# 2022 ANNUAL HYDROLOGY REPORT

SAGE CREEK MINE

PERMIT C-2009-087

January 2023


Submitted To: Colorado Division of Reclamation, Mining and Safety
1313 Sherman Street, Room 215
Denver, CO 80203

Prepared By: Peabody Sage Creek Mining
PO Box 670
Hayden, CO 81639

# Table of Contents

## 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 (AHR) presents the hydrologic monitoring data collected during the 2022 water year (October 2021 – September 2022) at the Peabody Sage Creek Mining, LLC's Peabody Sage Creek Mine (PSCM). The AHR fulfills the reporting requirements under the Colorado Division of Reclamation, Mining, and Safety (CDRMS) Permit No. C-2009-087.

## 1.1 BACKGROUND

The PSCM is an underground coal mine located in Routt County, approximately nine miles southeast of Hayden, Colorado. PSCM Permit No. C-2009-087 was approved by CDRMS in May 2010. The PSCM permit area encompasses the majority of the former Seneca II Mine (State Permit No. C-1980-005) which is a reclaimed surface mine that extracted coal from 1968 through 1999. Many of the PSCM hydrologic monitoring sites were previously utilized for the Seneca II Mine. Excavation of the PSCM portal began in June 2011 and underground mining proceeded until the fall of 2012 when it was suspended. The PSCM remains in a care and maintenance state. No coal extraction occurred in 2022.

In 2012 the Water Quality Control Division (WQCD) issued PSCM a violation for elevated selenium in the mine discharges. In response, PSCM completed an extensive monitoring effort to evaluate the source and fate of selenium in these watersheds. In 2014 the Water Quality Control Commission (WQCC) granted a temporary modification of the chronic selenium TVS in both Cow Camp Creek and Grassy Creek to current conditions to allow PSCM to collect additional biologic and water quality data needed to develop site-specific standards. In 2017, the WQCC extended the selenium temporary modification for Grassy Creek to 12/31/2022 and the temporary modification to Cow Camp Creek to 12/31/2023. In May 2019 the WQCD incorporated the extension of the selenium temporary modification into NPDES Permit No. CO0048275. PSCM continues to collect the biologic and water quality data necessary for the development of a site-specific selenium standard. This AHR will only discuss data relevant to the requirements of the CDRMS permit.

## 2.0 METEOROLOGICAL

Meteorological data for the 2022 water year is presented in Appendix A. The 2022 data was obtained from NOAA weather station USC00053867 located in Hayden, Colorado (www.ncdc.noaa.gov/cdo-wb/). A total of 18.74 inches of precipitation was measured in 2022, which is 0.60 inches less than the 1981-2022 average of 18.14 inches. October, December, April, May, and September were wetter than normal, but the remaining months were drier than normal. Potential snowpack runoff, as estimated by totaling November through March precipitation, was 6.87 inches, which was 0.64 inches below the 1981-2022 average of 7.51 inches.

## 3.0 GROUNDWATER

The PSCM groundwater monitoring program includes seven monitoring wells. The following table includes the wells monitored, the water bearing unit they are screened in, the frequency they are monitored, and their required parameter list. The monitoring well locations are shown on Figure 1. Groundwater monitoring was completed by experienced personnel in accordance with the practices described in Section 2.04.7 of Permit No. C-2009-087. All samples were analyzed by ACZ Laboratories.

| Site | Unit | Monitoring Frequency | | Parameter List |
|---|---|---|---|---|
| | | Water Level | Water Quality | |
| SGAL70 | Grassy Creek Alluvium | SA | SA | GW Long |
| SCAL69 | Cow Camp Creek Alluvium | SA | SA | GW Short |
| SSP61 | Spoil | SA | SA | GW Short |
| SSP62 | Spoil | SA | SA | GW Short |
| COV2702 | Wadge Overburden | A | A | GW Long |
| SOV42 | Wadge Overburden | A | A | GW Short |
| CW2701 | Wadge Coal | A | A | GW Long |

**Note**
A: Annual
SA: Semi-Annually
GW Long: Field conductivity, field pH, field temperature, dissolved aluminum, dissolved arsenic, bicarbonate, dissolved boron, dissolved cadmium, calcium, carbonate, chloride, dissolved chromium, dissolved copper, fluoride, hardness, dissolved iron, dissolved lead, magnesium, dissolved manganese, dissolved mercury, dissolved nickel, nitrate, nitrite, potassium, dissolved selenium, sodium, Sodium Adsorption Ratio, sulfide, total suspended solids, dissolved zinc, Cation/Anion Balance, total dissolved solids, total dissolved solids calculated
GW Short: Field conductivity, field pH, field temperature, fluoride, dissolved iron, dissolved manganese, nitrate, nitrite, dissolved selenium, sulfate, total dissolved solids

### 3.1 WATER LEVELS

The static water levels measured during the 2022 water year are included with the groundwater quality data in Appendix B. Water level hydrographs for each of the wells are provided in Appendix C. The static water levels measured at the alluvium, bedrock, and spoil wells this year were within their respective historic range. This

includes Wadge Overburden Well SOV42 which was dry at the time of the monitoring event. SOV42 was also dry in 2019 and 2021.

Water levels in most of the water bearing units at PSCM exhibit seasonal fluctuations. The water table in the shallow alluvial and spoil 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. The water level in spoil wells SSP61 and SSP62 indicate only the downslope highwall portions of the spoil are significantly saturated.

### 3.2 GROUNDWATER QUALITY

The PSCM Groundwater Point of Compliance (GWPOC) is SGAL70. SGAL70 was previously used as the GWPOC at the Seneca II Mine and has a long historical record of water level and water quality data. SGAL70 is screened within the Grassy Creek alluvium downgradient of the PSCM surface effects. Bedrock GWPOC wells were deemed unnecessary due to the low hydraulic conductivity of the bedrock units, their low yields which are insufficient to support domestic or agricultural use, and because downgradient attenuation and dilution will further limit water quality impacts only to bedrock in close proximity to the mine. See Section 2.04, pg 103 of Permit No. C-2009-087 and Technical Revision 47 (TR-47) of Seneca II Permit No. C-1980-005 for further justification for the GWPOC.

Table B.1 of Appendix B includes the analytical results for the samples collected from GWPOC well SGAL70 during the 2020 water year and provides a comparison to the Grassy Creek Alluvial GWPOC water quality standards. Technical Revision 47 (TR-47) of Seneca II Permit No. C-1980-005 describes how the standards were established. Table B.2 provides the analytical results for the remaining monitoring wells however no comparisons to water quality standards were made as these wells are not GWPOC. Water quality samples were collected from all wells except for SOV42 which was dry and could not be sampled. The groundwater quality at SGAL70 complies with all TR-

47 water quality standards except for dissolved cadmium. The dissolved cadmium exceedances were not associated with a measurable value of cadmium but are the result of the lab detection limit exceeding the water quality standard. Water quality samples analyzed 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 threshold in response to high concentrations in one or more samples within the batch or from unrelated instrument interference. Cadmium has not been detected at SGAL70 since 2001 and the measured value was 3 μg/L. Since cadmium has not historically been a chemical of concern at this well its unlikely that that the elevated detection limit is censoring a concentration above the water quality standard.

## 4.0 SURFACE WATER

The PSCM lies within the headwaters of Grassy Creek and Fish Creek. The following table lists the PSCM surface water monitoring points from upstream to downstream, the stream they are associated with, the frequency they are monitored, and their required parameter list. See Figure 1 for the location of the surface water monitoring points. Surface water monitoring was completed by experienced personnel in accordance with the practices described in Section 2.04.7 of Permit No. C-2009-087. All samples were analyzed by ACZ Laboratories.

| Site | Type | Stream | Monitoring Frequency | | Parameter List |
|---|---|---|---|---|---|
| | | | Flow | Water Quality | |
| NPDES5 | NPDES | Fish Creek | SM | SM | NPDES |
| NPDES6 | NPDES | Fish Creek | SM | SM | NPDES |
| SSC10 | Surface Water | Fish Creek | SA | SA | SW Short |
| YSGF5 | Surface Water | Grassy Creek | TA | TA | SW Short |
| SSG1 | Surface Water | Grassy Creek | TA | TA | SW Short |
| SSLG5 | Surface Water | Little Grassy Creek | TA | TA | SW Short |
| NPDES2 | NPDES | Little Grassy Creek | SM | SM | NPDES |
| NPDES3 | NPDES | Grassy Creek | SM | SM | NPDES |
| NPDES7 | NDPES | Grassy Creek | SM | SM | NPDES |
| SSG2 | Surface Water | Grassy Creek | TA | TA | SW Short |
| YSG5 | Surface Water | Grassy Creek | TA | TA | SW Long |

**Note**
TA: Triannually during snowmelt runoff, post runoff, and baseflow (usually April, June, and September)
SA: Semiannually in June and July
SM: Semimonthly
SW Long: Field conductivity, field pH, field temperature, total recoverable arsenic, bicarbonate, dissolved boron, dissolved cadmium, calcium, carbonate, chloride, dissolved chromium, dissolved copper, hardness, total recoverable iron, dissolved lead, magnesium, dissolved manganese, total mercury, dissolved nickel, ammonia, nitrate, nitrite, potassium, dissolved selenium, dissolved silver, sodium, Sodium Adsorption Ratio, sulfate, sulfide, total suspended solids, dissolved zinc, Cation/Anion Balance, total dissolved solids, total dissolved solids calculated
SW Short: Field conductivity, field pH, field temperature, total recoverable iron, dissolved manganese, total mercury, ammonia, nitrate, nitrite, dissolved selenium, sulfate, sulfide, total suspended solids, total dissolved solids
NPDES: See NPDES Permit No. CO-0048275

The Colorado WQCC has established segment specific aquatic life water quality standards for Grassy Creek (Segment 13i and 13j) and Fish Creek (Segment 13g) of the Yampa River. The water quality standards for these segments are included in Colorado Department of Public Health & Environment (CDPHE) Regulation 33. Therefore, the following surface water quality discussion has been organized by drainage basin and then segment. The 2022 Water Year surface water quality data is provided in Appendix D. Samples from this year's stream points are compared to both the CDPHE surface water agricultural use standards (CDPHE, Reg. 31) and the appropriate segment specific aquatic life water quality standards (CDPHE, Reg. 33). 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 Fish Creek

Analytical results for the 2022 surface water monitoring completed at Cow Camp Creek (tributary to Fish Creek) stream point SSC10 is provided in Table D.1 of Appendix D. Analytical results for Outfalls 005 and 006, which report to Cow Camp Creek, are included in Table D.2 and D.3. The analytical results for Pond 004, which is only monitored under a special condition specific to the TDS limit at Outfall 005, is found in Table D.4. The temporary modification of the chronic aquatic life selenium standard to current conditions has been extended through 12/31/2022 for Yampa Segment 13g, which includes Cow Camp Creek down to its confluence with Fish Creek (CDPHE, Reg. 33). A report only monthly average limit at Outfalls 005 and 006 was also incorporated into NPDES Permit No. CO0048275. Surprisingly when WQCD extended the selenium temporary modification in the NPDES permit they did not extend the flow limit compliance schedule despite the direct relationship between the seasonal flow limits and seasonal selenium limits at the site. The flow limits became effective on 10/1/2019.

There were no exceedances of the water quality based NPDES permit limits or the Yampa Segment 13g water quality standards at Outfalls 005 or 006 in 2022. However, there was one monthly average flow limit exceedance at Outfall 006 in March. Outfalls 005 and 006 are associated with spoil spring discharges and the flows are the

result of natural hydrologic processes which can not be practically controlled. Although the TDS in the August 2nd sample collected at Outfall 005 is greater than its August monthly TDS limit, this limit only applies when cattle are present, and the TDS in Pond 004 exceeds 5000 mg/L. As shown in Table D.4, the TDS at Pond 004 was less than the 5000 mg/L in August. Despite monitoring downstream point SSC10, within Cow Camp Creek, in April, June, and July, no water was present during any of these events and samples could not be collected. Cow Camp Creek loses water to the alluvium in its lower reach and the stream is often dry near its outlet even when discharge persists in the upper reaches.

### 4.2 GRASSY CREEK

Analytical results for the monitoring conducted at upper Grassy Creek Segment 13i stream points SSLG5, YSGF5, SSG1, and SSG2 are provided in Tables D.5 through D.8 of Appendix D and the analytical results for downstream monitoring point YSG5 located in lower Grassy Creek Segment 13j are found in Table D.9. Analytical results for PSCM Outfalls 002, 003, and 007, which report to upper Grassy Creek Segment 13.i, are found in Table D.10 through D.12. The PSCM does not have any outfalls that discharge directly to Grassy Creek Segment 13j. As is described in CDPHE Regulation 33, a current conditions temporary modification of the chronic dissolved selenium standard is in place for Yampa Segment 13i and 13j. The temporary modification for chronic total recoverable iron in Yampa Segment 13i was deleted in 2022, the standard has returned to 1 mg/L.

No exceedances of the NPDES permit limits occurred at the PSCM upper Grassy Creek Outfalls in 2022. Total recoverable iron exceeded the chronic aquatic life standard of 1 mg/L once at stream points SSLG5, SSG1, SSG2, and YSG5. These exceedances all occurred during the April 18th monitoring event. Synoptic watershed monitoring was completed in Grassy Creek during this event and there were no exceedances of the total recoverable iron standard at Outfalls 002 (<0.12 mg/L), 003 (0.196 mg/L), or 007 (<0.06 mg/L). However, iron exceedances did occur at stream points located both upstream (SSLG5, SSG1) and downstream of the outfalls (SSG2, YSG5).

Grassy Creek also receives drainage from Yoast Mine Outfall 010 and 011. Yoast has been reclaimed and vegetated for over 10 years and the total recoverable iron measured in the April 18th discharge from Outfall 010 was 0.51 mg/L. Outfall 011 was not discharging during the event. See Tables D.2 and D.4 in Appendix D of the Permit No. C-1994-082 2022 Annual Hydrology Report. Total recoverable iron at the Grassy Creek stream points is strongly correlated with suspended solids ($r^2$: 0.87) which become naturally elevated during rain and snow melt runoff events (Figure D.1). This indicates the elevated iron in Grassy Creek is unrelated to the runoff from the mine and is likely the result of natural erosional processes that are occurring within the unmined portions of the watershed.

Stream points SSLG5, YSGF5, SSG1, SSG2, and YSG5 were compliant with all other aquatic life standards and agriculture use standards except for sulfide and mercury. The exceedances for both parameters were related to the laboratories method detection limit being greater than the standard. The method detection limit for the sulfide analysis (MDL: 0.02 mg/L) conducted by PSCM's lab exceeds the water quality standard for un-ionized sulfide ($H_2S$: 0.002 mg/L) by an order of magnitude. This method detects both dissolved sulfides and acid-soluble metallic sulfides that are present in suspended matter and provides a single cumulative concentration. 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. The toxic un-ionized hydrogen sulfide is dominant at low pH however in alkaline waters, like those present at PSCM, most of the dissolved sulfide is present as non-toxic ionized sulfide. Dissolved sulfide is also rarely present in oxygenated surface waters as it typically oxidizes to sulfate very quickly. Therefore, it is unlikely that that the elevated detection limit is censoring a concentration above the water quality standard and this result is an actual exceedance of the standard.

The method detection limit for mercury (0.02 μg/L) used by PSCM's lab is above the 0.01 μg/L aquatic life standard. PSCM's lab follows EPA method 245.1 which utilizes cold vapor atomic adsorption and follows the CDRMS Guidelines for the Collection of Water Quality and Overburden Geochemistry Data. At the time that the PSCM NPDES permit was established the WQCD performed a reasonable potential analysis and determined that there was no potential for the discharges to exceed the mercury

standard and the monitoring requirements were removed. There is no reason to believe that the mercury detection limit is censoring a measurable value above the water quality standard.

CDPHE Regulation 31 specifies that the manganese agricultural use standard of 0.2 mg/L standard is only applicable when irrigation water is applied to soils with pH lower than 6.0. The soils at PSCM are alkaline and the 0.2 mg/L standard is therefore not applicable for any of the surface water points. Dissolved manganese is significantly less than the CDPHE Yampa Segment 13i and 13j acute and chronic aquatic life standards.

## 5.0 SPRINGS

The PSCM monitoring program includes five springs. The following table includes the springs, the frequency they are monitored, 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 in accordance with the practices described in Section 2.04.7 of Permit No. C-2009-087. All samples were analyzed by ACZ Laboratories.

| Site | Type | Unit | Monitoring Frequency | | Parameter List |
|---|---|---|---|---|---|
| | | | Discharge | Water Quality | |
| SSSPG3 | Spring | Spoils | A | A | SW Short |
| SSSPG4 | Spring | Spoils | A | A | SW Short |
| SSSPG5 | Spring | Spoils | A | A | SW Short |
| SSSPG6A | Spring | Spoils | A | A | SW Long |
| SSSPG10 | Spring | Spoils | A | A | SW Short |

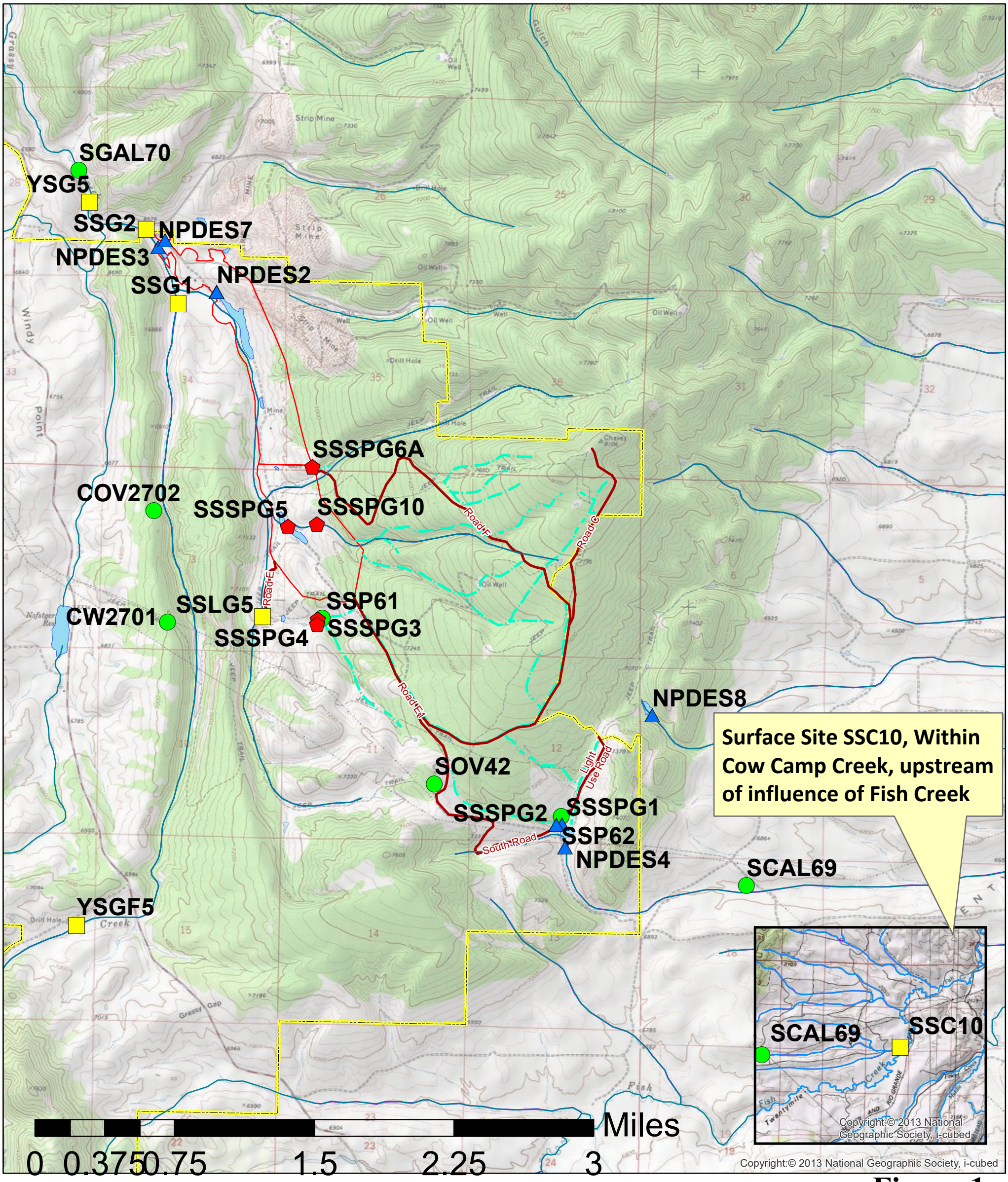
**Note**
A: Annual
SW Long: Field conductivity, field pH, field temperature, total recoverable arsenic, bicarbonate, dissolved boron, dissolved cadmium, calcium, carbonate, chloride, dissolved chromium, dissolved copper, hardness, total recoverable iron, dissolved lead, magnesium, dissolved manganese, total mercury, dissolved nickel, ammonia, nitrate, nitrite, potassium, dissolved selenium, dissolved silver, sodium, Sodium Adsorption Ratio, sulfate, sulfide, total suspended solids, dissolved zinc, Cation/Anion Balance, total dissolved solids, total dissolved solids calculated
SW Short: Field conductivity, field pH, field temperature, total recoverable iron, dissolved manganese, total mercury, ammonia, nitrate, nitrite, dissolved selenium, sulfate, sulfide, total suspended solids, total dissolved solids

Table E.1 in Appendix E includes the analytical results for samples collected from the spoil springs in 2022. Samples were collected from all springs except for SSSPG10 and SSSPG6A which were dry. 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 were no exceedances of the agricultural use surface water quality standards at the springs in 2022.

## 6.0 SUMMARY

No significant hydrologic impacts attributable to activities at PSCM were noted during 2022. Groundwater levels in all alluvium, bedrock, and spoil monitoring wells were within the historic range observed at these locations. The groundwater quality at the GWPOC complied with all TR-47 water quality standards except for dissolved cadmium. The dissolved cadmium exceedances were not associated with a measurable value of cadmium but were the result of the lab detection limit exceeding the water quality standard.

There were no exceedances of the water quality based NPDES permit limits at any of the outfalls in 2022. However, there was one monthly average flow limit exceedance in March at Outfall 006. This outfall is associated with a spoil spring and the flows are the result of natural hydrologic processes which can not be practically controlled. Although exceedances of the total recoverable iron chronic aquatic life standards occurred at stream monitoring point SSLG5, SSG1, SSG2, and YSG5 on April 18th, synoptic watershed monitoring conducted during the same event confirmed that the iron was unrelated to the discharges from the PSCM outfalls. It is likely that the iron at YSG5 is the result of natural erosional processes that are occurring within the unmined portions of the watershed. There were no other measured exceedances of the applicable Yampa Segment 13g, 13i, or 13j aquatic life standards or agricultural use standards in Cow Camp Creek or upper and lower Grassy Creek during 2022.




# Figure 1

## Legend

- NPDES
- Surface Water
- SPRING
- Ground Water
- Segement_13g Bond Creek
- Segement_13i Grassy Creek
- Sage Creek Mine Permit Boundary
- PSCM Current Disturbance

N W E S

**Peabody Sage Creek Mine**

Peabody

36600 RCR #27
Hayden, CO 81639

**Annual Hydrology Report 2022**

| | |
|---|---|
| DESIGNED BY: MLK<br>DRAWN BY: MLK<br>APPROVED BY: | COUNTRY: USA<br>STATE/PROVINCE: COLORADO<br>GSC: 5N 86W, 6N 86W |
| DATE: 2020-06-24 | DRAWING/SHEET: 1 of 1<br>C.I.: 0' |

# APPENDIX A

# METEOROLOGICAL DATA

| PERIOD OF RECORD PRECIPITATION SUMMARY | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Water Year** | **OCT** | **NOV** | **DEC** | **JAN** | **FEB** | **MAR** | **APR** | **MAY** | **JUN** | **JUL** | **AUG** | **SEP** | **TOTAL** |
| 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 | 1.70 | 1.53 | 1.63 | 1.56 | 1.34 | 1.46 | 1.92 | 1.78 | 1.09 | 1.27 | 1.30 | 1.57 | 18.14 |

**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.

U.S. Department of Commerce
National Oceanic & Atmospheric Administration
National Environmental Satellite, Data, and Information Service

Current Location: Elev: 6467 ft. Lat: 40.4926° N Lon: -107.2548° W
Station: **HAYDEN, CO US USC00053867**

# Record of Climatological Observations

**These data are quality controlled and may not be identical to the original observations.**

Generated on 01/20/2023

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

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 | 24 Hour Wind Movement (mi) | Amount of Evap. (in) | 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) | | | Ground Cover (see *) | Max. | Min. | Ground Cover (see *) | Max. | Min. |
| 2021 | 10 | 01 | 60 | 36 | 60 | 0.00 | | 0.0 | | 0.0 | | | | | | | | |
| 2021 | 10 | 02 | 67 | 36 | 66 | 0.00 | | 0.0 | | 0.0 | | | | | | | | |
| 2021 | 10 | 03 | 68 | 36 | 66 | 0.00 | | 0.0 | | 0.0 | | | | | | | | |
| 2021 | 10 | 04 | 72 | 40 | 68 | 0.00 | | 0.0 | | 0.0 | | | | | | | | |
| 2021 | 10 | 05 | 73 | 41 | 68 | 0.00 | | 0.0 | | 0.0 | | | | | | | | |
| 2021 | 10 | 06 | 70 | 40 | 60 | 0.00 | | 0.0 | | 0.0 | | | | | | | | |
| 2021 | 10 | 07 | 68 | 41 | 60 | 0.00 | | 0.0 | | 0.0 | | | | | | | | |
| 2021 | 10 | 08 | 60 | 41 | 52 | 0.03 | | 0.0 | | 0.0 | | | | | | | | |
| 2021 | 10 | 09 | 55 | 40 | 44 | 0.36 | | 0.0 | | 0.0 | | | | | | | | |
| 2021 | 10 | 10 | 51 | 36 | 45 | 0.12 | | 0.0 | | 0.0 | | | | | | | | |
| 2021 | 10 | 11 | 57 | 31 | 53 | 0.00 | | 0.0 | | 0.0 | | | | | | | | |
| 2021 | 10 | 12 | 53 | 32 | 35 | 0.12 | | T | | 0.0 | | | | | | | | |
| 2021 | 10 | 13 | 36 | 25 | 34 | 0.26 | | 3.0 | | 0.0 | | | | | | | | |
| 2021 | 10 | 14 | 39 | 28 | 35 | 0.07 | | 0.0 | | 0.0 | | | | | | | | |
| 2021 | 10 | 15 | 40 | 25 | 39 | 0.00 | | 0.0 | | 0.0 | | | | | | | | |
| 2021 | 10 | 16 | 59 | 23 | 52 | 0.00 | | 0.0 | | 0.0 | | | | | | | | |
| 2021 | 10 | 17 | 68 | 31 | 60 | 0.00 | | 0.0 | | 0.0 | | | | | | | | |
| 2021 | 10 | 18 | 68 | 32 | 53 | 0.00 | | 0.0 | | 0.0 | | | | | | | | |
| 2021 | 10 | 19 | 53 | 32 | 40 | 0.14 | | 0.0 | | 0.0 | | | | | | | | |
| 2021 | 10 | 20 | 54 | 24 | 48 | 0.02 | | 0.0 | | 0.0 | | | | | | | | |
| 2021 | 10 | 21 | 60 | 30 | 57 | 0.00 | | 0.0 | | 0.0 | | | | | | | | |
| 2021 | 10 | 22 | 62 | 30 | 52 | 0.00 | | 0.0 | | 0.0 | | | | | | | | |
| 2021 | 10 | 23 | 55 | 30 | 52 | 0.00 | | 0.0 | | 0.0 | | | | | | | | |
| 2021 | 10 | 24 | 56 | 35 | 50 | 0.11 | | T | | 0.0 | | | | | | | | |
| 2021 | 10 | 25 | 70 | 32 | 62 | 0.00 | | 0.0 | | 0.0 | | | | | | | | |
| 2021 | 10 | 26 | 64 | 30 | 32 | 0.50 | | 1.0 | | 1.0 | | | | | | | | |
| 2021 | 10 | 27 | 42 | 28 | 40 | 0.09 | | 0.5 | | 0.0 | | | | | | | | |
| 2021 | 10 | 28 | 48 | 25 | 47 | 0.00 | | 0.0 | | 0.0 | | | | | | | | |
| 2021 | 10 | 29 | 54 | 32 | 54 | 0.00 | | 0.0 | | 0.0 | | | | | | | | |
| 2021 | 10 | 30 | 59 | 20 | 55 | 0.00 | | 0.0 | | 0.0 | | | | | | | | |
| 2021 | 10 | 31 | 55 | 28 | 51 | 0.00 | | 0.0 | | 0.0 | | | | | | | | |
| Summary | | | 58 | 32 | | 1.82 | | 4.5 | | | | | | | | | | |

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 NCDC'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.

U.S. Department of Commerce
National Oceanic & Atmospheric Administration
National Environmental Satellite, Data, and Information Service

Current Location: Elev: 6467 ft. Lat: 40.4926° N Lon: -107.2548° W
Station: **HAYDEN, CO US USC00053867**

# Record of Climatological Observations

**These data are quality controlled and may not be identical to the original observations.**

Generated on 01/20/2023

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

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 | 24 Hour Wind Movement (mi) | Amount of Evap. (in) | 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) | | | Ground Cover (see *) | Max. | Min. | Ground Cover (see *) | Max. | Min. |
| 2021 | 11 | 01 | 51 | 36 | 46 | 0.01 | | 0.0 | | 0.0 | | | | | | | | |
| 2021 | 11 | 02 | 51 | 36 | 46 | 0.37 | | 0.0 | | 0.0 | | | | | | | | |
| 2021 | 11 | 03 | 51 | 38 | 48 | 0.03 | | 0.0 | | 0.0 | | | | | | | | |
| 2021 | 11 | 04 | 56 | 30 | 55 | 0.00 | | 0.0 | | 0.0 | | | | | | | | |
| 2021 | 11 | 05 | 60 | 29 | 51 | 0.00 | | 0.0 | | 0.0 | | | | | | | | |
| 2021 | 11 | 06 | 64 | 28 | 57 | 0.00 | | 0.0 | | 0.0 | | | | | | | | |
| 2021 | 11 | 07 | 69 | 32 | 51 | 0.00 | | 0.0 | | 0.0 | | | | | | | | |
| 2021 | 11 | 08 | 57 | 34 | 45 | 0.00 | | 0.0 | | 0.0 | | | | | | | | |
| 2021 | 11 | 09 | 55 | 26 | 50 | 0.00 | | 0.0 | | 0.0 | | | | | | | | |
| 2021 | 11 | 10 | 50 | 34 | 37 | 0.03 | | 0.0 | | 0.0 | | | | | | | | |
| 2021 | 11 | 11 | 44 | 30 | 44 | 0.00 | | 0.0 | | 0.0 | | | | | | | | |
| 2021 | 11 | 12 | 45 | 34 | 44 | T | | 0.0 | | 0.0 | | | | | | | | |
| 2021 | 11 | 13 | 52 | 29 | 48 | 0.00 | | 0.0 | | 0.0 | | | | | | | | |
| 2021 | 11 | 14 | 55 | 24 | 45 | 0.00 | | 0.0 | | 0.0 | | | | | | | | |
| 2021 | 11 | 15 | 58 | 31 | 49 | 0.00 | | 0.0 | | 0.0 | | | | | | | | |
| 2021 | 11 | 16 | 55 | 35 | 43 | 0.00 | | 0.0 | | 0.0 | | | | | | | | |
| 2021 | 11 | 17 | 43 | 20 | 25 | 0.06 | | 0.5 | | 0.0 | | | | | | | | |
| 2021 | 11 | 18 | 44 | 14 | 40 | 0.00 | | 0.0 | | 0.0 | | | | | | | | |
| 2021 | 11 | 19 | 52 | 29 | 42 | 0.00 | | 0.0 | | 0.0 | | | | | | | | |
| 2021 | 11 | 20 | 45 | 34 | 35 | 0.12 | | 0.5 | | 0.0 | | | | | | | | |
| 2021 | 11 | 21 | 43 | 19 | 32 | 0.00 | | 0.0 | | 0.0 | | | | | | | | |
| 2021 | 11 | 22 | 47 | 18 | 35 | 0.00 | | 0.0 | | 0.0 | | | | | | | | |
| 2021 | 11 | 23 | 50 | 18 | 48 | 0.00 | | 0.0 | | 0.0 | | | | | | | | |
| 2021 | 11 | 24 | 48 | 24 | 27 | T | | T | | 0.0 | | | | | | | | |
| 2021 | 11 | 25 | 40 | 10 | 30 | 0.00 | | 0.0 | | 0.0 | | | | | | | | |
| 2021 | 11 | 26 | 48 | 18 | 33 | 0.00 | | 0.0 | | 0.0 | | | | | | | | |
| 2021 | 11 | 27 | 48 | 20 | 34 | 0.00 | | 0.0 | | 0.0 | | | | | | | | |
| 2021 | 11 | 28 | 50 | 22 | 39 | 0.00 | | 0.0 | | 0.0 | | | | | | | | |
| 2021 | 11 | 29 | 53 | 24 | 40 | 0.00 | | 0.0 | | 0.0 | | | | | | | | |
| 2021 | 11 | 30 | 51 | 16 | 35 | 0.00 | | 0.0 | | 0.0 | | | | | | | | |
| Summary | | | 51 | 26 | | 0.62 | | 1.0 | | | | | | | | | | |

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 NCDC'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.

U.S. Department of Commerce
National Oceanic & Atmospheric Administration
National Environmental Satellite, Data, and Information Service

Current Location: Elev: 6467 ft. Lat: 40.4926° N Lon: -107.2548° W
Station: **HAYDEN, CO US USC00053867**

# Record of Climatological Observations

**These data are quality controlled and may not be identical to the original observations.**

Generated on 01/20/2023

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

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 | 24 Hour Wind Movement (mi) | Amount of Evap. (in) | 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) | | | Ground Cover (see *) | Max. | Min. | Ground Cover (see *) | Max. | Min. |
| 2021 | 12 | 01 | 57 | 22 | 42 | 0.00 | | 0.0 | | 0.0 | | | | | | | | |
| 2021 | 12 | 02 | 60 | 25 | 42 | 0.00 | | 0.0 | | 0.0 | | | | | | | | |
| 2021 | 12 | 03 | 57 | 25 | 40 | 0.00 | | 0.0 | | 0.0 | | | | | | | | |
| 2021 | 12 | 04 | 57 | 20 | 42 | 0.00 | | 0.0 | | 0.0 | | | | | | | | |
| 2021 | 12 | 05 | 52 | 20 | 39 | 0.00 | | 0.0 | | 0.0 | | | | | | | | |
| 2021 | 12 | 06 | 39 | 19 | 36 | 0.00 | | 0.0 | | 0.0 | | | | | | | | |
| 2021 | 12 | 07 | 48 | 27 | 35 | 0.00 | | 0.0 | | 0.0 | | | | | | | | |
| 2021 | 12 | 08 | 42 | 16 | 39 | 0.00 | | 0.0 | | 0.0 | | | | | | | | |
| 2021 | 12 | 09 | 40 | 30 | 31 | T | | 0.0 | | 0.0 | | | | | | | | |
| 2021 | 12 | 10 | 31 | 13 | 19 | 0.30 | | 3.0 | | 2.0 | | | | | | | | |
| 2021 | 12 | 11 | 30 | -5 | 17 | 0.00 | | 0.0 | | 2.0 | | | | | | | | |
| 2021 | 12 | 12 | 38 | 8 | 24 | 0.00 | | 0.0 | | 2.0 | | | | | | | | |
| 2021 | 12 | 13 | 47 | 10 | 31 | 0.00 | | 0.0 | | 1.0 | | | | | | | | |
| 2021 | 12 | 14 | 50 | 21 | 37 | 0.00 | | 0.0 | | 1.0 | | | | | | | | |
| 2021 | 12 | 15 | 48 | 15 | 21 | 0.28 | | 3.0 | | 3.0 | | | | | | | | |
| 2021 | 12 | 16 | 32 | 5 | 25 | 0.00 | | 0.0 | | 3.0 | | | | | | | | |
| 2021 | 12 | 17 | 30 | 15 | 22 | 0.20 | | 2.5 | | 5.0 | | | | | | | | |
| 2021 | 12 | 18 | 30 | -2 | 15 | 0.00 | | 0.0 | | 5.0 | | | | | | | | |
| 2021 | 12 | 19 | 34 | 2 | 17 | 0.00 | | 0.0 | | 5.0 | | | | | | | | |
| 2021 | 12 | 20 | 36 | 5 | 21 | 0.00 | | 0.0 | | 4.0 | | | | | | | | |
| 2021 | 12 | 21 | 37 | 9 | 25 | 0.00 | | 0.0 | | 4.0 | | | | | | | | |
| 2021 | 12 | 22 | 37 | 7 | 28 | 0.00 | | 0.0 | | 3.0 | | | | | | | | |
| 2021 | 12 | 23 | 43 | 23 | 38 | T | | T | | 2.0 | | | | | | | | |
| 2021 | 12 | 24 | 42 | 22 | 25 | 0.97 | | 14.0 | | 14.0 | | | | | | | | |
| 2021 | 12 | 25 | 38 | 20 | 28 | 0.00 | | 0.0 | | 12.0 | | | | | | | | |
| 2021 | 12 | 26 | 37 | 19 | 23 | 0.13 | | 2.0 | | 12.0 | | | | | | | | |
| 2021 | 12 | 27 | 34 | 12 | 28 | 0.00 | | 0.0 | | 12.0 | | | | | | | | |
| 2021 | 12 | 28 | 28 | 8 | 19 | 0.27 | | 3.0 | | 14.0 | | | | | | | | |
| 2021 | 12 | 29 | 24 | 12 | 19 | 0.14 | | 3.0 | | 15.0 | | | | | | | | |
| 2021 | 12 | 30 | 34 | 18 | 33 | 0.00 | | 0.0 | | 13.0 | | | | | | | | |
| 2021 | 12 | 31 | 33 | 20 | 20 | 0.50 | | 10.0 | | 19.0 | | | | | | | | |
| Summary | | | 40 | 15 | | 2.79 | | 40.5 | | | | | | | | | | |

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 NCDC'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.

U.S. Department of Commerce
National Oceanic & Atmospheric Administration
National Environmental Satellite, Data, and Information Service

Current Location: Elev: 6467 ft. Lat: 40.4926° N Lon: -107.2548° W
Station: **HAYDEN, CO US USC00053867**

# Record of Climatological Observations

**These data are quality controlled and may not be identical to the original observations.**

Generated on 01/20/2023

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

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 | 24 Hour Wind Movement (mi) | Amount of Evap. (in) | 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) | | | Ground Cover (see *) | Max. | Min. | Ground Cover (see *) | Max. | Min. |
| 2022 | 01 | 01 | 20 | 0 | 3 | T | | T | | 19.0 | | | | | | | | |
| 2022 | 01 | 02 | 27 | -10 | 10 | 0.00 | | 0.0 | | 17.0 | | | | | | | | |
| 2022 | 01 | 03 | 24 | -6 | 9 | 0.00 | | 0.0 | | 17.0 | | | | | | | | |
| 2022 | 01 | 04 | 32 | 3 | 27 | 0.00 | | 0.0 | | 17.0 | | | | | | | | |
| 2022 | 01 | 05 | 34 | 20 | 32 | 0.23 | | 2.5 | | 17.0 | | | | | | | | |
| 2022 | 01 | 06 | 43 | 14 | 39 | 0.27 | | 3.5 | | 16.0 | | | | | | | | |
| 2022 | 01 | 07 | 54 | 24 | 36 | 0.00 | | 0.0 | | 12.0 | | | | | | | | |
| 2022 | 01 | 08 | 45 | 18 | 18 | 0.25 | | 4.0 | | 16.0 | | | | | | | | |
| 2022 | 01 | 09 | 31 | 2 | 8 | 0.00 | | 0.0 | | 16.0 | | | | | | | | |
| 2022 | 01 | 10 | 28 | 0 | 9 | 0.00 | | 0.0 | | 16.0 | | | | | | | | |
| 2022 | 01 | 11 | 31 | 2 | 15 | 0.00 | | 0.0 | | 14.0 | | | | | | | | |
| 2022 | 01 | 12 | 38 | 2 | 20 | 0.00 | | 0.0 | | 14.0 | | | | | | | | |
| 2022 | 01 | 13 | 36 | 10 | 30 | 0.00 | | 0.0 | | 13.0 | | | | | | | | |
| 2022 | 01 | 14 | 35 | 12 | 28 | T | | T | | 13.0 | | | | | | | | |
| 2022 | 01 | 15 | 34 | 7 | 20 | 0.00 | | 0.0 | | 13.0 | | | | | | | | |
| 2022 | 01 | 16 | 31 | 4 | 17 | 0.00 | | 0.0 | | 13.0 | | | | | | | | |
| 2022 | 01 | 17 | 32 | 4 | 17 | 0.00 | | 0.0 | | 13.0 | | | | | | | | |
| 2022 | 01 | 18 | 36 | 8 | 18 | 0.00 | | 0.0 | | 13.0 | | | | | | | | |
| 2022 | 01 | 19 | 32 | 4 | 21 | 0.00 | | 0.0 | | 13.0 | | | | | | | | |
| 2022 | 01 | 20 | 29 | 12 | 24 | 0.02 | | 0.5 | | 13.0 | | | | | | | | |
| 2022 | 01 | 21 | 38 | 20 | 25 | 0.28 | | 4.0 | | 17.0 | | | | | | | | |
| 2022 | 01 | 22 | 28 | 8 | 8 | 0.01 | | T | | 17.0 | | | | | | | | |
| 2022 | 01 | 23 | 31 | 1 | 11 | 0.00 | | 0.0 | | 17.0 | | | | | | | | |
| 2022 | 01 | 24 | 29 | -2 | 17 | 0.00 | | 0.0 | | 17.0 | | | | | | | | |
| 2022 | 01 | 25 | 37 | 10 | 11 | 0.12 | | 1.5 | | 18.0 | | | | | | | | |
| 2022 | 01 | 26 | 27 | -5 | 15 | 0.00 | | 0.0 | | 18.0 | | | | | | | | |
| 2022 | 01 | 27 | 33 | 2 | 11 | 0.00 | | 0.0 | | 18.0 | | | | | | | | |
| 2022 | 01 | 28 | 33 | -3 | 8 | 0.00 | | 0.0 | | 18.0 | | | | | | | | |
| 2022 | 01 | 29 | 38 | 0 | 11 | 0.00 | | 0.0 | | 17.0 | | | | | | | | |
| 2022 | 01 | 30 | 32 | -3 | 10 | 0.00 | | 0.0 | | 17.0 | | | | | | | | |
| 2022 | 01 | 31 | 28 | -4 | 17 | 0.00 | | 0.0 | | 17.0 | | | | | | | | |
| Summary | | | 33 | 5 | | 1.18 | | 16.0 | | | | | | | | | | |

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 NCDC'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.

U.S. Department of Commerce
National Oceanic & Atmospheric Administration
National Environmental Satellite, Data, and Information Service

Current Location: Elev: 6467 ft. Lat: 40.4926° N Lon: -107.2548° W
Station: **HAYDEN, CO US USC00053867**

# Record of Climatological Observations

**These data are quality controlled and may not be identical to the original observations.**

Generated on 01/20/2023

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

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 | 24 Hour Wind Movement (mi) | Amount of Evap. (in) | 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) | | | Ground Cover (see *) | Max. | Min. | Ground Cover (see *) | Max. | Min. |
| 2022 | 02 | 01 | 25 | 2 | 8 | 0.00 | | 0.0 | | 17.0 | | | | | | | | |
| 2022 | 02 | 02 | 20 | -16 | 3 | 0.00 | | 0.0 | | 17.0 | | | | | | | | |
| 2022 | 02 | 03 | 21 | -17 | 5 | 0.00 | | 0.0 | | 17.0 | | | | | | | | |
| 2022 | 02 | 04 | 30 | -5 | 15 | 0.00 | | 0.0 | | 17.0 | | | | | | | | |
| 2022 | 02 | 05 | 32 | 0 | 17 | 0.00 | | 0.0 | | 17.0 | | | | | | | | |
| 2022 | 02 | 06 | 35 | 12 | 17 | 0.00 | | 0.0 | | 16.0 | | | | | | | | |
| 2022 | 02 | 07 | 38 | 4 | 22 | T | | T | | 16.0 | | | | | | | | |
| 2022 | 02 | 08 | 37 | 4 | 23 | 0.00 | | 0.0 | | 15.0 | | | | | | | | |
| 2022 | 02 | 09 | 36 | 10 | 30 | 0.00 | | 0.0 | | 15.0 | | | | | | | | |
| 2022 | 02 | 10 | 43 | 22 | 33 | 0.00 | | 0.0 | | 15.0 | | | | | | | | |
| 2022 | 02 | 11 | 44 | 10 | 27 | 0.00 | | 0.0 | | 14.0 | | | | | | | | |
| 2022 | 02 | 12 | 38 | 2 | 22 | 0.00 | | 0.0 | | 14.0 | | | | | | | | |
| 2022 | 02 | 13 | 37 | 6 | 22 | 0.00 | | 0.0 | | 14.0 | | | | | | | | |
| 2022 | 02 | 14 | 45 | 2 | 30 | 0.00 | | 0.0 | | 14.0 | | | | | | | | |
| 2022 | 02 | 15 | 47 | 13 | 35 | 0.00 | | 0.0 | | 14.0 | | | | | | | | |
| 2022 | 02 | 16 | 37 | 24 | 25 | 0.16 | | 2.0 | | 16.0 | | | | | | | | |
| 2022 | 02 | 17 | 37 | 0 | 13 | 0.00 | | 0.0 | | 16.0 | | | | | | | | |
| 2022 | 02 | 18 | 38 | 10 | 29 | 0.00 | | 0.0 | | 16.0 | | | | | | | | |
| 2022 | 02 | 19 | 43 | 12 | 24 | 0.00 | | 0.0 | | 15.0 | | | | | | | | |
| 2022 | 02 | 20 | 46 | 9 | 40 | 0.00 | | 0.0 | | 15.0 | | | | | | | | |
| 2022 | 02 | 21 | 40 | 20 | 34 | 0.00 | | 0.0 | | 15.0 | | | | | | | | |
| 2022 | 02 | 22 | 34 | 0 | 5 | 0.19 | | 2.0 | | 17.0 | | | | | | | | |
| 2022 | 02 | 23 | 15 | 1 | 6 | 0.35 | | 4.0 | | 21.0 | | | | | | | | |
| 2022 | 02 | 24 | 30 | 0 | 10 | 0.05 | | 1.0 | | 21.0 | | | | | | | | |
| 2022 | 02 | 25 | 32 | 0 | 10 | 0.10 | | 1.5 | | 22.0 | | | | | | | | |
| 2022 | 02 | 26 | 36 | -10 | 13 | 0.00 | | 0.0 | | 22.0 | | | | | | | | |
| 2022 | 02 | 27 | 38 | -3 | 17 | 0.00 | | 0.0 | | 21.0 | | | | | | | | |
| 2022 | 02 | 28 | 44 | 4 | 26 | 0.00 | | 0.0 | | 20.0 | | | | | | | | |
| Summary | | | 36 | 4 | | 0.85 | | 10.5 | | | | | | | | | | |

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 NCDC'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.

U.S. Department of Commerce
National Oceanic & Atmospheric Administration
National Environmental Satellite, Data, and Information Service

Current Location: Elev: 6467 ft. Lat: 40.4926° N Lon: -107.2548° W
Station: **HAYDEN, CO US USC00053867**

# Record of Climatological Observations

**These data are quality controlled and may not be identical to the original observations.**

Generated on 01/20/2023

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

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 | 24 Hour Wind Movement (mi) | Amount of Evap. (in) | 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) | | | Ground Cover (see *) | Max. | Min. | Ground Cover (see *) | Max. | Min. |
| 2022 | 03 | 01 | 52 | 12 | 31 | 0.00 | | 0.0 | | 20.0 | | | | | | | | |
| 2022 | 03 | 02 | 51 | 22 | 34 | 0.00 | | 0.0 | | 19.0 | | | | | | | | |
| 2022 | 03 | 03 | 60 | 22 | 37 | 0.00 | | 0.0 | | 18.0 | | | | | | | | |
| 2022 | 03 | 04 | 53 | 24 | 37 | T | | 0.0 | | 18.0 | | | | | | | | |
| 2022 | 03 | 05 | 44 | 29 | 29 | 0.42 | | 2.0 | | 19.0 | | | | | | | | |
| 2022 | 03 | 06 | 41 | 14 | 18 | T | | T | | 19.0 | | | | | | | | |
| 2022 | 03 | 07 | 32 | 3 | 14 | 0.00 | | 0.0 | | 19.0 | | | | | | | | |
| 2022 | 03 | 08 | 41 | 0 | 25 | T | | T | | 19.0 | | | | | | | | |
| 2022 | 03 | 09 | 32 | 12 | 16 | 0.18 | | 3.0 | | 21.0 | | | | | | | | |
| 2022 | 03 | 10 | 22 | -1 | 3 | 0.06 | | 1.0 | | 21.0 | | | | | | | | |
| 2022 | 03 | 11 | 33 | -16 | 19 | 0.00 | | 0.0 | | 21.0 | | | | | | | | |
| 2022 | 03 | 12 | 50 | 12 | 30 | 0.00 | | 0.0 | | 20.0 | | | | | | | | |
| 2022 | 03 | 13 | 46 | 10 | 33 | T | | T | | 20.0 | | | | | | | | |
| 2022 | 03 | 14 | 46 | 21 | 33 | 0.06 | | 1.0 | | 21.0 | | | | | | | | |
| 2022 | 03 | 15 | 53 | 12 | 41 | 0.00 | | 0.0 | | 20.0 | | | | | | | | |
| 2022 | 03 | 16 | 41 | 31 | 38 | 0.25 | | 1.5 | | 21.0 | | | | | | | | |
| 2022 | 03 | 17 | 47 | 22 | 30 | 0.02 | | T | | 20.0 | | | | | | | | |
| 2022 | 03 | 18 | 46 | 14 | 40 | 0.00 | | 0.0 | | 20.0 | | | | | | | | |
| 2022 | 03 | 19 | 50 | 12 | 40 | 0.00 | | 0.0 | | 20.0 | | | | | | | | |
| 2022 | 03 | 20 | 52 | 30 | 47 | 0.00 | | 0.0 | | 19.0 | | | | | | | | |
| 2022 | 03 | 21 | 47 | 22 | 34 | 0.02 | | 0.5 | | 19.0 | | | | | | | | |
| 2022 | 03 | 22 | 41 | 12 | 36 | T | | T | | 19.0 | | | | | | | | |
| 2022 | 03 | 23 | 48 | 12 | 36 | 0.00 | | 0.0 | | 19.0 | | | | | | | | |
| 2022 | 03 | 24 | 51 | 22 | 43 | 0.00 | | 0.0 | | 18.0 | | | | | | | | |
| 2022 | 03 | 25 | 58 | 23 | 53 | 0.00 | | 0.0 | | 17.0 | | | | | | | | |
| 2022 | 03 | 26 | 63 | 33 | 53 | 0.00 | | 0.0 | | 15.0 | | | | | | | | |
| 2022 | 03 | 27 | 67 | 34 | 57 | 0.00 | | 0.0 | | 12.0 | | | | | | | | |
| 2022 | 03 | 28 | 68 | 34 | 55 | 0.00 | | 0.0 | | 8.0 | | | | | | | | |
| 2022 | 03 | 29 | 55 | 32 | 37 | 0.42 | | T | | 5.0 | | | | | | | | |
| 2022 | 03 | 30 | 50 | 32 | 43 | 0.00 | | 0.0 | | 4.0 | | | | | | | | |
| 2022 | 03 | 31 | 54 | 22 | 49 | 0.00 | | 0.0 | | 0.0 | | | | | | | | |
| Summary | | | 48 | 18 | | 1.43 | | 9.0 | | | | | | | | | | |

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 NCDC'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.

U.S. Department of Commerce
National Oceanic & Atmospheric Administration
National Environmental Satellite, Data, and Information Service

Current Location: Elev: 6467 ft. Lat: 40.4926° N Lon: -107.2548° W
Station: **HAYDEN, CO US USC00053867**

# Record of Climatological Observations

**These data are quality controlled and may not be identical to the original observations.**

Generated on 01/20/2023

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

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 | 24 Hour Wind Movement (mi) | Amount of Evap. (in) | 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) | | | Ground Cover (see *) | Max. | Min. | Ground Cover (see *) | Max. | Min. |
| 2022 | 04 | 01 | 53 | 24 | 52 | 0.11 | | 0.0 | | 0.0 | | | | | | | | |
| 2022 | 04 | 02 | 61 | 23 | 61 | 0.00 | | 0.0 | | 0.0 | | | | | | | | |
| 2022 | 04 | 03 | 61 | 33 | 53 | 0.00 | | 0.0 | | 0.0 | | | | | | | | |
| 2022 | 04 | 04 | 53 | 24 | 53 | 0.00 | | 0.0 | | 0.0 | | | | | | | | |
| 2022 | 04 | 05 | 53 | 30 | 30 | T | | T | | 0.0 | | | | | | | | |
| 2022 | 04 | 06 | 49 | 14 | 43 | 0.00 | | 0.0 | | 0.0 | | | | | | | | |
| 2022 | 04 | 07 | 53 | 14 | 50 | 0.00 | | 0.0 | | 0.0 | | | | | | | | |
| 2022 | 04 | 08 | 60 | 23 | 60 | 0.00 | | 0.0 | | 0.0 | | | | | | | | |
| 2022 | 04 | 09 | 63 | 31 | 57 | 0.00 | | 0.0 | | 0.0 | | | | | | | | |
| 2022 | 04 | 10 | 57 | 20 | 40 | 0.18 | | 1.0 | | 0.0 | | | | | | | | |
| 2022 | 04 | 11 | 45 | 30 | 45 | 0.00 | | 0.0 | | 0.0 | | | | | | | | |
| 2022 | 04 | 12 | 55 | 20 | 32 | 0.32 | | 5.0 | | 2.0 | | | | | | | | |
| 2022 | 04 | 13 | 34 | 12 | 26 | 0.07 | | 1.0 | | 2.0 | | | | | | | | |
| 2022 | 04 | 14 | 48 | 10 | 48 | 0.05 | | 0.5 | | 1.0 | | | | | | | | |
| 2022 | 04 | 15 | 50 | 30 | 50 | 0.00 | | 0.0 | | 0.0 | | | | | | | | |
| 2022 | 04 | 16 | 60 | 30 | 54 | 0.00 | | 0.0 | | 0.0 | | | | | | | | |
| 2022 | 04 | 17 | 55 | 34 | 54 | 0.33 | | 0.5 | | 0.0 | | | | | | | | |
| 2022 | 04 | 18 | 70 | 30 | 70 | 0.00 | | 0.0 | | 0.0 | | | | | | | | |
| 2022 | 04 | 19 | 70 | 32 | 66 | 0.00 | | 0.0 | | 0.0 | | | | | | | | |
| 2022 | 04 | 20 | 66 | 34 | 62 | 0.00 | | 0.0 | | 0.0 | | | | | | | | |
| 2022 | 04 | 21 | 72 | 40 | 72 | 0.00 | | 0.0 | | 0.0 | | | | | | | | |
| 2022 | 04 | 22 | 72 | 38 | 38 | T | | 0.0 | | 0.0 | | | | | | | | |
| 2022 | 04 | 23 | 42 | 31 | 33 | 0.85 | | 4.0 | | 2.0 | | | | | | | | |
| 2022 | 04 | 24 | 55 | 32 | 55 | 0.02 | | T | | 0.0 | | | | | | | | |
| 2022 | 04 | 25 | 55 | 22 | 55 | 0.00 | | 0.0 | | 0.0 | | | | | | | | |
| 2022 | 04 | 26 | 58 | 30 | 58 | 0.00 | | 0.0 | | 0.0 | | | | | | | | |
| 2022 | 04 | 27 | 70 | 35 | 70 | 0.00 | | 0.0 | | 0.0 | | | | | | | | |
| 2022 | 04 | 28 | 73 | 34 | 64 | 0.00 | | 0.0 | | 0.0 | | | | | | | | |
| 2022 | 04 | 29 | 64 | 32 | 47 | 0.14 | | 1.5 | | 0.0 | | | | | | | | |
| 2022 | 04 | 30 | 60 | 24 | 60 | 0.00 | | 0.0 | | 0.0 | | | | | | | | |
| | | Summary | 58 | 27 | | 2.07 | | 13.5 | | | | | | | | | | |

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 NCDC'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.

U.S. Department of Commerce
National Oceanic & Atmospheric Administration
National Environmental Satellite, Data, and Information Service

Current Location: Elev: 6467 ft. Lat: 40.4926° N Lon: -107.2548° W
Station: **HAYDEN, CO US USC00053867**

# Record of Climatological Observations

**These data are quality controlled and may not be identical to the original observations.**

Generated on 01/20/2023

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

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 | 24 Hour Wind Movement (mi) | Amount of Evap. (in) | 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) | | | Ground Cover (see *) | Max. | Min. | Ground Cover (see *) | Max. | Min. |
| 2022 | 05 | 01 | 66 | 28 | 55 | 0.00 | | 0.0 | | 0.0 | | | | | | | | |
| 2022 | 05 | 02 | 59 | 32 | 57 | 0.68 | | 0.0 | | 0.0 | | | | | | | | |
| 2022 | 05 | 03 | 60 | 32 | 32 | 0.16 | | 0.5 | | 1.0 | | | | | | | | |
| 2022 | 05 | 04 | 48 | 32 | 46 | 0.18 | | 2.0 | | 0.0 | | | | | | | | |
| 2022 | 05 | 05 | 68 | 40 | 67 | 0.00 | | 0.0 | | 0.0 | | | | | | | | |
| 2022 | 05 | 06 | 73 | 42 | 67 | 0.00 | | 0.0 | | 0.0 | | | | | | | | |
| 2022 | 05 | 07 | 67 | 45 | 50 | 0.06 | | 0.0 | | 0.0 | | | | | | | | |
| 2022 | 05 | 08 | 62 | 40 | 55 | 0.16 | | 0.0 | | 0.0 | | | | | | | | |
| 2022 | 05 | 09 | 55 | 32 | 55 | 0.05 | | 0.0 | | 0.0 | | | | | | | | |
| 2022 | 05 | 10 | 70 | 24 | 64 | 0.00 | | 0.0 | | 0.0 | | | | | | | | |
| 2022 | 05 | 11 | 77 | 41 | 70 | 0.00 | | 0.0 | | 0.0 | | | | | | | | |
| 2022 | 05 | 12 | 70 | 40 | 57 | 0.00 | | 0.0 | | 0.0 | | | | | | | | |
| 2022 | 05 | 13 | 65 | 24 | 65 | 0.00 | | 0.0 | | 0.0 | | | | | | | | |
| 2022 | 05 | 14 | 72 | 30 | 72 | 0.00 | | 0.0 | | 0.0 | | | | | | | | |
| 2022 | 05 | 15 | 78 | 40 | 78 | 0.00 | | 0.0 | | 0.0 | | | | | | | | |
| 2022 | 05 | 16 | 81 | 46 | 74 | 0.00 | | 0.0 | | 0.0 | | | | | | | | |
| 2022 | 05 | 17 | 78 | 40 | 65 | T | | 0.0 | | 0.0 | | | | | | | | |
| 2022 | 05 | 18 | 75 | 42 | 75 | 0.00 | | 0.0 | | 0.0 | | | | | | | | |
| 2022 | 05 | 19 | 75 | 40 | 73 | 0.00 | | 0.0 | | 0.0 | | | | | | | | |
| 2022 | 05 | 20 | 73 | 30 | 49 | 0.47 | | 6.0 | | 0.0 | | | | | | | | |
| 2022 | 05 | 21 | 53 | 20 | 53 | T | | T | | 0.0 | | | | | | | | |
| 2022 | 05 | 22 | 62 | 31 | 57 | 0.00 | | 0.0 | | 0.0 | | | | | | | | |
| 2022 | 05 | 23 | 57 | 33 | 57 | 0.06 | | 0.0 | | 0.0 | | | | | | | | |
| 2022 | 05 | 24 | 60 | 34 | 60 | 0.00 | | 0.0 | | 0.0 | | | | | | | | |
| 2022 | 05 | 25 | 68 | 31 | 68 | 0.00 | | 0.0 | | 0.0 | | | | | | | | |
| 2022 | 05 | 26 | 78 | 40 | 78 | 0.00 | | 0.0 | | 0.0 | | | | | | | | |
| 2022 | 05 | 27 | 83 | 46 | 76 | 0.00 | | 0.0 | | 0.0 | | | | | | | | |
| 2022 | 05 | 28 | 76 | 42 | 66 | 0.00 | | 0.0 | | 0.0 | | | | | | | | |
| 2022 | 05 | 29 | 66 | 40 | 41 | 0.86 | | 0.0 | | 0.0 | | | | | | | | |
| 2022 | 05 | 30 | 55 | 34 | 43 | 0.40 | | 0.0 | | 0.0 | | | | | | | | |
| 2022 | 05 | 31 | 66 | 30 | 55 | 0.06 | | 0.0 | | 0.0 | | | | | | | | |
| Summary | | | 68 | 36 | | 3.14 | | 8.5 | | | | | | | | | | |

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 NCDC'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.

U.S. Department of Commerce
National Oceanic & Atmospheric Administration
National Environmental Satellite, Data, and Information Service

Current Location: Elev: 6467 ft. Lat: 40.4926° N Lon: -107.2548° W
Station: **HAYDEN, CO US USC00053867**

# Record of Climatological Observations

**These data are quality controlled and may not be identical to the original observations.**

Generated on 01/20/2023

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

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 | 24 Hour Wind Movement (mi) | Amount of Evap. (in) | 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) | | | Ground Cover (see *) | Max. | Min. | Ground Cover (see *) | Max. | Min. |
| 2022 | 06 | 01 | 75 | 30 | 73 | 0.00 | | 0.0 | | 0.0 | | | | | | | | |
| 2022 | 06 | 02 | 87 | 47 | 77 | 0.00 | | 0.0 | | 0.0 | | | | | | | | |
| 2022 | 06 | 03 | 83 | 46 | 73 | 0.00 | | 0.0 | | 0.0 | | | | | | | | |
| 2022 | 06 | 04 | 81 | 43 | 73 | 0.00 | | 0.0 | | 0.0 | | | | | | | | |
| 2022 | 06 | 05 | 73 | 50 | 70 | 0.01 | | 0.0 | | 0.0 | | | | | | | | |
| 2022 | 06 | 06 | 74 | 44 | 71 | 0.19 | | 0.0 | | 0.0 | | | | | | | | |
| 2022 | 06 | 07 | 76 | 41 | 74 | 0.00 | | 0.0 | | 0.0 | | | | | | | | |
| 2022 | 06 | 08 | 79 | 39 | 72 | 0.00 | | 0.0 | | 0.0 | | | | | | | | |
| 2022 | 06 | 09 | 86 | 52 | 83 | 0.00 | | 0.0 | | 0.0 | | | | | | | | |
| 2022 | 06 | 10 | 89 | 45 | 84 | 0.00 | | 0.0 | | 0.0 | | | | | | | | |
| 2022 | 06 | 11 | 91 | 50 | 84 | 0.00 | | 0.0 | | 0.0 | | | | | | | | |
| 2022 | 06 | 12 | 90 | 55 | 88 | 0.00 | | 0.0 | | 0.0 | | | | | | | | |
| 2022 | 06 | 13 | 88 | 48 | 65 | 0.00 | | 0.0 | | 0.0 | | | | | | | | |
| 2022 | 06 | 14 | 67 | 43 | 66 | 0.00 | | 0.0 | | 0.0 | | | | | | | | |
| 2022 | 06 | 15 | 77 | 33 | 76 | 0.00 | | 0.0 | | 0.0 | | | | | | | | |
| 2022 | 06 | 16 | 87 | 38 | 85 | 0.00 | | 0.0 | | 0.0 | | | | | | | | |
| 2022 | 06 | 17 | 93 | 52 | 78 | 0.00 | | 0.0 | | 0.0 | | | | | | | | |
| 2022 | 06 | 18 | 78 | 60 | 72 | 0.03 | | 0.0 | | 0.0 | | | | | | | | |
| 2022 | 06 | 19 | 76 | 54 | 71 | 0.15 | | 0.0 | | 0.0 | | | | | | | | |
| 2022 | 06 | 20 | 71 | 42 | 67 | 0.00 | | 0.0 | | 0.0 | | | | | | | | |
| 2022 | 06 | 21 | 80 | 35 | 78 | 0.00 | | 0.0 | | 0.0 | | | | | | | | |
| 2022 | 06 | 22 | 81 | 45 | 79 | 0.00 | | 0.0 | | 0.0 | | | | | | | | |
| 2022 | 06 | 23 | 82 | 50 | 70 | 0.03 | | 0.0 | | 0.0 | | | | | | | | |
| 2022 | 06 | 24 | 73 | 46 | 71 | 0.12 | | 0.0 | | 0.0 | | | | | | | | |
| 2022 | 06 | 25 | 81 | 46 | 75 | 0.00 | | 0.0 | | 0.0 | | | | | | | | |
| 2022 | 06 | 26 | 82 | 53 | 79 | 0.00 | | 0.0 | | 0.0 | | | | | | | | |
| 2022 | 06 | 27 | 86 | 50 | 85 | 0.00 | | 0.0 | | 0.0 | | | | | | | | |
| 2022 | 06 | 28 | 88 | 51 | 86 | 0.00 | | 0.0 | | 0.0 | | | | | | | | |
| 2022 | 06 | 29 | 86 | 50 | 62 | T | | 0.0 | | 0.0 | | | | | | | | |
| 2022 | 06 | 30 | 76 | 54 | 61 | 0.08 | | 0.0 | | 0.0 | | | | | | | | |
| Summary | | | 81 | 46 | | 0.61 | | 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 NCDC'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.

U.S. Department of Commerce
National Oceanic & Atmospheric Administration
National Environmental Satellite, Data, and Information Service

Current Location: Elev: 6467 ft. Lat: 40.4926° N Lon: -107.2548° W
Station: **HAYDEN, CO US USC00053867**

# Record of Climatological Observations

**These data are quality controlled and may not be identical to the original observations.**

Generated on 01/20/2023

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

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 | 24 Hour Wind Movement (mi) | Amount of Evap. (in) | 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) | | | Ground Cover (see *) | Max. | Min. | Ground Cover (see *) | Max. | Min. |
| 2022 | 07 | 01 | 83 | 51 | 80 | 0.28 | | 0.0 | | 0.0 | | | | | | | | |
| 2022 | 07 | 02 | 83 | 51 | 73 | 0.03 | | 0.0 | | 0.0 | | | | | | | | |
| 2022 | 07 | 03 | 84 | 50 | 78 | 0.02 | | 0.0 | | 0.0 | | | | | | | | |
| 2022 | 07 | 04 | 88 | 52 | 86 | 0.00 | | 0.0 | | 0.0 | | | | | | | | |
| 2022 | 07 | 05 | 86 | 57 | 70 | T | | 0.0 | | 0.0 | | | | | | | | |
| 2022 | 07 | 06 | 83 | 53 | 70 | 0.00 | | 0.0 | | 0.0 | | | | | | | | |
| 2022 | 07 | 07 | 87 | 51 | 84 | T | | 0.0 | | 0.0 | | | | | | | | |
| 2022 | 07 | 08 | 91 | 52 | 88 | 0.00 | | 0.0 | | 0.0 | | | | | | | | |
| 2022 | 07 | 09 | 94 | 52 | 90 | 0.00 | | 0.0 | | 0.0 | | | | | | | | |
| 2022 | 07 | 10 | 92 | 53 | 81 | 0.00 | | 0.0 | | 0.0 | | | | | | | | |
| 2022 | 07 | 11 | 90 | 55 | 87 | 0.00 | | 0.0 | | 0.0 | | | | | | | | |
| 2022 | 07 | 12 | 92 | 51 | 89 | 0.00 | | 0.0 | | 0.0 | | | | | | | | |
| 2022 | 07 | 13 | 90 | 51 | 80 | 0.00 | | 0.0 | | 0.0 | | | | | | | | |
| 2022 | 07 | 14 | 92 | 53 | 90 | 0.06 | | 0.0 | | 0.0 | | | | | | | | |
| 2022 | 07 | 15 | 90 | 61 | 78 | 0.06 | | 0.0 | | 0.0 | | | | | | | | |
| 2022 | 07 | 16 | 87 | 57 | 84 | 0.23 | | 0.0 | | 0.0 | | | | | | | | |
| 2022 | 07 | 17 | 90 | 56 | 89 | 0.00 | | 0.0 | | 0.0 | | | | | | | | |
| 2022 | 07 | 18 | 92 | 56 | 87 | 0.03 | | 0.0 | | 0.0 | | | | | | | | |
| 2022 | 07 | 19 | 91 | 57 | 80 | 0.00 | | 0.0 | | 0.0 | | | | | | | | |
| 2022 | 07 | 20 | 90 | 55 | 90 | 0.00 | | 0.0 | | 0.0 | | | | | | | | |
| 2022 | 07 | 21 | 91 | 52 | 89 | 0.00 | | 0.0 | | 0.0 | | | | | | | | |
| 2022 | 07 | 22 | 94 | 53 | 86 | 0.00 | | 0.0 | | 0.0 | | | | | | | | |
| 2022 | 07 | 23 | 90 | 61 | 69 | 0.10 | | 0.0 | | 0.0 | | | | | | | | |
| 2022 | 07 | 24 | 71 | 56 | 61 | 0.22 | | 0.0 | | 0.0 | | | | | | | | |
| 2022 | 07 | 25 | 85 | 51 | 82 | 0.00 | | 0.0 | | 0.0 | | | | | | | | |
| 2022 | 07 | 26 | 89 | 51 | 86 | 0.00 | | 0.0 | | 0.0 | | | | | | | | |
| 2022 | 07 | 27 | 91 | 52 | 86 | 0.00 | | 0.0 | | 0.0 | | | | | | | | |
| 2022 | 07 | 28 | 87 | 55 | 68 | 0.00 | | 0.0 | | 0.0 | | | | | | | | |
| 2022 | 07 | 29 | 84 | 52 | 76 | 0.11 | | 0.0 | | 0.0 | | | | | | | | |
| 2022 | 07 | 30 | 89 | 50 | 82 | 0.00 | | 0.0 | | 0.0 | | | | | | | | |
| 2022 | 07 | 31 | 87 | 53 | 85 | 0.00 | | 0.0 | | 0.0 | | | | | | | | |
| Summary | | | 88 | 54 | | 1.14 | | 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 NCDC'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.

U.S. Department of Commerce
National Oceanic & Atmospheric Administration
National Environmental Satellite, Data, and Information Service

Current Location: Elev: 6467 ft. Lat: 40.4926° N Lon: -107.2548° W
Station: **HAYDEN, CO US USC00053867**

# Record of Climatological Observations

**These data are quality controlled and may not be identical to the original observations.**

Generated on 01/20/2023

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

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 | 24 Hour Wind Movement (mi) | Amount of Evap. (in) | 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) | | | Ground Cover (see *) | Max. | Min. | Ground Cover (see *) | Max. | Min. |
| 2022 | 08 | 01 | 91 | 56 | 72 | 0.15 | | 0.0 | | 0.0 | | | | | | | | |
| 2022 | 08 | 02 | 85 | 56 | 74 | 0.02 | | 0.0 | | 0.0 | | | | | | | | |
| 2022 | 08 | 03 | 87 | 54 | 81 | 0.00 | | 0.0 | | 0.0 | | | | | | | | |
| 2022 | 08 | 04 | 91 | 53 | 90 | 0.00 | | 0.0 | | 0.0 | | | | | | | | |
| 2022 | 08 | 05 | 90 | 57 | 71 | 0.00 | | 0.0 | | 0.0 | | | | | | | | |
| 2022 | 08 | 06 | 91 | 58 | 89 | 0.00 | | 0.0 | | 0.0 | | | | | | | | |
| 2022 | 08 | 07 | 89 | 53 | 82 | 0.00 | | 0.0 | | 0.0 | | | | | | | | |
| 2022 | 08 | 08 | 90 | 48 | 87 | 0.00 | | 0.0 | | 0.0 | | | | | | | | |
| 2022 | 08 | 09 | 93 | 51 | 91 | 0.00 | | 0.0 | | 0.0 | | | | | | | | |
| 2022 | 08 | 10 | 95 | 60 | 91 | 0.00 | | 0.0 | | 0.0 | | | | | | | | |
| 2022 | 08 | 11 | 93 | 55 | 86 | 0.00 | | 0.0 | | 0.0 | | | | | | | | |
| 2022 | 08 | 12 | 90 | 54 | 88 | 0.02 | | 0.0 | | 0.0 | | | | | | | | |
| 2022 | 08 | 13 | 89 | 60 | 83 | 0.00 | | 0.0 | | 0.0 | | | | | | | | |
| 2022 | 08 | 14 | 86 | 59 | 68 | 0.32 | | 0.0 | | 0.0 | | | | | | | | |
| 2022 | 08 | 15 | 82 | 54 | 66 | 0.04 | | 0.0 | | 0.0 | | | | | | | | |
| 2022 | 08 | 16 | 84 | 54 | 75 | 0.00 | | 0.0 | | 0.0 | | | | | | | | |
| 2022 | 08 | 17 | 87 | 49 | 85 | 0.00 | | 0.0 | | 0.0 | | | | | | | | |
| 2022 | 08 | 18 | 89 | 49 | 81 | 0.00 | | 0.0 | | 0.0 | | | | | | | | |
| 2022 | 08 | 19 | 85 | 53 | 74 | 0.00 | | 0.0 | | 0.0 | | | | | | | | |
| 2022 | 08 | 20 | 74 | 48 | 63 | 0.00 | | 0.0 | | 0.0 | | | | | | | | |
| 2022 | 08 | 21 | 76 | 52 | 67 | 0.36 | | 0.0 | | 0.0 | | | | | | | | |
| 2022 | 08 | 22 | 85 | 48 | 84 | 0.00 | | 0.0 | | 0.0 | | | | | | | | |
| 2022 | 08 | 23 | 87 | 52 | 81 | 0.00 | | 0.0 | | 0.0 | | | | | | | | |
| 2022 | 08 | 24 | 86 | 53 | 83 | 0.02 | | 0.0 | | 0.0 | | | | | | | | |
| 2022 | 08 | 25 | 83 | 51 | 72 | 0.00 | | 0.0 | | 0.0 | | | | | | | | |
| 2022 | 08 | 26 | 82 | 49 | 68 | 0.00 | | 0.0 | | 0.0 | | | | | | | | |
| 2022 | 08 | 27 | 85 | 47 | 70 | 0.06 | | 0.0 | | 0.0 | | | | | | | | |
| 2022 | 08 | 28 | 81 | 47 | 75 | 0.00 | | 0.0 | | 0.0 | | | | | | | | |
| 2022 | 08 | 29 | 85 | 46 | 80 | 0.00 | | 0.0 | | 0.0 | | | | | | | | |
| 2022 | 08 | 30 | 90 | 47 | 88 | 0.00 | | 0.0 | | 0.0 | | | | | | | | |
| 2022 | 08 | 31 | 90 | 50 | 85 | 0.00 | | 0.0 | | 0.0 | | | | | | | | |
| Summary | | | 87 | 52 | | 0.99 | | 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 NCDC'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.

U.S. Department of Commerce
National Oceanic & Atmospheric Administration
National Environmental Satellite, Data, and Information Service

Current Location: Elev: 6467 ft. Lat: 40.4926° N Lon: -107.2548° W
Station: **HAYDEN, CO US USC00053867**

# Record of Climatological Observations

**These data are quality controlled and may not be identical to the original observations.**

Generated on 01/20/2023

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

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 | 24 Hour Wind Movement (mi) | Amount of Evap. (in) | 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) | | | Ground Cover (see *) | Max. | Min. | Ground Cover (see *) | Max. | Min. |
| 2022 | 09 | 01 | 90 | 49 | 84 | 0.00 | | 0.0 | | 0.0 | | | | | | | | |
| 2022 | 09 | 02 | 91 | 48 | 88 | 0.00 | | 0.0 | | 0.0 | | | | | | | | |
| 2022 | 09 | 03 | 92 | 56 | 88 | 0.00 | | 0.0 | | 0.0 | | | | | | | | |
| 2022 | 09 | 04 | 94 | 49 | 67 | 0.00 | | 0.0 | | 0.0 | | | | | | | | |
| 2022 | 09 | 05 | 92 | 47 | 87 | 0.00 | | 0.0 | | 0.0 | | | | | | | | |
| 2022 | 09 | 06 | 92 | 46 | 85 | 0.00 | | 0.0 | | 0.0 | | | | | | | | |
| 2022 | 09 | 07 | 94 | 47 | 88 | 0.00 | | 0.0 | | 0.0 | | | | | | | | |
| 2022 | 09 | 08 | 91 | 49 | 81 | 0.00 | | 0.0 | | 0.0 | | | | | | | | |
| 2022 | 09 | 09 | 81 | 47 | 73 | 0.02 | | 0.0 | | 0.0 | | | | | | | | |
| 2022 | 09 | 10 | 73 | 37 | 69 | 0.00 | | 0.0 | | 0.0 | | | | | | | | |
| 2022 | 09 | 11 | 85 | 35 | 77 | 0.00 | | 0.0 | | 0.0 | | | | | | | | |
| 2022 | 09 | 12 | 85 | 39 | 80 | 0.00 | | 0.0 | | 0.0 | | | | | | | | |
| 2022 | 09 | 13 | 80 | 44 | 62 | 0.00 | | 0.0 | | 0.0 | | | | | | | | |
| 2022 | 09 | 14 | 73 | 46 | 71 | 0.04 | | 0.0 | | 0.0 | | | | | | | | |
| 2022 | 09 | 15 | 71 | 51 | 60 | 0.25 | | 0.0 | | 0.0 | | | | | | | | |
| 2022 | 09 | 16 | 69 | 45 | 66 | 0.21 | | 0.0 | | 0.0 | | | | | | | | |
| 2022 | 09 | 17 | 74 | 47 | 73 | 0.37 | | 0.0 | | 0.0 | | | | | | | | |
| 2022 | 09 | 18 | 80 | 43 | 76 | 0.00 | | 0.0 | | 0.0 | | | | | | | | |
| 2022 | 09 | 19 | 83 | 42 | 79 | 0.00 | | 0.0 | | 0.0 | | | | | | | | |
| 2022 | 09 | 20 | 79 | 46 | 64 | 0.05 | | 0.0 | | 0.0 | | | | | | | | |
| 2022 | 09 | 21 | 71 | 47 | 55 | 0.34 | | 0.0 | | 0.0 | | | | | | | | |
| 2022 | 09 | 22 | 71 | 51 | 64 | 0.44 | | 0.0 | | 0.0 | | | | | | | | |
| 2022 | 09 | 23 | 69 | 35 | 65 | 0.00 | | 0.0 | | 0.0 | | | | | | | | |
| 2022 | 09 | 24 | 72 | 35 | 68 | 0.00 | | 0.0 | | 0.0 | | | | | | | | |
| 2022 | 09 | 25 | 76 | 36 | 72 | 0.00 | | 0.0 | | 0.0 | | | | | | | | |
| 2022 | 09 | 26 | 79 | 40 | 73 | 0.00 | | 0.0 | | 0.0 | | | | | | | | |
| 2022 | 09 | 27 | 79 | 42 | 73 | 0.00 | | 0.0 | | 0.0 | | | | | | | | |
| 2022 | 09 | 28 | 82 | 46 | 72 | 0.00 | | 0.0 | | 0.0 | | | | | | | | |
| 2022 | 09 | 29 | 73 | 47 | 60 | 0.00 | | 0.0 | | 0.0 | | | | | | | | |
| 2022 | 09 | 30 | 61 | 48 | 50 | 0.38 | | 0.0 | | 0.0 | | | | | | | | |
| | | Summary | 80 | 45 | | 2.10 | | 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 NCDC'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 SGAL70 during water year 2022.

| Well | Date | Depth to Water ft btoc | SPC, Field N UMHOS/CM | pH, Field N S.U. | Temp., Field N DEG-C | 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 | 5/6/2022 | 9.83 | 3320 | 7.42 | 7.9 | < 0.1 | < 0.4 | 107 | **< 16** | 31.2 | < 40 | < 20 | 0.27 |
| SGAL70 | 9/15/2022 | 11.31 | 3350 | 7.11 | 9.9 | < 0.1 | 0.29 | 134 | **< 16** | 29.8 | 45 | 29 | 0.17 |
| **GWPOC Water Quality Standards*** | | | - | 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 | 5/6/2022 | < 0.12 | < 60 | 0.041 | < 0.2 | < 16 | 0.027 | < 0.01 | 6.4 | 1820 | < 0.02 | 3020 | 0.180 |
| SGAL70 | 9/15/2022 | 0.345 | < 60 | 0.027 | < 0.2 | < 16 | 0.042 | < 0.01 | < 2 | 1840 | < 0.02 | 3020 | < 0.04 |
| **GWPOC Water Quality Standards*** | | **14.1** | **70** | **2.44** | **2** | **100** | **10** | **1** | **20** | **2517** | - | **5038** | **2** |

| Well | Date | Alkalinity, Bicarbonate N MG/L | Alkalinity, Carbonate 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 % | TDS (Calc) N MG/L | TSS N MG/L |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SGAL70 | 5/6/2022 | 332 | < 2 | 346 | 3260 | 1810 | 230 | 5.64 | 174 | 1.8 | -2.2 | 2810 | 7.0 |
| SGAL70 | 9/15/2022 | 334 | < 2 | 364 | 3220 | 1890 | 239 | 5.40 | 170 | 1.7 | -1.1 | 2850 | 32.0 |
| **GWPOC Water Quality Standards*** | | - | - | - | - | - | - | - | - | - | - | - | - |

**Notes**

* See Part 2.04 page 103 of Permit C-2009-087 and TR-47 of Permit C-1980-005.

**Bold** Analyte exceeds GWPOC Standard

**Table B.2.** Groundwater analytical results for Non-Point of Compliance wells during water year 2022.

| Well | Date | Depth to Water ft btoc | SPC, Field N UMHOS/CM | pH, Field N S.U. | Temp., Field N DEG-C | 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SCAL69 | 5/6/2022 | 5.51 | 2620 | 7.24 | 7.6 | | | | | | | | 0.25 |
| SCAL69 | 9/15/2022 | 8.69 | 2520 | 7.24 | 11.4 | | | | | | | | 0.18 |
| SSP61 | 5/6/2022 | 9.19 | 4210 | 6.84 | 11.4 | | | | | | | | 0.37 |
| SSP61 | 9/15/2022 | 13.07 | 4010 | 6.87 | 11.4 | | | | | | | | 0.24 |
| SSP62 | 5/6/2022 | 15.31 | 3930 | 6.93 | 11.5 | | | | | | | | 0.32 |
| SSP62 | 9/15/2022 | 17.89 | 3800 | 6.96 | 11.3 | | | | | | | | 0.21 |
| COV2702 | 5/6/2022 | 144.87 | 1120 | 9.52 | 10.9 | < 0.05 | 0.31 | 149 | < 8 | 4.60 | < 20 | < 10 | 1.77 |
| SOV42* | 5/6/2022 | - | | | | | | | | | | | |
| CW2701 | 5/6/2022 | 160.38 | 1560 | 9.5 | 11.2 | < 0.05 | < 0.2 | 264 | < 8 | 6.66 | < 20 | < 10 | 2.40 |

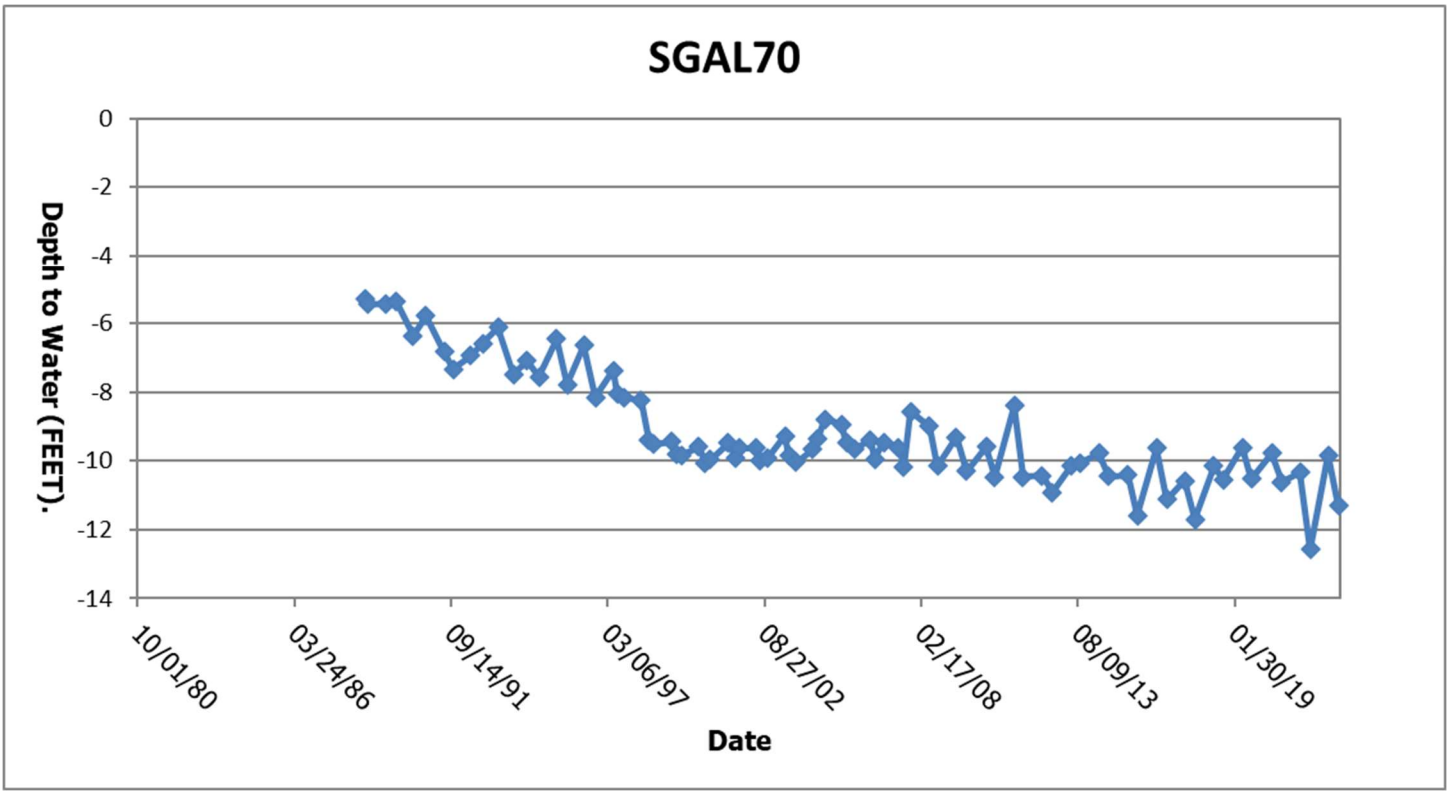
| Well | Date | Iron D MG/L | Lead D UG/L | Manganese D MG/L | Mercury D UG/L | Nickel D UG/L | Nitrate N. N MG/L | Nitrite N. N MG/L | Selenium D UG/L | Sulfates N MG/L | Sulfide N MG/L | TDS, Lab N MG/L | Zinc D MG/L |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SCAL69 | 5/6/2022 | < 0.12 | | 0.120 | | | < 0.02 | < 0.01 | < 2 | 1270 | | 2240 | |
| SCAL69 | 9/15/2022 | < 0.12 | | 0.111 | | | < 0.02 | < 0.01 | < 2 | 1180 | | 2080 | |
| SSP61 | 5/6/2022 | < 0.3 | | 0.527 | | | 7.89 | 0.051 | 5.9 | 2670 | | 4200 | |
| SSP61 | 9/15/2022 | < 0.3 | | 0.435 | | | 4.31 | 0.121 | < 2 | 2520 | | 3990 | |
| SSP62 | 5/6/2022 | 0.171 | | 1.19 | | | 0.022 | < 0.01 | < 2 | 2590 | | 3980 | |
| SSP62 | 9/15/2022 | 1.35 | | 4.67 | | | <0.02 | < 0.01 | < 2 | 2410 | | 3660 | |
| COV2702 | 5/6/2022 | < 0.06 | < 30 | 0.011 | < 0.2 | < 8 | < 0.02 | < 0.01 | < 2 | < 20 | 0.098 | 586 | 1.83 |
| SOV42* | 5/6/2022 | | | | | | | | | | | | |
| CW2701 | 5/6/2022 | < 0.06 | < 30 | < 0.01 | < 0.2 | < 8 | < 0.02 | 0.016 | < 2 | 87 | 16.4 | 882 | 1.27 |

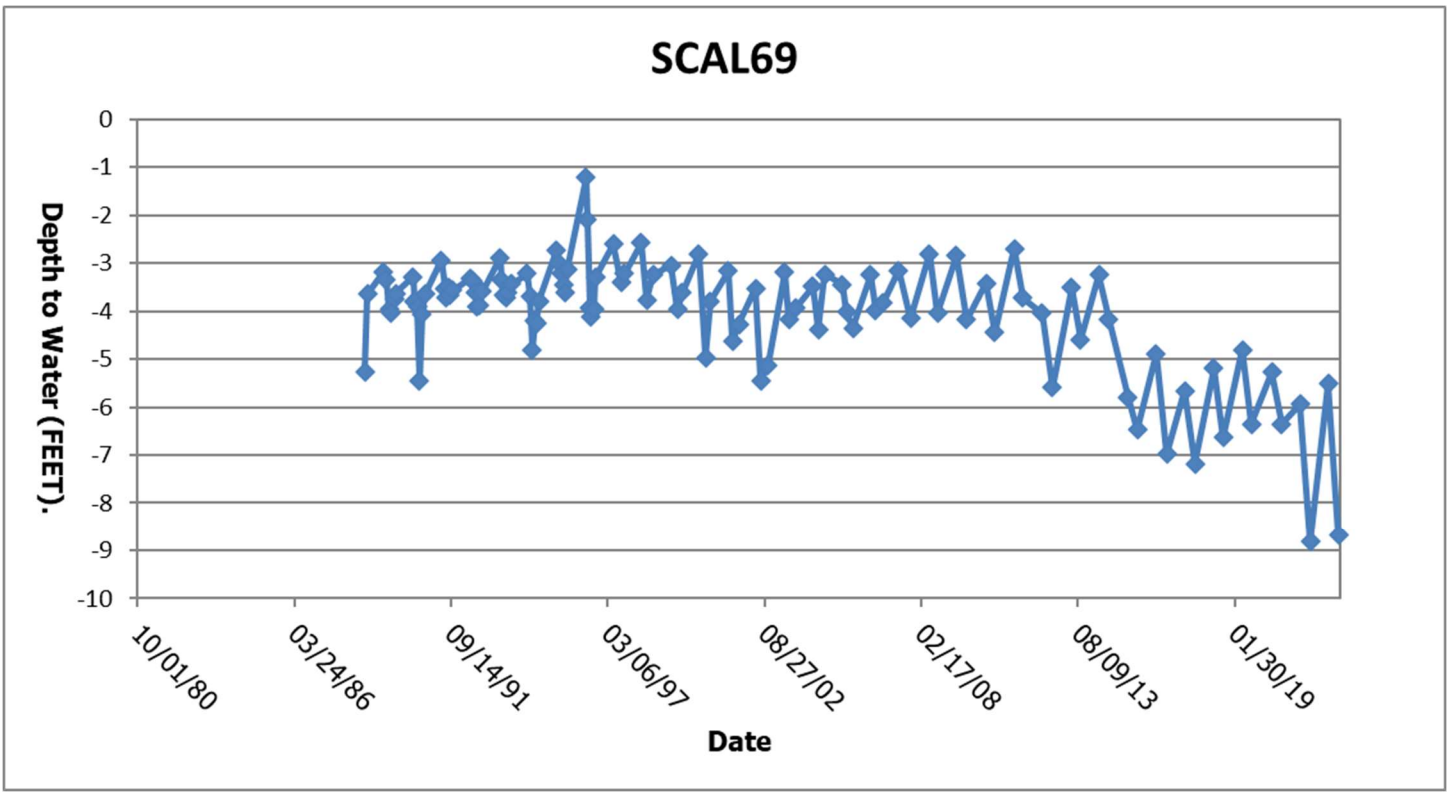
| Well | Date | Alkalinity, Bicarbonate N MG/L | Alkalinity, Carbonate D MG/L | Calcium D MG/L | SpC, Lab N UMS/CM | Hardness N MG/L | Magnesium D MG/L | Potassium D MG/L | Sodium D MG/L | SAR N NONE | Cation / Anion % | TDS (Calc) N MG/L | TSS N MG/L |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SCAL69 | 5/6/2022 | | | | | | | | | | | | |
| SCAL69 | 9/15/2022 | | | | | | | | | | | | |
| SSP61 | 5/6/2022 | | | | | | | | | | | | |
| SSP61 | 9/15/2022 | | | | | | | | | | | | |
| SSP62 | 5/6/2022 | | | | | | | | | | | | |
| SSP62 | 9/15/2022 | | | | | | | | | | | | |
| COV2702 | 5/6/2022 | 355 | 186 | 1.29 | 1040 | 4.6 | 0.34 | 1.91 | 244 | 50 | 0 | 584 | 12.0 |
| SOV42* | 5/6/2022 | | | | | | | | | | | | |
| CW2701 | 5/6/2022 | 431 | 288 | 7.23 | 1500 | 21 | 0.61 | 2.91 | 351 | 34 | -3.0 | 895 | 66.0 |

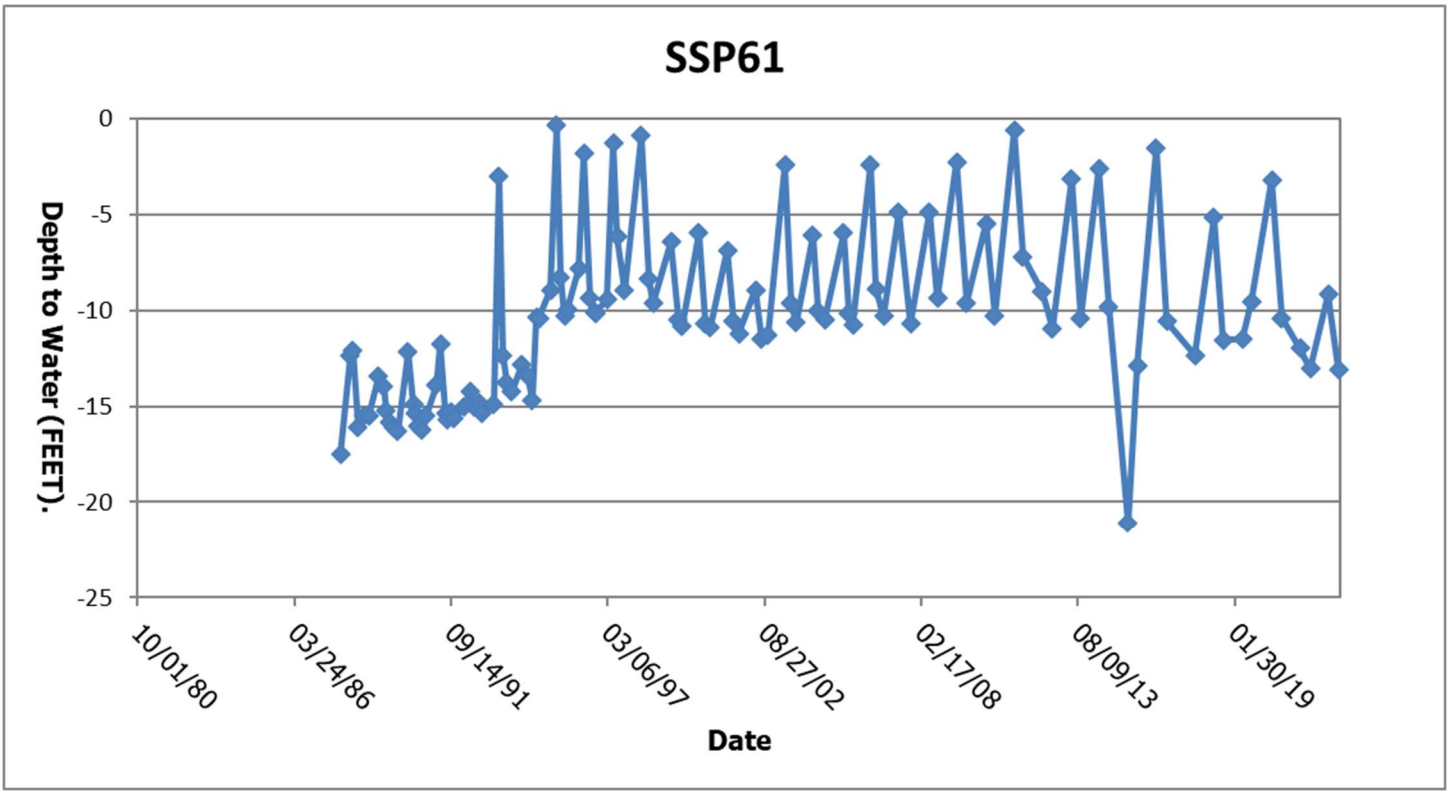
**Notes**
*Well was dry. Sample could not be collected

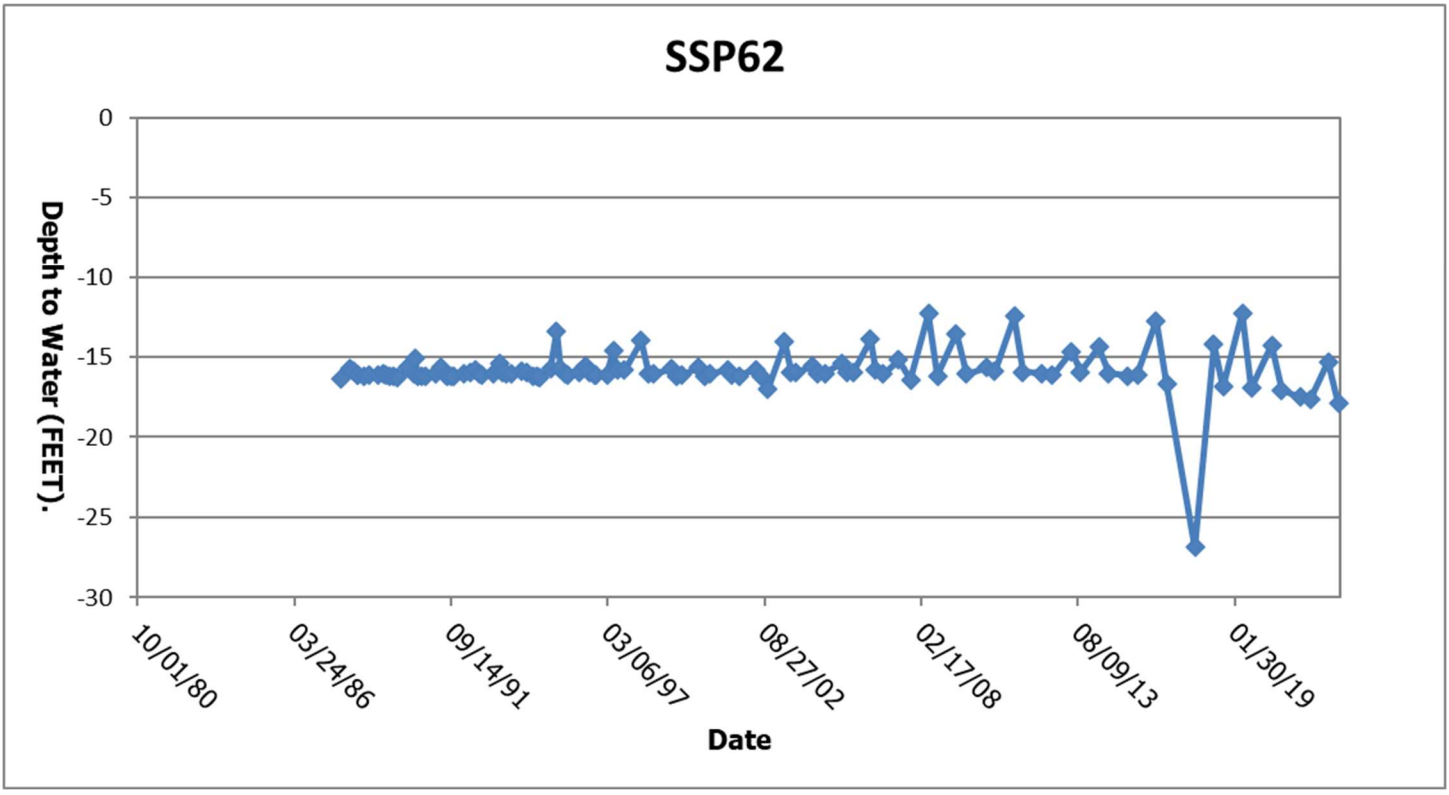
# APPENDIX C

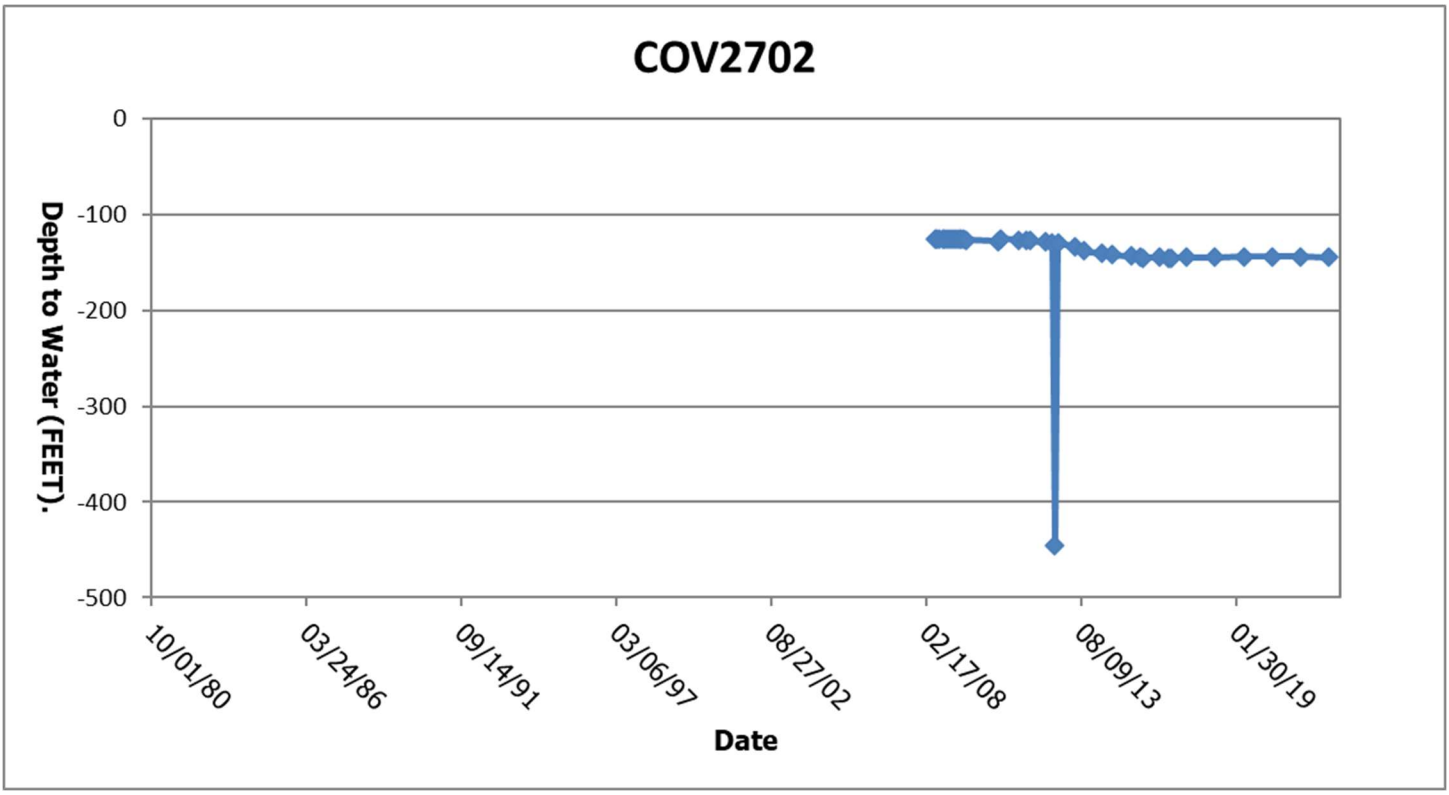
# GROUNDWATER HYDROGRAPHS

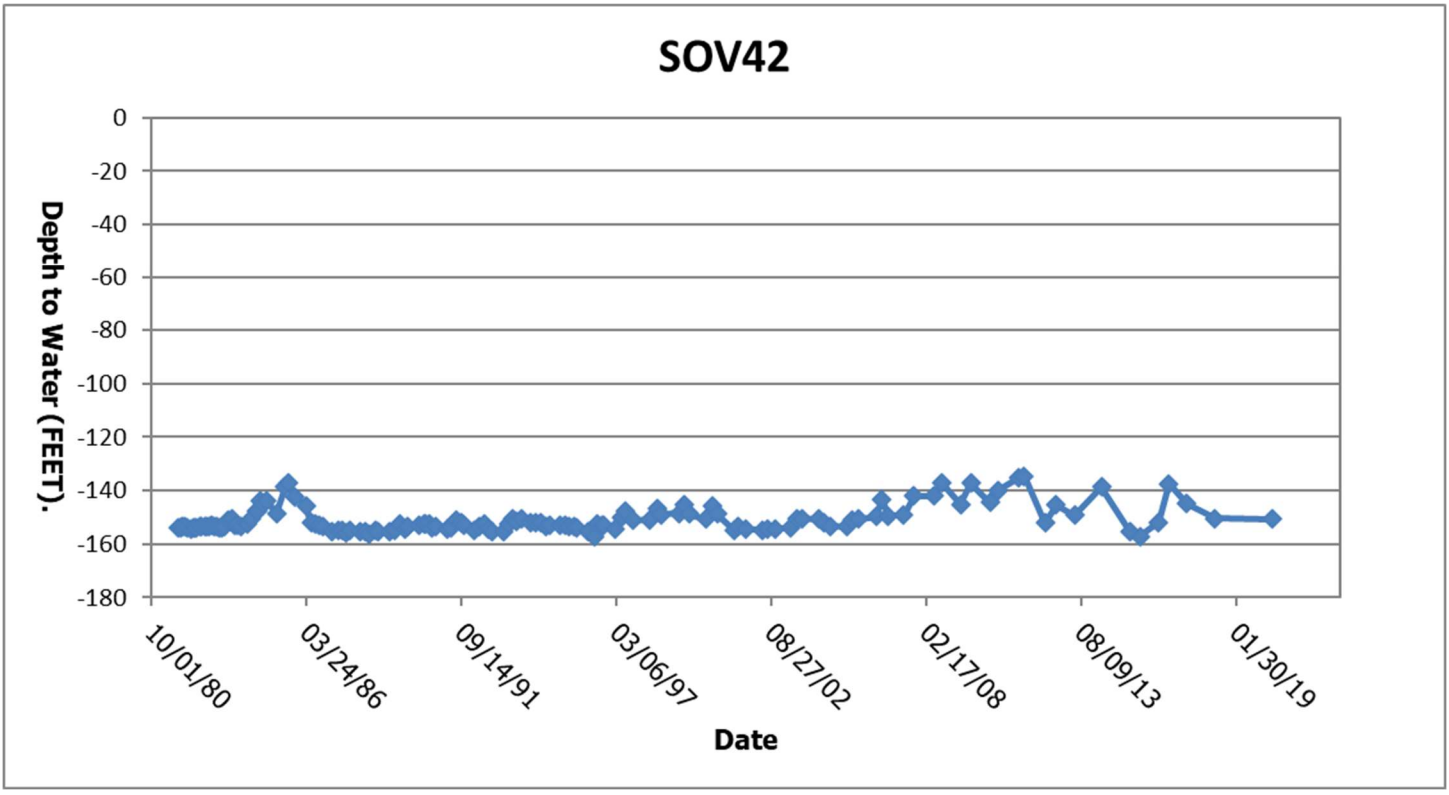

SGAL70
Depth to Water (FEET).
0
-2
-4
-6
-8
-10
-12
-14
10/01/80
03/24/86
09/14/91
03/06/97
08/27/02
02/17/08
08/09/13
01/30/19
Date

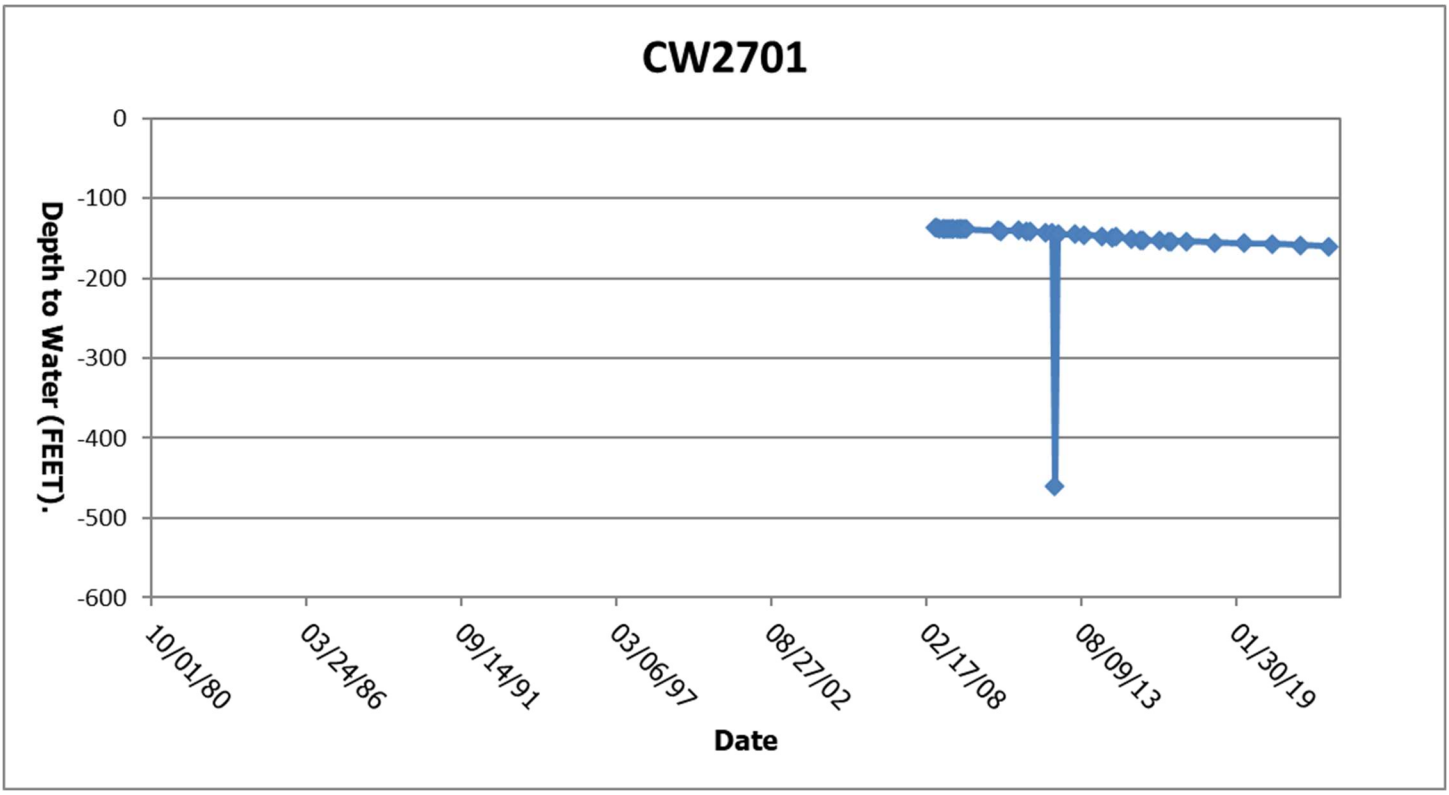

SCAL69
Depth to Water (FEET).
0
-1
-2
-3
-4
-5
-6
-7
-8
-9
-10
10/01/80
03/24/86
09/14/91
03/06/97
08/27/02
02/17/08
08/09/13
01/30/19
Date


SSP61
Depth to Water (FEET).
0
-5
-10
-15
-20
-25
10/01/80
03/24/86
09/14/91
03/06/97
08/27/02
02/17/08
08/09/13
01/30/19
Date


SSP62
Depth to Water (FEET).
0
-5
-10
-15
-20
-25
-30
10/01/80
03/24/86
09/14/91
03/06/97
08/27/02
02/17/08
08/09/13
01/30/19
Date


COV2702
0
-100
-200
-300
-400
-500
Depth to Water (FEET).
10/01/80
03/24/86
09/14/91
03/06/97
08/27/02
02/17/08
08/09/13
01/30/19
Date


SOV42
0
-20
-40
-60
-80
-100
-120
-140
-160
-180
Depth to Water (FEET).
10/01/80
03/24/86
09/14/91
03/06/97
08/27/02
02/17/08
08/09/13
01/30/19
Date


CW2701
0
-100
-200
-300
-400
-500
-600
Depth to Water (FEET).
10/01/80
03/24/86
09/14/91
03/06/97
08/27/02
02/17/08
08/09/13
01/30/19
Date

# APPENDIX D

# SURFACE WATER QUALITY DATA

**Table D.1** Fish Creek Yampa Segment 13g stream point analytical data for water year 2022.

| Location | Date | Flow N GPM | 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SSC10 | 4/18/2022 | 0 | | | | | | | | | | | | |
| SSC10 | 6/21/2022 | 0 | | | | | | | | | | | | |
| SSC10 | 7/18/2022 | 0 | | | | | | | | | | | | |
| Yampa Segment 13g Standards - Acute | | - | - | 6.5 - 9.0 | - | - | - | - | 4.738 | 0.01*** | 0.5 | 100 | 0.05 | 18.4 |
| Yampa Segment 13g Standards - Chronic | | - | - | - | - | - | - | 1 | 2.618 | - | - | - | - | 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 |
|---|---|---|---|---|---|---|---|
| SSC10 | 4/18/2022 | | | | | | |
| SSC10 | 6/21/2022 | | | | | | |
| SSC10 | 7/18/2022 | | | | | | |
| Yampa Segment 13g Standards - Acute | | - | - | - | 0.002*** | - | - |
| Yampa Segment 13g Standards - Chronic | | - | - | - | - | - | - |
| Agricultural Use Standards | | - | - | - | - | - | - |

**Notes**

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

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

*** The standard is an order of magnitude less than the laboratories detection limit.

**Bold** Analyte exceeds the Yampa Segment 13g or Agricultural Use Standards

**Table D.2** Fish Creek Yampa Segment 13g NPDES Outfall 005 analytical data for water year 2022.

| Location | Date | Flow N MGD | pH, Field N S.U. | Oil & Grease Y / N | Iron TR MG/L | Selenium* D UG/L | Selenium PD UG/L | Selenium* TR UG/L | TDS, Lab N MG/L | Manganese PD MG/L |
|---|---|---|---|---|---|---|---|---|---|---|
| SSSPG2 (NPDES5) | 10/11/2021 | 0.000 | | | | | | | | |
| SSSPG2 (NPDES5) | 10/27/2021 | 0.000 | | | | | | | | |
| SSSPG2 (NPDES5) | 11/8/2021 | 0.000 | | | | | | | | |
| SSSPG2 (NPDES5) | 11/17/2021 | 0.000 | | | | | | | | |
| SSSPG2 (NPDES5) | 12/1/2021 | 0.000 | | | | | | | | |
| SSSPG2 (NPDES5) | 12/13/2021 | 0.000 | | | | | | | | |
| SSSPG2 (NPDES5) | 1/10/2022 | 0.000 | | | | | | | | |
| SSSPG2 (NPDES5) | 1/26/2022 | 0.000 | | | | | | | | |
| SSSPG2 (NPDES5) | 2/7/2022 | 0.000 | | | | | | | | |
| SSSPG2 (NPDES5) | 2/21/2022 | 0.000 | | | | | | | | |
| SSSPG2 (NPDES5) | 3/2/2022 | 0.000 | | | | | | | | |
| SSSPG2 (NPDES5) | 3/22/2022 | 0.000 | | | | | | | | |
| SSSPG2 (NPDES5) | 4/4/2022 | 0.000 | | | | | | | | |
| SSSPG2 (NPDES5) | 4/18/2022 | 0.029 | 8.1 | N | < 0.3 | | 1.2 | 1.37 | 4260 | 0.062 |
| SSSPG2 (NPDES5) | 4/18/2022 | 0.029 | 8.1 | N | | 1.19 | | 0.74 | 4310 | |
| SSSPG2 (NPDES5) | 4/26/2022 | | | | | 3.24 | 3.97 | 3.83 | 4450 | |
| SSSPG2 (NPDES5) | 5/9/2022 | 0.018 | 8.25 | N | < 0.3 | | 2.32 | 2.55 | 4200 | |
| SSSPG2 (NPDES5) | 5/17/2022 | 0.015 | 8.11 | N | < 0.3 | | 1.73 | 1.62 | 4300 | |
| SSSPG2 (NPDES5) | 6/6/2022 | 0.002 | 7.95 | N | < 0.3 | | 0.7 | 0.86 | 4530 | |
| SSSPG2 (NPDES5) | 6/21/2022 | 0.002 | 7.94 | N | < 0.3 | | < 0.5 | 0.64 | 4900 | |
| SSSPG2 (NPDES5) | 7/5/2022 | 0.001 | 7.59 | N | < 0.3 | | < 0.5 | < 0.5 | 4920 | 0.237 |
| SSSPG2 (NPDES5) | 7/18/2022 | 0.001 | 7.84 | N | | 0.59 | | < 0.5 | 4960 | |
| SSSPG2 (NPDES5) | 7/18/2022 | 0.001 | 7.84 | N | < 0.3 | | 0.63 | < 0.5 | 5120 | |
| SSSPG2 (NPDES5) | 8/2/2022 | 0.0004 | 8.08 | N | < 0.3 | | 0.49 | 0.45 | 5110 | |
| SSSPG2 (NPDES5) | 8/17/2022 | 0.000 | | | | | | | | |
| SSSPG2 (NPDES5) | 9/6/2022 | 0.000 | | | | | | | | |
| SSSPG2 (NPDES5) | 9/22/2022 | 0.000 | | | | | | | | |
| NPDES Limit | Daily Max | Report | 6.5 - 9.0 | Report | - | - | 18.4 | - | - | Report |
| | Monthly Avg. | Varies** | - | - | 1 | - | Report | - | Varies** | Report |
| Yampa Segment 13g Standards - Acute | | - | 6.5 - 9.0 | - | - | 18.4 | - | - | - | 4.738 |
| Yampa Segment 13g Standards - Chronic | | - | - | - | 1 | TM*** | - | - | - | 2.618 |
| Agricultural Use Standards | | - | - | - | - | 20 | - | - | - | 0.2**** |

**Notes**

An NPDES permit renewal application sample was collected on 6/11/2020 for an extended list of paramaters that are not required for the permits standard discharge monitoring requirements. See Table D.12 for the analytical results from this sample.

* Outfall 005 does not have a dissolved selenium or total recoverable selenium monitoring requirement.

** See permit CO0048275 for variable monthly average flow and TDS limits. Note that the TDS limits are only applicable when cattle are present.

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

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

**Bold** Analyte exceeds the NPDES Daily Max limit, Segment 13g aquatic life standard, or Agricultural Use standard

**Bold** Analyte exceeds the NPDES Monthly Average limit

**Table D.3** Fish Creek Yampa Segment 13g NPDES Outfall 006 analytical data for water year 2022.

| Location | Date | Flow N MGD | pH, Field N S.U. | Oil & Grease Y / N | Iron TR MG/L | Selenium* D UG/L | Selenium PD UG/L | Selenium* TR UG/L | TDS, Lab N MG/L | TSS* N MG/L | Manganese* D MG/L |
|---|---|---|---|---|---|---|---|---|---|---|---|
| SSSPG1 (NPDES6) | 10/11/2021 | 0.071 | 7.36 | N | < 0.06 | | 1.45 | 1.41 | 4110 | | |
| SSSPG1 (NPDES6) | 10/27/2021 | 0.069 | 7.38 | N | < 0.06 | | 1.54 | 1.56 | 4110 | | |
| SSSPG1 (NPDES6) | 11/8/2021 | 0.070 | 7.42 | N | < 0.3 | | 1.35 | 1.61 | 3980 | | |
| SSSPG1 (NPDES6) | 11/17/2021 | 0.070 | 7.42 | N | < 0.06 | | 1.6 | 1.45 | 4020 | | |
| SSSPG1 (NPDES6) | 12/1/2021 | 0.063 | 7.5 | N | < 0.06 | | 1.66 | 1.71 | | < 5 | |
| SSSPG1 (NPDES6) | 12/13/2021 | 0.052 | 7.47 | N | < 0.06 | | 1.55 | 1.61 | 4090 | | |
| SSSPG1 (NPDES6) | 1/10/2022 | 0.056 | 7.43 | N | < 0.3 | | 1.64 | 1.62 | 4140 | | |
| SSSPG1 (NPDES6) | 1/26/2022 | 0.055 | 7.47 | N | < 0.3 | | 1.59 | 1.42 | 4130 | | |
| SSSPG1 (NPDES6) | 2/7/2022 | 0.055 | 7.58 | N | < 0.12 | | 1.55 | 1.4 | 3980 | | |
| SSSPG1 (NPDES6) | 2/21/2022 | 0.053 | 7.59 | N | < 0.3 | | 1.65 | 1.93 | 4080 | | |
| SSSPG1 (NPDES6) | 3/2/2022 | **0.060** | 7.59 | N | < 0.3 | | 1.11 | 1.62 | 4050 | | |
| SSSPG1 (NPDES6) | 3/22/2022 | **0.061** | 7.56 | N | < 0.3 | | 1.42 | 1.67 | 4210 | | |
| SSSPG1 (NPDES6) | 4/4/2022 | 0.126 | 7.51 | N | < 0.06 | | 2.31 | 2.69 | 3750 | | |
| SSSPG1 (NPDES6) | 4/18/2022 | 0.139 | 7.08 | N | < 0.12 | | 4.13 | 3.35 | 3750 | | |
| SSSPG1 (NPDES6) | 4/18/2022 | 0.139 | 7.08 | N | | 3.95 | | 3.35 | 3770 | | |
| SSSPG1 (NPDES6) | 4/26/2022 | | | | | 2 | 2.15 | 2.41 | 3990 | 8 | |
| SSSPG1 (NPDES6) | 5/9/2022 | 0.107 | 7.28 | N | < 0.12 | | 4.58 | 5.14 | 3760 | | |
| SSSPG1 (NPDES6) | 5/17/2022 | 0.097 | 7.27 | N | < 0.12 | | 5.26 | 4.65 | 3740 | | |
| SSSPG1 (NPDES6) | 6/6/2022 | 0.077 | 7.22 | N | < 0.12 | | 3.45 | 4.02 | 3720 | | |
| SSSPG1 (NPDES6) | 6/21/2022 | 0.076 | 7.24 | N | < 0.12 | | 2.78 | 2.65 | 3840 | | |
| SSSPG1 (NPDES6) | 7/5/2022 | 0.068 | 7.06 | N | < 0.12 | | 2.19 | 2.29 | 3870 | | |
| SSSPG1 (NPDES6) | 7/18/2022 | 0.061 | 7.22 | N | | 2.1 | | 1.8 | 3810 | | |
| SSSPG1 (NPDES6) | 7/18/2022 | 0.061 | 7.22 | N | < 0.12 | | 2.42 | 1.87 | 3800 | | |
| SSSPG1 (NPDES6) | 8/2/2022 | 0.036 | 7.4 | N | < 0.12 | | 2.2 | 1.58 | 3870 | | |
| SSSPG1 (NPDES6) | 8/17/2022 | 0.036 | 7.48 | N | < 0.12 | | 1.7 | 1.79 | 3640 | | |
| SSSPG1 (NPDES6) | 9/6/2022 | 0.031 | 7.65 | N | < 0.12 | | 1.5 | 1.29 | 3830 | | |
| SSSPG1 (NPDES6) | 9/22/2022 | 0.034 | 7.71 | N | <0.06 | | 1.46 | 1.36 | 3840 | | |
| NPDES Limit | Daily Max | Report | 6.5 - 9.0 | Report | - | - | 18.4 | - | - | - | - |
| | Monthly Avg. | Varies** | - | - | 1 | - | Report | - | 5000** | - | - |
| Yampa Segment 13g Standards - Acute | | - | 6.5 - 9.0 | - | - | 18.4 | - | - | - | - | 4.738 |
| Yampa Segment 13g Standards - Chronic | | - | - | - | 1 | TM*** | - | - | - | - | 2.618 |
| Agricultural Use Standards | | - | - | - | - | 20 | - | - | - | - | 0.2**** |

**Notes**

An NPDES permit renewal application sample was collected on 6/11/2020 for an extended list of paramaters that are not required for the permits standard discharge monitoring requirements. See Table D.12 for the analytical results from this sample.

* Outfall 006 does not have a dissolved selenium, total recoverable selenium, TSS, or mangenese monitoring requirement

** TDS limit only applies when cattle are present.

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

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

**Bold** Analyte exceeds the NPDES Daily Max limit, Segment 13g aquatic life standard, or Agricultural Use standard

**Bold** Analyte exceeds the NPDES Monthly Average limit

**Table D.4** Fish Creek Yampa Segment 13g NPDES Monitoring Point Pond 004 analytical data for water year 2022.

| Location | Date | Flow* N MGD | pH, Field* N S.U. | Selenium* D UG/L | Selenium* PD UG/L | Selenium* TR UG/L | TDS, Lab N MG/L |
|---|---|---|---|---|---|---|---|
| NPDES4 | 4/18/2022 | 0.180 | 7.95 | 1.23 | | 0.98 | 2830 |
| NPDES4 | 4/26/2022 | | | 1.69 | 1.83 | 2.29 | 3420 |
| NPDES4 | 7/18/2022 | 0.060 | 8.23 | 1.25 | | 1.09 | 4000 |
| NPDES4 | 8/2/2022 | | | | | | 4230 |
| NPDES4 | 8/17/2022 | | | | | | 4030 |
| NPDES4 | 9/6/2022 | 0.030 | 8.62 | | | | 4200 |
| NPDES4 | 9/22/2022 | 0.033 | 8.5 | | | | 4760 |
| NPDES Limit | Daily Max | - | - | - | | - | - |
| | Monthly Avg. | - | - | - | | - | 5000** |
| Yampa Segment 13g Standards - Acute | | - | 6.5 - 9.0 | 18.4 | | - | - |
| Yampa Segment 13g Standards - Chronic | | - | - | TM*** | | - | - |
| Agricultural Use Standards | | - | - | 20 | | - | - |

**Notes**

* Outfall 004 does not have a flow, pH, dissolved selenium, potentially dissolved selenium, or total recoverable selenium monitoring requirement Samples only required to be collected when cattle are present from August through October

** TDS monthly average limit only applicable from August through October when calttle are present.

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

**Bold** Analyte exceeds the NPDES Daily Max limit, Segment 13g aquatic life standard, or Agricultural Use standard

**Bold** Analyte exceeds the NPDES Monthly Average limit

**Table D.5** Upper Grassy Creek Yampa Segment 13i stream point SSLG5 analytical data for water year 2022.

| Location | Date | Flow N GPM | 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SSLG5 | 4/18/2022 | 3.5 | 839 | 8.31 | 4.7 | < 0.06 | 0.343 | **3.89** | | | | | | |
| SSLG5 | 4/18/2022 | 3.5 | 839 | 8.31 | 4.7 | | | **4.19** | 0.00623 | **< 0.2** | < 0.05 | 0.725 | < 0.01 | 2.25 |
| SSLG5 | 6/21/2022 | 0 | | | | | | | | | | | | |
| SSLG5 | 7/18/2022 | 0 | | | | | | | | | | | | |
| SSLG5 | 9/6/2022 | 0 | | | | | | | | | | | | |
| Yampa Segment 13i Standards - Acute | | - | - | 6.5 - 9.0 | - | - | - | - | 4.738 | 0.01*** | 0.5 | 100 | 0.05 | 18.4 |
| Yampa Segment 13i Standards - Chronic | | - | - | - | - | - | - | 1 | 2.618 | - | - | - | - | 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 |
|---|---|---|---|---|---|---|---|
| SSLG5 | 4/18/2022 | | | | | 604 | 19.0 |
| SSLG5 | 4/18/2022 | 1.9 | 1.89 | 236 | **< 0.02** | 588 | 33.0 |
| SSLG5 | 6/21/2022 | | | | | | |
| SSLG5 | 7/18/2022 | | | | | | |
| SSLG5 | 9/6/2022 | | | | | | |
| Yampa Segment 13i Standards - Acute | | - | - | - | 0.002*** | - | - |
| Yampa Segment 13i Standards - Chronic | | - | - | - | - | - | - |
| Agricultural Use Standards | | - | - | - | - | - | - |

**Notes**

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

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

*** The standard is an order of magnitude less than the laboratories detection limit.

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

**Table D.6** Upper Grassy Creek Yampa Segment 13i stream point YSGF5 analytical data for water year 2022.

| Location | Date | Flow N GPM | 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 | 4/18/2022 | 768 | 1437 | 8.06 | 12 | < 0.06 | 0.238 | 0.964 | | | | | | |
| YSGF5 | 4/18/2022 | 768 | 1437 | 8.06 | 12 | | | 0.943 | 0.102 | **< 0.2** | < 0.05 | < 0.02 | < 0.01 | 1.78 |
| YSGF5 | 6/21/2022 | 12.4 | 1653 | 8.18 | 10.6 | | | 1.000 | 0.461 | **< 0.2** | < 0.05 | < 0.02 | < 0.01 | 0.26 |
| YSGF5 | 7/18/2022 | 8.3 | 1794 | 8.27 | 24.3 | 0.077 | 0.419 | 0.711 | | | | | | |
| YSGF5 | 9/6/2022 | 0 | | | | | | | | | | | | |
| Yampa Segment 13i Standards - Acute | | - | - | 6.5 - 9.0 | - | - | - | - | 4.738 | 0.01*** | 0.5 | 100 | 0.05 | 18.4 |
| Yampa Segment 13i Standards - Chronic | | - | - | - | - | - | - | 1 | 2.618 | - | - | - | - | 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 | 4/18/2022 | | | | | 1090 | 7.0 |
| YSGF5 | 4/18/2022 | 2.08 | 1.92 | 633 | **< 0.02** | 1080 | 14.0 |
| YSGF5 | 6/21/2022 | 0.29 | 0.3 | 669 | **< 0.02** | 1280 | 20.0 |
| YSGF5 | 7/18/2022 | | | | | 1290 | 22.0 |
| YSGF5 | 9/6/2022 | | | | | | |
| Yampa Segment 13i Standards - Acute | | - | - | - | 0.002*** | - | - |
| Yampa Segment 13i Standards - Chronic | | - | - | - | - | - | - |
| Agricultural Use Standards | | - | - | - | - | - | - |

**Notes**

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

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

*** The standard is an order of magnitude less than the laboratories detection limit.

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

**Table D.7** Upper Grassy Creek Yampa Segment 13i stream point SSG1 analytical data for water year 2022.

| Location | Date | Flow N GPM | 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SSG1 | 4/18/2022 | 221 | 1092 | 8.22 | 4.4 | < 0.06 | 0.272 | **1.56** | | | | | | |
| SSG1 | 4/18/2022 | 221 | 1092 | 8.22 | 4.4 | | | **1.54** | 0.0345 | **< 0.2** | < 0.05 | 0.111 | < 0.01 | 2.02 |
| SSG1 | 6/21/2022 | 0 | | | | | | | | | | | | |
| SSG1 | 7/18/2022 | 0 | | | | | | | | | | | | |
| SSG1 | 9/6/2022 | 0 | | | | | | | | | | | | |
| Yampa Segment 13i Standards - Acute | | - | - | 6.5 - 9.0 | - | - | - | - | 4.738 | 0.01*** | 0.5 | 100 | 0.05 | 18.4 |
| Yampa Segment 13i Standards - Chronic | | - | - | - | - | - | - | 1 | 2.618 | - | - | - | - | 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 |
|---|---|---|---|---|---|---|---|
| SSG1 | 4/18/2022 | | | | | 736 | 28.0 |
| SSG1 | 4/18/2022 | 1.91 | 1.88 | 368 | **< 0.02** | 720 | 28.0 |
| SSG1 | 6/21/2022 | | | | | | |
| SSG1 | 7/18/2022 | | | | | | |
| SSG1 | 9/6/2022 | | | | | | |
| Yampa Segment 13i Standards - Acute | | - | - | - | 0.002*** | - | - |
| Yampa Segment 13i Standards - Chronic | | - | - | - | - | - | - |
| Agricultural Use Standards | | - | - | - | - | - | - |

**Notes**

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

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

*** The standard is an order of magnitude less than the laboratories detection limit.

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

**Table D.8** Upper Grassy Creek Yampa Segment 13i stream point SSG2 analytical data for water year 2022.

| Location | Date | Flow N GPM | 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SSG2 | 4/18/2022 | 1080 | 2314 | 8.04 | 12.9 | | | **4.03** | 0.0555 | **< 0.2** | < 0.05 | 0.063 | < 0.01 | 1.82 |
| SSG2 | 4/18/2022 | 1080 | 2314 | 8.04 | 12.9 | < 0.06 | 0.370 | **1.48** | | | | | | 1.86 |
| SSG2 | 4/26/2022 | | | | | | | | | | | | | 1.32 |
| SSG2 | 6/21/2022 | 23.7 | 4020 | 7.86 | 19.1 | | | 0.250 | 0.0422 | **< 0.2** | < 0.05 | < 0.02 | < 0.01 | 1.04 |
| SSG2 | 7/18/2022 | 12.6 | 3611 | 8.25 | 25.6 | < 0.12 | 0.232 | 0.424 | | | | | | 0.73 |
| SSG2 | 9/6/2022 | 0 | | | | | | | | | | | | |
| Yampa Segment 13i Standards - Acute | | - | - | 6.5 - 9.0 | - | - | - | - | 4.738 | 0.01*** | 0.5 | 100 | 0.05 | 18.4 |
| Yampa Segment 13i Standards - Chronic | | - | - | - | - | - | - | 1 | 2.618 | - | - | - | - | 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 |
|---|---|---|---|---|---|---|---|
| SSG2 | 4/18/2022 | 1.7 | 1.53 | 1110 | **< 0.02** | 2020 | 37.0 |
| SSG2 | 4/18/2022 | | 1.65 | 1130 | | 1980 | 54.0 |
| SSG2 | 4/26/2022 | 1.46 | 166 | 2040 | | 2680 | 10.0 |
| SSG2 | 6/21/2022 | 0.75 | 1.01 | 2340 | **< 0.02** | 3850 | < 5 |
| SSG2 | 7/18/2022 | | 0.72 | 2150 | | 3620 | 22.0 |
| SSG2 | 9/6/2022 | | | | | | |
| Yampa Segment 13i Standards - Acute | | - | - | - | 0.002*** | - | - |
| Yampa Segment 13i Standards - Chronic | | - | - | - | - | - | - |
| Agricultural Use Standards | | - | - | - | - | - | - |

**Notes**

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

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

*** The standard is an order of magnitude less than the laboratories detection limit.

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

**Table D.9** Lower Grassy Creek Yampa Segment 13j stream point YSG5 analytical data for water year 2022.

| Location | Date | Flow N GPM | SpC, Field N UMHOS/CM | pH, Field N S.U. | Temp., Field N C | Arsenic TR UG/L | Alkalinity, Bicarbonate N MG/L | Boron D UG/L | Cadmium D UG/L | Calcium D MG/L | Carbonate as CO3 N MG/L | Chloride N MG/L | Chromium D UG/L | Copper D UG/L |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| YSG5 | 4/18/2022 | 817 | 2237 | 8.18 | 10.3 | | | | | | | | | |
| YSG5 | 4/18/2022 | 1354 | 2237 | 8.18 | 10.3 | 1.12 | 237 | 135 | < 0.05 | 181 | < 2 | 16.3 | < 0.5 | 1.8 |
| YSG5 | 4/26/2022 | | | | | | | | | | | | | |
| YSG5 | 6/21/2022 | 12.4 | 398 | 8.53 | 15.3 | 1.41 | 359 | 235 | < 0.05 | 368 | < 2 | 23.6 | < 0.5 | < 0.8 |
| YSG5 | 7/18/2022 | 1.1 | 3676 | 8.02 | 21.9 | | | | | | | | | |
| YSG5 | 9/6/2022 | 0 | | | | | | | | | | | | |
| Yampa Segment 13j Standards - Acute | | - | - | 6.5 - 9.0 | - | 340 | - | 750 | 9.2 | - | - | - | 1773 | 50 |
| Yampa Segment 13j Standards - Chronic | | - | - | - | - | 7.6 | - | | 1.2 | - | - | - | 231 | 29 |
| Agricultural Use Standards | | - | - | - | - | 100 | - | 750 | 10 | - | - | - | 100 | 200 |

| Location | Date | Hardness N MG/L | Iron TR MG/L | Lead D UG/L | Magnesium D MG/L | Manganese D MG/L | Mercury T UG/L | Nickel D UG/L | Ammonia N. N MG/L | Nitrate N. N MG/L | Nitrite N. N MG/L | Potassium D MG/L | Selenium D UG/L | Selenium TR UG/L |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| YSG5 | 4/18/2022 | | | | | | | | | | | | 8.27 | 8.65 |
| YSG5 | 4/18/2022 | 1180 | **1.06** | < 0.1 | 178 | 0.072 | **< 0.2** | < 8 | < 0.05 | 1.12 | 0.013 | 6.26 | 8.81 | 8.48 |
| YSG5 | 4/26/2022 | | | | | | | | | | | | 6.19 | 7.02 |
| YSG5 | 6/21/2022 | 2350 | 0.512 | < 0.1 | 348 | 0.236 | **< 0.2** | < 16 | < 0.05 | <0.02 | < 0.01 | 8.83 | 0.72 | 0.77 |
| YSG5 | 7/18/2022 | | | | | | | | | | | | 0.7 | 0.51 |
| YSG5 | 9/6/2022 | | | | | | | | | | | | | |
| Yampa Segment 13j Standards - Acute | | - | - | 281 | - | 4.738 | 0.01*** | 1513 | 0.5 | 100 | 0.05 | - | 18.4 | - |
| Yampa Segment 13j Standards - Chronic | | - | 1 | 11 | - | 2.618 | - | 168 | - | - | - | - | TM* | - |
| Agricultural Use Standards | | - | - | 100 | - | 0.2** | - | 200 | - | 100 | 10 | - | 20 | - |

| Location | Date | Silver D UG/L | Sodium D MG/L | SAR N RATIO | Sulfates N MG/L | Sulfide N MG/L | Zinc D MG/L | Cation / Anion Balance N % | TDS, Lab N MG/L | TDS Calc. N MG/L | TSS N MG/L |
|---|---|---|---|---|---|---|---|---|---|---|---|
| YSG5 | 4/18/2022 | | | | 1120 | | | | 1860 | | |
| YSG5 | 4/18/2022 | < 0.1 | 135 | 1.7 | 1110 | **< 0.02** | < 0.02 | 3.4 | 1910 | 1750 | 20.0 |
| YSG5 | 4/26/2022 | | | | 2030 | | | | 2660 | | 8.0 |
| YSG5 | 6/21/2022 | < 0.1 | 140 | 1.3 | 2380 | **< 0.02** | < 0.04 | -3.6 | 3690 | 3450 | 6.0 |
| YSG5 | 7/18/2022 | | | | 2130 | | | | 3650 | | |
| YSG5 | 9/6/2022 | | | | | | | | | | |
| Yampa Segment 13j Standards - Acute | | 22 | - | - | - | 0.002*** | 0.565 | - | - | - | - |
| Yampa Segment 13j Standards - Chronic | | 3.5 | - | - | - | - | 0.428 | - | - | - | - |
| Agricultural Use Standards | | - | - | - | - | - | 2 | - | - | - | - |

**Notes**

* 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 standard is an order of magnitude less than the laboratories detection limit.

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

**Table D.10.** Upper Grassy Creek Segment 13i NPDES Outfall 002 analytical data for water year 2022.

| Location | Date | Flow N MGD | pH, Field N S.U. | Oil & Grease Y / N | Iron* D MG/L | Iron* PD MG/L | Iron TR MG/L | Selenium* D UG/L | Selenium PD UG/L | Selenium* TR UG/L | TDS, Lab N MG/L | TSS N MG/L | Copper PD UG/L |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NPDES2 | 10/11/2021 | 0.014 | 7.91 | N | | | 0.115 | | 0.45 | 0.57 | 4450 | 9 | < 10 |
| NPDES2 | 10/27/2021 | 0.034 | 7.76 | N | | | | | 0.38 | 0.36 | | 8 | |
| NPDES2 | 11/8/2021 | 0.069 | 8.06 | N | | | 0.099 | | 0.5 | 0.58 | | 5 | |
| NPDES2 | 11/17/2021 | 0.064 | 8.09 | N | | | | | 0.71 | 0.44 | | < 5 | |
| NPDES2 | 12/1/2021 | 0.061 | 8.24 | N | | | 0.094 | | 0.55 | 0.73 | | < 5 | |
| NPDES2 | 12/13/2021 | 0.050 | 8.2 | N | | | | | 0.58 | 0.76 | | < 5 | |
| NPDES2 | 1/10/2022 | 0.046 | 8.14 | N | | | < 0.3 | | 0.58 | 0.72 | 4480 | 6 | < 50 |
| NPDES2 | 1/26/2022 | 0.044 | 8.11 | N | | | | | 0.62 | 0.76 | | 14 | |
| NPDES2 | 2/7/2022 | 0.045 | 8.2 | N | | | 0.128 | | 0.65 | 0.52 | | 5 | |
| NPDES2 | 2/21/2022 | 0.044 | 8.15 | N | | | | | 0.67 | 0.66 | | 7 | |
| NPDES2 | 3/2/2022 | 0.046 | 8.16 | N | | | | | 0.56 | 0.58 | | 11 | |
| NPDES2 | 3/22/2022 | 0.047 | 7.97 | N | | | 0.147 | | 0.72 | 0.78 | | 8 | |
| NPDES2 | 4/4/2022 | 0.344 | 8.19 | N | | | | | 1.79 | 1.84 | 1800 | 5 | < 10 |
| NPDES2 | 4/18/2022 | 0.467 | 8.13 | N | | | 0.072 | | 1.17 | 0.94 | | 5 | |
| NPDES2 | 4/18/2022 | 0.467 | 8.13 | N | < 0.12 | < 0.12 | < 0.12 | 1.26 | | 1.07 | 3680 | < 5 | |
| NPDES2 | 5/9/2022 | 0.409 | 8.29 | N | | | < 0.06 | | 1.14 | 1.18 | | < 5 | |
| NPDES2 | 5/17/2022 | 0.272 | 8.25 | N | | | | | 1.01 | 1 | | < 5 | |
| NPDES2 | 6/6/2022 | 0.225 | 8.2 | N | | | < 0.06 | | 1.03 | 1.02 | | < 5 | |
| NPDES2 | 6/21/2022 | 0.219 | 7.92 | N | | | | | 0.84 | 0.91 | | 5 | |
| NPDES2 | 7/5/2022 | 0.077 | 7.96 | N | | | < 0.3 | | < 0.5 | 0.63 | 4000 | < 5 | < 4 |
| NPDES2 | 7/18/2022 | 0.061 | 8.16 | N | < 0.3 | < 0.3 | 0.11 | 0.79 | | 0.86 | 4020 | 9 | |
| NPDES2 | 7/18/2022 | 0.061 | 8.16 | N | | | | | 1.02 | 0.84 | | 7 | |
| NPDES2 | 8/2/2022 | 0.056 | 8.31 | N | | | 0.344 | | 0.87 | 0.7 | | 11 | |
| NPDES2 | 8/17/2022 | 0.038 | 8.4 | N | | | | | 0.62 | 0.62 | | 41 | |
| NPDES2 | 9/6/2022 | 0.028 | 8.45 | N | | | 0.796 | | 0.69 | 0.58 | | 24 | |
| NPDES2 | 9/22/2022 | 0.031 | 8.49 | N | | | | | 0.5 | 0.7 | | 30 | |
| NPDES Limit | Daily Max | Report | 6.5 - 9.0 | Report | - | - | 6 | - | 18.4 | - | Report | 70 | Report |
| | Monthly Avg. | Varies** | - | - | - | - | 1 | - | Report | - | Report | 35 | Report |
| Yampa Segment 13i Standards - Acute | | - | 6.5 - 9.0 | - | - | - | - | 18.4 | - | - | - | - | 50 |
| Yampa Segment 13i Standards - Chronic | | - | - | - | - | - | 1 | TM*** | - | - | - | - | 29 |
| Agricultural Use Standards | | - | - | - | - | - | - | 20 | - | - | - | - | 200 |

**Notes**

* Outfall 002 does not have a dissolved iron, potentially dissolved iron, dissolved selenium, or total recoverable selenium monitoring requirement

** See permit CO0048275 for variable monthly average flow limit. Note that the flow limits were revised effective July 1 2020

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

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

**Bold** Analyte exceeds the NPDES Monthly Average limit

**Table D.11.** Upper Grassy Creek Segment 13i NPDES Outfall 003 analytical data for water year 2022.

| Location | Date | Flow N MGD | pH, Field N S.U. | Oil & Grease Y / N | Iron* D MG/L | Iron* PD MG/L | Iron TR MG/L | Selenium* D UG/L | Selenium PD UG/L | Selenium* TR UG/L | TDS, Lab* N MG/L | TSS N MG/L | Manganese PD MG/L |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NPDES3 | 10/11/2021 | 0.000 | | | | | | | | | | | |
| NPDES3 | 10/27/2021 | 0.000 | | | | | | | | | | | |
| NPDES3 | 11/8/2021 | 0.001 | 8.2 | N | | | 0.161 | | 0.52 | 0.47 | | < 5 | |
| NPDES3 | 11/17/2021 | 0.002 | 8.34 | N | | | 0.086 | | 0.44 | 0.38 | | < 5 | |
| NPDES3 | 12/1/2021 | 0.001 | 8.36 | N | | | 0.125 | | 0.37 | 0.51 | | 6 | |
| NPDES3 | 12/13/2021 | 0.001 | 8.27 | N | | | 0.069 | | 0.4 | 0.34 | | < 5 | |
| NPDES3 | 1/10/2022 | 0.000 | | | | | | | | | | | |
| NPDES3 | 1/26/2022 | 0.000 | | | | | | | | | | | |
| NPDES3 | 2/7/2022 | 0.000 | | | | | | | | | | | |
| NPDES3 | 2/21/2022 | 0.000 | | | | | | | | | | | |
| NPDES3 | 3/2/2022 | 0.000 | | | | | | | | | | | |
| NPDES3 | 3/22/2022 | 0.001 | 7.83 | N | | | 0.711 | | 0.54 | 0.56 | | 13 | |
| NPDES3 | 4/4/2022 | 0.026 | 8.13 | N | | | 0.231 | | 0.58 | 0.62 | | < 5 | 0.399 |
| NPDES3 | 4/18/2022 | 0.036 | 8.37 | N | | | 0.194 | | 1.31 | 1.21 | | 6 | |
| NPDES3 | 4/18/2022 | 0.036 | 8.37 | N | < 0.06 | 0.119 | 0.196 | 1.39 | | 1.12 | 1790 | 12 | |
| NPDES3 | 5/9/2022 | 0.036 | 8.12 | N | | | 0.168 | | 2.06 | 1.97 | | < 5 | |
| NPDES3 | 5/17/2022 | 0.025 | 8.23 | N | | | 0.132 | | 2.06 | 2.24 | | 6 | |
| NPDES3 | 6/6/2022 | 0.004 | 7.76 | N | | | 0.288 | | 1.34 | 1.38 | | 6 | |
| NPDES3 | 6/21/2022 | 0.004 | 7.84 | N | | | 0.378 | | 0.8 | 0.98 | | 14 | |
| NPDES3 | 7/5/2022 | 0.002 | 8.11 | N | | | 0.359 | | 0.87 | 0.87 | | 16 | 0.521 |
| NPDES3 | 7/18/2022 | 0.001 | 8.18 | N | | | 0.457 | | 0.99 | 1.24 | | 31 | |
| NPDES3 | 7/18/2022 | 0.001 | 8.18 | N | < 0.06 | 0.19 | 0.545 | 1.02 | | 1.02 | 1970 | 41 | |
| NPDES3 | 8/2/2022 | 0.001 | 8.29 | N | | | 0.529 | | 0.85 | 0.85 | | 16 | |
| NPDES3 | 8/17/2022 | 0.000 | | | | | | | | | | | |
| NPDES3 | 9/6/2022 | 0.000 | | | | | | | | | | | |
| NPDES3 | 9/22/2022 | 0.000 | | | | | | | | | | | |
| NPDES Limit | Daily Max | Report | 6.5 - 9.0 | Report | - | - | 6 | - | 18.4 | - | - | 70 | Report |
| | Monthly Avg. | 0.1195 | - | - | - | - | 1 | - | Report | - | - | 35 | Report |
| Yampa Segment 13i Standards - Acute | | - | 6.5 - 9.0 | - | - | - | - | 18.4 | - | - | - | - | 4.738 |
| Yampa Segment 13i Standards - Chronic | | - | - | - | - | - | 1 | TM** | - | - | - | - | 2.618 |
| Agricultural Use Standards | | - | - | - | - | - | - | 20 | - | - | - | - | 0.2*** |

**Notes**

* Outfall 003 does not have a dissolved iron, potentially dissolved iron, dissolved selenium, total recoverable selenium, or TDS monitoring requirement

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

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

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

**Bold** Analyte exceeds the NPDES Monthly Average limit

**Table D.12.** Upper Grassy Creek Segment 13i NPDES Outfall 007 analytical data for water year 2022.

| Location | Date | Flow N GPM | pH, Field N S.U. | Oil & Grease Y / N | Iron TR MG/L | Selenium PD UG/L | Selenium* TR UG/L | TSS N MG/L | Manganese PD MG/L |
|---|---|---|---|---|---|---|---|---|---|
| NPDES7 | 10/11/2021 | 0.000 | | | | | | | |
| NPDES7 | 10/27/2021 | 0.000 | | | | | | | |
| NPDES7 | 11/8/2021 | 0.000 | | | | | | | |
| NPDES7 | 11/17/2021 | 0.000 | | | | | | | |
| NPDES7 | 12/1/2021 | 0.000 | | | | | | | |
| NPDES7 | 12/13/2021 | 0.000 | | | | | | | |
| NPDES7 | 1/10/2022 | 0.000 | | | | | | | |
| NPDES7 | 1/26/2022 | 0.000 | | | | | | | |
| NPDES7 | 2/7/2022 | 0.000 | | | | | | | |
| NPDES7 | 2/21/2022 | 0.000 | | | | | | | |
| NPDES7 | 3/2/2022 | 0.000 | | | | | | | |
| NPDES7 | 3/22/2022 | 0.000 | | | | | | | |
| NPDES7 | 4/4/2022 | 0.008 | 8.21 | N | < 0.06 | 3.34 | 3.26 | < 5 | < 0.01 |
| NPDES7 | 4/18/2022 | 0.004 | 7.91 | N | < 0.06 | 1.57 | 1.47 | < 5 | |
| NPDES7 | 5/9/2022 | 0.003 | 7.96 | N | < 0.06 | 0.45 | 0.54 | < 5 | |
| NPDES7 | 5/17/2022 | 0.000 | | | | | | | |
| NPDES7 | 6/6/2022 | 0.000 | | | | | | | |
| NPDES7 | 6/21/2022 | 0.000 | | | | | | | |
| NPDES7 | 7/5/2022 | 0.000 | | | | | | | |
| NPDES7 | 7/18/2022 | 0.000 | | | | | | | |
| NPDES7 | 8/2/2022 | 0.000 | | | | | | | |
| NPDES7 | 8/17/2022 | 0.000 | | | | | | | |
| NPDES7 | 9/6/2022 | 0.000 | | | | | | | |
| NPDES7 | 9/22/2022 | 0.000 | | | | | | | |
| NPDES Limit | Daily Max | Report | 6.5 - 9.0 | Report | 6 | Report | - | 70 | Report |
| | Monthly Avg. | Report | - | - | 1 | Report | - | 35 | Report |
| Yampa Segment 13i Standards - Acute | | - | 6.5 - 9.0 | - | - | 18.4 | - | - | 4.738 |
| Yampa Segment 13i Standards - Chronic | | - | - | - | 1 | TM** | - | - | 2.618 |
| Agricultural Use Standards | | - | - | - | - | 20 | - | - | 0.2*** |

**Notes**

* Outfall 007 does not have a total recoverable selenium monitoring requirement

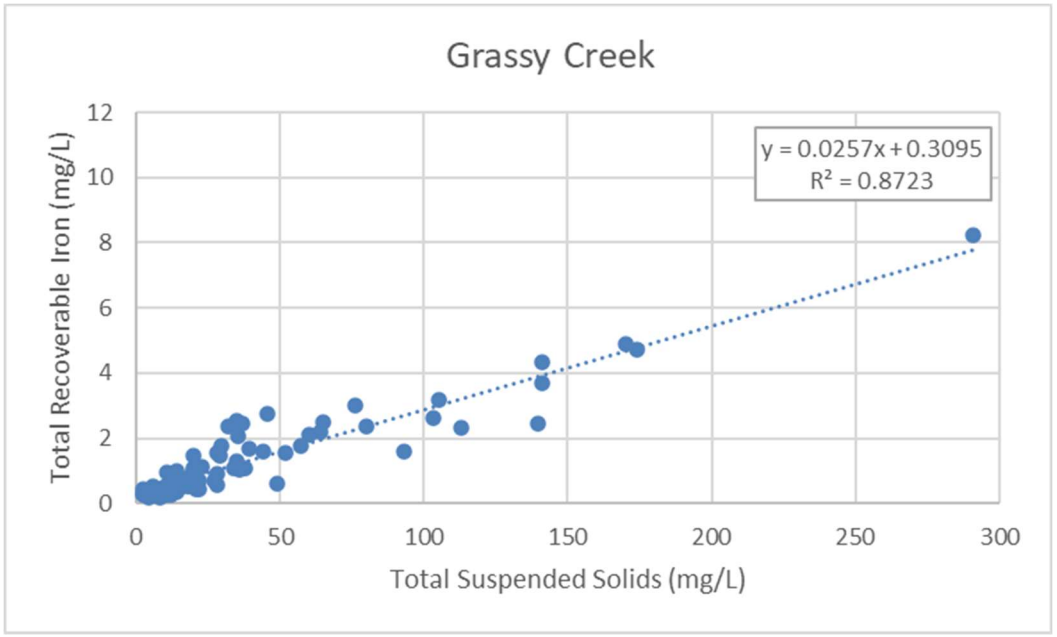
** A current condtions temporary modification is in place for the Segment 13i chronic selenium standards.

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

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

**Bold** Analyte exceeds the NPDES Monthly Average limit

**Figure D.1.** Suspended solids vs total recoverable iron at Grassy Creek stream points YSGF5, SSG1, SSG2 and YSG5 for samples collected from October 1, 2015 through September 30, 2022.



# APPENDIX E

# SPRING WATER QUALITY DATA

**Table E.1.** Analytical data for spoil springs sampled during the 2022 water year.

| Location | Date | Flow N GPM | 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| SSSPG10 | 6/21/2022 | 0 | | | | | | | | | |
| SSSPG3 | 6/22/2022 | 71.4 | 3955 | 7.8 | 15.1 | < 0.3 | 0.154 | < 0.2 | < 0.05 | 3.21 | 0.016 |
| SSSPG4 | 6/22/2022 | 20.3 | 3918 | 7.84 | 12 | < 0.3 | 0.0607 | < 0.2 | < 0.05 | 7.49 | 0.010 |
| SSSPG5 | 6/21/2022 | 73.2 | 4207 | 7.49 | 21.7 | < 0.3 | 0.00519 | < 0.2 | < 0.05 | 0.140 | < 0.01 |
| SSSPG6A | 6/21/2022 | 0 | | | | | | | | | |
| 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 |
|---|---|---|---|---|---|---|---|---|
| SSSPG10 | 6/21/2022 | | | | | | | |
| SSSPG3 | 6/22/2022 | 2.73 | 2.21 | 2.02 | 2670 | < 0.02 | 4210 | 8.0 |
| SSSPG4 | 6/22/2022 | 6.45 | 6.83 | 6.17 | 2710 | < 0.02 | 4280 | 12.0 |
| SSSPG5 | 6/21/2022 | 1.23 | 1.12 | 0.99 | 2520 | < 0.02 | 3930 | 7.0 |
| SSSPG6A | 6/21/2022 | | | | | | | |
| 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