2023 ANNUAL HYDROLOGY REPORT

YOAST MINE

PERMIT C-94-082

March 2024

Submitted To: Colorado Division of Reclamation, Mining and Safety
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Table of Contents

1.0 Introduction 4
1.1 Background 4
2.0 Meteorlogical 5
3.0 Groundwater 6
3.1 Water Levels 6
3.2 Groundwater Quality 7
4.0 Surface Water 10
4.1 Grassy Creek 11
4.2 Sage Creek 13
5.0 Springs 15
6.0 Summary 16

FIGURES

1. Monitoring Site Locations

APPENDICES

A. Meteorological Data
B. Groundwater Quality Data
C. Groundwater Hydrographs
D. Surface Water Quality Data
E. Spring Water Quality Data

1.0 INTRODUCTION

This Annual Hydrology Report presents the hydrologic monitoring data collected during the 2023 water year (October 2022 – September 2023) at the Seneca Coal Company's (SCC) Yoast Mine (Yoast). The AHR fulfills the reporting requirements under the Colorado Division of Reclamation, Mining, and Safety (CDRMS) Permit No. C-1994-082.

1.1 BACKGROUND

Yoast is a surface coal mine located in Routt County, approximately 25 miles west of Steamboat Springs, Colorado (Figure 1). The Yoast permit went into effect on August 8, 1995. Overburden removal began in 1996 in the Grassy Creek watershed and 2000 in the Sage Creek watershed. The last of the coal at Yoast was removed in February 2006. The mine has been reclaimed and vegetated for many years and SCC is actively pursuing bond release.

2.0 METEOROLOGICAL

Meteorological data for the 2023 water year is presented in Appendix A. The 2023 data was obtained from NOAA weather station USC00053867 located in Hayden, Colorado (www.ncdc.noaa.gov/cdo-wb/). A total of 20.99 inches of precipitation was measured in 2023, which is 2.78 inches greater than the 1981-2023 average of 18.21 inches. November, December, January, March, and June were wetter than normal, but the remaining months were drier than normal. Potential snowpack runoff, as estimated by totaling November through March precipitation, was 14.12 inches, which was 6.45 inches above the 1981-2023 average of 7.67 inches.

3.0 GROUNDWATER

The Yoast groundwater monitoring program includes 10 monitoring wells. The following table includes the wells monitored, the water bearing unit they are screened in, the frequency of monitoring, and the required parameter list. The monitoring well locations are shown on Figure 1. Groundwater monitoring was completed by experienced personnel and samples were collected following the monitoring practices described in Tab 15 of Permit C-1994-082. All samples were analyzed by ACZ Laboratories.

Site	Unit	Monitoring Frequency		Parameter List
		Water Level	Water Quality	
YAAL14	Annand Draw Alluvium	A	A	GW Long
YGAL16	Grassy Creek Alluvium	A	A	GW Long
SGAL70	Grassy Creek Alluvium	A	A	GW Long
YSAL1	Sage Creek Alluvium	A	A	GW Long
YSAL3	Sage Creek Alluvium	A	A	GW Long
YOV30	Wadge Overburden	A	A	GW Long
YW30	Wadge Coal	A	A	GW Long
YWU30	Wadge Underburden	A	A	GW Long
YWC33	Wolf Creek Coal	A	A	GW Short
YWCU33	Wolf Creek Underburden	A	A	GW Short

Note
A: Annual
GW Long: Field conductivity, field pH, field temperature, fluoride, dissolved iron, dissolved manganese, nitrate, nitrite, dissolved selenium, sulfate, total dissolved solids
GW Short: Field conductivity, field pH, field temperature, dissolved iron, dissolved manganese, total dissolved solids

3.1 WATER LEVELS

The static water levels measured during the 2023 water year are included with the groundwater quality data in Appendix B. Water level hydrographs for each of the wells are also provided in Appendix C. The static water levels were measured at all wells except for YWC33, where the well casing was damaged, and a measurement

could not be made. The water levels measured at all wells this year except for YOV30 were within their respective historic range. The static water level in Wadge Overburden Well YOV30 (135.66 ft bgs) was the lowest recorded since its installation. This water level was about a foot less than the previous minimum measured in May of 2021. Despite this drop the water level in YOV30 has been fairly stable, ranging from 132.61 – 135.66 ft bgs, since 2015. The water levels in most of the water bearing units at Yoast exhibit seasonal fluctuations. The water table in the shallow alluvial wells fluctuates in response to seasonal precipitation events, with the water table typically at its highest during the spring snowmelt seasons and then declining through late summer/early fall in response to the dry conditions. The water levels in the bedrock overburden and coal seams also fluctuate in response to recharge from seasonal precipitation but are partially influenced by interactions with groundwater in the reclaimed mine spoil. Due to the bedrock unit depths and lower hydraulic conductivity, the water level fluctuations are typically muted relative to the fluctuations observed in the shallow alluvium.

3.2 Groundwater Quality

The Yoast Mine Groundwater Points of Compliance (GWPOC) were established in Technical Revision 39 (TR-39) (see Attachment 15-1 of Permit C-1994-082). The two GWPOC monitoring wells are YSAL3 which is screened within the Sage Creek Alluvium and SGAL70 which is screened within the Grassy Creek Alluvium (Figure 1). SGAL70 is located downgradient of both the Yoast Mine and the adjacent Sage Creek Mine. Bedrock GWPOC wells were deemed unnecessary in TR-39 due to the limited potential for the mine to negatively impact the quality of bedrock groundwater. The Wadge and Wolf Creek Coal exhibit low hydraulic conductivity (Wadge Coal: 2.45E-7 to 3.5E-7 cm/sec; Wolf Creek Coal: 4.55E-6 cm/sec) which impedes the migration of mine-impacted groundwater through these units. Attenuation and dilution should further limit water quality impacts. Aquifers of regional significance include the Trout Creek Sandstone and the Twentymile Sandstone. The Twentymile Sandstone is located approximately 500 ft above the Wadge Coal seam and is not found within the Yoast permit boundary. Low permeability confining layers of the Williams Fork Formation isolate the Trout Creek Sandstone from the mine. The Trout Creek Sandstone lies approximately 300 to 400 feet below the Wadge Coal seam and approximately 60 to

100 feet below the Wolf Creek Coal Seam. The groundwater in the Trout Creek Sandstone is under confined conditions and exhibits an upward hydraulic head that further limits the potential for mine affected groundwater to infiltrate into this unit. See TR-39 located in the Appendix 15-1 of the Yoast Mine permit package for additional justification for the Groundwater Points of Compliance.

Tables B.1 and B.2 in Appendix B include the analytical results for samples collected from wells YSAL3 and SGAL70 in 2023 and provide a comparison to the Grassy Creek and Sage Creek Alluvial GWPOC water quality standards established in TR-39. Table B.3 includes the analytical results for the remaining monitoring wells however no comparison to water quality standards were made as these wells are not GWPOC. The groundwater quality at SGAL70 meets the TR-39 water quality standards for all parameters except for dissolved cadmium. This exceedance is not associated with a measurable value of cadmium as the lab detection limit exceeded the cadmium water quality standard. Water quality samples at commercial labs are often run in groups that include samples from unrelated locations and the detection limit for the batch of samples can be increased above the normal detection as a result of elevated concentrations in one or more samples within the batch or from unrelated instrument interference. The fact that cadmium has not historically been an issue at this well suggests that that the elevated detection limit is unlikely to be censoring a measured value above the water quality standard. There were no exceedances of the GWPOC standards at YSAL3 in 2023.

Predictions for the potential TDS increases at several of the Yoast monitoring wells were made in the Probable Hydrologic Consequences (PHC, Tab 17) section of Permit C-1994-082. The table below outlines these predictions along with this year's observed value. In 2023, the TDS at five of the seven wells exceeded the predicted value. Although the predicted TDS values for the Grassy Creek (YAAL14, YGAL16) and Sage Creek (YSAL1, YSAL3) alluvial wells were exceeded its important to acknowledge that the 2023 values remain within the range of ambient, pre-mine, TDS measured in alluvial monitoring wells in these same drainages. Overburden removal in the Grassy Creek basin began in 1996. The pre-mine (1/1/1980 – 1/31/1994) TDS measured in Grassy Creek alluvial wells YGAL15, YGAL16, YGAL17 and YGAL18 ranged from 546 – 4030 mg/L (mean:1603 mg/L) (see Table 6 TR-39). The pre-mine (1/1/1980 – 12/31/1999) TDS measured in Sage Creek alluvial wells

YSAL1, YSAL12, YSAL3, and YSAL8 ranged from 230 – 2140 mg/L (see Table 2 TR-39). This suggests that the slightly elevated TDS concentrations could be from non-mine related sources such as bedrock groundwater contributions from the underlying Lewis Shale or agriculture, which can concentrate dissolved salts, which weren't considered as part of the post mine predictions.

Well	Predicted TDS (mg/L)	This Years TDS (mg/L)
YAAL14	2036	3190*
YGAL16	1296	1600*
YSAL1	798	1280*
YSAL3	798	1310*
YOV30	3201	2660
YW30	2570	6230*
YWC33**	2721	-

Note
*Indicates value above prediction
** YWC33 well casing broken. Sample could not be collected.

The TDS measured in 2023 at bedrock well YW30 also exceeded its predicted values. As described above the low hydraulic conductivity of the bedrock units will inhibit groundwater from migrating away from the mine. Groundwater from the Wadge Coal and its overburden have not historically been used in this area because groundwater yields from these units are insufficient for irrigation or domestic use. Low permeable confining bedrock units separating the mine from usable aquifers will continue to isolate the mine water from these systems.

4.0 SURFACE WATER

The Yoast Mine lies within the headwaters of the Grassy Creek and Sage Creek watersheds. The southwest portion of the permit drains to the west towards Sage Creek, which ultimately flows to the north-northeast towards the Yampa River. A small area on the southeastern end of the permit drains southeast towards Grassy Creek, which flows to the northeast near the southern end of the permit area before bending to the north towards the Yampa River. The remainder of the permit area drains to the north-northeast towards Annand Draw, which drains north to Scotchmans Gulch, before eventually flowing to the east-northeast to Grassy Creek. The following table includes the Yoast surface water monitoring points, the watershed they are located in, the frequency of monitoring, and the required parameter list. See Figure 1 for the location of the surface water monitoring points. Surface water monitoring was completed by experienced personnel and samples were collected following the monitoring practices described in Tab 15 of Permit C-1994-082. All samples were analyzed by ACZ Laboratories.

Site	Type	Watershed	Monitoring Frequency		Parameter List
			Flow	Water Quality	
NPDES11	NPDES	Grassy Creek	M	M	NPDES
YSGF5	Surface Water	Grassy Creek	SA	SA	SW Long
NPDES10	NPDES	Grassy Creek	M	M	NPDES
YSG5	Surface Water	Grassy Creek	SA	SA	SW Long
YSSF3	Surface Water	Sage Creek	SA	SA	SW Short
NPDES14	NPDES	Sage Creek	M	M	NPDES
NPDES13	NPDES	Sage Creek	M	M	NPDES
NPDES12	NPDES	Sage Creek	M	M	NPDES
YSS2	Surface Water	Sage Creek	SA	SA	SW Long

Note
SA: Semiannual during spring snowmelt and summer baseflow
M: Monthly
SW Long: Field conductivity, field pH, field temperature, total recoverable iron, dissolved manganese, total mercury, ammonia, nitrate, nitrite, dissolved selenium, sulfate, sulfide, total dissolved solids, total suspended solids
SW Short: Field conductivity, field pH, field temperature, total recoverable iron, dissolved manganese, total suspended solids, total dissolved solids
NPDES: See NPDES permit CO-0000221

The Colorado Water Quality Control Commission (CWQCC) has established segment specific aquatic life water quality standards for Grassy Creek (Segment 13i and 13j) and Sage Creek (Segment 13e) of the Yampa River. The water quality standards for these segments are included in CWQCC Regulation 33. Therefore, the following surface water quality discussion has been organized by drainage basin. The 2023 Water Year surface water quality data is provided in Appendix D. Samples from this year's stream points are compared to both the Colorado Department of Public Health & Environment (CDPHE) surface water agricultural use standards (CDPHE, Reg. 31) and the appropriate segment specific aquatic life water quality standards. Samples from NPDES outfalls are compared to NPDES discharge limits as well as the segment specific aquatic life standards. Additional discussion of the water quality in each stream segment follows.

4.1 Grassy Creek

Analytical results for the 2023 surface water monitoring conducted at upper Grassy Creek Segment 13i stream point YSGF5 and NPDES Outfall 011 are provided in Tables D.1 and D.2 of Appendix D. Analytical results for lower Grassy Creek stream point YSG5 and NPDES Outfall 010 are provided in Table D.3 and D.4. As described in CWQCC Regulation 33, a current conditions temporary modification of the chronic dissolved selenium standard is in place for Yampa River Segment 13i and Segment 13j which includes upper and lower Grassy Creek. At one time a current conditions temporary modification of the chronic iron standard was also in place for both segments. However because the elevated iron in the stream is not the result of elevated iron in the mine discharges the temporary modification was deleted and the iron standard was returned to 1 mg/L.

There were no exceedances of NPDES permit limits or instream water quality standards at Outfalls 010 or 011. Outfall 011 rarely discharges and unfortunately during the May discharge event the incorrect sample type was collected. Cadmium, chromium, copper, lead, mercury, nickel, selenium, silver, and zinc, which have a quarterly monitoring frequency, were not analyzed. These parameters will be analyzed in future discharge samples.

There were two exceedances of the Yampa Segment 13i chronic total recoverable iron water quality standards at upper Grassy Creek stream point YSGF5. The iron measured in the samples collected on June 28th (1.57 mg/L) and July 17th (1.79 mg/L) were both above the 1 mg/L standard. Monitoring was also completed at Outfall 011 on June 26th and July 17th and the outfall was not discharging during either event. Baseline monitoring completed at YSGF5 between 1991 and 1993 indicates iron was routinely above (mean: 1.34 mg/L; range: 0.15 – 9.9 mg/L; n:19) the 1 mg/L Segment 13j iron standard. Total recoverable iron at Grassy Creek stream point YSGF5 is strongly correlated with suspended solids (r^2: 0.91) which become naturally elevated during rain and snow melt runoff events (Figure D.1). The total suspended solids in the YSGF5 June and July samples were elevated (59-62 mg/L) relative to the concentration observed at downstream point YSG5 (≤ 14 mg/L). This indicates the elevated iron observed in upper Grassy Creek is unrelated to the runoff from the reclaimed mine and is likely the result of natural erosional processes that are occurring within the unmined portions of the watershed.

There was one exceedance of the Yampa Segment 13j agricultural use dissolved manganese standard at lower Grassy Creek stream point YSG5. Synoptic watershed monitoring during this event confirmed that the Yoast outfalls were not discharging and that that elevated manganese was not associated with discharge from the mine. CWQCC Regulation 31 specifies that the 0.2 mg/L manganese agricultural use standard is only applicable when irrigation water is applied to soils with pH lower than 6.0. The soils at Yoast Mine are alkaline and the agriculture standard is therefore not applicable. The dissolved manganese measured at YSG5 is significantly less than the Yampa Segment 13i acute and chronic manganese standards.

The method detection limit for the sulfide analysis (MDL: 0.02 mg/L) conducted by SCC's lab exceeds the Yampa Segment 13i and 13j water quality standard for un-ionized sulfide (H_2S) of 0.002 mg/L. All of the sulfide samples analyzed were non-detect. This analytical method detects both dissolved sulfides and acid-soluble metallic sulfides that are present in suspended matter and provides a single cumulative concentration. Furthermore, dissolved sulfide includes both the ionized (HS^-) and un-ionized forms of hydrogen sulfide (H_2S). The distribution of sulfide between the un-ionized hydrogen sulfide and ionized form is dependent on the temperature and pH. At low pH most of the dissolved sulfide exists as the toxic un-

ionized hydrogen sulfide. In alkaline waters, like those present at Yoast, most of the dissolved sulfide is present as non-toxic ionized sulfide.

The method detection limit for mercury (0.02 μg/L) used by SCC's lab is above the 0.01 μg/L aquatic life standard. None of the samples collected during 2023 exceeded the labs method detection limit. CDPHE previously performed a reasonable potential analysis for Outfall 010 and determined that there was no reasonable potential for discharges from this outfall to exceed the mercury limit and the monitoring requirement was dropped from the NPDES permit. There is no reason to believe total mercury in Grassy Creek exceeds the aquatic life standard.

4.2 Sage Creek

Analytical results for the 2023 surface water monitoring conducted at Sage Creek stream points YSSF3 and YSS2 are provided in Table D.5 of Appendix D and the analytical results for Outfalls 012, 013, and 014 that report to Sage Creek are included in Table D.6 through D.8. There was one exceedance of the Yampa Segment 13e total recoverable iron standard and the Segment 13e and agricultural use selenium standard at Outfall 013. Outfall 013 only discharges in response to the spring snowmelt and the flows are typically of limited volume and duration. The total recoverable exceedance at Outfall 013 occurred during the April 19th sampling event. This appears to be an anomaly as the pH was neutral (7.9 su) and the TSS was low (14 mg/L). There have been no other exceedances of the iron standard at Outfall 013 over the last 10 years (October 2013 – Present; n: 22). The selenium standard exceedances were measured in the May 24th sample, with the dissolved selenium exceeding the acute aquatic life standard and the total recoverable selenium exceeding the agricultural use standard. The discharge at Outfall 013 during this event was only 7.6 gpm (0.011 MGD). Despite the elevated selenium at the outfall, the selenium measured at downstream point YSS2 on May 24th was very low, with 0.21 ug/L dissolved selenium and 0.26 ug/L total recoverable selenium. This is well below the aquatic life and agricultural use standards and indicates there was no impact within Sage Creek. There were no exceedances of the Yampa Segment 13e aquatic life standards or agricultural use standards at Outfalls 012, 013, and 014.

As discussed in Section 4.1, the lab used by SCC has a method detection limit for mercury and sulfide that are above the Segment 13e water quality standard. None of the samples collected from YSS2 in 2023 exceed the labs mercury or sulfide method detection limit. All other parameters sampled at Sage Creek stream points YSS2 and YSSF3 were within the applicable water quality standards.

In the Probable Hydrological Consequences Probable Hydrologic Consequences (PHC, Tab 17) section of Permit C-1994-082, predictions were made for the expected TDS increases to be observed at several stream points. The following table outlines these predictions along with 2023's average concentration.

Stream Point	Predicted TDS (mg/L)	Mean TDS (mg/L)
NPDES10	3938	3388
YSGF5	1337	911
NPDES12	4291	2959
WSSF3*	2118	905

* WSSF3 is a Seneca II-W stream point located in Sage Creek, downstream of the Yoast outfalls. See the 2023 Annual Hydrology Report for Permit C-1982-057 for the full dataset.

The annual average TDS measured at each of the four monitoring locations was less than the predicted value.

5.0 SPRINGS

The Yoast monitoring program includes four spring sites. The following table includes the list of springs monitored, the frequency of monitoring, and the parameter list. See Figure 1 for the location of the spring points. Spring monitoring was completed by experienced personnel and samples were collected following the monitoring practices described in Tab 15 of Permit C-1994-082. All samples were analyzed by ACZ Laboratories.

Site	Type	Unit	Monitoring Frequency		Parameter List
			Discharge	Water Quality	
YSSPG1	Spring	Spoils	A	A	SW Long
YSSPG2	Spring	Spoils	A	A	SW Short
YSSPG3	Spring	Spoils	A	A	SW Short
YSSPG4	Spring	Spoils	A	A	SW Short

Note
A: Annual
SW Long: Field conductivity, field pH, field temperature, total recoverable iron, dissolved manganese, total mercury, ammonia, nitrate, nitrite, dissolved selenium, sulfate, sulfide, total dissolved solids, total suspended solids
SW Short: Field conductivity, field pH, field temperature, total recoverable iron, dissolved manganese, total suspended solids, total dissolved solids

Table E.1 in Appendix E includes the analytical results for samples collected from the four spoil springs in 2023. The primary post-mine land use in this area is livestock grazing and wildlife habitat. Therefore, the water quality collected from the spoil springs is compared to the CWQCC agricultural use standards established in CDPHE Regulation 31. There was one exceedance of the dissolved manganese agricultural use standard at spring YSSPG4 in 2023. As previously noted, the 0.2 mg/L Manganese agricultural use standard is only applicable when irrigation water is applied to acidic soils (<6.0 pH). For alkaline soils, as are found at Yoast, a more appropriate standard would be 10 mg/L (EPA, 1976). Therefore, none of the manganese results above 0.2 mg/L are considered exceedances of the standard.

6.0 SUMMARY

No significant hydrologic impacts, attributable to activities at Yoast, were noted during 2023. Groundwater levels in all monitoring wells except for YOV30 were within their historic range. The water level measured in YOV30 represented a historic low, however it was only about one foot less then the prior minimum. YOV30 is screened within the overburden above the Wadge Coal and the water level has been fairly stable since 2015, with the water level fluctuating between 132.61 and 135.66 ft bgs. Groundwater from the Wadge Coal overburden is not used locally because the groundwater yields are insufficient for irrigation or domestic use.

No measured water quality exceedances occurred at the GWPOC. Exceedances of the total recoverable iron chronic aquatic life standards occurred twice at stream point YSGF5 in upper Grassy Creek. Synoptic monitoring completed at Outfall 011 during these events confirmed that the iron was unrelated to the discharge from the Yoast outfall and is likely the result of natural erosional processes that are occurring within the unmined portions of the watershed. There was also one exceedance of the manganese agricultural use standard at lower Grassy Creek monitoring point YSG5 in September. However, the Yoast Mine outfalls were not discharging during this event. There were no other exceedances of the surface water quality standards at the stream monitoring points.

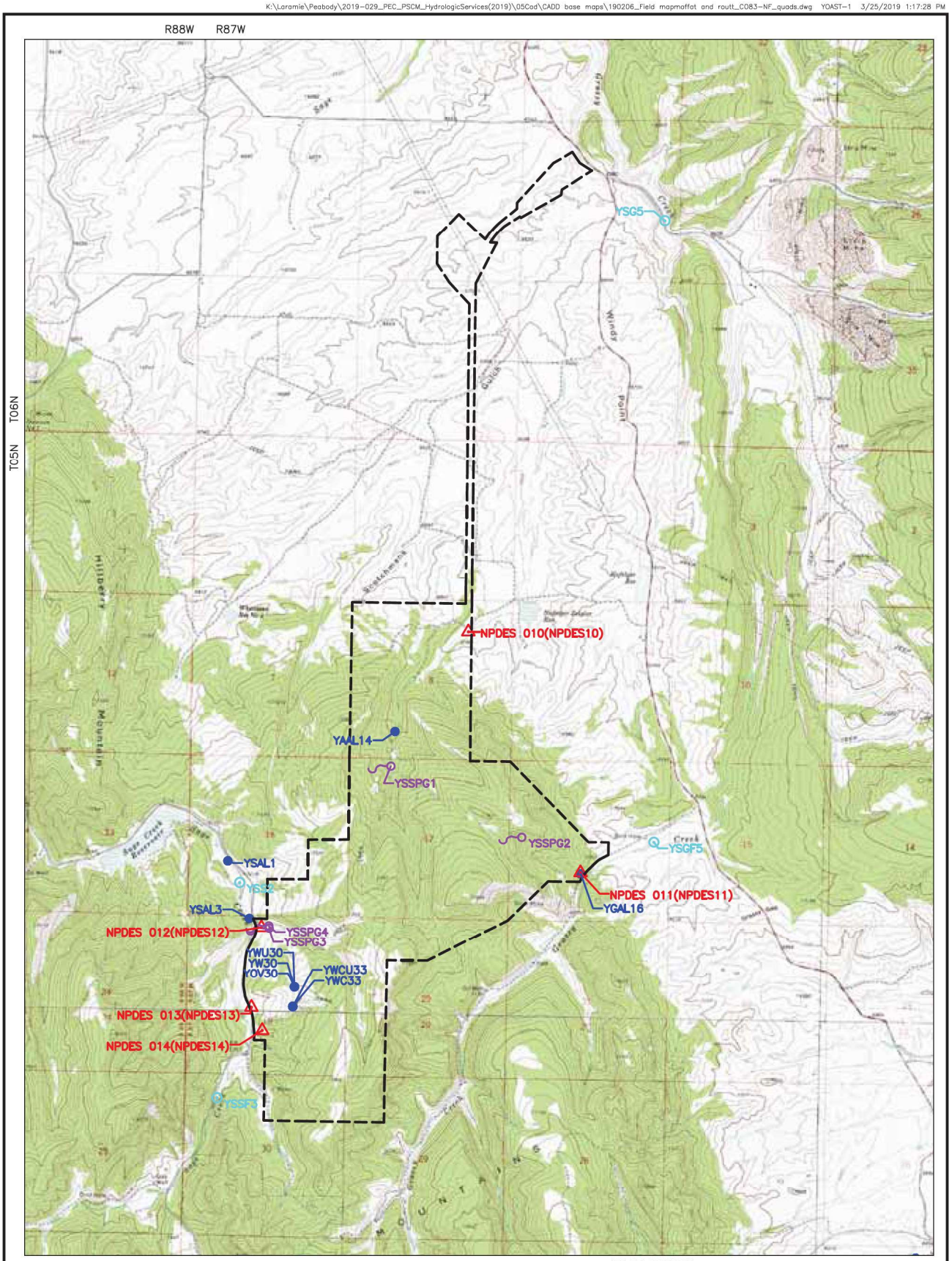

IMAGE SOURCE:
DIGITAL RASTER GRAPHIC COUNTY MOSAIC BY NRCS OF ROUTT COUNTY, COLORADO FROM GEOSPATIAL DATA GATEWAY (HTTPS://GDG.SC.EGOV.USDA.GOV) DOWNLOADED 10/16

DESIGNED BY: JAH	FIGURE 1 MONITORING SITE LOCATIONS
DRAWN BY: SDG	
CHECKED BY: TNS	YOAST MINE PEABODY SAGE CREEK MINING, LLC PEABODY ENERGY
DATE: 2019	WWC ENGINEERING

APPENDIX A

METEOROLOGICAL DATA

PERIOD OF RECORD PRECIPITATION SUMMARY													
Water Year	**OCT**	**NOV**	**DEC**	**JAN**	**FEB**	**MAR**	**APR**	**MAY**	**JUN**	**JUL**	**AUG**	**SEP**	**TOTAL**
2023	1.23	2.06	4.12	3.79	1.04	3.11	1.37	0.52	1.69	0.29	1.33	0.44	20.99
2022	1.82	0.62	2.79	1.18	0.85	1.43	2.07	3.14	0.61	1.14	0.99	2.1	18.74
2021	0.87	0.74	1.46	1.03	1.59	1.67	0.5	1.02	0.15	0.86	1.09	1.46	12.44
2020	1.90	1.37	2.60	2.53	2.40	1.67	1.75	1.63	0.77	0.71	0.43	0.43	18.19
2019	2.14	1.81	1.62	2.45	1.46	2.89	1.66	1.88	3.57	0.38	0.44	1.53	21.83
2018	2.45	1.31	1.36	1.65	1.92	1.90	2.95	0.85	0.15	0.15	1.33	0.17	16.19
2017	1.29	0.91	2.06	2.70	1.47	0.84	2.06	1.85	0.13	1.68	0.46	1.74	17.19
2016	1.39	1.90	2.55	2.65	1.16	1.40	3.02	1.94	0.40	0.81	0.19	1.02	18.43
2015	1.60	2.10	1.84	0.55	1.02	1.30	1.60	4.36	0.61	2.36	1.53	0.90	19.77
2014	2.69	1.75	1.42	2.02	0.78	1.96	1.19	2.58	0.72	1.50	3.77	0.87	21.25
2013	0.86	0.46	3.21	1.02	0.73	1.29	3.58	1.67	0.06	0.46	1.48	2.76	17.58
2012	1.41	1.65	0.36	0.87	1.97	0.50	1.13	0.22	0.15	2.43	0.55	1.56	12.80
2011	2.18	1.91	2.98	1.59	2.09	2.52	4.50	3.56	0.85	1.82	0.65	1.14	25.79
2010	1.22	0.77	1.24	0.75	0.90	0.73	1.98	2.80	1.34	1.19	1.56	0.62	15.10
2009	0.53	1.16	1.38	2.80	0.60	1.32	1.40	1.89	2.08	0.51	1.04	0.48	15.19
2008	1.41	0.13	3.36	2.51	1.70	1.64	0.94	1.68	0.37	0.57	0.75	0.91	15.97
2007	2.64	0.76	0.86	1.04	1.34	1.46	0.62	0.87	0.33	0.52	1.12	2.72	14.28
2006	2.27	2.04	2.01	1.78	0.58	1.06	0.95	0.93	0.24	1.48	2.71	2.75	18.80
2005	1.34	1.68	0.50	1.49	0.84	0.99	1.97	1.41	3.36	0.57	1.57	1.30	17.02
2004	0.44	2.90	1.58	0.74	1.64	0.40	1.57	1.26	0.86	1.00	1.44	2.76	16.59
2003	1.88	1.09	1.28	0.74	1.95	0.99	2.57	1.15	1.33	0.47	0.62	1.83	15.90
2002	1.14	1.17	0.54	0.88	0.92	1.06	1.39	0.40	0.37	0.78	1.26	1.94	11.85
2001	0.67	1.60	1.16	0.96	1.41	1.07	1.28	1.15	0.85	1.11	2.06	1.66	14.98
2000	0.43	0.61	1.66	1.66	1.68	1.46	1.84	1.94	0.54	0.75	2.38	2.00	16.95
1999	1.85	0.81	1.13	2.13	0.99	0.57	3.21	2.00	1.39	2.10	1.85	0.78	18.81
1998	2.37	1.08	0.95	1.34	1.93	1.77	1.77	0.62	2.51	1.50	0.48	1.50	17.82
1997	1.79	2.39	1.69	2.88	0.97	0.48	3.19	2.75	1.60	1.05	3.57	5.48	27.84
1996	1.32	2.20	1.26	3.60	2.19	0.99	1.34	2.10	1.00	1.33	0.35	1.37	19.05
1995	0.95	2.09	0.68	1.47	0.97	0.82	3.36	4.48	1.54	1.23	0.73	2.69	21.01
1994	3.02	1.61	1.16	0.69	1.13	0.56	1.85	1.07	0.43	0.24	0.98	0.72	13.46
1993	1.46	1.48	1.33	2.28	1.66	1.53	2.55	1.14	1.29	0.65	1.37	1.39	18.13
1992	1.18	2.79	0.85	0.88	1.16	1.20	1.66	3.08	1.15	4.38	0.95	0.98	20.26
1991	3.20	1.71	1.18	1.75	0.86	2.42	1.09	0.96	1.74	1.59	2.00	1.32	19.82
1990	0.77	1.38	2.08	0.65	1.64	1.54	1.36	1.12	1.38	1.14	0.51	1.22	14.79
1989	0.13	2.79	1.13	1.02	2.50	1.38	0.45	1.39	0.53	1.82	1.33	1.52	15.99
1988	1.27	1.22	2.32	2.80	0.70	1.31	0.83	1.85	1.93	0.60	1.03	2.31	18.17
1987	2.65	1.00	0.56	1.28	1.35	1.50	1.60	1.92	0.64	1.78	1.35	0.46	16.09
1986	3.51	4.19	1.34	0.79	3.01	1.59	2.70	0.99	1.00	1.65	1.96	2.12	24.85
1985	2.61	1.68	1.80	2.40	1.01	2.40	3.77	1.40	0.68	1.28	0.64	1.17	20.84
1984	2.16	2.82	5.03	0.59	0.43	2.31	2.68	1.33	2.36	1.84	2.61	1.31	25.47
1983	1.64	1.52	1.03	1.10	1.66	2.17	2.28	1.57	2.76	1.88	1.08	0.79	19.48
1982	3.76	0.78	2.51	1.71	0.62	2.64	1.92	0.97	0.46	1.60	1.19	2.64	20.80
1981	1.09	0.33	0.43	0.53	0.45	2.50	0.69	3.97	1.65	2.24	1.12	1.33	16.33
AVG	1.69	1.54	1.68	1.61	1.33	1.50	1.91	1.75	1.11	1.24	1.30	1.54	18.21

Note

Data from October 1980 to February 1982, and 2011 Water Year and later, from U.S. Department of Commerce - NOAA - Hayden Station. All other data from Seneca II Mine Meteorological Station with Belfort Weighing Bucket Rain Gage. Site relocated to USGS site on August 31, 1991. Precipitation recorded in inches.

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National Centers for Environmental Information
151 Patton Avenue
Asheville, North Carolina 28801

Current Location: Elev: 6467 ft. Lat: 40.4926° N Lon: 107.2548° W

Station: **HAYDEN, CO US USC00053867**

Observation Time Temperature: 1800 Observation Time Precipitation: 1800

Year	Month	Day	Temperature (F)			Precipitation					Evaporation		"Soil Temperature (F)"					
			"24 Hrs. Ending at Observation Time"		At Obs.	24 Hour Amounts Ending at Observation Time				At Obs. Time			4 in. Depth			8 in. Depth		
			Max.	Min.		Rain, Melted Snow, Etc. (in)	Flag	Snow, Ice Pellets, Hail (in)	Flag	Snow, Ice Pellets, Hail, Ice on Ground (in)	24 Hour Wind Movement (mi)	Amount of Evap. (in)	Ground Cover (see *)	Max.	Min.	Ground Cover (see *)	Max.	Min.
2022	10	01	58	40	56	0.15		0.0		0.0								
2022	10	02	65	45	53	0.12		0.0		0.0								
2022	10	03	67	40	60	0.00		0.0		0.0								
2022	10	04	68	40	61	0.00		0.0		0.0								
2022	10	05	68	34	62	0.00		0.0		0.0								
2022	10	06	71	35	65	0.00		0.0		0.0								
2022	10	07	70	33	64	0.00		0.0		0.0								
2022	10	08	71	37	62	0.00		0.0		0.0								
2022	10	09	71	36	61	0.00		0.0		0.0								
2022	10	10	69	35	64	0.00		0.0		0.0								
2022	10	11	68	32	63	0.00		0.0		0.0								
2022	10	12	69	31	59	0.00		0.0		0.0								
2022	10	13	69	32	60	0.00		0.0		0.0								
2022	10	14	70	28	61	0.00		0.0		0.0								
2022	10	15	70	27	60	0.00		0.0		0.0								
2022	10	16	67	27	59	0.00		0.0		0.0								
2022	10	17	68	26	59	0.00		0.0		0.0								
2022	10	18	69	27	60	0.00		0.0		0.0								
2022	10	19	71	29	64	0.00		0.0		0.0								
2022	10	20	72	30	64	0.00		0.0		0.0								
2022	10	21	68	27	61	0.00		0.0		0.0								
2022	10	22	68	32	60	0.00		0.0		0.0								
2022	10	23	60	30	32	0.54		0.5		0.0								
2022	10	24	37	26	33	0.01		T		0.0								
2022	10	25	35	27	34	0.08		T		0.0								
2022	10	26	44	29	34	0.15		1.0		0.0								
2022	10	27	34	25	33	0.18		1.0		0.0								
2022	10	28	51	20	40	0.00		0.0		0.0								
2022	10	29	53	24	45	0.00		0.0		0.0								
2022	10	30	54	27	46	0.00		0.0		0.0								
2022	10	31	56	23	47	0.00		0.0		0.0								
Summary			62	31		1.23		2.5										

Empty, or blank, cells indicate that a data observation was not reported.

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Asheville, North Carolina 28801

Current Location: Elev: 6467 ft. Lat: 40.4926° N Lon: 107.2548° W

Station: **HAYDEN, CO US USC00053867**

Observation Time Temperature: 1800 Observation Time Precipitation: 1800

Year	Month	Day	Temperature (F)			Precipitation					Evaporation		"Soil Temperature (F)"					
			"24 Hrs. Ending at Observation Time"		At Obs.	24 Hour Amounts Ending at Observation Time				At Obs. Time			4 in. Depth			8 in. Depth		
			Max.	Min.		Rain, Melted Snow, Etc. (in)	Flag	Snow, Ice Pellets, Hail (in)	Flag	Snow, Ice Pellets, Hail, Ice on Ground (in)	24 Hour Wind Movement (mi)	Amount of Evap. (in)	Ground Cover (see *)	Max.	Min.	Ground Cover (see *)	Max.	Min.
2022	11	01	62	28	54	0.00		0.0		0.0								
2022	11	02	63	32	53	0.00		0.0		0.0								
2022	11	03	53	28	29	0.32		2.0		2.0								
2022	11	04	35	16	30	0.09		1.0		2.0								
2022	11	05	45	26	43	0.12		0.5		0.0								
2022	11	06	43	27	32	0.36		4.0		2.0								
2022	11	07	62	31	52	0.00		0.0		0.0								
2022	11	08	62	34	46	0.00		0.0		0.0								
2022	11	09	59	29	29	0.16		2.0		2.0								
2022	11	10	32	19	25	0.04		1.0		2.0								
2022	11	11	32	11	21	0.00		0.0		2.0								
2022	11	12	41	11	30	0.00		0.0		1.0								
2022	11	13	45	15	30	0.00		0.0		0.0								
2022	11	14	34	14	24	0.00		0.0		0.0								
2022	11	15	28	9	18	0.23		4.5		3.0								
2022	11	16	30	5	18	0.00		0.0		3.0								
2022	11	17	31	11	24	0.02		0.5		3.0								
2022	11	18	24	11	11	T		0.5		3.0								
2022	11	19	32	-3	19	0.00		0.0		3.0								
2022	11	20	43	6	26	0.00		0.0		2.0								
2022	11	21	45	12	30	0.00		0.0		2.0								
2022	11	22	47	11	31	0.00		0.0		2.0								
2022	11	23	34	10	29	0.10		1.3		3.0								
2022	11	24	38	19	29	T		T		3.0								
2022	11	25	42	12	29	0.00		0.0		2.0								
2022	11	26	43	16	32	0.00		0.0		2.0								
2022	11	27	37	27	29	0.11		2.0		3.0								
2022	11	28	38	25	30	T		T		3.0								
2022	11	29	30	11	11	0.51		6.0		8.0								
2022	11	30	35	6	20	0.00		0.0		8.0								
		Summary	42	17		2.06		25.3										

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Observation Time Temperature: 1800 Observation Time Precipitation: 1800

Year	Month	Day	Temperature (F)			Precipitation					Evaporation		"Soil Temperature (F)"					
			"24 Hrs. Ending at Observation Time"			24 Hour Amounts Ending at Observation Time				At Obs. Time			4 in. Depth			8 in. Depth		
			Max.	Min.	At Obs.	Rain, Melted Snow, Etc. (in)	Flag	Snow, Ice Pellets, Hail (in)	Flag	Snow, Ice Pellets, Hail, Ice on Ground (in)	24 Hour Wind Movement (mi)	Amount of Evap. (in)	Ground Cover (see *)	Max.	Min.	Ground Cover (see *)	Max.	Min.
2022	12	01	46	7	41	0.00		0.0		7.0								
2022	12	02	45	11	11	0.26		4.0		11.0								
2022	12	03	27	1	27	0.00		0.0		11.0								
2022	12	04	39	26	35	T		T		8.0								
2022	12	05	39	28	28	0.52		6.0		13.0								
2022	12	06	31	15	15	0.34		5.0		17.0								
2022	12	07	23	2	17	0.07		1.0		17.0								
2022	12	08	33	13	13	0.36		5.0		19.0								
2022	12	09	24	5	15	0.00		0.0		19.0								
2022	12	10	28	4	18	0.00		0.0		17.0								
2022	12	11	29	13	24	0.00		0.0		17.0								
2022	12	12	38	23	27	T		T		16.0								
2022	12	13	27	13	16	0.34		4.0		19.0								
2022	12	14	24	15	20	0.24		4.5		23.0								
2022	12	15	20	10	11	0.11		1.5		23.0								
2022	12	16	12	-3	0	0.00		0.0		22.0								
2022	12	17	14	-7	-1	0.00		0.0		21.0								
2022	12	18	18	-8	1	0.00		0.0		20.0								
2022	12	19	15	-10	4	0.00		0.0		20.0								
2022	12	20	23	-1	20	0.00		0.0		20.0								
2022	12	21	35	16	30	T		T		19.0								
2022	12	22	30	-13	-11	0.17		2.5		20.0								
2022	12	23	17	-15	17	0.00		0.0		19.0								
2022	12	24	30	17	28	0.04		1.5		19.0								
2022	12	25	36	14	32	0.00		0.0		18.0								
2022	12	26	41	29	33	0.00		0.0		17.0								
2022	12	27	40	16	32	0.26		2.0		19.0								
2022	12	28	35	27	27	0.58		5.0		23.0								
2022	12	29	29	14	19	0.03		0.5		21.0								
2022	12	30	22	6	21	0.06		1.0		21.0								
2022	12	31	39	21	31	0.74		7.0		28.0								
Summary			29	9		4.12		50.5										

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Station: **HAYDEN, CO US USC00053867**

Observation Time Temperature: 1800 Observation Time Precipitation: 1800

Year	Month	Day	Temperature (F)			Precipitation					Evaporation		"Soil Temperature (F)"					
			"24 Hrs. Ending at Observation Time"			24 Hour Amounts Ending at Observation Time				At Obs. Time			4 in. Depth			8 in. Depth		
			Max.	Min.	At Obs.	Rain, Melted Snow, Etc. (in)	Flag	Snow, Ice Pellets, Hail (in)	Flag	Snow, Ice Pellets, Hail, Ice on Ground (in)	24 Hour Wind Movement (mi)	Amount of Evap. (in)	Ground Cover (see *)	Max.	Min.	Ground Cover (see *)	Max.	Min.
2023	01	01	40	31	37	T		T		27.0								
2023	01	02	37	26	26	0.12		1.5		25.0								
2023	01	03	26	20	23	0.19		2.5		27.0								
2023	01	04	29	13	13	0.02		0.5		26.0								
2023	01	05	29	5	19	0.00		0.0		25.0								
2023	01	06	32	17	30	0.40		6.0		31.0								
2023	01	07	38	19	19	0.16		2.0		30.0								
2023	01	08	28	11	24	0.00		0.0		30.0								
2023	01	09	38	13	33	0.00		0.0		29.0								
2023	01	10	43	31	39	0.33		4.0		28.0								
2023	01	11	39	28	28	0.28		4.0		32.0								
2023	01	12	28	8	18	0.05		1.5		33.0								
2023	01	13	33	13	23	0.00		0.0		30.0								
2023	01	14	34	15	27	0.00		0.0		29.0								
2023	01	15	38	26	34	0.10		1.0		29.0								
2023	01	16	34	24	29	0.11		2.0		30.0								
2023	01	17	30	16	25	T		T		30.0								
2023	01	18	27	20	21	0.30		4.0		33.0								
2023	01	19	21	0	12	0.00		0.0		32.0								
2023	01	20	17	2	11	0.00		0.0		32.0								
2023	01	21	20	7	11	T		0.5		31.0								
2023	01	22	23	5	15	0.00		0.0		31.0								
2023	01	23	21	3	10	0.00		0.0		30.0								
2023	01	24	23	4	10	T		T		29.0								
2023	01	25	20	7	11	0.02		0.5		29.0								
2023	01	26	22	1	17	0.08		1.5		31.0								
2023	01	27	25	17	23	0.67		8.0		39.0								
2023	01	28	32	23	23	0.26		3.0		40.0								
2023	01	29	27	8	8	0.37		5.0		44.0								
2023	01	30	9	-1	1	0.33		4.5		48.0								
2023	01	31	7	-26	-4	0.00		0.0		47.0								
Summary			28	12		3.79		52.0										

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Observation Time Temperature: 1800 Observation Time Precipitation: 1800

Year	Month	Day	Temperature (F)			Precipitation					Evaporation		"Soil Temperature (F)"					
			"24 Hrs. Ending at Observation Time"		At Obs.	24 Hour Amounts Ending at Observation Time				At Obs. Time			4 in. Depth			8 in. Depth		
			Max.	Min.		Rain, Melted Snow, Etc. (in)	Flag	Snow, Ice Pellets, Hail (in)	Flag	Snow, Ice Pellets, Hail, Ice on Ground (in)	24 Hour Wind Movement (mi)	Amount of Evap. (in)	Ground Cover (see *)	Max.	Min.	Ground Cover (see *)	Max.	Min.
2023	02	01	16	-10	3	0.00		0.0		45.0								
2023	02	02	21	-5	10	0.00		0.0		44.0								
2023	02	03	28	-1	14	0.00		0.0		42.0								
2023	02	04	29	6	17	0.00		0.0		41.0								
2023	02	05	43	11	34	0.00		0.0		39.0								
2023	02	06	34	23	24	0.23		2.5		42.0								
2023	02	07	28	11	13	0.03		1.0		40.0								
2023	02	08	27	4	23	0.10		1.0		41.0								
2023	02	09	23	9	9	0.03		1.0		40.0								
2023	02	10	23	-1	16	0.00		0.0		40.0								
2023	02	11	31	6	19	0.00		0.0		39.0								
2023	02	12	34	9	20	0.00		0.0		38.0								
2023	02	13	26	7	20	0.00		0.0		38.0								
2023	02	14	28	9	15	0.03		0.5		38.0								
2023	02	15	26	10	12	T		T		38.0								
2023	02	16	15	-9	6	0.08		1.0		38.0								
2023	02	17	24	-2	14	0.00		0.0		38.0								
2023	02	18	27	-1	18	0.00		0.0		38.0								
2023	02	19	33	9	26	0.05		1.0		39.0								
2023	02	20	40	21	36	0.00		0.0		37.0								
2023	02	21	42	13	35	0.00		0.0		36.0								
2023	02	22	41	5	5	0.16		3.0		38.0								
2023	02	23	24	-3	20	0.11		1.5		39.0								
2023	02	24	31	13	25	0.11		1.5		40.0								
2023	02	25	34	7	24	0.00		0.0		39.0								
2023	02	26	44	16	33	0.00		0.0		38.0								
2023	02	27	37	27	29	0.00		0.0		37.0								
2023	02	28	31	21	21	0.11		1.5		37.0								
		Summary	30	7		1.04		15.5										

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			Max.	Min.		Rain, Melted Snow, Etc. (in)	Flag	Snow, Ice Pellets, Hail (in)	Flag	Snow, Ice Pellets, Hail, Ice on Ground (in)	24 Hour Wind Movement (mi)	Amount of Evap. (in)	Ground Cover (see *)	Max.	Min.	Ground Cover (see *)	Max.	Min.
2023	03	01	33	7	26	T		T		37.0								
2023	03	02	31	21	21	0.00		0.0		37.0								
2023	03	03	32	10	23	0.13		2.0		40.0								
2023	03	04	34	6	33	0.04		0.5		39.0								
2023	03	05	36	22	22	0.27		6.0		45.0								
2023	03	06	36	19	23	0.14		2.0		42.0								
2023	03	07	30	6	20	0.00		0.0		42.0								
2023	03	08	28	2	24	0.00		0.0		41.0								
2023	03	09	35	13	28	0.08		1.0		41.0								
2023	03	10	42	16	37	0.00		0.0		40.0								
2023	03	11	43	24	24	0.19		2.0		39.0								
2023	03	12	33	10	31	0.05		1.0		39.0								
2023	03	13	41	18	33	0.00		0.0		38.0								
2023	03	14	48	22	42	0.00		0.0		38.0								
2023	03	15	44	33	33	0.11		T		37.0								
2023	03	16	34	19	29	0.16		1.5		37.0								
2023	03	17	29	0	21	0.00		0.0		37.0								
2023	03	18	27	-1	20	0.00		0.0		37.0								
2023	03	19	37	3	34	0.00		0.0		37.0								
2023	03	20	39	23	34	0.13		1.5		37.0								
2023	03	21	39	11	35	0.32		4.0		39.0								
2023	03	22	40	29	29	0.56		6.0		42.0								
2023	03	23	40	25	30	0.18		2.0		41.0								
2023	03	24	40	19	31	0.00		0.0		40.0								
2023	03	25	32	6	24	0.40		4.5		41.0								
2023	03	26	29	4	22	0.00		0.0		41.0								
2023	03	27	28	9	23	0.00		0.0		41.0								
2023	03	28	36	5	30	0.00		0.0		41.0								
2023	03	29	49	22	45	0.00		0.0		40.0								
2023	03	30	46	30	35	0.10		1.0		40.0								
2023	03	31	37	22	32	0.25		3.0		39.0								
		Summary	36	15		3.11		38.0										

Empty, or blank, cells indicate that a data observation was not reported.

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National Centers for Environmental Information
151 Patton Avenue
Asheville, North Carolina 28801

Current Location: Elev: 6467 ft. Lat: 40.4926° N Lon: 107.2548° W

Station: **HAYDEN, CO US USC00053867**

Observation Time Temperature: 1800 Observation Time Precipitation: 1800

Year	Month	Day	Temperature (F)			Precipitation					Evaporation		"Soil Temperature (F)"					
			"24 Hrs. Ending at Observation Time"		At Obs.	24 Hour Amounts Ending at Observation Time				At Obs. Time			4 in. Depth			8 in. Depth		
			Max.	Min.		Rain, Melted Snow, Etc. (in)	Flag	Snow, Ice Pellets, Hail (in)	Flag	Snow, Ice Pellets, Hail, Ice on Ground (in)	24 Hour Wind Movement (mi)	Amount of Evap. (in)	Ground Cover (see *)	Max.	Min.	Ground Cover (see *)	Max.	Min.
2023	04	01	46	20	44	0.02		0.5		38.0								
2023	04	02	50	36	37	0.00		0.0		36.0								
2023	04	03	47	26	38	0.00		0.0		34.0								
2023	04	04	38	21	27	0.40		4.0		35.0								
2023	04	05	32	10	27	0.04		0.5		35.0								
2023	04	06	35	11	34	0.00		0.0		34.0								
2023	04	07	42	14	37	0.00		0.0		33.0								
2023	04	08	46	26	43	0.00		0.0		31.0								
2023	04	09	45	25	41	0.00		0.0		30.0								
2023	04	10	46	29	43	0.00		0.0		27.0								
2023	04	11	60	30	54	0.00		0.0		26.0								
2023	04	12	64	31	55	0.00		0.0		22.0								
2023	04	13	60	42	53	0.00		0.0		15.0								
2023	04	14	53	27	38	0.47		6.0		14.0								
2023	04	15	43	26	41	0.00		0.0		13.0								
2023	04	16	53	23	52	0.00		0.0		9.0								
2023	04	17	64	29	62	0.00		0.0		3.0								
2023	04	18	62	34	51	0.00		0.0		1.0								
2023	04	19	51	24	33	0.10		0.5		T								
2023	04	20	40	16	31	0.00		0.0		0.0								
2023	04	21	32	19	31	0.15		2.0		2.0								
2023	04	22	43	27	42	0.00		0.0		0.0								
2023	04	23	50	25	48	0.00		0.0		0.0								
2023	04	24	58	30	54	0.00		0.0		0.0								
2023	04	25	54	33	48	0.16		0.5		0.0								
2023	04	26	60	31	56	0.00		0.0		0.0								
2023	04	27	60	33	51	0.00		0.0		0.0								
2023	04	28	55	29	54	0.03		0.0		0.0								
2023	04	29	70	31	69	0.00		0.0		0.0								
2023	04	30	73	33	69	0.00		0.0		0.0								
		Summary	51	26		1.37		14.0										

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151 Patton Avenue
Asheville, North Carolina 28801

Current Location: Elev: 6467 ft. Lat: 40.4926° N Lon: 107.2548° W

Station: **HAYDEN, CO US USC00053867**

Observation Time Temperature: 1800 Observation Time Precipitation: 1800

Year	Month	Day	Temperature (F)			Precipitation					Evaporation		"Soil Temperature (F)"					
			"24 Hrs. Ending at Observation Time"		At Obs.	24 Hour Amounts Ending at Observation Time				At Obs. Time			4 in. Depth			8 in. Depth		
			Max.	Min.		Rain, Melted Snow, Etc. (in)	Flag	Snow, Ice Pellets, Hail (in)	Flag	Snow, Ice Pellets, Hail, Ice on Ground (in)	24 Hour Wind Movement (mi)	Amount of Evap. (in)	Ground Cover (see *)	Max.	Min.	Ground Cover (see *)	Max.	Min.
2023	05	01	78	40	68	0.00		0.0		0.0								
2023	05	02	73	46	64	0.00		0.0		0.0								
2023	05	03	75	41	72	0.00		0.0		0.0								
2023	05	04	72	44	58	0.05		0.0		0.0								
2023	05	05	66	37	60	0.00		0.0		0.0								
2023	05	06	62	34	59	0.22		0.0		0.0								
2023	05	07	60	34	55	0.02		0.0		0.0								
2023	05	08	67	35	64	T		0.0		0.0								
2023	05	09	74	36	69	0.00		0.0		0.0								
2023	05	10	74	42	63	0.00		0.0		0.0								
2023	05	11	63	44	56	0.13		0.0		0.0								
2023	05	12	62	45	59	0.02		0.0		0.0								
2023	05	13	69	39	65	0.00		0.0		0.0								
2023	05	14	72	43	62	0.00		0.0		0.0								
2023	05	15	74	43	62	T		0.0		0.0								
2023	05	16	73	40	66	0.08		0.0		0.0								
2023	05	17	76	41	73	0.00		0.0		0.0								
2023	05	18	73	43	65	0.00		0.0		0.0								
2023	05	19	72	41	68	0.00		0.0		0.0								
2023	05	20	74	42	71	0.00		0.0		0.0								
2023	05	21	77	43	70	0.00		0.0		0.0								
2023	05	22	74	42	66	0.00		0.0		0.0								
2023	05	23	74	42	68	0.00		0.0		0.0								
2023	05	24	74	44	62	0.00		0.0		0.0								
2023	05	25	76	43	70	T		0.0		0.0								
2023	05	26	80	40	73	0.00		0.0		0.0								
2023	05	27	73	42	62	0.00		0.0		0.0								
2023	05	28	72	41	61	0.00		0.0		0.0								
2023	05	29	77	40	73	0.00		0.0		0.0								
2023	05	30	79	37	75	0.00		0.0		0.0								
2023	05	31	76	42	64	0.00		0.0		0.0								
		Summary	72	41		0.52		0.0										

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Asheville, North Carolina 28801

Current Location: Elev: 6467 ft. Lat: 40.4926° N Lon: 107.2548° W

Station: **HAYDEN, CO US USC00053867**

Observation Time Temperature: 1800 Observation Time Precipitation: 1800

Year	Month	Day	Temperature (F)			Precipitation					Evaporation		"Soil Temperature (F)"					
			"24 Hrs. Ending at Observation Time"			24 Hour Amounts Ending at Observation Time				At Obs. Time			4 in. Depth			8 in. Depth		
			Max.	Min.	At Obs.	Rain, Melted Snow, Etc. (in)	Flag	Snow, Ice Pellets, Hail (in)	Flag	Snow, Ice Pellets, Hail, Ice on Ground (in)	24 Hour Wind Movement (mi)	Amount of Evap. (in)	Ground Cover (see *)	Max.	Min.	Ground Cover (see *)	Max.	Min.
2023	06	01	69	43	60	0.00		0.0		0.0								
2023	06	02	60	47	50	0.29		0.0		0.0								
2023	06	03	68	47	63	0.04		0.0		0.0								
2023	06	04	68	44	65	0.00		0.0		0.0								
2023	06	05	76	46	65	0.13		0.0		0.0								
2023	06	06	82	45	65	0.00		0.0		0.0								
2023	06	07	69	44	58	0.00		0.0		0.0								
2023	06	08	76	46	75	0.00		0.0		0.0								
2023	06	09	79	42	75	0.00		0.0		0.0								
2023	06	10	75	43	69	0.00		0.0		0.0								
2023	06	11	76	44	71	0.00		0.0		0.0								
2023	06	12	73	51	57	0.09		0.0		0.0								
2023	06	13	65	42	56	0.09		0.0		0.0								
2023	06	14	74	45	60	0.23		0.0		0.0								
2023	06	15	66	42	55	0.30		0.0		0.0								
2023	06	16	68	42	65	0.39		0.0		0.0								
2023	06	17	68	42	60	0.13		0.0		0.0								
2023	06	18	78	44	75	0.00		0.0		0.0								
2023	06	19	83	47	80	0.00		0.0		0.0								
2023	06	20	81	44	79	0.00		0.0		0.0								
2023	06	21	83	42	81	0.00		0.0		0.0								
2023	06	22	84	43	81	0.00		0.0		0.0								
2023	06	23	81	43	75	0.00		0.0		0.0								
2023	06	24	76	38	74	0.00		0.0		0.0								
2023	06	25	85	43	83	0.00		0.0		0.0								
2023	06	26	85	44	84	0.00		0.0		0.0								
2023	06	27	84	50	82	0.00		0.0		0.0								
2023	06	28	83	39	82	0.00		0.0		0.0								
2023	06	29	82	43	66	T		0.0		0.0								
2023	06	30	76	41	71	0.00		0.0		0.0								
		Summary	76	44		1.69		0.0										

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National Centers for Environmental Information
151 Patton Avenue
Asheville, North Carolina 28801

Current Location: Elev: 6467 ft. Lat: 40.4926° N Lon: 107.2548° W

Station: **HAYDEN, CO US USC00053867**

Observation Time Temperature: 1800 Observation Time Precipitation: 1800

Year	Month	Day	Temperature (F)			Precipitation					Evaporation		"Soil Temperature (F)"					
			"24 Hrs. Ending at Observation Time"			24 Hour Amounts Ending at Observation Time				At Obs. Time			4 in. Depth			8 in. Depth		
			Max.	Min.	At Obs.	Rain, Melted Snow, Etc. (in)	Flag	Snow, Ice Pellets, Hail (in)	Flag	Snow, Ice Pellets, Hail, Ice on Ground (in)	24 Hour Wind Movement (mi)	Amount of Evap. (in)	Ground Cover (see *)	Max.	Min.	Ground Cover (see *)	Max.	Min.
2023	07	01	82	44	76	0.00		0.0		0.0								
2023	07	02	86	47	85	0.03		0.0		0.0								
2023	07	03	87	47	78	0.00		0.0		0.0								
2023	07	04	81	47	64	0.02		0.0		0.0								
2023	07	05	81	49	78	0.03		0.0		0.0								
2023	07	06	78	53	71	0.00		0.0		0.0								
2023	07	07	84	50	74	0.00		0.0		0.0								
2023	07	08	84	50	71	0.00		0.0		0.0								
2023	07	09	88	50	86	0.00		0.0		0.0								
2023	07	10	88	51	83	0.00		0.0		0.0								
2023	07	11	89	49	87	0.00		0.0		0.0								
2023	07	12	91	50	87	0.00		0.0		0.0								
2023	07	13	91	52	89	0.00		0.0		0.0								
2023	07	14	89	47	85	0.00		0.0		0.0								
2023	07	15	86	47	85	0.00		0.0		0.0								
2023	07	16	91	45	89	0.00		0.0		0.0								
2023	07	17	96	51	89	0.00		0.0		0.0								
2023	07	18	89	55	80	0.00		0.0		0.0								
2023	07	19	89	55	80	0.00		0.0		0.0								
2023	07	20	85	56	78	0.05		0.0		0.0								
2023	07	21	87	48	80	0.00		0.0		0.0								
2023	07	22	90	48	89	0.00		0.0		0.0								
2023	07	23	89	53	85	0.00		0.0		0.0								
2023	07	24	94	52	92	0.00		0.0		0.0								
2023	07	25	92	57	87	0.00		0.0		0.0								
2023	07	26	88	56	77	0.00		0.0		0.0								
2023	07	27	88	54	84	0.16		0.0		0.0								
2023	07	28	92	60	88	0.00		0.0		0.0								
2023	07	29	93	56	88	0.00		0.0		0.0								
2023	07	30	92	59	87	0.00		0.0		0.0								
2023	07	31	87	62	75	0.00		0.0		0.0								
Summary			88	52		0.29		0.0										

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Station: **HAYDEN, CO US USC00053867**

Observation Time Temperature: 1800 Observation Time Precipitation: 1800

Year	Month	Day	Temperature (F)			Precipitation					Evaporation		"Soil Temperature (F)"					
			"24 Hrs. Ending at Observation Time"		At Obs.	24 Hour Amounts Ending at Observation Time				At Obs. Time			4 in. Depth			8 in. Depth		
			Max.	Min.		Rain, Melted Snow, Etc. (in)	Flag	Snow, Ice Pellets, Hail (in)	Flag	Snow, Ice Pellets, Hail, Ice on Ground (in)	24 Hour Wind Movement (mi)	Amount of Evap. (in)	Ground Cover (see *)	Max.	Min.	Ground Cover (see *)	Max.	Min.
2023	08	01	81	56	67	0.19		0.0		0.0								
2023	08	02	81	59	77	0.22		0.0		0.0								
2023	08	03	79	54	75	0.30		0.0		0.0								
2023	08	04	83	49	78	0.05		0.0		0.0								
2023	08	05	84	48	78	0.00		0.0		0.0								
2023	08	06	82	43	76	0.00		0.0		0.0								
2023	08	07	76	48	71	0.07		0.0		0.0								
2023	08	08	80	46	69	0.00		0.0		0.0								
2023	08	09	81	41	80	0.00		0.0		0.0								
2023	08	10	85	45	77	0.00		0.0		0.0								
2023	08	11	86	51	78	0.00		0.0		0.0								
2023	08	12	85	52	78	0.02		0.0		0.0								
2023	08	13	82	52	79	0.00		0.0		0.0								
2023	08	14	85	47	82	0.00		0.0		0.0								
2023	08	15	91	46	89	0.00		0.0		0.0								
2023	08	16	92	51	83	0.00		0.0		0.0								
2023	08	17	92	52	89	0.00		0.0		0.0								
2023	08	18	90	60	69	0.02		0.0		0.0								
2023	08	19	88	56	80	0.00		0.0		0.0								
2023	08	20	92	57	90	0.00		0.0		0.0								
2023	08	21	91	55	88	0.00		0.0		0.0								
2023	08	22	88	57	61	0.23		0.0		0.0								
2023	08	23	85	51	79	0.02		0.0		0.0								
2023	08	24	81	58	75	0.13		0.0		0.0								
2023	08	25	77	55	67	0.06		0.0		0.0								
2023	08	26	85	51	83	0.02		0.0		0.0								
2023	08	27	88	56	82	0.00		0.0		0.0								
2023	08	28	84	50	81	0.00		0.0		0.0								
2023	08	29	87	52	82	0.00		0.0		0.0								
2023	08	30	90	53	85	0.00		0.0		0.0								
2023	08	31	89	46	85	0.00		0.0		0.0								
Summary			85	52		1.33		0.0										

Empty, or blank, cells indicate that a data observation was not reported.

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151 Patton Avenue
Asheville, North Carolina 28801

Current Location: Elev: 6467 ft. Lat: 40.4926° N Lon: 107.2548° W

Station: **HAYDEN, CO US USC00053867**

Observation Time Temperature: 1800 Observation Time Precipitation: 1800

Year	Month	Day	Temperature (F)			Precipitation					Evaporation		"Soil Temperature (F)"					
			"24 Hrs. Ending at Observation Time"		At Obs.	24 Hour Amounts Ending at Observation Time				At Obs. Time			4 in. Depth			8 in. Depth		
			Max.	Min.		Rain, Melted Snow, Etc. (in)	Flag	Snow, Ice Pellets, Hail (in)	Flag	Snow, Ice Pellets, Hail, Ice on Ground (in)	24 Hour Wind Movement (mi)	Amount of Evap. (in)	Ground Cover (see *)	Max.	Min.	Ground Cover (see *)	Max.	Min.
2023	09	01	85	50	81	0.00		0.0		0.0								
2023	09	02	84	50	80	0.00		0.0		0.0								
2023	09	03	80	50	72	0.15		0.0		0.0								
2023	09	04	72	53	57	0.07		0.0		0.0								
2023	09	05	76	40	70	0.03		0.0		0.0								
2023	09	06	85	43	80	0.00		0.0		0.0								
2023	09	07	82	40	77	0.00		0.0		0.0								
2023	09	08	83	41	79	0.00		0.0		0.0								
2023	09	09	84	42	80	0.00		0.0		0.0								
2023	09	10	81	55	74	0.00		0.0		0.0								
2023	09	11	76	44	70	0.00		0.0		0.0								
2023	09	12	78	42	75	0.00		0.0		0.0								
2023	09	13	78	40	68	0.00		0.0		0.0								
2023	09	14	68	50	58	0.04		0.0		0.0								
2023	09	15	72	39	62	0.03		0.0		0.0								
2023	09	16	77	38	72	0.00		0.0		0.0								
2023	09	17	78	41	71	0.00		0.0		0.0								
2023	09	18	78	42	58	0.03		0.0		0.0								
2023	09	19	73	42	54	0.05		0.0		0.0								
2023	09	20	76	41	73	0.04		0.0		0.0								
2023	09	21	76	47	73	0.00		0.0		0.0								
2023	09	22	73	40	57	0.00		0.0		0.0								
2023	09	23	67	30	63	0.00		0.0		0.0								
2023	09	24	73	31	67	0.00		0.0		0.0								
2023	09	25	78	35	70	0.00		0.0		0.0								
2023	09	26	80	38	76	0.00		0.0		0.0								
2023	09	27	82	39	75	0.00		0.0		0.0								
2023	09	28	82	41	76	0.00		0.0		0.0								
2023	09	29	80	37	75	0.00		0.0		0.0								
2023	09	30	82	39	71	0.00		0.0		0.0								
		Summary	78	42		0.44		0.0										

Empty, or blank, cells indicate that a data observation was not reported.

*Ground Cover: 1=Grass; 2=Fallow; 3=Bare Ground; 4=Brome grass; 5=Sod; 6=Straw mulch; 7=Grass muck; 8=Bare muck; 0=Unknown

"s" This data value failed one of NCEI's quality control tests. "At Obs." = Temperature at time of observation

"T" values in the Precipitation or Snow category above indicate a "trace" value was recorded.

"A" values in the Precipitation Flag or the Snow Flag column indicate a multiday total, accumulated since last measurement, is being used.

Data value inconsistency may be present due to rounding calculations during the conversion process from SI metric units to standard imperial units.

APPENDIX B

GROUNDWATER QULITY DATA

Table B.1. Groundwater analytical results for Point of Compliance (POC) well YSAL3 during water year 2023.

Location	Date	Static Water Level FT BTOC	SPC, Field N UMHOS/CM	pH, Field N S.U.	Temp., Field N DEG-C	Fluoride N MG/L	Iron D MG/L	Manganese D MG/L	Nitrate N. N MG/L	Nitrite N. N MG/L	Selenium D UG/L	Sulfates N MG/L	TDS, Lab N MG/L
YSAL3	6/22/2023	4.51	1850	7.3	7.8	0.29	0.423	0.186	< 0.02	0.012	< 2	691	1310
Sage Creek TR39 GWPOC Standards*			-	6.5 - 8.5	-	2	4.91	0.76	10	1	20	1200	2675

Notes

* See Yoast Mine Technical Revision 39 (TR-39) for GWPOC standards

Bold Exceeds groundwater quality standard

Table B.2. Groundwater analytical results for Point of Compliance (POC) well SGAL70 during water year 2023.

Well	Date	Depth to Water ft btoc	pH, Field N S.U.	Temp., Field N DEG-C	SPC, Field N UMHOS/CM	Aluminum D MG/L	Arsenic D UG/L	Boron D UG/L	Cadmium D UG/L	Chloride N MG/L	Chromium D UG/L	Copper D UG/L	Fluoride N MG/L
SGAL70	6/21/2023	9.82	7.7	9.5	3380	< 0.1	< 0.4	126	**< 16**	36	< 40	< 20	0.26
SGAL70	9/25/2023	9.78	7.3	14.6	2870	< 0.05	0.25	141	**< 8**	39.6	< 20	< 10	0.26
Grassy Creek TR39 GWPOC Standard*			6.5 - 8.5	-	-	**5**	**50**	**750**	**5**	**250**	**100**	**200**	**2**

Well	Date	Iron D MG/L	Lead D UG/L	Manganese D MG/L	Mercury D UG/L	Nickel D UG/L	Nitrate N. N MG/L	Nitrite N. N MG/L	Selenium D UG/L	Sulfates N MG/L	Sulfide N MG/L	TDS, Lab N MG/L	Zinc D MG/L
SGAL70	6/21/2023	< 0.12	< 60	0.082	< 0.2	< 16	0.069	< 0.01	13.5	1870	< 0.02	3270	< 0.04
SGAL70	9/25/2023	0.067	< 30	0.312	< 0.2	< 8	< 0.02	0.013	< 2	2000	< 0.02	3290	0.061
TR-39 GWPOC Standards*		**14.1**	**70**	**2.44**	**2**	**100**	**10**	**1**	**20**	**2517**	-	**5038**	**5**

Well	Date	Alk. as CaCO3, @ pH 4.5 N MG/L	Calcium D MG/L	SPC, Lab N UMS/CM	Hardness N MG/L	Magnesium D MG/L	Potassium D MG/L	Sodium D MG/L	SAR N NONE	Cation / Anion Balance N %
SGAL70	6/21/2023	398	354	3370	1940	257	5.68	183	1.8	-1.1
SGAL70	9/25/2023	351	372	3410	2040	271	6.18	184	1.8	-1
TR-39 GWPOC Standards*		-	-	-	-	-	-	-	-	-

Notes

* See Yoast Mine Technical Revision 39 (TR-39) for GWPOC standards

Bold Analyte exceeds the TR-39 GWPOC Standard

Table B.3. Groundwater analytical results for Non-Point of Compliance wells during water year 2023.

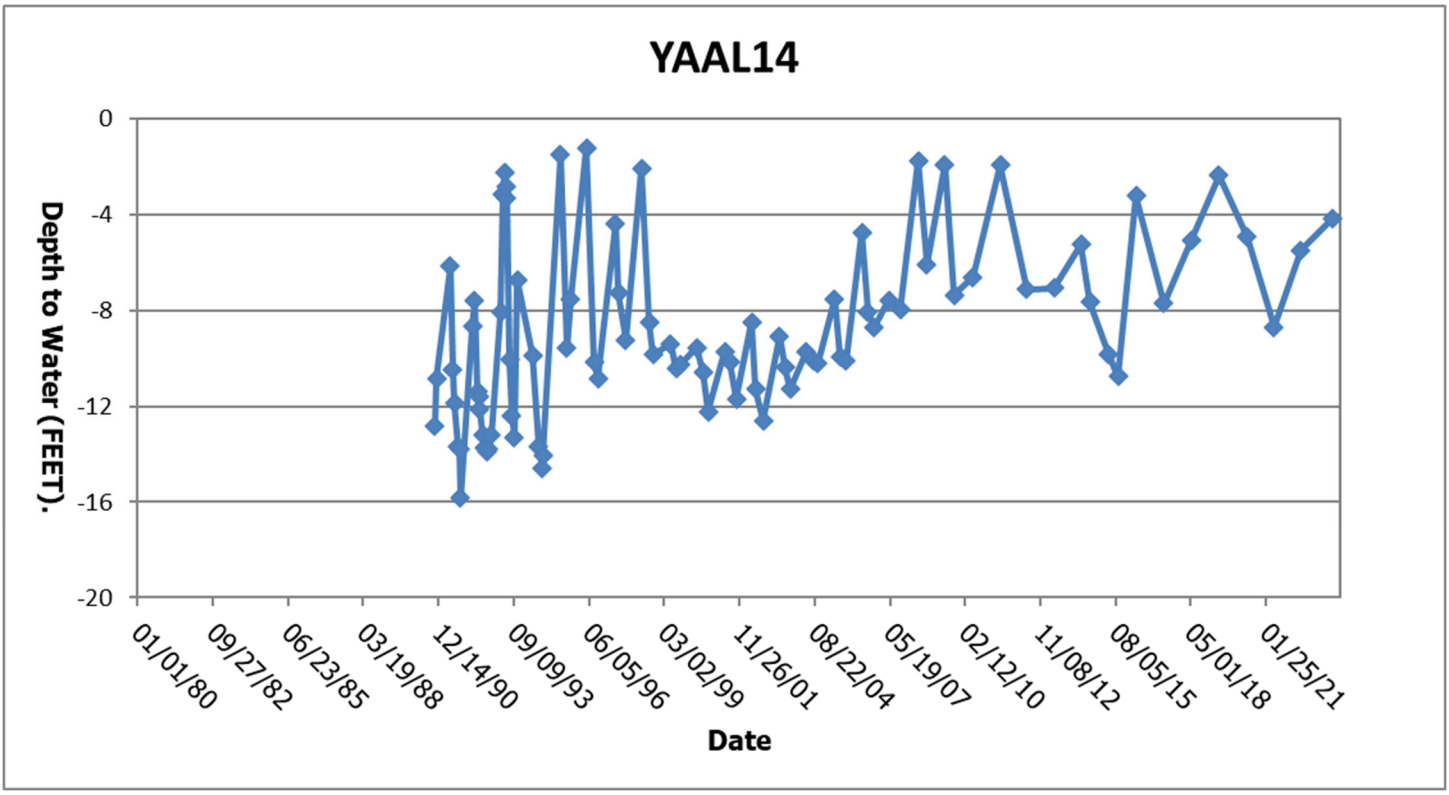
Location	Date	Static Water Level FT BTOC	SPC, Field N UMHOS/CM	pH, Field N S.U.	Temp., Field N DEG-C	Fluoride N MG/L	Iron D MG/L	Manganese D MG/L	Nitrate N. N MG/L	Nitrite N. N MG/L	Selenium D UG/L	Sulfates N MG/L	TDS, Lab N MG/L
YAAL14	6/21/2023	4.18	3380	7.3	11.2	0.18	< 0.12	0.136	< 0.02	< 0.01	< 2	1760	3190
YGAL16	6/21/2023	7.36	1850	7.4	12.6	0.19	0.065	0.019	0.047	< 0.01	< 2	922	1600
YSAL1	6/22/2023	5.46	1680	7.3	9.7	0.19	0.07	< 0.01	0.499	< 0.01	< 2	729	1280
YOV30	6/21/2023	135.66	3570	7.6	10.9	1.19	0.257	0.066	0.042	< 0.01	< 2	1450	2660
YW30	6/21/2023	34.24	7550	7.6	10.4	1.06	0.561	< 0.05	0.082	0.013	< 2	3650	6230
YWU30	6/21/2023	215.98	1790	7	10.8	< 0.15	0.318	0.102	0.413	0.023	< 2	514	1330
YWC33*	6/21/2023												
YWCU33	6/21/2023	247.12	1470	8.5	13.7		0.226	< 0.01					852

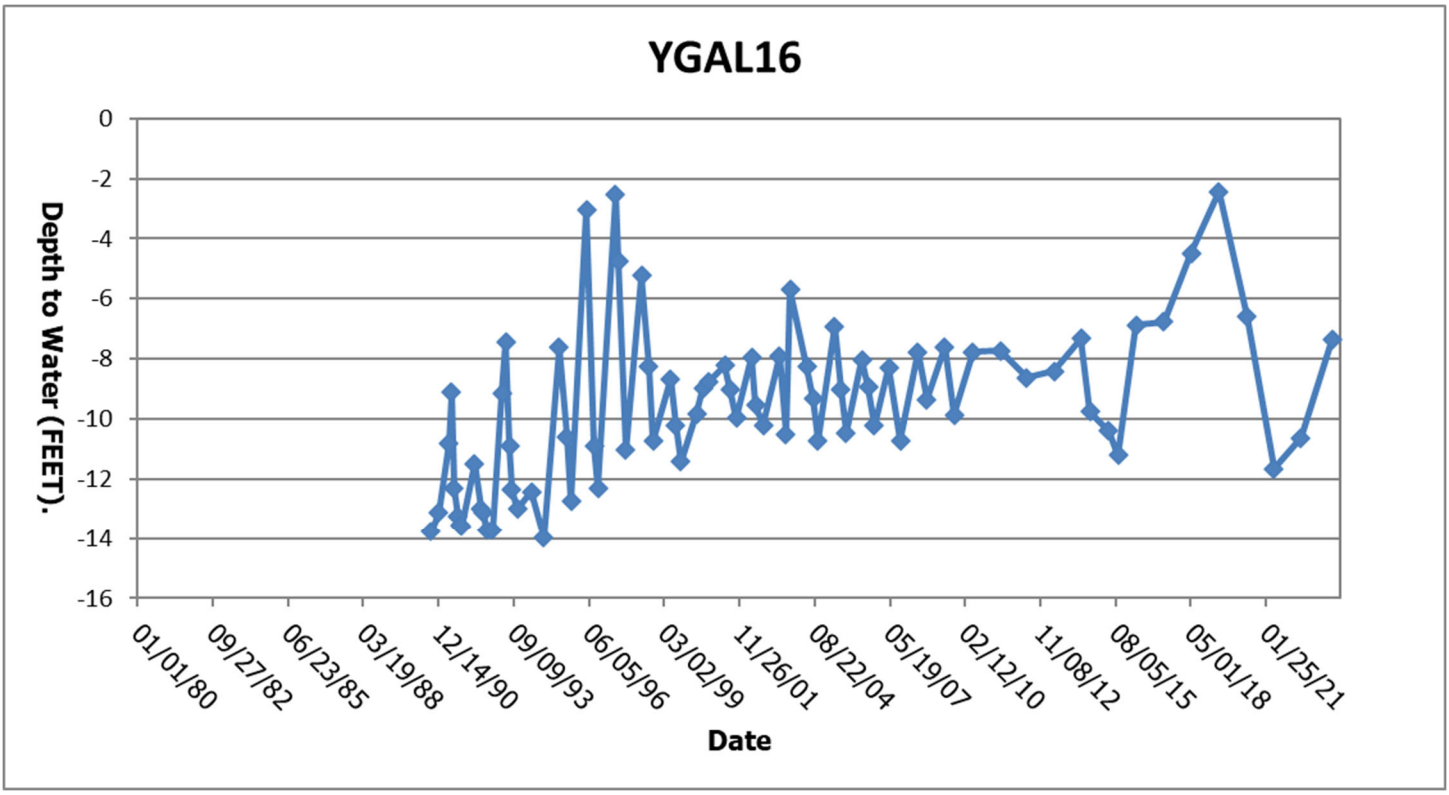
Notes

*YWC33 well casing broken. Water level could not be measured and a sample could not be collected.

APPENDIX C

GROUNDWATER HYDROGRAPHS


YAAL14
Depth to Water (FEET).
0
-4
-8
-12
-16
-20
01/01/80
09/27/82
06/23/85
03/19/88
12/14/90
09/09/93
06/05/96
03/02/99
11/26/01
08/22/04
05/19/07
02/12/10
11/08/12
08/05/15
05/01/18
01/25/21
Date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Depth to Water (FEET).
0
-2
-4
-6
-8
-10
-12
-14
-16
01/01/80
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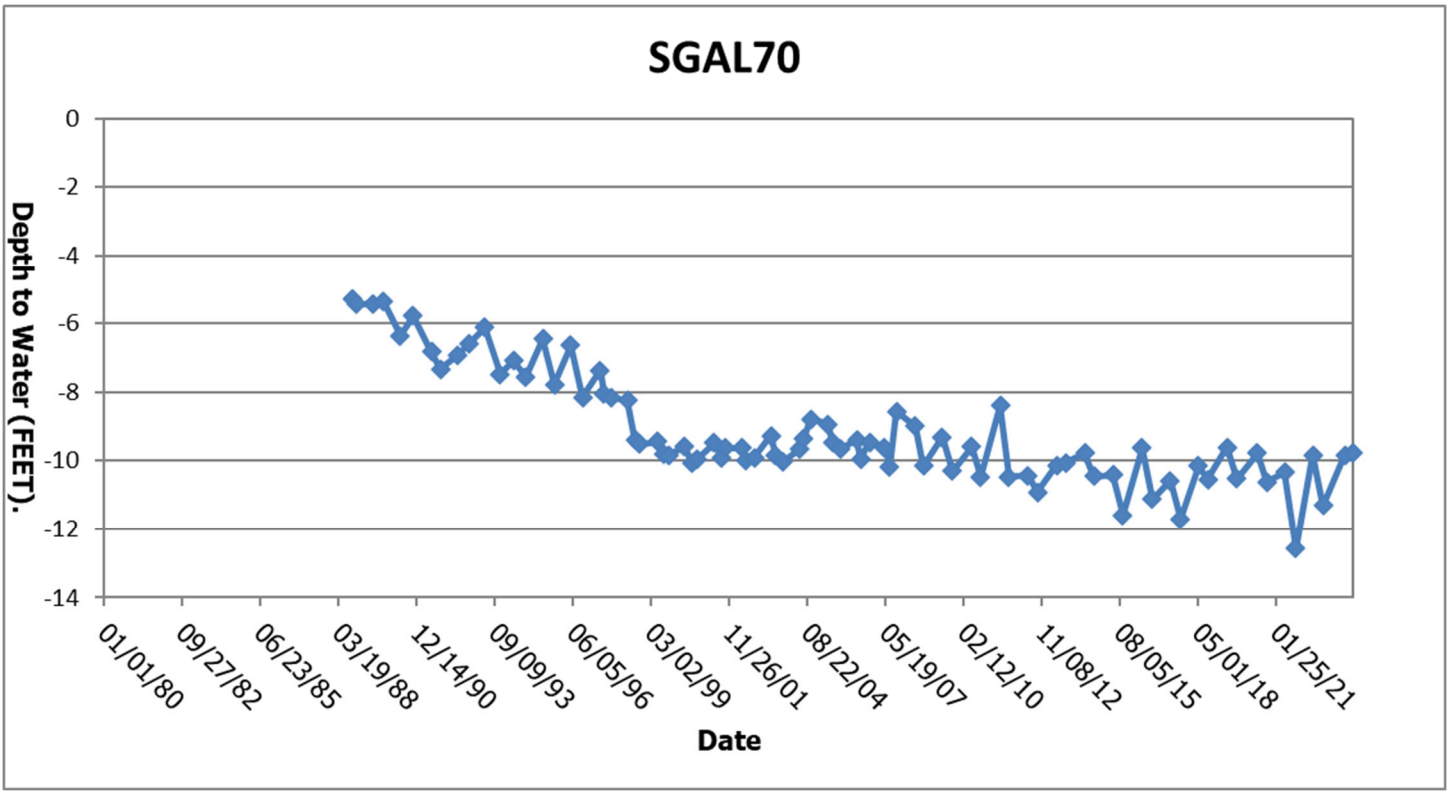
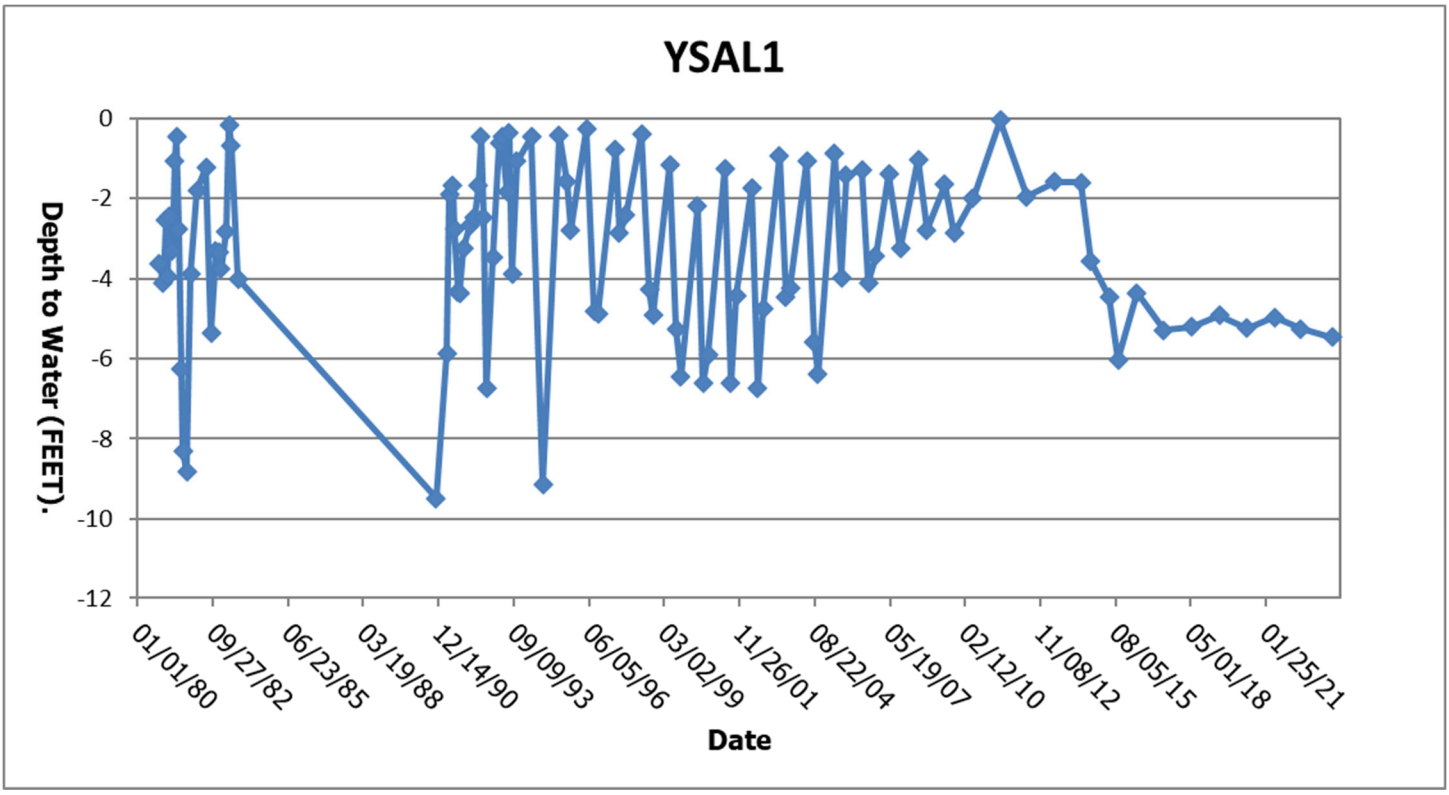
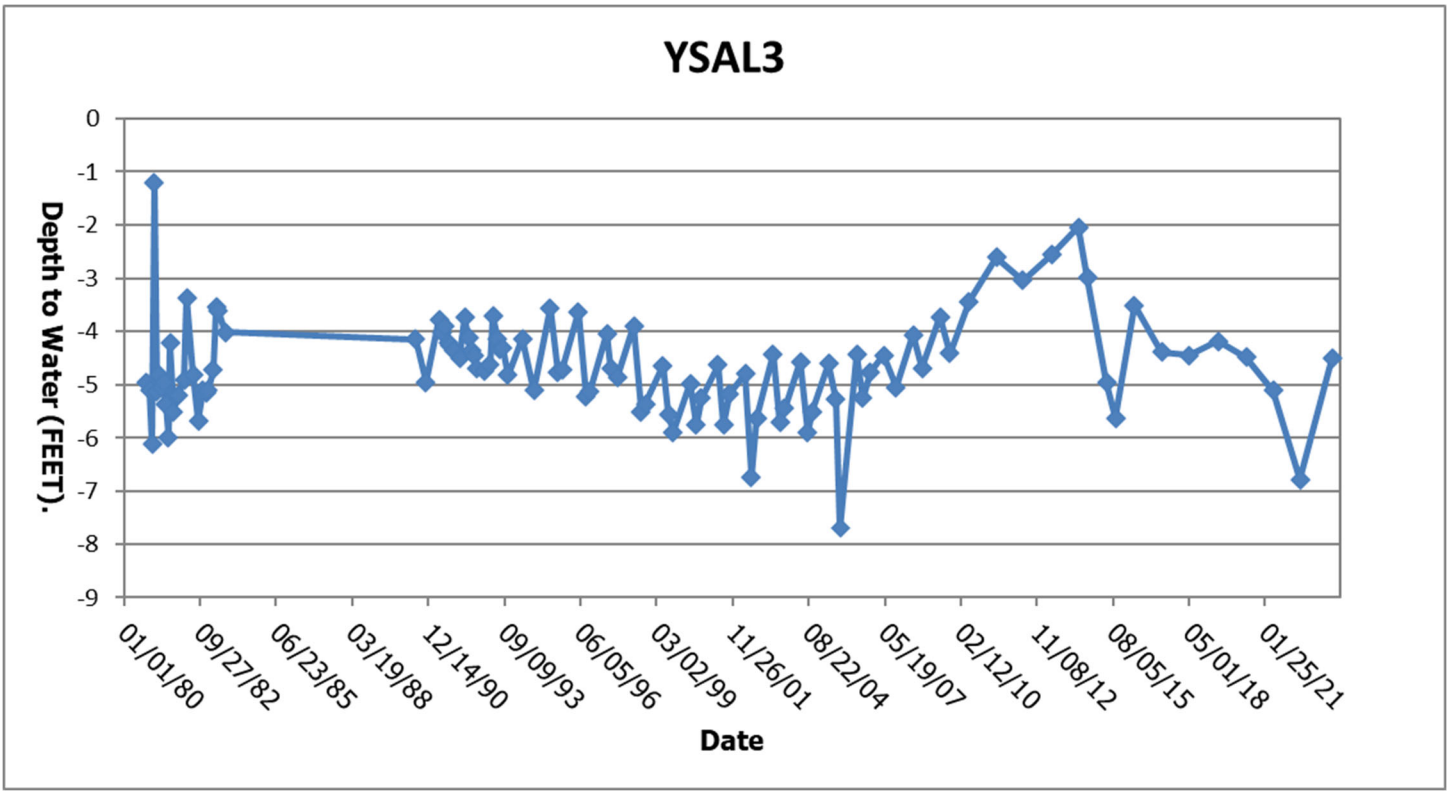
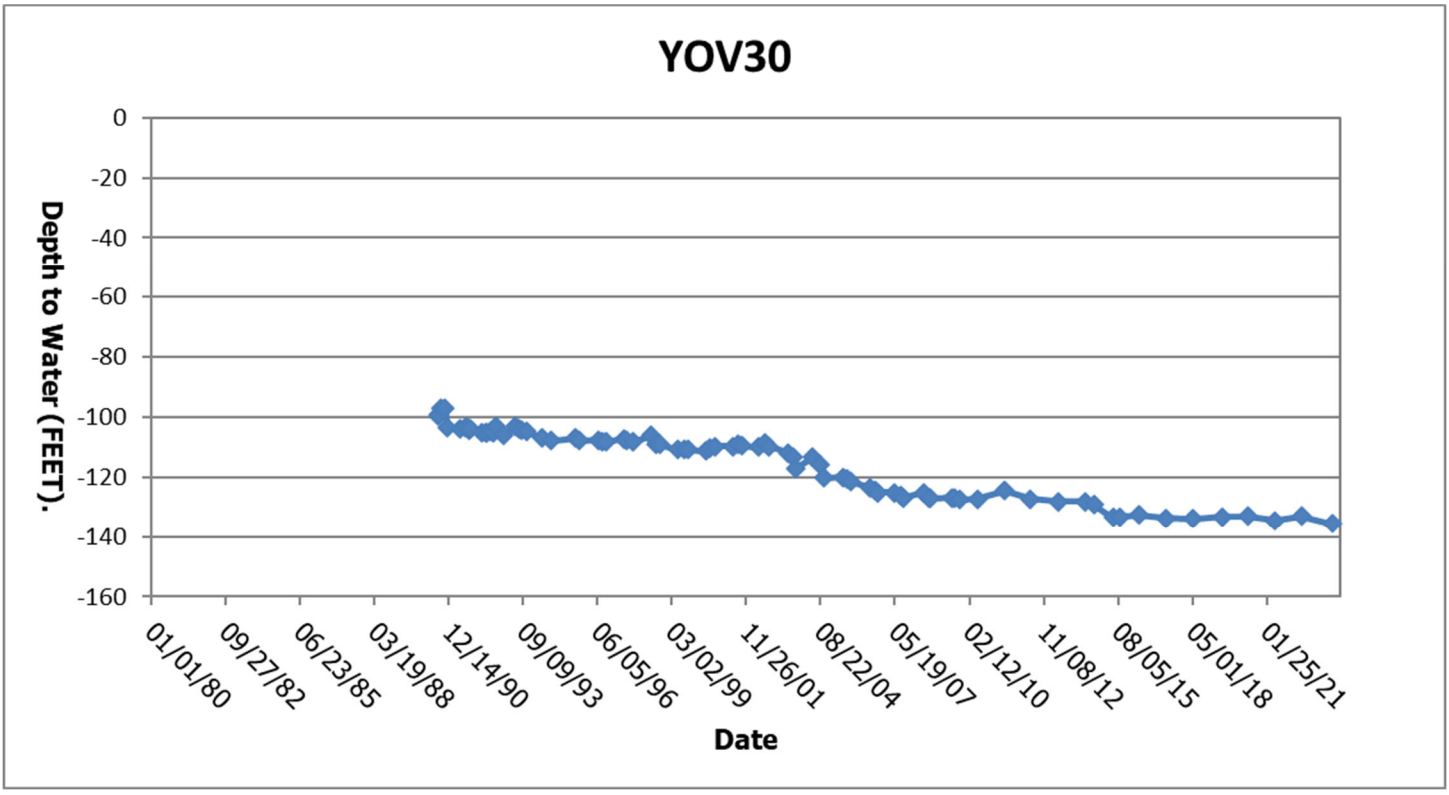
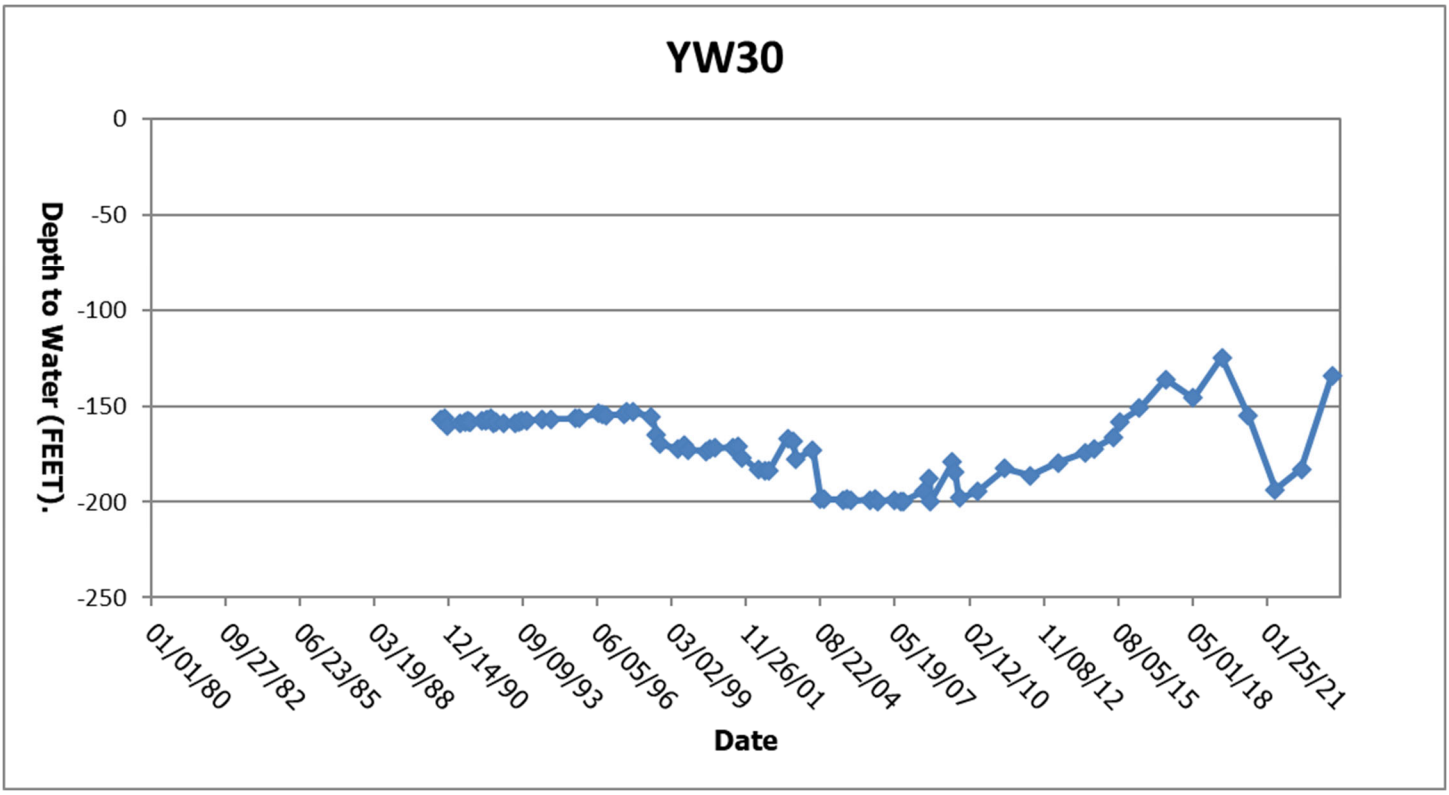
06/23/85
03/19/88
12/14/90
09/09/93
06/05/96
03/02/99
11/26/01
08/22/04
05/19/07
02/12/10
11/08/12
08/05/15
05/01/18
01/25/21
Date

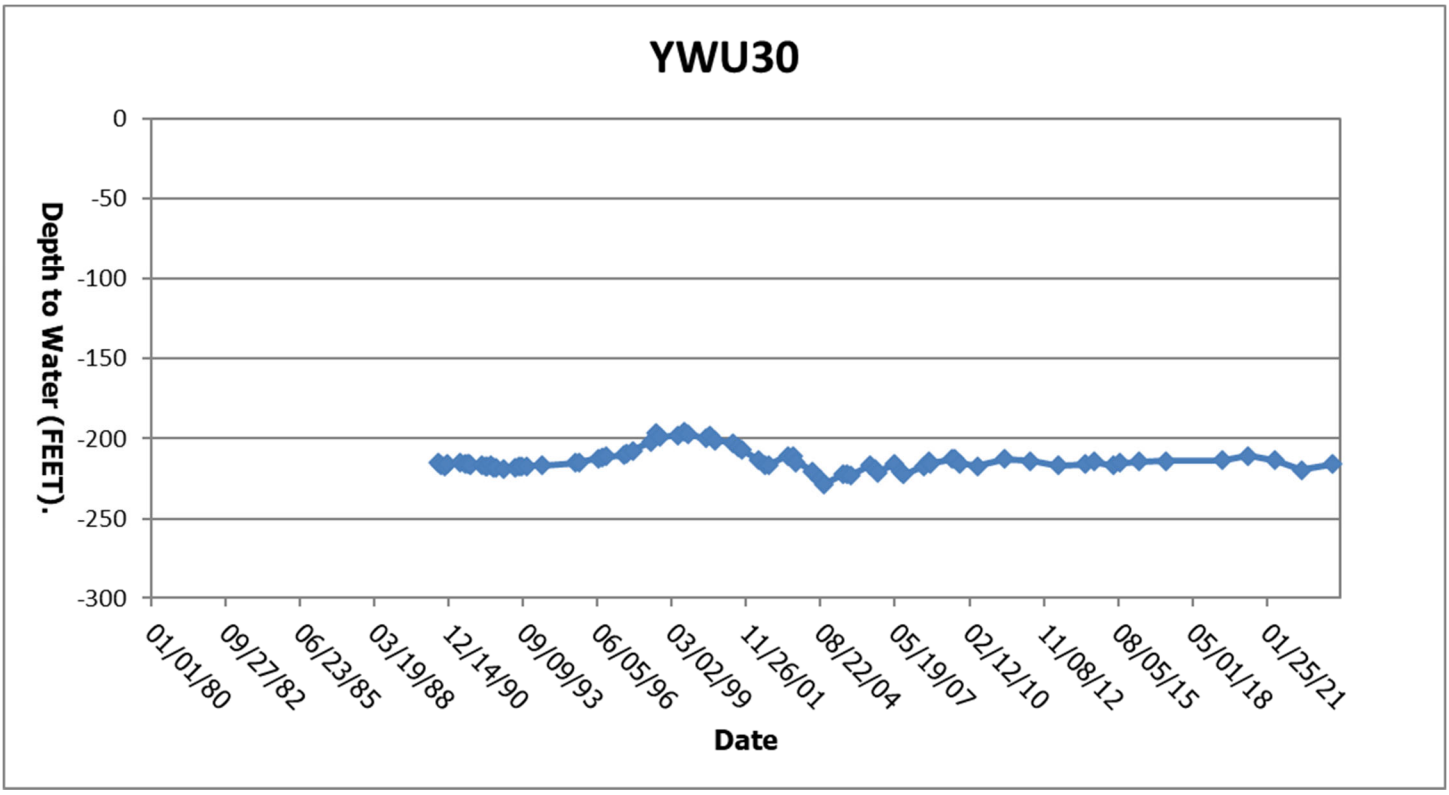

SGAL70
Depth to Water (FEET).
0
-2
-4
-6
-8
-10
-12
-14
01/01/80
09/27/82
06/23/85
03/19/88
12/14/90
09/09/93
06/05/96
03/02/99
11/26/01
08/22/04
05/19/07
02/12/10
11/08/12
08/05/15
05/01/18
01/25/21
Date

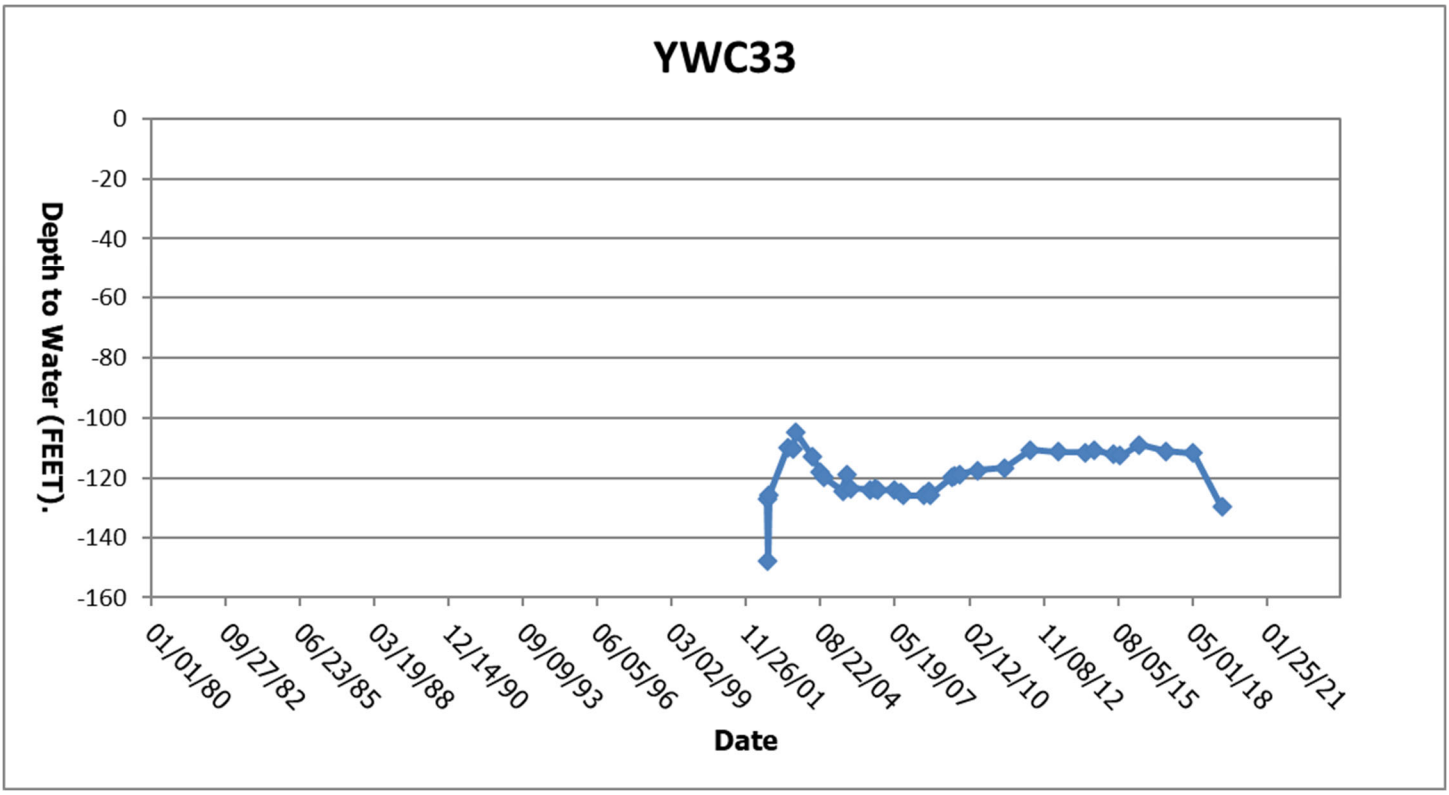

YSAL1
Depth to Water (FEET).
0
-2
-4
-6
-8
-10
-12
01/01/80
09/27/82
06/23/85
03/19/88
12/14/90
09/09/93
06/05/96
03/02/99
11/26/01
08/22/04
05/19/07
02/12/10
11/08/12
08/05/15
05/01/18
01/25/21
Date

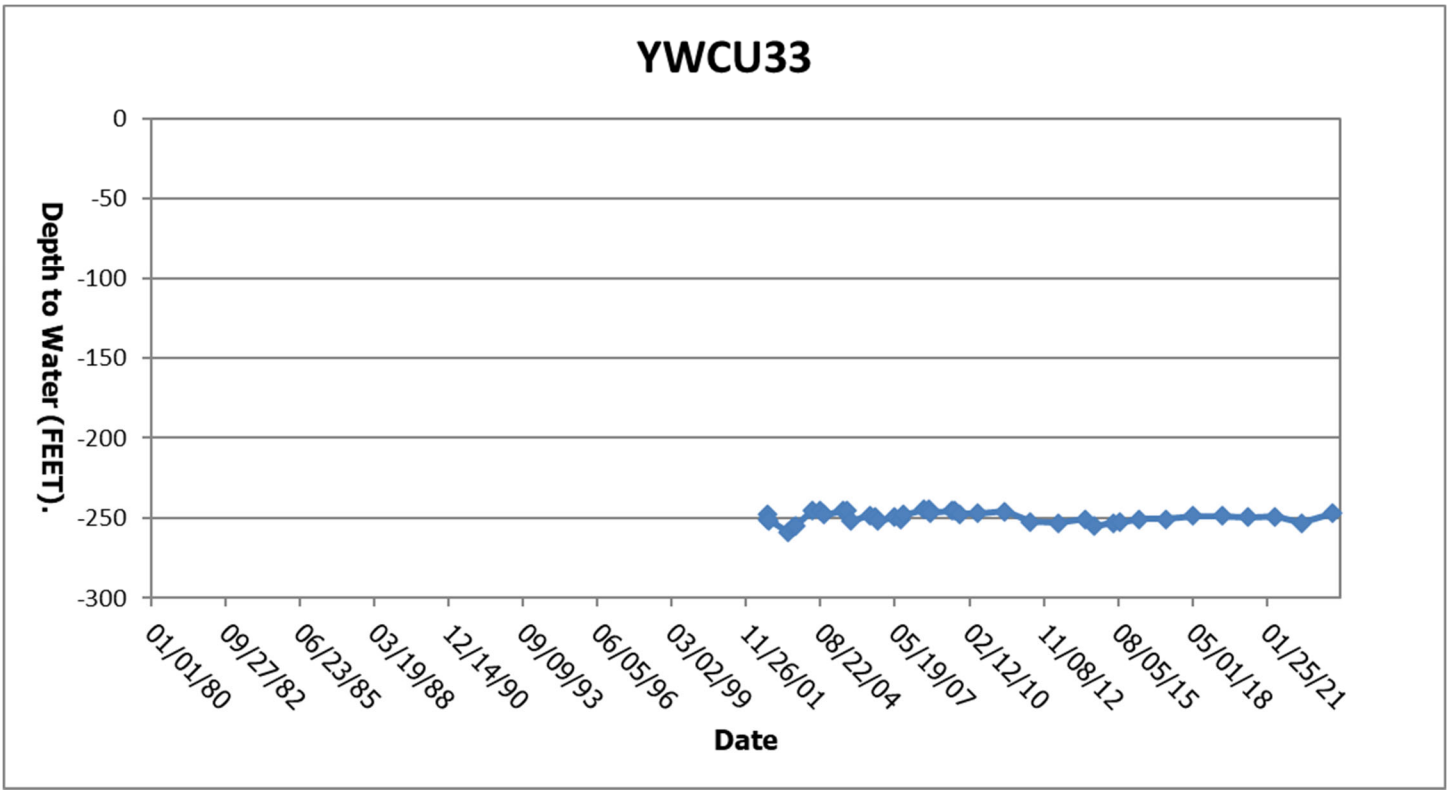

YSAL3
Depth to Water (FEET).
0
-1
-2
-3
-4
-5
-6
-7
-8
-9
01/01/80
09/27/82
06/23/85
03/19/88
12/14/90
09/09/93
06/05/96
03/02/99
11/26/01
08/22/04
05/19/07
02/12/10
11/08/12
08/05/15
05/01/18
01/25/21
Date


YOV30
Depth to Water (FEET).
0
-20
-40
-60
-80
-100
-120
-140
-160
01/01/80
09/27/82
06/23/85
03/19/88
12/14/90
09/09/93
06/05/96
03/02/99
11/26/01
08/22/04
05/19/07
02/12/10
11/08/12
08/05/15
05/01/18
01/25/21
Date


YW30
Depth to Water (FEET).
0
-50
-100
-150
-200
-250
01/01/80
09/27/82
06/23/85
03/19/88
12/14/90
09/09/93
06/05/96
03/02/99
11/26/01
08/22/04
05/19/07
02/12/10
11/08/12
08/05/15
05/01/18
01/25/21
Date


YWU30
Depth to Water (FEET).
0
-50
-100
-150
-200
-250
-300
01/01/80
09/27/82
06/23/85
03/19/88
12/14/90
09/09/93
06/05/96
03/02/99
11/26/01
08/22/04
05/19/07
02/12/10
11/08/12
08/05/15
05/01/18
01/25/21
Date


YWC33
0
-20
-40
-60
-80
-100
-120
-140
-160
Depth to Water (FEET).
01/01/80
09/27/82
06/23/85
03/19/88
12/14/90
09/09/93
06/05/96
03/02/99
11/26/01
08/22/04
05/19/07
02/12/10
11/08/12
08/05/15
05/01/18
01/25/21
Date


YWCU33
0
-50
-100
-150
-200
-250
-300
Depth to Water (FEET).
01/01/80
09/27/82
06/23/85
03/19/88
12/14/90
09/09/93
06/05/96
03/02/99
11/26/01
08/22/04
05/19/07
02/12/10
11/08/12
08/05/15
05/01/18
01/25/21
Date

APPENDIX D

SURFACE WATER QUALITY DATA

Table D.1 Upper Grassy Creek Yampa Segment 13i stream point analytical data for water year 2023.

Location	Date	Flow N MGD	SPC, Field N UMHOS/CM	pH, Field N S.U.	Temp., Field N C	Iron D MG/L	Iron PD MG/L	Iron TR MG/L	Manganese D MG/L	Mercury T UG/L	Ammonia N. N MG/L	Nitrate N. N MG/L	Nitrite N. N MG/L	Selenium D UG/L
YSGF5	5/23/2023	4.63	955	8.3	16.5	0.0958	0.189	0.417	0.114	**< 0.2**	< 0.05	0.026	< 0.01	0.8
YSGF5	6/28/2023	0.057	1386	8.2	12.2			**1.57**	0.108	**< 0.2**	< 0.1	0.025	< 0.01	0.39
YSGF5	7/17/2023	0.015	1386	8.1	21.7	0.074	0.696	**1.79**						
YSGF5	9/7/2023	0												
Yampa Segment 13i Standards - Acute		-	-	6.5 - 9.0	-	-	-	-	4.738	0.01***	Varies	100	0.05	18.4
Yampa Segment 13i Standards - Chronic		-	-	-	-	-	-	1	2.618	-	Varies	-	-	TM*
Agricultural Use Standards		-	-	-	-	-	-	-	0.2**	-	-	100	10	20

Location	Date	Selenium PD UG/L	Selenium TR UG/L	Sulfates N MG/L	Sulfide N MG/L	TDS, Lab N MG/L	TSS N MG/L
YSGF5	5/23/2023	0.79	0.78	363	**< 0.02**	758	18
YSGF5	6/28/2023	0.23	0.38	447	**< 0.02**	944	62
YSGF5	7/17/2023					1030	59
YSGF5	9/7/2023						
Yampa Segment 13i Standards - Acute		-	-	-	0.002****	-	-
Yampa Segment 13i Standards - Chronic		-	-	-	-	-	-
Agricultural Use Standards		-	-	-	-	-	-

Notes

The ammonia standard varies based on stream classification, pH, and temperature. See Regulation 33 Table Value Standard calculation formula. Each samples water quality was compared to calculated standard.

* A current conditions temporary modification is in place for the Segment 13i chronic selenium standard.

** The manganese agricultural use standard is only applicable for areas with acidic soils. This areas soils are alkaline.

*** The mercury standard is an order of magnitude less than the labs 0.2 mg/L analytical detection limit.

**** The sulfide standard is an order of magnitude less than the labs 0.02 mg/L sulfide analytical detection limit.

Bold Analyte exceeds the Yampa Segment 13i or Agricultural Use Standards

Table D.2. Upper Grassy Creek Segment 13i NPDES Outfall 011 analytical data for water year 2023.

Location	Date	Flow N MGD	pH, Field N S.U.	Oil & Grease Y / N	Iron TR MG/L	TDS, Lab N MG/L	Cadmium PD UG/L	Chromium PD UG/L	Copper PD UG/L	Lead PD UG/L	Mercury T UG/L	Nickel PD UG/L
NPDES11	10/22/2022	0										
NPDES11	11/17/2022	0										
NPDES11	12/6/2022	0										
NPDES11	1/22/2023	0										
NPDES11	2/10/2023	0										
NPDES11	3/21/2023	0										
NPDES11	4/21/2023	0										
NPDES11	5/23/2023	0.046	8.2	NA	< 0.15	1450						
NPDES11	6/26/2023	0										
NPDES11	7/17/2023	0										
NPDES11	8/21/2023	0										
NPDES11	9/7/2023	0										
NPDES Limit	Daily Max		6.5 - 9.0	10	Report	Report	Report	Report	Report	Report	Report	Report
	Monthly Avg.		NA	NA	1	Report	Report	Report	Report	Report	Report	Report
Yampa Segment 13i Standards - Acute			6.5 - 9.0	-	-	-	9.2	1773	50	281	0.01	1513
Yampa Segment 13i Standards - Chronic			-	-	1	-	1.2	231	29	11	-	168
Agricultural Use Standards			-	-	-	-	10	100	200	100	-	200

Location	Date	Selenium PD UG/L	Selenium* TR UG/L	Silver PD UG/L	Zinc PD MG/L
NPDES11	10/22/2022				
NPDES11	11/17/2022				
NPDES11	12/6/2022				
NPDES11	1/22/2023				
NPDES11	2/10/2023				
NPDES11	3/21/2023				
NPDES11	4/21/2023				
NPDES11	5/23/2023		0.7		
NPDES11	6/26/2023				
NPDES11	7/17/2023				
NPDES11	8/21/2023				
NPDES11	9/7/2023				
NPDES Limit	Daily Max	Report	-	Report	Report
	Monthly Avg.	Report	-	Report	Report
Segment 13i Standards - Acute		18.4	-	22	0.565
Segment 13i Standards - Chronic		TM**	-	3.5	0.428
Agricultural Use Standards		-	20	-	2

Note

*NPDES11 does not have a Total Recoverable Selenium NPDES monitoring requirement.

** A current conditions temporary modification is in place for the Segment 13i chronic selenium standard.

Bold Analyte exceeds the NPDES limit, Segment 13i aquatic life standard, or Agricultural Use standard

Table D.3 Lower Grassy Creek Yampa Segment 13j stream point analytical data for water year 2023.

Location	Date	Flow N MGD	SPC, Field N UMHOS/CM	pH, Field N S.U.	Temp., Field N C	Iron D MG/L	Iron PD MG/L	Iron TR MG/L	Manganese D MG/L	Mercury T UG/L	Ammonia N. N MG/L	Nitrate N. N MG/L	Nitrite N. N MG/L	Selenium D UG/L
YSG5	5/23/2023	7.51	3375	8.3	19.9			0.437	0.045	**< 0.2**	< 0.05	1.07	0.019	4.75
YSG5	5/25/2023	7.51[1]	2390	8.3	13.1									4.13
YSG5	6/28/2023	0.09	2934	7.9	17.4			0.576	0.095	**< 0.2**	< 0.1	0.368	< 0.01	2.08
YSG5	7/17/2023	0.007	3273	8	21.5									1.62
YSG5	9/7/2023	0.02	2685	8.1	14.8			0.746	**0.398**	**< 0.2**	< 0.1	< 0.02	< 0.01	0.89
Yampa Segment 13j Standards - Acute		-	-	6.5 - 9.0	-	-	-	-	4.738	0.01***	Varies	100	0.05	18.4
Yampa Segment 13j Standards - Chronic		-	-	-	-	-	-	1	2.618	-	Varies	-	-	TM*
Agricultural Use Standards		-	-	-	-	-	-	-	0.2**	-	-	100	10	20

Location	Date	Selenium PD UG/L	Selenium TR UG/L	Sulfates N MG/L	Sulfide N MG/L	TDS, Lab N MG/L	TSS N MG/L
YSG5	5/23/2023		4.55	1460	**< 0.02**	2320	16
YSG5	5/25/2023	3.88	3.81				
YSG5	6/28/2023		1.98	1520	**< 0.02**	2500	14
YSG5	7/17/2023		1.7	1670		2970	
YSG5	9/7/2023		1.07	1870	**< 0.02**	3030	16
Yampa Segment 13j Standards - Acute		-	-	-	0.002****	-	-
Yampa Segment 13j Standards - Chronic		-	-	-	-	-	-
Agricultural Use Standards		-	-	-	-	-	-

Notes

[1] Flow measured on 5/23/2023

The ammonia standard varies based on stream classification, pH, and temperature. See Regulation 33 Table Value Standard calculation formula. Each samples water quality was compared to calculated standard.

* A current conditions temporary modification is in place for the Segment 13j chronic selenium standard.

** The manganese agricultural use standard is only applicable for areas with acidic soils. This areas soils are alkaline.

*** The mercury standard is an order of magnitude less than the labs 0.2 mg/L analytical detection limit.

**** The sulfide standard is an order of magnitude less than the labs 0.02 mg/L sulfide analytical detection limit.

Bold Analyte exceeds the Yampa Segment 13j or Agricultural Use Standards

Table D.4. Lower Grassy Creek Segment 13j NPDES Outfall 010 analytical data for water year 2023.

Location	Date	Flow N MGD	pH, Field N S.U.	Oil & Grease Y / N	Iron TR MG/L	TDS, Lab N MG/L	Copper PD UG/L	Selenium* D UG/L	Selenium PD UG/L	Selenium* TR UG/L
NPDES10	10/22/2022	0								
NPDES10	11/16/2022	0.00144	8.22	N	< 0.75	4280	< 2		0.38	0.69
NPDES10	12/5/2022	0.00144	8.19	N	< 0.75	4210	< 2		0.38	0.59
NPDES10	1/22/2023	1.1	7.48	N	< 0.75	4080	< 10		0.57	0.56
NPDES10	2/9/2023	0.006	8	N	< 0.75	4270	< 4		0.73	0.53
NPDES10	3/21/2023	0.02	7.2	N	0.191	3720	< 4		1.38	0.99
NPDES10	4/20/2023	1.176	7.8	N	0.277	1270	< 2		1.36	1.22
NPDES10	5/23/2023	1.063	8.1	N	< 0.3	2500	< 2	0.58	0.48	0.62
NPDES10	6/26/2023	0.002	7.5	N	0.425	2770	< 4		0.28	0.47
NPDES10	7/17/2023	0								
NPDES10	8/21/2023	0								
NPDES10	9/7/2023	0								
NPDES Limit	Daily Max		6.5 - 9.0	10	Report	Report	Report	-	Report	-
	Monthly Avg.		NA	NA	1	Report	Report	-	Report	-
Yampa Segment 13j Standards - Acute			6.5 - 9.0	-	-	-	50	18.4	-	-
Yampa Segment 13j Standards - Chronic			-	-	1	-	29	TM**	-	-
Agricultural Use Standards			-	-	-	-	200	-	-	20

Note

*NPDES10 does not have a Dissolved or Total Recoverable Selenium NPDES monitoring requirement.

** A current conditions temporary modification is in place for the Segment 13j chronic selenium standard.

Bold Analyte exceeds the NPDES limit, Segment 13j aquatic life standard, or Agricultural Use standard

Table D.5. Sage Creek Segment 13e stream point analytical data for water year 2023.

Location	Date	Flow N MGD	SPC, Field N UMHOS/CM	pH, Field N S.U.	Temp., Field N C	Iron D MG/L	Iron PD MG/L	Iron TR MG/L	Manganese D MG/L	Mercury T UG/L	Ammonia N. N MG/L	Nitrate N. N MG/L	Nitrite N. N MG/L	Selenium D UG/L
YSSF3	5/25/2023	2.22[1]	343	8.2	16.2			0.384	0.0142					0.11
YSSF3	6/28/2023	0.068	603	7.9	8.7			0.279	0.0335					0.17
YSS2	5/24/2023	4.3	2390	8.3	13.1			0.319	0.0741	**< 0.2**	< 0.05	0.647	<0.01	0.21
YSS2	6/28/2023	0.072	1762	8.2	9.9			0.451	0.043	**< 0.2**	< 0.1	0.048	< 0.01	0.37
YSS2	9/7/2023	0.01	2557	8.3	17.2			0.649	0.0655					0.31
Yampa Segment 13e Standards - Acute		-	-	6.5 - 9.0	-	-	-	-	4.738	0.01**	Varies	100	0.05	18.4
Yampa Segment 13e Standards - Chronic		-	-	-	-	-	-	1.25	2.618	-	Varies	-	-	TM***
Agricultural Use Standards		-	-	-	-	-	-	-	0.2*	-	-	100	10	20

Location	Date	Selenium PD UG/L	Selenium TR UG/L	Sulfates N MG/L	Sulfide N MG/L	TDS, Lab N MG/L	TSS N MG/L
YSSF3	5/25/2023	0.27	0.2			228	12
YSSF3	6/28/2023	0.11	0.14			314	6
YSS2	5/24/2023	0.28	0.26	117	**< 0.02**	388	12
YSS2	6/28/2023	0.31	0.35	684	**< 0.02**	1280	13
YSS2	9/7/2023	0.4	0.36			2760	17
Yampa Segment 13e Standards - Acute		-	-	-	0.002****	-	-
Yampa Segment 13e Standards - Chronic		-	-	-	-	-	-
Agricultural Use Standards		-	-	-	-	-	-

Notes

[1] Flow measured on 5/24/2023

The ammonia standard varies based on stream classification, pH, and temperature. See Regulation 33 Table Value Standard calculation formula. Each samples water quality was compared to calculated standard.

* The manganese agricultural use standard is only applicable for areas with acidic soils. This areas soils are alkaline.

** The mercury standard is an order of magnitude less than the labs 0.2 mg/L analytical detection limit.

*** A current conditions temporary modification is in place for the Segment 13e chronic selenium standard.

**** The sulfide standard is an order of magnitude less than the labs 0.02 mg/L sulfide analytical detection limit.

Bold Analyte exceeds the Yampa Segment 13e or Agricultural Use Standards

Table D.6. Sage Creek Segment 13e NPDES Outfall 014 analytical data for water year 2023.

Location	Date	Flow N MGD	pH, Field N S.U.	Oil & Grease Y / N	TDS N MG/L	Selenium* D UG/L	Selenium* TR UG/L
NPDES14	10/22/2022	0					
NPDES14	11/16/2022	0					
NPDES14	12/5/2022	0					
NPDES14	1/22/2023	0					
NPDES14	2/10/2023	0					
NPDES14	3/21/2023	0					
NPDES14	4/19/2023	0.134	7.8	N	616		
NPDES14	5/24/2023	0.022	8.3	N	2020	0.81	0.93
NPDES14	6/26/2023	0					
NPDES14	7/18/2023	0					
NPDES14	8/21/2023	0					
NPDES14	9/7/2023	0					
NPDES Limit	Daily Max		6.5 - 9.0	10	Report	-	-
	Monthly Avg.		NA	NA	Report	-	-
Yampa Segment 13e Standards - Acute			6.5 - 9.0	-	-	18.4	-
Yampa Segment 13e Standards - Chronic			-	-	-	TM**	-
Agricultural Use Standards			-	-	-	-	20

Note

*NPDES14 does not have a Dissolved or Total Recoverable Selenium NPDES monitoring requirement.

** A current conditions temporary modification is in place for the Segment 13e chronic selenium standard.

Bold Analyte exceeds the NPDES limit or Agricultural Use standard

Table D.7. Sage Creek Segment 13e NPDES Outfall 013 analytical data for water year 2023.

Location	Date	Flow N MGD	pH, Field N S.U.	Oil & Grease Y / N	TDS, Lab N MG/L	Arsenic TR UG/L	Cadmium PD UG/L	Chromium PD UG/L	Copper PD UG/L	Iron TR MG/L	Lead PD UG/L	Manganese PD MG/L	Mercury T UG/L	Nickel PD UG/L
NPDES13	10/22/2022	0												
NPDES13	11/16/2022	0												
NPDES13	12/5/2022	0												
NPDES13	1/22/2023	0												
NPDES13	2/10/2023	0												
NPDES13	3/21/2023	0												
NPDES13	4/19/2023	0.118	7.9	N	708	0.8	< 0.25	< 2	< 2	**1.33**	0.35	0.011	0.00353	< 40
NPDES13	5/24/2023	0.011	8.9	N	5930	< 5	< 0.5	< 4	< 10	< 0.75	0.24	< 0.05	0.00171	< 40
NPDES13	6/26/2023	0												
NPDES13	7/18/2023	0												
NPDES13	8/21/2023	0												
NPDES13	9/7/2023	0												
NPDES Limit	Daily Max		6.5 - 9.0	10	Report	Report	Report	Report	Report	Report	Report	Report	Report	Report
	Monthly Avg.		NA	NA	Report	Report	Report	Report	Report	Report	Report	Report	Report	Report
Yampa Segment 13e Standards - Acute			6.5 - 9.0	-	-	340	9.2	1773	50	1.25	281	4.738	0.01	1513
Yampa Segment 13e Standards - Chronic			-	-	-	100	1.2	231	29	-	11	2.618	-	168
Agricultural Use Standards			-	-	-	100	10	100	200	-	100	0.2***	-	200

Location	Date	Selenium D UG/L	Selenium PD UG/L	Selenium TR UG/L	Zinc PD MG/L	TSS* N MG/L
NPDES13	10/22/2022					
NPDES13	11/16/2022					
NPDES13	12/5/2022					
NPDES13	1/22/2023					
NPDES13	2/10/2023					
NPDES13	3/21/2023					
NPDES13	4/19/2023		2.93	2.79	< 0.05	14
NPDES13	5/24/2023	**45.1**	44.7	**49.1**	< 0.05	15
NPDES13	6/26/2023					
NPDES13	7/18/2023					
NPDES13	8/21/2023					
NPDES13	9/7/2023					
NPDES Limit	Daily Max	-	Report	-	Report	-
	Monthly Avg.	-	Report	-	Report	-
Segment 13e Standards - Acute		18.4	-	-	0.565	-
Segment 13e Standards - Chronic		TM**	-	-	0.428	-
Agricultural Use Standards		-	-	20****	2	-

Note

*TSS is not an NPDES monitoring requirement at this outfall

** A current condtions temporary modification is in place for the Segment 13e chronic selenium standard.

*** The agricultural use manganese standard is only applicable to areas with acidic soils. These are not present at Yoast Mine.

**** The agricultural use standard is applied to total recoverable selenium

Bold Analyte exceeds the NPDES limit, Segment 13e aquatic life standard, or Agricultural Use standard

Table D.8. Sage Creek Segment 13e NPDES Outfall 012 analytical data for water year 2023.

Location	Date	Flow N MGD	pH, Field N S.U.	Oil & Grease Y / N	Iron TR MG/L	TDS N MG/L	Manganese PD MG/L	Selenium* D UG/L	Selenium PD UG/L	Selenium* TR UG/L
NPDES12	10/20/2022	0.046224	8.27	N	0.072	3310	0.0141		0.21	0.25
NPDES12	11/16/2022	0.043632	8.29	N	0.168	3460			0.34	0.23
NPDES12	12/5/2022	0.041616	8.26	N	< 0.3	3150			< 0.5	0.14
NPDES12	1/22/2023	0.04104	7.82	N	< 0.3	2860			3.06	< 0.5
NPDES12	2/10/2023	0.027	7.4	N	< 0.3	2840			< 0.5	< 0.5
NPDES12	3/21/2023	0.026	7.4	N	< 0.3	3530	0.146		3.8	0.72
NPDES12	4/19/2023	0.144	7.6	N	0.187	1140			1.25	1.24
NPDES12	5/24/2023	0.138	7.9	N	< 0.3	2860		1.62	1.36	1.34
NPDES12	6/26/2023	0.153	7.7	N	< 0.3	2960			1.04	0.63
NPDES12	7/18/2023	0.096	7.6	N	< 0.3	3050	0.038	0.45	0.24	0.43
NPDES12	8/21/2023	0.077	8	N	< 0.15	3170			0.41	0.34
NPDES12	9/7/2023	0.054	8.2	N	< 0.3	3180			0.43	0.41
NPDES Limit	Daily Max		6.5 - 9.0	10	Report	Report	Report	-	18	-
	Monthly Avg.		NA	NA	1	Report	Report	-	4.6	-
Yampa Segment 13e Standards - Acute			6.5 - 9.0	-	1	-	4.738	18.4	-	-
Yampa Segment 13e Standards - Chronic			-	-	-	-	2.618	TM**	-	-
Agricultural Use Standards			-	-	-	-	0.2***	-	-	20

Note

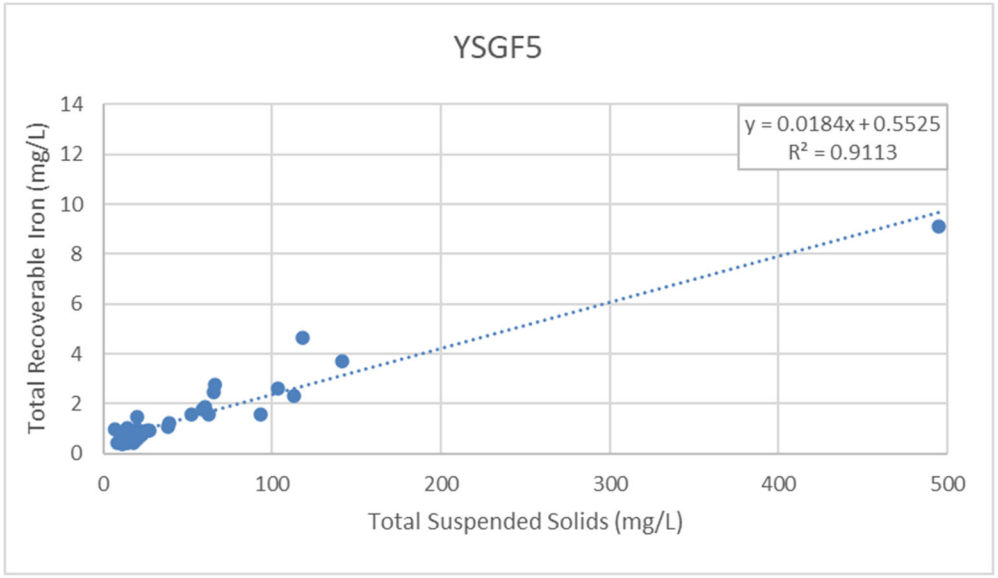
*NPDES12 does not have a Dissolved or Total Recoverable Selenium NPDES monitoring requirement.

** A current condtions temporary modification is in place for the Segment 13e chronic selenium standard.

*** The manganese agricultural use standard is only applicable to areas with acidic soils. These are not present at Yoast Mine.

Bold Analyte exceeds the NPDES limit, Segment 13e aquatic life standard, or Agricultural Use standard

Figure D.1. Suspended solids vs total recoverable iron at upper Grassy Creek stream points YSGF5 collected between January 1, 2014 and September 30, 2023.



APPENDIX E

SPRING WATER QUALITY DATA

Table E.1. Analytical data for springs sampled during the 2023 water year.

Location	Date	Flow N MGD	SPC, Field N UMHOS/CM	pH, Field N S.U.	Temp., Field N C	Iron TR MG/L	Manganese D MG/L	Mercury T UG/L	Ammonia N. N MG/L	Nitrate N. N MG/L	Nitrite N. N MG/L
YSSPG1	6/29/2023	0.004	2944	8	10.3	0.068	0.0811	< 1	< 0.2	0.058	< 0.05
YSSPG2	6/29/2023	0									
YSSPG3	6/29/2023	0.002	2242	8	17.1	< 0.15	0.0836				
YSSPG4	6/29/2023	0.004	2998	6.5	12.8	0.578	**1.88**				
Agricultural Use Standards		-	-	-	-	-	0.2*	-	-	100	10

Location	Date	Selenium D UG/L	Selenium PD UG/L	Selenium TR UG/L	Sulfates N MG/L	Sulfide N MG/L	TDS, Lab N MG/L	TSS N MG/L
YSSPG1	6/29/2023	0.17	0.15	0.14	1360	< 0.1	2450	6
YSSPG2	6/29/2023							
YSSPG3	6/29/2023	0.54	0.51	0.56			1800	< 20
YSSPG4	6/29/2023	0.26	0.28	0.25			2510	< 20
Agricultural Use Standards		20	-	-	-	-	-	-

Notes

* The manganese agricultural use standard is only applicable for areas with acidic soils. This areas soils are alkaline.

Bold Analyte exceeds the Agricultural Use Standards