
Approx. Station		2+14.8		2+74.7		2+77.7		5+74.6		8+74.6		11+74.7		11+75.1		
Year	Date	(feet)	(inches)	(feet)	(inches)	(feet)	(Inches)	(feet)	(inches)	(feet)	(Inches)	(feet)	(inches)	(feet)	(Inches)	
1985	10/19/1985	0.000	0.000					0.000	0.000	0.000	0.000	0.000	0.000			Initial Reading for A,C,D & E
1986																Data was not found
1987	8/19/1987	0.040	0.480					0.010	0.120	0.020	0.240	-0.030	-0.360			
1988																Data was not found
1989																Data was not found
1990	10/5/1990	0.120	1.440			0.000	0.000	0.050	0.600	0.030	0.360	0.000	0.000			Initial Reading for B-1
1991	6/12/1991	0.130	1.560			0.000	0.000	0.070	0.840	0.070	0.840	0.000	0.000			
1992																Data was not found
1993																Data was not found
1994	5/11/1994	0.140	1.680			0.030	0.360	0.070	0.840	0.060	0.720	0.000	0.000			BM-2 was destroyed
1995																Data was not found
1996	5/2/1996	0.140	1.680			0.040	0.480	0.080	0.960	0.060	0.720	0.000	0.000			
1997	5/28/1997	0.140	1.680			0.040	0.480	0.070	0.840	0.050	0.600	0.000	0.000			
1998	5/1/1998	0.140	1.680			0.050	0.600	0.080	0.960	0.060	0.720	0.000	0.000			
1999	4/28/1999	0.140	1.680			0.055	0.660	0.075	0.900	0.050	0.600					Monument E was paved over
2000	6/28/2000	0.140	1.680			0.060	0.720	0.080	0.960	0.055	0.660	0.000	0.000			Monument E was reestablished
2001	5/3/2001	0.135	1.620	0.000	0.000	0.055	0.660	0.065	0.780	0.030	0.360	-0.025	-0.300	0.000	0.000	Initial Reading for Band E-1
2002	5/21/2002	0.135	1.620	0.010	0.120	0.065	0.780	0.065	0.780	0.035	0.420	-0.025	-0.300	0.000	0.000	
2003	5/22/2003	0.215	2.580	0.015	0.180	0.065	0.780	0.070	0.840	0.035	0.420	-0.025	-0.300	-0.005	-0.060	
2004	5/18/2004	0.135	1.620	0.015	0.180	0.065	0.780	0.070	0.840	0.030	0.360	-0.035	-0.420	-0.005	-0.060	
2005	5/31/2005	0.140	1.680	0.020	0.240	0.075	0.900	0.065	0.780	0.035	0.420	-0.030	-0.360	-0.005	-0.060	
2006	5/31/2006	0.135	1.620	0.025	0.300	0.080	0.960	0.060	0.720	0.030	0.360	-0.030	-0.360	-0.010	-0.120	
2007	5/16/2007	0.138	1.656	0.028	0.336	0.082	0.984	0.059	0.708	0.026	0.312	-0.041	-0.492	-0.014	-0.168	
2008	5/23/2008	0.135	1.620	0.030	0.360	0.080	0.960	0.055	0.660	0.020	0.240	-0.050	-0.600	-0.025	-0.300	
2009	6/10/2009	0.140	1.680	0.035	0.420	0.085	1.020	0.055	0.660	0.020	0.240	-0.035	-0.420	-0.015	-0.180	
2010	5/19/2010	0.140	1.680	0.035	0.420	0.090	1.080	0.060	0.720	0.025	0.300	-0.035	-0.420	-0.010	-0.120	
2011	5/18/2011	0.140	1.680	0.040	0.480	0.095	1.140	0.055	0.660	0.020	0.240	-0.045	-0.540	-0.015	-0.180	
2012	5/24/2012	0.145	1.740	0.045	0.540	0.100	1.200	0.050	0.600	0.015	0.180	-0.050	-0.600	-0.020	-0.240	
2013	6/6/2013	0.150	1.800	0.045	0.540	0.100	1.200	0.045	0.540	0.010	0.120	-0.055	-0.660	-0.030	-0.360	
2014	4/21/2014	0.150	1.800	0.045	0.540	0.095	1.140	0.040	0.480	0.005	0.060	-0.060	-0.720	-0.035	-0.420	
2015	6/4/2015	0.155	1.860	0.040	0.480	0.093	1.116	0.038	0.456	0.000	0.000	-0.070	-0.840	-0.045	-0.540	
2016	7/25/2016	0.160	1.920	0.040	0.480	0.090	1.080	0.030	0.360	-0.010	-0.120	-0.080	-0.960	-0.055	-0.660	BM-4 was destroyed
2017																No survey was done in 2017
2018	5/31/2018	0.160	1.920	0.035	0.420	0.090	1.080	0.030	0.360	-0.010	-0.120	-0.095	-1.140	-0.070	-0.840	
2019	5/31/2019	0.160	1.920	0.045	0.540	0.095	1.140	0.030	0.360	-0.015	-0.180	-0.100	-1.200	-0.070	-0.840	
2020	7/18/2020	0.161	1.932	0.049	0.588	0.102	1.224	0.040	0.480	0.003	0.036	-0.087	-1.044	-0.065	-0.780	
2022	4/26/2022	0.162	1.944	0.056	0.672	0.109	1.308	0.050	0.600	0.007	0.084	-0.086	-1.032	-0.061	-0.732	Survey for 2021 Review Period
2022	10/27/2022	0.171	2.052	0.074	0.888	0.127	1.524	0.071	0.852	0.029	0.348	-0.062	-0.744	-0.037	-0.444	Survey for 2022 Review Period

Figures

NOTES:

1. SECTION A-A' SHOWN ON FIGURE 2
2. ELEVATIONS ARE IN FEET RELATIVE TO NGVD29
3. BM-4 WAS DESTROYED BETWEEN 2015 AND 2016. BM-4 WAS RE-ESTABLISHED BY 2018
4. BM-3 WAS DESTROYED 10/7/2022 DUE TO THE IRVINE COMPANY'S GRADING OPERATIONS

NOTE: PEIZOMETER NO. 38 AND MH #1 ARE LOCATED DOWNSTREAM FROM THIS POINT (350 AND 600 FEET)



LEGEND

- P-67 PIEZOMETER OR OBSERVATION WELL
- △ D SUBSURFACE SURVEY MONUMENT
- ⑧ FLOW POINT ID
- SEEPAGE VAULT
- BM-3 BENCH MARK
- ══ OUTLET PIPE
- ══ SUBDRAIN LINE
- +— STATION ALONG AXIS OF DAM
- A A' LINE OF SECTION

OUTLET VALVE VAULT
24-IN.-DIA. BUTTERFLY
BLOWOFF VALVE

OUTLET METER VAULT
24-IN.-DIA. GATE VALVE

LEFT ABUTMENT

AXIS OF DAM AND
SURVEY BASELINE

24-IN.-DIA. OUTLET PIPE

RESERVOIR

DAM CREST
ELEV. 418

SPILLWAY CREST
ELEV. 412

APPROXIMATE LIMIT
OF DAM EMBANKMENT

NOT TO SCALE


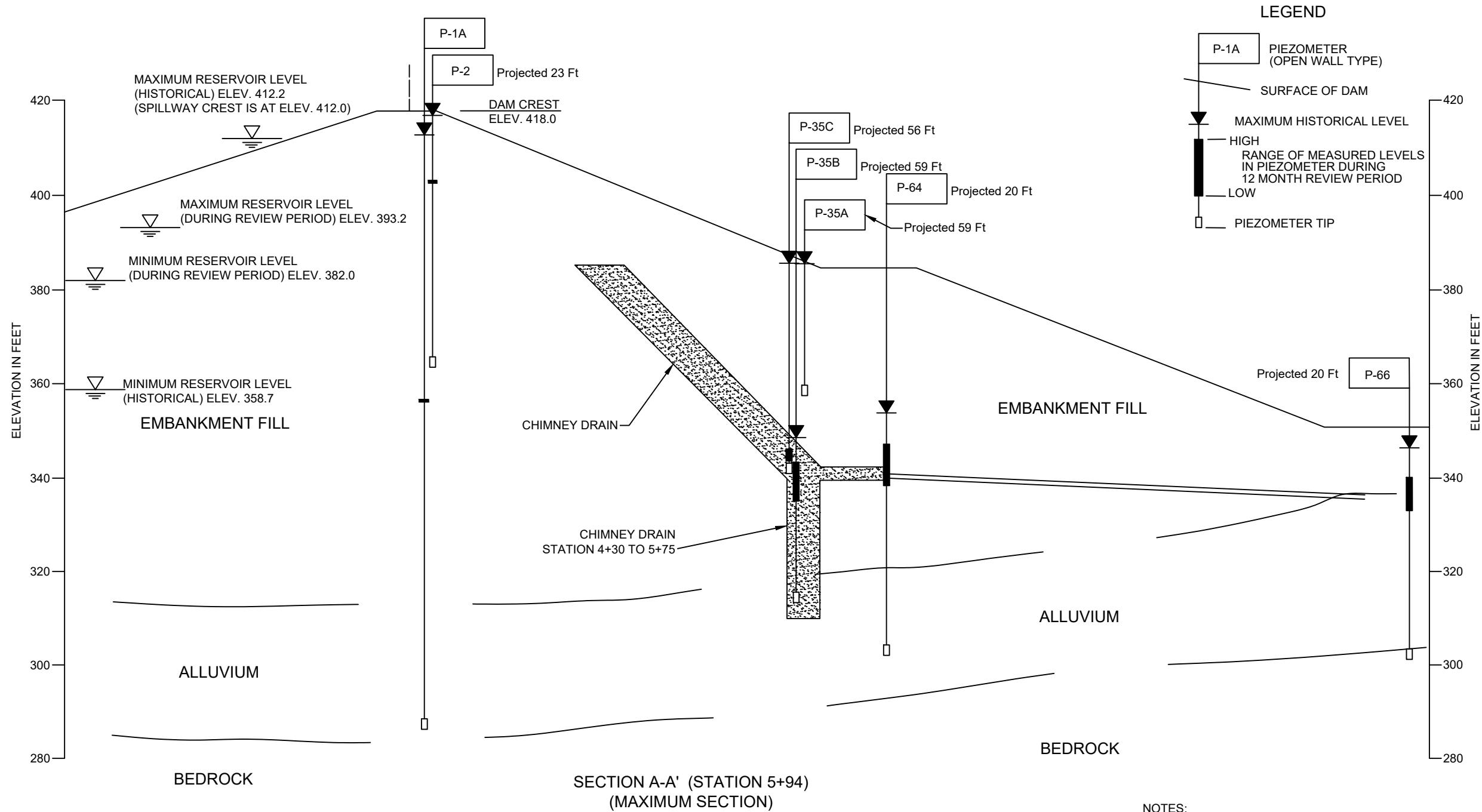
Annual Surveillance Report from Jan. 2021 to Dec. 2022 Rattlesnake Canyon Dam and Reservoir Irvine, CA		SITE AND INSTRUMENTATION PLAN	
		Irvine Ranch Water District Irvine, CA	Project 1901888 May 2023

Fig. 1

L



NOT TO SCALE


Annual Surveillance Report from Jan. 2021 to Dec. 2022 Rattlesnake Canyon Dam and Reservoir Irvine, CA		SECTION A-A'
Irvine Ranch Water District Irvine, CA	Project 1901888	May 2023 Fig. 2

Figure 3
RATTLESNAKE CANYON DAM
2-YR OPEN WELL PIEZOMETER AND RESERVOIR WATER SURFACE ELEVATIONS
OPEN WELL PIEZOMETERS P-35A, P-35B, P-35C, AND P-67
JANUARY 2021 THROUGH DECEMBER 2022

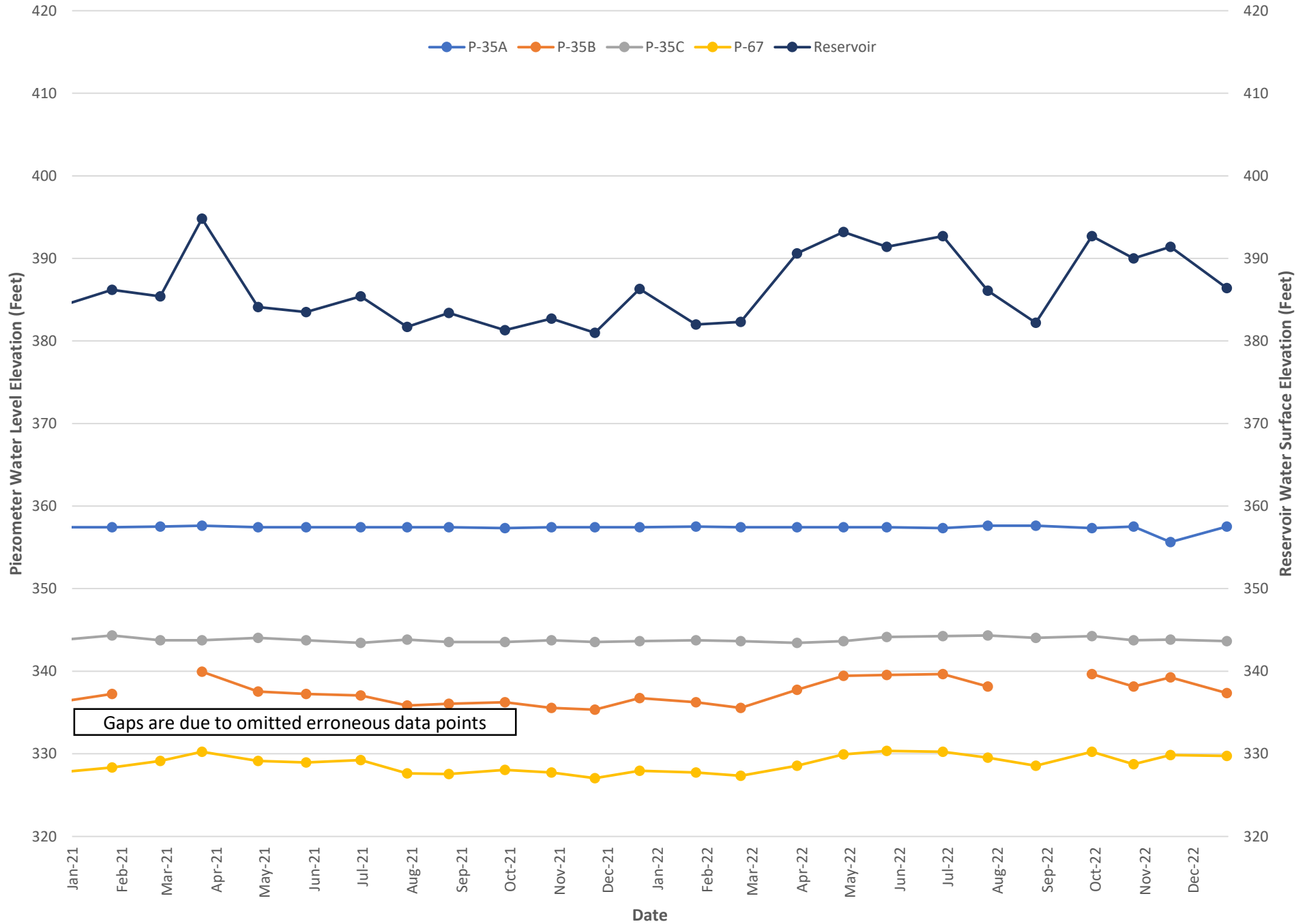


Figure 4
RATTLESNAKE CANYON DAM
2-YR OPEN WELL PIEZOMETER AND RESERVOIR WATER SURFACE ELEVATIONS
OPEN WELL PIEZOMETERS P-1A, P-2, P-64, AND P-66
JANUARY 2021 THROUGH DECEMBER 2022

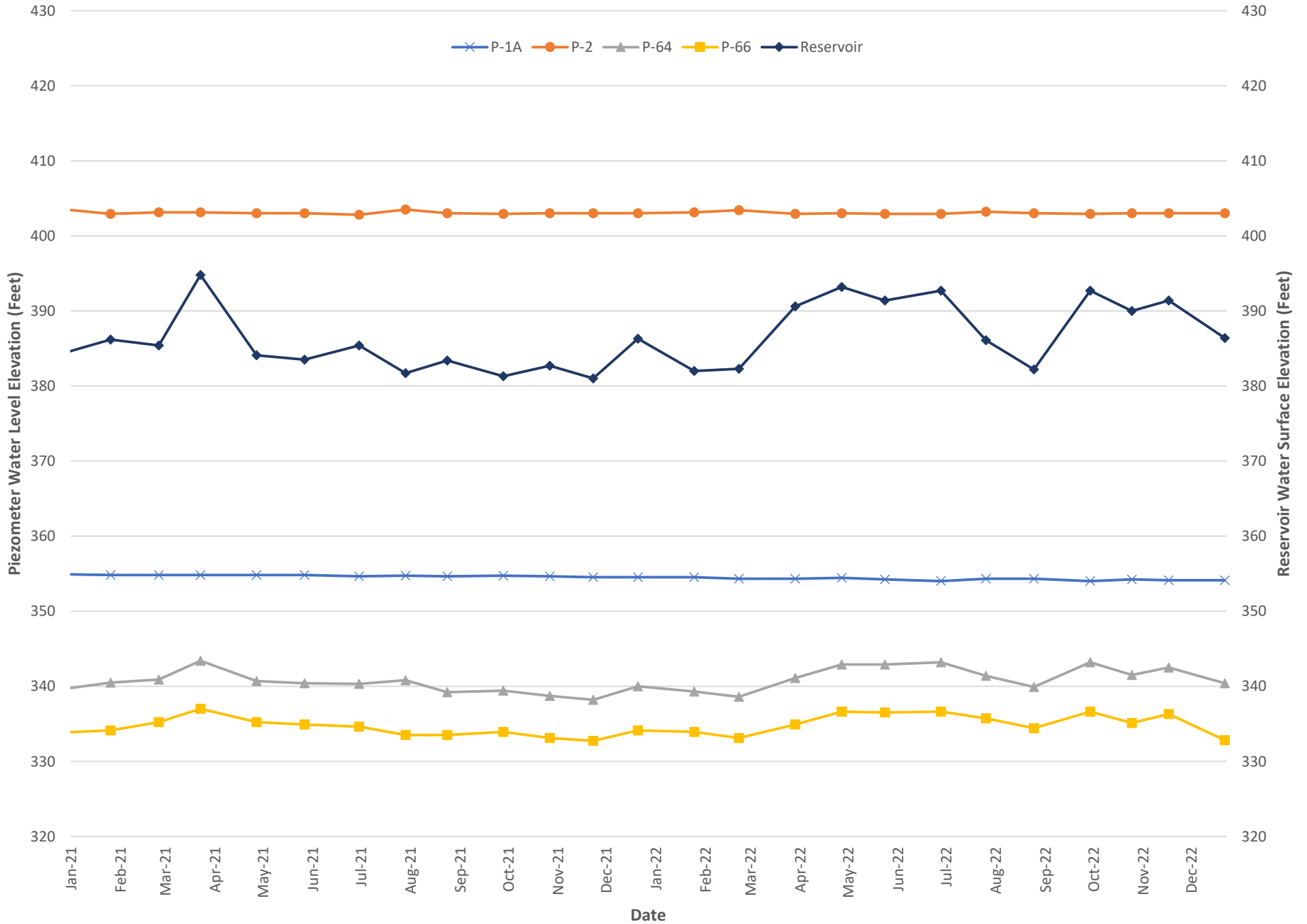


Figure 5
RATTLESNAKE CANYON DAM
2-YR OPEN WELL PIEZOMETER AND RESERVOIR WATER SURFACE ELEVATIONS
OPEN WELL PIEZOMETERS P-3A, AND P-30B
JANUARY 2021 THROUGH DECEMBER 2022

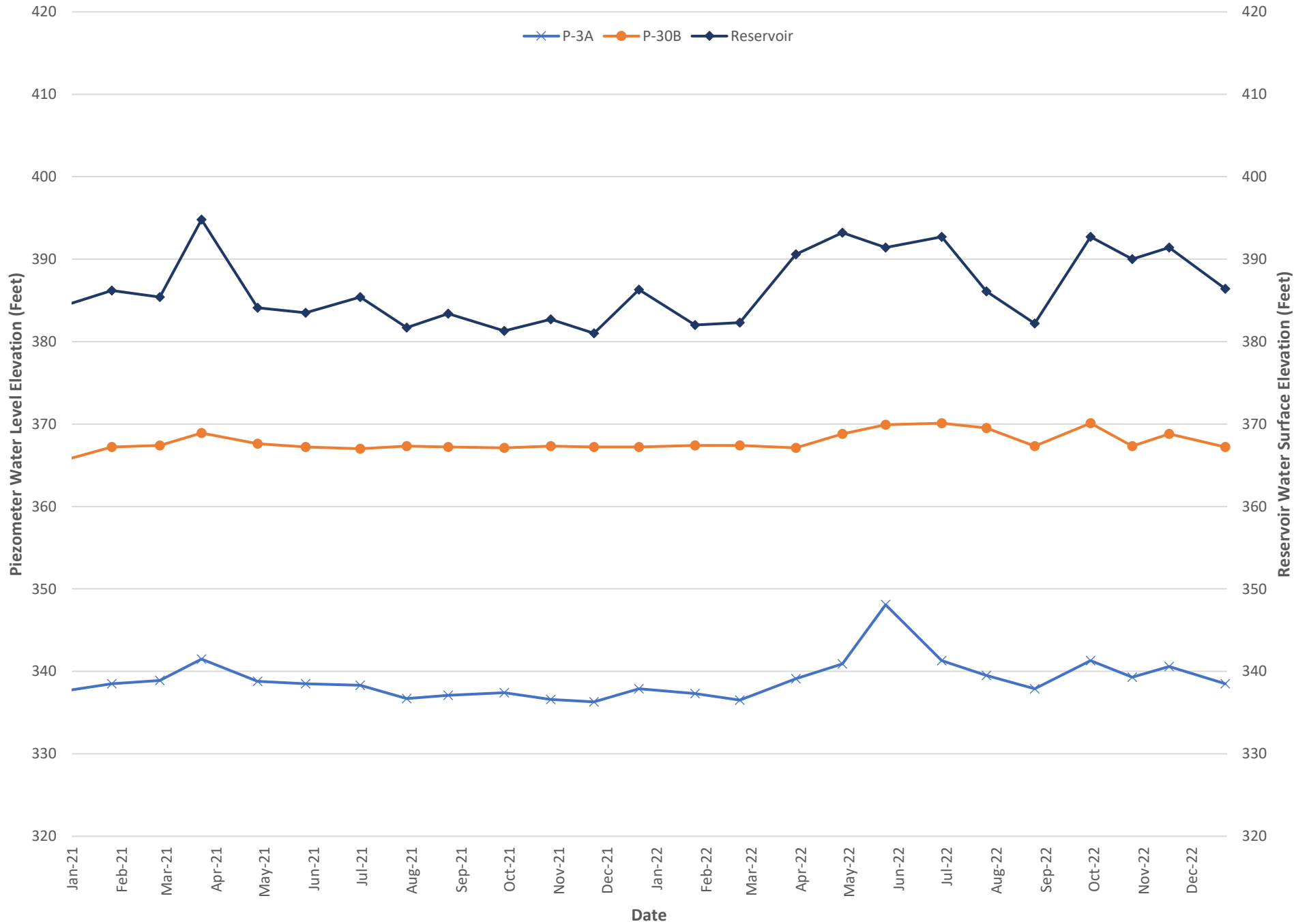


Figure 6
RATTLESNAKE CANYON DAM
2-YR OBSERVATION WELL AND RESERVOIR WATER SURFACE ELEVATIONS
OBSERVATION WELLS VBW/OW-1, VBW/OW-2, AND VBW/OW-3
JANUARY 2021 THROUGH DECEMBER 2022

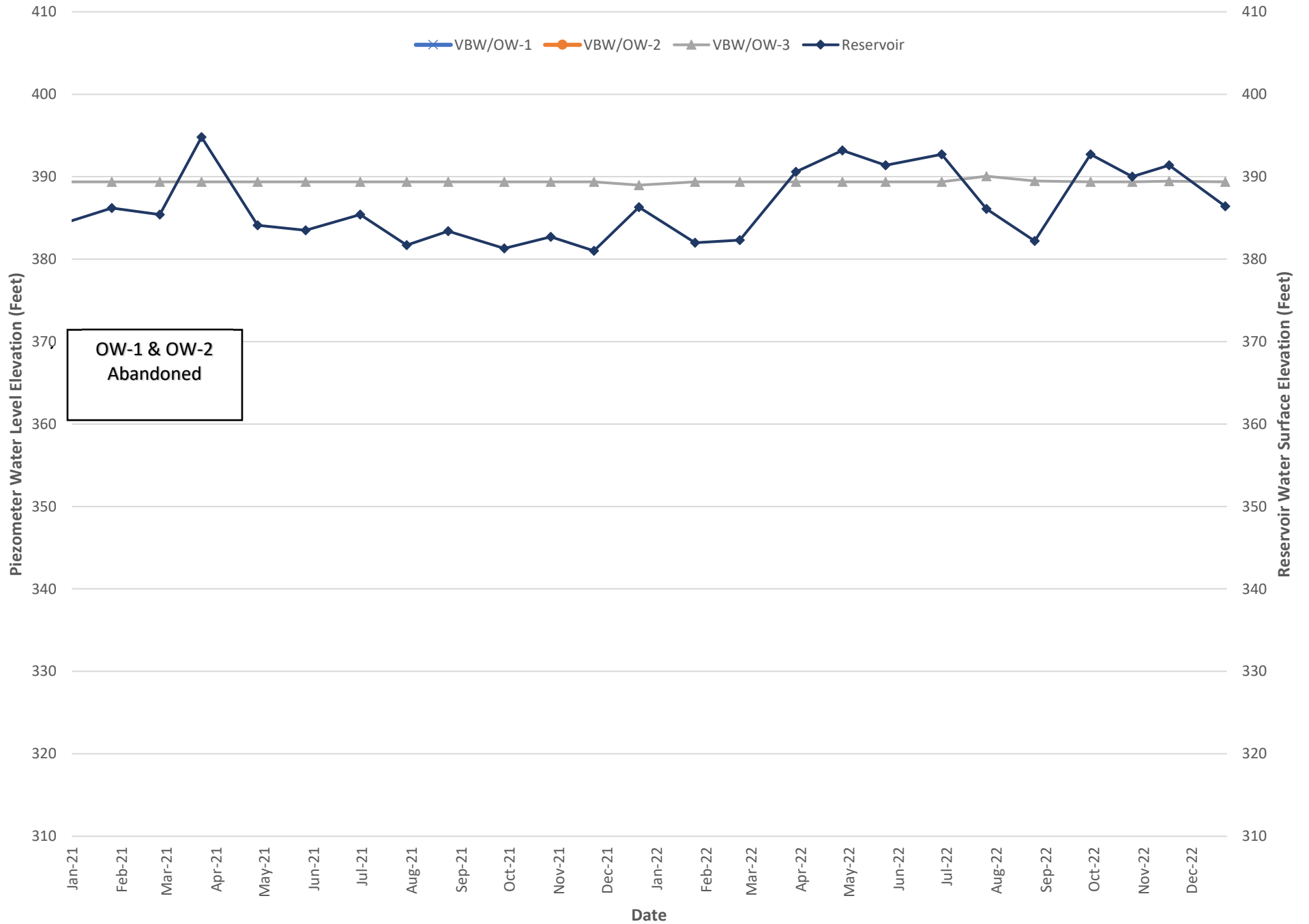


Figure 7
RATTLESNAKE CANYON DAM
2-YR OPEN WELL PIEZOMETER AND RESERVOIR WATER SURFACE ELEVATIONS
OPEN WELL PIEZOMETERS P-52, P-61, P-62, P-63, AND P-65
JANUARY 2021 THROUGH DECEMBER 2022

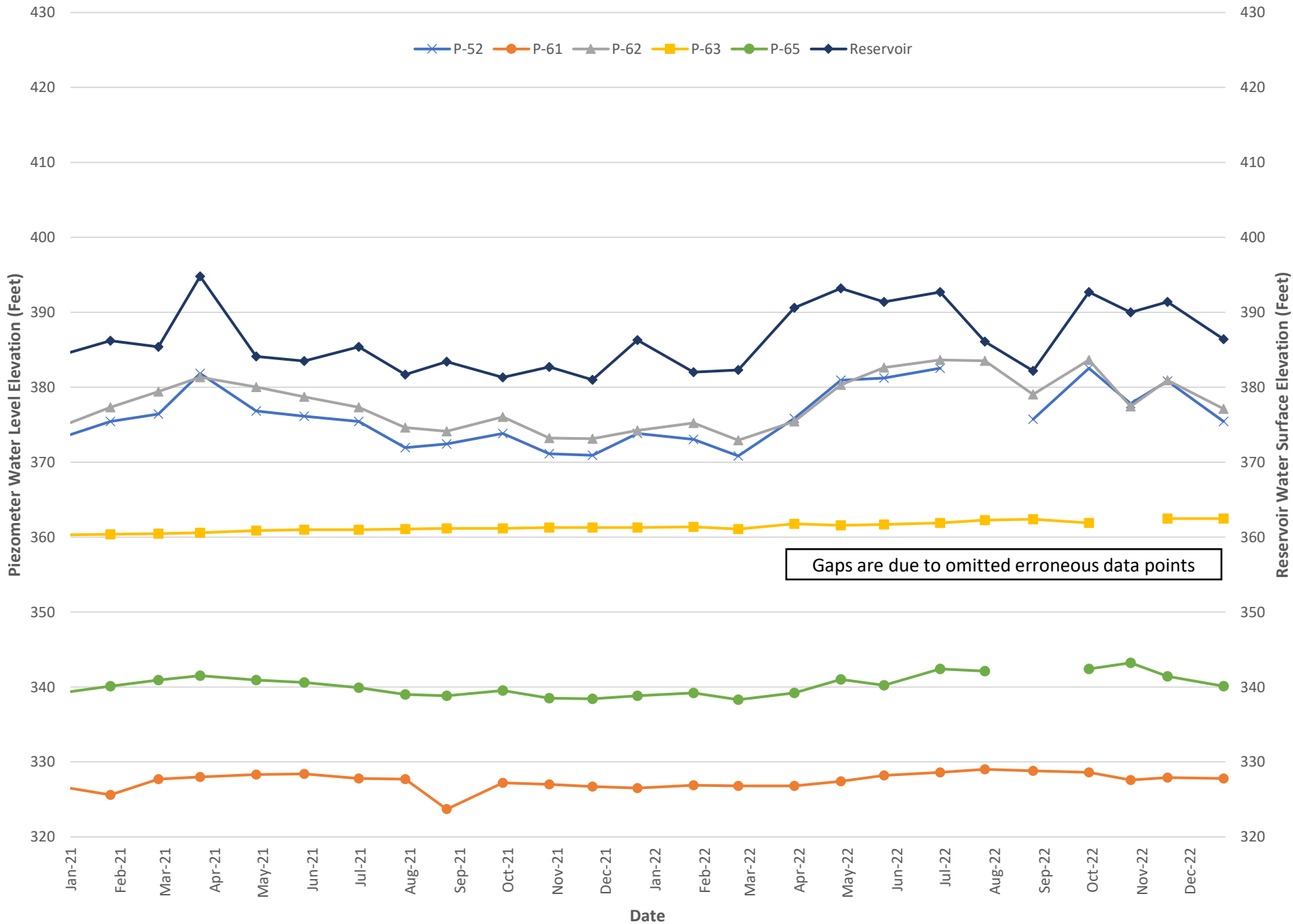


Figure 8
RATTLESNAKE CANYON DAM
HISTORICAL OPEN WELL PIEZOMETER AND RESERVOIR WATER SURFACE ELEVATIONS
OPEN WELL PIEZOMETERS P-35A, P-35B, P-35C, AND P-67
JANUARY 2012 THROUGH DECEMBER 2022

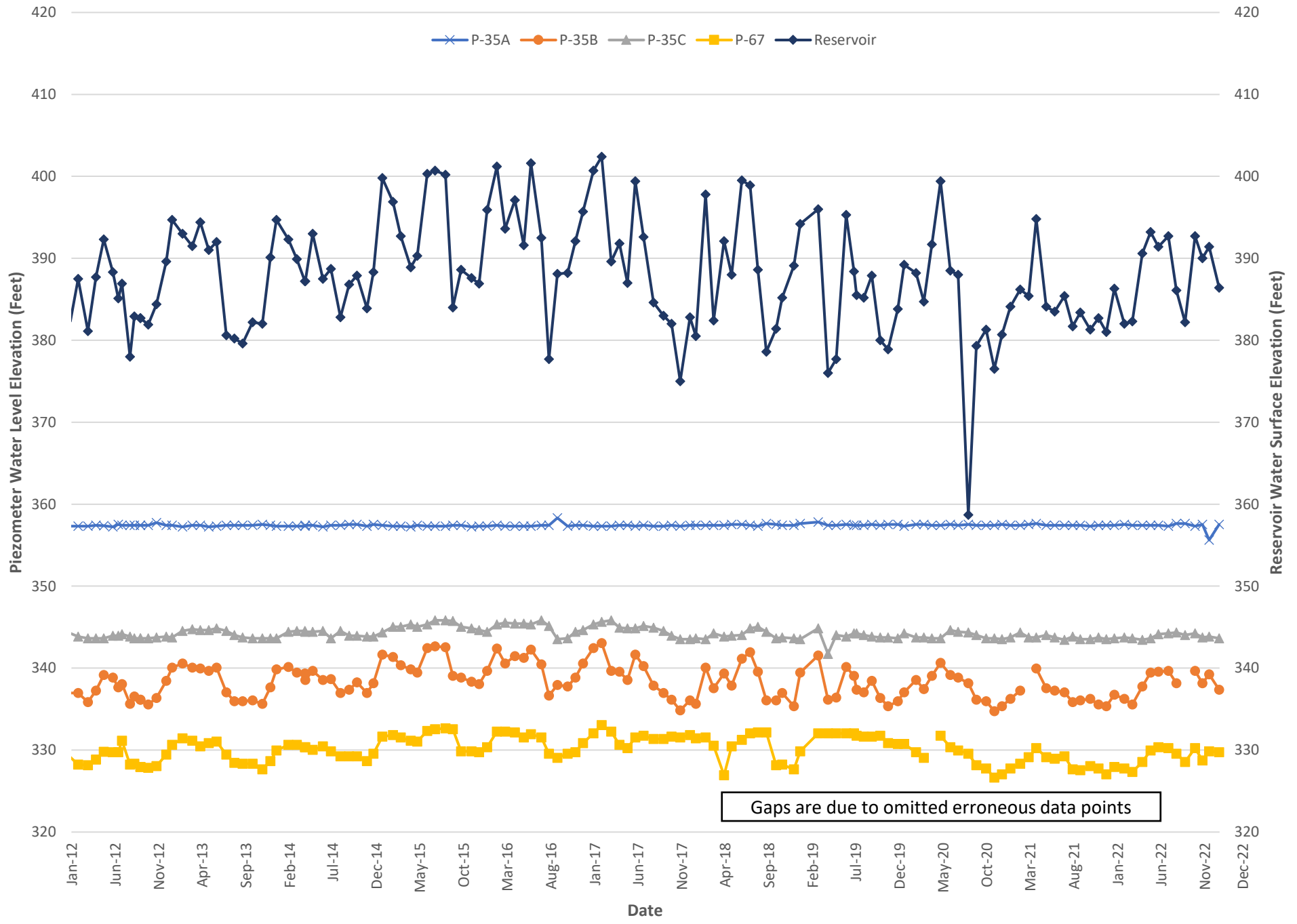


Figure 9
RATTLESNAKE CANYON DAM
HISTORICAL OPEN WELL PIEZOMETER AND RESERVOIR WATER SURFACE ELEVATIONS
OPEN WELL PIEZOMETERS P-1A, P-2, P-64, AND P-66
JANUARY 2012 THROUGH DECEMBER 2022

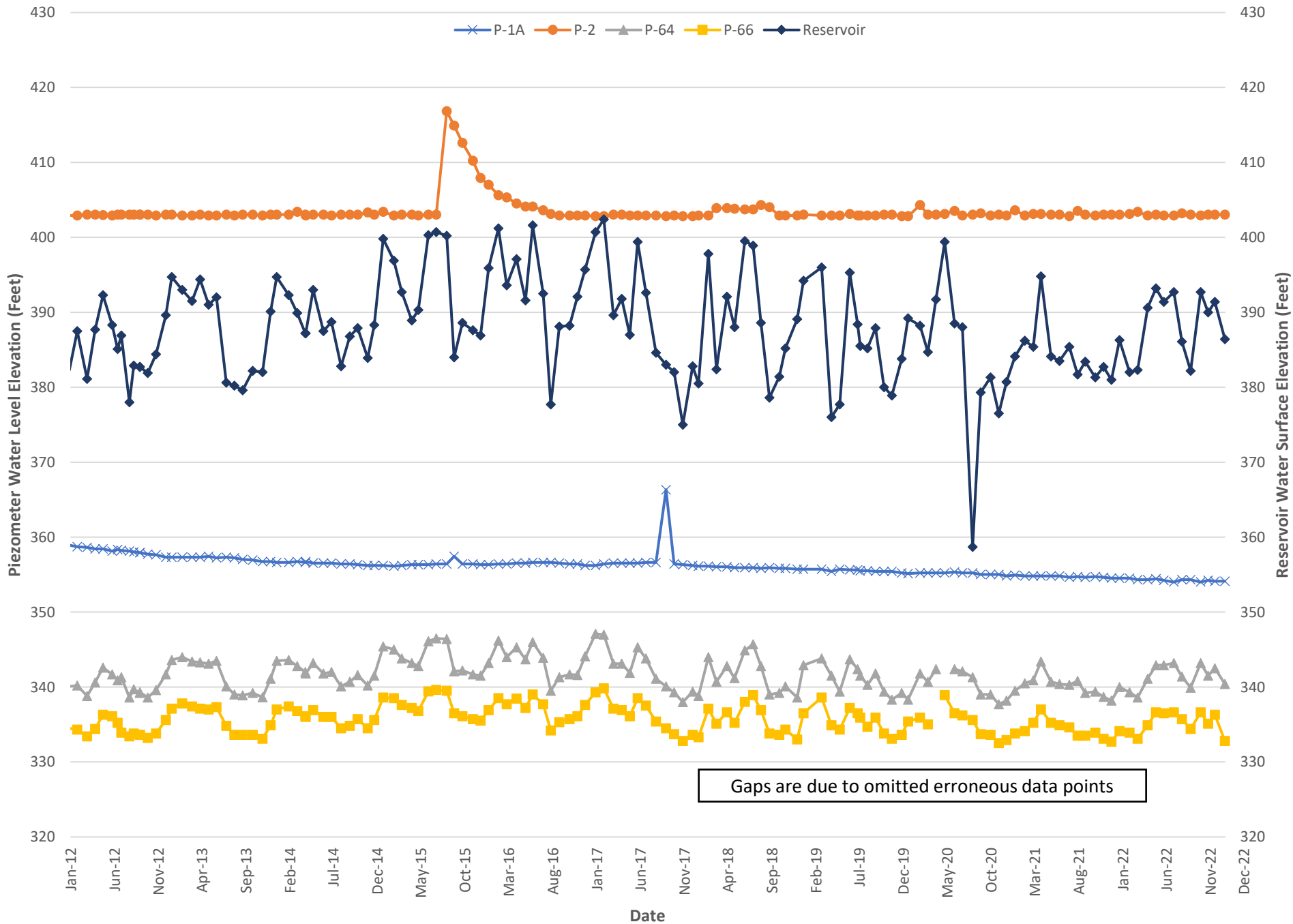


Figure 10
RATTLESNAKE CANYON DAM
HISTORICAL OPEN WELL PIEZOMETER AND RESERVOIR WATER SURFACE ELEVATIONS
OPEN WELL PIEZOMETERS P-3A, AND P-30B
JANUARY 2012 THROUGH DECEMBER 2022

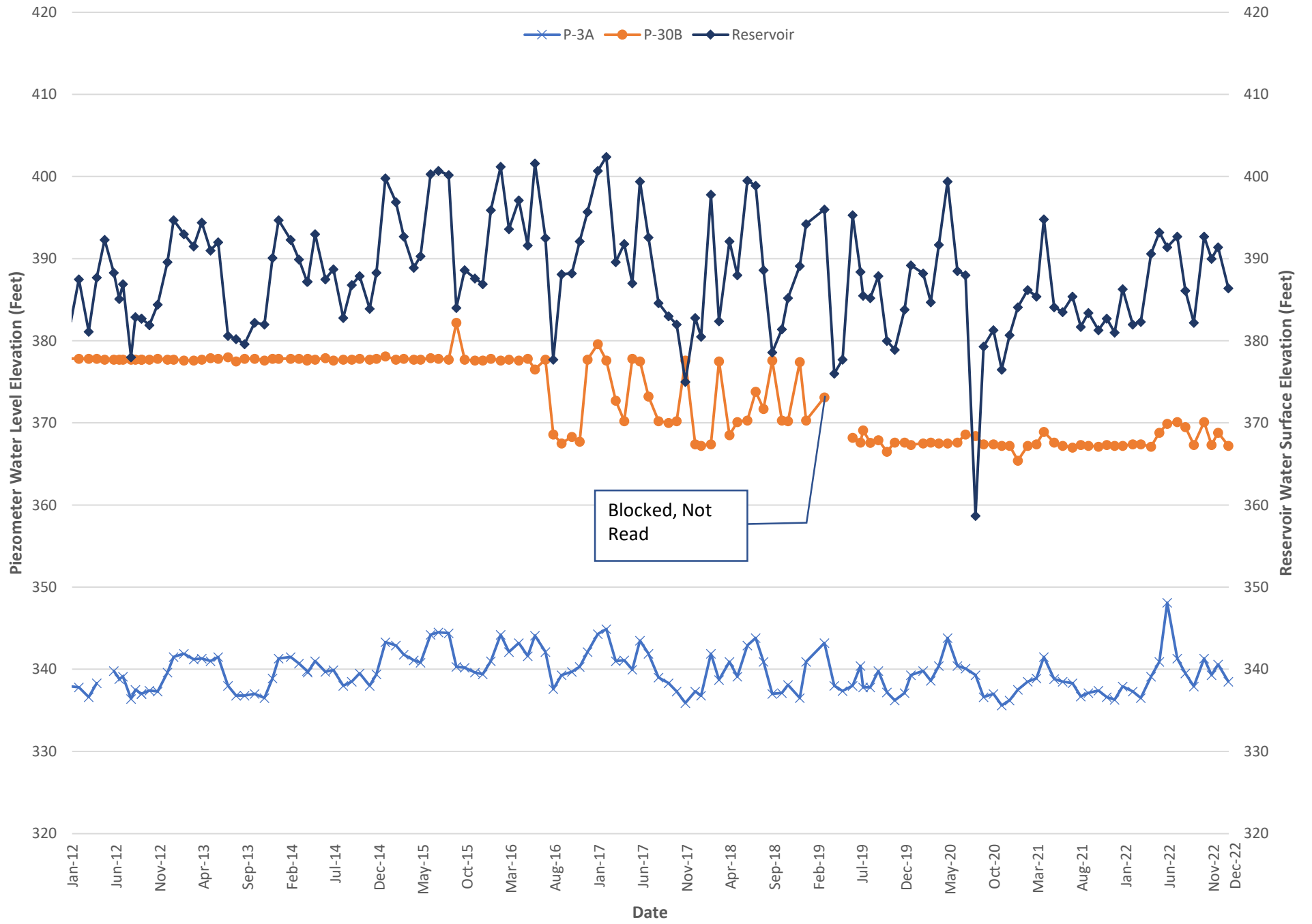


Figure 11
RATTLESNAKE CANYON DAM
HISTORICAL OBSERVATION WELL AND RESERVOIR WATER SURFACE ELEVATIONS
OBSERVATION WELLS VBW/OW-1, VBW/OW-2, AND VBW/OW-3
JANUARY 2012 THROUGH DECEMBER 2022

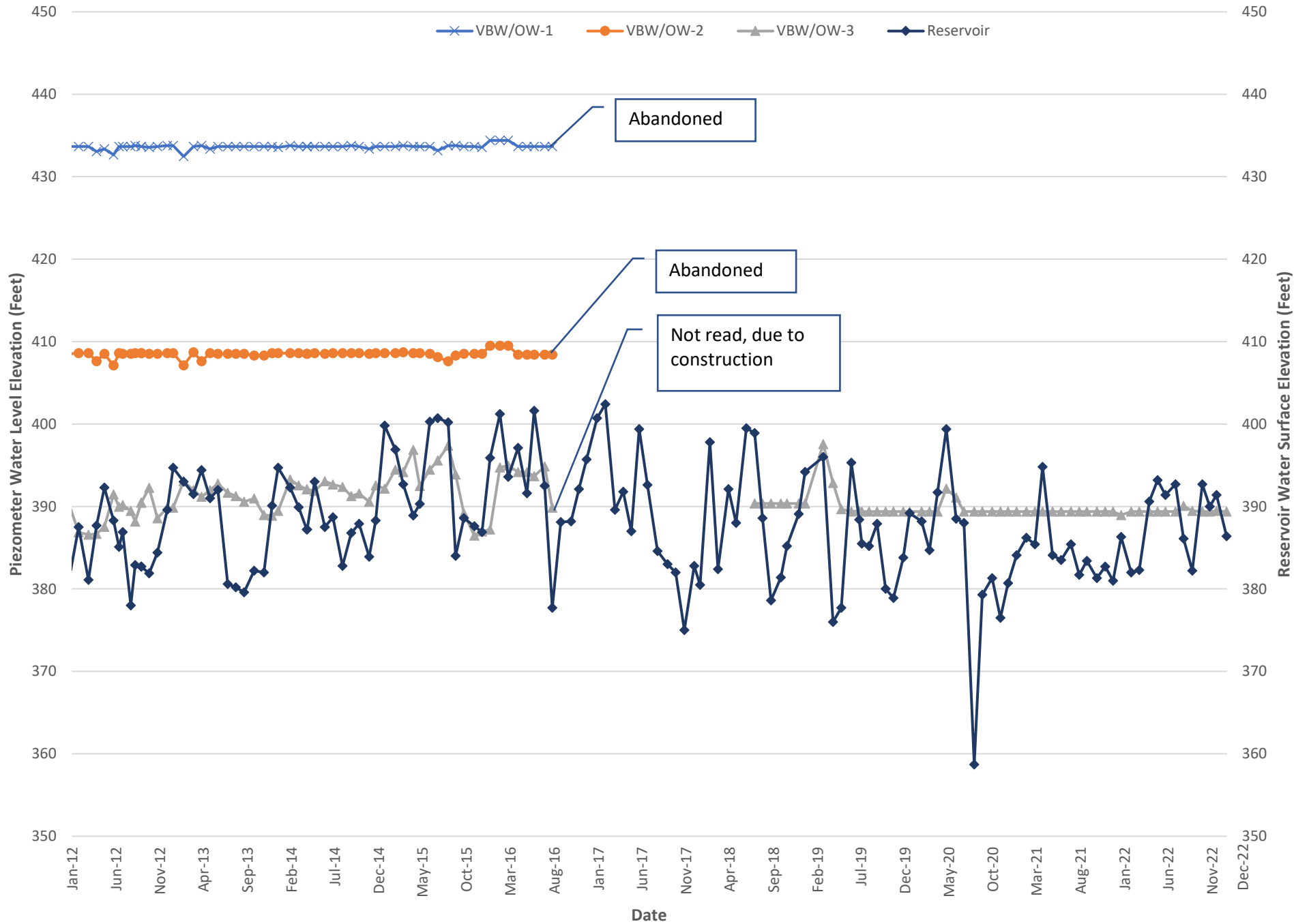


Figure 12
RATTLESNAKE CANYON DAM
HISTORICAL OPEN WELL PIEZOMETER AND RESERVOIR WATER SURFACE ELEVATIONS
OPEN WELL PIEZOMETERS P-52, P-61, P-62, P-63, AND P-65
JANUARY 2012 THROUGH DECEMBER 2022

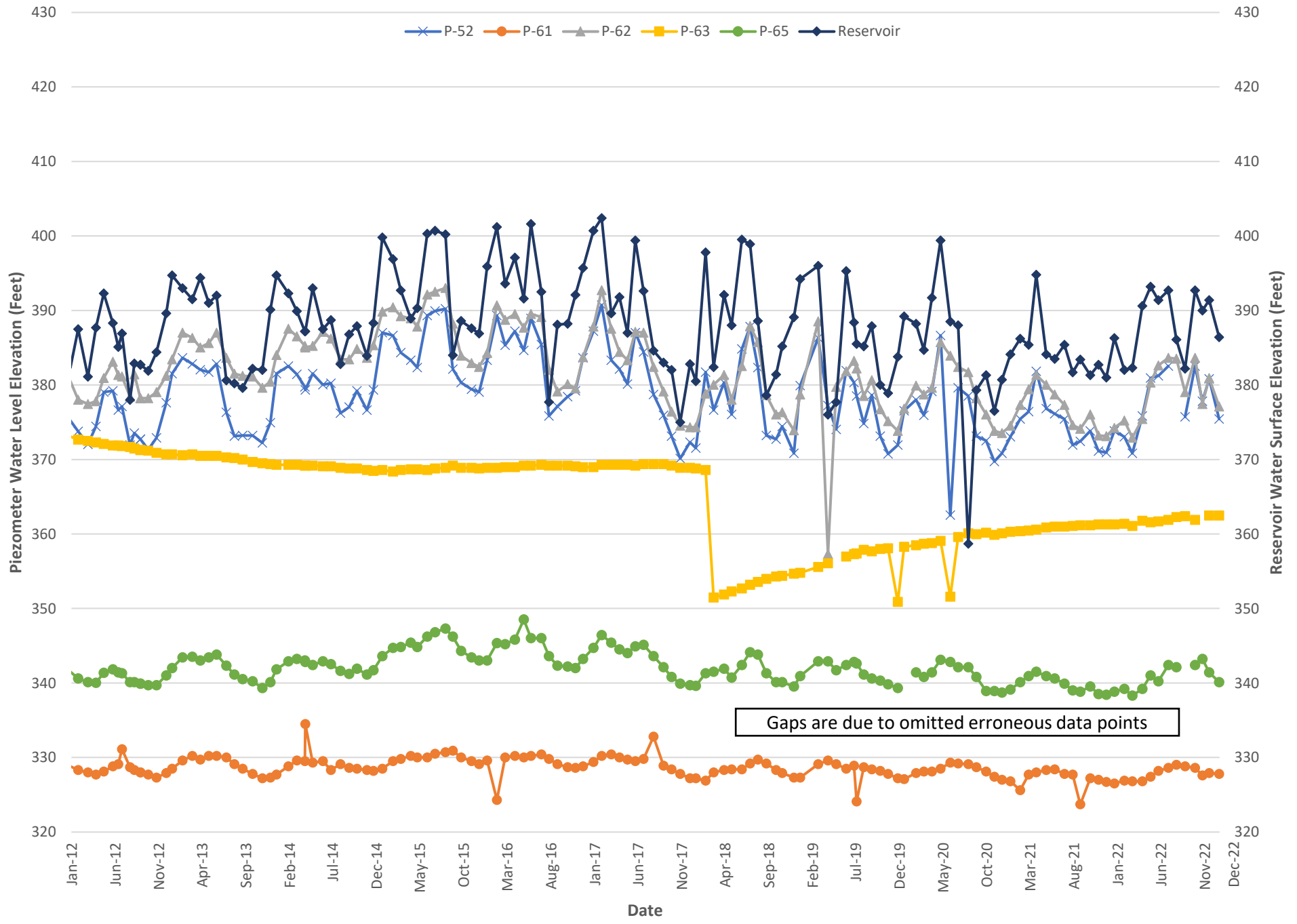


Figure 13
RATTLESNAKE CANYON DAM
2-YR SEEPAGE, RESERVOIR WATER SURFACE ELEVATIONS, AND RAINFALL
FLOW POINTS FP-11, FP-1 NORTH, FP-1 SOUTH
JANUARY 2021 THROUGH DECEMBER 2022

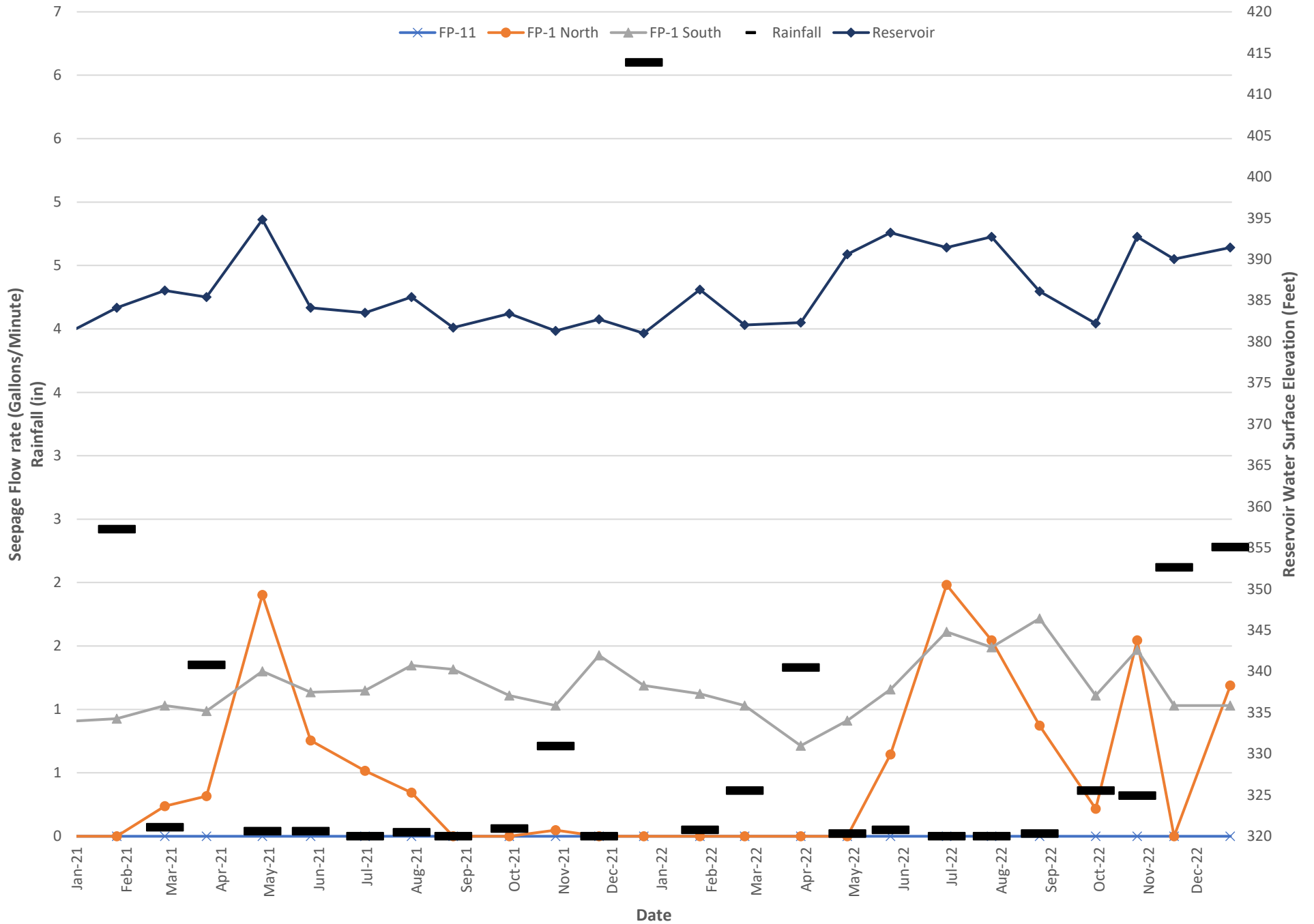


Figure 14
RATTLESNAKE CANYON DAM
2-YR SEEPAGE, RESERVOIR WATER SURFACE ELEVATIONS, AND RAINFALL
FLOW POINTS FP-2, FP-3, FP-4
JANUARY 2021 THROUGH DECEMBER 2022

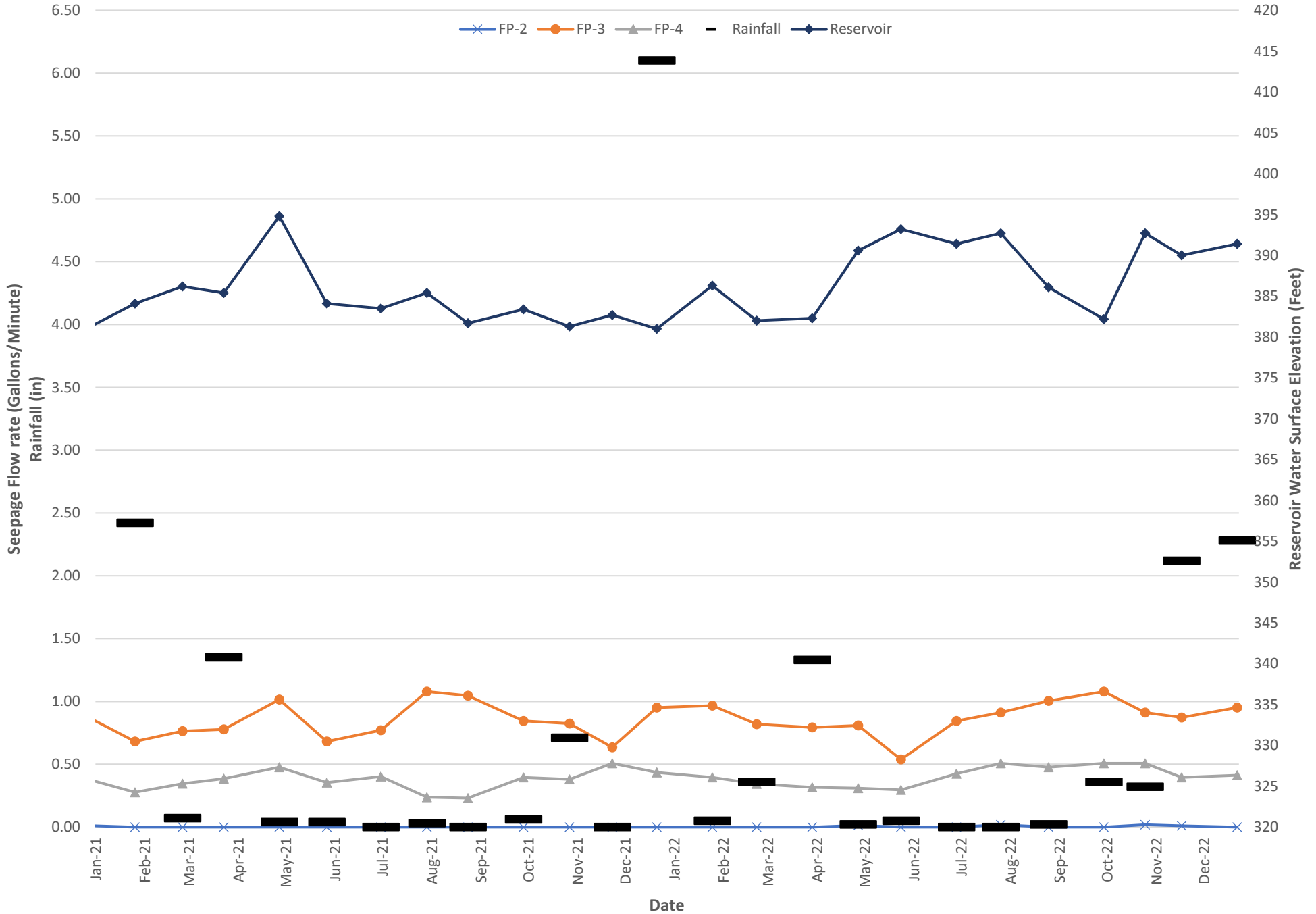


Figure 15
RATTLESNAKE CANYON DAM
2-YR SEEPAGE, RESERVOIR WATER SURFACE ELEVATIONS, AND RAINFALL
FLOW POINTS FP-5, FP-8
JANUARY 2021 THROUGH DECEMBER 2022

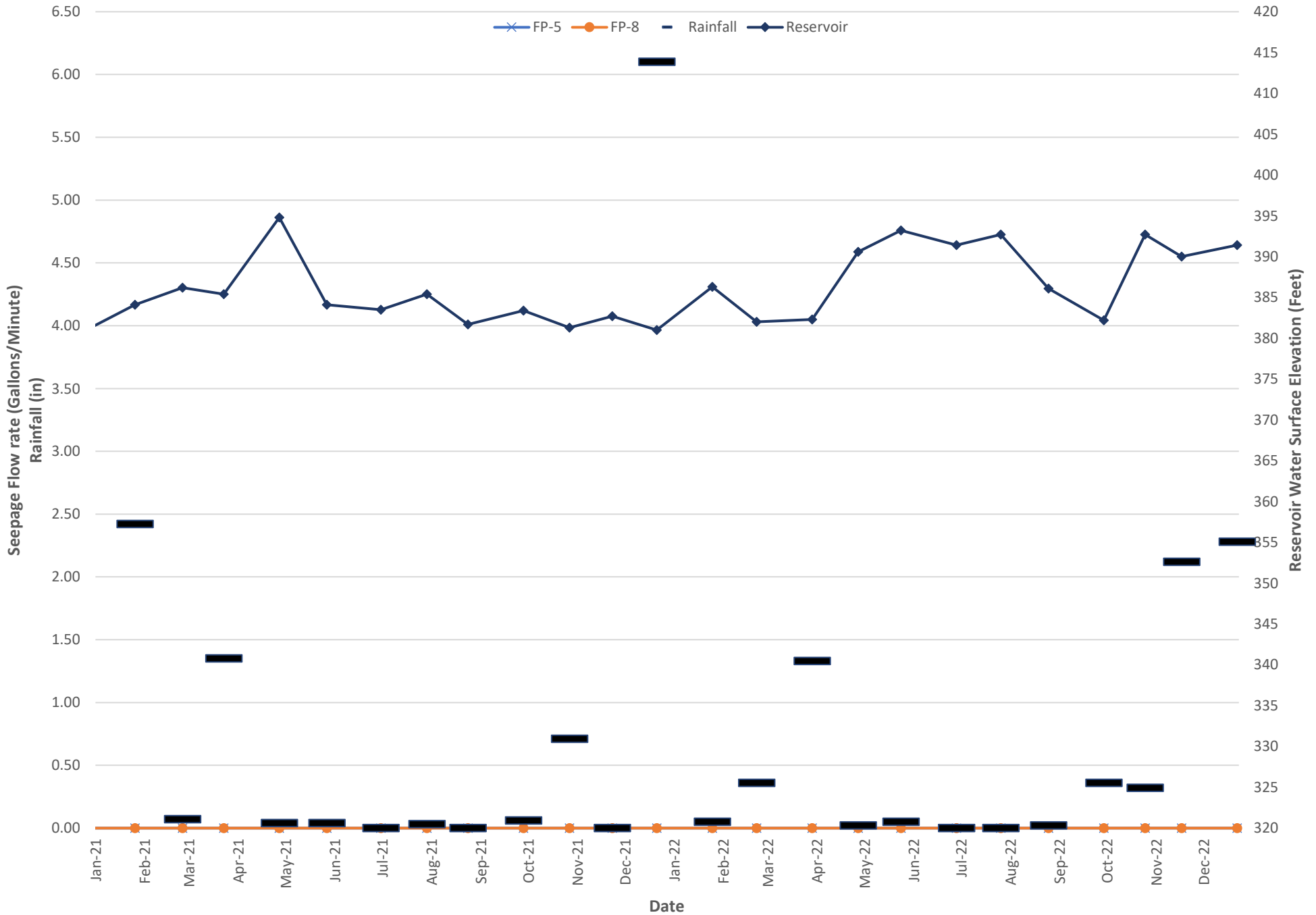


Figure 16
RATTLESNAKE CANYON DAM
HISTORICAL SEEPAGE AND RESERVOIR WATER SURFACE ELEVATIONS
FLOW POINTS FP-11, FP-1 NORTH, AND FP-1 SOUTH
JANUARY 2012 THROUGH DECEMBER 2022

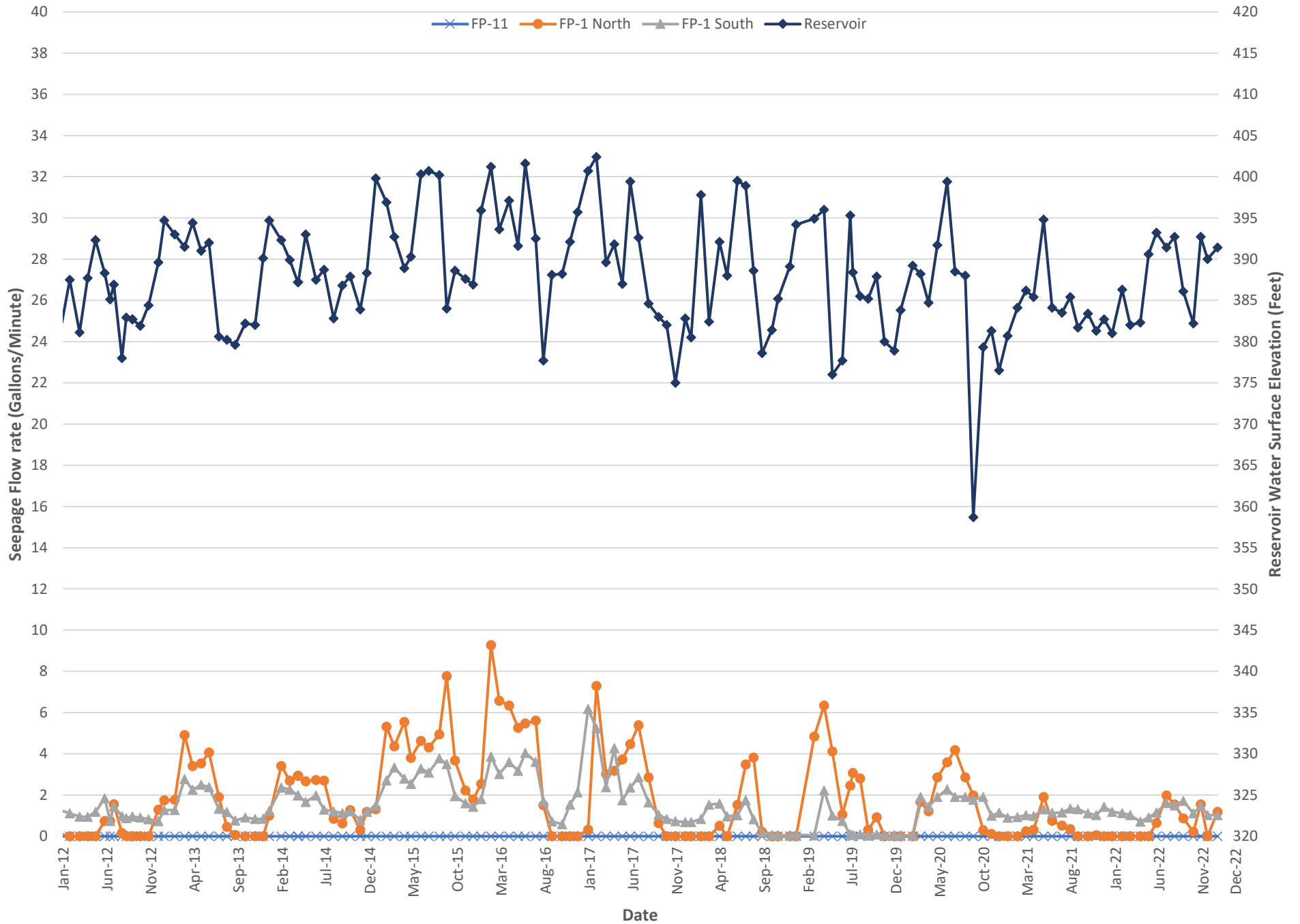


Figure 17
RATTLESNAKE CANYON DAM
HISTORICAL SEEPAGE AND RESERVOIR WATER SURFACE ELEVATIONS
FLOW POINTS FP-2, FP-3, AND FP-4
JANUARY 2012 THROUGH DECEMBER 2022

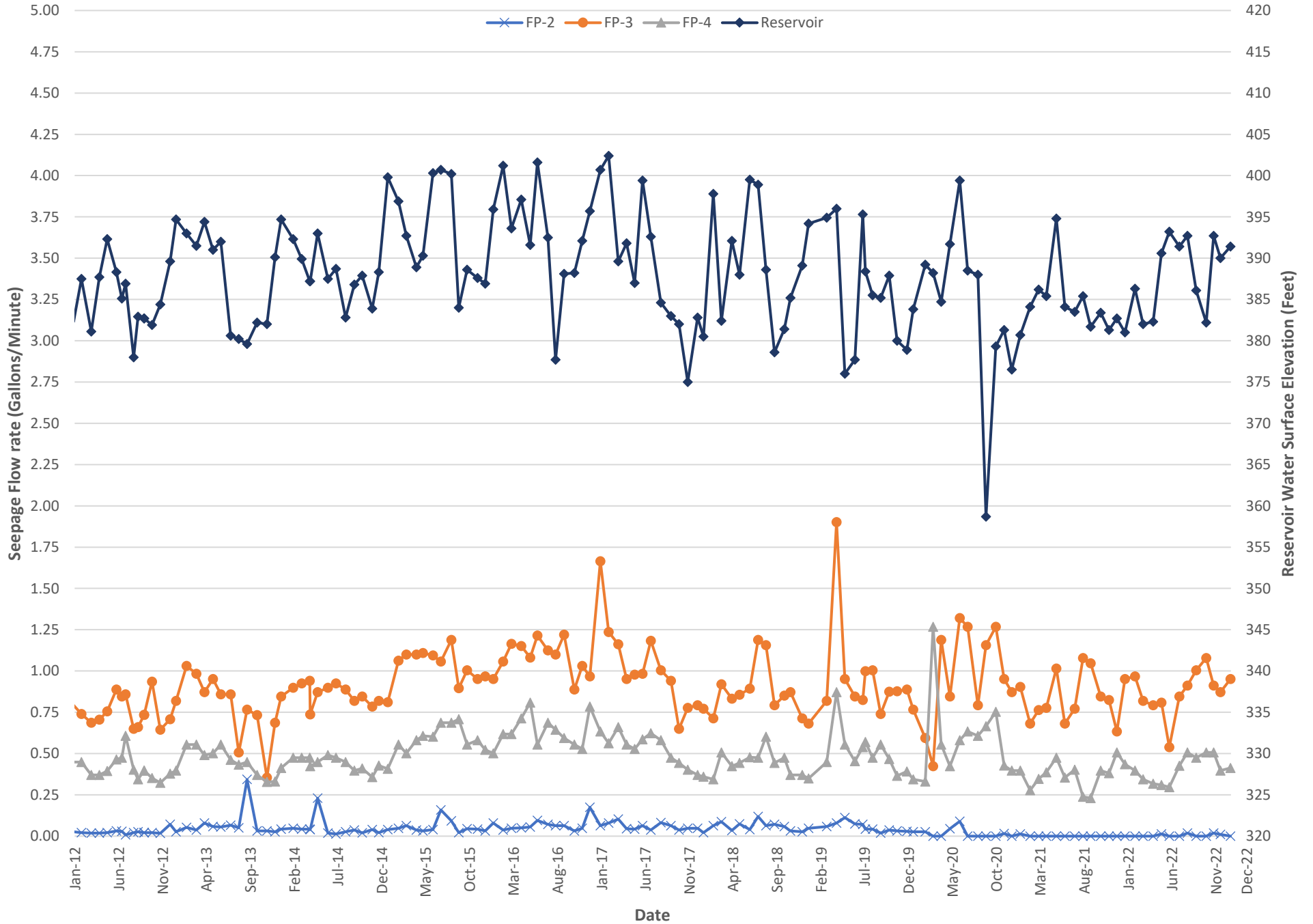


Figure 18
RATTLESNAKE CANYON DAM
HISTORICAL SEEPAGE AND RESERVOIR WATER SURFACE ELEVATIONS
FLOW POINTS FP-5, AND FP-8
JANUARY 2012 THROUGH DECEMBER 2022

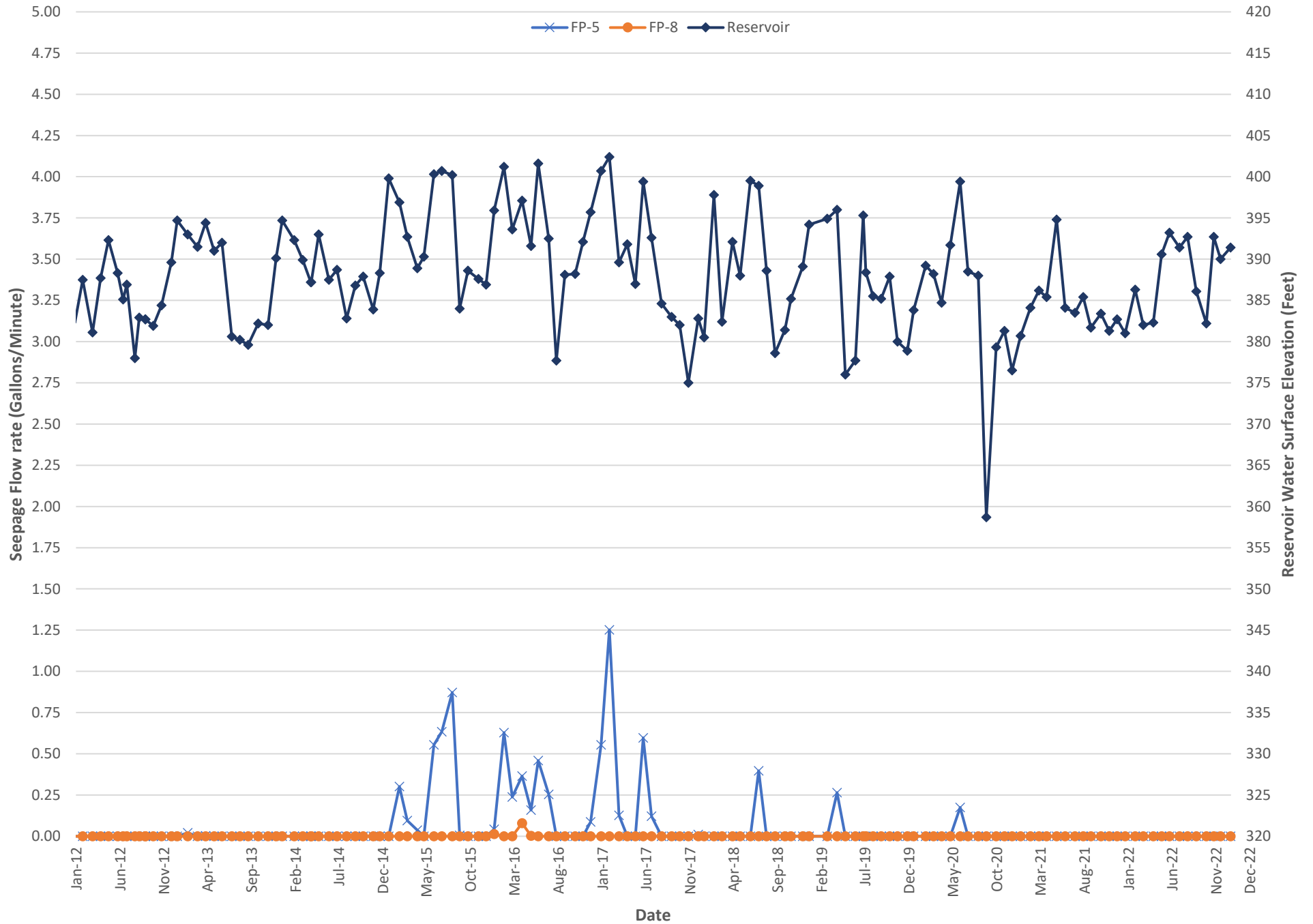


Figure 19
 RATTLESNAKE CANYON DAM
 HISTORICAL CUMULATIVE HORIZONTAL DISPLACEMENT
 SURVEY MONUMENTS A, B, B-1, C, D, E AND E-1
 1985 THROUGH 2022

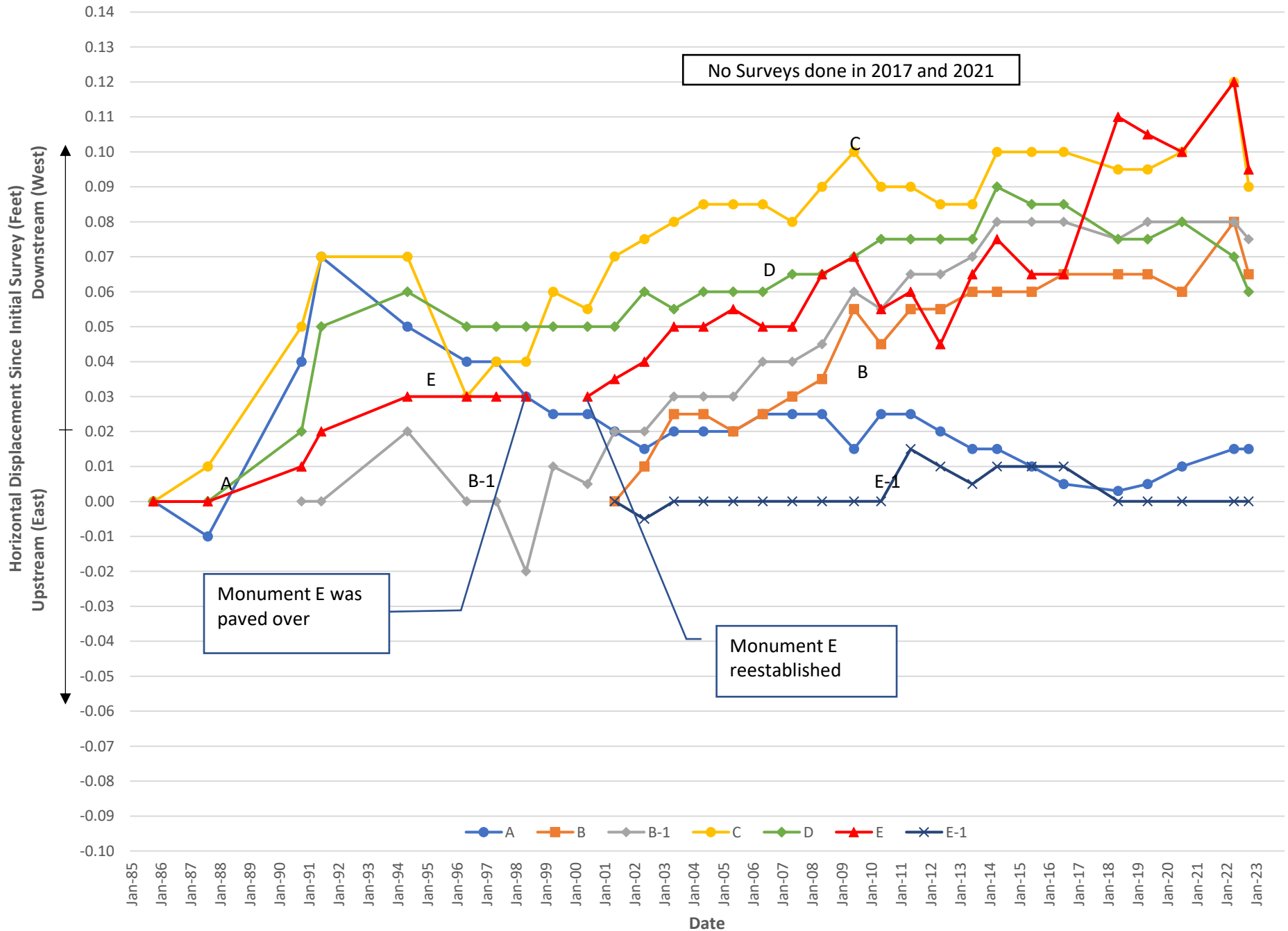
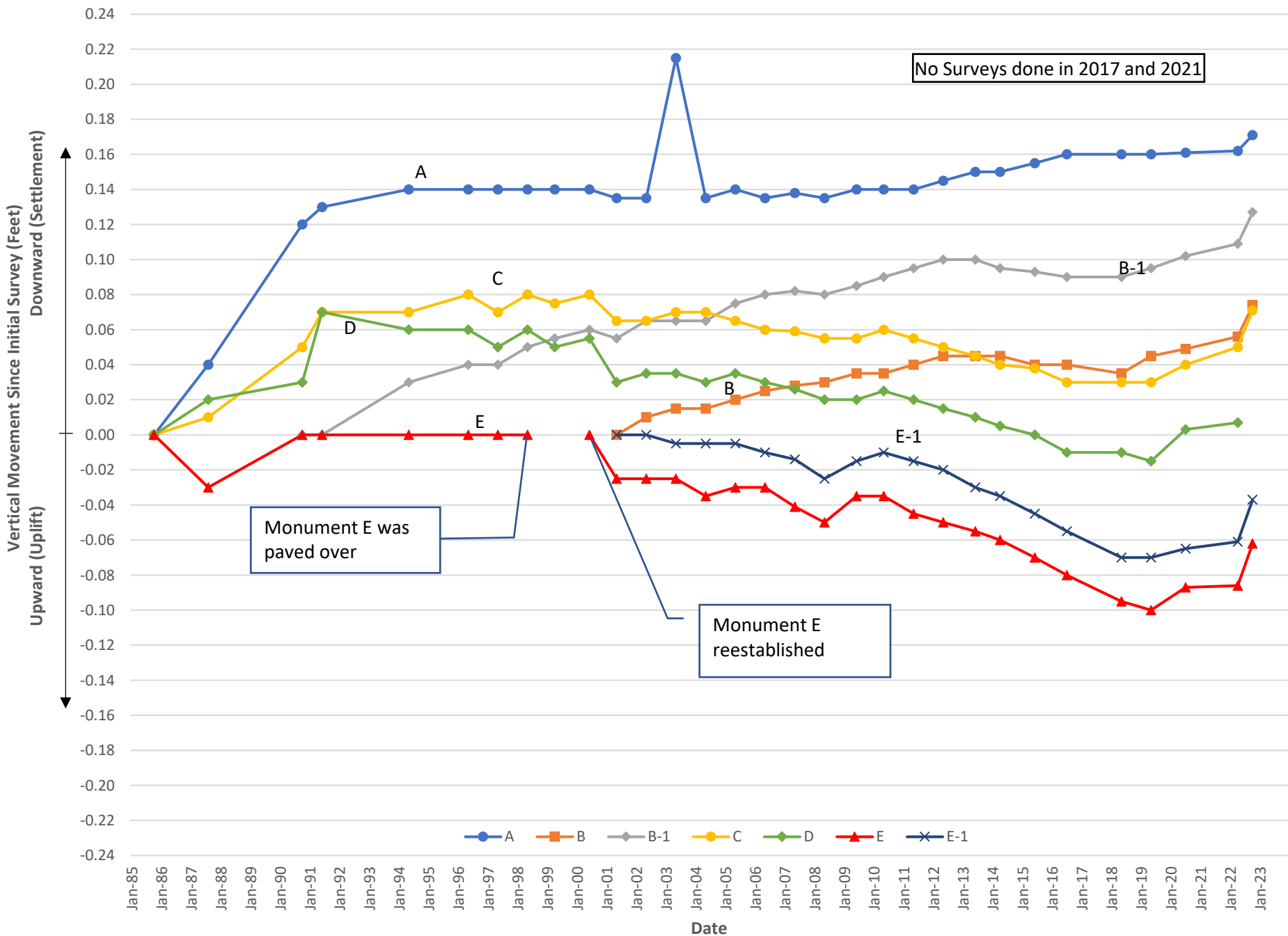


Figure 20
 RATTLESNAKE CANYON DAM
 HISTORICAL CUMULATIVE VERTICAL DISPLACEMENT
 SURVEY MONUMENTS A, B, B-1, C, D, E AND E-1
 1985 THROUGH 2022



Appendix

Inspection Photographs of Rattlesnake Canyon Dam - December 13, 2022

Reservoir Dam Valve Exercising Table

CNC Survey Report

Inspection Photographs of Rattlesnake Canyon Dam

December 13, 2022



Photo 1 AC-lined crest and upstream face looking towards right abutment. Note cracks.



Photo 2) AC-lined crest and upstream face looking towards left abutment. Note cracks.



Photo 3) Left end of AC-line upstream face and the reservoir. Note outlet control valves and cleared vegetation near groin.



Photo 4) Downstream face looking towards right abutment, photo taken from crest.



Photo 5) Spillway control section and channel upstream.



Photo 6) Spillway channel. Note hairline cracking on the right spillway wall and concrete spalling at previous repairs.



Photo 7) Hairline cracking on right spillway wall.



Photo 8) Concrete spalling at previous liner joint repairs.



Photo 9) Spillway stilling basin looking downstream. Note trees and vegetation.



Photo 10) Separation between AC pavement and spillway concrete line joint.



Photo 11) Separation between AC pavement and spillway concrete liner joint.



Photo 12) Seepage drain-pipe outfalls at the bottom of the seepage vault downstream of dam.

Reservoir Dam Valve Exercising Table

Reservoir Dam Valve Exercising

Rattlesnake Canyon Dam

Date	Top # of turns	Middle # of turns	Bottom # of turns	Main # of turns	Blow Off Valve# 2	Blow Off Valve# 1
5/7/2013	135	53	55	270	N/A	Not Turned
4/22/2014	135	53	55	270	N/A	Not Turned
4/20/2015 DSOD	135	53	55/10%	270	N/A	Exercised 100%
4/15/2016	135	53	55	270	N/A	Not Turned
6/12/2016	135	53	55	270	N/A	Exercised 100%
4/18/2017	135	53	55	270	N/A	Exercised 100%
5/2/2018 DSOD	135	53	55	270	N/A	Not Exercised
8/14/2018	135	53	55	270	Installed and exercised 100%	Exercised 100%
3/28/2019 DSOD	135	53	55	270	36	36
1/14/2020 DSOD	Not Turned	Not Turned	Not Turned	Not Turned	Not Turned	Not Turned
4/23/2020	135	53	55	270	36	36
4/27/2021	135	53	55	270	36	36
5/9/2022	135	53	55	270	36	36

CNC Survey Report



2121 Alton Pkwy | Ste 200
 Irvine | CA | 92606
 P | 949.863.0588
 www.cnc-eng.com

JOB NAME IRWD
RATTLESNAKE RESERVOIR
 JOB NO. 22-006/22-012 SRN _____
 CREW A. MORENO
R. STEWART
 DATE 10-27-2022 SHEET 1 OF 3

RESERVOIR MONITORING LAND SURVEYING NOTES

NAME STA. OFFSET

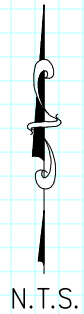
BM4 12+73.305

BRASS CAP IN WELL MONUMENT.
 HOLD FOR LINE.

E-1 11+75.125
 E 11+74.694

HOLD STA. (PUNCH MARK RIM. ON LINE)

0.085'



NOTES:

- A - REBAR/PUNCH MARK IN AC HOLE DN 0.20' (HELD 0.075' OFFSET W/LN BM4 AND E-1)
- B-E REBAR/PUNCH IN WELL MONUMENT
- E-1 PUNCH MARK ON RIM OF WELL MONUMENT
- POL SET MAG NAIL ON ORIGINAL LINE PER REPORT DATED 4-26-2022.
- TBM3 SET MAG NAIL ON ORIGINAL LINE PER REPORT DATED 4-26-2022.

WEATHER CONDITIONS: INSTRUMENT SETUP
 TEMP - 66°
 PARTLY CLOUDY SKIES
 HUMIDITY - 60.01%
 BAROMETRIC PRESSURE (INHG) - 30.05
 RESERVOIR WATER LEVEL ELEVATION - 388.6±

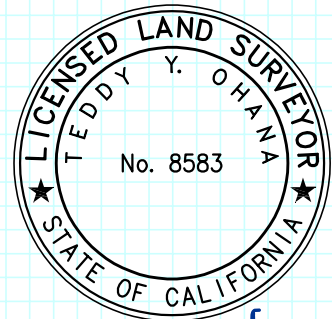
D 8+74.613

0.06'

C 5+74.605

0.10'

3+79.611 (POL)



B-1 2+77.624
 B 2+74.626

0.075'

2+81.914 (POL)

0.125'

Teddy Ohana
 TEDDY Y. OHANA PLS 8583

A 2+28.351 (POL)
 TBM3 2+14.762
 2+05.647

0.075' (PT. A, HELD OFFSET 0.075' FROM 4-26-2022 REPORT UNTIL BM3 IS REBUILT.)

HOLD FOR LINE

BM3

BM3 IN WELL MONUMENT, DESTROYED 10-7-2022

Prepared by:



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 Irvine | CA | 92606
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 www.cnc-eng.com

Date: 10/27/2022

SURVEY LEVELING NOTES
 SHEET 2 of 3

PROJECT: IRWD / Rattlesnake Reservoir – Level Report

STATION	B.S.	HI	F.S.	ADJ ELEVATION	SURVEY LEVELING NOTES
Hnskr 9004				428.256	Hunsaker Nail
	0.759	429.015			
TP			9.692	419.321	TP (Turn Point POL5)
	5.861	425.185			
A			6.034	419.149	Rebar w/punch in AC hole.
	4.521	423.672			
B			5.728	417.941	
	4.353	422.297			
B-1			4.441	417.853	
	5.517	423.373			
C			5.460	417.909	
	5.505	423.419			Rebar w/punch in Well Typical At pts B thru E
D			5.163	418.251	
	5.755	424.010			
E-1			5.224	418.782	Punch on Rim of Well
	5.109	423.895			
E			5.763	418.127	
	14.430	432.562			
BM4			3.537	429.020	Newly Levelled 10/27/2022
	3.480	432.505			
E			14.374	418.127	
	5.879	424.010			
D			5.754	418.251	
	5.141	423.397			
C			5.484	417.909	
	5.387	423.300			
B			5.354	417.941	
	5.762	423.708			
TP			4.382	419.321	TP (Turn Point POL5)

Prepared by:



2121 Alton Pkwy | Ste 200
Irvine | CA | 92606
P | 949.863.0588
www.cnc-eng.com

Date: 10/27/2022

SURVEY LEVELING NOTES
SHEET 3 of 3

PROJECT: IRWD / Rattlesnake Reservoir – Level Report

	10.206	429.533			
Hnskr 9004			1.268	428.256	Hunsaker Nail
	1.084	429.349			
TBM3			10.037	419.304	Mag Nail Online Near old BM3
	9.730	429.042			
Hnskr 9004			0.779	428.256	Hunsaker Nail
					ALL ELEVATIONS ARE ADJUSTED