Williams Fork Mine

2021 ANNUAL HYDROLOGY REPORT
Permit No. C-1981-044

Submitted to:

Colorado Division of Reclamation Mining and Safety
Denver, Colorado

Submitted by:

Moffat County Mining, LLC
Oak Creek, Colorado

May 2022

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1.0 INTRODUCTION

The following Annual Hydrology Report (AHR) presents hydrologic monitoring data from the Williams Fork underground mine sites near Craig, Colorado for the 2021 calendar year. Site locations are described below. This AHR is provided in fulfillment of reporting requirements under the Colorado State Division of Reclamation, Mining and Safety (DRMS), Permit No. C-81-044. All references to "2021" in this report refer to the 2021 calendar year (January 1, 2021 through December 31,2021). Monitoring results for prior calendar years (1983 through 2020) are presented in previous AHRs, although selected historical data (period of record – POR) are summarized in some of the tables and figures within this AHR.

Following a discussion of Site Location and Background, this AHR provides a section on the 2021 Hydrologic Monitoring Program, which is further divided into the following subsections:

1) Groundwater Monitoring
2) Surface Water Monitoring

This is followed by the Summary and Conclusions Section. Tables, Figures, and back-up documentation are located in the tabbed sections at the back of this AHR.

2.0 SITE LOCATION AND BACKGROUND

Williams Fork No. 5 and Eagle No. 6 Mines are underground coal mines located approximately seven miles south of Craig, Colorado, on State Highway 13. The mine sites, and adjacent area lie along the northern foot of the Williams Fork Mountains, which trend east to west. The elevation of the permit area ranges from a low of approximately 6,130 feet in the Big Bottom area, to a high of about 7,400 feet in the Williams Fork Mountains. The entire operation is located in Moffat County, Colorado. The general location of the site is shown on Figure 1.

There are two (2) major northwestern Colorado Rivers, which intersect the permit area. These are: 1) the Yampa River and 2) the Williams Fork River. The Yampa River runs from north to south through the permit area, while the Williams Fork River runs from south to north and intersects the Yampa River just north of the mine facilities area. The northern portion of the permit area is dominated by the Big Bottom alluvium, while the southern and eastern portions of the permit area are dominated by the Williams Fork Mountains and the river beds of the Yampa and Williams Fork Rivers.

The Eagle Mine sites are located in an area, which has been historically mined by surface and underground mining. The earliest records of mining indicate that underground mining began in this area in the late 1920's and early 1930's, while surface strip mining began around 1975. The major mines which have operated in

the past are: 1) Wise Hill (1,2,3,4), Williams Fork Strip (1,2,3), and Trapper Strip. The Trapper Strip Mine began operations in 1976 and has continued to date.

Underground mining began at the Eagle No. 5 Mine in 1972, under a subsidiary of the Zigler Coal Co. The Cyprus Empire Corporation (CEC), a subsidiary of the Cyprus Coal Company, subsequently acquired the mines from Zigler in 1982, and began operating under an approved Colorado Mine Land Reclamation Board permit in August, 1983. In 1999**,** CEC was acquired by RAG EC. In April 2004, RAG EC was acquired by Peabody Energy, with the mine owned by Peabody's subsidiary, BTU, and the mine name changing to BTU Empire Corporation (BTU EC). In December 2009, the mine name was changed to William's Fork Mine (WFM)

Hydrologic monitoring has been conducted at the mine site since 1980, primarily by CEC/RAG EC/BTU EC/WFM personnel. A private company (Two Pines Inc.) has also been contracted to assist with some of the hydrologic monitoring over the years. Water quality samples are currently analyzed by ACZ Laboratories, Inc., of Steamboat Springs, Colorado, an USEPA certified laboratory.

The Eagle No. 5 Mine, mining the "F" Coal Seam of the Cretaceous Age Williams Fork Formation, originally utilized room-and-pillar mining methods until 1985, when economics dictated a change to the longwall mining method. The aerial extent of the underground workings in the Eagle No. 5 Mine was approximately 2,040 acres in early 1990, when the No. 5 mine was sealed and mining moved to the Eagle No. 6 Mine. Full production in the Eagle No. 6 Mine began in late 1990, with coal extraction from the underlying "E" Coal Seam of the Williams Fork Formation. Coal mined at the No. 5 and No. 6 Mines was loaded on unit trains at the mine facility area and hauled by rail to market. The 5A portals and a short section of the No. 5 Mine mains were used for access to the Eagle No. 6 Mine. The aerial extent of the underground workings in the Eagle No. 6 Mine (underlying portions of the No. 5 Mine) was approximately 640 acres at in late 1995, when mining ceased. The mines were subsequently in temporary cessation (TC), until Williams Fork re-activated water monitoring during the second quarter of 2006, in anticipation of WFM considering options for future re-activation of the mine site, and because a bond release application was also being contemplated for the Utah Tract and Williams Fork Strip Pit portions of the mine property.

During the third quarter of 2013, the mine reverted back to TC monitoring (discussed further below). In July 2013 all power was shut down on the mine property. Within a month or so of the shut-down, the site substation was partially dismantled.

In May 2014, copper thieves were discovered on site and apprehended by the Moffat County Sherriff's department. The thieves' activities had resulted in $500,000 to one million dollars-worth of damage between the main warehouse and the multi-services building on site. Security cameras were subsequently installed on site, and a security company was hired to inspect the site daily.

In November 2016, WFM requested deactivation of TC status, in anticipation of upcoming reclamation of the site. Reclamation continued through 2020 and was finalized in 2021. DRMS will be updated

periodically with the status of the reclamation.

3.0 2021 HYDROLOGIC MONITORING PROGRAM

The WFM hydrologic monitoring program includes data collected specifically to meet requirements of the DMG, as well as data collected to meet the requirements of the Colorado Wastewater Discharge Permit System (CDPS). Note that "CDPS" parameters were formerly referred to as National Pollutant Discharge Elimination System (NPDES) parameters in prior AHRs. Specific monitoring locations are illustrated on Figure 2.

In June 2001, Technical Revision TR01-32 was approved, allowing suspension of many DRMS hydrologic monitoring requirements while the mine was in temporary cessation (TC). In 2005 BTU EC began to examinate options for future re-activation of the mine site. In view of this considerations, BTU EC reverted back to the active monitoring plan (pages 1 – 14 of Exhibit 29), during the second quarter of 2006. In the third quarter of 2013 the mine reverted back to temporary cessation monitoring, as it was decided that there were no short term plans to reactivate mining.

WFM personnel is responsible for adhering to the monitoring requirements of its CDPS permit. Note that data acquisition required under the TC monitoring plan, only include sites:

- Bedrock well TR-7A,
- Alluvial well AVF-5,
- Surface water sites (Williams Fork) WF-1, WF-2,
- CDPS (Permit CO-0034142) sites:
    - 1) Mine discharge No. 5 Mine sump [CDPS Outfall 003, a.k.a. site 5D];
    - 2) Mine discharge 7 North Angle Well Bore [CDPS Outfall 024, a.k.a. site 9P3], and
    - 3) Spring - No. 1 StripPit [CDPS Outfall 022, a.k.a. site 1SP].

In 2017 TC was lifted and reclamation of the mine site began.

Table 1A presents a summary of hydrologic monitoring requirements for these sites under TC (modified from TR01-32, Appendix D of the TC monitoring plan). Table 1B outlines monitoring and sites required when off of TC. Water quality monitoring includes field parameters (Table 2), surface water quality parameters under TC (Table 3A), and off of TC (Table 3B). CDPS parameters (Table 4) are the monitoring requirements page from CDPHE CDPS permit CO-0042142.

3.1 GROUNDWATER MONITORING

3.1.1 BEDROCK WELLS

Three sandstone aquifers are found beneath the subject site. In ascending order, they are: Trout Creek

Sandstone, Middle Sandstone, and Twentymile Sandstone. The Eagle No. 5 and Eagle No. 6 Mines are located between the Trout Creek Sandstone and the Middle Sandstone.

Water Levels

Trout Creek Sandstone: Water level measurements in the Trout Creek Sandstone No. 5 Mine well are shown on Figure 3. Historical annual water level fluctuations of 20 to 200 feet have been observed at this well but no seasonal pattern is evident. Note that recent water levels (2006 to date) were lower than levels measured prior to TC. This drop is apparently from consistent subsurface dewatering with the No. 5 mine pump. Levels remained relatively consistent from 2006 through 2008. There was a general rise in water level of about 40 feet in 2009, through 2012. This is due to periodic down time from malfunctions of the No. 5 mine pump. During the last quarter of 2012, the pump failed, resulting in no discharge. The pump was replaced in the spring of 2012, but stopped operating in July 2013 when power was removed from the site. Note the higher water level for No 5 at the last reading indicates how the water level had risen without pump dewatering over the years. In September of 2020 reclamation efforts made it impossible to get a reading during the 4th quarter due to well obstruction. Water level readings resumed in 2021. The former Okie Plaza Trout Creek well was abandoned in June 1994 as mining advanced through its location.

Middle Sandstone: The water levels in the Middle Sandstone formation as measured in wells TR-4, TR-7a, 81-01, 83-01, 83-02, and 83-03. Historically these show fluctuations which are apparently related to dewatering and past subsidence associated with Mines 5 and 6. Wells TR-4 water levels appear to be slightly rising since about 2008 (Fig. 4). Levels in TR-7A (Fig. 5) have risen about 50 feet since 2013. There was one outlier in the spring of 2020 that dropped the well level by 40 feet but the well has since returned to the prior level. It is unclear if there was a reading error or what caused the drop. The water level has remained steady through 2021. 81-01 in 2021 is relatively consistent with that seen prior to TC (Fig. 6). The water levels in 83-01 (Fig. 7) have been on the rise since monitoring was reactivated in 2006, with consistent seasonal fluctuations. The water levels in well 83-02 (Fig. 8) are consistent with those found since monitoring was reactivated in 2006. The water level decline of about 150 feet from 1987 to mid 1990 in well 83-02 was determined to be related to mine dewatering as Mine 5 workings approached the location of the well. The more abrupt 200 foot decline in water levels observed in 1990 is thought to be a drawdown response due to subsidence as it is located only a few hundred feet horizontally from an F seam longwall panel which was mined in a similar time frame. The water level stabilized until 1994 when it recovered to the 1983 levels. Water levels in 83-02 have been stabile since 2006.

Wells TR-4 and 83-03 are located at greater distance horizontally from the active operations for mines 5 and 6. Water levels in Well TR-4 (Fig. 4) historically appear to be related to the fluctuations observed on all three of the down gradient Middle Sandstone Wells: 81-01, 83-01 and 83-02. The water level decline in TR-4 prior to 1984 and the subsequent recovery up to 1988 closely parallels the trends observed in Wells 81-01 and 83-01. The decline during the first part of 1991 also parallels the trend in these two wells. However, the

rapid decline during the last part of 1989 and the first part of 1990 appears to follow the trend observed in Well 83-02 although the magnitude of decline is considerably less. Unusually large fluctuations for TR-4 for 1999 through 2000 have been attributed to a faulty pressurized line system.

Well 83-03 (Fig.9) is the Middle Sandstone monitoring well located furthest (more than 1.5 miles) from active underground operations for Mines 5 and 6. The overall trend from 1984 through 2000 and again in 2006 to date suggests a similar trend to the other Middle Sandstone wells. The long term decline could be a pressure response due to the overall drop in potentiometric levels in the Middle Sandstone in the vicinity of Mines 5 and 6. The water levels in the Middle Sandstone wells had either recovered or stabilized in 1995. Note that in early 2008 and 2009 there were drops in the water level, after which water levels stabilized and started to rise again in 2012. The reason for the drops is unclear. A larger drop of over 125 feet occurred after the TC ended in 2017 and monitoring resumed, the water has since stabilized and is on a steady mild incline.

Historically, the groundwater gradient in the Middle Sandstone in the vicinity of the mining operation generally decreases from the southeast to the northwest.

Twentymile Sandstone: Monitoring results to date (Fig. 10) showed no apparent change in the water levels in the Twentymile Sandstone that could be attributable to mining activities. During 2019, wells 259 and 84-01 remained relatively stable as compared to 2006 through 2013, although 84-01 exhibited a slight drop in water level. 9 Mine well has exhibited a stable level since the beginning of monitoring.

Historically, the groundwater gradient in the Middle Sandstone in the vicinity of the mining operation generally decreases from the southeast to the northwest.

Water Quality

Trout Creek Sandstone: The field parameter data for No. 5 Mine well does not suggest any significant mining related water quality impacts to the Trout Creek Sandstone. The water quality data for this Trout Creek Sandstone well is summarized on Table 5. A plot of field conductivity measurements is presented in Figure 11. Note that conductivity values for the No. 5 Mine well following the 2006 removal from TC appear elevated compared to earlier historical values. This may be related to consistent pumping at this site. Note that the No. 5 dewatering pump was damaged during the fourth quarter of 2010, and was removed and replaced with another pump in June 2012 when the area was dry enough to bring in a crane. In July 2013 all

power was removed from the facility, and pumping ceased.

Middle Sandstone: The field parameter data for the three Middle Sandstone wells (TR-4, TR-7A, 81-01) was reviewed. Water quality data are summarized in Tables 6 through 11. Plots of field conductivity for these Middle Sandstone Wells are presented in Figure 12. The conductivity measurements recorded in wells TR-7A , TR-4, and 81-01 remain stable as compared to recent historic values. Note that wells TR-4 and 81-01 exhibited elevated conductivity values after monitoring was re-initiated in 2006 when removed from TC. The reason for that effect is unknown.

Wells TR-7A and TR-4 have historically indicated a slight reduction in concentrations of major ions over time. Historically, all three wells have shown a reduction in concentrations of iron which shows considerable variation in concentrations. The general reduction in iron concentrations may be the result of better purging of well bore volumes prior to sampling.

Twentymile Sandstone: The 2021 field parameter data for the two Twentymile Sandstone wells 259, does not suggest a significant impact or trend. Figure 13 shows historical conductivity data. The 9 Mine well exhibited a rise in conductivity in 2010, appeared to stabilize in mid-2011 and went up again in 2016 but has since stabilized and is on a mild downward trend. Water quality data for these Twentymile Sandstone wells are summarized in Tables 12 through 14. Measurements for well 259 during 2012 appeared to follow the 9 mine well increase in conductivity, almost mirroring it but returning to “normal” level in 2013 only to have another spike in 2020. The two jumps in conductivity may be related, however an explanation is unknown at this time. The conductivity for the 259 jumped back down in 2021 and will be watched during 2022.

In summary, elevated conductivity values were detected in the Trout Creek and Middle Sandstones. However the overall water quality of these, as well as the Twentymile Sandstone does not indicate obvious adverse impacts related to Mines 5 and 6.

3.1.2 MINE WATER DISCHARGE

The 7 North Angle (7NA) well site (associated with CDPS Outfall 024, a.k.a. site 9P3 by DRMS) was a mine dewatering well site that would eventually discharge into the Williams Fork River. The Eagle No. 5 Mine sump discharge is CDPS Outfall 003, a.k.a. site 5D. It is also a mine dewatering pump. Under TC, monitoring of these sites remains the same as in the active mining monitoring plan, however 9P3 has not discharged since 2001, and no near future discharge is anticipated.

Site 5D has not discharged since about July 2013, when power was removed from the site. No near future discharge is anticipated from this site either. Please consult prior AHRs for historical data.

There was no active pumping performed at the mine since July 2013. A plot of the measured discharge for this point is presented in Figure 14. Figure 15 is a historical monthly tabulation of flow measurements.

3.1.3 ALLUVIAL WELLS

Under TC, water data in the Williams Fork River Alluvium is monitored via alluvial well AVF-5, which is located adjacent to the underground discharge sediment ponds area (See Figure 2). Under TC, AVF-5 is measured for water level and field parameters on an annual basis (between July 20th and August 30th) concurrent with the Williams Fork surface water sampling (site WF-1). No water quality analyses were required for AVF-5 under TC.

Out of TC, alluvial wells AVF-3, AVF-5, and AVF-6 require quarterly water quality monitoring (See Table 1B). These wells are located in the general area of the loadout facilities and underground discharge sediment ponds. Historically, groundwater levels in the alluvium have remained fairly regular, with normal seasonal fluctuations, apparently related to changes in river levels. POR groundwater levels are plotted in Figure 16. The data indicates no impact on alluvial water levels related to mining.

Field parameter data for these alluvial wells are presented in Tables 15 through 17. POR water quality data is provided in Tables 15A through 17A. A plot of field electric conductivity versus time is presented in Figure 17. There has been no conclusive evidence of seasonal variation of water quality in the alluvium. The wells were within historic levels in 2021.

3.2 SURFACE WATER MONITORING

3.2.1 Rivers

There are two rivers in the vicinity of the mine site. The Yampa River, flows in a southeasterly direction across the mine site. The Yampa River drains most of the northwest corner of Colorado and part of south-central Wyoming. The second river is the Williams Fork, which is a major tributary of the Yampa River. The Williams Fork River joins the Yampa River on the mine property. Monitoring data is collected for the Williams Fork River. The Williams Fork River gaging station (WF-2) is near the confluence with the Yampa River, downstream of the Eagle No. 5 Mine discharge. The staff gage (WF-1) is located upstream of the mine discharge points. WF-2 is also monitored concurrent with WF-1.

The flow data for WF-2 was historically provided by the United States Geologic Survey (USGS) via one gaging station and one staff gage for collection of Williams Fork River flow data (former site 09249750). however, their monitoring of the Williams Fork stations was discontinued in 2001. In 2010 the State Division of Water Resources (Office of State Engineer) reactivated the site. Data for the former USGS site can be found on the State Water Resources website under station No. WMFKMHCO. A copy of their 2021 daily

average flow data is provided at the back of this AHR under Support Data.

Historically, comparisons between up gradient site WF-1, and down gradient site WF-2, have not show any stream depletion impacts from mine dewatering. Summaries of WF-1 and WF-2 water quality data are presented in Tables 18 through 19. POR data is provided in Tables 18A and 19A, respectively. A plot of upstream and downstream dissolved solids measurements for the river is presented in Figure 18. Water quality data does not show any significant variation from expected values. The comparisons of data from the upstream and downstream station on the Williams Fork River indicate that there is no detectable effect of mining on river water quality. As expected, dissolved solids decrease with increasing flow rate in the rivers, due to dilution from runoff.

3.2.2 Springs

There is one active spring on the mine site area, known as the No. 1 Strip Pit Discharge, or 1SP. There are a few other ephemeral springs and local permanent "damp spots" in the area; however, their combined flow is normally less than 5-10 gpm, and therefore are not significant. The 1SP Discharge is a CDPS monitoring point (Outfall 022). There is no sediment pond associated with this spring. Spring water runs down a narrow path through a vegetative filter, drops down onto an isolated sand bar, and during the spring discharges directly to the Williams Fork River. The POR discharges for the 1SP are presented in Figure 19. 2021 discharge data is presented in Figure 20. The site flows sporadically during the spring. The discharge typically begins in March during the spring melt, and may be dry by the end of June. 1SP is typically dry from July through November, and freezes over from December into February/March. 2021 was particularly dry, with water present late March through May.

Table 20 provides 2021 data for this site, while Table 20A provides POR data. A plot of POR total dissolved solids for 1SP is presented in Figure 21, and POR iron concentrations are presented on Figure 22. Figure 21 indicates TDS concentrations that are consistent with historic concentrations. Figure 22 illustrates the variable nature of total recoverable iron concentrations in 1SP discharge. Since 2002 there has been slight general upward trend in iron concentrations, however these levels are still within historic ranges seen for this site. We will continue to monitor this trend.

3.2.3 Ponds

There was no recorded discharge from any on-site sediment ponds in 2021.

4.0 SUMMARY AND CONCLUSIONS

The subject mine site ceased active mining operations in 1995, thus total mined acreage has not changed since then. The mine was subsequently placed in Temporary Cessation in 2001. The TC status ended in the second quarter of 2006, when WFM re-activated full water monitoring activities in anticipation of future re-activation of the mine site, and because a bond release application was also being contemplated for the Utah Tract and Williams Fork Strip Pit portions of the mine property. After the second quarter of 2013, the mine

was again placed in TC, as no near future mining activities were anticipated. The site was taken off TC in November 2016 for reclamation and will continue until further notice. DRMS will be notified of our intensions well in advance.

No significant, unpredicted, or adverse environmental impacts were noted during hydrologic monitoring for 2021. All environmental precautions have been taken to a max extent during the reclamation process. BMP are being followed. During 2018 most of the major structures were demolished and removed from site. Final grading started in 2019 and reclamation will be finalized in 2022.

TABLES

TABLE 1A
SUMMARY OF HYDROLOGIC MONITORING STATIONS UNDER TEMPORARY CESSATION

BEDROCK WELLS

STATION NAME	WATER SOURCE	DATUM ELEVATION (ft)	DEPTH (ft)	SCREEN INTERVAL (ft)	FREQUENCY OF MEASUREMENT*			
					WATER LEVEL	FIELD PARAMETER**	FULL QUALITY**	COMMENTS
TR-7A	Middle SS	6,244.30	740	624-725	A	A	NA	

ALLUVIAL WELLS

STATION NAME	WATER SOURCE	DATUM ELEVATION (ft)	DEPTH (ft)	FREQUENCY OF MEASUREMENT*			
				WATER LEVEL	FIELD PARAMETER**	FULL QUALITY**	COMMENTS
AVF-5	Wms. Fk. Alluvial	6,132.59	16	A	A	NA	.

MINE DISCHARGES

STATION NAME	WATER SOURCE	DATUM ELEVATION (ft)	FREQUENCY OF MEASUREMENT*				
			WATER LEVEL	FIELD PARAMETER**	CDPS	FULL QUALITY**	COMMENTS
No. 5 Mine Sump	F Seam	6,300-5,600	W	W	Outfall 003 (5D)	S/Q	No Discharge in 2014
7 N. Angle Sump	F Seam		W	W	Outfall 024 (9P3)	S/Q	No Discharge in 2014

SURFACE WATERS

STATION NAME	WATER SOURCE	DATUM ELEVATION (ft)	FREQUENCY OF MEASUREMENT*				
			WATER LEVEL	FIELD PARAMETER**	CDPS	FULL QUALITY**	COMMENTS
WF-1	Wms. Fk. Upstrm	6,142.39	A	A	NA	A	
WF-2	Wms. Fk. Dwnstrm	6,119.87	A	A	NA	A	

SPRINGS

STATION NAME	WATER SOURCE	DATUM ELEVATION (ft)	FREQUENCY OF MEASUREMENT*				
			WATER LEVEL	FIELD PARAMETER**	CDPS	FULL QUALITY**	COMMENTS
No. 1 Strip Pit	Spoils	6,120.00	W	W	Outfall 022 (1SP)	S/Q	Limited discharge in 2014

* W=Weekly, S=Semi-Monthly, M=Monthly, Q=Quarterly, A=Annually

** Surface water parameters for surface water stations, and CDPS parameters for mine discharges and No. 1 Strip Pit

TABLE 1B
SUMMARY OF HYDROLOGIC MONITORING STATIONS
BEDROCK WELLS

STATION NAME	WATER SOURCE	DATUM ELEVATION (ft)	DEPTH (ft)	SCREEN INTERVAL (ft)	FREQUENCY OF MEASUREMENT*			COMMENTS	
					FLOW LEVEL	FIELD PARAMETER**	FULL QUALITY**		
No. 5 Mine Well	Trout Creek SS	6,143.62	437	400-437	Q	Q	A	Water Supply	No Power
Okie Plaza Well	Trout Creek SS	6,551.68	800					Abandoned 6/94	
TR-4	Middle SS	6,308.30	1,335	1,230-1,330	Q	Q	A		
TR-7A	Middle SS	6,244.30	740	624-725	Q	Q	A		
81-01	Middle SS	6,413.00	533	384-533	Q	Q	A		
83-01	Middle SS	6,172.13	509	405-509	Q				
83-02	Middle SS	6,678.50	708	620-708	Q				
83-03	Middle SS	6,131.22	1,640	1,520-1,640	Q				
259	Twentymile SS	6,128.00	104	18-104	Q	Q	A		
84-01	Twentymile SS	6,307.47	962	585-959	Q				
No. 9 Mine Well	Twentymile SS	6,383.29	600		Q	Q	A	Water Supply	

* C=Continuous, D=Daily, W=Weekly, S=Semi-Monthly, M=Montly, Q=Quarterly, A=Annually
** Groundwater Parameters

TABLE 1B - CONTINUED
SUMMARY OF HYDROLOGIC MONITORING STATIONS

ALLUVIAL WELLS

STATION NAME	WATER SOURCE	DATUM ELEVATION (ft)	DEPTH (ft)	FREQUENCY OF MEASUREMENT* FLOW LEVEL	FIELD PARAMETER**	FULL QUALITY**	COMMENTS
AVF-3	Wms. Fk. Alluvial	6,137.95	17	Q	Q	Q	
AVF-5	Wms. Fk. Alluvial	6,132.59	16	Q	Q	Q	Replaced AVF-5 9/82
AVF-6	Wms. Fk. Alluvial	6,146.23	16	Q	Q	Q	
9BF	9MN Waste Pile	-	-	Q	Q	Q	

MINE DISCHARGES

STATION NAME	WATER SOURCE	DATUM ELEVATION (ft)	FREQUENCY OF MEASUREMENT* FLOW LEVEL	FIELD PARAMETER**	NPDES	FULL QUALITY**	COMMENTS
No. 5 Mine Sump	F Seam	6,300-5,600	W	W	S/Q	--	NPDES # 003
7 N. Angle Sump	F Seam		W	W	S/Q		NPDES #024 (9P3)

SURFACE WATERS

STATION NAME	WATER SOURCE	DATUM ELEVATION (ft)	FREQUENCY OF MEASUREMENT* FLOW LEVEL	FIELD PARAMETER**	NPDES	FULL QUALITY**	COMMENTS
WF-1	Wms. Fk. Upstrm	6,142.39	M	M	--	Q	
WF-2	Wms. Fk. Dwnstrm	6,119.87	C	M	--	Q	

SPRINGS

STATION NAME	WATER SOURCE	DATUM ELEVATION (ft)	FREQUENCY OF MEASUREMENT* FLOW LEVEL	FIELD PARAMETER**	NPDES	FULL QUALITY**	COMMENTS
No. 1 Strip Pit	Spoils	6,120.00	W	W	S/Q	--	NPDES #022

* C=Continuous, D=Daily, W=Weekly, S=Semi-Monthly, M=Monthly, Q=Quarterly, A=Annually

** Surface water parameters for surface water stations, ground water parameters for spring stations, and NPDES parameters for mine discharges and No. 1 Strip Pit

TABLE 2
FIELD PARAMETERS

PARAMETER	SAMPLE SOURCE		
	Ground Water	Surface Water	NPDES
Temperature	X	X	X
Conductivity	X	X	X
pH	X	X	X
Suspended Solids		X	
Flow		X	X
Depth	X		

TABLE 3A
FULL SUITE OF WATER QUALITY ANALYSES
UNDER TEMPORARY CESSATION

PARAMETER	SURFACE WATER
Conductivity	**X**
pH	**X**
Acidity (as CaCO3)	**X**
Solids, Total Dissolved	**X**
Solids, Total Suspended	**X**
Chloride	**X**
Iron, Total Recoverable	**X**
Manganese, Total Recoverable	**X**

TABLE 3B
FULL SUITE OF WATER QUALITY ANALYSES

PARAMETER	GROUND WATER	SURFACE WATER
Conductivity*	X	X
pH	X	X
Alkalinity (CaCO3)	X	
Acidity (as CaCO3)		X
Solids, Dissolved		X
Suspended		X
Hardness	X	
Calcium	X	
Magnesium	X	
Sodium	X	
Bicarbonate (as HCO3)	X	
Carbonate (as CO3)	X	
Chloride	X	X
Sulfate	X	
Arsenic	X	
Cadmium	X	
Lead	X	
Mercury	X	
Selenium	X	
Iron	X	X
Manganese	X	X
Zinc	X	
Boron	X	
Molybdenum	X	
Nitrate (as N)	X	

* umhos/cm3 @ 25 C

Outfalls 003A, 022A, 024A

Effluent Parameter	Effluent Limitations Maximum Concentrations			Monitoring Requirements	
	30-Day Average	7-Day Average	Daily Maximum	Frequency	Sample Type
Effluent Flow (MGD)	Report		Report	Monthly	Instantaneous
Temp Daily Max (°C) Beginning May 1, 2013			Report	Continuous	Recorder
Temp MWAT (°C) Beginning May 1, 2013		Report		Continuous	Recorder
pH (su)			6.5-9	2 Days/Month	Grab
TSS (mg/l)	35		70	2 Days/Month	Grab
Oil and Grease (mg/l)			10	2 Days/Month	Visual
TDS (mg/l)	Report		Report	Quarterly	Grab
Arsenic, Tot (ug/l)	Report			Monthly	Grab
As, PD (µg/l)			Report	Monthly	Grab
Cd, PD (µg/l)	Report		Report	Monthly	Grab
Cr, TR (µg/l)			Report	Monthly	Grab
Cr+3, TR (µg/l)			Report	Monthly	Grab
Cu, PD (µg/l)	Report		Report	Monthly	Grab
Fe, TR (µg/l)	1,000		6,000	2 Days/Month	Grab
Pb, PD (µg/l)	Report		Report	Monthly	Grab
Mn, PD (µg/l)	Report		Report	Monthly	Grab
Hg, Tot (µg/l)	Report			Monthly	Grab
Ni, PD (µg/l)	Report		Report	Monthly	Grab
Se, PD (µg/l)	Report		Report	Monthly	Grab
Ag, PD (µg/l)	Report		Report	Monthly	Grab
Zn, PD (µg/l)	Report		Report	Monthly	Grab
Sulfide (mg/l)	Report			Monthly	Grab
WET, chronic					
Pimephales Lethality			Stat Diff & IC25 ≥ IWC	Annual	3 Grabs / Test
Ceriodaphnia Lethality				Annual	3 Grabs / Test
Pimephales Toxicity			Report Stat Diff & IC25	Annual	3 Grabs / Test
Ceriodaphnia Toxicity				Annual	3 Grabs / Test

ALTERNATE LIMITATIONS

Any discharge or increase in the volume of a discharge caused by precipitation within any 24-hour period less than or equal to the 10-year, 24-hour precipitation event (or snowmelt of equivalent volume) may comply with the following limitations subject to burden of proof requirements described in Part I.B.4.

The following limits may be substituted for those contained in the previous table. All other parameters remain unchanged.

Table: 5 **2021 Annual Hydrology Report**

Williams Fork Mine **Water Year Monitoring Data**

Site: 5MN, NO. 5 Mine Well, Trout Creek Sandstone Datum: 6143.62

Date	2/9/2021	4/14/2021	9/19/2021	12/12/2021
Depth to Water (FT)	26.36	24.58	20.74	17.61

POWER HAS BEEN DISCONNECTED AND WATER LEVEL IS TOO LOW TO OBTAIN SAMPLE SINCE 2013

Table: 6 **2021 Annual Hydrology Report**

Williams Fork Mine **Water Year Monitoring Data**

Site: T4, Well TR-4, Middle Sandstone Datum: 6308.3

			Date	2/9/2021		4/14/2021		9/19/2021		12/12/2021	
			Depth to Water (FT)	14.87		11.76		15.95		11.91	
Type	**Parameter**	**Fraction**	**Units**	**Result**	**Detection**	**Result**	**Detection**	**Result**	**Detection**	**Result**	**Detection**
ANION	Alkalinity, Bicarbonate as CaCO3	N	MG/L			493	Y				
ANION	Alkalinity, Carbonate as CaCO3	N	MG/L			46.9	Y				
ANION	Chloride	N	MG/L			26.1	Y				
ANION	Sulfates	N	MG/L			474	Y				
CATION	Calcium	D	MG/L			24.4	Y				
CATION	Magnesium	D	MG/L			12.8	Y				
CATION	Sodium	D	MG/L			382	Y				
FIELD	pH, Field	N	S.U.	8.53	Y	8.47	Y	8.56	Y	8.49	Y
FIELD	Specific Conductivity, Field	N	UMHOS/CM	2290	Y	2210	Y	2290	Y	2180	Y
FIELD	Temperature, Field	N	DEG-C	11.3	Y	10.9	Y	11	Y	10.8	Y
NUTRIENT	Nitrate as NO3	N	MG/L			0.05	N				
NUTRIENT	NO3-NO2 Nitrogen	N	MG/L			0.1	N				
PHYSICAL	Alkalinity as CaCO3, @ pH 4.5	N	MG/L			540	Y				
PHYSICAL	Hardness as CACO3	N	MG/L			114	Y				
PHYSICAL	Hydroxide as OH	N	MG/L			20	N				
PHYSICAL	pH, Lab	N	S.U.			8.6	Y				
PHYSICAL	Specific Conductivity, Lab	N	UMHOS/CM			1920	Y				
PRIMARY	Arsenic	D	UG/L			1	N				
PRIMARY	Cadmium	D	UG/L			0.25	N				
PRIMARY	Lead	D	UG/L			0.11	Y				
PRIMARY	Mercury	D	UG/L			1	N				
PRIMARY	Selenium	D	UG/L			0.25	N				
SECONDARY	Iron	D	UG/L			122	Y				
SECONDARY	Manganese	D	UG/L			48	Y				
SECONDARY	Zinc	D	UG/L			50	N				
TRACE	Boron	D	UG/L			175	Y				
TRACE	Molybdenum	D	UG/L			100	N				

Table: 6A **2021 Annual Hydrology Report**

Williams Fork Mine **Period of Record**

Site: T4, Well TR-4, Middle Sandstone Datum: 6308.3

Type	Parameter	Fraction	Units	Start Date	End Date	Count	Average	Median	Max	Min	STD
ANION	Alkalinity, Bicarbonate as CaCO3	N	MG/L	5/20/2009	4/14/2021	8	577	559	690	468	82
ANION	Alkalinity, Carbonate as CaCO3	N	MG/L	6/27/1996	4/14/2021	7	45.3	38	112	2	34.6
ANION	Chloride	N	MG/L	3/30/1981	4/14/2021	37	11.9	3	41	1	15.6
ANION	Sulfates	N	MG/L	3/30/1981	4/14/2021	37	172	45	620	2	243
CATION	Calcium	D	MG/L	7/8/1983	4/14/2021	29	8.35	4	100	2	18.1
CATION	Magnesium	D	MG/L	7/8/1983	4/14/2021	29	13.8	7	51.3	1	11.9
CATION	Sodium	D	MG/L	7/8/1983	4/14/2021	29	198	41	553	16.3	225
FIELD	pH, Field	N	S.U.	1/26/1982	12/12/2021	104	8.55	8.61	9.5	6.97	0.488
FIELD	Specific Conductivity, Field	N	UMHOS/CM	1/26/1982	12/12/2021	104	776.83	351.5	2410	180	774.15
FIELD	Temperature, Field	N	DEG-C	5/27/1982	12/12/2021	100	11.5	11	26.5	4.5	2.85
NUTRIENT	Nitrate as NO3	N	MG/L	5/5/2011	4/14/2021	6	0.04	0.04	0.05	0.01	0.02
NUTRIENT	Nitrate Nitrogen	N	MG/L	3/5/1985	4/11/2017	22	0.03	0.03	0.07	0.02	0.01
NUTRIENT	NO3-NO2 Nitrogen	N	MG/L	3/30/1981	4/14/2021	39	0.06	0.03	0.1	0.02	0.04
PHYSICAL	Alkalinity as CaCO3, @ pH 4.5	N	MG/L	3/30/1981	4/14/2021	33	333	245	630	117	185
PHYSICAL	Hardness	N	MG/L	5/5/2011	5/18/2020	8	31	32	42	18	7.9
PHYSICAL	Hardness as CACO3	N	MG/L	4/14/2021	4/14/2021	1	114	114	114	114	0
PHYSICAL	Hydroxide as OH	N	MG/L	6/11/1992	4/14/2021	13	10	20	20	0	9
PHYSICAL	pH, Lab	N	S.U.	3/30/1981	4/14/2021	37	8.55	8.6	10.3	6.9	0.623
PHYSICAL	Specific Conductivity, Lab	N	UMHOS/CM	3/30/1981	4/14/2021	37	900	500	2340	180	839
PRIMARY	Arsenic	D	UG/L	7/8/1983	4/14/2021	29	3	1	40	1	7
PRIMARY	Cadmium	D	UG/L	7/8/1983	4/14/2021	29	4.9	5	50	0.25	9
PRIMARY	Lead	D	UG/L	7/8/1983	4/14/2021	29	17	20	50	0.1	14
PRIMARY	Mercury	D	UG/L	7/8/1983	4/14/2021	29	0.5	0.2	1	0.1	0.4
PRIMARY	Selenium	D	UG/L	7/8/1983	4/14/2021	29	0.91	1	2	0.2	0.55
SECONDARY	Iron	D	UG/L	3/5/1985	4/14/2021	28	325	90	1510	10	453
SECONDARY	Manganese	D	UG/L	7/8/1983	4/14/2021	29	19	10	54	5	15
SECONDARY	Zinc	D	UG/L	7/8/1983	4/14/2021	29	56	10	990	5	180
TRACE	Boron	D	UG/L	7/8/1983	4/14/2021	29	91.2	50	220	10	80.9
TRACE	Molybdenum	D	UG/L	7/8/1983	4/14/2021	29	60	50	200	5	50

Table: 7 **2021 Annual Hydrology Report**

Williams Fork Mine **Water Year Monitoring Data**

Site: T7A, Well TR-7A, Middle Sandstone Datum: 6244.3

			Date	2/9/2021		4/14/2021		9/19/2021		12/12/2021	
			Depth to Water (FT)	106.14		105.81		106.7		106.32	
Type	**Parameter**	**Fraction**	**Units**	**Result**	**Detection**	**Result**	**Detection**	**Result**	**Detection**	**Result**	**Detection**
ANION	Alkalinity, Bicarbonate as CaCO3	N	MG/L			204	Y				
ANION	Alkalinity, Carbonate as CaCO3	N	MG/L			34.8	Y				
ANION	Chloride	N	MG/L			3.15	Y				
ANION	Sulfates	N	MG/L			4.8	Y				
CATION	Calcium	D	MG/L			7.32	Y				
CATION	Magnesium	D	MG/L			27.4	Y				
CATION	Sodium	D	MG/L			31.9	Y				
FIELD	pH, Field	N	S.U.	8.49	Y	8.28	Y	8.37	Y	8.31	Y
FIELD	Specific Conductivity, Field	N	UMHOS/CM	410	Y	400	Y	410	Y	390	Y
FIELD	Temperature, Field	N	DEG-C	11.2	Y	11.3	Y	11.5	Y	11.1	Y
NUTRIENT	Nitrate as NO3	N	MG/L			0.05	N				
NUTRIENT	NO3-NO2 Nitrogen	N	MG/L			0.1	N				
PHYSICAL	Alkalinity as CaCO3, @ pH 4.5	N	MG/L			239	Y				
PHYSICAL	Hardness as CACO3	N	MG/L			131	Y				
PHYSICAL	Hydroxide as OH	N	MG/L			20	N				
PHYSICAL	pH, Lab	N	S.U.			8.9	Y				
PHYSICAL	Specific Conductivity, Lab	N	UMHOS/CM			375	Y				
PRIMARY	Arsenic	D	UG/L			1	N				
PRIMARY	Cadmium	D	UG/L			0.25	N				
PRIMARY	Lead	D	UG/L			9.74	Y				
PRIMARY	Mercury	D	UG/L			1	N				
PRIMARY	Selenium	D	UG/L			0.25	N				
SECONDARY	Iron	D	UG/L			551	Y				
SECONDARY	Manganese	D	UG/L			31	Y				
SECONDARY	Zinc	D	UG/L			102	Y				
TRACE	Boron	D	UG/L			49	Y				
TRACE	Molybdenum	D	UG/L			100	N				

Table: 7A **2021 Annual Hydrology Report**

Williams Fork Mine **Period of Record**

Site: T7A, Well TR-7A, Middle Sandstone Datum: 6244.3

Type	Parameter	Fraction	Units	Start Date	End Date	Count	Average	Median	Max	Min	STD
ANION	Alkalinity, Bicarbonate as CaCO3	N	MG/L	5/20/2009	4/14/2021	8	209	205	250	188	19.9
ANION	Alkalinity, Carbonate as CaCO3	N	MG/L	6/25/1996	4/14/2021	7	23.5	23.9	34.8	12	8.26
ANION	Chloride	N	MG/L	3/30/1981	4/14/2021	37	3.34	2	8	1	1.98
ANION	Sulfates	N	MG/L	3/30/1981	4/14/2021	37	22	10	85	1	21.7
CATION	Calcium	D	MG/L	6/29/1983	4/14/2021	29	7.29	5.3	28	2	5.7
CATION	Magnesium	D	MG/L	6/29/1983	4/14/2021	29	26.2	27.4	32	14	5.44
CATION	Sodium	D	MG/L	6/29/1983	4/14/2021	29	36.4	33	63	19.6	10.3
FIELD	pH, Field	N	S.U.	1/26/1982	12/12/2021	107	8.63	8.68	10.1	7.1	0.488
FIELD	Specific Conductivity, Field	N	UMHOS/CM	1/26/1982	12/12/2021	107	406	390	1320	122	119
FIELD	Temperature, Field	N	DEG-C	5/27/1982	12/12/2021	102	11.7	11.5	21	5.4	2.39
NUTRIENT	Nitrate as NO3	N	MG/L	5/5/2011	4/14/2021	6	0.05	0.05	0.05	0.05	8E-18
NUTRIENT	Nitrate Nitrogen	N	MG/L	3/5/1985	4/11/2017	22	0.03	0.02	0.05	0.02	0.01
NUTRIENT	NO3-NO2 Nitrogen	N	MG/L	3/30/1981	4/14/2021	40	0.074	0.09	0.35	0.02	0.062
PHYSICAL	Alkalinity as CaCO3, @ pH 4.5	N	MG/L	3/30/1981	4/14/2021	34	186	197	239	127	30.6
PHYSICAL	Hardness	N	MG/L	5/5/2011	5/18/2020	8	132	135	146	120	9.15
PHYSICAL	Hardness as CACO3	N	MG/L	4/14/2021	4/14/2021	1	131	131	131	131	0
PHYSICAL	Hydroxide as OH	N	MG/L	6/11/1992	4/14/2021	13	10	20	20	0	9
PHYSICAL	pH, Lab	N	S.U.	3/30/1981	4/14/2021	37	8.722	8.8	10.14	6.5	0.561
PHYSICAL	Specific Conductivity, Lab	N	UMHOS/CM	3/30/1981	4/14/2021	37	379	370	600	265	59.4
PRIMARY	Arsenic	D	UG/L	6/29/1983	4/14/2021	29	3	1	40	1	7
PRIMARY	Cadmium	D	UG/L	6/29/1983	4/14/2021	29	3.3	5	10	0.06	2.5
PRIMARY	Lead	D	UG/L	6/29/1983	4/14/2021	29	26	20	290	0.7	52.2
PRIMARY	Mercury	D	UG/L	6/29/1983	4/14/2021	29	0.5	0.2	1	0.1	0.4
PRIMARY	Selenium	D	UG/L	6/29/1983	4/14/2021	29	0.92	1	2	0.25	0.54
SECONDARY	Iron	D	UG/L	3/5/1985	4/14/2021	28	302	80	3780	10	707
SECONDARY	Manganese	D	UG/L	6/29/1983	4/14/2021	29	25	22	50	10	10
SECONDARY	Zinc	D	UG/L	6/29/1983	4/14/2021	29	22.8	10	102	5	22.3
TRACE	Boron	D	UG/L	6/29/1983	4/14/2021	29	40	40	100	10	22
TRACE	Molybdenum	D	UG/L	6/29/1983	4/14/2021	29	60	50	200	10	50

Table: 8 **2021 Annual Hydrology Report**

Williams Fork Mine **Water Year Monitoring Data**

Site: 01, Well 81-01, Middle Sandstone Datum: 6413.0

			Date	2/9/2021		4/14/2021		9/19/2021		12/12/2021	
			Depth to Water (FT)	253.11		252.96		254.09		254.46	
Type	**Parameter**	**Fraction**	**Units**	**Result**	**Detection**	**Result**	**Detection**	**Result**	**Detection**	**Result**	**Detection**
ANION	Alkalinity, Bicarbonate as CaCO3	N	MG/L			337	Y				
ANION	Alkalinity, Carbonate as CaCO3	N	MG/L			20	N				
ANION	Chloride	N	MG/L			39.5	Y				
ANION	Sulfates	N	MG/L			449	Y				
CATION	Calcium	D	MG/L			106	Y				
CATION	Magnesium	D	MG/L			107	Y				
CATION	Sodium	D	MG/L			33.6	Y				
FIELD	pH, Field	N	S.U.	7.21	Y	7.24	Y	7.21	Y	7.28	Y
FIELD	Specific Conductivity, Field	N	UMHOS/CM	1340	Y	1390	Y	1370	Y	1410	Y
FIELD	Temperature, Field	N	DEG-C	10.8	Y	10.9	Y	11.2	Y	11.4	Y
NUTRIENT	Nitrate as NO3	N	MG/L			0.05	N				
NUTRIENT	NO3-NO2 Nitrogen	N	MG/L			0.1	N				
PHYSICAL	Alkalinity as CaCO3, @ pH 4.5	N	MG/L			337	Y				
PHYSICAL	Hardness as CACO3	N	MG/L			705	Y				
PHYSICAL	Hydroxide as OH	N	MG/L			20	N				
PHYSICAL	pH, Lab	N	S.U.			8.2	Y				
PHYSICAL	Specific Conductivity, Lab	N	UMHOS/CM			1380	Y				
PRIMARY	Arsenic	D	UG/L			1	N				
PRIMARY	Cadmium	D	UG/L			0.25	N				
PRIMARY	Lead	D	UG/L			0.12	Y				
PRIMARY	Mercury	D	UG/L			1	N				
PRIMARY	Selenium	D	UG/L			0.35	Y				
SECONDARY	Iron	D	UG/L			4500	Y				
SECONDARY	Manganese	D	UG/L			193	Y				
SECONDARY	Zinc	D	UG/L			50	N				
TRACE	Boron	D	UG/L			39	Y				
TRACE	Molybdenum	D	UG/L			100	N				

Table: 8A **2021 Annual Hydrology Report**

Williams Fork Mine **Period of Record**

Site: 01, Well 81-01, Middle Sandstone Datum: 6413.0

Type	Parameter	Fraction	Units	Start Date	End Date	Count	Average	Median	Max	Min	STD
ANION	Alkalinity, Bicarbonate as CaCO3	N	MG/L	5/20/2009	4/14/2021	8	375	366	480	278	72.5
ANION	Alkalinity, Carbonate as CaCO3	N	MG/L	5/20/2009	4/14/2021	5	20	20	20	1	8
ANION	Chloride	N	MG/L	5/20/2009	4/14/2021	10	35.6	40	44.3	7	11.8
ANION	Sulfates	N	MG/L	5/20/2009	4/14/2021	10	345	368	449	170	84.3
CATION	Calcium	D	MG/L	5/20/2009	4/14/2021	10	99.5	104	120	69	16
CATION	Magnesium	D	MG/L	5/20/2009	4/14/2021	10	98.3	105	111	54	17.4
CATION	Sodium	D	MG/L	5/20/2009	4/14/2021	10	34.6	34.6	48.7	22	6.56
FIELD	pH, Field	N	S.U.	2/13/2019	12/12/2021	12	7.24	7.24	7.28	7.16	0.034
FIELD	Specific Conductivity, Field	N	UMHOS/CM	2/13/2019	12/12/2021	12	1330	1310	1410	1300	38.2
FIELD	Temperature, Field	N	DEG-C	2/13/2019	12/12/2021	12	11.1	11	11.6	10.8	0.246
NUTRIENT	Nitrate as NO3	N	MG/L	5/5/2011	4/14/2021	6	0.04	0.05	0.05	0.01	0.02
NUTRIENT	Nitrate Nitrogen	N	MG/L	5/20/2009	4/11/2017	4	0.05	0.05	0.05	0.05	0
NUTRIENT	NO3-NO2 Nitrogen	N	MG/L	5/5/2011	4/14/2021	18	0.09	0.1	0.1	0.03	0.02
PHYSICAL	Alkalinity as CaCO3, @ pH 4.5	N	MG/L	5/20/2009	4/14/2021	10	335	334	390	278	38.9
PHYSICAL	Hardness	N	MG/L	5/5/2011	5/18/2020	8	663	666	736	588	49.3
PHYSICAL	Hardness as CACO3	N	MG/L	4/14/2021	4/14/2021	1	705	705	705	705	0
PHYSICAL	Hydroxide as OH	N	MG/L	5/5/2011	4/14/2021	9	20	20	20	20	0
PHYSICAL	pH, Lab	N	S.U.	5/20/2009	4/14/2021	10	8.08	8.1	8.3	7.75	0.159
PHYSICAL	Specific Conductivity, Lab	N	UMHOS/CM	5/20/2009	4/14/2021	10	1230	1240	1380	880	155
PRIMARY	Arsenic	D	UG/L	5/20/2009	4/14/2021	10	1	1	2	1	0.5
PRIMARY	Cadmium	D	UG/L	5/20/2009	4/14/2021	10	0.44	0.5	0.5	0.25	0.11
PRIMARY	Lead	D	UG/L	5/20/2009	4/14/2021	10	0.76	0.25	5	0.1	1.5
PRIMARY	Mercury	D	UG/L	5/20/2009	4/14/2021	10	0.9	1	1	0.2	0.3
PRIMARY	Selenium	D	UG/L	5/20/2009	4/14/2021	10	0.64	0.3	2	0.3	0.67
SECONDARY	Iron	D	UG/L	5/20/2009	4/14/2021	10	5390	5010	12800	30	3320
SECONDARY	Manganese	D	UG/L	5/20/2009	4/14/2021	10	234	212	372	98	86.8
SECONDARY	Zinc	D	UG/L	5/20/2009	4/14/2021	10	50	50	50	5	10
TRACE	Boron	D	UG/L	5/20/2009	4/14/2021	10	40	40	80	20	18
TRACE	Molybdenum	D	UG/L	5/20/2009	4/14/2021	10	90	100	100	50	20

Table: 9 **2021 Annual Hydrology Report**

Williams Fork Mine **Water Year Monitoring Data**

Site: 301, Well 83-01, Middle Sandstone Datum: 6172.13

Date	2/9/2021	4/14/2021	9/19/2021	12/12/2021
Depth to Water (FT)	27.43	25.89	27.43	27.91

Table: 10 **2021 Annual Hydrology Report**

Williams Fork Mine **Water Year Monitoring Data**

Site: 302, Well 83-02, Middle Sandstone Datum: 6678.50

Date	2/9/2021	4/14/2021	9/19/2021	12/12/2021
Depth to Water (FT)	85.21	85.78	85.83	85.81

Table: 11 **2021 Annual Hydrology Report**

Williams Fork Mine **Water Year Monitoring Data**

Site: 303, Well 83-03, Middle Sandstone Datum: 6131.22

Date	1/4/2021	4/14/2021	9/19/2021	12/12/2021
Depth to Water (FT)	73.92	77.39	76.23	76.23

Table: 12 **2021 Annual Hydrology Report**

Williams Fork Mine **Water Year Monitoring Data**

Site: 259, Well 259, Twentymile Sandstone Datum: 6128.0

			Date	2/9/2021		4/14/2021		9/19/2021		12/12/2021	
			Depth to Water (FT)	4.62		9.24		6.93		4.62	
Type	**Parameter**	**Fraction**	**Units**	**Result**	**Detection**	**Result**	**Detection**	**Result**	**Detection**	**Result**	**Detection**
ANION	Alkalinity, Bicarbonate as CaCO3	N	MG/L			246	Y				
ANION	Alkalinity, Carbonate as CaCO3	N	MG/L			7.4	Y				
ANION	Chloride	N	MG/L			3.71	Y				
ANION	Sulfates	N	MG/L			67.7	Y				
CATION	Calcium	D	MG/L			55.8	Y				
CATION	Magnesium	D	MG/L			21.9	Y				
CATION	Sodium	D	MG/L			31.7	Y				
FIELD	pH, Field	N	S.U.	7.4	Y	7.41	Y	7.39	Y	7.4	Y
FIELD	Specific Conductivity, Field	N	UMHOS/CM	610	Y	600	Y	590	Y	380	Y
FIELD	Temperature, Field	N	DEG-C	11.2	Y	10.6	Y	10.8	Y	11	Y
NUTRIENT	Nitrate as NO3	N	MG/L			0.05	N				
NUTRIENT	NO3-NO2 Nitrogen	N	MG/L			0.1	N				
PHYSICAL	Alkalinity as CaCO3, @ pH 4.5	N	MG/L			254	Y				
PHYSICAL	Hardness as CACO3	N	MG/L			230	Y				
PHYSICAL	Hydroxide as OH	N	MG/L			20	N				
PHYSICAL	pH, Lab	N	S.U.			8.3	Y				
PHYSICAL	Specific Conductivity, Lab	N	UMHOS/CM			575	Y				
PRIMARY	Arsenic	D	UG/L			1	N				
PRIMARY	Cadmium	D	UG/L			0.25	N				
PRIMARY	Lead	D	UG/L			0.2	Y				
PRIMARY	Mercury	D	UG/L			1	N				
PRIMARY	Selenium	D	UG/L			0.25	N				
SECONDARY	Iron	D	UG/L			460	Y				
SECONDARY	Manganese	D	UG/L			27	Y				
SECONDARY	Zinc	D	UG/L			405	Y				
TRACE	Boron	D	UG/L			52	Y				
TRACE	Molybdenum	D	UG/L			100	N				

Table: 12A **2021 Annual Hydrology Report**

Williams Fork Mine **Period of Record**

Site: 259, Well 259, Twentymile Sandstone Datum: 6128.0

Type	Parameter	Fraction	Units	Start Date	End Date	Count	Average	Median	Max	Min	STD
ANION	Alkalinity, Bicarbonate as CaCO3	N	MG/L	5/20/2009	4/14/2021	9	99	42	254	8.2	107
ANION	Alkalinity, Carbonate as CaCO3	N	MG/L	11/25/1996	4/14/2021	7	7.9	3.6	20	1	8.6
ANION	Chloride	N	MG/L	3/30/1981	4/14/2021	35	7.11	4	30.6	1	7.3
ANION	Sulfates	N	MG/L	3/30/1981	4/14/2021	35	37	47	95	1	29.4
CATION	Calcium	D	MG/L	6/29/1983	4/14/2021	27	26	16	76	2.4	22.6
CATION	Magnesium	D	MG/L	6/29/1983	4/14/2021	27	12.4	9	24.2	1.1	9.15
CATION	Sodium	D	MG/L	6/29/1983	4/14/2021	27	23	21	39.3	4.7	11.1
FIELD	pH, Field	N	S.U.	1/26/1982	12/12/2021	102	7.57	7.61	9.21	6	0.66
FIELD	Specific Conductivity, Field	N	UMHOS/CM	1/26/1982	12/12/2021	102	412.6	426	1440	109.2	249.6
FIELD	Temperature, Field	N	DEG-C	5/27/1982	12/12/2021	98	10.9	11	18.9	4	2.75
NUTRIENT	Nitrate as NO3	N	MG/L	5/5/2011	4/14/2021	6	0.05	0.05	0.05	0.05	8E-18
NUTRIENT	Nitrate Nitrogen	N	MG/L	3/5/1985	4/11/2017	20	0.03	0.02	0.09	0.01	0.02
NUTRIENT	NO3-NO2 Nitrogen	N	MG/L	3/30/1981	4/14/2021	39	0.066	0.08	0.26	0.02	0.05
PHYSICAL	Alkalinity as CaCO3, @ pH 4.5	N	MG/L	3/30/1981	4/14/2021	34	144	188	254	6.8	93.3
PHYSICAL	Hardness	N	MG/L	5/5/2011	5/18/2020	8	76.6	36	226	25	83.2
PHYSICAL	Hardness as CACO3	N	MG/L	4/14/2021	4/14/2021	1	230	230	230	230	0
PHYSICAL	Hydroxide as OH	N	MG/L	6/11/1992	4/14/2021	13	10	20	20	0	9
PHYSICAL	pH, Lab	N	S.U.	6/29/1981	4/14/2021	34	7.77	7.87	9.2	5.9	0.759
PHYSICAL	Specific Conductivity, Lab	N	UMHOS/CM	3/30/1981	4/14/2021	35	357	460	575	67	192
PRIMARY	Arsenic	D	UG/L	6/29/1983	4/14/2021	27	3	1	40	1	8
PRIMARY	Cadmium	D	UG/L	6/29/1983	4/14/2021	27	3.2	3	10	0.06	2.5
PRIMARY	Lead	D	UG/L	6/29/1983	4/14/2021	27	30	20	380	0.1	72
PRIMARY	Mercury	D	UG/L	6/29/1983	4/14/2021	27	0.5	0.2	1	0.1	0.4
PRIMARY	Selenium	D	UG/L	6/29/1983	4/14/2021	27	1.1	1	6	0.25	1.1
SECONDARY	Iron	D	UG/L	3/5/1985	4/14/2021	26	929	75	7400	10	2030
SECONDARY	Manganese	D	UG/L	6/29/1983	4/14/2021	27	102	50	330	7	95.8
SECONDARY	Zinc	D	UG/L	6/29/1983	4/14/2021	27	69	30	540	5	123
TRACE	Boron	D	UG/L	6/29/1983	4/14/2021	27	63	52	240	10	45
TRACE	Molybdenum	D	UG/L	6/29/1983	4/14/2021	27	60	50	200	10	50

Table: 13 **2021 Annual Hydrology Report**
Williams Fork Mine **Water Year Monitoring Data**

Site: 401, Well 84-01, Twentymile Sandstone Datum: 6307.47

Date	2/9/2021	4/14/2021	9/19/2021	12/12/2021
Depth to Water (FT)	45.13	45.95	45.68	45.88

Table: 14 **2021 Annual Hydrology Report**

Williams Fork Mine **Water Year Monitoring Data**

Site: 9MN, #9 Mine Well, Twentymile Sandstone Datum: 6383.29

			Date	2/9/2021		4/14/2021		9/19/2021		12/12/2021	
			Depth to Water (FT)	65.1		65.26		65.17		65.19	
Type	**Parameter**	**Fraction**	**Units**	**Result**	**Detection**	**Result**	**Detection**	**Result**	**Detection**	**Result**	**Detection**
ANION	Alkalinity, Bicarbonate as CaCO3	N	MG/L			282	Y				
ANION	Alkalinity, Carbonate as CaCO3	N	MG/L			20	N				
ANION	Chloride	N	MG/L			52.6	Y				
ANION	Sulfates	N	MG/L			270	Y				
CATION	Calcium	D	MG/L			82.9	Y				
CATION	Magnesium	D	MG/L			69	Y				
CATION	Sodium	D	MG/L			35.1	Y				
FIELD	pH, Field	N	S.U.	7.03	Y	6.98	Y	7.02	Y	6.96	Y
FIELD	Specific Conductivity, Field	N	UMHOS/CM	1110	Y	1090	Y	1110	Y	1080	Y
FIELD	Temperature, Field	N	DEG-C	11.1	Y	10.9	Y	11.1	Y	11	Y
NUTRIENT	Nitrate as NO3	N	MG/L			0.05	N				
NUTRIENT	NO3-NO2 Nitrogen	N	MG/L			0.1	N				
PHYSICAL	Alkalinity as CaCO3, @ pH 4.5	N	MG/L			282	Y				
PHYSICAL	Hardness as CACO3	N	MG/L			491	Y				
PHYSICAL	Hydroxide as OH	N	MG/L			20	N				
PHYSICAL	pH, Lab	N	S.U.			8	Y				
PHYSICAL	Specific Conductivity, Lab	N	UMHOS/CM			1070	Y				
PRIMARY	Arsenic	D	UG/L			1	N				
PRIMARY	Cadmium	D	UG/L			0.25	N				
PRIMARY	Lead	D	UG/L			0.5	N				
PRIMARY	Mercury	D	UG/L			1	N				
PRIMARY	Selenium	D	UG/L			0.25	N				
SECONDARY	Iron	D	UG/L			421	Y				
SECONDARY	Manganese	D	UG/L			1150	Y				
SECONDARY	Zinc	D	UG/L			50	N				
TRACE	Boron	D	UG/L			62	Y				
TRACE	Molybdenum	D	UG/L			100	N				

Table: 14A **2021 Annual Hydrology Report**

Williams Fork Mine **Period of Record**

Site: 9MN, #9 Mine Well, Twentymile Sandstone Datum: 6383.29

Type	Parameter	Fraction	Units	Start Date	End Date	Count	Average	Median	Max	Min	STD
ANION	Alkalinity, Bicarbonate as CaCO3	N	MG/L	5/20/2009	4/14/2021	8	370	392	480	259	90
ANION	Alkalinity, Carbonate as CaCO3	N	MG/L	6/13/1996	4/14/2021	6	10	20	20	1	10
ANION	Chloride	N	MG/L	3/30/1981	4/14/2021	31	14.6	4	54.7	2	18.2
ANION	Sulfates	N	MG/L	3/30/1981	4/14/2021	31	90.8	50	365	4	91
CATION	Calcium	D	MG/L	6/29/1983	4/14/2021	24	81.6	79.7	163	35.1	29.4
CATION	Magnesium	D	MG/L	6/29/1983	4/14/2021	24	41.1	33	87.3	22	16.7
CATION	Sodium	D	MG/L	6/29/1983	4/14/2021	24	21.042	16.95	43.5	9.9	9.4706
FIELD	pH, Field	N	S.U.	1/26/1982	12/12/2021	103	7.36	7.3	8.7	6.6	0.425
FIELD	Specific Conductivity, Field	N	UMHOS/CM	1/26/1982	12/12/2021	103	785	640	3500	428	376
FIELD	Temperature, Field	N	DEG-C	5/27/1982	12/12/2021	99	13.1	12.2	23.1	9.7	2.81
NUTRIENT	Nitrate as NO3	N	MG/L	5/5/2011	4/14/2021	6	0.05	0.05	0.05	0.05	8E-18
NUTRIENT	Nitrate Nitrogen	N	MG/L	3/5/1985	4/11/2017	17	0.03	0.02	0.08	0.02	0.02
NUTRIENT	NO3-NO2 Nitrogen	N	MG/L	3/30/1981	4/14/2021	37	0.055	0.04	0.12	0.02	0.036
PHYSICAL	Alkalinity as CaCO3, @ pH 4.5	N	MG/L	3/30/1981	4/14/2021	31	301	296	441	193	46.1
PHYSICAL	Hardness	N	MG/L	5/5/2011	5/18/2020	8	513	481	767	358	121
PHYSICAL	Hardness as CACO3	N	MG/L	4/14/2021	4/14/2021	1	491	491	491	491	0
PHYSICAL	Hydroxide as OH	N	MG/L	6/4/1992	4/14/2021	13	10	20	20	0	9
PHYSICAL	pH, Lab	N	S.U.	3/30/1981	4/14/2021	32	7.89	7.88	9.1	7	0.403
PHYSICAL	Specific Conductivity, Lab	N	UMHOS/CM	3/30/1981	4/14/2021	32	728	620	1470	380	266
PRIMARY	Arsenic	D	UG/L	6/29/1983	4/14/2021	24	3.7	1.2	40	0.5	8
PRIMARY	Cadmium	D	UG/L	6/29/1983	4/14/2021	24	3	3	10	0.07	2.5
PRIMARY	Lead	D	UG/L	6/29/1983	4/14/2021	24	10	20	50	0.1	10
PRIMARY	Mercury	D	UG/L	6/29/1983	4/14/2021	24	0.5	0.2	1	0.1	0.4
PRIMARY	Selenium	D	UG/L	6/29/1983	4/14/2021	24	1	1	4	0.2	0.88
SECONDARY	Iron	D	UG/L	3/5/1985	4/14/2021	23	613	140	3760	10	986
SECONDARY	Manganese	D	UG/L	6/29/1983	4/14/2021	24	242	61.5	1150	40	329
SECONDARY	Zinc	D	UG/L	6/29/1983	4/14/2021	24	259	124	1200	10	296
TRACE	Boron	D	UG/L	6/29/1983	4/14/2021	24	41	30	90	20	21
TRACE	Molybdenum	D	UG/L	6/29/1983	4/14/2021	24	70	50	200	10	50

Table: 15 **2021 Annual Hydrology Report**

Williams Fork Mine **Water Year Monitoring Data**

Site: AV3, Well AVF-3, Williams Fork Alluvium Datum: 6137.95

				Date	2/9/2021		4/14/2021		9/19/2021		12/12/2021	
				Depth to Water (FT)	8.35		6.93		8.59		DRY	
Type	**Parameter**	**Fraction**	**Units**		**Result**	**Detection**	**Result**	**Detection**	**Result**	**Detection**	**Result**	**Detection**
ANION	Alkalinity, Bicarbonate as CaCO3	N	MG/L		501	Y	97	Y	194	Y		
ANION	Alkalinity, Carbonate as CaCO3	N	MG/L		20	N	20	N	20	N		
ANION	Chloride	N	MG/L		8.03	Y	1.54	Y	4.72	Y		
ANION	Sulfates	N	MG/L		15.2	Y	5	N	4.4	Y		
CATION	Calcium	D	MG/L		62.5	Y	27.1	Y	56.7	Y		
CATION	Magnesium	D	MG/L		12.7	Y	6.99	Y	12.5	Y		
CATION	Sodium	D	MG/L		5.79	Y	2.93	Y	5.42	Y		
FIELD	pH, Field	N	S.U.		7.12	Y	7.5	Y	7.36	Y		
FIELD	Specific Conductivity, Field	N	UMHOS/CM		590	Y	780	Y	410	Y		
FIELD	Temperature, Field	N	DEG-C		7.4	Y	8.9	Y	15.9	Y		
NUTRIENT	Nitrate as NO3	N	MG/L		0.167	Y	0.021	Y	0.05	N		
NUTRIENT	NO3-NO2 Nitrogen	N	MG/L		0.447	Y	1.29	Y	0.1	N		
PHYSICAL	Alkalinity as CaCO3, @ pH 4.5	N	MG/L		501	Y	97	Y	194	Y		
PHYSICAL	Hardness	N	MG/L		208	Y						
PHYSICAL	Hardness as CACO3	N	MG/L				97	Y	193	Y		
PHYSICAL	Hydroxide as OH	N	MG/L		20	N	20	N	20	N		
PHYSICAL	pH, Lab	N	S.U.		8	Y	8.2	Y	8	Y		
PHYSICAL	Specific Conductivity, Lab	N	UMHOS/CM		555	Y	196	Y	385	Y		
PRIMARY	Arsenic	D	UG/L		6.3	Y	1.05	Y	5.34	Y		
PRIMARY	Cadmium	D	UG/L		0.052	Y	0.25	N	0.096	Y		
PRIMARY	Lead	D	UG/L		0.73	Y	0.5	N	0.48	Y		
PRIMARY	Mercury	D	UG/L		1	N	1	N	1	N		
PRIMARY	Selenium	D	UG/L		0.8	Y	0.53	Y	0.6	Y		
SECONDARY	Iron	D	UG/L		1410	Y	150	N	2150	Y		
SECONDARY	Manganese	D	UG/L		934	Y	159	Y	784	Y		
SECONDARY	Zinc	D	UG/L		50	N	63	Y	21	Y		
TRACE	Boron	D	UG/L		81	Y	42	Y	162	Y		
TRACE	Molybdenum	D	UG/L		100	N	100	N	100	N		

Table: 15A **2021 Annual Hydrology Report**

Williams Fork Mine **Period of Record**

Site: AV3, Well AVF-3, Williams Fork Alluvium Datum: 6137.95

Type	Parameter	Fraction	Units	Start Date	End Date	Count	Average	Median	Max	Min	STD
ANION	Alkalinity, Bicarbonate as CaCO3	N	MG/L	3/16/2009	9/19/2021	24	450	502	601	97	137
ANION	Alkalinity, Carbonate as CaCO3	N	MG/L	3/16/1996	9/19/2021	24	9.16	2	20	1	9.27
ANION	Chloride	N	MG/L	6/29/1981	9/19/2021	110	203	185	2300	1.54	229
ANION	Sulfates	N	MG/L	6/29/1981	9/19/2021	110	290	284	531	4.4	110
CATION	Calcium	D	MG/L	3/30/1983	9/19/2021	103	113	112	167	27.1	24.1
CATION	Magnesium	D	MG/L	3/30/1983	9/19/2021	103	71.1	73.1	104	6.99	18.9
CATION	Sodium	D	MG/L	3/30/1983	9/19/2021	103	181	181	288	2.93	55.8
FIELD	pH, Field	N	S.U.	1/26/1982	9/19/2021	150	7.42	7.4	8.7	6.8	0.276
FIELD	Specific Conductivity, Field	N	UMHOS/CM	1/26/1982	9/19/2021	150	1652.124	1655	2750	390	354.6525
FIELD	Temperature, Field	N	DEG-C	5/27/1982	9/19/2021	146	9.42	9	18.5	3.7	2.96
NUTRIENT	Nitrate as NO3	N	MG/L	2/15/2011	9/19/2021	18	0.0432	0.05	0.17	0.01	0.0355
NUTRIENT	Nitrate Nitrogen	N	MG/L	3/26/1984	11/15/2017	81	0.14	0.08	0.71	0.02	0.15
NUTRIENT	NO3-NO2 Nitrogen	N	MG/L	6/29/1981	9/19/2021	110	0.243	0.1	1.99	0.01	0.308
PHYSICAL	Alkalinity as CaCO3, @ pH 4.5	N	MG/L	6/29/1981	9/19/2021	103	417	410	980	97	99.5
PHYSICAL	Hardness	N	MG/L	3/16/1992	2/9/2021	24	486	531	661	132	143
PHYSICAL	Hardness as CACO3	N	MG/L	4/14/2021	9/19/2021	2	145	145	193	97	67.9
PHYSICAL	Hydroxide as OH	N	MG/L	8/14/1991	9/19/2021	48	10	20	20	0	10
PHYSICAL	pH, Lab	N	S.U.	6/29/1981	9/19/2021	110	7.77	7.75	8.4	6.7	0.344
PHYSICAL	Specific Conductivity, Lab	N	UMHOS/CM	6/29/1981	9/19/2021	110	1716	1755	2700	196	435.4
PRIMARY	Arsenic	D	UG/L	3/30/1983	9/19/2021	103	2.37	1	40	0.2	5.56
PRIMARY	Cadmium	D	UG/L	3/30/1983	9/19/2021	103	3.6	5	10	0.05	2.2
PRIMARY	Lead	D	UG/L	3/30/1983	9/19/2021	103	23	20	100	0.1	20
PRIMARY	Mercury	D	UG/L	3/30/1983	9/19/2021	103	0.5	0.2	10	0.1	1
PRIMARY	Selenium	D	UG/L	3/30/1983	9/19/2021	103	1.58	1	25.6	0.1	2.67
SECONDARY	Iron	D	UG/L	3/26/1984	9/19/2021	99	286	50	3460	5	598
SECONDARY	Manganese	D	UG/L	3/30/1983	9/19/2021	103	143	124	934	5	135
SECONDARY	Zinc	D	UG/L	3/30/1983	9/19/2021	103	24	10	190	5	28
TRACE	Boron	D	UG/L	3/30/1983	9/19/2021	102	113	100	280	10	46.9
TRACE	Molybdenum	D	UG/L	3/30/1983	9/19/2021	103	60	50	200	10	50

Table: 16 **2021 Annual Hydrology Report**

Williams Fork Mine **Water Year Monitoring Data**

Site: AV5, Well AVF-5, Williams Fork Alluvium Datum: 6132.59

				Date	2/9/2021		4/14/2021		9/19/2021		12/12/2021	
				Depth to Water (FT)	8.22		7.87		9.12		8.82	
Type	**Parameter**	**Fraction**	**Units**		**Result**	**Detection**	**Result**	**Detection**	**Result**	**Detection**	**Result**	**Detection**
ANION	Alkalinity, Bicarbonate as CaCO3	N	MG/L		717	Y	736	Y	741	Y	662	Y
ANION	Alkalinity, Carbonate as CaCO3	N	MG/L		14.6	Y	33.4	Y	31.3	Y	42.7	Y
ANION	Chloride	N	MG/L		44.1	Y	38.6	Y	43	Y	34.8	Y
ANION	Sulfates	N	MG/L		445	Y	374	Y	383	Y	294	Y
CATION	Calcium	D	MG/L		60	Y	48.5	Y	52	Y	44.2	Y
CATION	Magnesium	D	MG/L		12.8	Y	23.9	Y	25.7	Y	22.2	Y
CATION	Sodium	D	MG/L		6.09	Y	377	Y	425	Y	386	Y
FIELD	pH, Field	N	S.U.		7.2	Y	7.36	Y	7.48	Y	7.68	Y
FIELD	Specific Conductivity, Field	N	UMHOS/CM		2160	Y	1980	Y	1990	Y	2000	Y
FIELD	Temperature, Field	N	DEG-C		7.1	Y	9.8	Y	14.9	Y	8.7	Y
NUTRIENT	Nitrate as NO3	N	MG/L		0.05	N	0.029	Y	0.05	N	0.05	N
NUTRIENT	NO3-NO2 Nitrogen	N	MG/L		0.161	Y	0.855	Y	0.1	N	0.126	Y
PHYSICAL	Alkalinity as CaCO3, @ pH 4.5	N	MG/L		731	Y	770	Y	772	Y	705	Y
PHYSICAL	Hardness	N	MG/L		203	Y					202	Y
PHYSICAL	Hardness as CACO3	N	MG/L				220	Y	236	Y		
PHYSICAL	Hydroxide as OH	N	MG/L		20	N	20	N	20	N	20	N
PHYSICAL	pH, Lab	N	S.U.		8.3	Y	8.4	Y	8.4	Y	8.4	Y
PHYSICAL	Specific Conductivity, Lab	N	UMHOS/CM		2230	Y	2050	Y	2110	Y	1910	Y
PRIMARY	Arsenic	D	UG/L		7.94	Y	0.52	Y	0.95	Y	0.72	Y
PRIMARY	Cadmium	D	UG/L		0.097	Y	0.25	N	0.25	N	0.25	N
PRIMARY	Lead	D	UG/L		1.49	Y	0.11	Y	0.2	Y	0.13	Y
PRIMARY	Mercury	D	UG/L		1	N	1	N	1	N	1	N
PRIMARY	Selenium	D	UG/L		1.59	Y	4.36	Y	4.64	Y	4.82	Y
SECONDARY	Iron	D	UG/L		2100	Y	150	N	178	Y	150	N
SECONDARY	Manganese	D	UG/L		1030	Y	655	Y	1070	Y	829	Y
SECONDARY	Zinc	D	UG/L		50	N	50	N	50	N	50	N
TRACE	Boron	D	UG/L		86	Y	279	Y	416	Y	336	Y
TRACE	Molybdenum	D	UG/L		100	N	100	N	100	N	100	N

Table: 16A **2021 Annual Hydrology Report**

Williams Fork Mine **Period of Record**

Site: AVF, Well AVF-5, Williams Fork Alluvium Datum: 6132.59

Type	Parameter	Fraction	Units	Start Date	End Date	Count	Average	Median	Max	Min	STD
ANION	Alkalinity, Bicarbonate as CaCO3	N	MG/L	3/16/2009	12/12/2021	25	877	863	1200	637	168
ANION	Alkalinity, Carbonate as CaCO3	N	MG/L	3/16/1996	12/12/2021	25	11.6	2	43.6	1	13.8
ANION	Chloride	N	MG/L	6/29/1981	12/12/2021	111	27.5	27	47.9	7	7.9
ANION	Sulfates	N	MG/L	6/29/1981	12/12/2021	111	201	169	733	4	175
CATION	Calcium	D	MG/L	3/30/1983	12/12/2021	104	70.8	50.8	225	28.3	43.2
CATION	Magnesium	D	MG/L	3/30/1983	12/12/2021	104	44.7	30.3	149	12.2	30.5
CATION	Sodium	D	MG/L	3/30/1983	12/12/2021	104	304	334	967	6.09	121
FIELD	pH, Field	N	S.U.	1/26/1982	12/12/2021	150	7.42	7.4	9.7	6.3	0.347
FIELD	Specific Conductivity, Field	N	UMHOS/CM	1/26/1982	12/12/2021	150	1736.02	1692	3700	220	462.385
FIELD	Temperature, Field	N	DEG-C	5/27/1982	12/12/2021	146	10.3	10.2	18.7	2	3.72
NUTRIENT	Nitrate as NO3	N	MG/L	2/15/2011	12/12/2021	19	0.067	0.05	0.46	0.01	0.096
NUTRIENT	Nitrate Nitrogen	N	MG/L	3/26/1984	11/19/2017	81	0.546	0.05	26.4	0.01	3
NUTRIENT	NO3-NO2 Nitrogen	N	MG/L	6/29/1981	12/12/2021	112	1.18	0.1	74	0.02	7.13
PHYSICAL	Alkalinity as CaCO3, @ pH 4.5	N	MG/L	6/29/1981	12/12/2021	105	790.7	833	1215	243	177.5
PHYSICAL	Hardness	N	MG/L	3/16/1992	12/12/2021	25	193	188	263	121	38.7
PHYSICAL	Hardness as CACO3	N	MG/L	4/14/2021	9/19/2021	2	228	228	236	220	11.3
PHYSICAL	Hydroxide as OH	N	MG/L	8/14/1991	12/12/2021	48	10	20	20	0	9
PHYSICAL	pH, Lab	N	S.U.	6/29/1981	12/12/2021	111	7.86	7.8	9.72	7	0.415
PHYSICAL	Specific Conductivity, Lab	N	UMHOS/CM	6/29/1981	12/12/2021	111	1709	1730	2580	860	281.9
PRIMARY	Arsenic	D	UG/L	3/30/1983	12/12/2021	104	2.23	1	40	0.3	5.52
PRIMARY	Cadmium	D	UG/L	3/30/1983	12/12/2021	104	3.5	5	10	0.07	2.2
PRIMARY	Lead	D	UG/L	3/30/1983	12/12/2021	104	24	20	310	0.1	33.1
PRIMARY	Mercury	D	UG/L	3/30/1983	12/12/2021	104	0.4	0.2	1	0.1	0.4
PRIMARY	Selenium	D	UG/L	3/30/1983	12/12/2021	104	2.33	2	27.8	0.1	3.43
SECONDARY	Iron	D	UG/L	3/26/1984	12/12/2021	99	114	40	2100	10	269
SECONDARY	Manganese	D	UG/L	3/30/1983	12/12/2021	104	315	163	2000	5	387
SECONDARY	Zinc	D	UG/L	3/30/1983	12/12/2021	104	21	10	60	5	18
TRACE	Boron	D	UG/L	3/30/1983	12/12/2021	104	247	265	440	30	107
TRACE	Molybdenum	D	UG/L	3/30/1983	12/12/2021	104	60	50	200	10	50

Table: 17 **2021 Annual Hydrology Report**

Williams Fork Mine **Water Year Monitoring Data**

Site: AV6, Well AVF-6, Williams Fork Alluvium Datum: 6146.23

				Date	2/9/2021		4/14/2021		9/19/2021		12/12/2021	
				Depth to Water (FT)	7.71		7.8		8.94		8.34	
Type	**Parameter**	**Fraction**	**Units**		**Result**	**Detection**	**Result**	**Detection**	**Result**	**Detection**	**Result**	**Detection**
ANION	Alkalinity, Bicarbonate as CaCO3	N	MG/L		450	Y	509	Y	405	Y	358	Y
ANION	Alkalinity, Carbonate as CaCO3	N	MG/L		20	N	20	N	20	N	14	Y
ANION	Chloride	N	MG/L		12.9	Y	8.4	Y	8.59	Y	8.75	Y
ANION	Sulfates	N	MG/L		284	Y	226	Y	178	Y	159	Y
CATION	Calcium	D	MG/L		114	Y	110	Y	93.9	Y	84.5	Y
CATION	Magnesium	D	MG/L		71	Y	68.2	Y	56.4	Y	51	Y
CATION	Sodium	D	MG/L		69.4	Y	63	Y	64	Y	60.3	Y
FIELD	pH, Field	N	S.U.		7.01	Y	7.19	Y	7.02	Y	7.52	Y
FIELD	Specific Conductivity, Field	N	UMHOS/CM		1220	Y	1190	Y	1000	Y	1040	Y
FIELD	Temperature, Field	N	DEG-C		8.9	Y	8.8	Y	15.8	Y	11.2	Y
NUTRIENT	Nitrate as NO3	N	MG/L		0.05	N	0.05	N	0.05	N	0.05	N
NUTRIENT	NO3-NO2 Nitrogen	N	MG/L		0.032	Y	0.27	Y	0.1	N	0.1	N
PHYSICAL	Alkalinity as CaCO3, @ pH 4.5	N	MG/L		450	Y	509	Y	405	Y	372	Y
PHYSICAL	Hardness	N	MG/L		577	Y					421	Y
PHYSICAL	Hardness as CACO3	N	MG/L				556	Y	467	Y		
PHYSICAL	Hydroxide as OH	N	MG/L		20	N	20	N	20	N	20	N
PHYSICAL	pH, Lab	N	S.U.		8.2	Y	8.2	Y	8.2	Y	8.3	Y
PHYSICAL	Specific Conductivity, Lab	N	UMHOS/CM		1250	Y	1230	Y	1050	Y	959	Y
PRIMARY	Arsenic	D	UG/L		0.25	Y	0.59	Y	0.56	Y	0.43	Y
PRIMARY	Cadmium	D	UG/L		0.127	Y	0.25	N	0.116	Y	0.25	N
PRIMARY	Lead	D	UG/L		0.47	Y	0.17	Y	0.43	Y	0.21	Y
PRIMARY	Mercury	D	UG/L		1	N	1	N	1	N	1	N
PRIMARY	Selenium	D	UG/L		0.35	Y	1.05	Y	1.47	Y	0.97	Y
SECONDARY	Iron	D	UG/L		175	Y	92	Y	306	Y	150	N
SECONDARY	Manganese	D	UG/L		92	Y	119	Y	131	Y	198	Y
SECONDARY	Zinc	D	UG/L		50	N	50	N	50	N	50	N
TRACE	Boron	D	UG/L		102	Y	75	Y	119	Y	123	Y
TRACE	Molybdenum	D	UG/L		100	N	100	N	100	N	100	N

Table: 17A **2021 Annual Hydrology Report**

Williams Fork Mine **Period of Record**

Site: AV6, Well AVF-6, Williams Fork Alluvium Datum: 6146.23

Type	Parameter	Fraction	Units	Start Date	End Date	Count	Average	Median	Max	Min	STD
ANION	Alkalinity, Bicarbonate as CaCO3	N	MG/L	3/16/2009	12/12/2021	25	471	490	613	284	87.4
ANION	Alkalinity, Carbonate as CaCO3	N	MG/L	3/16/1996	12/12/2021	25	8.9	2	20	1	8.9
ANION	Chloride	N	MG/L	6/29/1981	12/12/2021	111	24.5	20	92	3.2	18.8
ANION	Sulfates	N	MG/L	6/29/1981	12/12/2021	111	326	320	759	10	179
CATION	Calcium	D	MG/L	3/30/1983	12/12/2021	104	126	129	234	30.3	45.5
CATION	Magnesium	D	MG/L	3/30/1983	12/12/2021	104	70.5	72	123	19.5	22.3
CATION	Sodium	D	MG/L	3/30/1983	12/12/2021	104	137	118	451	30	83.4
FIELD	pH, Field	N	S.U.	1/26/1982	9/19/2021	149	7.37	7.39	8.22	6.8	0.256
FIELD	Specific Conductivity, Field	N	UMHOS/CM	1/26/1982	9/19/2021	149	1527.23	1592	3000	630	321.413
FIELD	Temperature, Field	N	DEG-C	5/27/1982	9/19/2021	145	10.4	10.5	23.1	4	3.53
NUTRIENT	Nitrate as NO3	N	MG/L	2/15/2011	12/12/2021	19	0.05	0.05	0.05	0.02	0.008
NUTRIENT	Nitrate Nitrogen	N	MG/L	3/26/1984	11/19/2017	81	0.046	0.02	0.5	0.02	0.074
NUTRIENT	NO3-NO2 Nitrogen	N	MG/L	6/29/1981	12/12/2021	112	0.0716	0.04	0.47	0.02	0.081
PHYSICAL	Alkalinity as CaCO3, @ pH 4.5	N	MG/L	6/29/1981	12/12/2021	105	532	533	917	263	124
PHYSICAL	Hardness	N	MG/L	3/16/1992	12/12/2021	25	499	504	875	258	151
PHYSICAL	Hardness as CACO3	N	MG/L	4/14/2021	9/19/2021	2	512	512	556	467	62.9
PHYSICAL	Hydroxide as OH	N	MG/L	8/14/1991	12/12/2021	49	10	20	20	0	10
PHYSICAL	pH, Lab	N	S.U.	6/29/1981	12/12/2021	110	7.75	7.7	8.6	6.8	0.356
PHYSICAL	Specific Conductivity, Lab	N	UMHOS/CM	6/29/1981	12/12/2021	111	1449	1450	2230	556	373.9
PRIMARY	Arsenic	D	UG/L	3/30/1983	12/12/2021	104	2.2	1	40	0.2	5.5
PRIMARY	Cadmium	D	UG/L	3/30/1983	12/12/2021	104	3.59	5	11	0.09	2.33
PRIMARY	Lead	D	UG/L	3/30/1983	12/12/2021	104	22	20	130	0.1	21
PRIMARY	Mercury	D	UG/L	3/30/1983	12/12/2021	104	0.4	0.2	1	0.1	0.4
PRIMARY	Selenium	D	UG/L	3/30/1983	12/12/2021	104	2.18	1	32	0.1	5
SECONDARY	Iron	D	UG/L	3/26/1984	12/12/2021	100	158	80	1600	5	238
SECONDARY	Manganese	D	UG/L	3/30/1983	12/12/2021	104	145	120	769	8	123
SECONDARY	Zinc	D	UG/L	3/30/1983	12/12/2021	104	21	10	100	5	20
TRACE	Boron	D	UG/L	3/30/1983	12/12/2021	104	109	90	390	20	73.3
TRACE	Molybdenum	D	UG/L	3/30/1983	12/12/2021	104	60	50	200	10	50

Table: 18 2021 Annual Hydrology Report
Williams Fork Mine Water Year Monitoring Data

Site:WF1, Williams Fork River, Upstream Datum: 6142.39

			Date	1/4/2021		2/9/2021		3/12/2021	
Type	**Parameter**	**Fraction**	**Units**	**Result**	**Detection**	**Result**	**Detection**	**Result**	**Detection**
FIELD	pH, Field	N	S.U.	7.21	Y	7.37	Y	7.33	Y
FIELD	Specific Conductivity, Field	N	UMHOS/CM	540	Y	580	Y	560	Y
FIELD	Temperature, Field	N	DEG-C	2.4	Y	2	Y	2.2	Y
PHYSICAL	Acidity	N	MG/L			20	N		
PHYSICAL	pH, Lab	N	S.U.			8.4	Y		
PHYSICAL	Solids, Total Suspended	N	MG/L	20	N	20	N		
PHYSICAL	Total Dissolved Solids, Lab	N	MG/L			318	Y		
SECONDARY	Iron	TR	UG/L			176	Y		
SECONDARY	Manganese	TR	UG/L			50	N		

Table: 18 2021 Annual Hydrology Report
Williams Fork Mine Water Year Monitoring Data

Site:WF1, Williams Fork River, Upstream Datum: 6142.39

			Date	4/14/2021		5/12/2021		6/17/2021	
Type	**Parameter**	**Fraction**	**Units**	**Result**	**Detection**	**Result**	**Detection**	**Result**	**Detection**
FIELD	pH, Field	N	S.U.	7.24	Y	7.52	Y	7.64	Y
FIELD	Specific Conductivity, Field	N	UMHOS/CM	430	Y	320	Y	410	Y
FIELD	Temperature, Field	N	DEG-C	9.6	Y	9.4	Y	20.1	Y
PHYSICAL	Acidity	N	MG/L	20	N				
PHYSICAL	pH, Lab	N	S.U.	8.5	Y				
PHYSICAL	Solids, Total Suspended	N	MG/L	9	Y	17	Y	8	Y
PHYSICAL	Total Dissolved Solids, Lab	N	MG/L	262	Y				
SECONDARY	Iron	TR	UG/L	470	Y				
SECONDARY	Manganese	TR	UG/L	16	Y				

Table: 18 2021 Annual Hydrology Report
Williams Fork Mine Water Year Monitoring Data

Site:WF1, Williams Fork River, Upstream Datum: 6142.39

			Date	7/21/2021		8/21/2021		9/19/2021	
Type	**Parameter**	**Fraction**	**Units**	**Result**	**Detection**	**Result**	**Detection**	**Result**	**Detection**
FIELD	pH, Field	N	S.U.	7.67	Y	7.65	Y	7.73	Y
FIELD	Specific Conductivity, Field	N	UMHOS/CM	500	Y	440	Y	510	Y
FIELD	Temperature, Field	N	DEG-C	21.3	Y	14.6	Y	15.9	Y
PHYSICAL	Acidity	N	MG/L					20	N
PHYSICAL	pH, Lab	N	S.U.					8.7	Y
PHYSICAL	Solids, Total Suspended	N	MG/L	30	Y	10	Y	5	Y
PHYSICAL	Total Dissolved Solids, Lab	N	MG/L					324	Y
SECONDARY	Iron	TR	UG/L					360	Y
SECONDARY	Manganese	TR	UG/L					17	Y

Table: 18 2021 Annual Hydrology Report
Williams Fork Mine Water Year Monitoring Data

Site:WF1, Williams Fork River, Upstream Datum: 6142.39

			Date	10/23/2021		11/20/2021		12/12/2021	
Type	**Parameter**	**Fraction**	**Units**	**Result**	**Detection**	**Result**	**Detection**	**Result**	**Detection**
FIELD	pH, Field	N	S.U.	7.86	Y	7.94	Y	8.28	Y
FIELD	Specific Conductivity, Field	N	UMHOS/CM	480	Y	560	Y	660	Y
FIELD	Temperature, Field	N	DEG-C	7.2	Y	4	Y	3.3	Y
PHYSICAL	Acidity	N	MG/L					20	N
PHYSICAL	pH, Lab	N	S.U.					8.4	Y
PHYSICAL	Solids, Total Suspended	N	MG/L	20	N	5	Y	20	N
PHYSICAL	Total Dissolved Solids, Lab	N	MG/L					318	Y
SECONDARY	Iron	TR	UG/L					228	Y
SECONDARY	Manganese	TR	UG/L					19	Y

Table: 18A **2021 Annual Hydrology Report**

Williams Fork Mine **Period of Record**

Site:WF1, Williams Fork River, Upstream Datum: 6142.39

Type	Parameter	Fraction	Units	Start Date	End Date	Count	Average	Median	Max	Min	STD
ANION	Sulfates	N	MG/L	6/19/1981	5/31/1990	13	76	66	138	21	40.4
FIELD	pH, Field	N	S.U.	1/26/1982	12/12/2021	310	9.73	8.1	524	7.11	29.3
FIELD	Specific Conductivity, Field	N	UMHOS/CM	1/26/1982	12/12/2021	309	543.09	558	1125	8.77	162.44
FIELD	Temperature, Field	N	DEG-C	5/27/1982	12/12/2021	305	8.88	8	27.8	0	7.18
PHYSICAL	Acidity	N	MG/L	3/23/1984	12/12/2021	102	3.62	1	20	-241	26
PHYSICAL	Alkalinity as CaCO3, @ pH 4.5	N	MG/L	6/19/1981	2/12/1997	14	163	180	225	69	52.1
PHYSICAL	pH, Lab	N	S.U.	6/19/1981	12/12/2021	113	8.22	8.3	8.79	7.3	0.313
PHYSICAL	Solids, Total Suspended	N	MG/L	6/19/1981	12/12/2021	304	82.38	13.5	2810	2	254.4
PHYSICAL	Total Dissolved Solids, Lab	N	MG/L	6/19/1981	12/12/2021	117	324	335	588	94	113
SECONDARY	Iron	TR	UG/L	3/23/1984	12/12/2021	83	1540	360	19500	60	3250
SECONDARY	Manganese	TR	UG/L	6/19/1981	12/12/2021	95	56.3	35	336	5	62.4

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Williams Fork Mine

2021 Annual Hydrology Report

Water Year Monitoring Data

Site:WF2, Williams Fork River, Upstream Datum: 6119.87

			Date	1/4/2021		2/9/2021		3/12/2021		4/14/2021	
Type	**Parameter**	**Fraction**	**Units**	**Result**	**Detection**	**Result**	**Detection**	**Result**	**Detection**	**Result**	**Detection**
FIELD	pH, Field	N	S.U.	7.2	Y	7.36	Y	7.32	Y	7.29	Y
FIELD	Specific Conductivity, Field	N	UMHOS/CM	530	Y	570	Y	560	Y	430	Y
FIELD	Temperature, Field	N	DEG-C	2.7	Y	2.1	Y	2	Y	9	Y
PHYSICAL	Acidity	N	MG/L			20	N			20	N
PHYSICAL	pH, Lab	N	S.U.			8.3	Y			8.5	Y
PHYSICAL	Solids, Total Suspended	N	MG/L	20	N	20	N			12	Y
PHYSICAL	Total Dissolved Solids, Lab	N	MG/L			326	Y			270	Y
SECONDARY	Iron	TR	UG/L			209	Y			556	Y
SECONDARY	Manganese	TR	UG/L			50	N			17	Y

Table: 19

Williams Fork Mine

2021 Annual Hydrology Report

Water Year Monitoring Data

Site:WF2, Williams Fork River, Upstream Datum: 6119.87

			Date	5/12/2021		6/17/2021		7/21/2021		8/21/2021	
Type	**Parameter**	**Fraction**	**Units**	**Result**	**Detection**	**Result**	**Detection**	**Result**	**Detection**	**Result**	**Detection**
FIELD	pH, Field	N	S.U.	7.58	Y	7.54	Y	7.63	Y	7.6	Y
FIELD	Specific Conductivity, Field	N	UMHOS/CM	310	Y	410	Y	510	Y	210	Y
FIELD	Temperature, Field	N	DEG-C	9.1	Y	19.9	Y	21.6	Y	14.5	Y
PHYSICAL	Acidity	N	MG/L								
PHYSICAL	pH, Lab	N	S.U.								
PHYSICAL	Solids, Total Suspended	N	MG/L	17	Y	7	Y	7	Y	7	Y
PHYSICAL	Total Dissolved Solids, Lab	N	MG/L								
SECONDARY	Iron	TR	UG/L								
SECONDARY	Manganese	TR	UG/L								

Table: 19

Williams Fork Mine

2021 Annual Hydrology Report

Water Year Monitoring Data

Site:WF2, Williams Fork River, Upstream Datum: 6119.87

			Date	9/19/2021		10/23/2021		11/20/2021		12/12/2021	
Type	**Parameter**	**Fraction**	**Units**	**Result**	**Detection**	**Result**	**Detection**	**Result**	**Detection**	**Result**	**Detection**
FIELD	pH, Field	N	S.U.	7.71	Y	7.89	Y	7.96	Y	8.38	Y
FIELD	Specific Conductivity, Field	N	UMHOS/CM	500	Y	470	Y	560	Y	630	Y
FIELD	Temperature, Field	N	DEG-C	14.8	Y	6.8	Y	4.2	Y	2	Y
PHYSICAL	Acidity	N	MG/L	20	N					20	N
PHYSICAL	pH, Lab	N	S.U.	8.6	Y					8.5	Y
PHYSICAL	Solids, Total Suspended	N	MG/L	12	Y	20	N	5	Y	5	Y
PHYSICAL	Total Dissolved Solids, Lab	N	MG/L	332	Y					366	Y
SECONDARY	Iron	TR	UG/L	484	Y					233	Y
SECONDARY	Manganese	TR	UG/L	21	Y					20	Y

Table: 19A **2021 Annual Hydrology Report**

Williams Fork Mine **Period of Record**

Site:WF2, Williams Fork River, Upstream Datum: 6119.87

Type	Parameter	Fraction	Units	Start Date	End Date	Count	Average	Median	Max	Min	STD
ANION	Sulfates	N	MG/L	6/19/1981	12/7/1983	12	80.9	85	144	21	39
FIELD	pH, Field	N	S.U.	1/26/1982	12/12/2021	316	8.05	8.1	8.83	6.77	0.392
FIELD	Specific Conductivity, Field	N	UMHOS/CM	1/26/1982	12/12/2021	315	549.17	561	1200	174.9	167.92
FIELD	Temperature, Field	N	DEG-C	5/27/1982	12/12/2021	311	8.81	8	27.8	0	7.05
PHYSICAL	Acidity	N	MG/L	3/23/1984	12/12/2021	104	3.56	1	20	-245	26.1
PHYSICAL	Alkalinity as CaCO3, @ pH 4.5	N	MG/L	6/19/1981	2/12/1997	13	179	203	223	71	51.7
PHYSICAL	pH, Lab	N	S.U.	6/19/1981	12/12/2021	115	8.23	8.3	8.7	7.1	0.274
PHYSICAL	Solids, Total Suspended	N	MG/L	6/19/1981	12/12/2021	307	81.8	12	2800	2	245
PHYSICAL	Total Dissolved Solids, Lab	N	MG/L	6/19/1981	12/12/2021	119	333	340	602	85	114
SECONDARY	Iron	TR	UG/L	3/23/1984	12/12/2021	85	1590	330	22400	100	3690
SECONDARY	Manganese	TR	UG/L	6/19/1981	12/12/2021	96	56.6	30	423	5	69.7

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Williams Fork Mine

2021 Annual Hydrology Report

Water Year Monitoring Data

Site: 1SP, Spoil Spring Datum: 6120.0

			Date	3/23/2021		3/30/2021		4/13/2021		4/19/2021	
Type	**Parameter**	**Fraction**	**Units**	**Result**	**Detection**	**Result**	**Detection**	**Result**	**Detection**	**Result**	**Detection**
FIELD	Flow	N	CFS	0.0049	Y			0.0049	Y	0.0049	Y
FIELD	pH, Field	N	S.U.	7.8	Y			7.3	Y	7	Y
FIELD	Specific Conductivity, Field	N	UMHOS/CM	2290	Y			960	Y	2310	Y
FIELD	Temperature, Field	N	DEG-C	11.1	Y			0.7	Y	12.6	Y
PRIMARY	Arsenic	PD	UG/L	0.39	Y			0.35	Y		
PRIMARY	Arsenic	T	UG/L	0.56	Y			0.49	Y		
PRIMARY	Cadmium	PD	UG/L	0.25	N			0.25	N		
PRIMARY	Chromium	TR	UG/L	50	N			50	N		
PRIMARY	Copper	PD	UG/L	50	N			50	N		
PRIMARY	Lead	PD	UG/L	0.5	N			0.5	N		
PRIMARY	Mercury	T	UG/L	1	N			1	N		
PRIMARY	Selenium	PD	UG/L	0.46	Y			0.25	N		
TRACE	Nickel	PD	UG/L	40	N			40	N		
TRACE	Sulfide	N	UG/L	100	N			100	N		
SECONDARY	Iron	TR	UG/L	429	Y	454	Y	406	Y	429	Y
SECONDARY	Manganese	PD	UG/L	529	Y			450	Y		
SECONDARY	Silver	PD	UG/L	25	N			25	N		
SECONDARY	Zinc	PD	UG/L	50	N			50	N		
PHYSICAL	pH, Lab	N	S.U.	8.2	Y			8	Y		
PHYSICAL	Solids, Total Suspended	N	MG/L	20	N	20	N	20	N	5	Y
PHYSICAL	Specific Conductivity, Lab	N	UMHOS/CM	2390	Y			2470	Y		
PHYSICAL	Total Dissolved Solids, Lab	N	MG/L			2000	Y			1940	Y

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Williams Fork Mine

2021 Annual Hydrology Report

Water Year Monitoring Data

Site: 1SP, Spoil Spring Datum: 6120.0

			Date	5/3/2021		5/11/2021		5/18/2021		5/25/2021	
Type	**Parameter**	**Fraction**	**Units**	**Result**	**Detection**	Result	Detection	Result	Detection	Result	Detection
FIELD	Flow	N	CFS	0.0049	Y	0.0049	Y	0.0049	Y	0.0049	Y
FIELD	pH, Field	N	S.U.	7.1	Y	7	Y	7.1	Y	6.8	Y
FIELD	Specific Conductivity, Field	N	UMHOS/CM	2100	Y	2260	Y	2300	Y	2350	Y
FIELD	Temperature, Field	N	DEG-C	8.7	Y	11.3	Y	15.4	Y	18.1	Y
PRIMARY	Arsenic	PD	UG/L	0.35	Y						
PRIMARY	Arsenic	T	UG/L	0.43	Y						
PRIMARY	Cadmium	PD	UG/L	0.25	N						
PRIMARY	Chromium	TR	UG/L	50	N						
PRIMARY	Copper	PD	UG/L	50	N						
PRIMARY	Lead	PD	UG/L	0.5	N						
PRIMARY	Mercury	T	UG/L	1	N						
PRIMARY	Selenium	PD	UG/L	0.25	N						
TRACE	Nickel	PD	UG/L	40	N						
TRACE	Sulfide	N	UG/L	100	N						
SECONDARY	Iron	TR	UG/L	364	Y	375	Y				
SECONDARY	Manganese	PD	UG/L	421	Y						
SECONDARY	Silver	PD	UG/L	25	N						
SECONDARY	Zinc	PD	UG/L	50	N						
PHYSICAL	pH, Lab	N	S.U.	8.2	Y						
PHYSICAL	Solids, Total Suspended	N	MG/L	20	N	20	N				
PHYSICAL	Specific Conductivity, Lab	N	UMHOS/CM	2170	Y						
PHYSICAL	Total Dissolved Solids, Lab	N	MG/L			1780	Y				

Table: 20A **2021 Annual Hydrology Report**

Williams Fork Mine **Period of Record**

Site: 1SP, Spoil Spring Datum: 6120.0

Type	Parameter	Fraction	Units	Start Date	End Date	Count	Average	Median	Max	Min	STD
FIELD	Flow	N	CFS	1/3/1984	5/25/2021	520	0.062	0.04	0.67	0	0.0739
FIELD	pH, Field	N	S.U.	5/28/1982	5/25/2021	1237	8.02	8.01	9.06	6.7	0.329
FIELD	Specific Conductivity, Field	N	UMHOS/CM	5/28/1982	5/25/2021	1236	1625.15	1627.5	3080	585	242.792
FIELD	Temperature, Field	N	DEG-C	5/28/1982	5/25/2021	1233	9.33	9.5	30	0	5.69
PRIMARY	Arsenic	PD	UG/L	11/20/2012	5/3/2021	42	0.75	0.6	5	0.3	0.73
PRIMARY	Arsenic	T	UG/L	9/22/1983	5/3/2021	44	0.85	0.8	2	0.4	0.34
PRIMARY	Cadmium	PD	UG/L	11/20/2012	5/3/2021	42	0.47	0.5	3	0.1	0.42
PRIMARY	Chromium	TR	UG/L	11/20/2012	5/3/2021	42	50	50	50	50	0
PRIMARY	Copper	PD	UG/L	11/20/2012	5/3/2021	42	50	50	100	50	8
PRIMARY	Lead	PD	UG/L	11/20/2012	5/3/2021	42	0.5	0.5	3	0.1	0.4
PRIMARY	Mercury	T	UG/L	1/17/1983	5/3/2021	48	0.8	1	1	0.1	0.3
PRIMARY	Selenium	PD	UG/L	11/20/2012	5/3/2021	42	0.812	0.3	12.9	0.1	1.99
TRACE	Nickel	PD	UG/L	11/20/2012	5/3/2021	42	40	40	80	10	11
TRACE	Sulfide	N	UG/L	5/31/1990	5/3/2021	42	95	100	210	10	31
SECONDARY	Iron	TR	UG/L	3/23/1984	5/11/2021	328	408	240	2350	0.16	438
SECONDARY	Manganese	PD	UG/L	11/20/2012	5/3/2021	42	505	485	1450	20	347
SECONDARY	Silver	PD	UG/L	11/20/2012	5/3/2021	42	30	30	50	25	3.4
SECONDARY	Zinc	PD	UG/L	11/20/2012	5/3/2021	42	57	50	330	10	45
PHYSICAL	pH, Lab	N	S.U.	9/28/1981	5/3/2021	177	8.11	8.1	8.5	7.08	0.226
PHYSICAL	Solids, Total Suspended	N	MG/L	9/28/1981	5/11/2021	646	11	6	76	1	9.3
PHYSICAL	Specific Conductivity, Lab	N	UMHOS/CM	9/28/1981	5/3/2021	177	2026	2080	2680	7.8	359.2
PHYSICAL	Total Dissolved Solids, Lab	N	MG/L	9/28/1981	5/11/2021	197	1298	1162	5160	820	431

Table: 21 **2021 Annual Hydrology Report**

Williams Fork Mine **Water Year Monitoring Data**

Site: 9BF Datum: 6308.3

			Date	2/9/2021		4/14/2021		9/19/2021		12/12/2021	
			Depth to Water (FT)	42.95		40.77		42.19		43.46	
Type	**Parameter**	**Fraction**	**Units**	**Result**	**Det**	**Result**	**Det**	**Result**	**Det**	**Result**	**Det**
ANION	Alkalinity, Bicarbonate as CaCO3	N	MG/L	382	Y	285	Y	331	Y	361	Y
ANION	Alkalinity, Carbonate as CaCO3	N	MG/L	20	N	20	N	20	N	20	N
ANION	Chloride	N	MG/L	18.2	Y	11.2	Y	12.6	Y	13.9	Y
ANION	Sulfates	N	MG/L	179	Y	155	Y	145	Y	103	Y
CATION	Calcium	D	MG/L	58	Y	39.8	Y	40.4	Y	45.7	Y
CATION	Magnesium	D	MG/L	36.9	Y	25.8	Y	25.2	Y	26.2	Y
CATION	Sodium	D	MG/L	112	Y	97.7	Y	99.4	Y	102	Y
FIELD	pH, Field	N	S.U.	7.12	Y	7.24	Y	7.21	Y	6.98	Y
FIELD	Specific Conductivity, Field	N	UMHOS/CM	1120	Y	980	Y	880	Y	1060	Y
FIELD	Temperature, Field	N	DEG-C	12.6	Y	12.7	Y	14.7	Y	12.9	Y
NUTRIENT		N	MG/L	0.061	Y	0.05	N	0.05	N	0.087	Y
NUTRIENT	NO3-NO2 Nitrogen	N	MG/L	1.12	Y	1.08	Y	0.1	N	0.77	Y
PHYSICAL	Alkalinity as CaCO3, @ pH 4.5	N	MG/L	382	Y	285	Y		Y	361	Y
PHYSICAL	Hardness	N	MG/L	297	Y					222	Y
PHYSICAL	Hardness as CACO3	N	MG/L			206	Y	205	Y		
PHYSICAL	Hydroxide as OH	N	MG/L	20	N	20	N	20	N	20	N
PHYSICAL	pH, Lab	N	S.U.	8	Y	8.2	Y	8	Y	8.1	Y
PHYSICAL	Specific Conductivity, Lab	N	UMHOS/CM	1120	Y	836	Y	897	Y	965	Y
PRIMARY	Arsenic	D	UG/L	0.32	Y	0.9	Y	0.45	Y	2.92	Y
PRIMARY	Cadmium	D	UG/L	0.25	N	0.25	N	0.053	Y	0.055	Y
PRIMARY	Lead	D	UG/L	0.18	Y	1.39	Y	0.51	Y	0.52	Y
PRIMARY	Mercury	D	UG/L	1	N	1	N	1	N	1	N
PRIMARY	Selenium	D	UG/L	13.4	Y	0.43	Y	0.25	N	0.25	N
SECONDARY	Iron	D	UG/L	68	Y	176	Y	230	Y	212	Y
SECONDARY	Manganese	D	UG/L	84	Y	45	Y	75	Y	122	Y
SECONDARY	Zinc	D	UG/L	30	Y	100	Y	45	Y	70	Y
TRACE	Boron	D	UG/L	548	Y	667	Y	616	Y	615	Y
TRACE	Molybdenum	D	UG/L	100	N	100	N	100	N	100	N

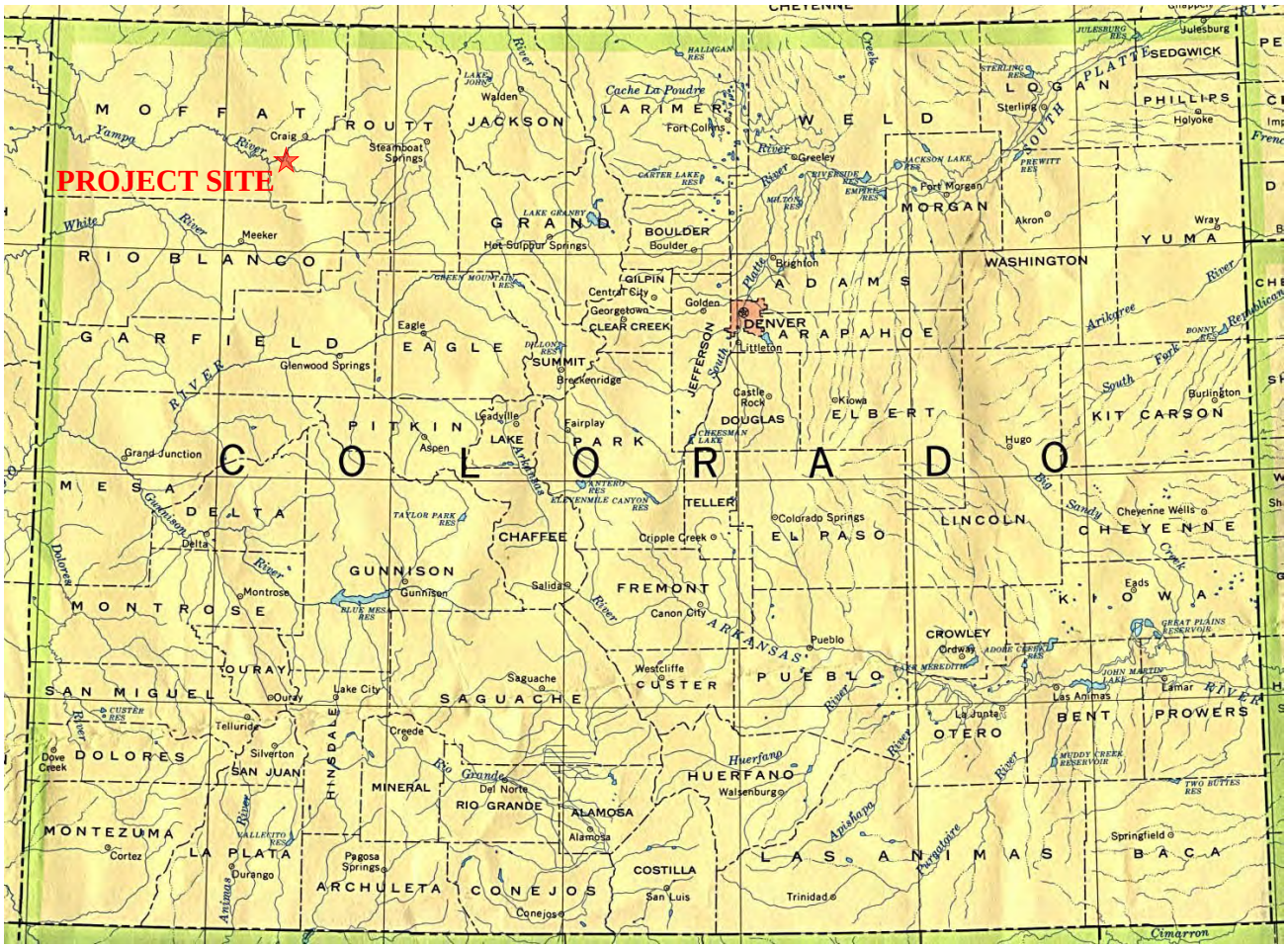
Table: 21A **2021 Annual Hydrology Report**

Williams Fork Mine **Period of Record**

Site: 9BF Datum: 6308.3

Type	Parameter	Fraction	Units	Start Date	End Date	Count	Average	Median	Max	Min	STD
ANION	Alkalinity, Bicarbonate as CaCO3	N	MG/L	6/10/2010	12/12/2021	21	482	440	1100	102	233
ANION	Alkalinity, Carbonate as CaCO3	N	MG/L	6/10/2010	12/12/2021	14	20	20	20	1	8
ANION	Chloride	N	MG/L	6/10/2010	12/12/2021	27	24.4	21	57	8.1	11.7
ANION	Sulfates	N	MG/L	6/10/2010	12/12/2021	27	253	250	520	18	129
CATION	Calcium	D	MG/L	6/10/2010	12/12/2021	27	51.5	57.4	87.3	27	15.8
CATION	Magnesium	D	MG/L	6/10/2010	12/12/2021	27	34.6	36.9	57.6	17.1	11.1
CATION	Sodium	D	MG/L	6/10/2010	12/12/2021	27	208	157	493	97.7	112
FIELD	pH, Field	N	S.U.	11/29/2016	12/12/2021	21	7.18	7.16	7.67	6.84	0.193
FIELD	Specific Conductivity, Field	N	UMHOS/CM	11/29/2016	12/12/2021	21	1170	1150	1850	710	262
FIELD	Temperature, Field	N	DEG-C	11/29/2016	12/12/2021	21	13.3	12.9	19.2	9.4	1.88
NUTRIENT	Nitrate as NO3	N	MG/L	2/15/2011	12/12/2021	17	0.046	0.05	0.13	0.01	0.03
NUTRIENT	Nitrate Nitrogen	N	MG/L	6/10/2010	11/19/2017	10	0.1	0.05	0.6	0.02	0.2
NUTRIENT	NO3-NO2 Nitrogen	N	MG/L	2/15/2011	12/12/2021	48	0.686	0.325	3.12	0.02	0.832
PHYSICAL	Alkalinity as CaCO3, @ pH 4.5	N	MG/L	6/10/2010	12/12/2021	27	481	396	957	102	220
PHYSICAL	Hardness	N	MG/L	2/15/2011	12/12/2021	22	288	305	455	138	84.8
PHYSICAL	Hardness as CACO3	N	MG/L	4/14/2021	9/19/2021	2	206	206	206	205	0.707
PHYSICAL	Hydroxide as OH	N	MG/L	2/15/2011	12/12/2021	24	20	20	20	20	0
PHYSICAL	pH, Lab	N	S.U.	6/10/2010	12/12/2021	27	7.85	8	8.4	6.9	0.414
PHYSICAL	Specific Conductivity, Lab	N	UMHOS/CM	6/10/2010	12/12/2021	27	1400	1310	2320	822	393
PRIMARY	Arsenic	D	UG/L	6/10/2010	12/12/2021	27	2.37	0.8	30	0.22	5.83
PRIMARY	Cadmium	D	UG/L	6/10/2010	12/12/2021	27	1.2	0.5	10	0.05	2.3
PRIMARY	Lead	D	UG/L	6/10/2010	12/12/2021	27	4.67	0.5	50	0.1	13.2
PRIMARY	Mercury	D	UG/L	6/10/2010	12/12/2021	27	0.9	1	1	0.2	0.3
PRIMARY	Selenium	D	UG/L	6/10/2010	12/12/2021	27	3.26	0.68	20.5	0.1	5.21
SECONDARY	Iron	D	UG/L	6/10/2010	12/12/2021	27	187	140	1210	20	236
SECONDARY	Manganese	D	UG/L	6/10/2010	12/12/2021	27	62.3	50	129	10	37.9
SECONDARY	Zinc	D	UG/L	6/10/2010	12/12/2021	27	96	40	830	5	180
TRACE	Boron	D	UG/L	6/10/2010	12/12/2021	27	588	610	690	440	75
TRACE	Molybdenum	D	UG/L	6/10/2010	12/12/2021	27	80	100	100	50	20

FIGURES

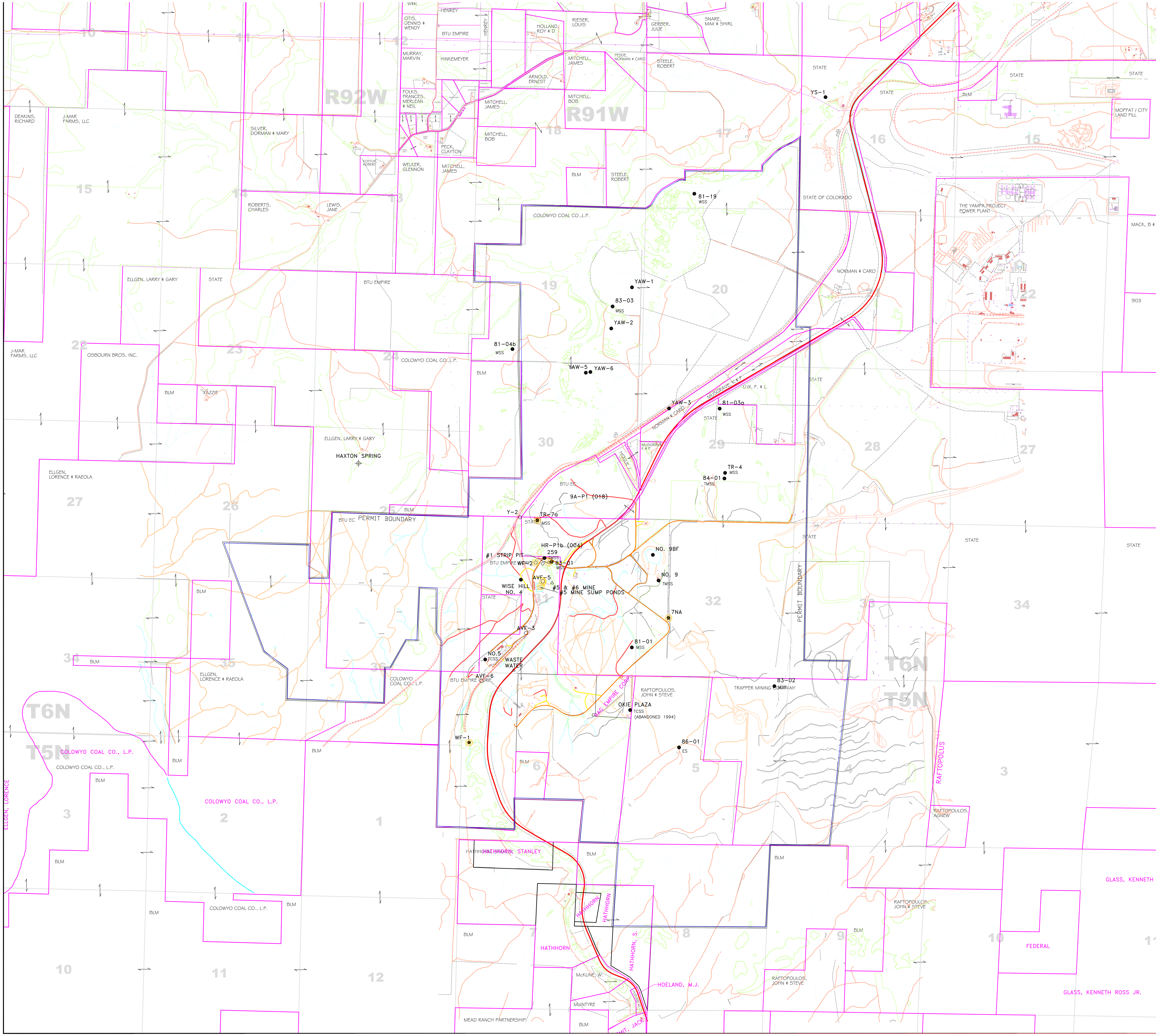


SCALE

0 50 100

MILES

GENERAL LOCATION MAP



LEGEND

- PERMIT BOUNDARY
- 86-01 — GROUNDWATER MONITOR WELL
- AVF-6 — ALLUVIAL MONITOR WELL
- WF-6 — STREAM WATER QUALITY MONITOR
- WF-1 — STREAM QUALITY & QUANTITY MONITOR
- A — MINE DISCHARGE LOCATION
- 1 — STREAM GAUGE
- HAXTON SPRING — SPRING
- WSS — WHITE SANDSTONE
- TMSS — TWENTYMILE SANDSTONE
- MSS — MIDDLE SANDSTONE
- TCSS — TROUT CREEK SANDSTONE
- ES — "E" SEAM
- 9A-P1 — POND

SITES MONITORED UNDER TEMPORARY CESSATION TR01-32

- WF-1 — TC SITES HIGHLIGHTED CIRCLE

MOFFAT COUNTY MINING, LLC

Peabody ENERGY

FIGURE 2
WILLIAMS FORK MINES
HYDROLOGIC MONITORING PROGRAM
LOCATION MAP

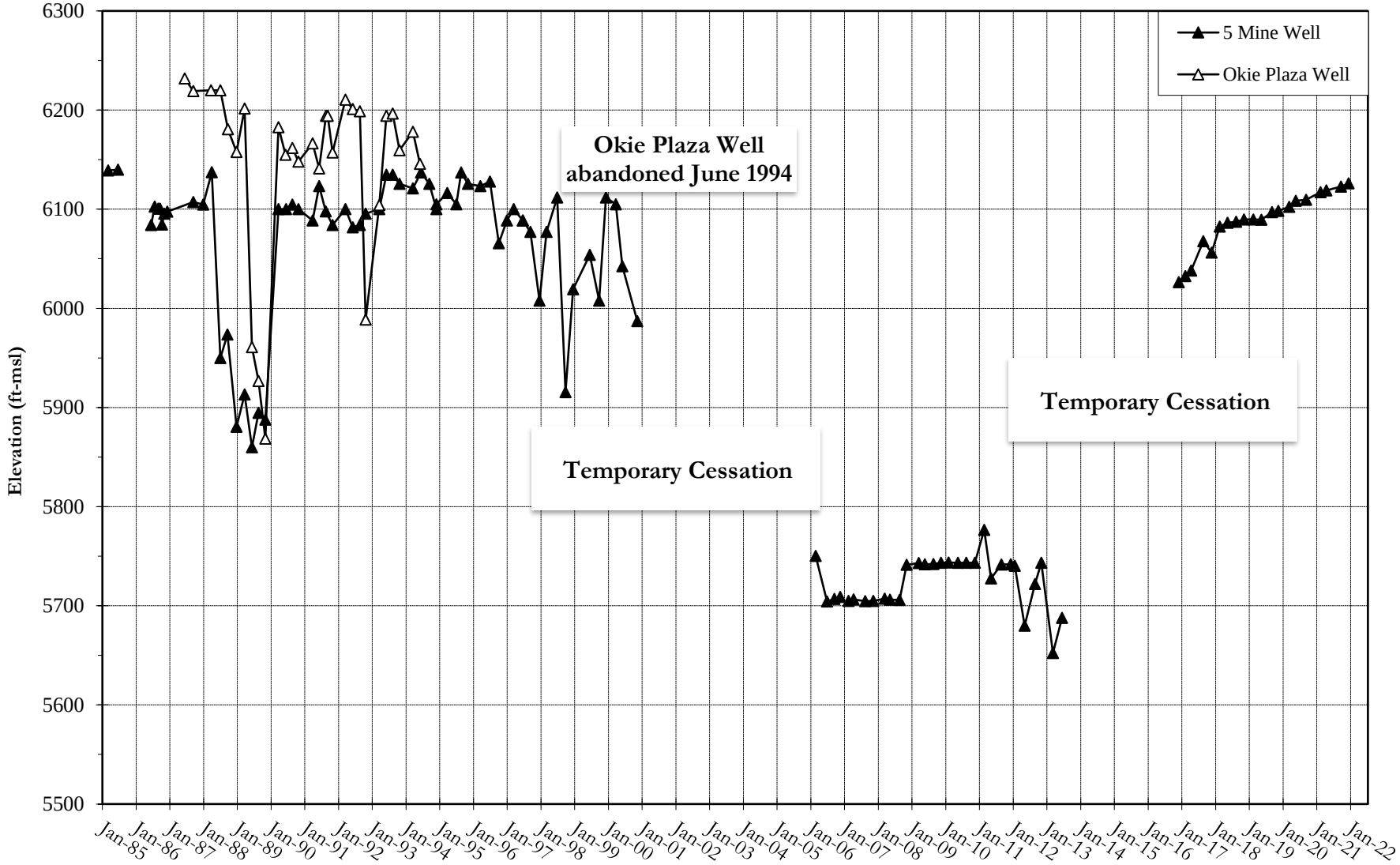
DESIGNED BY:	FJJ	COUNTRY:	USA
DRAWN BY:	KEC	STATE/PROVINCE:	Colorado
APPROVED BY:	Supervisor	GCS:	T 6 N, R 91 W
DATE:	2018 03 06	DRAWING/SHEET:	1 of 1
SCALE:	1" =1000'	C.I.:	0'

0 1000 2000 3000 FEET

I:\Miranda\FIG 2 2017.dwg

PLOT OF WATER LEVELS

Trout Creek Sandstone Wells

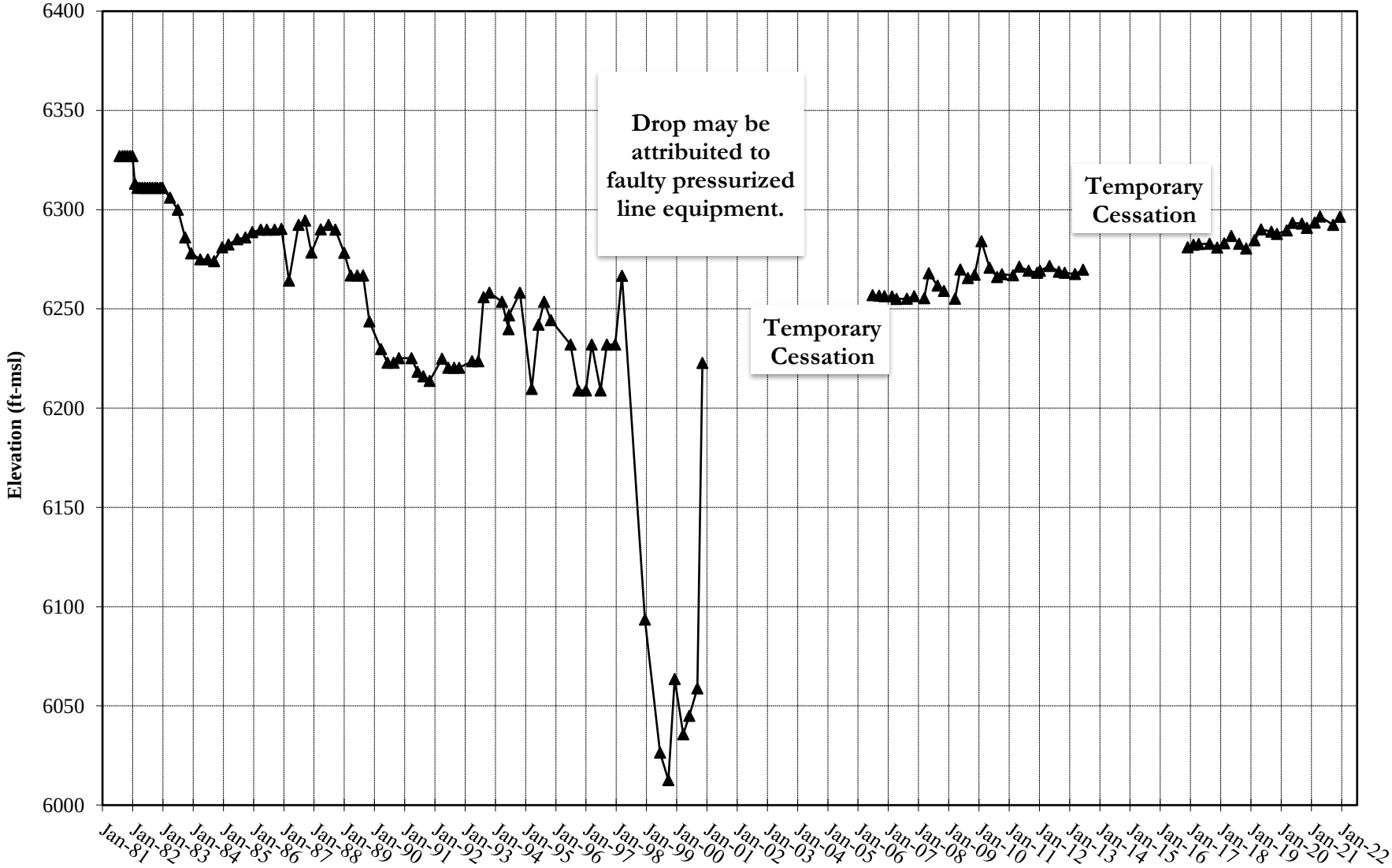


I:\Environmental\CDMG - CDRMS\AHR\2021\Williams Fork\Figures\3 TROUT CREEK SS WL

FIGURE 3

PLOT OF WATER LEVELS

Well TR-4, Middle Sandstone



I:\Environmental\CDMG - CDRMS\AHR\2021\Williams Fork\Figures\4 MIDDLE SS TR-4 WL

FIGURE 4

PLOT OF WATER LEVELS

Well TR-7a, Middle Sandstone

I:\Environmental\CDMG - CDRMS\AHR\2021\Williams Fork\Figures\5 MIDDLE SS TR-7A WL

FIGURE 5

PLOT OF WATER LEVELS

Well 81-01, Middle Sandstone

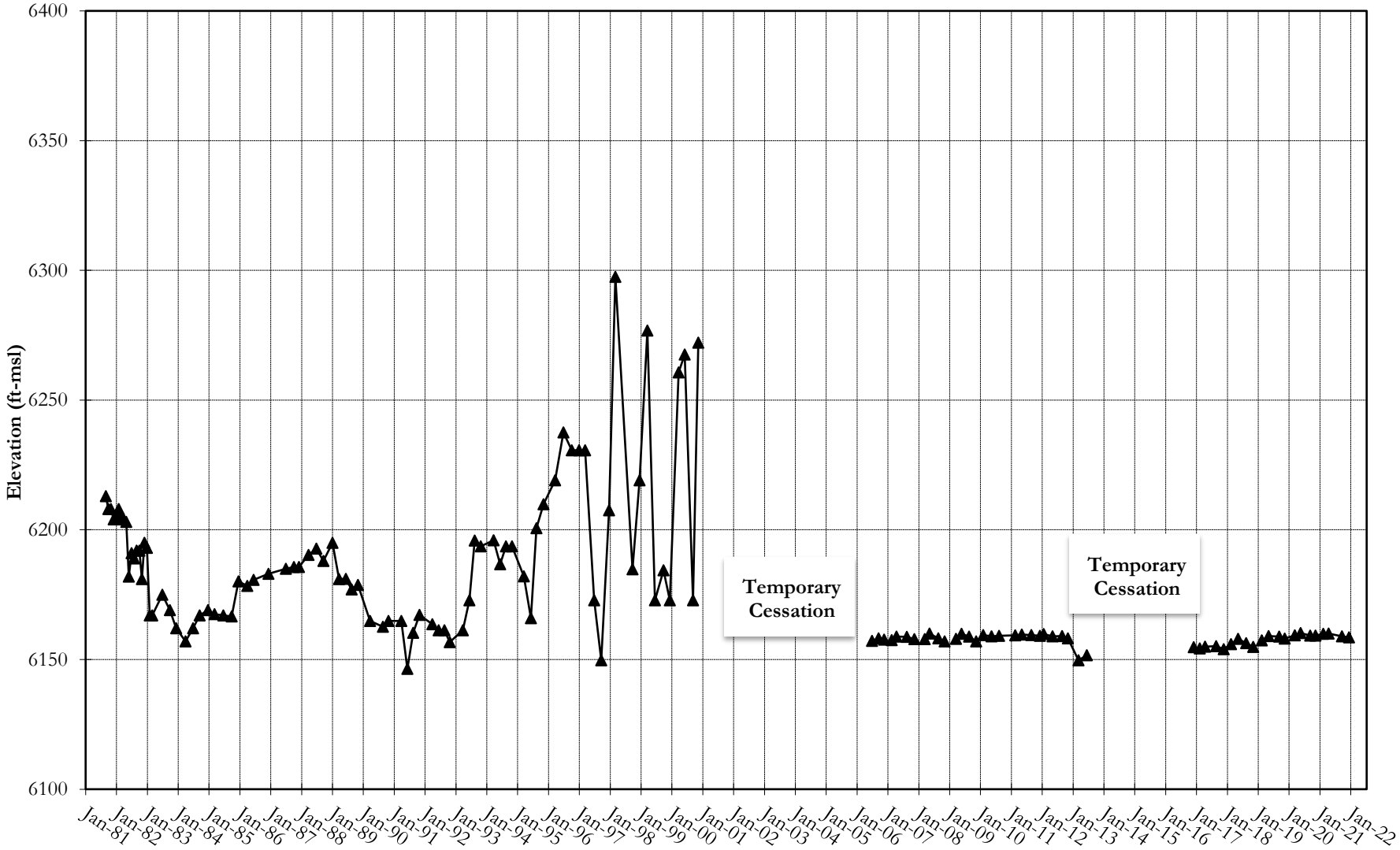


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FIGURE 6

PLOT OF WATER LEVELS

Well 83-01, Middle Sandstone

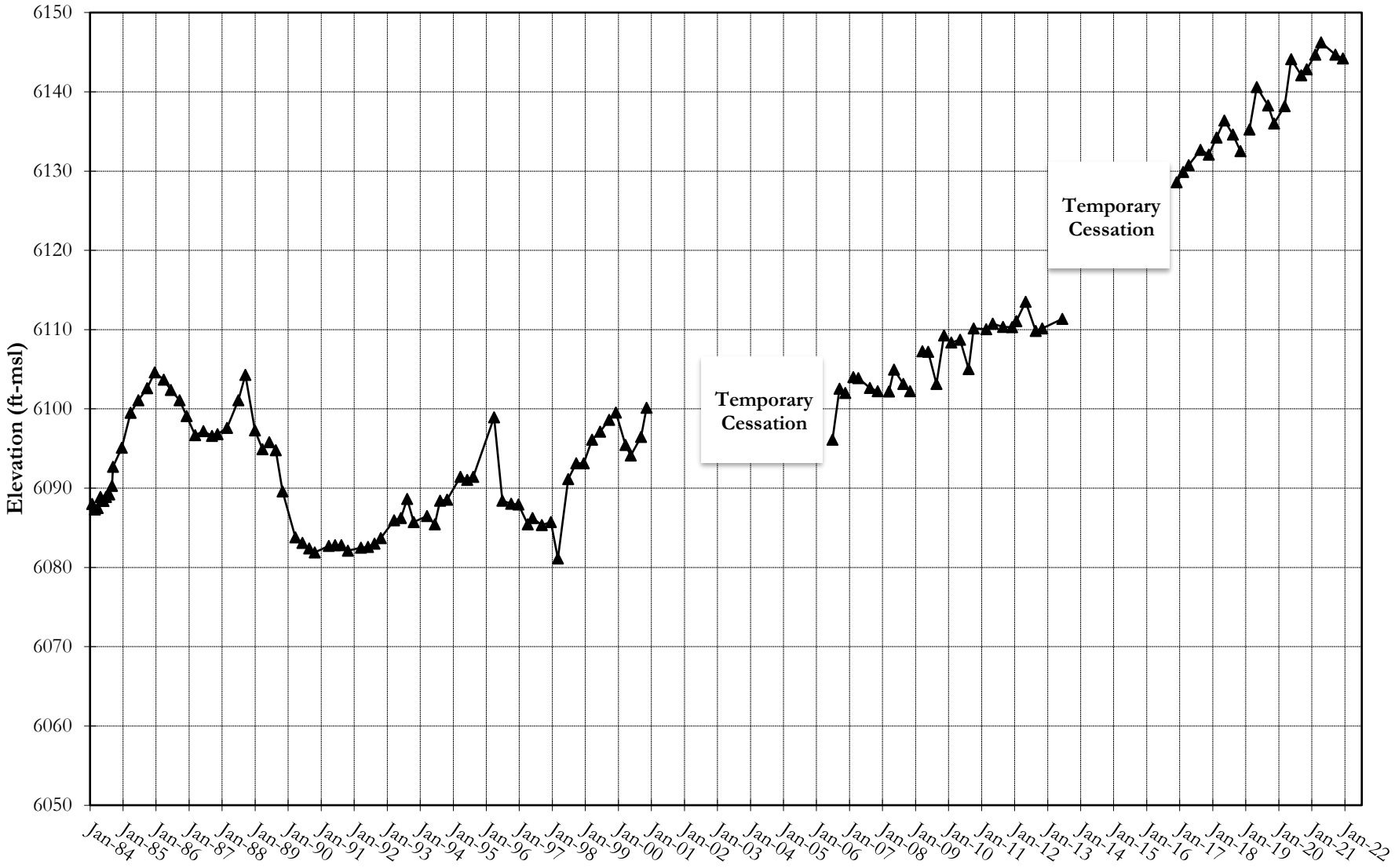

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FIGURE 7

PLOT OF WATER LEVELS

Well 83-02, Middle Sandstone

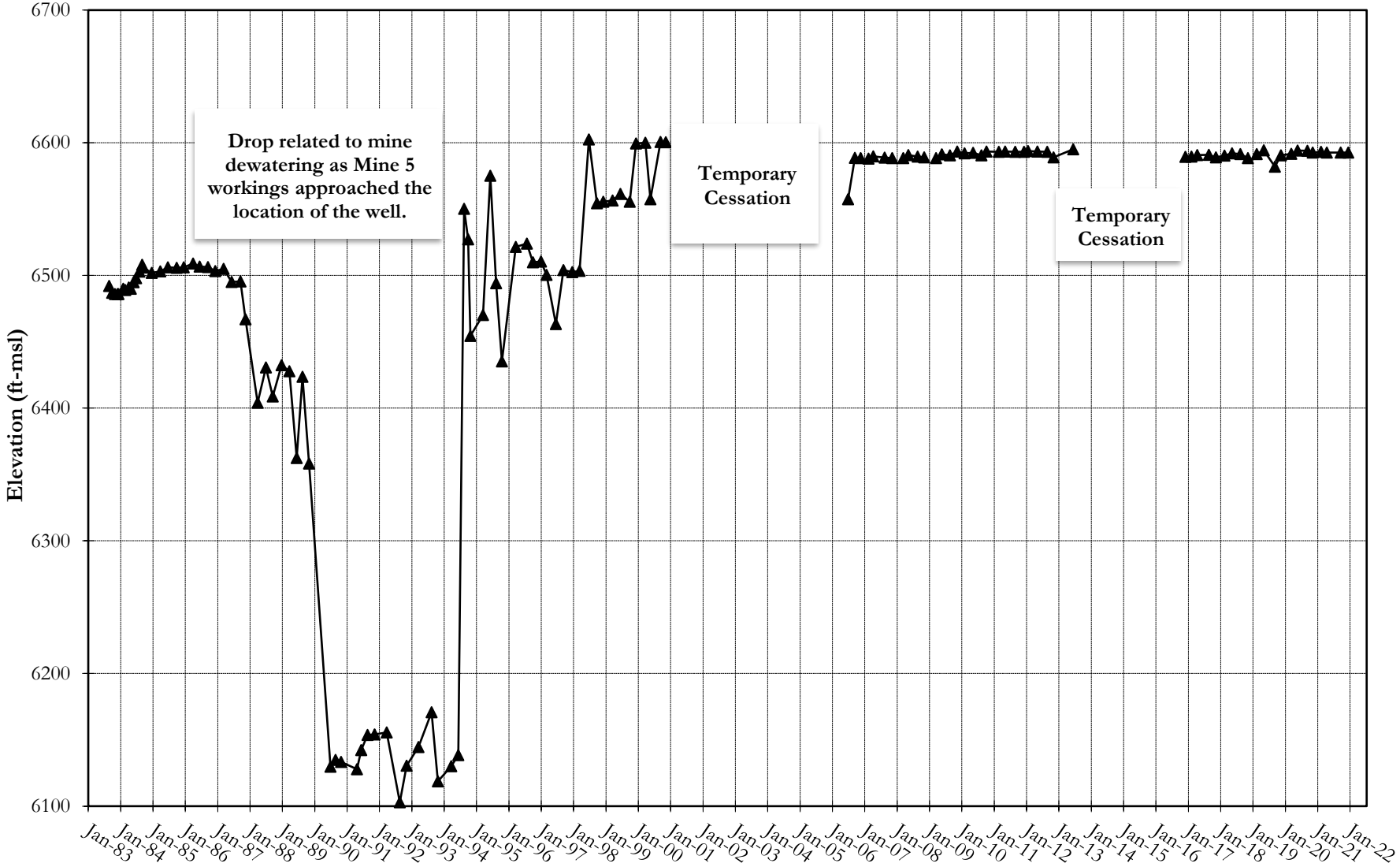

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FIGURE 8

PLOT OF WATER LEVELS

Well 83-03, Middle Sandstone

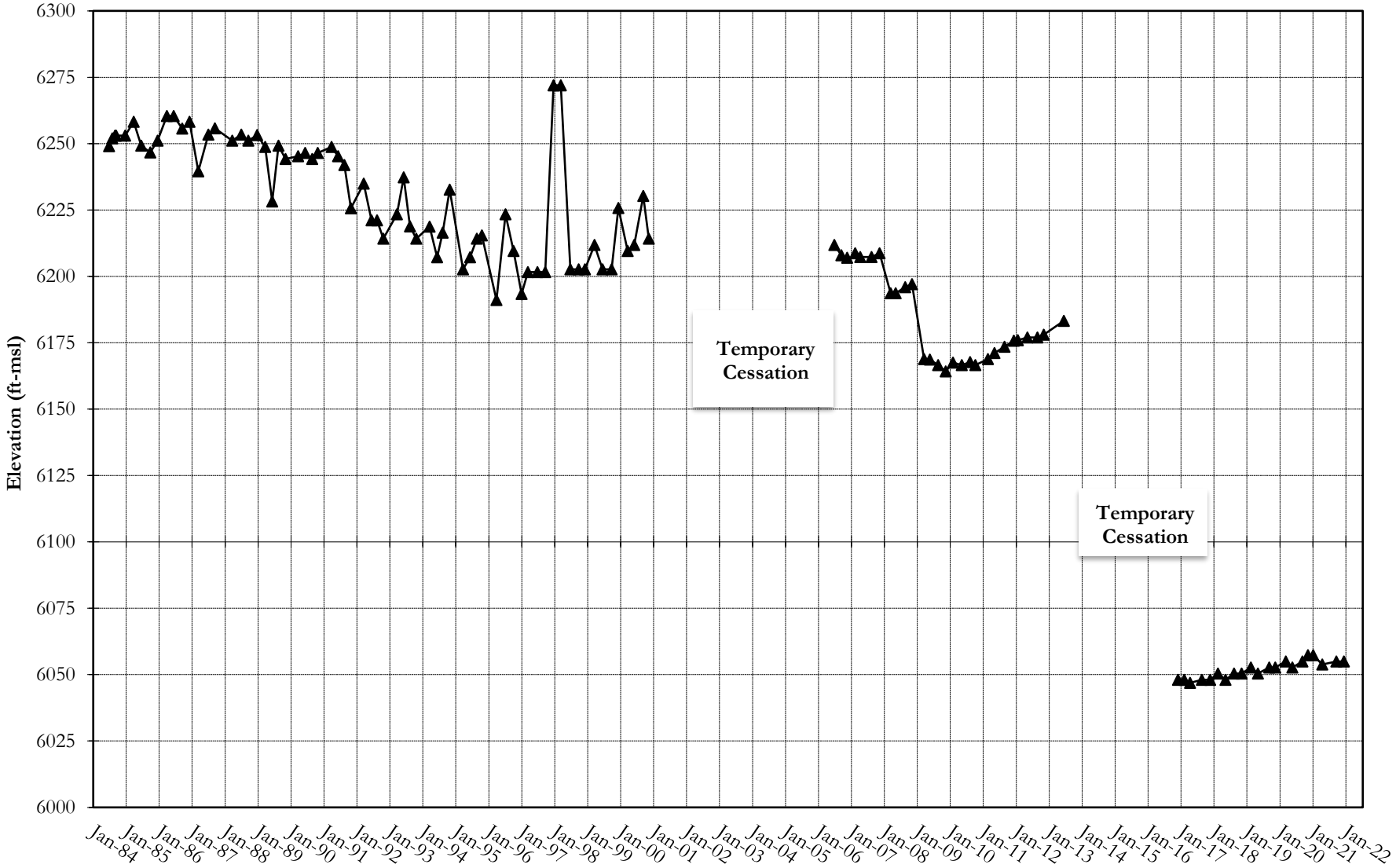

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FIGURE 9

PLOT OF WATER LEVELS

Twentymile Sandstone Wells

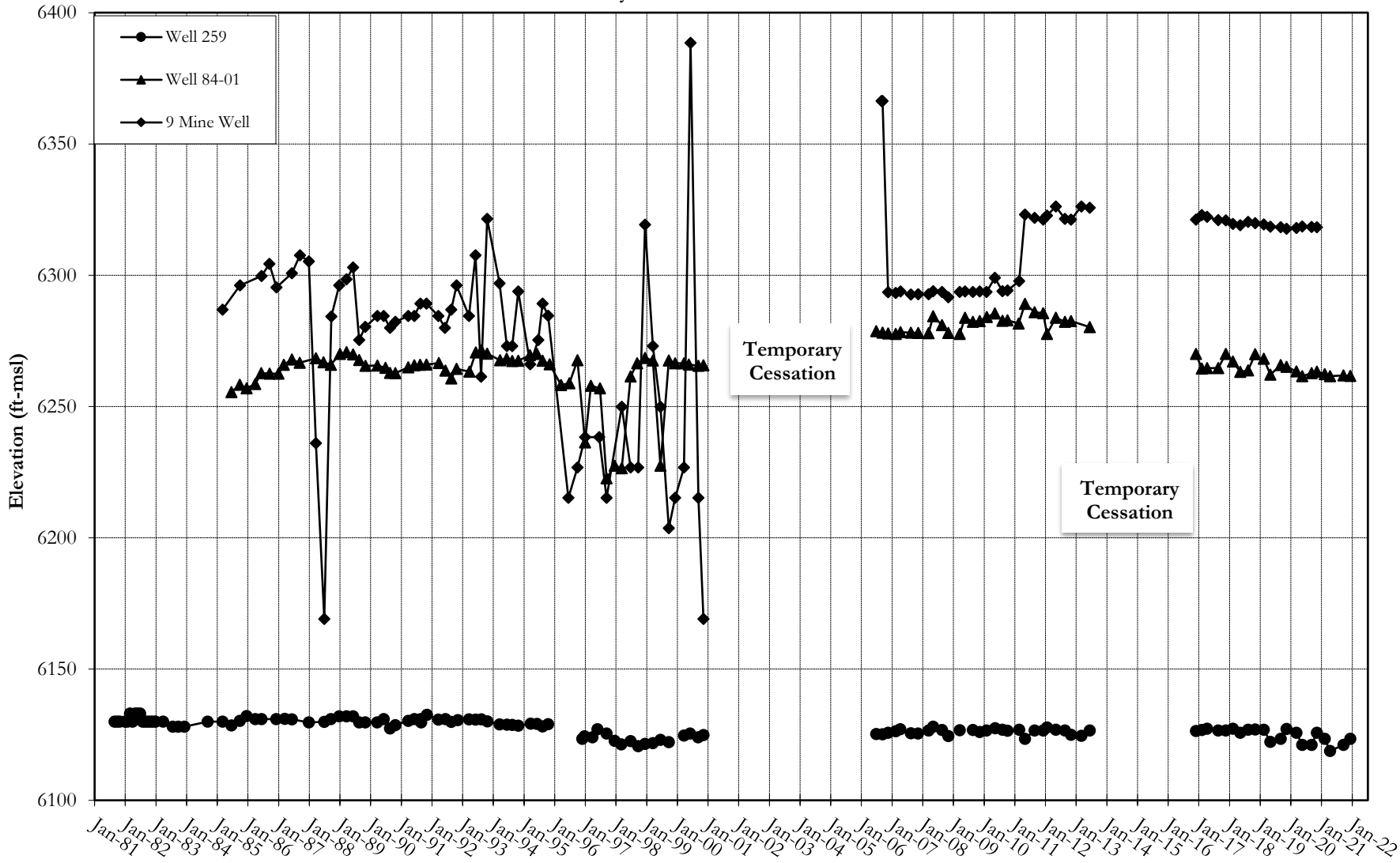
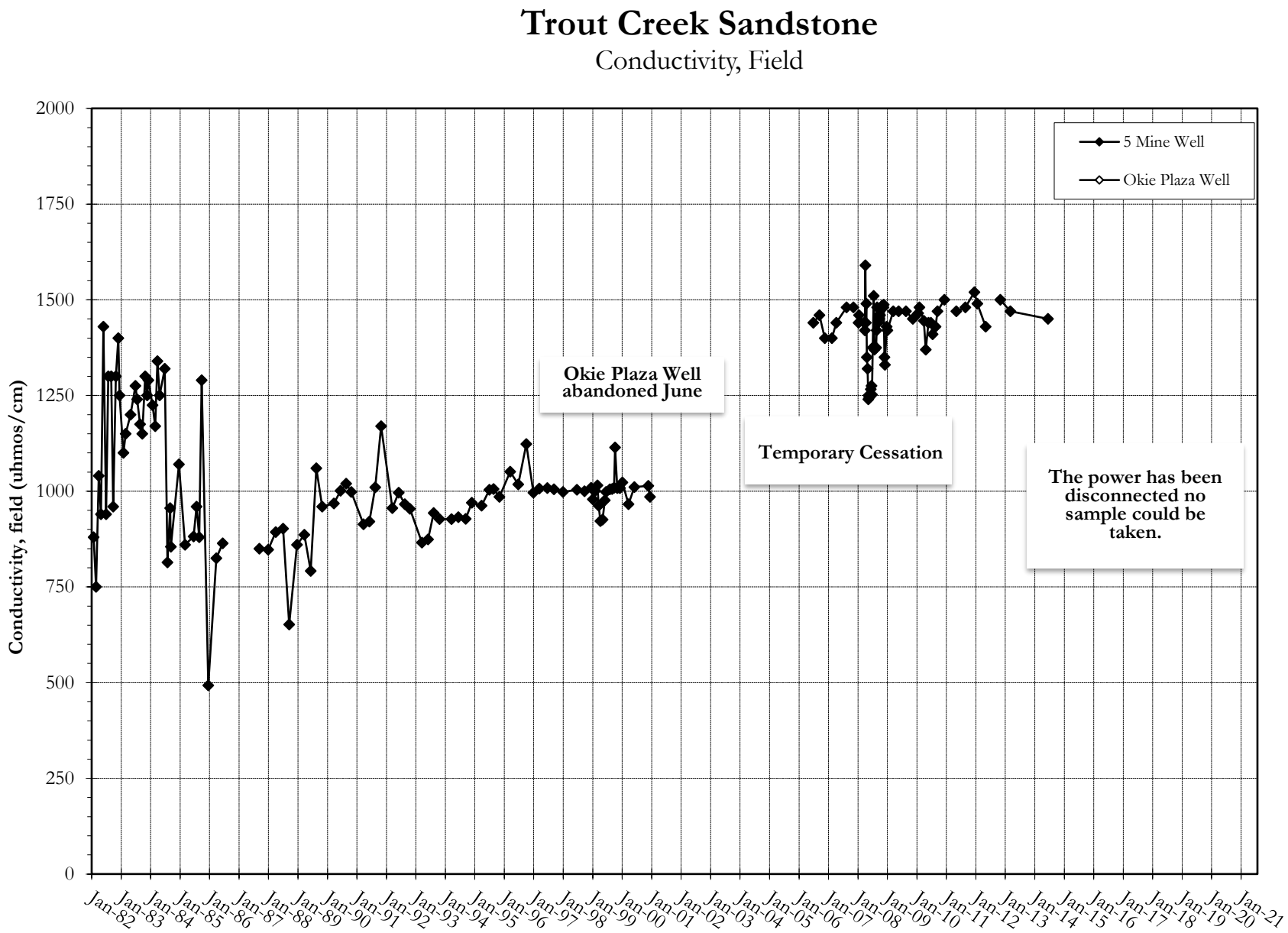


FIGURE 10

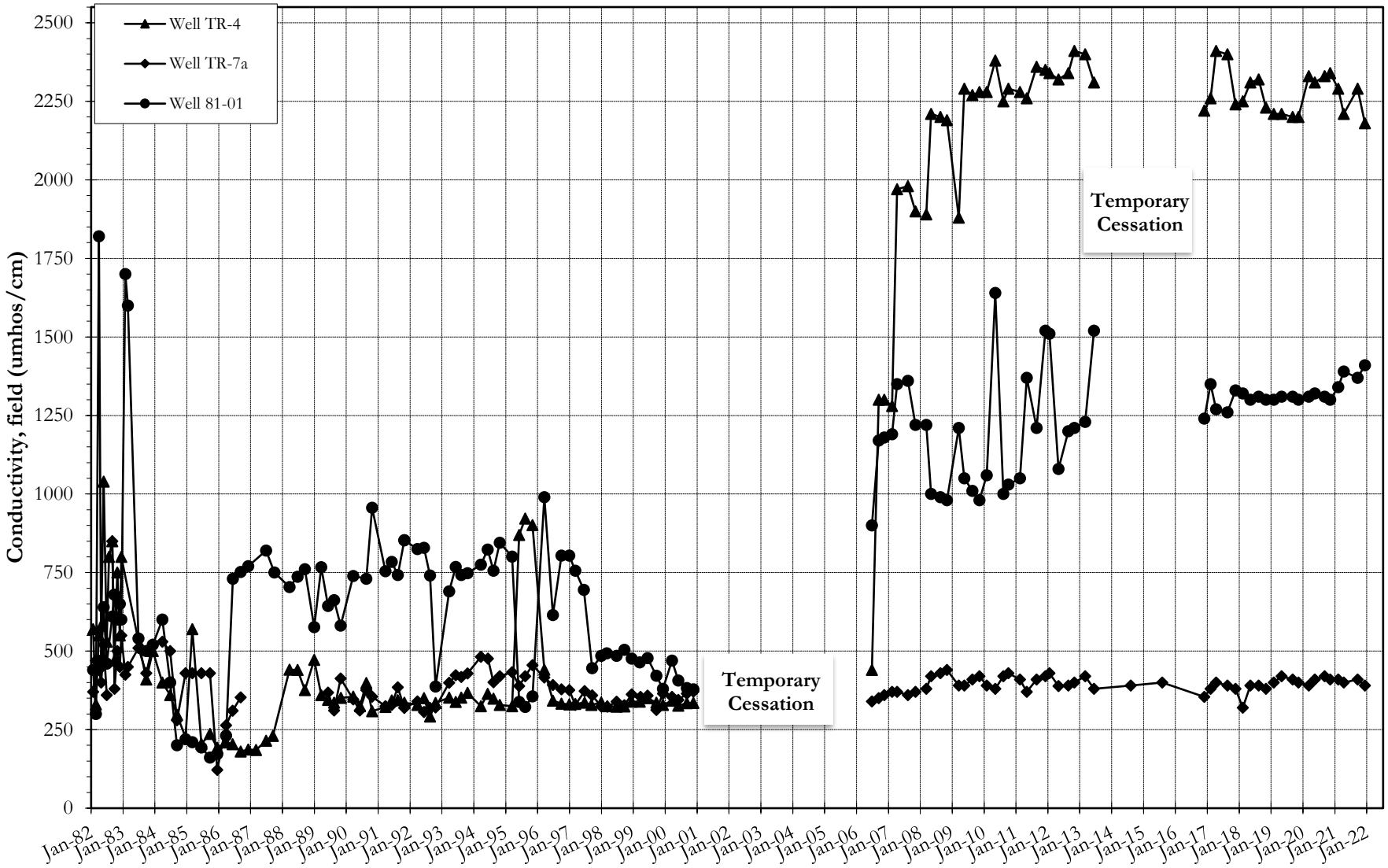


I:\Environmental\CDMG - CDRMS\AHR\2021\Williams Fork\Figures\11 TROUT CREEK SS EC

FIGURE 11

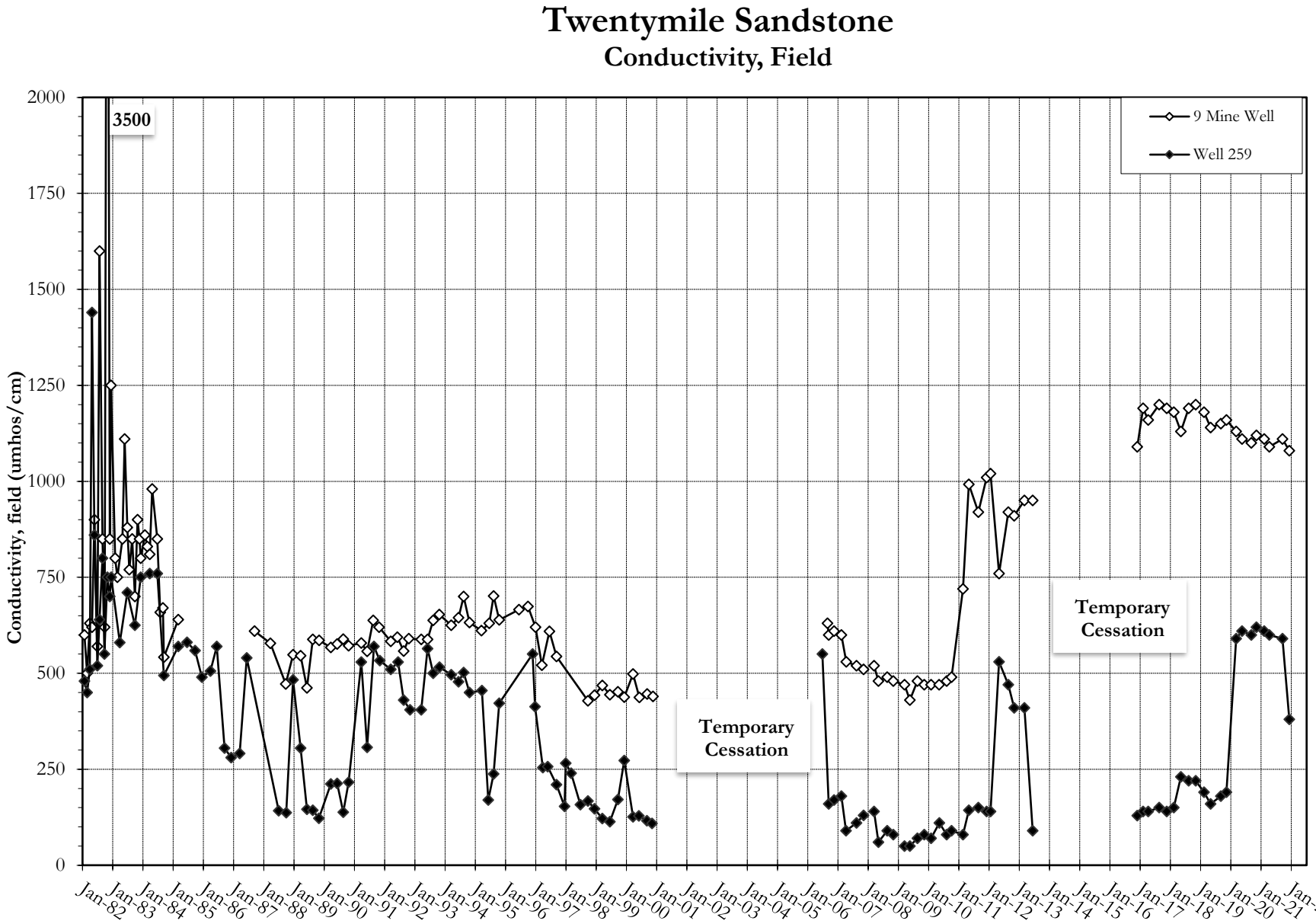
Middle Sandstone

Conductivity, Field



I:\Environmental\CDMG - CDRMS\AHR\2021\Williams Fork\Figures\12 MIDDLE SS EC

FIGURE 12



I:\Environmental\CDMG - CDRMS\AHR\2021\Williams Fork\Figures\13 TWENTYMILE SS EC

FIGURE 13

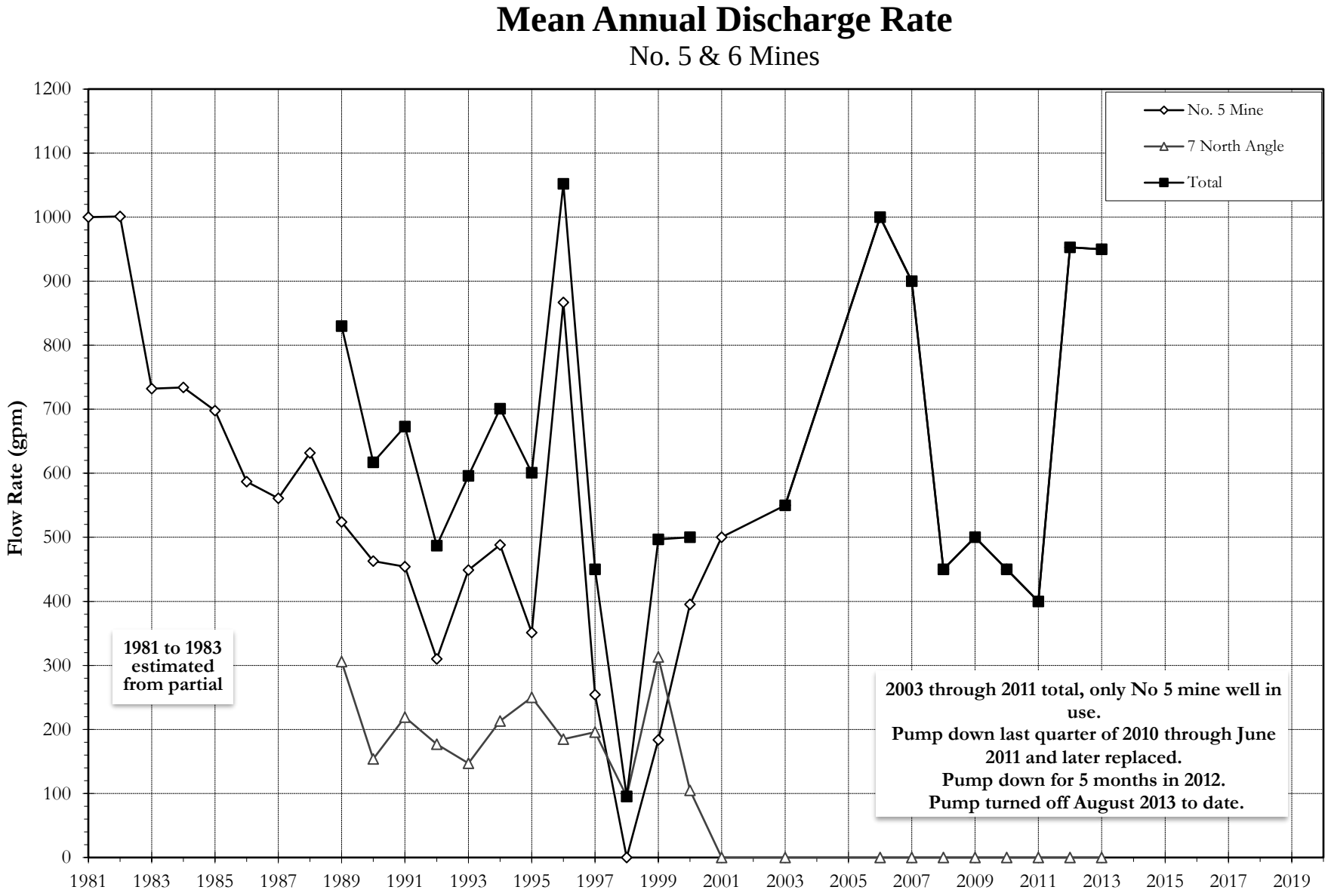
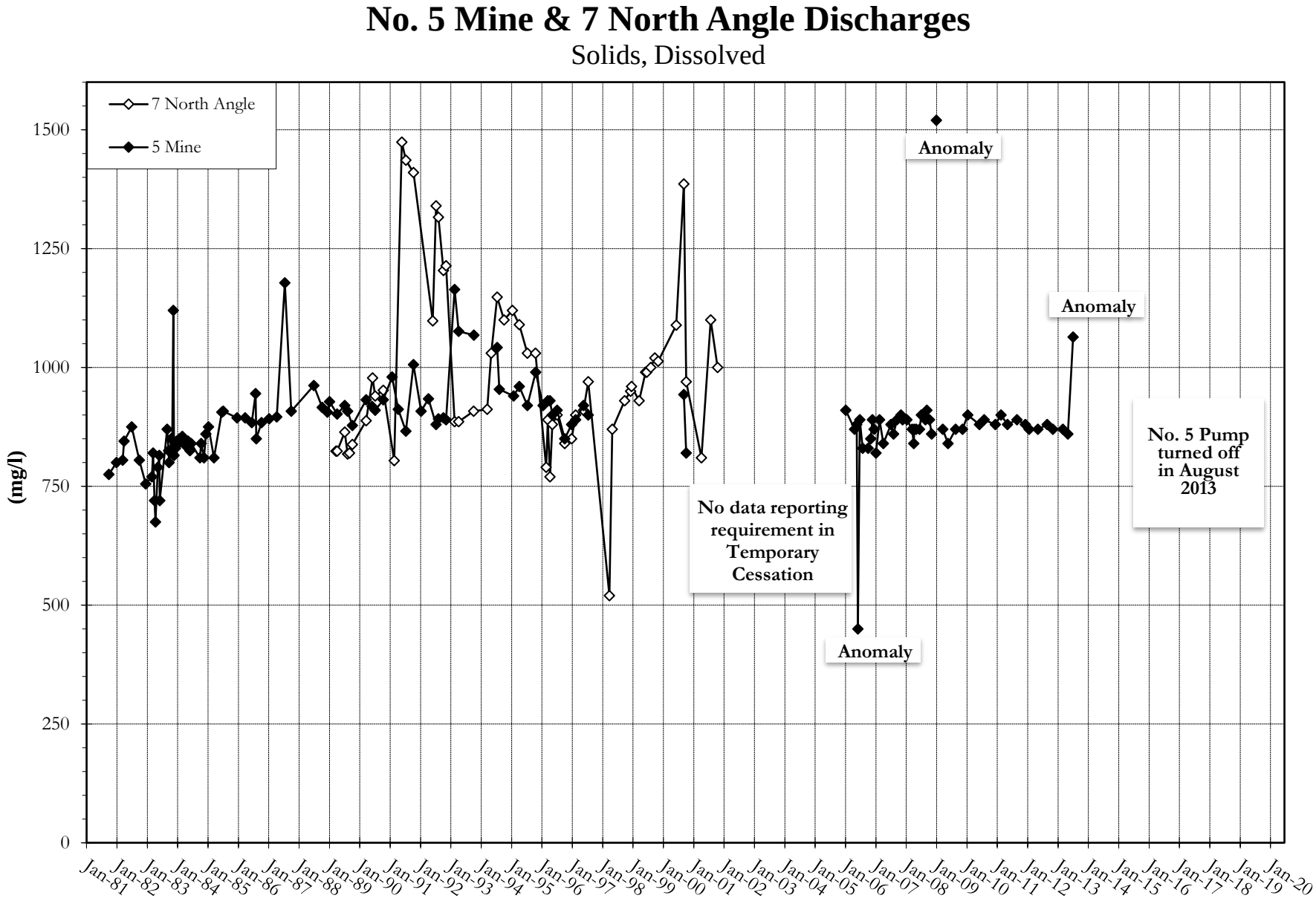

Mean Annual Discharge Rate
No. 5 & 6 Mines
Flow Rate (gpm)
No. 5 Mine
7 North Angle
Total
1981 to 1983 estimated from partial
2003 through 2011 total, only No 5 mine well in use.
Pump down last quarter of 2010 through June 2011 and later replaced.
Pump down for 5 months in 2012.
Pump turned off August 2013 to date.

FIGURE 14

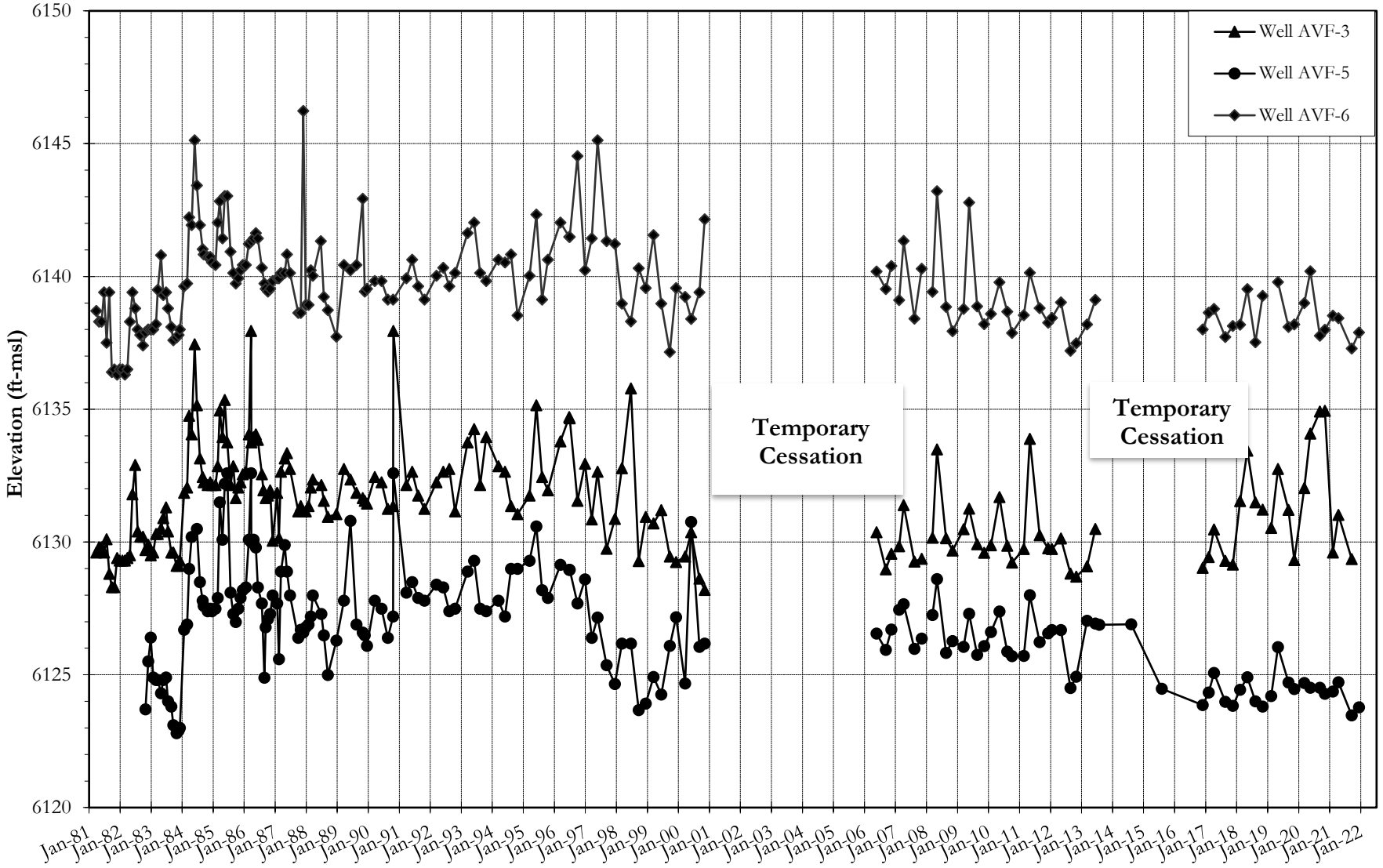


I:\Environmental\CDMG - CDRMS\AHR\2021\Williams Fork\Figures\15 5MN & 7NA POR TDS

FIGURE 15

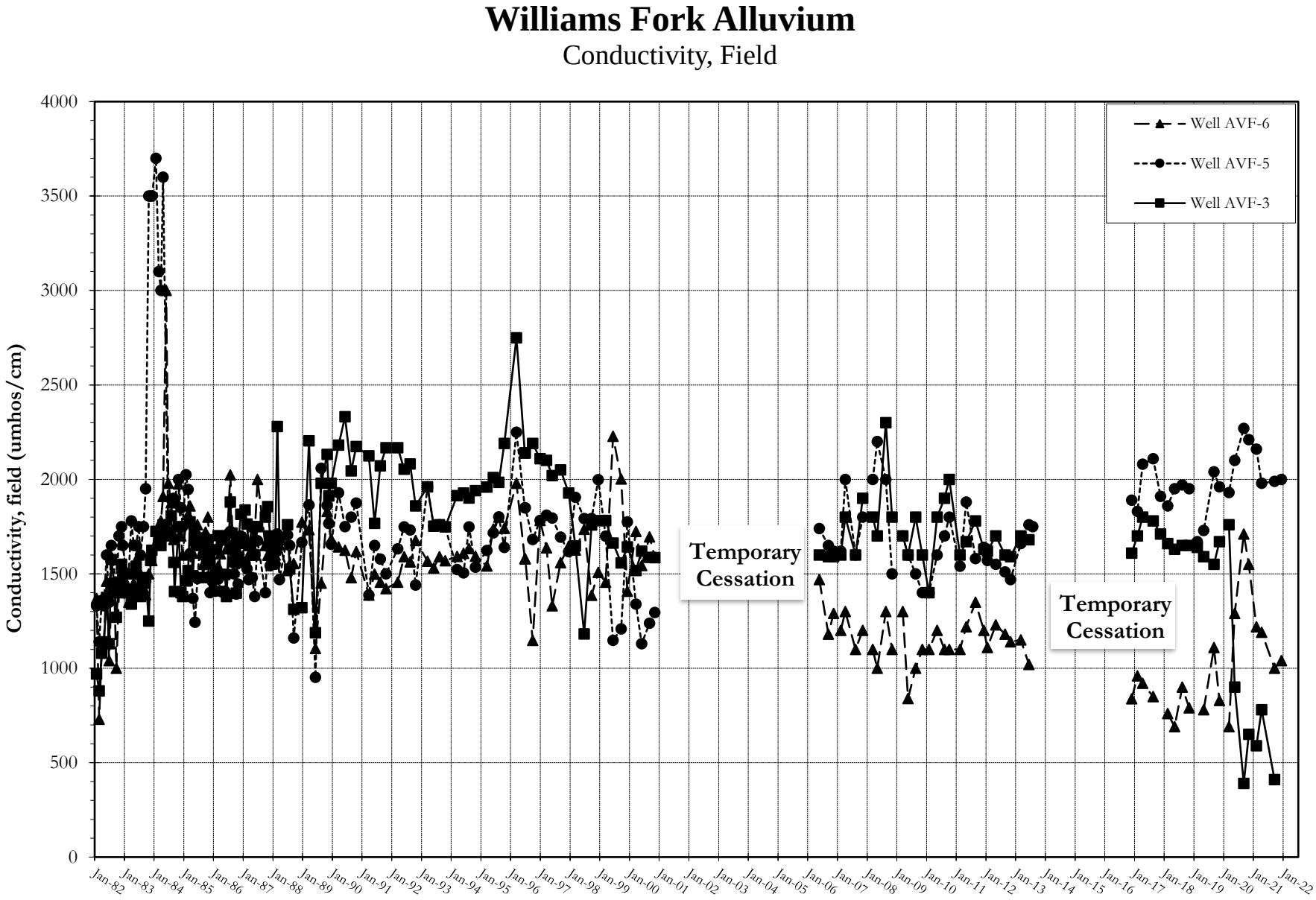
PLOT OF WATER LEVELS

Williams Fork Alluvium



I:\Environmental\CDMG - CDRMS\AHR\2021\Williams Fork\Figures\16 WILLIAMS FK ALLUVIUM POR WL

FIGURE 16

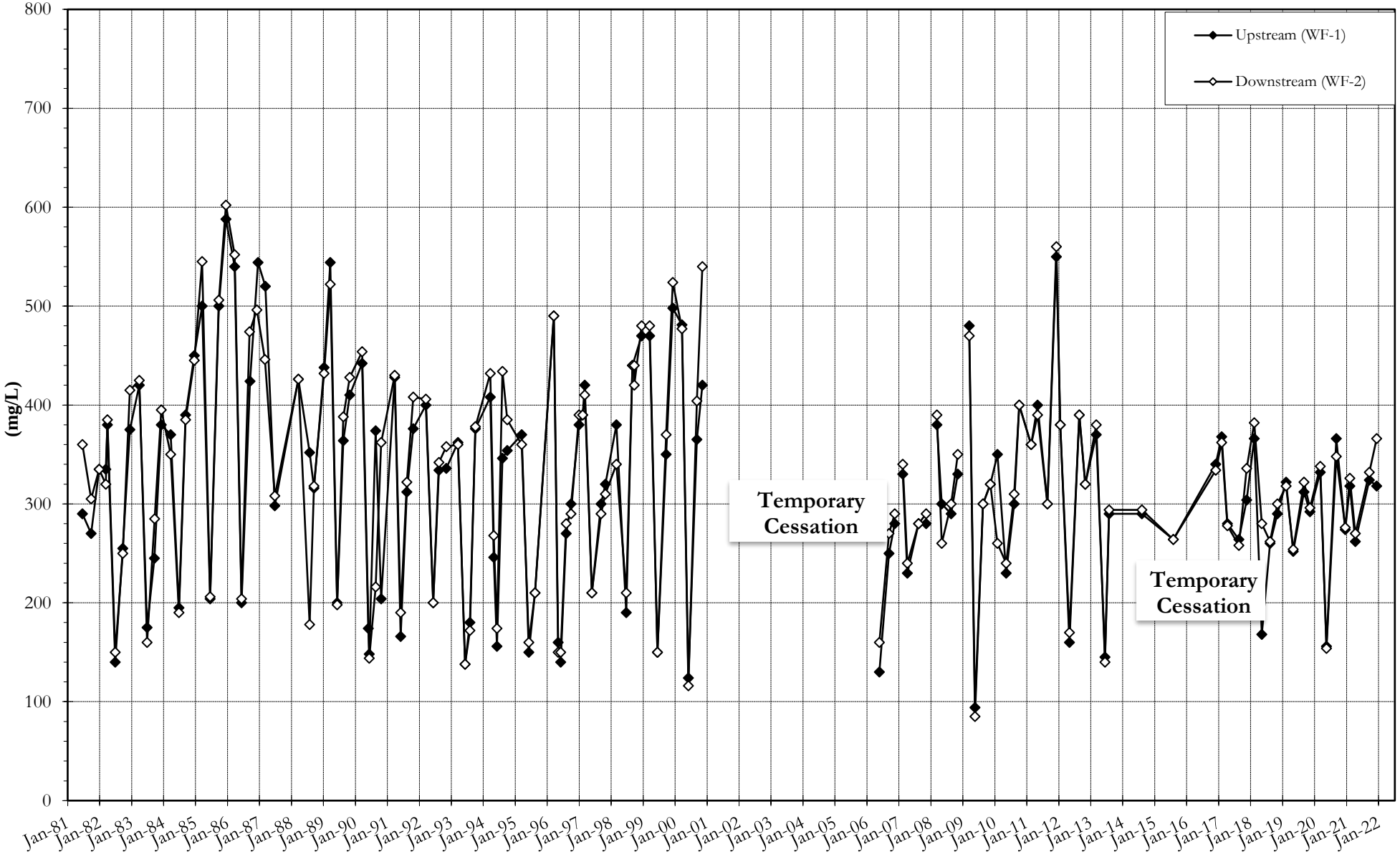


I:\Environmental\CDMG - CDRMS\AHR\2021\Williams Fork\Figures\17 WILLIAMS FK ALLUVIUM POR EC

FIGURE 17

Williams Fork River

Solids, Total Dissolved

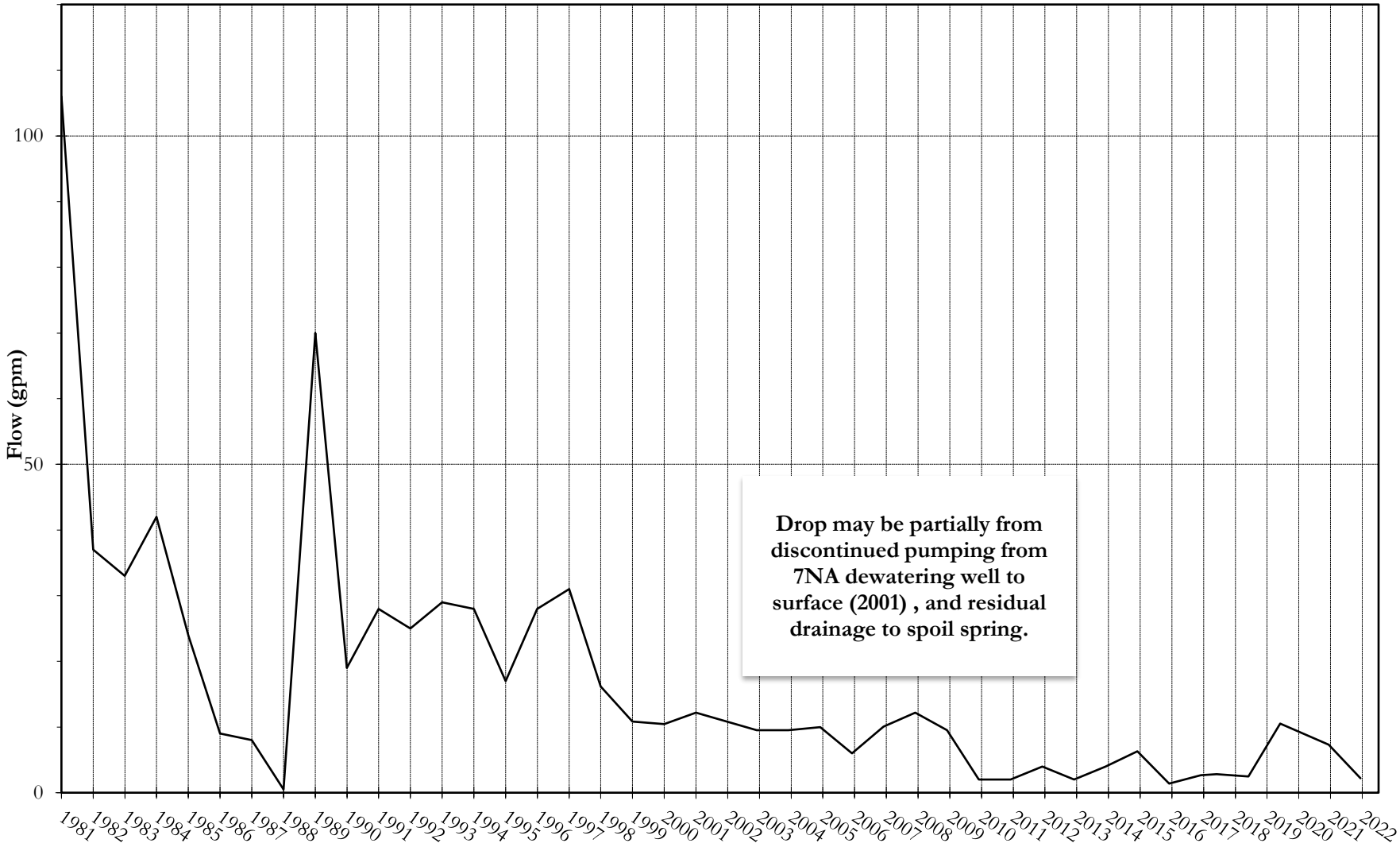


I:\Environmental\CDMG - CDRMS\AHR\2021\Williams Fork\Figures\18 WILLIAMS FK RIVER POR TDS

FIGURE 18

Average Discharge From No. 1 Strip Pit

Period of Record

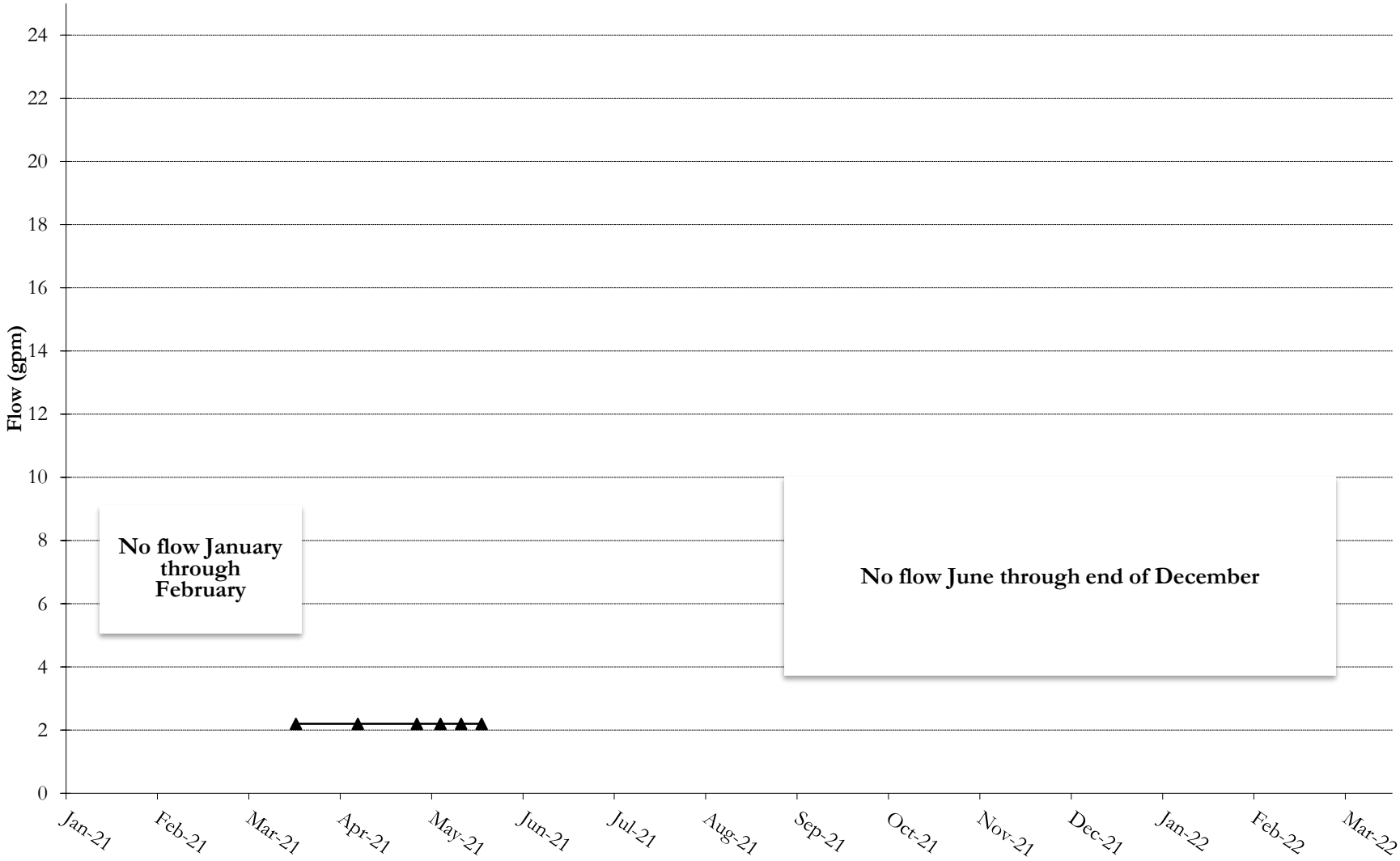


I:\Environmental\CDMG - CDRMS\AHR\2021\Williams Fork\Figures\19 STRIP PIT 1, 1SP POR DISCHARGE

FIGURE 19

Plot of Flow Rates

No. 1 Strip Pit Discharge, 2021 Water Year

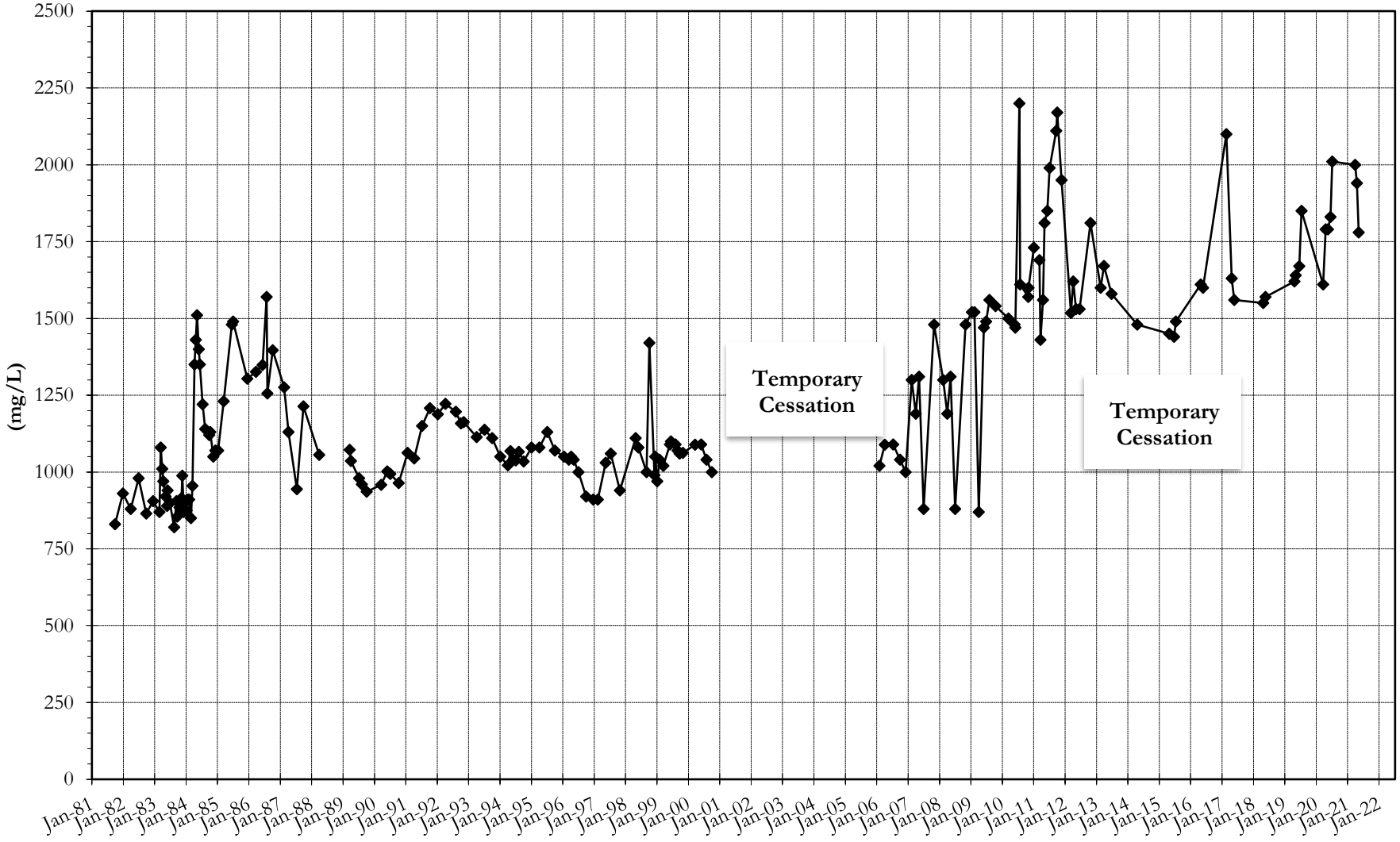


I:\Environmental\CDMG - CDRMS\AHR\2021\Williams Fork\Figures\20 STRIP PIT 1, 1SP WY DISCHARGE

FIGURE 20

No. 1 Strip Pit Discharge

Solids, Dissolved

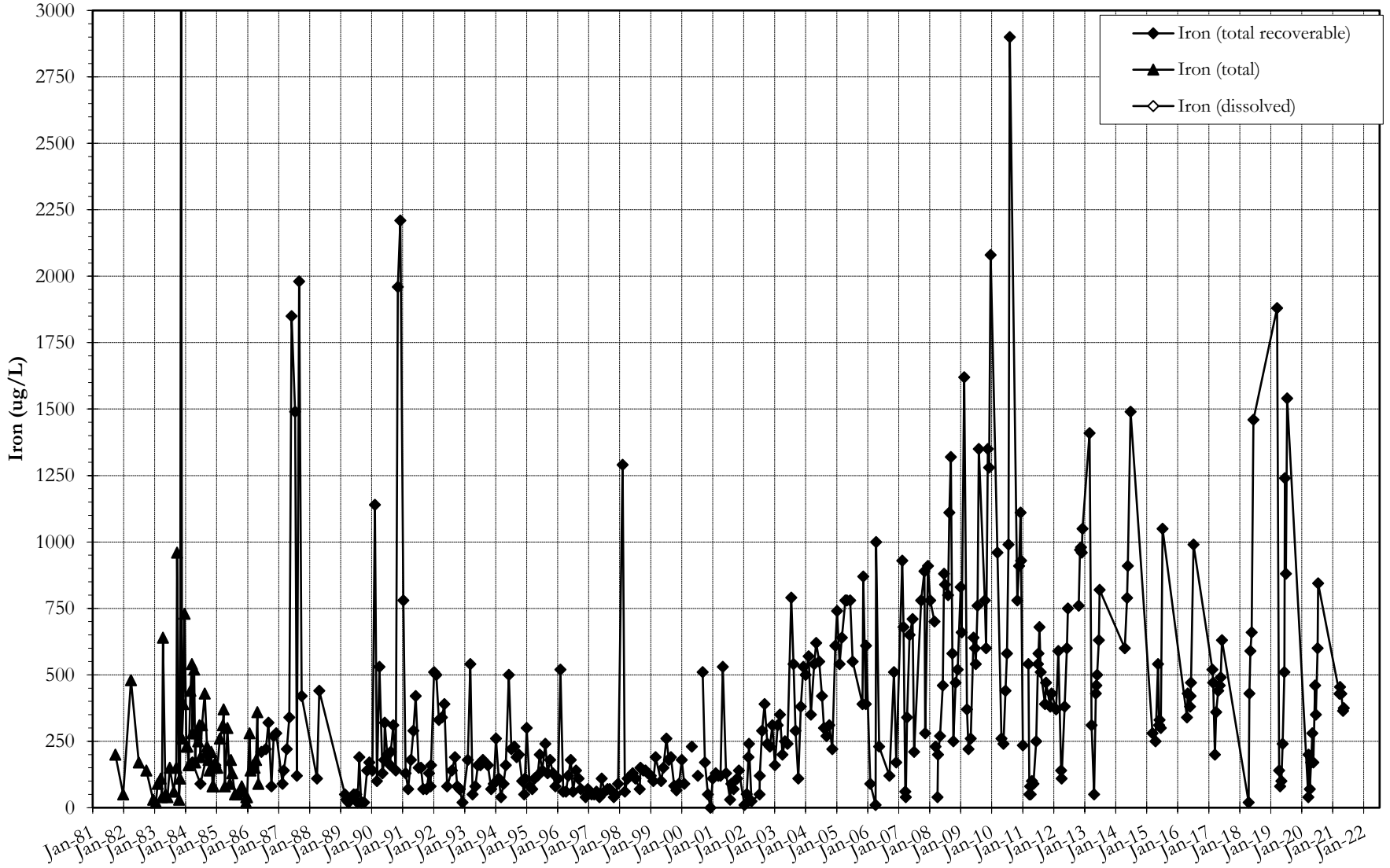


I:\Environmental\CDMG - CDRMS\AHR\2021\Williams Fork\Figures\21 STRIP PIT 1, 1SP POR TDS

FIGURE 21

No. 1 Strip Pit Discharge

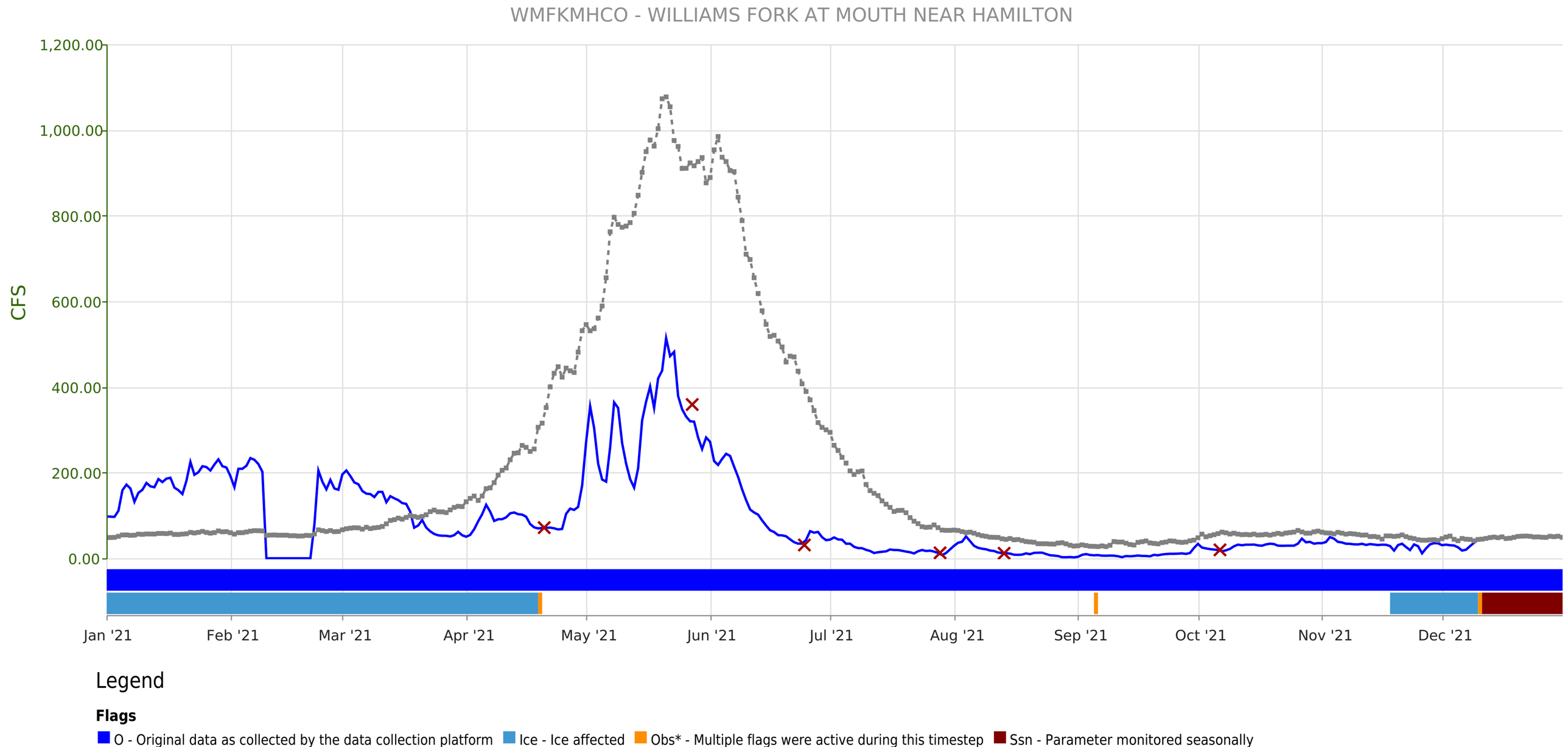
Iron - Period of Record



I:\Environmental\CDMG - CDRMS\AHR\2021\Williams Fork\Figures\22 STRIP PIT 1, 1SP POR FE

FIGURE 22

SUPPORTING DATA


WMFKMHCO - WILLIAMS FORK AT MOUTH NEAR HAMILTON
CFS
1,200.00
1,000.00
800.00
600.00
400.00
200.00
0.00
Jan '21
Feb '21
Mar '21
Apr '21
May '21
Jun '21
Jul '21
Aug '21
Sep '21
Oct '21
Nov '21
Dec '21
Legend
Flags
O - Original data as collected by the data collection platform
Ice - Ice affected
Obs* - Multiple flags were active during this timestep
Ssn - Parameter monitored seasonally

2021 Williams Fork River Flow Record

Site: WMFKMHCO

abbrev	Date Time	DISCHRG Value	DISCHRG Units	DISCHRG Observation
WMFKMHCO	01/01/2021 00:00	97.6	cfs	Ice
WMFKMHCO	01/02/2021 00:00	97.3	cfs	Ice
WMFKMHCO	01/03/2021 00:00	96.7	cfs	Ice
WMFKMHCO	01/04/2021 00:00	111	cfs	Ice
WMFKMHCO	01/05/2021 00:00	159	cfs	Ice
WMFKMHCO	01/06/2021 00:00	172	cfs	Ice
WMFKMHCO	01/07/2021 00:00	163	cfs	Ice
WMFKMHCO	01/08/2021 00:00	132	cfs	Ice
WMFKMHCO	01/09/2021 00:00	153	cfs	Ice
WMFKMHCO	01/10/2021 00:00	160	cfs	Ice
WMFKMHCO	01/11/2021 00:00	176	cfs	Ice
WMFKMHCO	01/12/2021 00:00	168	cfs	Ice
WMFKMHCO	01/13/2021 00:00	166	cfs	Ice
WMFKMHCO	01/14/2021 00:00	185	cfs	Ice
WMFKMHCO	01/15/2021 00:00	178	cfs	Ice
WMFKMHCO	01/16/2021 00:00	186	cfs	Ice
WMFKMHCO	01/17/2021 00:00	188	cfs	Ice
WMFKMHCO	01/18/2021 00:00	165	cfs	Ice
WMFKMHCO	01/19/2021 00:00	159	cfs	Ice
WMFKMHCO	01/20/2021 00:00	150	cfs	Ice
WMFKMHCO	01/21/2021 00:00	181	cfs	Ice
WMFKMHCO	01/22/2021 00:00	225	cfs	Ice
WMFKMHCO	01/23/2021 00:00	195	cfs	Ice
WMFKMHCO	01/24/2021 00:00	201	cfs	Ice
WMFKMHCO	01/25/2021 00:00	215	cfs	Ice
WMFKMHCO	01/26/2021 00:00	213	cfs	Ice
WMFKMHCO	01/27/2021 00:00	205	cfs	Ice
WMFKMHCO	01/28/2021 00:00	219	cfs	Ice
WMFKMHCO	01/29/2021 00:00	231	cfs	Ice
WMFKMHCO	01/30/2021 00:00	215	cfs	Ice
WMFKMHCO	01/31/2021 00:00	212	cfs	Ice
WMFKMHCO	02/01/2021 00:00	192	cfs	Ice
WMFKMHCO	02/02/2021 00:00	166	cfs	Ice
WMFKMHCO	02/03/2021 00:00	209	cfs	Ice
WMFKMHCO	02/04/2021 00:00	209	cfs	Ice
WMFKMHCO	02/05/2021 00:00	216	cfs	Ice
WMFKMHCO	02/06/2021 00:00	234	cfs	Ice
WMFKMHCO	02/07/2021 00:00	230	cfs	Ice
WMFKMHCO	02/08/2021 00:00	220	cfs	Ice
WMFKMHCO	02/09/2021 00:00	202	cfs	Ice
WMFKMHCO	02/10/2021 00:00	0	cfs	Ice
WMFKMHCO	02/11/2021 00:00	0	cfs	Ice

2021 Williams Fork River Flow Record

Site: WMFKMHCO

abbrev	Date Time	DISCHRG Value	DISCHRG Units	DISCHRG Observation
WMFKMHCO	02/12/2021 00:00	0	cfs	Ice
WMFKMHCO	02/13/2021 00:00	0	cfs	Ice
WMFKMHCO	02/14/2021 00:00	0	cfs	Ice
WMFKMHCO	02/15/2021 00:00	0	cfs	Ice
WMFKMHCO	02/16/2021 00:00	0	cfs	Ice
WMFKMHCO	02/17/2021 00:00	0	cfs	Ice
WMFKMHCO	02/18/2021 00:00	0	cfs	Ice
WMFKMHCO	02/19/2021 00:00	0	cfs	Ice
WMFKMHCO	02/20/2021 00:00	0	cfs	Ice
WMFKMHCO	02/21/2021 00:00	0	cfs	Ice
WMFKMHCO	02/22/2021 00:00	78.4	cfs	Ice
WMFKMHCO	02/23/2021 00:00	205	cfs	Ice
WMFKMHCO	02/24/2021 00:00	179	cfs	Ice
WMFKMHCO	02/25/2021 00:00	161	cfs	Ice
WMFKMHCO	02/26/2021 00:00	183	cfs	Ice
WMFKMHCO	02/27/2021 00:00	163	cfs	Ice
WMFKMHCO	02/28/2021 00:00	160	cfs	Ice
WMFKMHCO	03/01/2021 00:00	196	cfs	Ice
WMFKMHCO	03/02/2021 00:00	205	cfs	Ice
WMFKMHCO	03/03/2021 00:00	192	cfs	Ice
WMFKMHCO	03/04/2021 00:00	177	cfs	Ice
WMFKMHCO	03/05/2021 00:00	173	cfs	Ice
WMFKMHCO	03/06/2021 00:00	157	cfs	Ice
WMFKMHCO	03/07/2021 00:00	151	cfs	Ice
WMFKMHCO	03/08/2021 00:00	150	cfs	Ice
WMFKMHCO	03/09/2021 00:00	143	cfs	Ice
WMFKMHCO	03/10/2021 00:00	155	cfs	Ice
WMFKMHCO	03/11/2021 00:00	155	cfs	Ice
WMFKMHCO	03/12/2021 00:00	131	cfs	Ice
WMFKMHCO	03/13/2021 00:00	145	cfs	Ice
WMFKMHCO	03/14/2021 00:00	140	cfs	Ice
WMFKMHCO	03/15/2021 00:00	136	cfs	Ice
WMFKMHCO	03/16/2021 00:00	129	cfs	Ice
WMFKMHCO	03/17/2021 00:00	127	cfs	Ice
WMFKMHCO	03/18/2021 00:00	109	cfs	Ice
WMFKMHCO	03/19/2021 00:00	71.5	cfs	Ice
WMFKMHCO	03/20/2021 00:00	76.6	cfs	Ice
WMFKMHCO	03/21/2021 00:00	89.4	cfs	Ice
WMFKMHCO	03/22/2021 00:00	71.9	cfs	Ice
WMFKMHCO	03/23/2021 00:00	63	cfs	Ice
WMFKMHCO	03/24/2021 00:00	56.9	cfs	Ice
WMFKMHCO	03/25/2021 00:00	53.7	cfs	Ice

2021 Williams Fork River Flow Record

Site: WMFKMHCO

abbrev	Date Time	DISCHRG Value	DISCHRG Units	DISCHRG Observation
WMFKMHCO	03/26/2021 00:00	52.7	cfs	Ice
WMFKMHCO	03/27/2021 00:00	52.6	cfs	Ice
WMFKMHCO	03/28/2021 00:00	51.1	cfs	Ice
WMFKMHCO	03/29/2021 00:00	54	cfs	Ice
WMFKMHCO	03/30/2021 00:00	61.9	cfs	Ice
WMFKMHCO	03/31/2021 00:00	53.8	cfs	Ice
WMFKMHCO	04/01/2021 00:00	50.4	cfs	Ice
WMFKMHCO	04/02/2021 00:00	54.6	cfs	Ice
WMFKMHCO	04/03/2021 00:00	67.9	cfs	Ice
WMFKMHCO	04/04/2021 00:00	86.4	cfs	Ice
WMFKMHCO	04/05/2021 00:00	103	cfs	Ice
WMFKMHCO	04/06/2021 00:00	125	cfs	Ice
WMFKMHCO	04/07/2021 00:00	109	cfs	Ice
WMFKMHCO	04/08/2021 00:00	87.2	cfs	Ice
WMFKMHCO	04/09/2021 00:00	91.2	cfs	Ice
WMFKMHCO	04/10/2021 00:00	91.4	cfs	Ice
WMFKMHCO	04/11/2021 00:00	95.6	cfs	Ice
WMFKMHCO	04/12/2021 00:00	105	cfs	Ice
WMFKMHCO	04/13/2021 00:00	107	cfs	Ice
WMFKMHCO	04/14/2021 00:00	103	cfs	Ice
WMFKMHCO	04/15/2021 00:00	102	cfs	Ice
WMFKMHCO	04/16/2021 00:00	97.1	cfs	Ice
WMFKMHCO	04/17/2021 00:00	80	cfs	Ice
WMFKMHCO	04/18/2021 00:00	72.3	cfs	Ice
WMFKMHCO	04/19/2021 00:00	69.8	cfs	Obs*
WMFKMHCO	04/20/2021 00:00	70.9	cfs	
WMFKMHCO	04/21/2021 00:00	71	cfs	
WMFKMHCO	04/22/2021 00:00	71.7	cfs	
WMFKMHCO	04/23/2021 00:00	70	cfs	
WMFKMHCO	04/24/2021 00:00	67.4	cfs	
WMFKMHCO	04/25/2021 00:00	68.6	cfs	
WMFKMHCO	04/26/2021 00:00	104	cfs	
WMFKMHCO	04/27/2021 00:00	116	cfs	
WMFKMHCO	04/28/2021 00:00	113	cfs	
WMFKMHCO	04/29/2021 00:00	120	cfs	
WMFKMHCO	04/30/2021 00:00	170	cfs	
WMFKMHCO	05/01/2021 00:00	272	cfs	
WMFKMHCO	05/02/2021 00:00	355	cfs	
WMFKMHCO	05/03/2021 00:00	304	cfs	
WMFKMHCO	05/04/2021 00:00	221	cfs	
WMFKMHCO	05/05/2021 00:00	184	cfs	
WMFKMHCO	05/06/2021 00:00	179	cfs	

2021 Williams Fork River Flow Record

Site: WMFKMHCO

abbrev	Date Time	DISCHRG Value	DISCHRG Units	DISCHRG Observation
WMFKMHCO	05/07/2021 00:00	259	cfs	
WMFKMHCO	05/08/2021 00:00	364	cfs	
WMFKMHCO	05/09/2021 00:00	351	cfs	
WMFKMHCO	05/10/2021 00:00	269	cfs	
WMFKMHCO	05/11/2021 00:00	221	cfs	
WMFKMHCO	05/12/2021 00:00	185	cfs	
WMFKMHCO	05/13/2021 00:00	165	cfs	
WMFKMHCO	05/14/2021 00:00	210	cfs	
WMFKMHCO	05/15/2021 00:00	322	cfs	
WMFKMHCO	05/16/2021 00:00	366	cfs	
WMFKMHCO	05/17/2021 00:00	401	cfs	
WMFKMHCO	05/18/2021 00:00	351	cfs	
WMFKMHCO	05/19/2021 00:00	420	cfs	
WMFKMHCO	05/20/2021 00:00	438	cfs	
WMFKMHCO	05/21/2021 00:00	514	cfs	
WMFKMHCO	05/22/2021 00:00	472	cfs	
WMFKMHCO	05/23/2021 00:00	482	cfs	
WMFKMHCO	05/24/2021 00:00	379	cfs	
WMFKMHCO	05/25/2021 00:00	348	cfs	
WMFKMHCO	05/26/2021 00:00	331	cfs	
WMFKMHCO	05/27/2021 00:00	320	cfs	
WMFKMHCO	05/28/2021 00:00	319	cfs	
WMFKMHCO	05/29/2021 00:00	282	cfs	
WMFKMHCO	05/30/2021 00:00	255	cfs	
WMFKMHCO	05/31/2021 00:00	282	cfs	
WMFKMHCO	06/01/2021 00:00	272	cfs	
WMFKMHCO	06/02/2021 00:00	227	cfs	
WMFKMHCO	06/03/2021 00:00	218	cfs	
WMFKMHCO	06/04/2021 00:00	232	cfs	
WMFKMHCO	06/05/2021 00:00	244	cfs	
WMFKMHCO	06/06/2021 00:00	239	cfs	
WMFKMHCO	06/07/2021 00:00	214	cfs	
WMFKMHCO	06/08/2021 00:00	190	cfs	
WMFKMHCO	06/09/2021 00:00	161	cfs	
WMFKMHCO	06/10/2021 00:00	136	cfs	
WMFKMHCO	06/11/2021 00:00	114	cfs	
WMFKMHCO	06/12/2021 00:00	107	cfs	
WMFKMHCO	06/13/2021 00:00	102	cfs	
WMFKMHCO	06/14/2021 00:00	88.6	cfs	
WMFKMHCO	06/15/2021 00:00	76.5	cfs	
WMFKMHCO	06/16/2021 00:00	65.5	cfs	
WMFKMHCO	06/17/2021 00:00	61.4	cfs	

2021 Williams Fork River Flow Record

Site: WMFKMHCO

abbrev	Date Time	DISCHRG Value	DISCHRG Units	DISCHRG Observation
WMFKMHCO	06/18/2021 00:00	54.1	cfs	
WMFKMHCO	06/19/2021 00:00	53.6	cfs	
WMFKMHCO	06/20/2021 00:00	51.5	cfs	
WMFKMHCO	06/21/2021 00:00	44.3	cfs	
WMFKMHCO	06/22/2021 00:00	37.7	cfs	
WMFKMHCO	06/23/2021 00:00	34.3	cfs	
WMFKMHCO	06/24/2021 00:00	34.3	cfs	
WMFKMHCO	06/25/2021 00:00	42.8	cfs	
WMFKMHCO	06/26/2021 00:00	63.3	cfs	
WMFKMHCO	06/27/2021 00:00	59.9	cfs	
WMFKMHCO	06/28/2021 00:00	61.6	cfs	
WMFKMHCO	06/29/2021 00:00	49.3	cfs	
WMFKMHCO	06/30/2021 00:00	42.4	cfs	
WMFKMHCO	07/01/2021 00:00	43.6	cfs	
WMFKMHCO	07/02/2021 00:00	48.8	cfs	
WMFKMHCO	07/03/2021 00:00	44.1	cfs	
WMFKMHCO	07/04/2021 00:00	43.4	cfs	
WMFKMHCO	07/05/2021 00:00	34.1	cfs	
WMFKMHCO	07/06/2021 00:00	34.2	cfs	
WMFKMHCO	07/07/2021 00:00	26.9	cfs	
WMFKMHCO	07/08/2021 00:00	23.9	cfs	
WMFKMHCO	07/09/2021 00:00	23.6	cfs	
WMFKMHCO	07/10/2021 00:00	19.8	cfs	
WMFKMHCO	07/11/2021 00:00	17.2	cfs	
WMFKMHCO	07/12/2021 00:00	12.4	cfs	
WMFKMHCO	07/13/2021 00:00	14.1	cfs	
WMFKMHCO	07/14/2021 00:00	15.3	cfs	
WMFKMHCO	07/15/2021 00:00	16.2	cfs	
WMFKMHCO	07/16/2021 00:00	20.6	cfs	
WMFKMHCO	07/17/2021 00:00	19.4	cfs	
WMFKMHCO	07/18/2021 00:00	19.3	cfs	
WMFKMHCO	07/19/2021 00:00	17.6	cfs	
WMFKMHCO	07/20/2021 00:00	15.7	cfs	
WMFKMHCO	07/21/2021 00:00	14.2	cfs	
WMFKMHCO	07/22/2021 00:00	11.4	cfs	
WMFKMHCO	07/23/2021 00:00	16.5	cfs	
WMFKMHCO	07/24/2021 00:00	19.4	cfs	
WMFKMHCO	07/25/2021 00:00	17.1	cfs	
WMFKMHCO	07/26/2021 00:00	17.9	cfs	
WMFKMHCO	07/27/2021 00:00	15.7	cfs	
WMFKMHCO	07/28/2021 00:00	12.7	cfs	
WMFKMHCO	07/29/2021 00:00	7.52	cfs	

2021 Williams Fork River Flow Record

Site: WMFKMHCO

abbrev	Date Time	DISCHRG Value	DISCHRG Units	DISCHRG Observation
WMFKMHCO	07/30/2021 00:00	12.3	cfs	
WMFKMHCO	07/31/2021 00:00	20.8	cfs	
WMFKMHCO	08/01/2021 00:00	29.2	cfs	
WMFKMHCO	08/02/2021 00:00	36.2	cfs	
WMFKMHCO	08/03/2021 00:00	38.7	cfs	
WMFKMHCO	08/04/2021 00:00	51.1	cfs	
WMFKMHCO	08/05/2021 00:00	40.2	cfs	
WMFKMHCO	08/06/2021 00:00	29.2	cfs	
WMFKMHCO	08/07/2021 00:00	24.5	cfs	
WMFKMHCO	08/08/2021 00:00	22.4	cfs	
WMFKMHCO	08/09/2021 00:00	21.1	cfs	
WMFKMHCO	08/10/2021 00:00	18.2	cfs	
WMFKMHCO	08/11/2021 00:00	17.1	cfs	
WMFKMHCO	08/12/2021 00:00	13.6	cfs	
WMFKMHCO	08/13/2021 00:00	12.3	cfs	
WMFKMHCO	08/14/2021 00:00	11.9	cfs	
WMFKMHCO	08/15/2021 00:00	11	cfs	
WMFKMHCO	08/16/2021 00:00	8.36	cfs	
WMFKMHCO	08/17/2021 00:00	8.13	cfs	
WMFKMHCO	08/18/2021 00:00	8.62	cfs	
WMFKMHCO	08/19/2021 00:00	11.5	cfs	
WMFKMHCO	08/20/2021 00:00	9.62	cfs	
WMFKMHCO	08/21/2021 00:00	12.7	cfs	
WMFKMHCO	08/22/2021 00:00	13.1	cfs	
WMFKMHCO	08/23/2021 00:00	13.2	cfs	
WMFKMHCO	08/24/2021 00:00	10.1	cfs	
WMFKMHCO	08/25/2021 00:00	7.17	cfs	
WMFKMHCO	08/26/2021 00:00	6.43	cfs	
WMFKMHCO	08/27/2021 00:00	5.28	cfs	
WMFKMHCO	08/28/2021 00:00	2.63	cfs	
WMFKMHCO	08/29/2021 00:00	2.53	cfs	
WMFKMHCO	08/30/2021 00:00	2.92	cfs	
WMFKMHCO	08/31/2021 00:00	2.24	cfs	
WMFKMHCO	09/01/2021 00:00	3.47	cfs	
WMFKMHCO	09/02/2021 00:00	8.03	cfs	
WMFKMHCO	09/03/2021 00:00	9.86	cfs	
WMFKMHCO	09/04/2021 00:00	7.82	cfs	
WMFKMHCO	09/05/2021 00:00	7.03	cfs	Obs*
WMFKMHCO	09/06/2021 00:00	7.47	cfs	
WMFKMHCO	09/07/2021 00:00	6.2	cfs	
WMFKMHCO	09/08/2021 00:00	6.03	cfs	
WMFKMHCO	09/09/2021 00:00	6.39	cfs	

2021 Williams Fork River Flow Record

Site: WMFKMHCO

abbrev	Date Time	DISCHRG Value	DISCHRG Units	DISCHRG Observation
WMFKMHCO	09/10/2021 00:00	6.13	cfs	
WMFKMHCO	09/11/2021 00:00	4.81	cfs	
WMFKMHCO	09/12/2021 00:00	2.66	cfs	
WMFKMHCO	09/13/2021 00:00	5.29	cfs	
WMFKMHCO	09/14/2021 00:00	4.78	cfs	
WMFKMHCO	09/15/2021 00:00	5.35	cfs	
WMFKMHCO	09/16/2021 00:00	6.53	cfs	
WMFKMHCO	09/17/2021 00:00	5.58	cfs	
WMFKMHCO	09/18/2021 00:00	5.45	cfs	
WMFKMHCO	09/19/2021 00:00	4.67	cfs	
WMFKMHCO	09/20/2021 00:00	8.06	cfs	
WMFKMHCO	09/21/2021 00:00	7.07	cfs	
WMFKMHCO	09/22/2021 00:00	8.92	cfs	
WMFKMHCO	09/23/2021 00:00	9.95	cfs	
WMFKMHCO	09/24/2021 00:00	10.5	cfs	
WMFKMHCO	09/25/2021 00:00	10.5	cfs	
WMFKMHCO	09/26/2021 00:00	10.9	cfs	
WMFKMHCO	09/27/2021 00:00	11.5	cfs	
WMFKMHCO	09/28/2021 00:00	10.3	cfs	
WMFKMHCO	09/29/2021 00:00	12.4	cfs	
WMFKMHCO	09/30/2021 00:00	24.2	cfs	
WMFKMHCO	10/01/2021 00:00	33.7	cfs	
WMFKMHCO	10/02/2021 00:00	25.1	cfs	
WMFKMHCO	10/03/2021 00:00	23.1	cfs	
WMFKMHCO	10/04/2021 00:00	21.5	cfs	
WMFKMHCO	10/05/2021 00:00	20.5	cfs	
WMFKMHCO	10/06/2021 00:00	19.3	cfs	
WMFKMHCO	10/07/2021 00:00	16.5	cfs	
WMFKMHCO	10/08/2021 00:00	18.6	cfs	
WMFKMHCO	10/09/2021 00:00	22	cfs	
WMFKMHCO	10/10/2021 00:00	28.1	cfs	
WMFKMHCO	10/11/2021 00:00	31.9	cfs	
WMFKMHCO	10/12/2021 00:00	30.5	cfs	
WMFKMHCO	10/13/2021 00:00	31.8	cfs	
WMFKMHCO	10/14/2021 00:00	31.8	cfs	
WMFKMHCO	10/15/2021 00:00	32.1	cfs	
WMFKMHCO	10/16/2021 00:00	30.2	cfs	
WMFKMHCO	10/17/2021 00:00	29.4	cfs	
WMFKMHCO	10/18/2021 00:00	32.5	cfs	
WMFKMHCO	10/19/2021 00:00	34.1	cfs	
WMFKMHCO	10/20/2021 00:00	33.3	cfs	
WMFKMHCO	10/21/2021 00:00	29.5	cfs	

2021 Williams Fork River Flow Record

Site: WMFKMHCO

abbrev	Date Time	DISCHRG Value	DISCHRG Units	DISCHRG Observation
WMFKMHCO	10/22/2021 00:00	29.2	cfs	
WMFKMHCO	10/23/2021 00:00	29.4	cfs	
WMFKMHCO	10/24/2021 00:00	29.5	cfs	
WMFKMHCO	10/25/2021 00:00	29.5	cfs	
WMFKMHCO	10/26/2021 00:00	34.2	cfs	
WMFKMHCO	10/27/2021 00:00	46	cfs	
WMFKMHCO	10/28/2021 00:00	37.4	cfs	
WMFKMHCO	10/29/2021 00:00	38.4	cfs	
WMFKMHCO	10/30/2021 00:00	34.2	cfs	
WMFKMHCO	10/31/2021 00:00	35.4	cfs	
WMFKMHCO	11/01/2021 00:00	35.3	cfs	
WMFKMHCO	11/02/2021 00:00	38	cfs	
WMFKMHCO	11/03/2021 00:00	49.5	cfs	
WMFKMHCO	11/04/2021 00:00	46	cfs	
WMFKMHCO	11/05/2021 00:00	38.4	cfs	
WMFKMHCO	11/06/2021 00:00	37	cfs	
WMFKMHCO	11/07/2021 00:00	34.1	cfs	
WMFKMHCO	11/08/2021 00:00	33.8	cfs	
WMFKMHCO	11/09/2021 00:00	32.6	cfs	
WMFKMHCO	11/10/2021 00:00	32.4	cfs	
WMFKMHCO	11/11/2021 00:00	33.9	cfs	
WMFKMHCO	11/12/2021 00:00	31.2	cfs	
WMFKMHCO	11/13/2021 00:00	33.2	cfs	
WMFKMHCO	11/14/2021 00:00	32.1	cfs	
WMFKMHCO	11/15/2021 00:00	31	cfs	
WMFKMHCO	11/16/2021 00:00	31.8	cfs	
WMFKMHCO	11/17/2021 00:00	31.5	cfs	
WMFKMHCO	11/18/2021 00:00	28.7	cfs	Ice
WMFKMHCO	11/19/2021 00:00	18	cfs	Ice
WMFKMHCO	11/20/2021 00:00	30.9	cfs	Ice
WMFKMHCO	11/21/2021 00:00	34.1	cfs	Ice
WMFKMHCO	11/22/2021 00:00	26.3	cfs	Ice
WMFKMHCO	11/23/2021 00:00	19.2	cfs	Ice
WMFKMHCO	11/24/2021 00:00	32.4	cfs	Ice
WMFKMHCO	11/25/2021 00:00	28.4	cfs	Ice
WMFKMHCO	11/26/2021 00:00	11.5	cfs	Ice
WMFKMHCO	11/27/2021 00:00	23.2	cfs	Ice
WMFKMHCO	11/28/2021 00:00	32.7	cfs	Ice
WMFKMHCO	11/29/2021 00:00	35.3	cfs	Ice
WMFKMHCO	11/30/2021 00:00	35	cfs	Ice
WMFKMHCO	12/01/2021 00:00	30.6	cfs	Ice
WMFKMHCO	12/02/2021 00:00	31.9	cfs	Ice

2021 Williams Fork River Flow Record

Site: WMFKMHCO

abbrev	Date Time	DISCHRG Value	DISCHRG Units	DISCHRG Observation
WMFKMHCO	12/03/2021 00:00	30.5	cfs	Ice
WMFKMHCO	12/04/2021 00:00	29.9	cfs	Ice
WMFKMHCO	12/05/2021 00:00	25.7	cfs	Ice
WMFKMHCO	12/06/2021 00:00	18.1	cfs	Ice
WMFKMHCO	12/07/2021 00:00	20.1	cfs	Ice
WMFKMHCO	12/08/2021 00:00	28.5	cfs	Ice
WMFKMHCO	12/09/2021 00:00	36.3	cfs	Ice
WMFKMHCO	12/10/2021 00:00	43.4	cfs	Obs*
WMFKMHCO	12/11/2021 00:00		cfs	Ssn
WMFKMHCO	12/12/2021 00:00		cfs	Ssn
WMFKMHCO	12/13/2021 00:00		cfs	Ssn
WMFKMHCO	12/14/2021 00:00		cfs	Ssn
WMFKMHCO	12/15/2021 00:00		cfs	Ssn
WMFKMHCO	12/16/2021 00:00		cfs	Ssn
WMFKMHCO	12/17/2021 00:00		cfs	Ssn
WMFKMHCO	12/18/2021 00:00		cfs	Ssn
WMFKMHCO	12/19/2021 00:00		cfs	Ssn
WMFKMHCO	12/20/2021 00:00		cfs	Ssn
WMFKMHCO	12/21/2021 00:00		cfs	Ssn
WMFKMHCO	12/22/2021 00:00		cfs	Ssn
WMFKMHCO	12/23/2021 00:00		cfs	Ssn
WMFKMHCO	12/24/2021 00:00		cfs	Ssn
WMFKMHCO	12/25/2021 00:00		cfs	Ssn
WMFKMHCO	12/26/2021 00:00		cfs	Ssn
WMFKMHCO	12/27/2021 00:00		cfs	Ssn
WMFKMHCO	12/28/2021 00:00		cfs	Ssn
WMFKMHCO	12/29/2021 00:00		cfs	Ssn
WMFKMHCO	12/30/2021 00:00		cfs	Ssn
WMFKMHCO	12/31/2021 00:00		cfs	Ssn