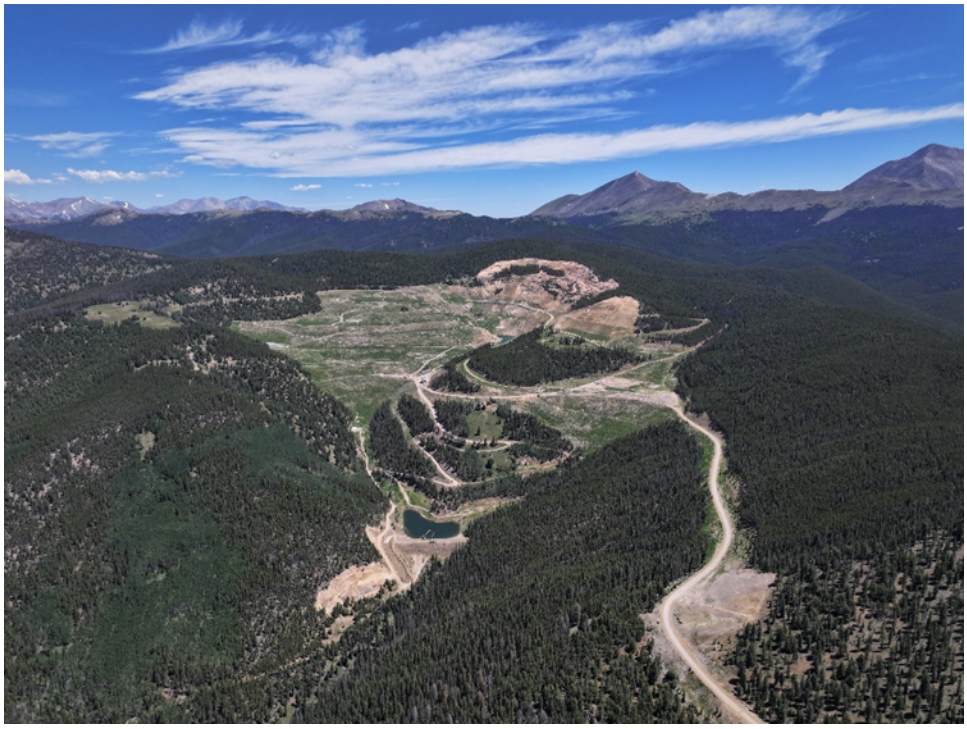
PITCH RECLAMATION PROJECT

COLORADO MINED LAND RECLAMATION BOARD

2024 ANNUAL RECLAMATION REPORT

RECLAMATION PERMIT NUMBER M-1977-004



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April 2025

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EXECUTIVE SUMMARY

Homestake Mining Company of California (HMC) operated the Pitch Uranium Mine (the Site) located in Saguache County, Colorado, from 1979 until 1984. The Site extracted uranium ore and trucked it to their mill in Grants, New Mexico. In 1984, operations were suspended, and the Site was placed into care and maintenance. Site disturbances were incrementally reclaimed and revegetated from 1985 to 1993. In 1993, HMC initiated permanent closure of the Site.

Since 1993, closure and reclamation has included pit wall grade-down and partial backfilling of the North Pit to improve pit wall stability; contouring and revegetation of the approximately 230 acres of disturbed area; construction of a plug in the historical Pinnacle underground mine adit to reduce seepage and improve water quality; monitoring of slope stability in the North Pit and South Mine area; monitoring of the phreatic surface in the Indian Rock Dump (IRD) and Tie Camp Rock Dump (TCRD); construction of surface water controls; dismantling and removal of the Radium Treatment Plant and associated foundation materials and soils that were placed in the Tie Camp Disposal Cell; and dismantling and removal of the sand filter plant that was placed in the sandstone quarry.

HMC submitted a 112d-3 Reclamation Plan amendment to Permit Number (No.) M-1977-004 in June 2019. The amendment package included a comprehensive update of the site reclamation plan and addresses the existing conditions and remaining work to be performed to adequately reclaim and close the Site. The Colorado Division of Reclamation, Mining, and Safety (DRMS) approved the amendment application in a letter dated January 6, 2020.

During 2024, HMC maintained the remaining Site facilities and fulfilled permit- and license-related compliance programs, which included the following tasks:

- Repairing erosion from storm events and seasonal runoff in the head scarp area of the North Pit that was disturbed by a 1980's landslide.
- Stabilization of the hillslope adjacent to and above the Mine Shop including installation of drainages and regrading to stabilize the slope.
- Monitoring of water quality at the Colorado Discharge Permit System (CDPS) permit (No. CO0022756) compliance point Outfall 001A (also known as SW-33) and submittal of monthly and quarterly discharge monitoring reports to the Colorado Department of Public Health and Environment (CDPHE) Water Quality Control Division (WQCD) in accordance with the requirements of the Colorado Discharge Permit System permit, effective January 1, 2010, and extended under timely renewal.
- Inspection and reporting in accordance with the terms and conditions of the Radioactive Materials License (RML) issued by the CDPHE – Hazardous Materials and Waste Management Division (HMWMD) (Permit No. 150-01).
- Monitoring of the drainage, stabilization, and reclamation in the constructed marsh areas near the location of the former Radium Treatment Plant and the drainages upstream from the sediment control pond.
- Monitoring of pit wall slopes on the south and east walls of the North Pit, the east wall of the South Pit Area, and the IRD and TCRD.
- Monitoring of the drainage channel constructed in 2013 between the 10,800 and 10,600 benches on the east wall of the North Pit.
- Monitoring of erosion and drainage repairs on the northwestern side of the IRD above the former-clay and low-grade ore stockpiles.

- Monitoring surface water diversion channels constructed in 2021 and 2022 along TCRD and the North Pit.
- Monitoring of the continued effectiveness of grading on the top three benches and slope face of the TCRD to reduce sedimentation on the benches, facilitate movement of stormwater and snowmelt off the benches, and reduce rill erosion on the dump slope.
- Inspection of cover repair completed in 2011 on the drainage channel on the Tie Camp Low Grade Ore Stockpile/Disposal Cell.
- Monitoring of precipitation at the Porphyry Creek SNOTEL site (701) during Water Year 2024 (monitoring period from October 1, 2023 through September 30, 2024), totaled 38.9 inches of snow water equivalent.
- Monitoring of groundwater levels in monitoring wells within and adjacent to the underground mine workings and monitored springs and seeps potentially influenced by the re-saturation of the underground mine workings.
- Monitoring of groundwater levels in monitoring wells and piezometers in both the IRD and TCRD.
- Continuation of noxious weed control. August 1, 2024.
- Monitoring of monuments and piezometers on the sediment control pond embankment in accordance with the requirements of the Colorado Division of Water Resources.

Best management practices (BMPs) continue to be evaluated to achieve surface water uranium load reduction at the Site to define and establish the Lowest Practical Level water quality standard on Indian Creek.

1. INTRODUCTION

This 2024 Annual Reclamation Report (report) has been prepared to fulfill the Homestake Mining Company of California (HMC) annual reclamation reporting requirements to the Colorado Division of Reclamation, Mining, and Safety (DRMS) for Reclamation Permit Number (No.) M-1977-004 for the Pitch Reclamation Project. The Pitch Reclamation Project is in Township 48 North, Range 6 East, Saguache County, Colorado (Figure 1). It consists of approximately 230 disturbed acres situated at 10,000 to 11,000 feet above mean sea level (amsl) on fee land owned by HMC. Reclamation activities conducted through 2024 at the Pitch Reclamation Project are shown on Figure 2 and photographs of 2024 site activities are presented in Appendix A. This report focuses on reclamation, monitoring, and remediation performed at the Pitch Reclamation Project during the 2024 calendar year. Documentation of reclamation conducted in previous years is provided in previous annual reports.

2. LAND DISTURBED IN 2024

Surface disturbances in 2024 were associated with repairing a hillslope failure near the Mine Shop and drainage maintenance. The work summarized below was approved by DRMS under the Reclamation Plan submitted on June 28, 2019, and approved on January 6, 2020.

The following work resulted in surface disturbances of approximately 5.25 acres of previously disturbed or reclaimed ground:

- Adding drainage channel and French drains to the hillslope adjacent to the Mine Shop and regrading the area to stabilize the slope after failure at the slopes toe was observed following the lining of the North Pit Diversion channel in 2022.

- Stockpiling of soil on the TCRD to facilitate the slope stabilization above the Mine Shop.

The areas associated with uranium load reduction systems may continue to be used in the future. The areas will be reclaimed once the infrastructure, wells, and piezometers/inclinometers are no longer being used as part of the water treatment feasibility evaluation or long-term monitoring program. Areas determined to no longer need uranium load reduction will be reclaimed. Eventual closure and reclamation will include plugging and abandonment of wells, piezometers, and inclinometers in accordance with Rule 16 of the Colorado Water Well Construction Rules. Following removal of piping and engineered structures associated with uranium load reduction BMPs, disturbed ground will be recontoured and revegetated, with grading for drainage, scarifying/harrowing, and fertilizing to be conducted as necessary for proper reclamation.

3. RECLAMATION ACTIVITIES IN 2024

During 2024, reclamation efforts focused on repairing the hillslope failure near the Mine Shop. Additionally, maintenance and regrading of roads to repair storm and seasonal damage and maintain positive drainage to minimize erosion and noxious weed control were completed. This work is described in the following subsections and depicted on Figure 2. Several areas that were not reclaimed in 2024 are also discussed to describe current conditions following previous reclamation activities and to summarize planned activities.

3.1 Drainage and Erosion Control – North Pit and South Mine Area

3.1.1 North Pit

The North Pit landslide in the 1980's created cracks and scarps across approximately 40 acres of the North Pit's East Wall. Earthwork was performed to reconstruct the diversion channel at the 10,500-foot level in the North Pit in 2020. The channel, lined with geosynthetic clay liner (GCL) and rip rap (sandstone from the onsite borrow source area), was reestablished to reduce infiltration into the slope and extended to the north to divert water from upper Indian drainage around the pit lake. This channel was partially washed out by flow from the drainage channel between the 10,600 and 10,800 levels during several significant storm events in the summer of 2024. The channel was repaired in September 2024. Water captured by the channel diverted water to the marsh area at the former Radium Treatment Plant (RTP) location. The same storm events that washed out the upper drainage channel transported sediment down to the marsh area, which required partial repair to preserve a weir which will be reinstalled in 2025. Further drainage improvements are planned for the upper North Pit area in 2025 to prevent similar erosion and vegetation will be established following these improvements to stabilize the ground surface.

An overflow channel was extended behind the Mine Shop in 2022 and the channel up to the 10,500 bench was lined as described above. During installation of the new channel liner, erosion on the adjacent hillslope accelerated after being undercut. During monitoring of the channel in 2023, it was observed that the channel was losing water due to failure of the liner between the 10,500-foot level and the mine shop. This channel and adjacent slope were repaired in 2024. A French drain system was installed on top of bedrock after overburden was excavated. The soil was stockpiled in the Tie Camp area during the drainage improvements and reinstalled, leaving an exposed drainage channel bisecting the improved hillslope that receives flow from the French drain system. The repair area was seeded after earthwork was completed.

3.1.2 South Pit

Earthwork was completed in 2020 to stabilize slope degradation associated with tension cracks in the South Pit. Previous slope creep and cracking was removed and refilled while incorporating drainage features at two benches along the South Pit slope. Earthwork was completed in October 2020. The disturbed areas were reseeded during 2021, and the area has been monitored for erosion since. The 2021 reseeding efforts appear to be successful. Additional seed will be applied, as needed, to ensure vegetative cover remains intact. No significant erosion has been observed since reseeding, and no repairs or regrading have been necessary.

3.2 Drainage and Erosion Control – Indian and Tie Camp Rock Dumps

3.2.1 Tie Camp Rock Dump

In 2012, repair work was completed on the top three benches and dump slope faces between benches of the TCRD to remove sediment buildup that was directing snowmelt and stormwater down the dump face and creating rill erosion. In 2021, surface water diversion controls were installed to channelize water towards the Mine Shop where a plunge pool redirected flow into a culvert to the bottom of the TCRD. The culvert daylights to a concrete channel. During inspections of the channels in 2021, the concrete channel was observed to be losing flow at the seams between channel sections and was repaired in 2022 by

resealing the seams between the sections. A weir was installed in 2023 to monitor flow through the channel. The weir was silted in several times during 2024 and required maintenance to remove the buildup of sediment.

The DRMS inspection in August 2023 noted no problems with the area and that vegetation is becoming established.

3.2.2 Indian Rock Dump

Erosion on the IRD was identified in 2010. Repairs were completed in 2012 that included grading and placement of boulders and riprap in the drainages west of the IRD. The repairs continue to be effective in 2024.

In 2021, flow into the IRD culvert was diverted to a new culvert near the Mine Shop. The former IRD and TCRD culverts were plugged. The outflow points of both culverts have been monitored and no breaches in the plugs have been noted. Regrading of low areas in the IRD was conducted in 2021 to promote surface water flow and reduce ponding and infiltration in these areas. Lodgepole pine seeds were planted around the IRD in 2022.

The DRMS inspection in August 2023 noted no problems with the area and that slopes appeared stable.

3.3 Noxious Weed Control

Noxious weed control was undertaken on isolated occurrences of Canadian thistle (*Cirsium arvense*) and scentless chamomile (*Matricaria prforate*) on the Site. Pest Away has assisted with noxious weed control since 2012, resulting in a large reduction in both noxious weeds. In 2024, Pest Away spot treated roads, reclaimed areas and other site areas by applying 175 gallons of Milestone with Telar XP at 7 ounces per acre, Escort XP w/R-11 Activator at 2 ounces per acre, and Bio 90 at 1 quart/100 gallons.

3.4 Observation of Access Road Revegetation

The Pitch Reclamation Project access road, Forest Road 243.2A, was graded and reseeded in 2016 because of sloughing that occurred in 2015. In 2022, the road width was reduced to 24 feet. Approximately 5 miles of road, averaging 30-40 feet wide, was ripped and reseeded in 2022. Grasses and other vegetation were observed to be growing in the ripped areas in 2024, consistent with observations from the DRMS inspection in August 2023 which noted no problems with the area and that vegetation is becoming established.

3.5 Inspection of Constructed Marsh Areas

In 2024, the constructed marsh area near the location of the former RTP and the drainages above the sediment control pond were inspected. Growth of cattails and sedges were still apparent in the marsh area. Siltation from the storm events that transported sediment down the North Pit Diversion channel did not affect the marsh area given location of the confluence of the channels downgradient of the marsh. Sediments accumulated in the downstream weirs and sediment pond.

3.6 Monitoring of Tie Camp Disposal Cell

Work completed in 2020 on the Tie Camp Disposal Cell was monitored in 2021. The area was used to stockpile soil during regrading of the hillslope adjacent to the Mine Shop in 2024. No rilling or erosion was observed during earthwork operations. No issues were noted in the DRMS inspection completed in August 2023.

4. MONITORING AND ANNUAL REPORTING

Monitoring of slope movement across the Site; collection of water levels in the underground mine workings, sediment control pond embankment, and rock dumps; and sitewide water quality sampling relevant to establishing the LPL for uranium was conducted in 2024.

4.1 Slope Movement Vector Analysis

Survey monuments (monitoring points) have been installed at the Pitch Reclamation Project to monitor surficial slope displacement in the North Pit and South Pit areas. The area east of the North Pit and south of northing 113,500 is referred to as the south wall of the North Pit, and the area east of the Pit Lake and north of northing 113,500 is referred to as the east wall of the North Pit. Monitoring points are also present on the east wall of the South Pit area. Forty-one of the monuments were surveyed during 2024. No monitoring points surveyed reported movement greater than the established movement threshold of 0.5 feet per year.

A detailed discussion of historical and 2024 monitoring point displacement data is presented in the 2024 Annual Inclinometer Monitoring Report in Appendix B.

4.2 Inclinometer Evaluation

Survey monument readings showed no significant movement compared to previous year's readings. Horizontal movement relative to the baseline readings is present with majority of the readings reporting less than 2-inches of cumulative movement, with most movement near surface. The reader used to collect data malfunctioned, causing corruption in much of the data collected in 2024 and will need to be replaced in 2025. Readings from IN-1, IN-2, and I98-2 were unusable, with historical data loss in the remaining inclinometers. A detailed discussion of inclinometer data is presented in the 2024 Annual Inclinometer Monitoring Report included in Appendix B.

4.3 Pinnacle Underground Mine Workings Monitoring

A concrete plug was constructed in the Pinnacle adit in September 1995. Authorization for the placement of the Pinnacle adit plug was requested by HMC in April 1995, and conditional approval was granted by the Colorado Division of Minerals and Geology (now DRMS) as TR-3 in May 1995. The intention of the plug was to seal the Pinnacle adit and allow the underground mine workings and adjacent country rock to resaturate. The resaturation of the underground mine workings was expected to re-establish a geochemically reducing environment and lower the solubility of uranium and radium within the underground mine workings.

The Colorado Division of Minerals and Geology approval required HMC to monitor the effects of resaturation in the underground mine workings for 5 years or until hydrologic conditions stabilized. Components in the Monitoring Plan outlined in TR-3 included continuation of discharge water quality monitoring at SW-33, monitoring of groundwater resaturation levels, annual spring and seep surveys in areas downgradient from the underground mine workings, and monitoring for changes in water quality that could be attributable to resaturation. The stated purpose of the monitoring program is to verify the intended effectiveness of the adit plug. In accordance with the requirements of TR-3, the following types of monitoring were performed in 2024 and are described in the subsections below:

- Survey of springs and seeps
- Groundwater levels in monitoring wells installed in and adjacent to the underground mine workings
- Water quality and flow from the Pinnacle adit at sampling point PP-01
- Discharges from the property at SW-33.

4.3.1 Spring and Seep Monitoring

Spring and seep surveys were conducted to monitor changes in shallow groundwater conditions due to construction of the Pinnacle adit plug. These surveys have been conducted annually since July 1995 and were repeated in 2024. In general, flow from some springs and seeps increased for a brief period after the adit plug installation and have declined to a steady state since the spring of 1997. Small variances noted since 1997 can be attributable to a variety of conditions, including precipitation, depth of snowpack, timing of snowmelt, and the potential for infiltration with respect to frozen ground. The “active” spring and seep locations are shown on Figure 3. Spring and seep flow measurements since monitoring was initiated are presented in Table 1. Typically, the springs flow in the early summer months and then decrease rapidly to a point where there is little to no flow in the fall.

4.3.2 Groundwater Levels

Monitoring wells and piezometers have been installed across the mine for multiple purposes, including water level monitoring and water quality sampling. From approximately 2017 to 2020, wells and piezometers were also used for injection and/or extraction as part of the chemical reagent injection program for uranium load reduction. For the purposes of this report, cased borings installed for water level monitoring that are not known to have been completed with well screens are referred to as piezometers, while monitoring installations completed with well screens for water level and water quality monitoring are referred to as wells.

There are currently 13 wells installed in or near the underground mine workings (P-4 through P-16). The locations of these wells are provided on Figure 3. These wells are used to monitor water levels throughout the underground mine workings area. Some of these wells were also used between 2015 and 2020 to inject reagents (phosphate and tracers) and recirculate water as part of the uranium load reduction BMP infrastructure to further support LPL establishment. The wells are described as follows:

- Wells P-4, P-5, P-11, and P-12 are located within or in immediate hydraulic connection to the underground mine workings. P-4 and P-5 were installed in 1995 prior to installation of the adit plug, whereas P-11 and P-12 were installed in 2015.
- Wells P-7, P-8, P-9, and P-10 are located outside of the underground mine workings, with P-7 located immediately upgradient of the adit plug. P-7 was installed as a replacement for P-6, which was monitored until approximately 1 year after plug grouting/construction. P-8 lies just to the north of the underground mine workings and was also constructed to monitor bedrock water levels upgradient of the Pinnacle adit plug. This is also the closest monitoring well to the Chester Fault Zone. P-8 was converted to a dual-purpose inclinometer in 1999 by installing inclinometer casing inside the well casing. P-10 has not been sampled since 2018 because of a blockage and is no longer monitored for water levels.
- Wells P-13, P-14, P-15, and P-16 are screened outside of, but adjacent to, the 10,300 drift and were installed in 2017 and 2018 as additional uranium load reduction BMP infrastructure.

Water levels in the wells fluctuate seasonally, with the highest levels observed in late May or early June, coinciding with snowmelt (Figure 4a). During phosphate injection events, water levels fluctuated more strongly in response to active water recirculation. Water levels in Figure 4b represent the data obtained during low- and high-flow sampling events (i.e., not collected during active phosphate injection) from 2013 to 2024 to provide additional clarity. Spring and summertime water levels vary from year to year because of the magnitude and timing of snowmelt and heavy summer precipitation events; however, water levels under low-flow or “baseflow” conditions can be used to assess long-term trends. Overall, the baseflow water levels indicate a groundwater gradient to the north/northwest. This gradient is steepest on the southern end of the North Pit, as demonstrated by the decrease in water levels moving from wells P-4/P-11 toward P-7, and further to P-8.

The following additional observations have been noted since the adit plug was installed in 1995:

- Baseflow water levels in well P-7 have stabilized at just under 10,400 feet above mean sea level. This value has not changed substantially since 2002, indicating that water levels behind the Pinnacle adit plug are stable.

- Water levels in wells P-4 and P-5, which are in direct hydraulic connection with the underground mine workings, have been very similar in low flow since 1997. Since the installation of wells P-11 and P-12 in 2015, the water levels in the wells have been comparable to each other and comparable to P-4 and P-5. Wells P-5 and P-12 exhibited higher water levels during summer months during the operation of the phosphate injection systems in 2015 through 2020; water levels in 2021 (without phosphate injections) through 2024 are similar to water levels prior to the initiation of injections in 2017 (Figure 4a).

- Wells in hydraulic connection with the underground mine workings (P-4, P-5, P-11, and P-12) show a stronger sensitivity to seasonal snowmelt (i.e., greater water level rise) compared to wells P-8, P-9, and P-10, suggesting more connection with infiltrating water. Seasonal response in well P-7 is generally greater than that in P-8 and P-9, but less than that observed in P-4, P-5, P-11, and P-12.

- Baseflow water levels in well P-4 have been generally stable since 1997. Monitoring well P-8 has consistently displayed the lowest water level in the mine vicinity, although it has increased since the adit was plugged.

Water level measurements during 2024 are similar to water levels observed in previous years, when injections were not occurring, although the baseflow water levels in some wells are slightly higher the pre-injection (P-7 and P-8). It is not yet known whether this baseflow water level increase is a direct result of the reagent injections and/or a temporary phenomenon.

4.3.3 Pinnacle Adit Flow and Water Quality

The flow rate from the Pinnacle adit at PP-01 has been monitored since November 1993. The flow generally consists of a seasonal pattern of high flows during the short period of spring melt in late May or early June and stable flows of less than 10 gallons per minute throughout the year (Figure 5). The spike in flows observed at PP-01 each spring are a result of snowmelt and runoff, likely from sources originating between the Pinnacle plug and the PP-01 monitoring point. Once the snowmelt is over, the flow rate at PP-01 decreases and stabilizes at baseflow levels. In 2024 Spring flow at PP-01 was the highest observed since the late 90s, which was due to the measurement being collected during peak runoff of snowmelt and not seepage from the adit plug, as is indicated by the low total uranium concentration in the sample collected alongside the flow measurement.

Dissolved radium 226 and total uranium have been monitored at PP-01 since March 1994. After construction of the Pinnacle adit plug in September 1995, both dissolved radium 226 and total uranium concentrations have stabilized at reduced concentrations (Figure 6). Sampling for dissolved radium 226 ceased after 2021 due to the stable conditions observed during the prior 20 years. Total uranium results in 2024 were consistent with these reduced, stabilized concentrations. These observed concentrations in PP-01 (0.0689 to 1.69 mg/L) appear lower than concentrations in the underground mine workings; for comparison, uranium concentrations in monitoring well P-7 upgradient of the adit plug were historically greater than 1 milligram per liter (2016 and earlier; prior to the initiation of phosphate injections, which have reduced uranium concentrations at P-7). This indicates that the seepage reporting at PP-01 represents a mixture of low-concentration surrounding groundwater with minimal adit discharge, confirming that water seepage past the adit plug is minimal.

4.4 Sediment Control Pond

Runoff from snowmelt and precipitation and groundwater discharge primarily flows across the property via the Indian and Tie Camp drainages. In 1980, an approximately 80-foot-high earthen embankment was constructed at the confluence of the Indian and Tie Camp drainages to allow settlement of suspended solids from surface water prior to its release to Indian Creek. The embankment is a jurisdictional structure under the Colorado Division of Water Resources (Permit No. 280110). A Sediment Control Pond Embankment Report is submitted annually to the Colorado Division of Water Resources, providing the results of the embankment-monitoring program. The 2024 Sediment Embankment report is provided in Appendix C.

4.4.1 Embankment Monitoring

The safety and efficiency of the sediment control pond embankment is monitored with a network of surface and subsurface systems. Following construction of the embankment in 1981, five permanent survey monuments and five piezometers were installed to monitor physical movement of the embankment and changes in phreatic surface within the embankment, respectively. In 2000, four additional piezometers were completed in the core of the embankment.

The 2024 monument survey was performed on August 14th and indicated minimal total vertical movement in the embankment. Survey results are within historic levels and lie within the range of survey error. Water level trends measured in the piezometers between 2016 and 2024 are within the expected range. A detailed discussion of piezometer monitoring is included in the 2024 Sediment Control Embankment Report provided in Appendix C.

4.4.2 Sediment Control Pond Silt/Turbidity Curtain Installation

A new silt/turbidity curtain was installed at the sediment control pond in early July 2017 and has been maintained since installation to further control potential suspended solids associated with treatment residuals management (TRM) which was in place until 2022. During dewatering of the pond for the 2020 Sediment Control Pond projects, the silt curtain was temporarily removed. Upon refilling of the sediment control pond, the silt curtain was reinstalled similar to the previous position. The curtain remained in place throughout 2024.

4.5 Rock Dumps

Monitoring and annual reporting associated with the IRD and TCRD are discussed in the following subsections.

4.5.1 Rock Dump Water Levels

Historically, the water levels in rock dump piezometers and newer monitoring wells show little fluctuation in the fall and winter months, with a temporary rise in response to the spring snowmelt or summer rain events. The extent that water levels rise each year depends on the fluctuation in snowpack and summer precipitation and the location of the piezometers within the rock dumps. Historical piezometers were installed to monitor water levels in the deeper portions of the IRD and TCRD that correspond to the former drainages that run along the original valley bottoms. The IRD and TCRD are separated into bench levels corresponding to ground surface elevation. The TCRD was regraded in 1994 and approved in TR #1. It has one piezometer at an elevation of 10,375 feet. Water levels within the rock dumps are presented in Table 2. Figures 7 through 9 show the historical variation of water levels at each location, and Figure 3 depicts the IRD and TCRD well and piezometer locations.

Indian Rock Dump: 10100-10300 Level

- Water levels in this level were subject to the source zone treatment program from 2017 through 2020; however, no areas of surficial instability have been observed from 1996 through 2024.
- Water levels in wells used for extraction during the phosphate injection pilot tests (RD-01, RD-03, and RD-05) fluctuated 2 to 5 feet (Figure 7). RD-02 and RD-04 are wells at the same ground surface elevation and fluctuated approximately 0 to 4 feet. Short-term water level variations between approximately 2015 and 2020 reflect changes during injection activities and appeared to have little influence on the overall subsurface water level. Variation in water level since injections stopped reflect seasonal water level fluctuations.
- Wells RD-06, RD-07, RD-08, RD-09, and 10300R at the 10300 level were used for injection in 2017 and 2018. Water levels in the IC-10300R and RD-09 wells decreased roughly 4 to 7 feet from the spring snowmelt in the spring to low-flow conditions in the fall (Figure 8).

Indian Rock Dump: 10370-10400 Level

- Monitoring well IC10370R intersects the former Indian drainage running along the valley bottom beneath the IRD and exhibits strong response to seasonal snowmelt and drainout (Figure 9). Piezometer IC10360 is also near IC10370R but does not intersect the former Indian drainage. An obstruction approximately 155 feet below the well collar in IC10360 has prevented water levels from being observed at this location.

Indian Rock Dump: 10525-10725 Level

- Piezometers IC10600 and IC10525 are used to monitor subsurface water in this area. IC10600 was measured during June 2024 but an obstruction prevented measurement during the Fall. Water levels during high flow were 10 ft higher during high flow in IC10600IC10525, which is also representative of the 10400-10600 level of the rock dump, was similar to previous years.

Indian Rock Dump: 10600-10650 Level

Piezometers IC10630 and IC10600 monitor subsurface water in this area of the IRD. The 2024 IC10630 water levels during high and low flow were similar to those in previous years.

Indian Rock Dump: 10650-10780 Level

- No piezometers are present in this area. Visual inspection of the area revealed no evidence of settling or slumping of the rock dump material. The drainage channels are functioning as designed.

Indian Rock Dump: 10800 Level

- No piezometers are present in this area. Visual inspection of the area in 2024 revealed no evidence of settling or slumping of the rock dump material, and the drainage channels are functioning as designed. Repairs made in 2012 just above the sericite stockpile continue to minimize erosion in this area, as observed in 2024.

Tie Camp Rock Dump: 10375 Level

- Piezometer TC10375 monitors subsurface water in the TCRD. The water level measured during the 2024 showed water levels 2 to 6 ft lower than in previous years. Reclamation activities have changed the flow in this area to divert water towards IRD.

In 2024, the IRD and TCRD were inspected monthly in accordance with the recommended monitoring program. The inspections and monitoring conducted in 2024 indicate stable conditions for the IRD and TCRD.

4.6 Establishing the Lowest Practical Level for Uranium

Field work in 2024 continued to evaluate best management practices for achieving the lowest practical level for uranium. In 2023, a formal alternative analysis was submitted to the CDPHE WQCD, EPA, and stakeholders (including the Upper Gunnison Parties). A revised version was submitted in 2024. The alternatives analysis includes an updated Site CSM and was prepared to support a DSV package.

4.6.1 Waste Disposal

Uranium load reduction testing in past years has generated waste that was disposed of in 2022 and 2023. The phosphate injection systems and ion exchange (IX) pilot systems remain onsite but did not operate in 2024. These systems may be decommissioned in the future based on the regulatory outcome of the DSV package.

4.6.2 Surface Water Management

No work was conducted in 2024 which altered surface water management strategies. Further work on the North Pit area is planned for 2025 (Section 7).

4.7 Colorado Discharge Permit System Monitoring

Monthly discharge monitoring reports (DMRs), pursuant to CDPS Permit No. CO0022756, were submitted to the CDPHE WQCD throughout 2024. Field and analytical data collected for the DMRs at SW-33 include flow, dissolved radium 226, total radium 226 + radium 228, total uranium, pH, total suspended solids, total dissolved solids, oil and grease, potentially dissolved zinc, and chronic Whole Effluent Toxicity (WET). During 2024, analytical results were below the CDPS permit 30-day average and daily maximum limitations. One WET test failed but subsequent accelerated testing passed. The 2024 DMRs are on file with the WQCD. Compliance conditions with the CDPS permit were maintained during and following the 2024 field activities.

4.8 Radioactive Materials License

A License Renewal Application for Radioactive Materials License (RML) 150-01 to the Colorado Department of Public Health and Environment (CDPHE) Hazardous Materials and Waste Management Division was submitted on March 28, 2023 and was approved on September 27, 2024. The updated RML Amendment 22 is included in Appendix D. HMC is authorized by the RML and associated license amendments to manage the Tie Camp Low-Grade Stockpile and Disposal Cell and the sediment upstream of the sediment control pond embankment within the applicable guidelines. HMC is also authorized to possess, handle, and store natural uranium in water treatment media and residuals collected through the phosphate injection system, ETC, IX, and TRM systems. The 2024 Annual RML Letter Report will be submitted to CDPHE by May 31, 2025, in accordance with RML Condition 15.F. A copy of this report will be provided to DRMS upon request.

5. INSPECTIONS

A DRMS inspection was not conducted during 2024. In 2023, DRMS representative Dustin Czapla conducted the inspection on August 23.

6. SURETY

HMC maintains a reclamation surety performance bond for the Pitch Reclamation Project in the form of a financial guarantee bond with Liberty Mutual Insurance Company. The financial guarantee bond was re-evaluated as part of the Site reclamation plan amendment and increased in 2019 to $24,451,940. A copy of the notification and surety form to DRMS is provided as Appendix E.

7. MONITORING AND RECLAMATION ACTIVITIES PLANNED FOR 2025

HMC submitted a 112d-3 amendment to Permit No. M-1977-004 in June 2019. The amendment package includes a comprehensive update of the Site reclamation plan and addresses the existing conditions and remaining work to be performed to adequately reclaim and close the site. The reclamation plan amendment was approved by DRMS on January 6, 2020.

The following monitoring and reclamation activities are tentatively scheduled or planned for 2025, but will be dependent upon site access:

North Pit Slide Upper Repair

- Install inclinometers in the area that was regraded in 2023.
- Conduct annual surveys of the slope monitoring monuments and inclinometers and conduct maintenance as needed.
- Add drainage channels to the area regraded in 2023 to mitigate erosion.
- Continue to monitor the drainage channels on the east and south walls of the North Pit, the east wall of the South Mine area, and other areas throughout the property, and make improvements as necessary.

Maintenance of the Sediment Pond

- Clean sediment traps in the Indian and Tie Camp drainages above the sediment control pond.
- Inspect and monitor the sediment control pond embankment, including surveying the monuments, inspecting for seepage, removing tree seedlings on the upstream and downstream face of the embankment, monitoring the outlet pipe, cleaning the debris trap above the outlet pipe, and repairing rill erosion as need.
- Monitor the sediment control pond embankment piezometers quarterly or more often if it is necessary to store water above the clay blanket located on the upstream side of the sediment control pond embankment.
- Inspect the piezometers for silt buildup and pressure flush the piezometers as necessary to eliminate buildup of debris and silt.

Underground Mine Workings

- Collect water level readings in the piezometers in and near the underground mine workings.

Revegetation and Weed Control

- Continue noxious weed control management using Milestone with Telar XP and Escort XP w/R-11 Activator.

General Maintenance and Permit Compliance Activities

- Maintain roads for safe travel into and around the Site.
- Excavate localized sediment in sections of the North and South Pit diversions.
- Monitor the Tie Camp Disposal Cell for depressions where water could pond and manage the drainage off and around the cell.
- Monitor revegetation and reseed or fertilize, as necessary.
- Conduct monthly and quarterly monitoring and reporting in accordance with the CDPS permit. Water quality monitoring will continue in 2025.

- Continue to monitor the constructed marsh area located in the drainage area near the former RTP and on the small sediment settling basins constructed upgradient from the sediment control pond, including placement of additional organic material (e.g., peat) and other enhancements to further promote sediment control, as necessary.

Optimization of Source Control and Treatment BMPs

No on-site construction or operation of BMP water treatment/management pilot systems are currently planned for 2025.

TABLES

Table 1
Springs and Seeps Summary of Activity 1995-2023
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Station	Current Designation	Spring 1995	Spring 1996	Spring 1997	Spring 1998	Fall 1998	Spring 1999	Fall 1999	Spring 2000	Fall 2000	Spring 2001	Fall 2001	Spring 2002	Fall 2002	Spring 2003
TC-1	Inactive	*<1	No Flow	*<1	No Flow	*<1	No Flow	N-O	*<1	*<1	No Flow	No Flow	N-O	N-O	N-O
TC-2	Spring	*5	*5	*5	*5	*5	*1	N-O	0.6	*<1	0.8	0.3	No Flow	0.2	1.5
TC-3	Spring	*5	*5	*5	*5	*5	*1	N-O	0.5	*<1	0.8	0.5	No Flow	0.4	3.8
TC-4	Seep	*<1	No Flow	*5	No Flow	*5	No Flow	N-O	1.2	No Flow	0.4	No Flow	No Flow	No Flow	4.3
TC-5	Seep	*<1	No Flow	*5	No Flow	*5	No Flow	N-O	0.5	No Flow	0.4	No Flow	No Flow	No Flow	1.7
TC-6	Inactive	*5	No Flow	No Flow	N-O	N-O	N-O	N-O	N-O	No Flow	No Flow	No Flow	N-O	N-O	N-O
TC-7	Spring	No Flow	*20	No Flow	No Flow	No Flow	No Flow	N-O	No Flow	No Flow	No Flow	No Flow	N-O	N-O	N-O
TC-8	Inactive	No Flow	No Flow	*<1	*<1	*<1	*<1	N-O	*<1	No Flow	No Flow	No Flow	N-O	N-O	N-O
TC-9	Seep	No Flow	No Flow	No Flow	*<1	*<1	0.1	N-O	0.2	No Flow	No Flow	No Flow	No Flow	No Flow	No Flow
TC-10	Spring	First monitored in spring 1999					*1	N-O	1.5	0.9	0.5	0.5	0.4	0.6	1.2
TC-11	Spring	First monitored in spring 2000							*<1	No Flow	No Flow	No Flow	N-O	N-O	N-O
TC-12	Inactive	First monitored in spring 2000							No Flow	No Flow	N-O	N-O	N-O	N-O	N-O
IC-1	Spring	*2	No Flow	No Flow	*<1	No Flow	N-O	N-O	N-O	N-O	No Flow	No Flow	N-O	N-O	N-O
IC-2	Spring	*<1	*<1	*<1	*<1	*<1	0.7	N-O	1.2	No Flow	0.5	No Flow	No Flow	No Flow	2.1
IC-3	Seep	*2	*2	*2-5	*<1	*<1	No Flow	N-O	No Flow	No Flow	No Flow	No Flow	No Flow	No Flow	No Flow
IC-4	Spring	*10	*5	*20	*15	*1	*2.5	N-O	8.6	No Flow	3.8	No Flow	No Flow	No Flow	28.4
IC-5	Seep	No Flow	No Flow	No Flow	*<1	No Flow	No Flow	N-O	*<1	*<1	No Flow	No Flow	N-O	N-O	N-O
IC-6	Seep	*5	No Flow	No Flow	*2	*<1	No Flow	N-O	1.3	No Flow	0.5	no flow	0.5	no flow or dry	0.7
IC-7	Seep	No Flow	No Flow	No Flow	No Flow	No Flow	No Flow	N-O	*<1	*<1	No Flow	No Flow	N-O	N-O	N-O
IC-8	Inactive	3	No Flow	No Flow	*<1	No Flow	No Flow	N-O	*<1	No Flow	No Flow	No Flow	N-O	N-O	N-O

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Station	Current Designation	Spring 1995	Spring 1996	Spring 1997	Spring 1998	Fall 1998	Spring 1999	Fall 1999	Spring 2000	Fall 2000	Spring 2001	Fall 2001	Spring 2002	Fall 2002	Spring 2003
IC-9	Inactive	No Flow	*<1	*<1	*<1	No Flow	No Flow	N-O	*<1	No Flow	No Flow	No Flow	N-O	N-O	N-O
IC-10	Spring	First monitored in spring 2003													16.8
IC-11	Inactive	First monitored in spring 2003													5.2
IC-12	Seep	First monitored in spring 2008													
IC-13	Seep	First observed in Spring 2022													
CF-1	Re-named as CFS and CFS-2	N-O	Variable	Variable	No Flow	*<1	Re-named as CFS and CFS-2								
CF-2		N-O	Variable	Variable	No Flow	*<1	Re-named as CFS and CFS-2								
NP-1	Inactive	First monitored in fall 1998				*<1	No Flow	N-O	No Flow	No Flow	No Flow	No Flow	N-O	N-O	N-O
CFS	Spring	First monitored in fall 1999						1.8	2.6	N-O	2.3	N-O	0.6	0.5	N-O
CFS-2	Spring	First monitored in fall 2002												0.4	N-O
CFS-4	Spring	First monitored in spring 2020													
RD-SEEP	Seep	First monitored in spring 2019													
TC-13	Seep	First monitored in spring 2019													
TC-14	Seep	First observed in Spring 2023													
EWS-01	Spring	First monitored in spring 2019													
TC-16	Seep	First observed in Spring 2024													
TC-15	Seep	First observed in Spring 2024													
TC-18	Seep	First observed in Spring 2024													
TC-19	Seep	First observed in Spring 2024													
CFS-3	Spring	First observed in Spring 2024													

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Station	Current Designation	Spring 1995	Spring 1996	Spring 1997	Spring 1998	Fall 1998	Spring 1999	Fall 1999	Spring 2000	Fall 2000	Spring 2001	Fall 2001	Spring 2002	Fall 2002	Spring 2003
IRD-1	Spring	First observed in Spring 2024													
TC-20	Spring	First observed in Spring 2024													
TC-TRIB-LOW	Spring	First observed in Fall 2023													
TC-TRIB-UP	Spring	First observed in Fall 2023													
TC-TRIB-SOURCE	Spring	First observed in Fall 2023													
IC-DRN	Spring	First observed in Spring 2023													
IC-CULV-SEEP	Seep	First observed in Spring 2024													
PP-01	Spring	First observed in Spring 2023													
TCCDRN	Spring	First observed in Spring 2023													

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Station	Fall 2003	Spring 2004	Fall 2004	Spring 2005	Fall 2005	Spring 2006	Fall 2006	Spring 2007	Fall 2007	Spring 2008	Fall 2008	Spring 2009	Fall 2009	Spring 2010	Fall 2010	Spring 2011
TC-1	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O
TC-2	0.3	0.6	No Flow	Flow observed	No Flow	Flow observed	No Flow	Flow observed	No Flow	Flow observed	No Flow	Flow observed	No Flow	Flow observed	No Flow	Flow observed
TC-3	0.4	0.9	No Flow	Flow observed	No Flow	Flow observed	No Flow	Flow observed	No Flow	Flow observed	No Flow	Flow observed	No Flow	Flow observed	No Flow	Flow observed
TC-4	No Flow	0.4	No Flow	Flow observed	No Flow	Flow observed	No Flow	Flow observed	No Flow	Flow observed	No Flow	Flow observed	No Flow	Flow observed	No Flow	Flow observed
TC-5	No Flow	No Flow	No Flow	Flow observed	No Flow	Flow observed	No Flow	Flow observed	No Flow	Flow observed	No Flow	Flow observed	No Flow	Flow observed	No Flow	Flow observed
TC-6	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O
TC-7	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O
TC-8	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O
TC-9	No Flow	No Flow	No Flow	No Flow	No Flow	No Flow	No Flow	No Flow	No Flow	Flow observed	No Flow	Flow observed	No Flow	Flow observed	No Flow	Flow observed
TC-10	0.6	1.7	0.6	0.9	0.5	0.7	0.5	0.9	0.5	1	0.5	0.9	0.4	0.8	0.5	0.9
TC-11	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O
TC-12	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O
IC-1	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O
IC-2	0.3	0.9	No Flow	Flow observed	No Flow	Flow observed	No Flow	Flow observed	No Flow	Flow observed	No Flow	Flow observed	No Flow	Flow observed	No Flow	Flow observed
IC-3	No Flow	No Flow	No Flow	Flow observed	No Flow	Flow observed	No Flow	Flow observed	No Flow	Flow observed	No Flow	Flow observed	no flow or dry	Flow observed	No Flow	Flow observed
IC-4	No Flow	1.9	No Flow	20.9	No Flow	15.4	No Flow	37.2	0.4	44.8	0.6	25	0.2	20.3	No Flow	40
IC-5	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O
IC-6	No Flow	No Flow	No Flow	No Flow	No Flow	No Flow	No Flow	No Flow	No Flow	No Flow	No Flow	No Flow	No Flow	No Flow	No Flow	No Flow
IC-7	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O
IC-8	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O

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Station	Fall 2003	Spring 2004	Fall 2004	Spring 2005	Fall 2005	Spring 2006	Fall 2006	Spring 2007	Fall 2007	Spring 2008	Fall 2008	Spring 2009	Fall 2009	Spring 2010	Fall 2010	Spring 2011
IC-9	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O
IC-10	4.2	13.4	4.9	14.5	4.1	11.9	5.6	15.3	5.7	18.2	4.4	13.6	5.1	13.2	4.6	17.4
IC-11	No Flow	No Flow	No Flow	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O
IC-12	First monitored in spring 2008									33.3	0.4	14.3	0.3	6.4	No Flow	17.6
IC-13	First observed in Spring 2022															
CF-1	Re-named as CFS and CFS-2															
CF-2	Re-named as CFS and CFS-2															
NP-1	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O
CFS	1.5	3.1	1.7	4.6	1.6	3.4	1.8	2.8	2.5	7.2	3.1	5.7	1.9	5.4	2	5.7
CFS-2	0.7	1.1	0.6	2.1	0.6	1.2	0.9	0.4	0.7	4.4	1.6	2.8	1.3	1.6	0.7	2.7
CFS-4	First monitored in spring 2020															
RD-SEEP	First monitored in spring 2019															
TC-13	First monitored in spring 2019															
TC-14	First observed in Spring 2023															
EWS-01	First monitored in spring 2019															
TC-16	First observed in Spring 2024															
TC-15	First observed in Spring 2024															
TC-18	First observed in Spring 2024															
TC-19	First observed in Spring 2024															
CFS-3	First observed in Spring 2024															

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Station	Fall 2003	Spring 2004	Fall 2004	Spring 2005	Fall 2005	Spring 2006	Fall 2006	Spring 2007	Fall 2007	Spring 2008	Fall 2008	Spring 2009	Fall 2009	Spring 2010	Fall 2010	Spring 2011
IRD-1	First observed in Spring 2024															
TC-20	First observed in Spring 2024															
TC-TRIB-LOW	First observed in Fall 2023															
TC-TRIB-UP	First observed in Fall 2023															
TC-TRIB-SOURCE	First observed in Fall 2023															
IC-DRN	First observed in Spring 2023															
IC-CULV-SEEP	First observed in Spring 2024															
PP-01	First observed in Spring 2023															
TCCDRN	First observed in Spring 2023															

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Station	Fall 2011	Spring 2012	Fall 2012	Spring 2013	Fall 2013	Spring 2014	Fall 2014	Spring 2015	Fall 2015	Spring 2016	Fall 2016	Spring 2017	Fall 2017	Spring 2018	Fall 2018	Spring 2019
TC-1	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O
TC-2	No Flow	Flow observed	No Flow	Flow observed	No Flow	Flow observed	No Flow	Flow observed	No Flow	Flow observed	Flow observed	N-O	N-O	N-O	N-O	N-O
TC-3	No Flow	Flow observed	No Flow	Flow observed	No Flow	Flow observed	No Flow	Flow observed	No Flow	Flow observed	Flow observed	N-O	N-O	N-O	N-O	N-O
TC-4	No Flow	Flow observed	No Flow	Flow observed	No Flow	Flow observed	No Flow	Flow observed	No Flow	Flow observed	No Flow	N-O	N-O	N-O	N-O	N-O
TC-5	No Flow	Flow observed	No Flow	Flow observed	No Flow	Flow observed	No Flow	Flow observed	No Flow	Flow observed	No Flow	N-O	N-O	N-O	N-O	Flow observed
TC-6	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O
TC-7	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O
TC-8	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O
TC-9	No Flow	Flow observed	No Flow	Flow observed	No Flow	Flow observed	No Flow	Flow observed	No Flow	Flow observed	No Flow	N-O	N-O	N-O	N-O	Flow observed
TC-10	0.4	0.6	0.5	0.5	0.6	1	0.5	1.1	0.4	0.5	0.4	0.7	0.3	0.9	0.48	1
TC-11	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O
TC-12	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O
IC-1	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O
IC-2		Flow observed	Flow observed	Flow observed	Flow observed	Flow observed	Flow observed	Flow observed	Flow observed	Flow observed	0.6	N-O	N-O	N-O	N-O	Flow observed
IC-3		Flow observed	Flow observed	Flow observed	Flow observed	Flow observed	Flow observed	Flow observed	Flow observed	Flow observed	Flow observed	N-O	N-O	N-O	N-O	N-O
IC-4	No Flow	No Flow	No Flow	3.3	No Flow	37.5	No Flow	30	No Flow	20	0.7	18.5	0.6	2.31	No Flow	3
IC-5	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O
IC-6	No Flow	No Flow	No Flow	0.7	No Flow	1.4	No Flow	No Flow	No Flow	No Flow	No Flow	N-O	N-O	N-O	N-O	Flow observed
IC-7	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O
IC-8	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O

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Station	Fall 2011	Spring 2012	Fall 2012	Spring 2013	Fall 2013	Spring 2014	Fall 2014	Spring 2015	Fall 2015	Spring 2016	Fall 2016	Spring 2017	Fall 2017	Spring 2018	Fall 2018	Spring 2019
IC-9	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O
IC-10	5.5	6.3	3.2	10	5	14	5.5	37.5	5	12.5	4.6	5.5	5	5	3.18	10
IC-11	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O
IC-12	0.4	No Flow	No Flow	4	No Flow	33.3	No Flow	14	No Flow	42.3	1.4	12.9	1.2	1.67	Flow observed	7.69
IC-13	First observed in Spring 2022															
CF-1	Re-named as CFS and CFS-2															
CF-2	Re-named as CFS and CFS-2															
NP-1	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O	N-O
CFS	0.1	1.9	1.2	3	1.2	3.1	1.7	5	1.6	4.8	1.2	3.6	1.3	0.64	2.27	N-O
CFS-2	0.8	0.8	0.5	2	0.8	3.9	0.9	3	1.1	5.2	Flow observed	3.9	1.5	0.94	1.15	N-O
CFS-4	First monitored in spring 2020															
RD-SEEP	First monitored in spring 2019															Flow observed
TC-13	First monitored in spring 2019															Flow observed
TC-14	First observed in Spring 2023															
EWS-01	First monitored in spring 2019															N-O
TC-16	First observed in Spring 2024															
TC-15	First observed in Spring 2024															
TC-18	First observed in Spring 2024															
TC-19	First observed in Spring 2024															
CFS-3	First observed in Spring 2024															

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Station	Fall 2011	Spring 2012	Fall 2012	Spring 2013	Fall 2013	Spring 2014	Fall 2014	Spring 2015	Fall 2015	Spring 2016	Fall 2016	Spring 2017	Fall 2017	Spring 2018	Fall 2018	Spring 2019
IRD-1	First observed in Spring 2024															
TC-20	First observed in Spring 2024															
TC-TRIB-LOW	First observed in Fall 2023															
TC-TRIB-UP	First observed in Fall 2023															
TC-TRIB-SOURCE	First observed in Fall 2023															
IC-DRN	First observed in Spring 2023															
IC-CULV-SEEP	First observed in Spring 2024															
PP-01	First observed in Spring 2023															
TCCDRN	First observed in Spring 2023															

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Station	Fall 2019	Spring 2020	Fall 2020	Spring 2021	Fall 2021	Spring 2022	Fall 2022	Spring 2023	Fall 2023	Spring 2024	Fall 2024
TC-1	N-O	No Flow	N-O	N-O	New Drainage Ditch	N-O	No Flow	Inundated; covered by new channel			
TC-2	N-O	Flow observed	N-O	N-O	No Flow	N-O	No Flow	No Flow	N-O	N-O	No Flow
TC-3	N-O	Flow observed	N-O	N-O	No Flow	N-O	No flow	No flow	N-O	N-O	No Flow
TC-4	N-O	No Flow	N-O	N-O	No Flow	N-O	No flow	1.28	N-O	No Flow	No Flow
TC-5	N-O	Flow observed	N-O	0.078	No Flow	N-O	No flow	No flow	N-O	1.902	No Flow
TC-6	N-O	No Flow	N-O	N-O	No Flow	N-O	No flow	N-O	N-O	N-O	N-O
TC-7	N-O	No Flow	N-O	N-O	No Flow	N-O	Frozen	No Flow	0.03	0.06	N-O
TC-8	N-O	No Flow	N-O	N-O	No Flow	N-O	No Flow	No Flow	N-O	No Flow	No Flow
TC-9	N-O	Flow observed	N-O	0.065	No Flow	N-O	No Flow	No Flow	N-O	No Flow	No Flow
TC-10	N-O	0.5	0.21	0.43316	0.375	0.52	0.9	0.08	0.69	0.87	0.52
TC-11	N-O	No Flow	N-O	N-O	N-O	N-O	N-O	N-O	N-O	1.162	No Flow
TC-12	N-O	No Flow	N-O	N-O	N-O	N-O	Inundated; covered by new				
IC-1	N-O	Flow observed	N-O	N-O	No Flow	N-O	No Flow	Flow Observed	No Flow	Flow Observed	Flow Observed
IC-2	N-O	Flow observed	N-O	Flow observed	Flow observed	N-O	No Flow	No Flow	0.54	N-O	Flow Observed
IC-3	N-O	Flow observed	N-O	0.0156	Flow observed	N-O	No Flow	No Flow	N-O	Flow Observed	Flow Observed
IC-4	N-O	Flow observed	N-O	2.34	0.6	10.9	No Flow	20.6	0.27	30	0.85
IC-5	N-O	No Flow	N-O	N-O	No Flow	N-O	No Flow	No FLow	No Flow	N-O	Flow Observed
IC-6	N-O	No Flow	N-O	N-O	No Flow	N-O	No Flow	No Flow	No Flow	0.06	No Flow
IC-7	N-O	No Flow	N-O	N-O	No Flow	N-O	No Flow	No Flow	No Flow	4.63	No Flow
IC-8	N-O	No Flow	N-O	N-O	No Flow	N-O	No Flow	No Flow	No Flow	N-O	No Flow

Table 1
Springs and Seeps Summary of Activity 1995-2023
Pitch Reclamation Project
Colorado Mined Land Reclamation Board - 2023 Annual Reclamation Report

Station	Fall 2019	Spring 2020	Fall 2020	Spring 2021	Fall 2021	Spring 2022	Fall 2022	Spring 2023	Fall 2023	Spring 2024	Fall 2024
IC-9	N-O	Flow observed	N-O	N-O	No Flow	N-O	No Flow	No Flow	No Flow	N-O	No Flow
IC-10	2	10.8	4.58	6.864	2.12	6.66	No Flow	10.66	3.49	Flow Observed	Flow Observed
IC-11	N-O	No Flow	N-O	N-O	No Flow	N-O	No Flow	No Flow	No Flow	N-O	N-O
IC-12	Flow observed	8.25	0.125	0.78	0.47	0.75	No Flow	1.04	0.306	Flow Observed	Flow Observed
IC-13	First observed in Spring 2022				N-O	Flow observed	No Flow	1.43	No Flow	1.69	Flow Observed
CF-1	Re-named as CFS and CFS-2										
CF-2	Re-named as CFS and CFS-2										
NP-1	N-O	N-O	N-O	N-O	No Flow	N-O	No Flow	No Flow	N-O	N-O	N-O
CFS	1.5	2.7	1.44	1.3	0.5	N-O	0.45	N-O	0.72	Flow Observed	0.76
CFS-2	3.4	1.4	2.53	0.39	1.06	N-O	0.63	N-O	0.95	Flow Observed	Flow Observed
CFS-4	First monitored in spring 2020	1.95	N-O	0.033	N-O	N-O	N-O	N-O	0.06	N-O	0.19
RD-SEEP	No flow	No Flow	No Flow	Flow observed	No Flow	N-O	No Flow	0.04	N-O	N-O	No Flow
TC-13	N-O	No Flow	N-O	0.0195	No Flow	N-O	N-O	N-O	N-O	N-O	0.18
TC-14	First observed in Spring 2023							1.04	No Flow	9.92	No Flow
EWS-01	Flow observed	Flow observed	N-O	Flow observed	Flow observed		No Flow	N-O	N-O	N-O	N-O
TC-16	First observed in Spring 2024									0.3593	No Flow
TC-15	First observed in Spring 2024									8.7	No Flow
TC-18	First observed in Spring 2024									0.60	No Flow
TC-19	First observed in Spring 2024									2.41	No Flow
CFS-3	First observed in Spring 2024									Flow Observed	0.59

Table 1
Springs and Seeps Summary of Activity 1995-2023
Pitch Reclamation Project
Colorado Mined Land Reclamation Board - 2023 Annual Reclamation Report

Station	Fall 2019	Spring 2020	Fall 2020	Spring 2021	Fall 2021	Spring 2022	Fall 2022	Spring 2023	Fall 2023	Spring 2024	Fall 2024
IRD-1	First observed in Spring 2024									0.3646	No Flow
TC-20	First observed in Spring 2024									Flow Observed	No Flow
TC-TRIB-LOW	First observed in Fall 2023								2.03	Flow Observed	0.63
TC-TRIB-UP	First observed in Fall 2023								1.1	Flow Observed	6.34
TC-TRIB-SOURCE	First observed in Fall 2023								Flow Observed	Flow Observed	2.85
IC-DRN	First observed in Spring 2023							Flow Observed	0.05	15	1.37
IC-CULV-SEEP	First observed in Spring 2024									Flow Observed	Flow Observed
PP-01	First observed in Spring 2023							36	3.74	77.42	11.7
TCCDRN	First observed in Spring 2023							0.43	0.10	10.6	0.08

Table 2
Seasonal Water Level Readings in Rock Dump Piezometers
Pitch Reclamation Project
Colorado Mined Land Reclamation Board - 2024 Annual Reclamation Report

ARCADIS

Ground Surface Elevation (ft amsl)	10631.50	10603.80	10523.60	10379.95	10373.40	10304.72	10305.55	10305.39	10304.64	10304.09	10043.60	10043.40	10043.29	10040.85	10044.42	10373.00
Location	10630	10600[a]	10525[a]	10370R	10360[a]	10300R	RD-06	RD-07	RD-08	RD-09	RD-01	RD-02	RD-03	RD-04	RD-05	TC10375[a]
Piezometer Type	M	M	M	M	M	I/M [c]	I/M [c]	I/M [c]	I/M [c]	I/M [c]	E	E	E	M	E	M
High Flow 2017	10436.5	10363.8	10301.2	10185.7	10156.2	10125.0	*10114.2*	*10115.0*	*10115.7*	*10100.1*	10028.3	10027.3	10028.7	10025.2	*10025.8*	10210.1
Low Flow 2017	10431.1	10356.7	10297.6	10184.1	10154.9	10116.4	10110.4	10117.2	10119.8	10116.5	10024.5	10027.3	10024.7	10021.4	10027.9	10206.6
High Flow 2018	10451.5	10357.3	10303.2	10183.7	[b]	10117.7	10114.6	10113.6	10118.6	10117.5	10030.0	10024.6	10025.1	10022.5	10025.6	10207.3
Low Flow 2018	10432.7	10355.7	10296.6	10177.6	[b]	10116.0	10119.7	10113.7	10158.0	10115.5	10022.0	10022.7	10022.0	10020.5	10026.7	10205.2
High Flow 2019	10431.9	10357.4	10304.2	10184.2	[b]	10120.8	10124.2	10123.5	10122.3	10118.7	10038.7	10027.9	10029.3	10024.9	10040.4	10210.7
Low Flow 2019	10430.5	10355.3	10300.8	10183.6	[b]	10117.2	No WL data	10112.4	10116.2	10115.5	10028.1	10024.5	10024.6	10022.5	10029.3	10211.2
High Flow 2020	10430.8	10359.4	10305.9	10194.6	[b]	10119.8	10120.7	10119.9	10118.6	10115.0	10027.7	10026.2	10028.2	10023.0	10038.1	10207.6
Low Flow 2020	10431.6	10353.0	10298.3	10180.5	[b]	10119.4	10115.0	10113.2	10116.2	10117.5	10024.1	10024.0	10024.1	10022.6	10022.8	10204.5
High Flow 2021	10429.6	[b]	10301.4	10181.4	[b]	10116.7	10115.6	10106.9	10113.9	10113.5	10022.4	10022.2	10024.5	10021.2	10031.2	No WL data
Low Flow 2021	No WL data	[b]	10295.4	10177.2	[b]	10116.2	10112.6	10111.9	10113.2	10113.0	10022.4	10021.5	10022.8	10020.3	10027.9	10204.3
High Flow 2022	10429.76	[b]	10302.65	10181.69	[b]	[b]	10119.67	10118.94	10115.49	10114.58	10026.72	10025.73	10027.42	10023.86	10027.61	No WL data
Low Flow 2022	No WL data	[b]	10297.05	10178.53	[b]	10116.24	10106.65	10108.04	10111.19	10111.80	No WL data	No WL data	No WL data	10024.35	10025.11	No WL data
High Flow 2023	10430.63	10365.6	10311.09	10184.76	[b]	10123.87	10125.64	10124.99	10123.58	10119.36	No WL data	10028.46	10030.52	10024.00	10039.57	10215.85
Low Flow 2023	10429.97	10351.8	10304.51	10183.07	[b]	10118.22	10113.95	10114.09	10113.97	10114.36	No WL data	10023.33	10024.76	10019.61	10030.05	10211.26
High Flow 2024	10430.69	10375.6	10305.49	10182.4	[b]	10123.09	10127.66	10127.14	10125.89	10118.6	10031.89	10030.11	10032.75	10027.84	10041.7	10213.38
Low Flow 2024	10430.67	[b]	10299.71	10181.25	[b]	10116.37	No WL data	No WL data	No WL data	10114.4	10025.4	10024.2	10025.9	10022.5	10031.4	10204.9

Notes:

[a] Estimated casing height of piezometer used because of a lack of survey data.

[b] Water level not taken because of obstruction in the piezometer.

[c] Operated as injection well from 2017-2018 and a monitoring well from 2019-2020

1. High-flow monitoring typically occurs in late May of each year.
2. Low-flow monitoring typically occurs in early October of each year.
3. *Italics indicates injection wells were monitored outside of typical high-flow monitoring period.*

Acronyms and Abbreviations:

E = extraction

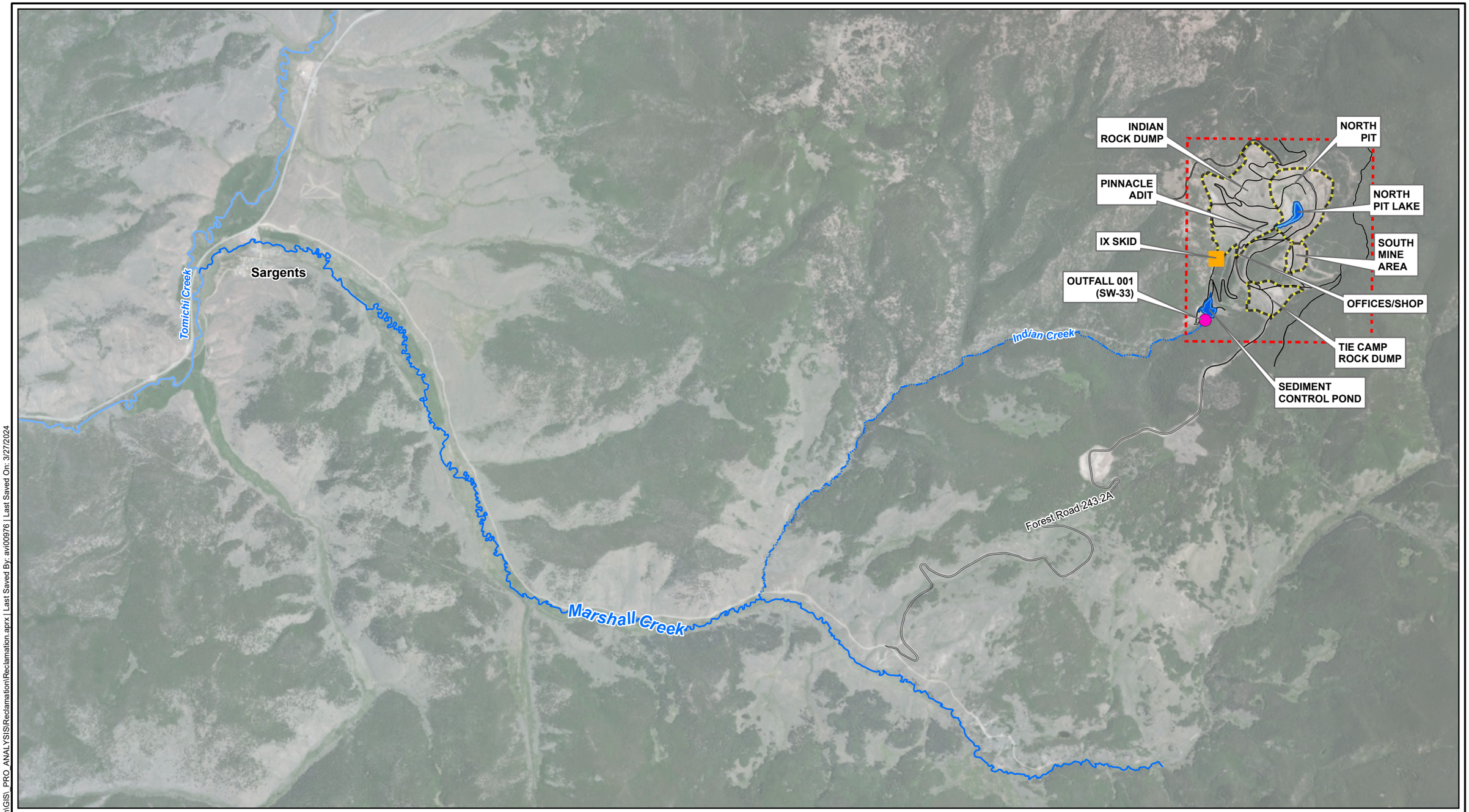
ft amsl = feet above mean sealevel

I = injection

M = monitoring

WL = Water Level

FIGURES



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Legend

- Sample Points
- Colorado Division of Reclamation, Mining, and Safety Permit Boundary
- Facility Areas
- Marshall Creek
- Indian Creek
- Tomichi Creek
- Roads

Notes:

Source: USGS 7.5' Quadrangles of Sargents, Chester, Sargents Peak, and Paholone Peak, Colorado

N

0 3,000 6,000 Feet

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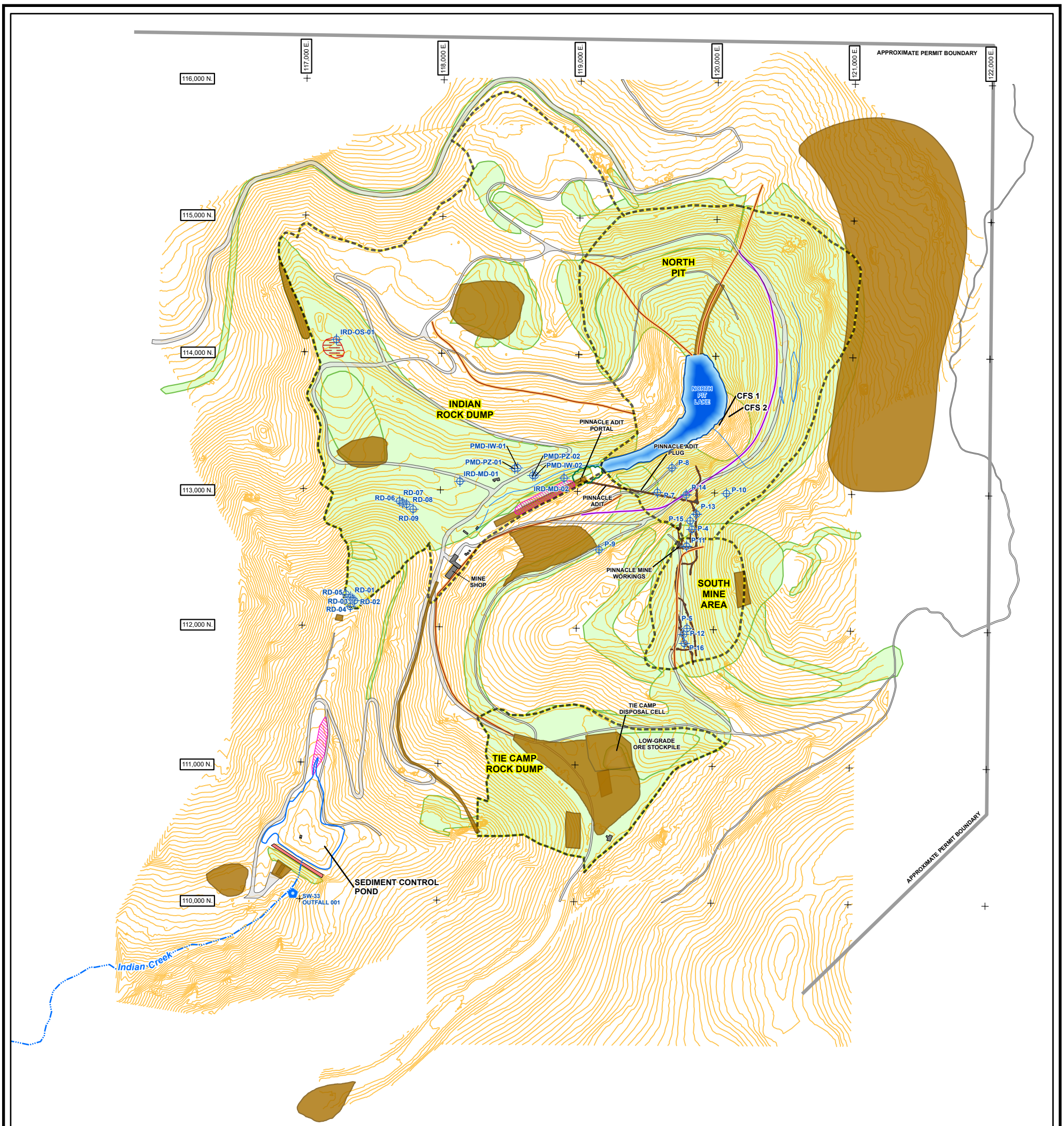
PITCH RECLAMATION PROJECT
HOMESTAKE MINING COMPANY
SARGENTS, COLORADO

LOCATION MAP

ARCADIS

FIGURE 1



Legend

- Piezometers
- Colorado Discharge Permit System Compliance Point
- Facility Areas
- Buildings
- Clay-Fabric-Rock Lined Channel
- Riprap Lined Channel
- Approximate Permit Boundary
- Areas of Earth Structure Repair
- Areas Revegetated
- Marsh Area
- Clay Stockpile
- Drainage Improvement
- Underground Workings
- Sediment Pond Embankment
- Disposal Cell Tie Camp
- Road

Notes:

1. Base topography provided by Homestake Mining Company established in 1994.
2. Revegetated areas prior to 1998 provided by Golder Associates.
3. For illustrative purposes.

PITCH RECLAMATION PROJECT
HOMESTAKE MINING COMPANY
SARGENTS, COLORADO

RECLAMATION AREAS

ARCADIS | FIGURE 2

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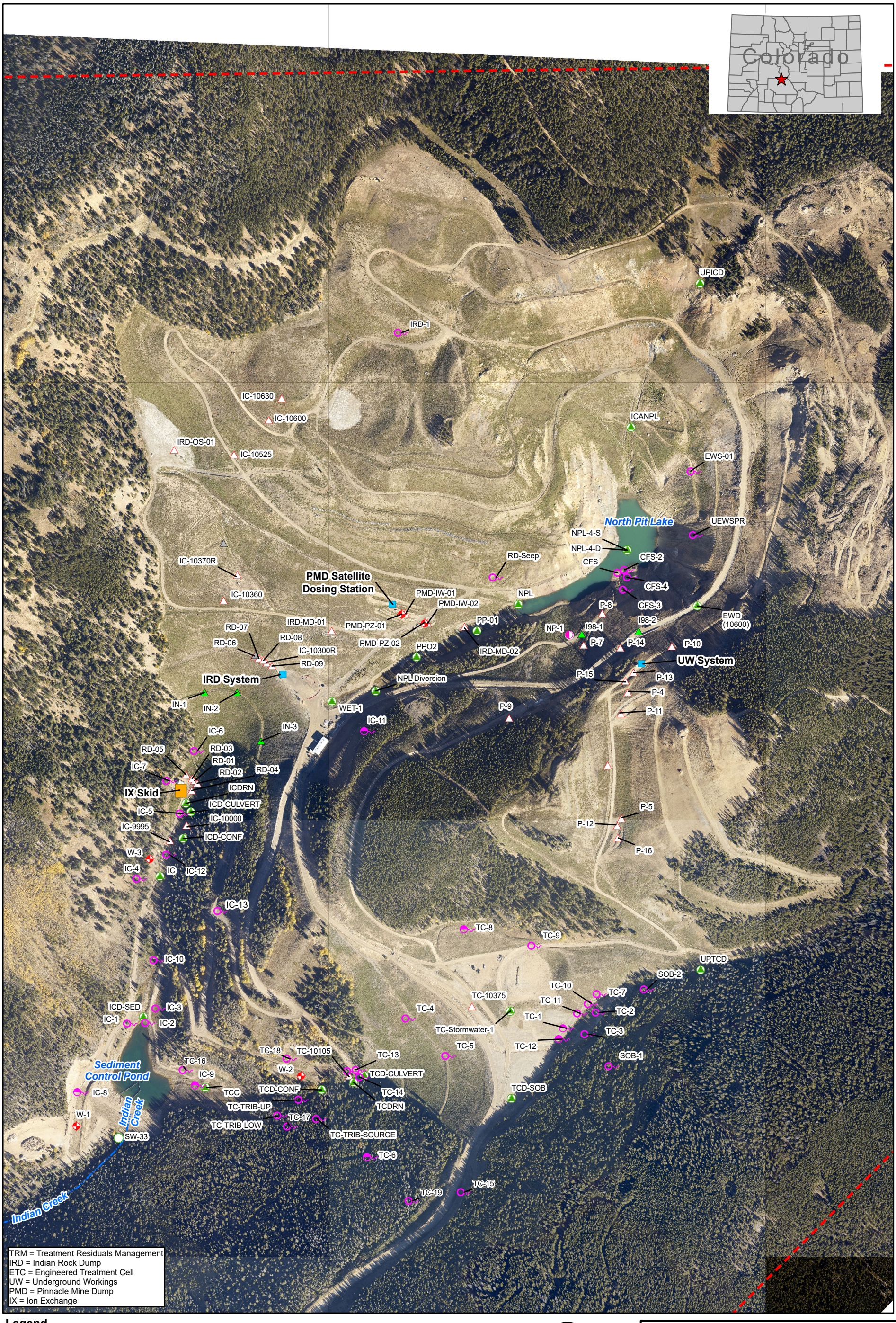

Legend

- Monitoring Well
- Inclinometer
- Piezometer
- Surface Water Sampling Point
- Active Seep/Spring
- Inactive Seep/Spring
- Colorado Discharge Permit System Compliance Point
- Colorado Discharge Permit System Boundary
- Phosphate Injection System Locations
- Ion Exchange Pilot Locations

N

0 260 520 Feet

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HOMESTAKE MINING COMPANY
SARGENTS, COLORADO

SYSTEMS AND MONITORING LOCATIONS

ARCADIS

FIGURE 3

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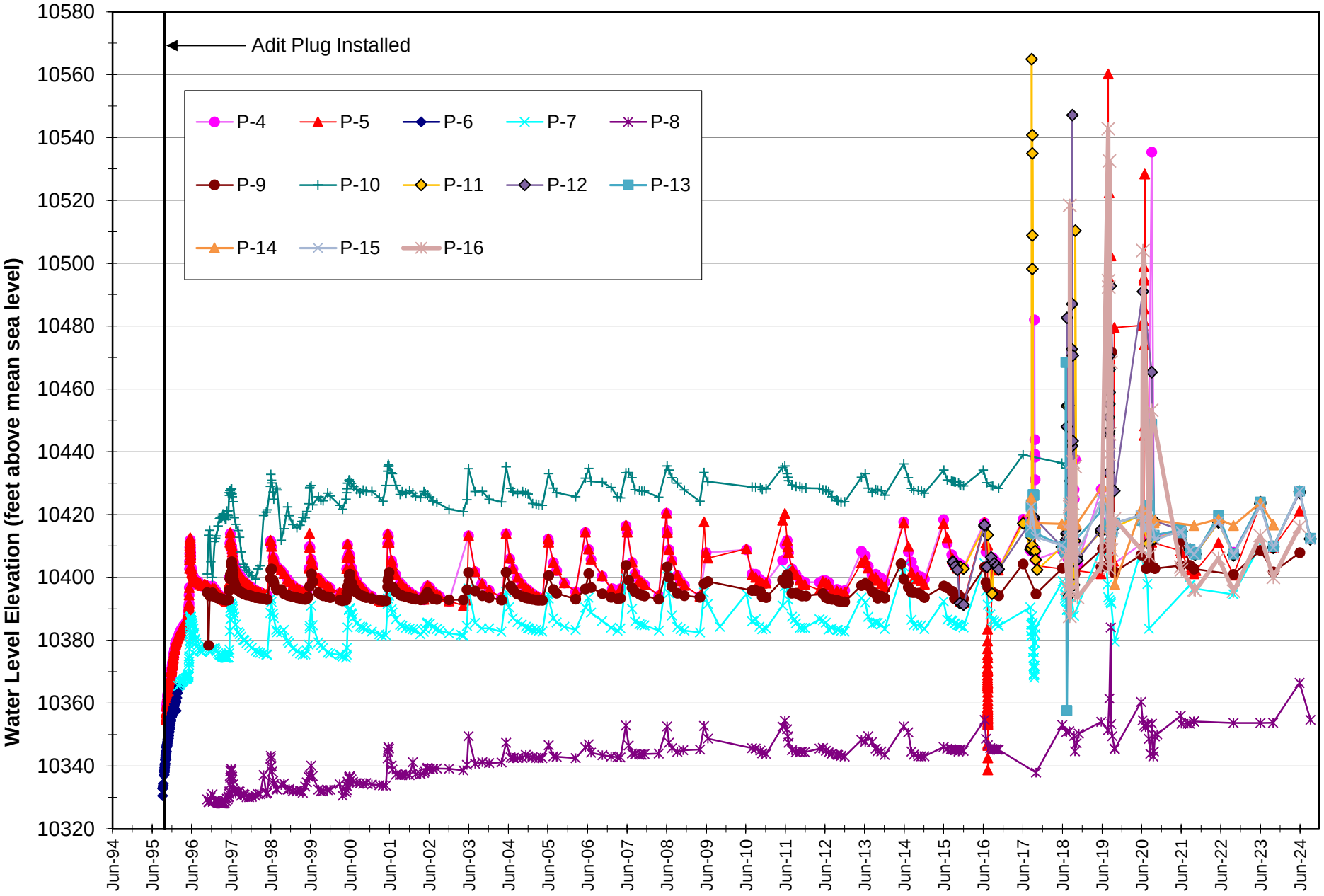

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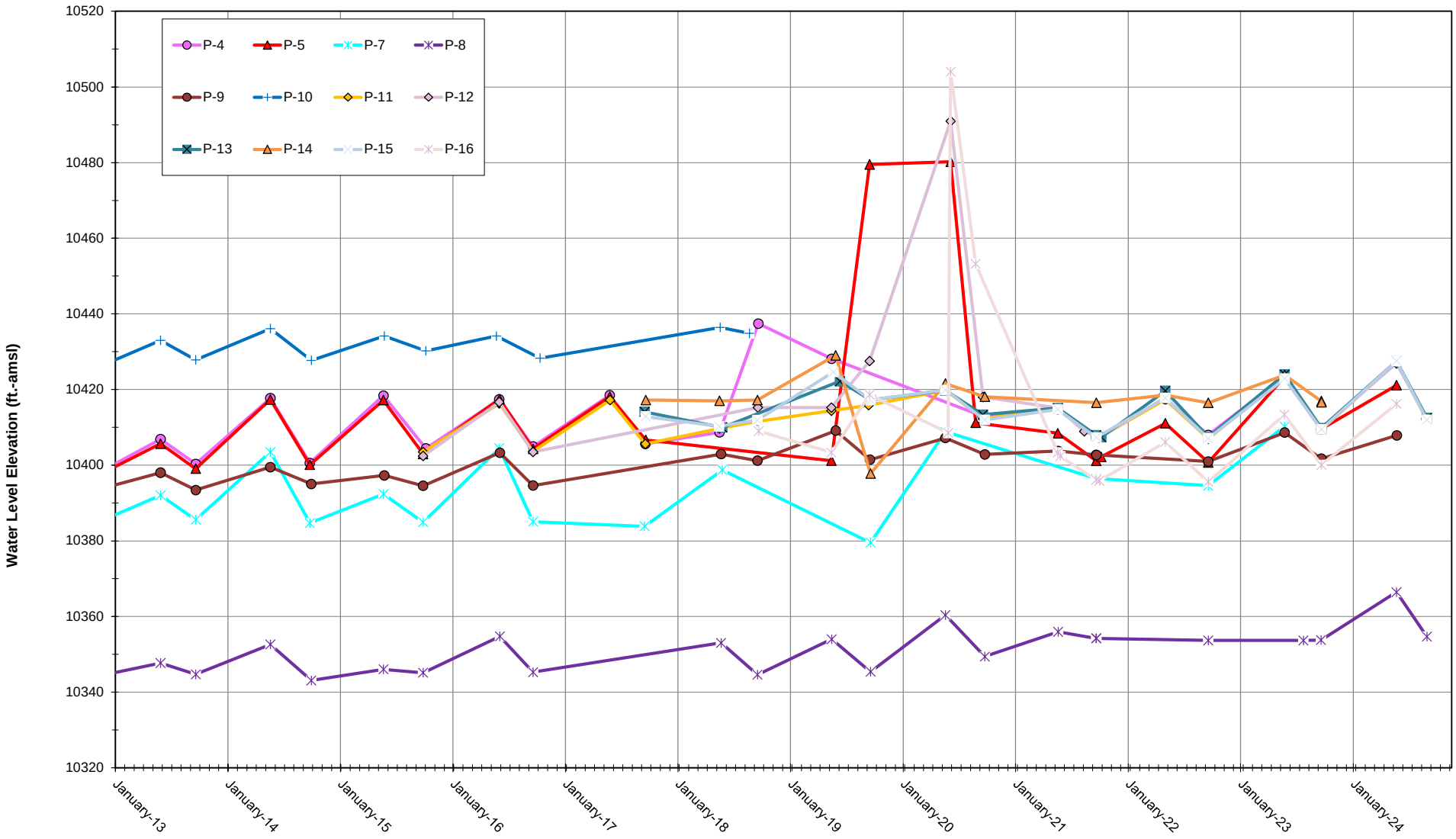
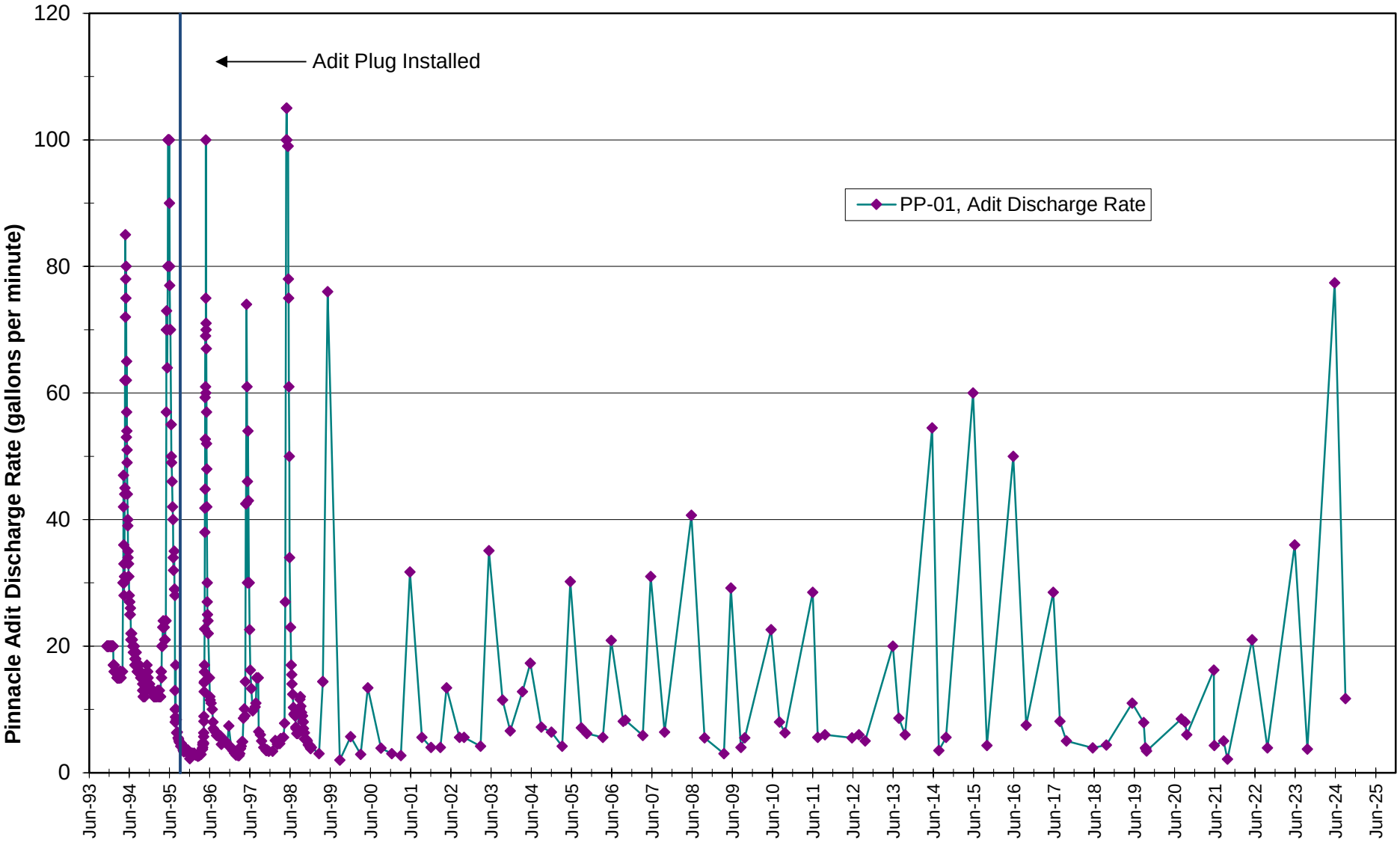
PITCH RECLAMATION PROJECT
HOMESTAKE MINING COMPANY
2024 Annual Reclamation Report

Figure 4a: Water Level Elevation Data in P - Wells 1995-2024



PITCH RECLAMATION PROJECT
HOMESTAKE MINING COMPANY
2024 Annual Reclamation Report

Figure 4b: Water Level Elevation Data in P-Wells 2013-2024



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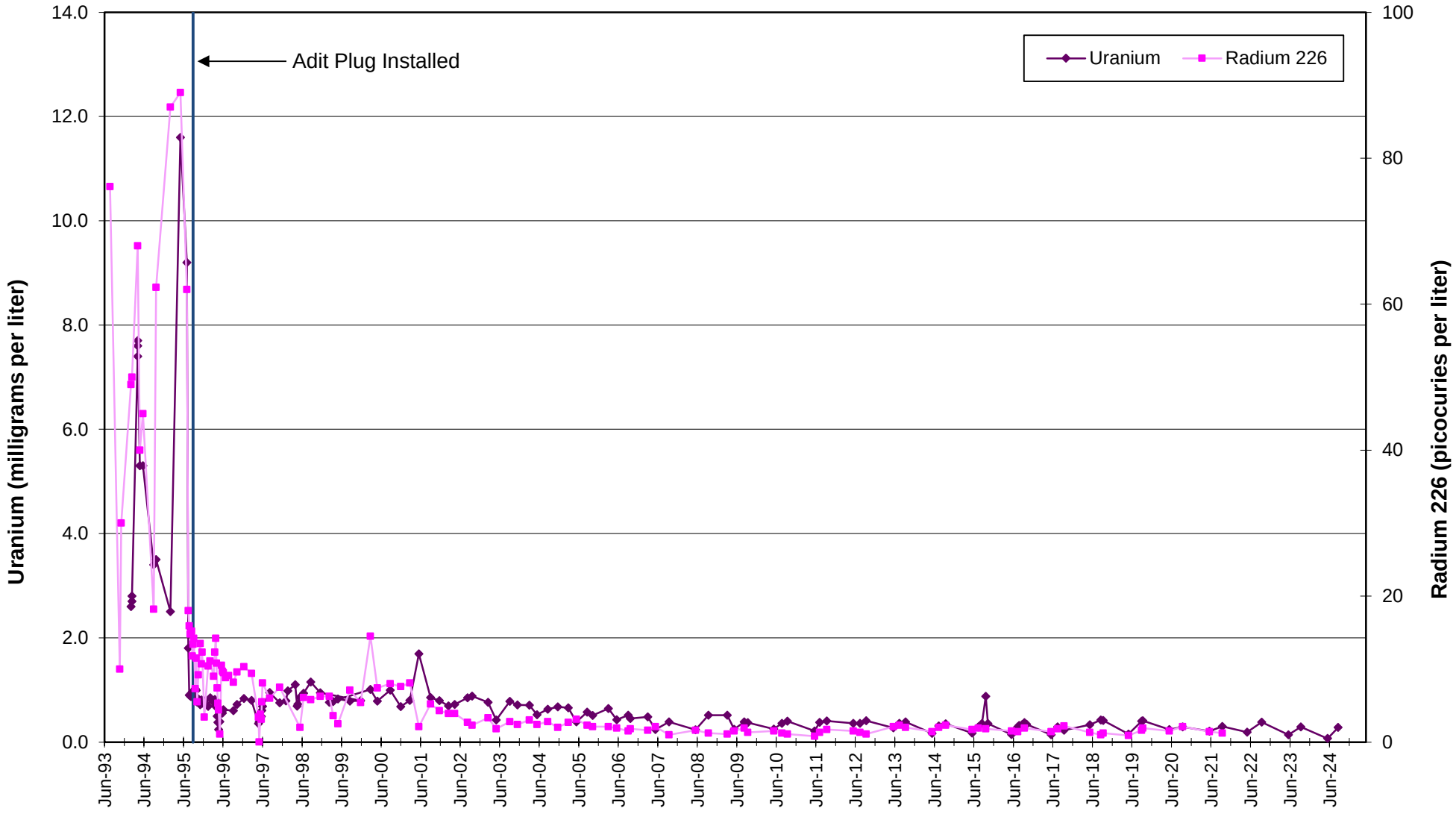
PITCH RECLAMATION PROJECT
HOMESTAKE MINING COMPANY

Figure 5: Hydrograph of Pinnacle Adit Discharge



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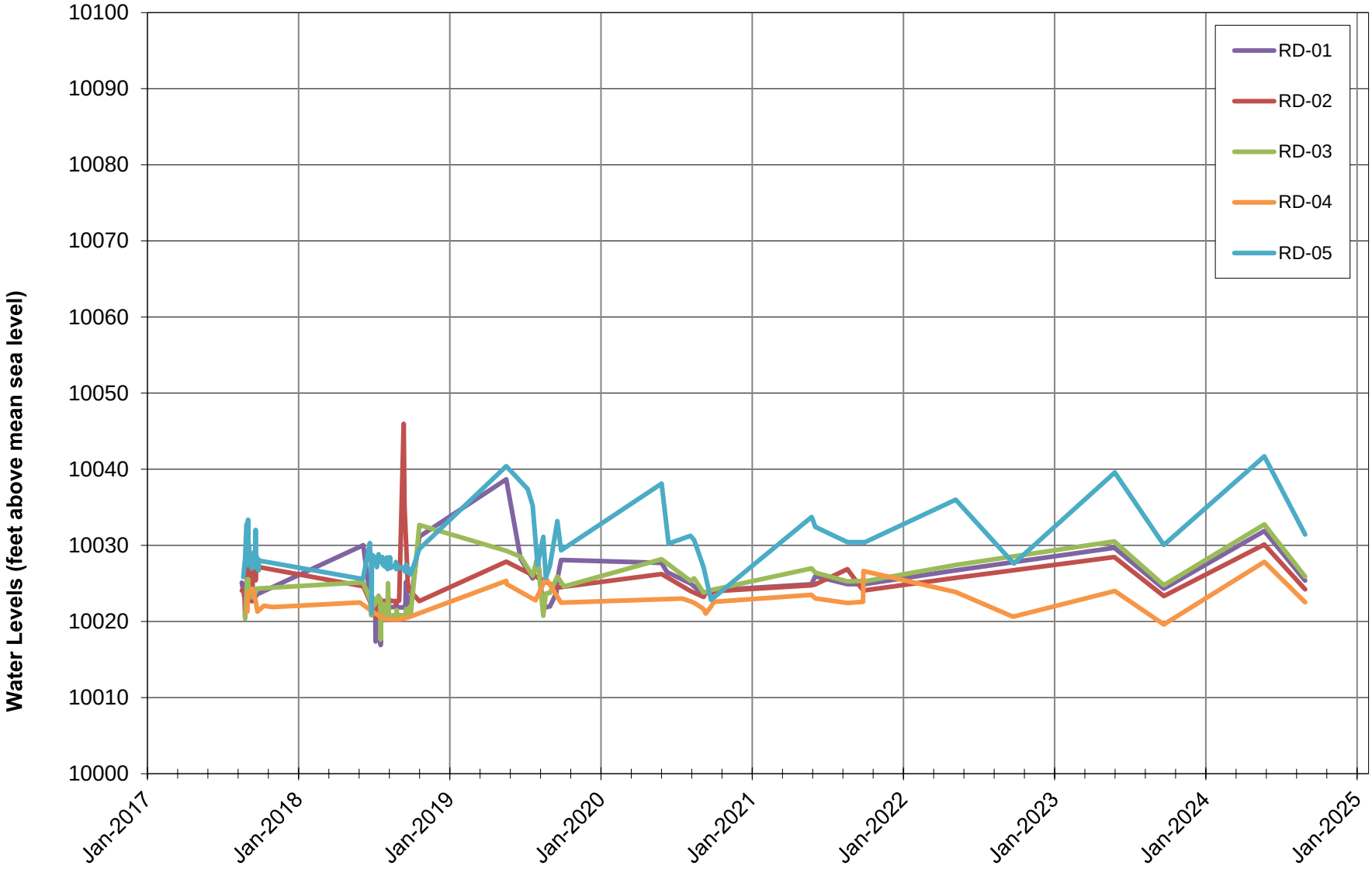
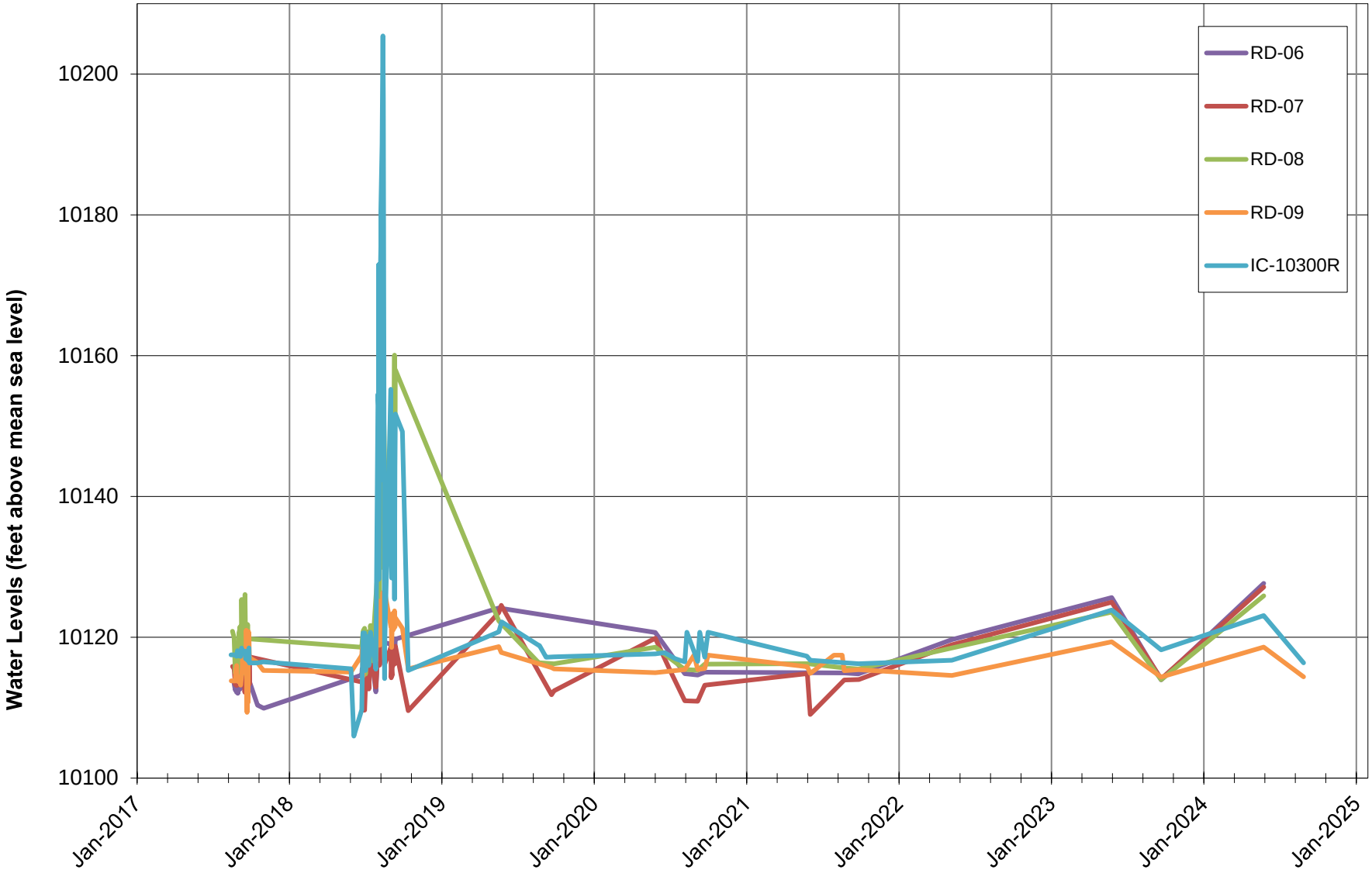
PITCH RECLAMATION PROJECT
HOMESTAKE MINING COMPANY
2024 Annual Reclamation Report

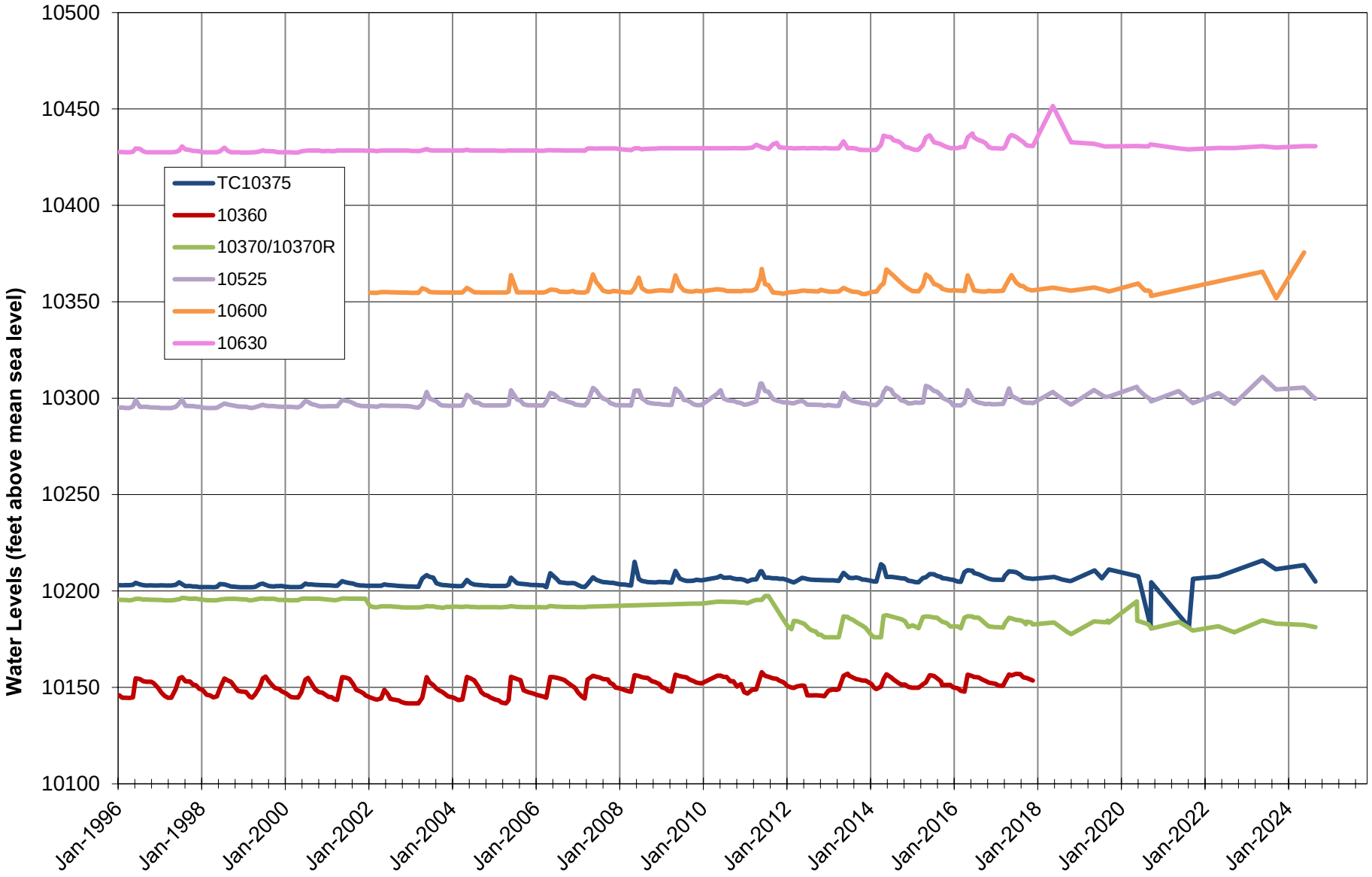
Figure 6: Pinnacle Adit Discharge, Uranium and Radium Concentrations



HOMESTAKE	**PITCH RECLAMATION PROJECT** **HOMESTAKE MINING COMPANY** **2024 Annual Reclamation Report**	**Figure 7: Historical Water Levels in Piezometers at the Toe of Indian Rock Dump**



HOMESTAKE	**PITCH RECLAMATION PROJECT** **HOMESTAKE MINING COMPANY** **2024 Annual Reclamation Report**	**Figure 8: Historical Water Levels in Piezometers at the 10300 Level of Indian Rock Dump**



PITCH RECLAMATION PROJECT
HOMESTAKE MINING COMPANY
2024 Annual Reclamation Report

Figure 9: Historical Water Levels in Piezometers at Indian Rock Dump and Tie Camp Rock Dump

APPENDICES

Photograph Log

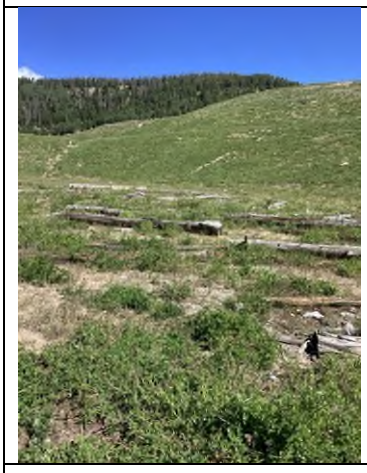
Pitch Reclamation Project

Photograph 7: View of NPL with cut trees in foreground for slope stabilization

Date: 06/10/2024

Photograph 8: 10600 bench washout and NPL delta with NPL slide area in upper left

Date: 08/27/2024



Photograph 9: IRD vegetation above the 10400 bench

Date: 08/27/2024

Photograph 10: DJI_20240713103716_0031_D

Date: 07/13/2024

APPENDIX A

2024 Photo Log

Photograph Log

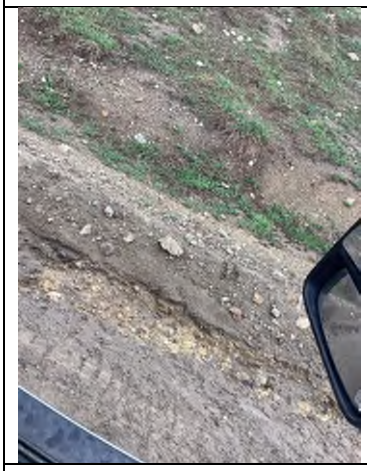
Pitch Reclamation Project

Photograph 1: Hillslope failure before repair

Date: 06/07/2024

Photograph 2: Tree removal underway

Date: 06/07/2024



Photograph 3: Ditch incision by IC-10630

Date: 06/10/2024

Photograph 4: NPL slid area washboard rilling

Date: 06/10/2024

Photograph 5: NPL slide area rilling

Date: 06/10/2024

Photograph 6: NPL slide area tension crack

Date: 06/10/2024

APPENDIX B

Annual Inclinometer Monitoring Report

Homestake Mining Company
Pitch Mine
2024 Annual Inclinometer Monitoring Report
Project No. 171004

Prepared by:

FORTE DYNAMICS, INC
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Units 3 & 4
Fort Collins, CO 80524
(720) 642-9328

Revision	Date	Status	Prepared By	Checked By	Approved By
REV 0	3/31/2025	Revision 0	R. Morlan	C. Green	M. Henderson

STATEMENT OF REPORT

The report enclosed entitled “2024 Annual Inclinometer Monitoring Report” has been prepared for the exclusive use of Homestake Mining Company (HMC). No third party shall be entitled to use this report without written consent of HMC, Strata-Geo LLC and Forte Dynamics, Inc (Forte). The use of any and all information contained herein shall be at the sole risk of the user regardless of any fault or negligence of HMC, Strata-Geo, or Forte.

This report has been prepared under the direct supervision of Michael Henderson, P.E. of Strata-Geo, LLC (Strata-Geo), with the assistance of Forte. The analyses presented have been completed according to the project information provided by Strata-Geo.

Table of Contents

Figures

Tables

Appendicies

1. INTRODUCTION

1.1 Location and Ownership

The Pitch Mine is owned and operated by Homestake Mining Company (HMC) as a subsidiary of Barrick Gold Corporation. The site is located in Saguache County within the Gunnison National Forest. It is located five miles East of Sargents, Colorado. The site location is shown on Figure 1-1.

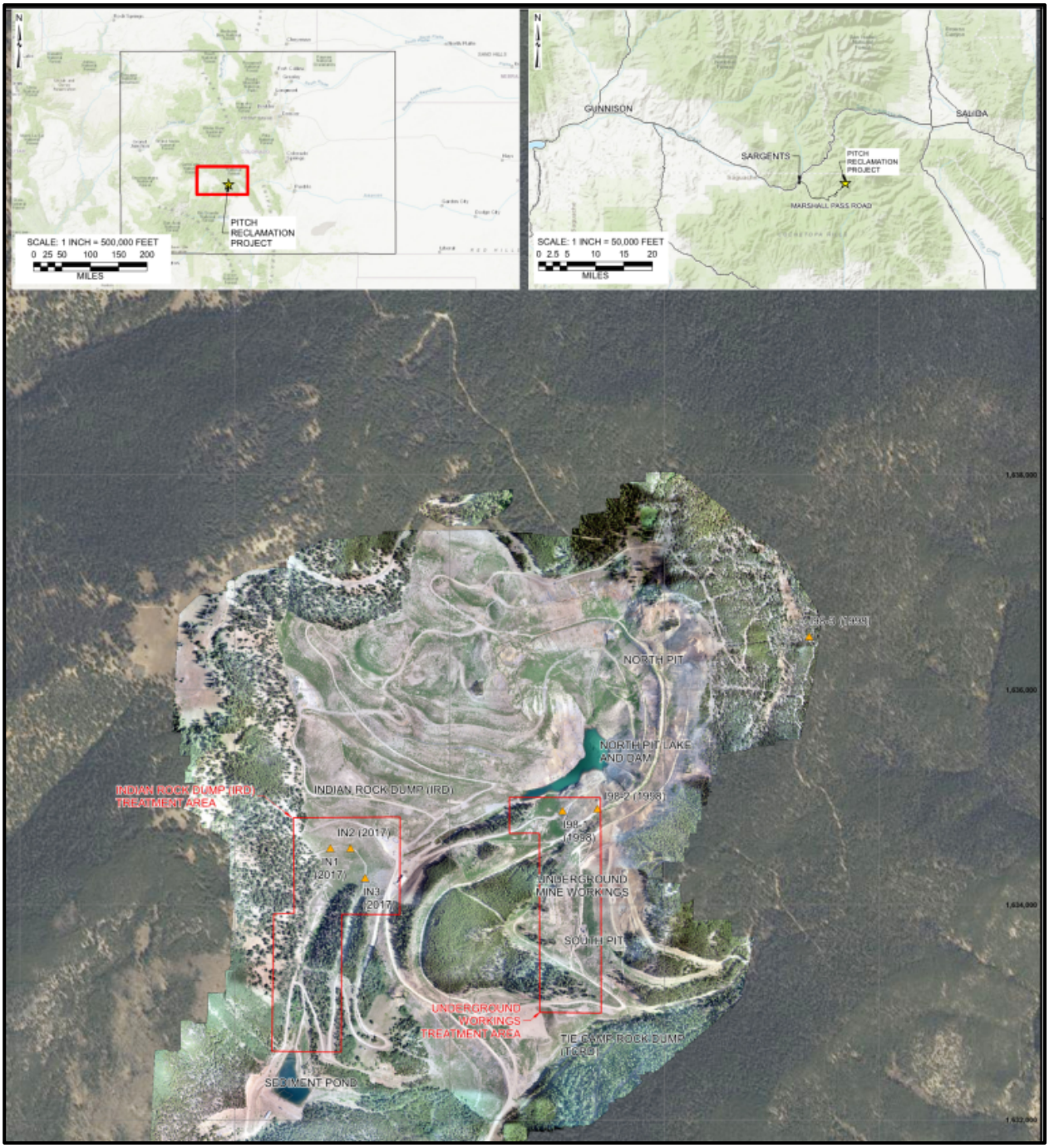

Figure 1-1: Site Location and Location of Inclinometers

1.2 Site Background

Mineral extraction began in 1957 using underground mining techniques. Tunnel mining took place from 1958–1962. Production from the Pitch Mine continued from 1968 to 1972 (BGC, 2016). HMC acquired the Pitch Mine site from Pinnacle in 1972. Pitch Mine was mined with open pit extraction techniques from 1979 to 1984 from the North and South Pits. The North Pit was developed during open pit operations and was allowed to fill with groundwater after mining ceased, whereas the South Pit never created a lake. Signs of slope instability began in 1980 within the East Wall of the North Pit. The most significant ground movement occurred in October 1983 (AAI, 1999). Mining was halted at the Pitch Mine in 1984 due to low economic factors (BGC, 2016). The facility has been undertaking reclamation activities since 1984.

The Pitch Mine is located on the western flank of the Sawatch Range within the Southern Rocky Mountains physiographic province. The site stratigraphy includes Precambrian high-grade metamorphic rocks and younger granitic and pegmatite intrusive dikes and veins which crosscut the older bedrock, Paleozoic sedimentary rocks (late Cambrian to Pennsylvanian), and Cenozoic volcanic rocks (Olsen, 1988; Nash, 1988; Olson, 1983; Goodknight and Ludlum, 1981). Surficial geology is a mixture of colluvium from Oligocene-aged water laid and welded volcanic tuffs, Pleistocene glacial deposits (till and moraines) and Holocene age colluvium, talus, landslide, and fluvial deposits (AAI, 1999). The main geologic structure at the site is the Chester fault zone and associated syncline associated with Laramide Orogeny deformation (USGS, 2011). The North Chester fault zone is a steeply dipping reverse fault that trends roughly north-south with approximately 1,400 ft of vertical displacement along the western flank of the southern Sawatch Range. Uranium mineralization at the Project occurs within a zone of fractured and brecciated Belden Formation and Leadville Dolomite on the footwall of the Chester fault (Olsen, 1988). Subsequent transverse-normal faults cut the Chester fault along a northeast-southwest trend (AAI, 1999).

Engineered structures remain on the premises though production has ceased. Some of these structures include:

- North Pit
- North Pit Lake and Dam
- South Pit
- Underground Mine Workings
- Indian Rock Dump
- Tie Camp Rock Dump
- Sediment Pond

1.3 Scope

Strata-Geo is the Engineer of Record (EOR) for the site, assisting HMC in their ongoing reclamation efforts at the Pitch Mine in compliance with applicable state, local, federal, and enterprise requirements. As part of the EOR role, Strata-Geo provides routine geotechnical monitoring and engineering services as needed. The EOR will coordinate and collaborate with the local company representative and prime vendors, following the current Lowest Practical Limit (LPL) and Best Management Practices (BMP) programs, relevant to the Project based on the Colorado discharge Permit System permit (Arcadis, 2017).

For the 2024 instrument report Forte, as a sub-contractor to Strata-Geo, provided on-site readings of the inclinometers on September 19 and 20. For reference, the collected data of the survey monuments from 2021 can be found in Appendix C. as a compiled table from North Star Surveying, Inc (North Star).

Inclinometer and survey monument locations are shown on Figure 1-1.

2. FIELD METHODOLOGY

2.1 Inclinometer Overview

The inclinometer casings at site were installed in a near-vertical borehole. The inclinometer probe used was provided by HMC and employs two force-balanced servo-accelerometers to measure tilt in two planes of the inclinometer wheels (“A” axis) and perpendicular to the wheels (“B” axis) (Slope Indicator, 2011). The drawings in Figure 2-1 show the probe from the side, top, and in the casing.

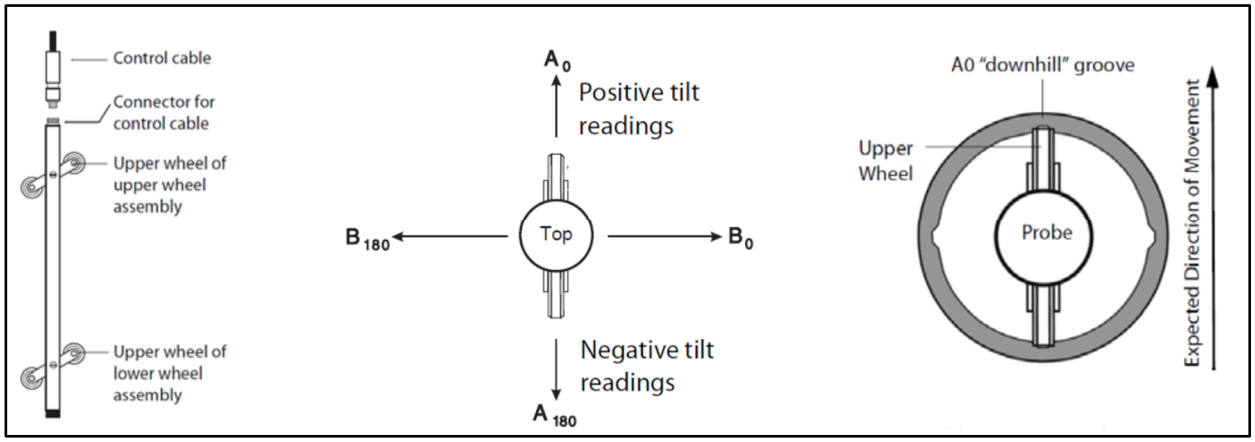

Figure 2-1: Inclinometer Probe and Casing Directions

There are six inclinometer casings installed at the Pitch Mine that are actively being surveyed. Three were installed in 1998 to monitor deformation in the east and south walls of the North Pit (Knight Piesold, 2017). These three survey locations are:

- I98-1 is positioned on the lower bench of the south wall.
- I98-2 is positioned on the upper bench of the south wall.
- I98-3 is positioned behind the head scarp above the east wall.

Three inclinometer casings were installed in 2017 in the IRD. These three survey locations are:

- IN-1 is positioned on the western side of the IRD.
- IN-2 is positioned in the middle of the IRD.
- IN-3 is positioned on the eastern side of the IRD.

The installation details for each inclinometer are included in Table 2-1. The installation details were verified by a desktop review and field measurements in 2017 (BGC, 2017).

Table 2-1: Inclinometer Installation Details

Inclinometer Name	Depth of Hole (ft)	Inclinometer Probe Starting Depth (ft)	Inclinometer Probe Ending Depth (ft)	Stickup Height of Casing Above Ground Surface (ft)	Length of Casing (ft)	Depth Read on Cable when Starting (ft)	Depth Read on Cable when Ending (ft)	Error (in)	A0 Azimuth (°)
I98-1	148	146.5	6.5	3.5	151.5	150	10	0.5	300
I98-2	256	253	1	3	259	256	4	0.8	315
I98-3	300	299	1	3	303	302	4	0.9	255
IN-1	63	61	11	4	67	64	14	0.2	176
IN-2	137.5	136.5	10.5	2.5	139	138	12	0.4	196
IN-3	24	22	10	3	26	24	12	0.1	268

2.2 Inclinometer Readings

A Durham Geo-Enterprises Inc. (Durham) Digitilt Classic Inclinometer System was used to obtain inclinometer readings. This system includes a Digitilt DataMate II (P/N: 50310900, S/N: 1730028) readout computer for data collection, a Digitilt Classic Control cable (cable), and a Digitilt probe (probe). HMC has maintained use of a Digitilt Classic Inclinometer system since the first inclinometer readings and during all subsequent annual readings. Prior to 2017, an older-model Digitilt DataMate I was used as the readout device for annual readings. Inclinometers I98-1, I98-2, and I98-3 had past data retained in the original data logger since the inclinometer casings installation in 1998. However, data corruption in 2003 resulted in the inability to use this data prior to August 8, 2007 (I98-1) and August 1, 2006 (I98-2 and I98-3). Surveys performed on these dates therefore comprise the current baseline surveys (Knight Piesold, 2017). HMC switched to a Digitilt DataMate II in 2017 to avoid future data corruption and to be compatible with newer operating systems for data processing purposes. The most recent survey on all inclinometers was collected on September 19 and 20, 2024. DigiPro 2 (version 2.13.4) software was used to process and plot inclinometer data.

A manufacturer-approved pulley assembly was used to lower and raise the inclinometer probe during readings of I98-1, I98-2, and I98-3 (Appendix B, Photo 04). The pulley assembly rests on top of the inclinometer casing and is clamped to the top of the casing using two wingnuts. A quarter inch of potential movement is possible between readings if the pulley assembly is not well-seated on the casing during surveys.

For IN-1, IN-2 and IN-3, the tops of the inclinometer casings are below the top of the standpipe. This spacing does not allow for the use of the pulley assembly for lowering and raising the inclinometer probe. Prior to Forte Dynamics's involvement with the project, a cable-catch was made with the inclinometer casing cap (cap) from IN-1 in place of the pulley assembly (Appendix B, Photo 01). A handsaw and drill were used to cut a v-notch in the cap of IN-1 to catch cable interval marks during retrieval of the inclinometer probe. Without the pulley assembly, the cable makes the even-marked measurements along the cable offset by 1.25 ft. Cable measurements were adjusted by adding one foot (round from 1.25 ft to 1 ft for simplicity of reporting numbers) to each measurement to account for this change (i.e., a cable measurement of 110 ft corresponds to a depth of 111 ft from the top of casing).

2.3 2024 Data Corruption

Although readings were collected and verified in the field at each inclinometer in 2024 Forte was not able to download the data to a laptop once returning to the office. The inclinometer and Digitilt DataMate II was

shipped to Durham in October 2024 to determine if the data could be salvaged. Due to a backlog in repairs Durham was not able to recover data from the unit until December 2024. Durham reported that data from inclinometers IN-1, IN-2, and I98-2 were corrupted and could not be retrieved. Durham was able to recover the data from IN-3, I98-1, and I98-3. Durham reported that the likely cause of the corruption was failure of the lithium magnesium dioxide button cell battery that serves as a low voltage backup to the units internal lead-acid storage battery. The button cell battery provides power to the systems memory to prevent data loss and corruption.

2.4 Survey Monument Readings

Table 2-2 provides the number of monitoring points read since 2012 as well as how many have been added or removed each year.

Table 2-2: Inclinometer Installation Details

Survey Year	Total Number of Monitoring Points Read	Number of Monitoring Points Not Monitored vs Previous Year	Number of Monitoring Points Added from Previous Year
2012	87	0	0
2013	87	0	0
2014	88	1	0
2015	91	3	0
2016	94	4	1
2017	94	2	2
2018	107	15	2
2019	91	2	18
2020	52	39	0
2021	59	3	9
2022	46	13	0
2023	45	1	0
2024	41	4	0

3. DATA VALIDATION

For each inclinometer reading, data can show significant changes year to year both from movement as well as error. This error can be systematic and lead to large cumulative differences that obscure areas of real movements in the data.

3.1 Checksums

Checksums are the sum of the 0- and 180-degree readings for individual intervals. For an idealized survey, the 0- and 180-degree readings are equal in magnitude and opposite in direction, creating a zero checksum. The application of checksums compares a range of values to determine the validity of surveys. Large checksums are indicative of reading errors. Inclinometer reading error can come from several sources including debris caught in the inclinometer casing grooves, deformed casing segments and malfunctioning probe wheels and depth control accuracy (DGSI, 2013).

3.2 Checksums Standard Deviation

Checksums standard deviation combines the checksums into a single value that defines the reading error for each axis (A-axis and B-axis) of an inclinometer reading. Subsequent standard deviations are compared to the baseline values taken during the inclinometer casing's baseline survey. Differences in A-axis standard deviation values are typically between three and five degrees, and differences in B-axis deviation values are typically between seven and nine degrees according to manufacturer specifications. These values can indicate potential error and have greater ranges when an inclinometer casing is incorrectly installed, survey methodology is modified, or the inclinometer casing is shallower in depth (DGSI, 2013).

3.2.1 Baseline Standard Deviations

The baseline standard deviations for inclinometer casings I98-1, I98-2, and I98-3 were defined by the baseline inclinometer surveys from 2006 and 2007 (Table 3-1). The baseline standard deviation values observed in the older inclinometer surveys indicate a deviation from manufacturer specification for I98-1 in the A-axis and B-axis and for I98-3 in the A-axis. Due to the very large errors in the initial baseline survey for 198-1 (standard deviation greater than 15), the data was removed, and the next following data set in 2008 was used as the baseline. The baseline standard deviations for inclinometer casings IN-1, IN-2, and IN-3 were defined by the first inclinometer surveys completed on August 22, 2017 (Table 3-1). The baseline standard deviation values for the newest inclinometer surveys were at or below manufacturer-prescribed standard deviations for the A-axis and B-axis.

Table 3-1: Manufacturer Recommended Standard Deviations

Inclinometer Name	Survey Date	A-axis Standard Deviation	Typical A-axis Standard Deviation	B-axis Standard Deviation	Typical B-axis Standard Deviation
I98-1	11/24/2008	-6.8	3.4	-6.9	5.8
I98-2	8/1/2006	-6.5	2.8	-3.9	5.1
I98-3	8/1/2006	-5.7	6.3	-7.6	8.6
IN-1	8/22/2017	-0.7	3.0	6.4	3.9
IN-2	8/22/2017	-7.0	1.6	9.8	4.7
IN-3	8/22/2017	-3.6	1.6	10.7	3.6

3.2.2 2024 Standard Deviations

Standard deviations for inclinometer casings I98-1, I98-2, I98-3, IN-1, IN-2, and IN-3 were calculated from the surveys taken on September 1, 2022 (Table 3-2). The standard deviation values listed in Table 3-2 were calculated from the checksum data for each of the inclinometer locations. Based on the calculated standard deviations, there is only one inclinometer, I98-2, whose standard deviation did not lie within a reasonable amount of the manufacturer's typical standard deviation. This potential error may be from a variety of sources including debris caught in the inclinometer casing grooves, water infiltration in the casing, deformed casing segments, malfunctioning probe wheels, loss of calibration, and depth control accuracy. This is further discussed in Section 6.

Table 3-2: Measured Standard Deviations

Inclinometer Name	Survey Date	A-axis Standard Deviation	Typical A-axis Standard Deviation	B-axis Standard Deviation	Typical B-axis Standard Deviation
I98-1	9/01/2022	4.1	3.4	7.4	5.8
I98-2	9/01/2022	36.4	2.8	13.5	5.1
I98-3	9/01/2022	2.51	6.3	9.14	8.6

Inclinometer Name	Survey Date	A-axis Standard Deviation	Typical A-axis Standard Deviation	B-axis Standard Deviation	Typical B-axis Standard Deviation
IN-1	9/01/2022	3.23	3.0	2.09	3.9
IN-2	9/01/2022	4.5	1.6	1.61	4.7
IN-3	9/01/2022	1.8	1.6	1.3	3.6

4. DATA CORRECTIONS

Potential sources of error associated with the Digitilt Classic Inclinometer system include limitations of the performance of equipment, anomalous installation characteristics, movement alterations to the installation characteristics, casing spiraling, and varied measurement techniques (DGSI, 2013). The combination of errors within datasets can alter associated data plots and create exaggerated displacements and false directions of movement.

Probes typically require annual calibration due to natural conditions such as transportation and handling. Without calibration, the data is likely to accumulate more error with each year. Prior to the inclinometer readings in 2024, the probe was calibrated. The last calibration prior to this year was done in 2023. Forte took care to keep the probe protected in transportation. However, natural error will occur.

4.1 Conventional Survey Methodology

The conventional alignment of inclinometer casing grooves and associated A-axes and B-axes is defined with respect to the anticipated direction of movement. The A0 groove is conventionally defined as the anticipated downslope movement direction (DGSI, 2013). Conventional groove alignment was observed for the older and newer inclinometer casings. However, survey readings were obtained with an unconventional probe orientation in the older sets of inclinometer casings. The unconventional probe orientation manifests within inclinometer plots as flipped signage that creates plots that are opposite and equal in terms of displacement values (A0 and B0 values are negative).

4.2 Depth Positioning and Measurement Technique Errors

Depth positioning and measurement technique errors occur from inconsistency in measurement technique and casing shortening (Mikkelson, 2003). Depth positioning and measurement technique errors occur when readings are not taken at the same depth as the baseline survey, or the probe is not allowed sufficient time to equilibrate at each reading location. Data sets taken from incorrectly obtained surveys can be visually identified in inclinometer plots and either removed or taken into consideration (Choi and Stark, 2008).

Depth positioning and measurement technique errors were identified by BGC from recordings before 2018. Several datasets had columns or entire sets with values of zero (indicating values were not properly recorded). These readings were significantly different from all other data sets and have since been excluded from the analysis. Depths displayed on the inclinometer plots for I98-1 and I98-2 represent cable measurements and not depths below ground surface. Stickup height must be subtracted from a given inclinometer plot depth to obtain a measurement referenced from ground surface. Depths displayed on the inclinometer plots for IN-1, IN-2, and IN-3 represent depths referenced from ground surface. This difference in reference for the two sets of inclinometer readings (IN's and I98's) occurred due to different methods used to record the data of the first reading of the inclinometer surveys.

When reading values from the cable (for IN-1, IN-2, and IN-3), a modified stickup is subtracted from a given cable measurement to obtain a depth below ground surface. The modified stickup is one foot less that the stickup height to account for an additional foot from measuring from the top of casing, and not from the top of the traditional cable pulley assembly.

4.3 Unimplemented Corrections

Bias-shift error is a systematic error that creates a re-occurring non-real shift in inclinometer plots (DGSI, 2013). Inclinometer casings are theoretically installed in stable ground beneath suspected movement zones. This installation protocol is based on borehole log assessments and creates a fixed base. Subsequent surveys generate a near-vertical plot in the lower portions of the inclinometer plots (Choi and Stark, 2008). Bias-shift error is the most common error and is identifiable in the deepest portions of the inclinometer plots where deviations from verticality and error-generating phenomena are most likely to occur such as from insufficient probe warm-up or long spans of time between calibrations by the manufacturer (Mikkelson, 2003). To correct for this, a bias shift correction was made for each year by manually increasing the correction factor until the lower portions of the plot were near vertical.

Rotation error is generated by the combination of inclinometer casing inclination and sensor axis alignment shift (Mikkelson, 2003). Rotation errors can also occur when a different probe is used to take measurements and can be identified graphically by comparing A-axis and B-axis inclinometer profile plots. A resemblance in graph shape and corresponding inclinometer casing profile indicates a reduction in rotation error prevalence. A difference in graph shape indicates rotation error may be prevalent (Choi and Stark, 2008). Rotation error was not suspected in any of the plots.

5. DATA ANALYSIS

Inclinometer data is plotted in the A-axis and B-axis. Because movement typically does not occur directly in line with these axes, the resultant of the two is used to determine the full magnitude of movement and direction. Analysis from each inclinometer is discussed below. It should be noted that +A Axis was not marked on some of the inclinometers or has come off. Forte assumed the +A Axis to be in the northmost direction. Based on the data analysis from 2021 to 2024 this appears to be correct for most location (see I98-3 for the only exception). Future readings should be completed using this assumption and the orientation marked on the inclinometer in the field with a notch in the casing.

5.1 Inclinometer I98-1

Historically, I98-1 appeared to have moved significantly in 2020 as compared to in 2018. The data taken in 2022, follows the same trendline as the 2020 data and further closely matches the data collected last year in 2021. Additionally, deformation, specifically larger horizontal movement relative to depth change, was observed to be increasing starting in 2020. This appears to have accelerated in 2021 and 2022. This is consistent with active horizontal movement. These areas are located between 20 and 30 feet along the A and B axis; and 50 and 55 feet along the B axis. Incremental movement in these areas relative to 2021 was less than 0.25 inches.

Readings taken in 2023 showed similar trends. However, significant erratic movement was observed in the A-axis, which was reported in the 2023 report. These erratic readings were reported to have been from equipment errors. The readings collected in 2024 reported similar trends to what was observed in 2020 through 2022, with less than 1-inch of movement relative to the 2017 baseline reading.

Groundwater was observed starting at approximately 30 feet below the top of casing. The presence of groundwater in a inclinometer can carry particulates into the casing causing issues with reading accuracy.

Checksum data collected at this location were within the manufacturer's recommended deviations.

5.2 Inclinometer I98-2

As discussed in Section 2.3, data collected from I98-2 in 2024 was corrupted and could not be used.

5.3 Inclinometer I98-3

Two initial readings were collected in 2017 (2017-1 and 2017-2). Differences of up to 1 inch were observed between two these readings. The standard deviation for the checksum data collected for each of these readings was below 3.0 and comparable to all other standard readings collected at the site. Little information exists on these readings, and it is unclear if both were collected using the same inclinometer casing axis. It is likely that one of the readings represents the A axis and the second represents the B axis.

The data results for each year corresponds to either to baseline 2017-1 or 2017-2 in the following way:

- The reading collected in 2022 and 2018 corresponds closely to baseline 2017-1.
- The readings collected in 2020 and 2019 corresponds closely to baseline 2017-2.
- No reading was collected in 2021.

Forte collected readings using the axis marked with paint (facing north to south) as the assumed A axis. Deformation when compared to either 2017-1 or 2017 is less than 1-inch horizontally with highest degree of movement within the first 20 feet of readings and less 0.25-inches of movement below 20 feet when compared to either baselines. Water was encountered in the piezometer estimated at deeper than 100 feet. Based on the consistent check sum values the presence of water does not appear to be interfering with the collection of readings.

The data for I98-3 appears to illustrate that no significant movement has occurred since the collection of baseline readings.

5.4 Inclinometer IN-1

As discussed in Section 2.3, the data collected from IN-1 in 2024 was corrupted and could not be used.

5.5 Inclinometer IN-2

As discussed in Section 2.3, the data collected from IN-2 in 2024 was corrupted and could not be used.

5.6 Inclinometer IN-3

In 2021, Forte's readings showed horizontal deformation of less than 0.25-inches along the positive A and B axis. The deformation was highest within the first 16 feet of readings and tapered to 0 at the bottom of the hole (24 feet). In 2024, the data trendline showed slight movement relative to the 2023 readings reporting a total movement of less than 2-inches from the baseline along the A-axis (movement of less than 1.5-inches further away from the baseline than the 2023 readings) and less than 1.5-inches along the B-axis (movement of less than 2-inches closer to the baseline compared to the 2023 readings). The total movement along the A-axis has increased slightly bringing it further away from the baseline and the movement in the B-axis brought it closer to the baseline when compared to the 2023 readings. Continuing monitoring should be performed.

5.7 Survey Monuments

There were 45 monitoring points surveyed in 2024 in the North Pit and South Pit zones. Every monitoring point surveyed in 2024 had data from 2021 to compare with and determine annual displacement values. From 2023 to 2024, 0 monitoring points were discontinued because movements measured in past years were less than the survey equipment error. No new points were added relative to those collected in 2021.

Potential survey error, the error from measurements using a total station to survey, is estimated by North Star to be 0.1 ft for every 1,000 ft of distance from the control point to the monitoring point. The threshold for the annual rate of local or global slope movement has been previously reported as 0.5 ft per year (BGC 2019). Slope movements below this amount are considered typical of ongoing landform deformation in the area. None of monuments surveyed reported movement greater than the established movement threshold. This is consistent with what was reported for the 2023 survey. The greatest displacement observed was 0.19 feet seen in both MP1994-18, MP1994-23, and MP1994-38. A table showing survey data and a comparison to the 2020 survey is included in Appendix C.

6. CONCLUSIONS AND RECOMMENDATIONS

The following observations and recommendations were made relative to the slope inclinometer movement and survey readings:

- The Digitilt Data Mate II reader experienced a major malfunction and corrupted much of the data collected in 2024. This equipment will require replacing in 2025. Readings collected from IN-1, IN-2, and I98-2 were unusable. Some historic data was also lost from the remaining inclinometers.
- Horizontal movement relative to the baseline readings is present with majority of the readings reporting less than 2-inches of cumulative movement, with most movement near surface. Movement trends show small fluctuations when comparing year of year readings sometimes slightly further away from the baseline or returning closer to the baseline.
- Survey monument readings showed no significant movement.
- The inclinometer probe should be calibrated before readings are collected in 2025.

7. CLOSURE

We trust the above satisfies your requirements currently. Should you have any questions or comments, please do not hesitate to contact us.

Yours sincerely,

Forte Dynamics

Per:

Reviewed by:

Michael Henderson, PE, P.Eng.

Principal Engineer

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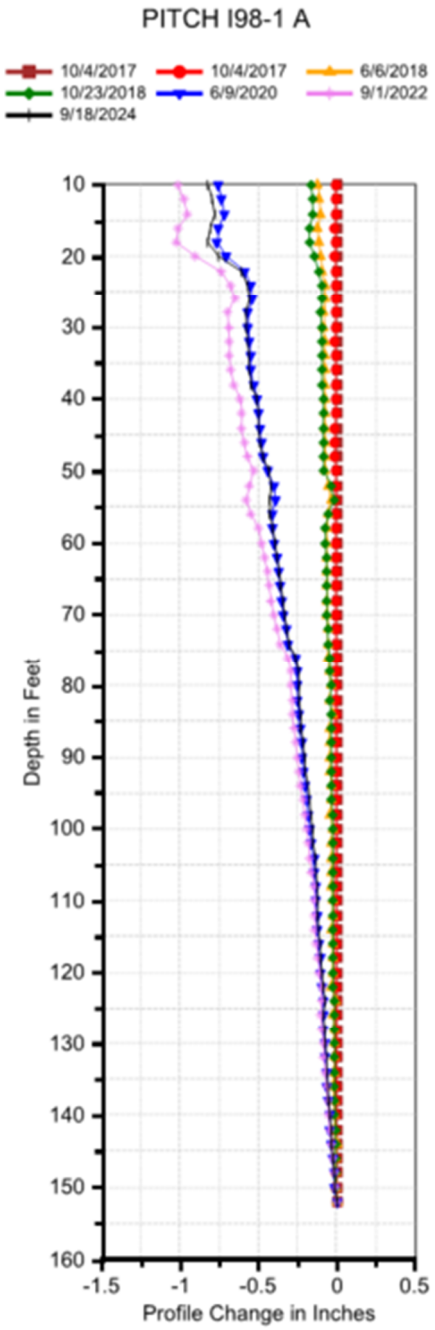
APPENDIX A: INCLINOMETER PLOTS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10/4/2017
6/6/2018
10/23/2018
6/9/2020
9/1/2022
9/18/2024
Depth in Feet
10
20
30
40
50
60
70
80
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110
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130
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150
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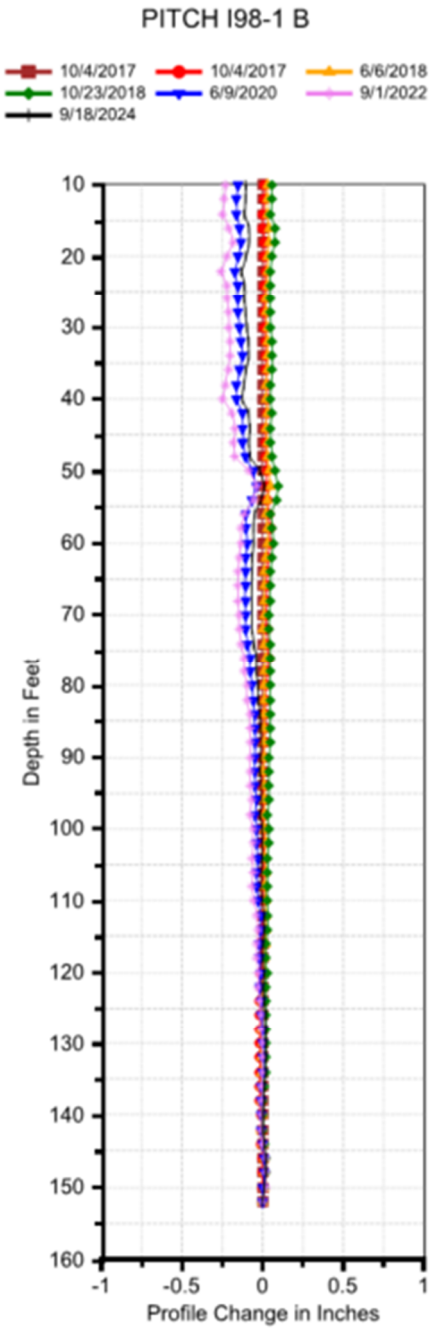
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10/4/2017
10/4/2017
6/6/2018
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9/1/2022
9/18/2024
Depth in Feet
10
20
30
40
50
60
70
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90
100
110
120
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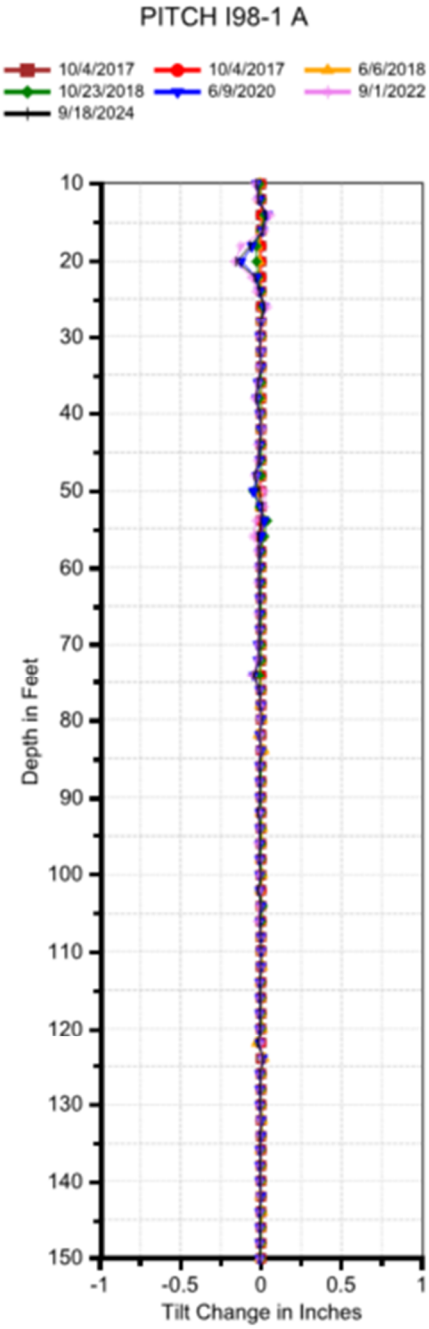
Profile Change in Inches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10/4/2017
10/4/2017
6/6/2018
10/23/2018
6/9/2020
9/1/2022
9/18/2024
Depth in Feet
10
20
30
40
50
60
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100
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120
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140
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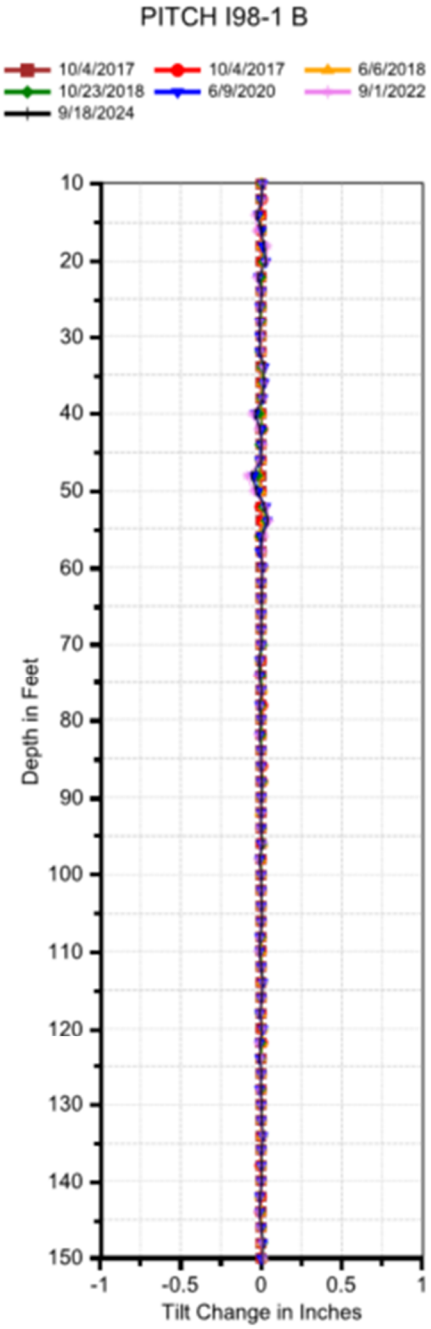
Tilt Change in Inches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10/4/2017
6/6/2018
10/23/2018
6/9/2020
9/1/2022
9/18/2024
Depth in Feet
10
20
30
40
50
60
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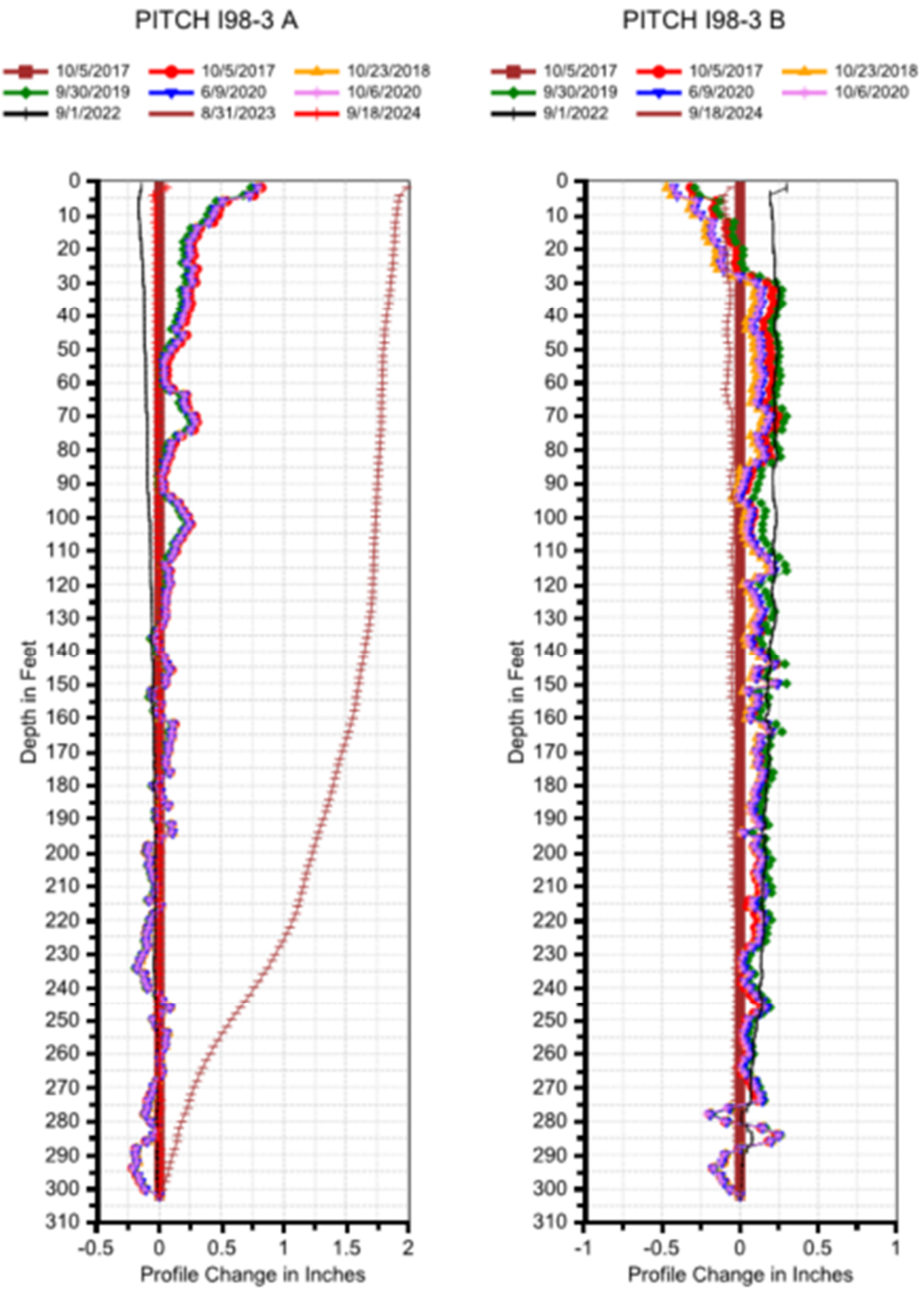
Tilt Change in Inches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10/5/2017
10/23/2018
9/30/2019
6/9/2020
10/6/2020
9/1/2022
8/31/2023
9/18/2024
Depth in Feet
Profile Change in Inches
PITCH I98-3 B
10/5/2017
10/5/2017
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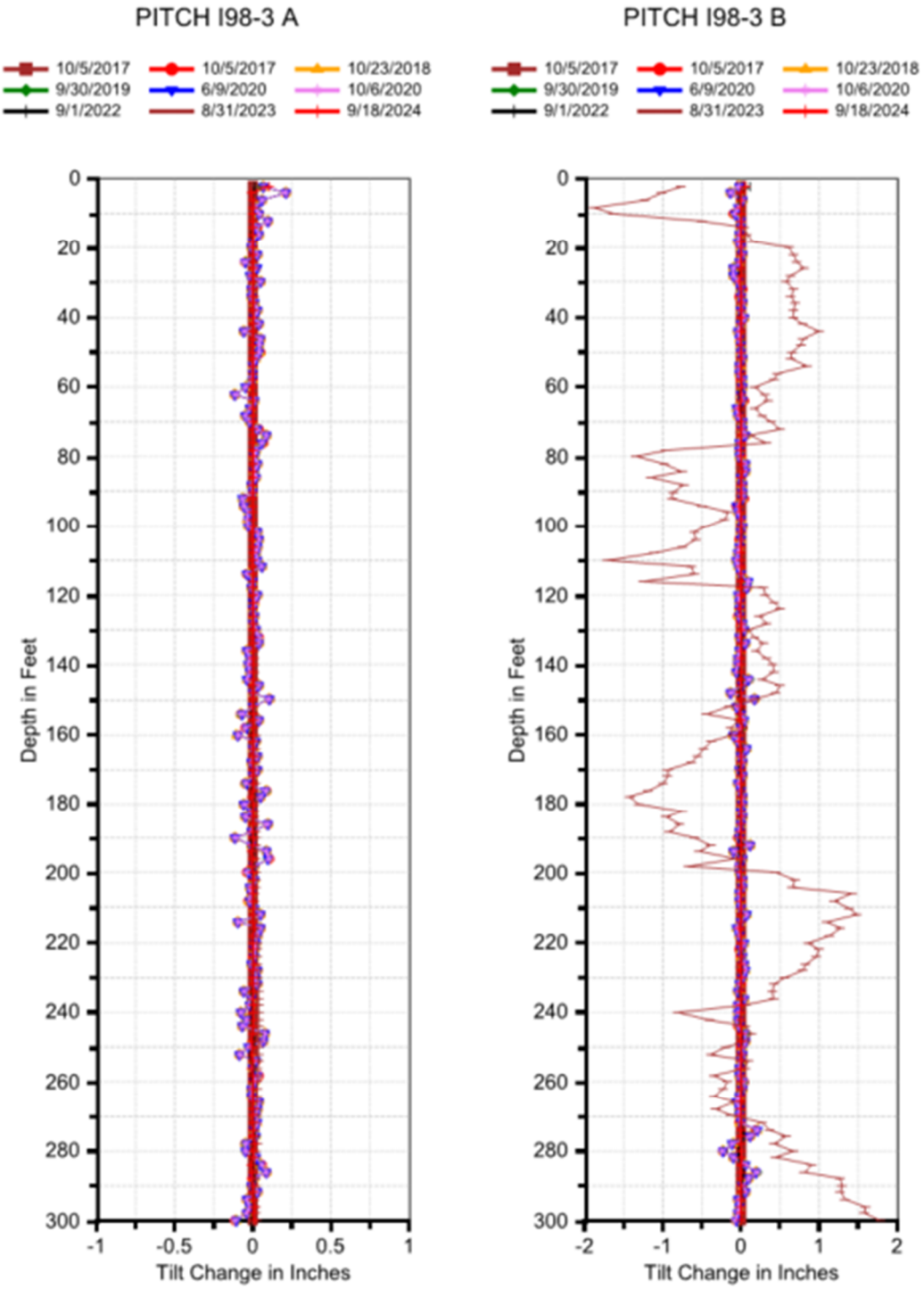
Depth in Feet
Profile Change in Inches



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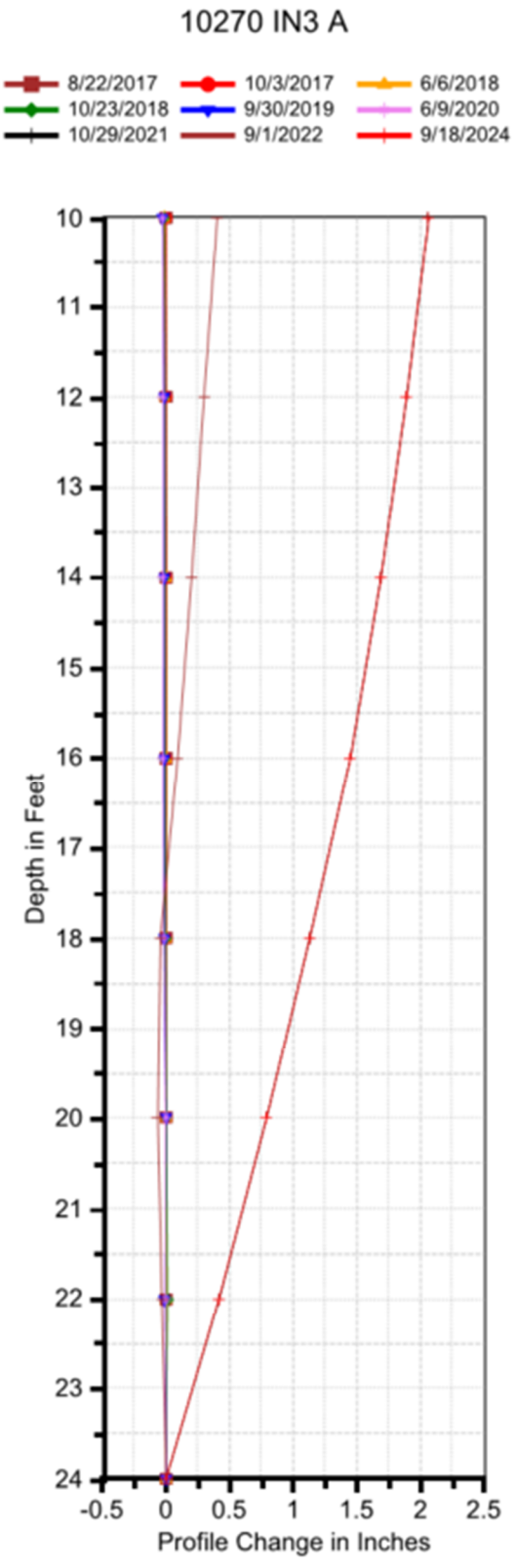
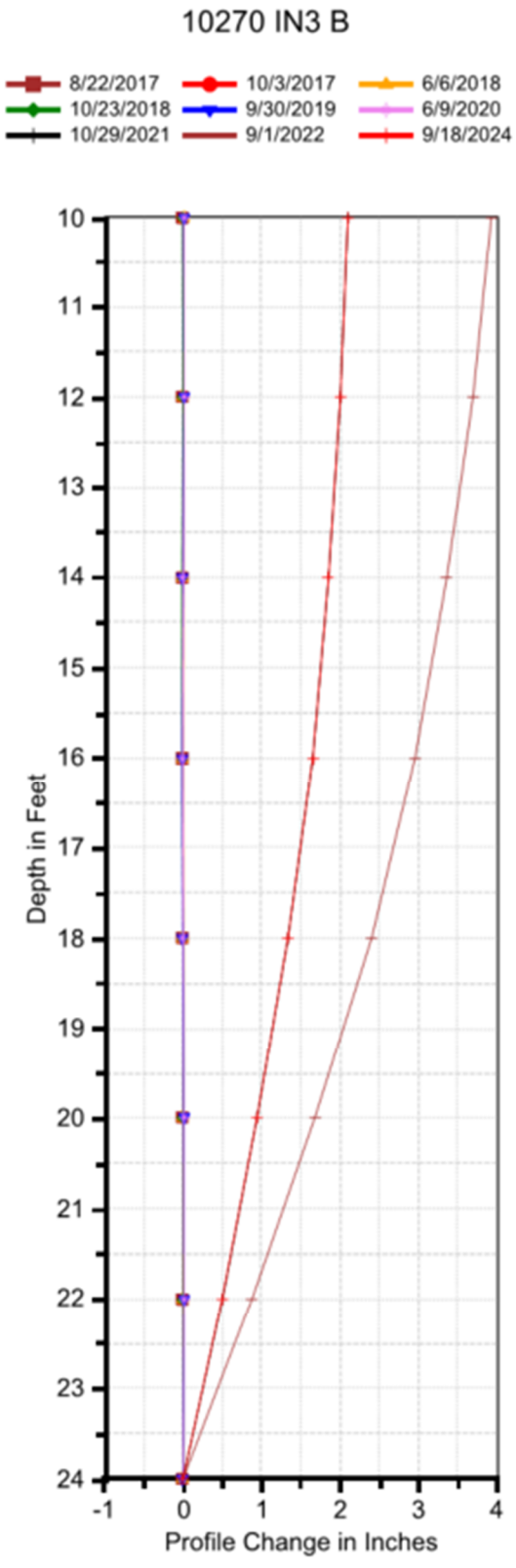
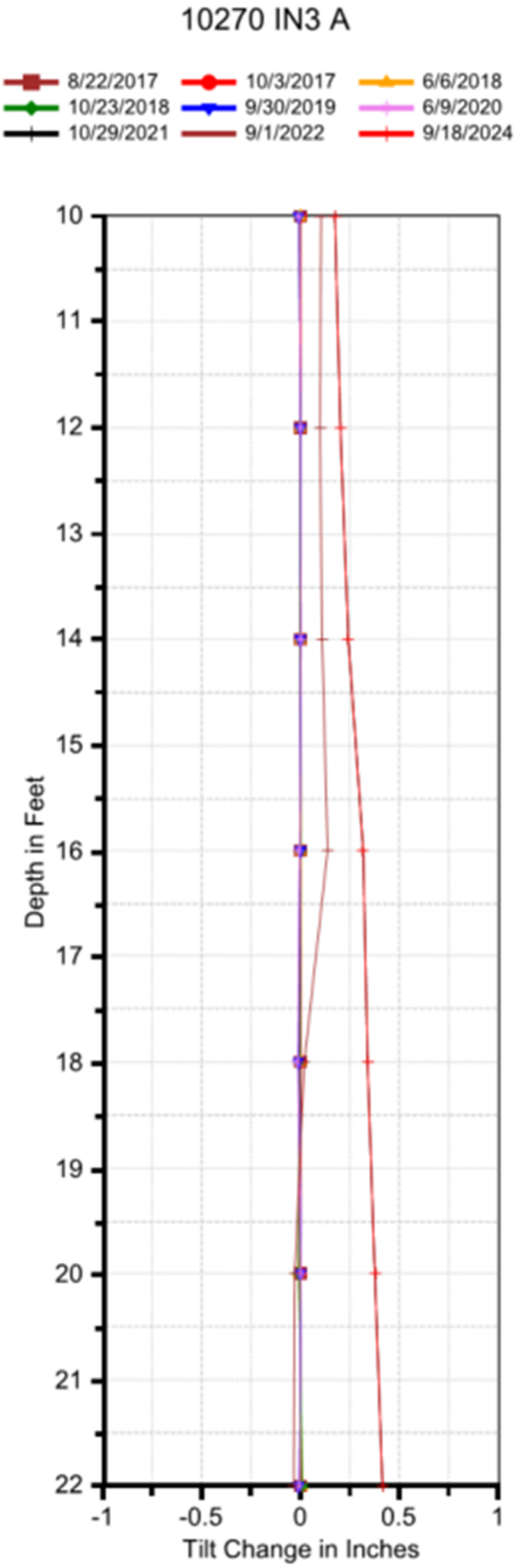




120 Commerce Drive., Units 3 & 4, Fort Collins, CO 80524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10/3/2017
6/6/2018
10/23/2018
9/30/2019
6/9/2020
10/29/2021
9/1/2022
9/18/2024
Depth in Feet
10
11
12
13
14
15
16
17
18
19
20
21
22
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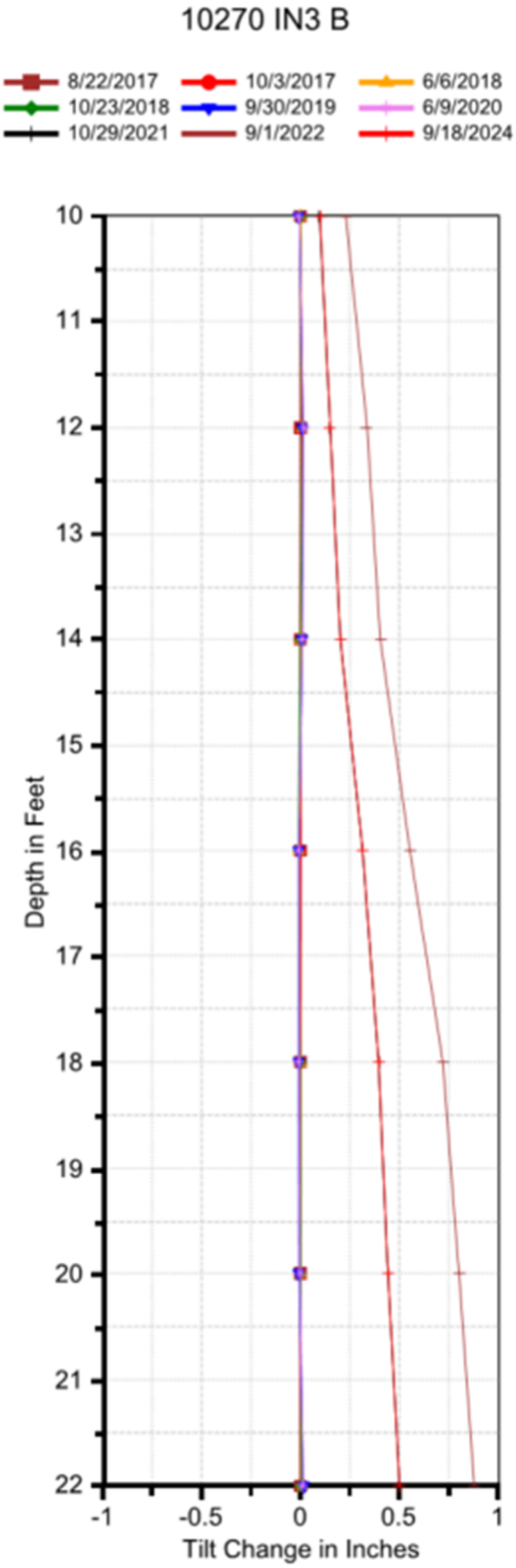
-0.5
0
0.5
1
Tilt Change in Inches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8/22/2017
10/3/2017
6/6/2018
10/23/2018
9/30/2019
6/9/2020
10/29/2021
9/1/2022
9/18/2024
Depth in Feet
10
11
12
13
14
15
16
17
18
19
20
21
22
-1
-0.5
0
0.5
1
Tilt Change in Inches

APPENDIX B: INCLINOMETER PHOTOGRAPHS

Photograph 1: Readings from inclinometer I98-1

APPENDIX C: SURVEY POINT DATA PROVIDED BY NORTH STAR

2024 Monitoring Point Survey

in Pitch Mine Local Coordinates and Local Elevations in U.S. Survey Foot

2024 MONITORING					2023 MONITORING					Compare 2024 to 2023		
Point #	Northing	Easting	Elevation	Description	Point #	Northing	Easting	Elevation	Description	Difference in Northing	Difference in Easting	Difference in Elevation
Monitoring Points												
	removed by Enviroworks (in 2020 in new road)			MP1994-6(WEST-FACE)		*removed by Enviroworks (in 2020 in new road)*			MP1994-6(WEST-FACE)	-	-	-
	removed by Enviroworks (in 2020 South Pit project)			MP1994-7(VERN)		*removed by Enviroworks (in 2020 South Pit project)*			MP1994-7(VERN)	-	-	-
8	113716.28	120789.54	10730.61	MP1994-8(ZORRO)	8	113716.35	120789.65	10730.56	MP1994-8(ZORRO)	-0.07	-0.11	0.05
	not shot in 2024: not moving in previous years			MP1994-9(ZORRO)		*not shot in 2023: not moving in previous years*			MP1994-9(ZORRO)	-	-	-
	not shot in 2024: not moving in previous years			MP1994-10(NORTH-PIT)		*not shot in 2023: not moving in previous years*			MP1994-10(NORTH-PIT)	-	-	-
	removed by Enviroworks (in 2023 North Pit project)			MP1994-12(ZORRO)		*removed by Enviroworks (in 2023 North Pit project)*			MP1994-12(ZORRO)	-	-	-
	not shot in 2024: not moving in previous years			MP1994-16(NORTH-PIT)		*not shot in 2023: not moving in previous years*			MP1994-16(NORTH-PIT)	-	-	-
18	114476.69	120899.61	10873.94	MP1994-18(ZORRO)	18	114476.80	120899.80	10874.02	MP1994-18(ZORRO)	-0.10	-0.19	-0.07
23	114637.09	120811.58	10860.89	MP1994-23(ZORRO)	23	114637.18	120811.77	10860.93	MP1994-23(ZORRO)	-0.09	-0.19	-0.04
	removed by loggers in 2022			MP1994-24(ZORRO)		*removed by loggers in 2022*			MP1994-24(ZORRO)	-	-	-
	removed by loggers in 2022			MP1994-25(ZORRO)		*removed by loggers in 2022*			MP1994-25(ZORRO)	-	-	-
	removed by loggers in 2022			MP1994-26(ZORRO)		*removed by loggers in 2022*			MP1994-26(ZORRO)	-	-	-
	removed by loggers in 2022			MP1994-27(ZORRO)		*removed by loggers in 2022*			MP1994-27(ZORRO)	-	-	-
	removed by loggers in 2022			MP1994-28(ZORRO)		*removed by loggers in 2022*			MP1994-28(ZORRO)	-	-	-
	removed by loggers in 2022			MP1994-29(ZORRO)		*removed by loggers in 2022*			MP1994-29(ZORRO)	-	-	-
	removed by loggers in 2022			MP1994-34(ZORRO)		*removed by loggers in 2022*			MP1994-34(ZORRO)	-	-	-
	removed by loggers in 2022			MP1994-35(ZORRO)		*removed by loggers in 2022*			MP1994-35(ZORRO)	-	-	-
	removed by loggers in 2022			MP1994-36(ZORRO)		*removed by loggers in 2022*			MP1994-36(ZORRO)	-	-	-
	removed by loggers in 2022			MP1994-37(ZORRO)		*removed by loggers in 2022*			MP1994-37(ZORRO)	-	-	-
38	115027.17	120419.43	10811.79	MP1994-38(ZORRO)	38	115027.29	120419.62	10811.87	MP1994-38(ZORRO)	-0.12	-0.19	-0.08
	not shot in 2024: not moving in previous years			MP1994-39(ZORRO)		*not shot in 2023: not moving in previous years*			MP1994-39(ZORRO)	-	-	-
	not shot in 2024: not moving in previous years			MP1994-40(NORTH-PIT)		*not shot in 2023: not moving in previous years*			MP1994-40(NORTH-PIT)	-	-	-
	not shot in 2024: not moving in previous years			MP1994-42(ZORRO)		*not shot in 2023: not moving in previous years*			MP1994-42(ZORRO)	-	-	-
	not shot in 2024: not moving in previous years			MP1994-43(NORTH-PIT)		*not shot in 2023: not moving in previous years*			MP1994-43(NORTH-PIT)	-	-	-
	not shot in 2024: not moving in previous years			MP1994-44(ZORRO)		*not shot in 2023: not moving in previous years*			MP1994-44(ZORRO)	-	-	-
	not shot in 2024: not moving in previous years			MP1994-45(ZORRO)		*not shot in 2023: not moving in previous years*			MP1994-45(ZORRO)	-	-	-
47	113193.57	120683.78	10718.96	MP1994-47(ZORRO)	47	113193.59	120683.79	10718.96	MP1994-47(ZORRO)	-0.02	-0.01	0.00
48	113021.25	120929.02	10795.42	MP1994-48(ZORRO)	48	113021.27	120929.01	10795.34	MP1994-48(ZORRO)	-0.02	0.01	0.08
	not shot in 2024: not moving in previous years			MP1994-50(ZORRO)		*not shot in 2023: not moving in previous years*			MP1994-50(ZORRO)	-	-	-
52	114966.40	121854.32	11094.78	MP-52(ZORRO)		*not shot in 2023: not moving in previous years*			MP-52(ZORRO)	-	-	-
	discontinued monitoring: too dangerous @ top of cliff			MP1995-59(WEST-FACE)		*discontinued monitoring: too dangerous @ top of cliff*			MP1995-59(WEST-FACE)	-	-	-
	removed by Enviroworks (in 2020 South Pit project)			MP1995-63(VERN)		*removed by Enviroworks (in 2020 South Pit project)*			MP1995-63(VERN)	-	-	-
	removed by Enviroworks (in 2020 South Pit project)			MP1995-64(VERN)		*removed by Enviroworks (in 2020 South Pit project)*			MP1995-64(VERN)	-	-	-
	monument washed out in summer 2024 heavy rain storm			MP1996-65(ZORRO)	65	114591.94	120429.59	10662.86	MP1996-65(ZORRO)	-	-	-
66	114245.87	120528.39	10628.50	MP1996-66(ZORRO)	66	114245.97	120528.54	10628.51	MP1996-66(ZORRO)	-0.10	-0.15	-0.01
	monument buried by ditch washout in summer 2024			MP1996-67(ZORRO)	67	113827.80	120540.19	10605.11	MP1996-67(ZORRO)	-	-	-
	not shot in 2024: monument about to fall over cliff			MP1996-68(WEST-FACE)	68	113099.54	119913.84	10538.88	MP1996-68(WEST-FACE)	-	-	-
69	114206.02	120307.96	10543.85	MP1996-69(ZORRO)	69	114206.14	120308.14	10543.87	MP1996-69(ZORRO)	-0.12	-0.18	-0.02
70	113856.74	120350.33	10540.00	MP1996-70(ZORRO)	70	113856.84	120350.40	10539.90	MP1996-70(ZORRO)	-0.10	-0.07	0.10
71	112574.99	120225.53	10793.00	MP1997-71(WEST-FACE)	71	112575.00	120225.56	10793.01	MP1997-71(WEST-FACE)	-0.01	-0.02	-0.01
72	112790.27	120124.51	10711.40	MP1997-72(WEST-FACE)	72	112790.23	120124.54	10711.40	MP1997-72(WEST-FACE)	0.04	-0.03	0.00
73	112826.57	120212.19	10721.45	MP1997-73(WEST-FACE)	73	112826.58	120212.24	10721.47	MP1997-73(WEST-FACE)	-0.01	-0.05	-0.02
74	112871.50	120284.74	10725.65	MP1997-74(WEST-FACE)	74	112871.52	120284.80	10725.67	MP1997-74(WEST-FACE)	-0.02	-0.06	-0.02
75	112891.23	119916.17	10611.11	MP1997-75(WEST-FACE)DISTURBED	75	112891.20	119916.21	10611.14	MP1997-75(WEST-FACE)DISTURBED	0.03	-0.04	-0.03
76	113085.56	120258.58	10630.27	MP1997-76(WEST-FACE)	76	113085.55	120258.59	10630.28	MP1997-76(WEST-FACE)	0.01	-0.01	-0.01
	discontinued monitoring: too dangerous @ top of cliff			MP1997-77(WEST-FACE)		*discontinued monitoring: too dangerous @ top of cliff*			MP1997-77(WEST-FACE)	-	-	-
78	112976.23	119755.10	10530.03	MP1997-78(WEST-FACE)	78	112976.19	119755.11	10530.03	MP1997-78(WEST-FACE)	0.04	-0.01	0.00
79	113159.42	120057.82	10552.30	MP1997-79(WEST-FACE)	79	113159.42	120057.85	10552.31	MP1997-79(WEST-FACE)	0.00	-0.03	-0.01
80	113234.80	120201.76	10569.48	MP1997-80(WEST-FACE)	80	113234.74	120201.76	10569.48	MP1997-80(WEST-FACE)	0.06	0.00	0.00
	not shot in 2024: not moving in previous years			MP1999-81(ZORRO)		*not shot in 2023: not moving in previous years*			MP1999-81(ZORRO)	-	-	-
	not shot in 2024: not moving in previous years			MP1999-82(NORTH-PIT)		*not shot in 2023: not moving in previous years*			MP1999-82(NORTH-PIT)	-	-	-
	not shot in 2024: not moving in previous years			MP1999-83(NORTH-PIT)		*not shot in 2023: not moving in previous years*			MP1999-83(NORTH-PIT)	-	-	-
	not shot in 2024: not moving in previous years			MP1999-84(NORTH-PIT)		*not shot in 2023: not moving in previous years*			MP1999-84(NORTH-PIT)	-	-	-
85	113853.56	120211.91	10488.31	MP1999-85(WEST-FACE)	85	113853.60	120212.02	10488.32	MP1999-85(WEST-FACE)	-0.04	-0.11	-0.01
86	114108.41	120100.22	10470.84	MP1999-86(WEST-FACE)	86	114108.42	120100.31	10470.85	MP1999-86(WEST-FACE)	-0.01	-0.08	0.00
87	114380.77	120149.96	10531.05	MP1999-87(WEST-FACE)	87	114380.88	120150.15	10531.08	MP1999-87(WEST-FACE)	-0.11	-0.19	-0.03
88	114794.96	120137.58	10644.77	MP1999-88(WEST-FACE)	88	114794.93	120137.61	10644.77	MP1999-88(WEST-FACE)	0.03	-0.03	0.00
89	114515.07	119990.01	10526.95	MP1999-89(WEST-FACE)	89	114515.08	119990.03	10527.00	MP1999-89(WEST-FACE)	-0.01	-0.02	-0.05
	not shot in 2024: not moving in previous years			MP1999-90(VERN)		*not shot in 2023: not moving in previous years*			MP1999-90(VERN)	-	-	-
	not shot in 2024: not moving in previous years			MP1999-91(VERN)		*not shot in 2023: not moving in previous years*			MP1999-91(VERN)	-	-	-
	removed by Enviroworks (in 2020 South Pit project)			MP2005-92(VERN)		*removed by Enviroworks (in 2020 South Pit project)*			MP2005-92(VERN)	-	-	-
	removed by Enviroworks (in 2020 South Pit project)			MP2014-93(VERN)		*removed by Enviroworks (in 2020 South Pit project)*			MP2014-93(VERN)	-	-	-
	removed by Enviroworks (in 2020 South Pit project)			MP2017-94(VERN)		*removed by Enviroworks (in 2020 South Pit project)*			MP2017-94(VERN)	-	-	-
	removed by Enviroworks (in 2020 South Pit project)			MP2017-95(VERN)		*removed by Enviroworks (in 2020 South Pit project)*			MP2017-95(VERN)	-	-	-
96	112338.18	120577.92	10905.45	MP2021-96(SOUTH-PIT)	96	112338.24	120577.92	10905.45	MP2021-96(SOUTH-PIT)	-0.06	0.00	0.00
97	112277.05	120463.44	10853.00	MP2021-97(SOUTH-PIT)	97	112277.10	120463.44	10853.02	MP2021-97(SOUTH-PIT)	-0.05	0.00	-0.02
98	112179.92	120531.64	10854.53	MP2021-98(SOUTH-PIT)	98	112179.97	120531.63	10854.55	MP2021-98(SOUTH-PIT)	-0.05	0.01	-0.02
99	112149.75	120431.48	10815.13	MP2021-99(SOUTH-PIT)	99	112149.81	120431.51	10815.16	MP2021-99(SOUTH-PIT)	-0.06	-0.03	-0.03
100	112175.07	120255.54	10758.05	MP2021-100(SOUTH-PIT)	1100	112175.10	120255.52	10758.07	MP2021-100(SOUTH-PIT)	-0.03	0.02	-0.02
101	112077.24	120298.60	10756.27	MP2021-101(SOUTH-PIT)	1101	112077.27	120298.60	10756.30	MP2021-101(SOUTH-PIT)	-0.02	0.01	-0.03
	removed by Meridiam in 2021, before it was surveyed in			MP2021-102		*removed by Meridiam in 2021, before it was surveyed in*			MP2021-102	-	-	-
103	112049.20	120087.90	10683.94	MP2021-103(SOUTH-PIT)	1103	112049.24	120087.89	10683.93	MP2021-103(SOUTH-PIT)	-0.04	0.01	0.01
104	111913.75	120140.20	10680.97	MP2021-104(SOUTH-PIT)	1104	111913.76	120140.20	10680.97	MP2021-104(SOUTH-PIT)	-0.01	0.00	0.00
105	111839.70	120046.08	10639.75	MP2021-105(SOUTH-PIT)	105	111839.73	120046.10	10639.76	MP2021-105(SOUTH-PIT)	-0.03	-0.02	-0.01
106	115433.44	120769.16	10931.98	MP2024-106(ZORRO)		*new monitoring point set in 2024*				-	-	-
107	114782.85	121076.74	10919.75	MP2024-107(ZORRO)		*new monitoring point set in 2024*				-	-	-
108	114419.92	121013.34	10889.07	MP2024-108(ZORRO)		*new monitoring point set in 2024*				-	-	-
110	115639.79	121150.89	11040.23	MP2024-110(ZORRO)		*new monitoring point set in 2024*				-	-	-
111	115525.99	121554.70	11115.84	MP2024-111(ZORRO)		*new monitoring point set in 2024*				-	-	-
112	114277.30	121713.72	11040.54	MP2024-112(ZORRO)		*new monitoring point set in 2024*				-	-	-
113	113814.77	121476.64	10952.74	MP2024-113(ZORRO)		*new monitoring point set in 2024*				-	-	-
114	113512.97	121384.29	10911.74	MP2024-114(ZORRO)		*new monitoring point set in 2024*				-	-	-
115	113922.43	120962.09	10786.70	MP2024-115(ZORRO)		*new monitoring point set in 2024*				-	-	-
116	113843.72	120967.47	10789.95	MP2024-116(ZORRO)		*new monitoring point set in 2024*				-	-	-
117	113616.30	120974.03	10799.90	MP2024-117(ZORRO)		*new monitoring point set in 2024*				-	-	-
118	113335.88	120956.81	10799.83	MP2024-118(ZORRO)		*new monitoring point set in 2024*				-	-	-
119	114150.34	121342.34	10922.73	MP2024-119(ZORRO)		*new monitoring point set in 2024*				-	-	-
120	114499.75	120425.05	10641.00	MP2024-120(ZORRO)		*new monitoring point set in 2024*				-	-	-
121	113863.18	120526.36	10604.27	MP2024-121(ZORRO)		*new monitoring point set in 2024*				-	-	-
122	112555.62	119037.76	10474.63	MP2024-122(P-9)		*new monitoring point set in 2024*				-	-	-
123	112403.15	118656.84	10460.23	MP2024-123(P-9)		*new monitoring point set in 2024*				-	-	-
	removed by Enviroworks (in 2020 South Pit project)			MP2005-HS4(VERN)		*removed by Enviroworks (in 2020 South Pit project)*			MP2005-HS4(VERN)	-	-	-
	removed by Enviroworks (in 2020 South Pit project)			MP2005-S1(VERN)		*removed by Enviroworks (in 2020 South Pit project)*			MP2005-S1(VERN)	-	-	-
	removed by Enviroworks (in 2020 South Pit project)			MP2010-S5(VERN)		*removed by Enviroworks (in 2020 South Pit project)*			MP2010-S5(VERN)	-	-	-
	removed by Enviroworks (in 2020 South Pit project)			MP2010-S6(VERN)		*removed by Enviroworks (in 2020 South Pit project)*			MP2010-S6(VERN)	-	-	-
	removed by Enviroworks (in 2020 South Pit project)			MP2010-S7(VERN)		*removed by Enviroworks (in 2020 South Pit project)*			MP2010-S7(VERN)	-	-	-
	removed by Enviroworks (in 2020 South Pit project)			MP2010-S9(VERN)		*removed by Enviroworks (in 2020 South Pit project)*			MP2010-S9(VERN)	-	-	-
	removed by Meridiam (in 2021 South Pit grading)			MP2010-S10(VERN)		*removed by Meridiam (in 2021 South Pit grading)*			MP2010-S10(VERN)	-	-	-
2002	111870.94	119876.07	10583.94	MP2010-S11(SOUTH-PIT)	1007	111870.95	119876.09	10583.94	MP2010-S11(SOUTH-PIT)	-0.01	-0.02	0.00
2003	111839.51	119798.36	10561.71	MP2010-S12(SOUTH-PIT)	1008	111839.51	119798.39	10561.70	MP2010-S12(SOUTH-PIT)	0.00	-0.03	0.01
	removed by Enviroworks (in 2020 South Pit project)			MP2011-VENTRAISE(SOUTH-PIT)		*removed by Enviroworks (in 2020 South Pit project)*			MP2011-VENTRAISE(SOUTH-PIT)	-	-	-
	removed by Enviroworks (in 2020 South Pit project)			MP2014-H5R(VERN)		*removed by Enviroworks (in 2020 South Pit project)*			MP2014-H5R(VERN)	-	-	-
Wells in North Pit and South Pit used as Monitoring Points												
	removed by loggers in 2022			C1994-1(ZORRO)		*removed by loggers in 2022*			C1994-1(ZORRO)	-	-	-
	removed by loggers in 2022			I1994-2(ZORRO)		*removed by loggers in 2022*			I1994-2(ZORRO)	-	-	-
1007	113051.16	119575.94	10423.87	I1998-1(WEST-FACE)	1004	113051.15	119575.94	10423.85	I1998-1(WEST-FACE)	0.01	0.00	0.02
2001	113069.22	119901.54	10537.15	I1998-2(WEST-FACE)	1000	113069.24	119901.56	10537.14	I1998-2(WEST-FACE)	-0.02	-0.02	0.01
	not shot in 2024: not moving in previous years			I1998-3(ZORRO)		*not shot in 2023: not moving in previous years*			I1998-3(ZORRO)	-	-	-
1003	112723.15	119837.31	10616.15	P1995-4(WEST-FACE)2"AC	1005	112723.16	119837.33	10616.15	P1995-4(WEST-FACE)2"AC	-0.01	-0.02	0.00
	not shot in 2024: not moving in previous years			P1995-5(SOUTH-PIT)	1009	112000.80	119806.90	10561.10	P1995-5(SOUTH-PIT)	-	-	-
1005	112991.16	119582.82	10443.33	P2012-7R(WEST-FACE)	1002	112991.13	119582.79	10443.34	P2012-7R(WEST-FACE)	0.03	0.03	0.00
1006	113173.42	119686.85	10434.00	P-8(WEST-FACE)	1003	113173.39	119686.87	10434.00	P-8(WEST-FACE)	0.03	-0.02	0.00
2000	112569.04	119159.97	10482.65	P-9(WEST-FACE)	1001	112569.02	119159.98	10482.69	P-9(WEST-FACE)	0.02	-0.01	-0.04
1004	112987.53	120087.54	10621.60	P-10(WEST-FACE)PUNCH-ON-HASP	1006	112987.50	120087.61	10621.54	P-10(WEST-FACE)PUNCH-ON-HASP	0.03	-0.07	0.06
	not shot in 2024: no longer monitoring recent wells			P2015-11(VERN)		*not shot in 2023: no longer monitoring recent wells*			P2015-11(VERN)	-	-	-
	not shot in 2024: no longer monitoring recent wells			P2015-12(SOUTH-PIT)		*not shot in 2023: no longer monitoring recent wells*			P2015-12(SOUTH-PIT)	-	-	-
	not shot in 2024: no longer monitoring recent wells			P2017-13(VERN)		*not shot in 2023: no longer monitoring recent wells*			P2017-13(VERN)	-	-	-
	not shot in 2024: no longer monitoring recent wells			P2017-14(WEST-FACE)		*not shot in 2023: no longer monitoring recent wells*			P2017-14(WEST-FACE)	-	-	-
	not shot in 2024: no longer monitoring recent wells			P2017-15(VERN)		*not shot in 2023: no longer monitoring recent wells*			P2017-15(VERN)	-	-	-
	not shot in 2024: no longer monitoring recent wells			P2018-16(SOUTH-PIT)		*not shot in 2023: no longer monitoring recent wells*			P2018-16(SOUTH-PIT)	-	-	-

North Star Surveying, Inc.
December 14, 2024

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APPENDIX C

2024 Sediment Embankment Report

CONSULTING
SERVICES
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590 Oak Road
Ridgway, CO 81432
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April 1, 2025
Project No.: File

Mr. David Wykoff, Site Supervisor
Homestake Mining Company
Pitch Reclamation Project
112 Marshall Street
Sargents, CO 81249

Dear Mr. Wykoff,

RE: Pitch Reclamation Project – 2024 Annual Report
Sediment Control Embankment, Permit ID 280110

Homestake Mining Company (HMC), a subsidiary of Barrick Gold Corporation, owns and operates the Pitch Mine. The site is in the Sawatch Range of Saguache County within the Gunnison National Forest. It is located 5 miles east of Sargents, Colorado, and 18 miles southwest of Salida, Colorado.

HMC operated the site as an open pit mine for the extraction of uranium ore from 1979 to 1984. From 1984 to present, the project has been maintained by HMC as it progressed into the final stages of closure and reclamation.

The sediment control embankment was constructed in 1980. The embankment was constructed below the confluence of the Indian and Tie Camp drainages to allow the settlement of suspended solids from surface water before releasing into Indian Creek. The embankment is a jurisdictional structure under the Colorado Division of Water Resources, with permit ID 280110. The dam is classified as a “low hazard” structure under the Colorado Dam Safety Rules and Regulations for Dam Safety and Dam Construction (January 1, 2020). The safe storage level is 9900 feet above mean sea level (amsl).

The embankment is approximately 80 feet high at the maximum section and has a crest elevation of 9905.0 feet amsl. The hydraulic height of the dam is 75 feet. The structure was designed as a zoned embankment with a 15.0-foot-thick clay core and both upstream and downstream rockfill shells constructed with compacted weathered sandstone. The pond area has a surface area of approximately 5.4 acres with a corresponding capacity of 66 acre-feet. An emergency overflow spillway exists through the right abutment with an outfall weir elevation of 9900.0 feet amsl (Glasgow, 2002).

Following the completion of construction in 1981, five piezometers and five permanent survey monuments were installed to monitor both changes in the phreatic surface within the embankment and physical movements of the embankment, respectively. In 2000, four additional piezometers were installed along the crest of the embankment.

Seepage was observed on the downstream face of the embankment in June 2000 and discussed in the 2000 and 2001 annual reports. This seepage has not reappeared following the repair work conducted in 2001.

Significant construction was undertaken in 2020 to improve seepage control on the reservoir and to replace the outlet system which was reaching its original design life. The construction in 2020 included removing riprap from the face of the embankment, installation of a new seepage barrier

system that extended to the crest of the embankment, removal and replacement of the primary outlet works, and grout filling of small pipelines which extended from the reservoir to the water treatment plant.

This 2024 annual monitoring report is a component of the continuing Engineer of Record (EOR) role established by HMC and uses survey data provided by Northstar Surveying, Inc. (Northstar) and piezometric data provided by HMC. This monitoring report includes a physical inspection of the structure that was conducted on August 14, 2024, by Mr. Michael Henderson, PE, who is the facility's EOR.

1.0 EMBANKMENT DISPLACEMENT MONUMENTS

The survey monuments (M1 to M5) measure vertical displacement and are located near the upstream side of the embankment crest level, as shown on Figure 1-1. The five permanent survey monuments have been surveyed annually since 1981.

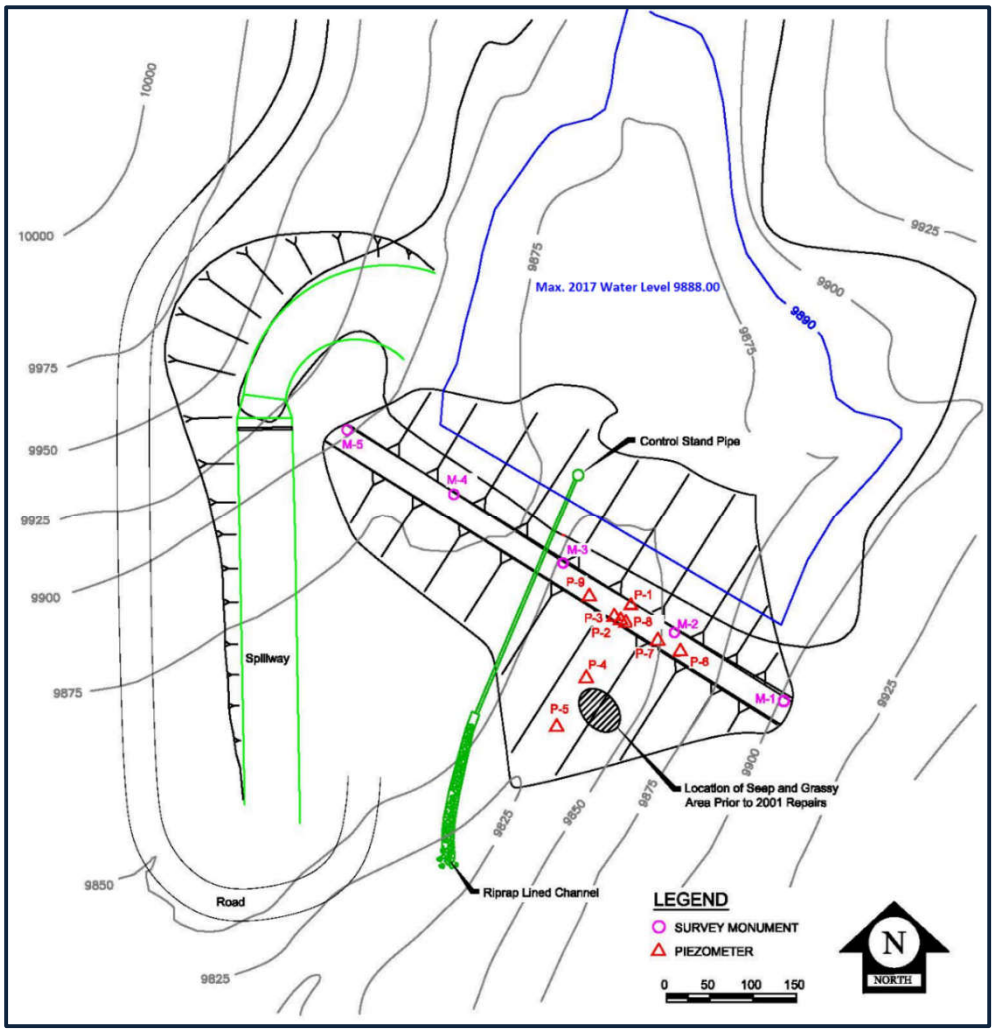

Figure 1-1: Monitoring Station Locations (Glasgow, 2002)

As shown in Table 1-1, differences between the 2018 survey and the 2020 survey of embankment monitoring points are between -0.02 feet and +0.01 feet, which is consistent with previous measurements and within the range of survey error.

Table 1-1: Crest Monitoring Elevations[1]

Date	Monument 1	Monument 2	Monument 3	Monument 4	Monument 5
3-Sep-81	9905.94	9905.26	9904.85	9906.06	9905.15
15-Sep-81	9905.93	9905.27	9904.85	9906.05	9905.17
1-Oct-81	9905.92	9905.24	9904.83	9906.02	9905.14
8-Oct-81	9905.92	9905.26	9904.85	9906.04	9905.18
16-Nov-81	9905.92	9905.25	9904.84	9906.06	9905.19
2-Dec-81	9905.91	9905.24	9904.83	9906.07	9905.10
17-Dec-81	9905.94	9905.27	9904.85	9906.05	9905.22
19-Jan-82	9905.90	9905.23	9904.82	9906.06	9905.16
2-Feb-82	9905.93	9905.25	9904.85	9906.09	9905.23
18-May-82	9905.87	9905.13	9904.66	9905.97	9905.21
3-Jun-82	9905.85	9905.09	9904.59	9905.94	9905.19
1-Jul-82	9905.83	9905.05	9904.55	9905.90	9905.16
6-Aug-82	9905.83	9905.05	9904.55	9905.71	9905.19
18-Nov-82	9905.78	9905.01	9904.53	9905.87	9905.20
7-Jun-83	9905.66	9904.87	9904.43	9905.82	9905.19
27-Sep-83	9905.43	9904.70	9904.31	9905.68	9905.17
2-Aug-84	9905.48	9904.71	9904.27	9905.64	9905.08
28-Jun-85	9905.48	9904.72	9904.34	9905.77	9905.23
16-Jul-86	9905.63	9904.90	9904.47	9905.79	9905.12
9-Sep-87	9905.67	9904.86	9904.46	9905.82	9905.03
20-Sep-88	9905.51	9904.72	9904.36	9905.75	9905.34
7-Sep-89	9905.51	9904.73	9904.34	9905.68	9905.20
20-Sep-90	9905.45	9904.65	9904.25	9905.63	9905.15
25-Sep-91	9905.49	9904.70	9904.31	9905.66	9905.26
30-Sep-92	9905.47	9904.67	9904.29	9905.64	9905.23
23-Sep-93	9905.46	9904.67	9904.29	9905.62	9905.24
29-Jul-94	9905.47	9904.67	9904.27	9905.62	9905.24
27-Sep-95	9905.46	9904.66	9904.27	9905.62	9905.25

[1] Original mine coordinate system

Date	Monument 1	Monument 2	Monument 3	Monument 4	Monument 5
17-Sep-96	9905.46	9904.65	9904.26	9905.60	9905.26
13-Oct-97	9905.46	9904.67	9904.29	9905.63	9905.27
29-Sep-98	9905.45	9904.64	9904.26	9905.61	9905.27
7-Nov-99	9905.44	9904.64	9904.25	9905.60	9905.26
26-Oct-00	9905.45	9904.64	9904.26	9905.62	9905.29
15-Oct-01	9905.43	9904.64	9904.26	9905.59	9905.24
24-Sep-02	9905.46	9904.65	9904.26	9905.62	9905.27
8-Sep-03	9905.43	9904.62	9904.23	9905.58	9905.24
24-Sep-04	9905.44	9904.64	9904.27	9905.61	9905.27
23-Oct-05	9905.43	9904.63	9904.25	9905.58	9905.26
1-Oct-06	9905.44	9904.63	9904.25	9905.59	9905.27
20-Oct-07	9905.44	9904.62	9904.24	9905.59	9905.25
17-Oct-08	9905.44	9904.63	9904.24	9905.60	9905.27
23-Oct-09	9905.43	9904.61	9904.24	9905.57	9905.24
12-Sep-10	9905.44	9904.62	9904.24	9905.58	9905.24
24-Sep-11	9905.44	9904.62	9904.24	9905.59	9905.27
30-Sep-12	9905.43	9904.61	9904.24	9905.58	9905.27
23-Jul-13	9905.43	9904.61	9904.23	9905.58	9905.27
30-Jul-14	9905.41	9904.60	9904.22	9905.55	9905.26
25-Aug-15	9905.42	9904.60	9904.22	9905.56	9905.22
30-Aug-16	9905.43	9904.62	9904.22	9905.57	9905.27
5-Oct-17	9905.42	9904.61	9904.24	9905.58	9905.26
23-Oct-18	9905.43	9904.62	9904.24	9905.57	9905.28
17 Oct-19	9905.43	9904.62	9904.23	9905.57	9905.27
24-Aug 2020[2]	9905.43	9904.61	9904.23	9905.58	9905.26
Differential 2018-2020	+0.00	-0.01	-0.01	+0.01	-0.02

Key: Maximum Elevation (Blue highlight)
Minimum Elevation (Green highlight)

Four of the dam monitoring point monuments (1, 2, 3, and 4) were removed as part of the 2020 dam remediation project on September 24, 2020, to allow a new liner to be placed on the upstream face of the dam.

[2] Original survey monuments were removed during 2020 construction of the dam and replaced with new monuments on the crest of the embankment on Oct 15, 2020. This is the last set of readings before removal.

These monuments were re-established on October 15, 2020, near the prior monuments. The numbering system for the replacement monuments is Dam 6, Dam 7, Dam 8, and Dam 9. This replacement is detailed in a Northstar report dated October 30, 2020 (included in Attachment A to the 2022 Inspection Report).

Table 1-2 shows the initial survey readings on the reestablished survey monitoring points, plus the non-replaced Monument 5, taken on October 17, 2020.

Table 1-2: Crest Monitoring Elevations After October 15, 2020

Date	Monument 5	Monument 6	Monument 7	Monument 8	Monument 9
17 Oct 2020	9905.24	9905.11	9904.44	9905.08	9905.39
23 July 2021	9905.24	9905.07	9904.42	9905.07	9905.40
19 Aug 2022	9905.24	9905.09	9904.44	9905.08	9905.44
17 Oct 2023	9905.26	9905.08	9904.44	9905.07	9905.45
15 Oct 2024	9905.26	9905.08	9904.43	9905.07	9905.43

The results of this survey indicate that the sediment control dam is stable and is not experiencing vertical movement.

2.0 PIEZOMETER EVALUATION

There are currently nine piezometers monitoring water levels in the embankment. The first five were installed when the embankment was completed in 1981. Four additional piezometers were installed along the crest of the embankment in 2000. The piezometers are named P1 through P9 in Figure 1-1 (Section 1.0) and called P-1 through P-9 in Table 2-1. This section will discuss the history and the evaluation of piezometers for 2022.

2.1 Piezometric History of the Sediment Control Embankment

In June 2000, seepage was observed on the downstream face of the embankment. Subsequent evaluations during 2000 determined there was a localized elevated phreatic surface within the embankment and the downstream shell. Remediation work was conducted in 2001 to identify the cause and repair the embankment. The repair consisted of installing a cutoff trench and clay blanket on the upstream face over the seepage area.

The top of the inclined clay blanket constructed in 2001 is at elevation 9885.5 feet amsl. A final engineering report detailing the repairs and performance was provided to the Colorado Division of Water Resources on January 7, 2003 (Glasgow, 2002). In May 2004, the operating pond level was increased by 10 feet to an elevation of 9888.5 feet amsl. In May 2005, the water level in the pond reached a maximum elevation of 9893.5 feet amsl. This water level was the highest in the pond since the repair work was performed in 2001, and it was 7 feet below the spillway crest elevation of 9900.0 feet amsl. The water levels in P1, P4, and P8 responded with a quick rise in their piezometric levels corresponding to the water being temporarily stored above the repair level but the water levels in the piezometers dropped back quickly to normal levels as the pond water level dropped below 9885.5 feet amsl.

The response to the 2005 reservoir level indicated that the seepage through the embankment was effectively controlled to the elevation of the 2001 inclined clay blanket, but that storage above that elevation would result in increasing phreatic levels in the embankment. HMC set the top of the inclined clay blanket as the maximum desired operating level and then undertook additional construction in 2020 to improve seepage control.

The following major components of the sediment pond facility were rehabilitated in 2020:

- Removal of the upstream riprap from the embankment;
- Placement of a bituminous geomembrane liner on the upstream face of the embankment extending to the crest elevation of 9905 feet amsl;
- Removal and replacement of the primary outlet riser, including valves and access walkway; and
- Replacement of the upstream riprap.

2.1 Piezometer Data Evaluation for 2024

The meteorological station at the site was not operable during 2024, so this year is lacking a measurement of the total precipitation. The total precipitation for 2023 was 11.9 inches measured at the Colorado Porphyry Snotel site, similar to the total precipitation for 2021 and 2022. The total precipitation for the period January 2020 through December 2020 was 7.36 inches. From January 2018 through December 2018, the total precipitation was approximately 360 millimeters (mm) (14.2 inches). This compares with precipitation from January 2017 to December 2017 of 439 mm (17.3 inches) and from January 2016 to December 2016 of 482 mm (19.0 inches).

Piezometers P1, P2, P3, P6, P7, P8, and P9 are located on the Sediment Pond embankment crest, while Piezometers P4 and P5 are located on the downstream slope of the embankment. The comparison between 2016, 2017, 2018, 2020, 2021, and 2022 maximum piezometric levels for each of the piezometers is presented in Table 2-1. Piezometer levels are presented in Table 2-2 and show the piezometric levels varied from 0.10 to 3.45 feet, which is within the expected range, except for P-1 and P-5 in 2023. An analysis of the data recorded at 15-minute intervals indicated that the data for P-1 increased over 3 days and then returned to more normal levels and did not correspond to an increased lake level. The data from P-5 also showed a short-term increase over less than 1 day, again without a corresponding increase in lake level. These variations are likely due to instrument readings rather than real increases in the piezometric level in the embankment.

Table 2-1: Maximum Change in Water Levels in Embankment Piezometers[3]

Year	Maximum Elevation (feet amsl)								
	P-1	P-2	P-3	P-4	P-5	P-6	P-7	P-8	P-9
2016	9869.94	9847.51	9867.51	9828.3	9829.78	9870.86	9870.33	9866.28	9865.79
2017	9869.93	9847.11	9866.82	9829.34	9830.53	9870.01	9870.73	9867.16	9866.04
2018	9860.36	9845.82	9864.32	9828.09	9828.7	9867.39	9866.65	9862.76	9864.24

[3] 2024 piezometer levels from January 1, 2024, through December 31, 2024. Some missing records when instruments were offline.

Year	Maximum Elevation (feet amsl)								
	P-1	P-2	P-3	P-4	P-5	P-6	P-7	P-8	P-9
2020	9868.60	9845.39	9866.84	9828.20	9828.77	9868.17	9869.53	9861.84	9865.12
2021	9861.28	9844.91	9861.06	9828.20	9829.75	9867.58	9866.91	9860.03	9864.58
2022	9859.06	9844.88	9863.43	9828.12	9831.05	dry	9866.60	9861.22	9864.66
2023	9876.14	9844.86	9866.41	9828.06	9837.52	9868.13	9868.58	9861.71	9865.0
2024	9879.31	9845.00	9866.47	9831.85	9834.37	9867.52	9868.49	9861.76	9866.09

2.1 Facility Maintenance History

Piezometer P4 is close to the seepage area noted in 2000, and it is monitored closely. From 2005 to 2009 it was observed that the water level in P4 was not falling back as rapidly as the other piezometers. It was noted that when the P4 and P5 probe were pulled out, the probe was covered with silt. The silt buildup had not allowed the pipes to drain sufficiently to accurately reflect the phreatic surface in the embankment. In July 2009, both piezometers P4 and P5 were flushed with high-pressure water, approximately 250 gallons at 80 to 90 pounds per square inch (psi), to minimize the silt and other debris that had built up in the standpipes. The high-pressure flushing resulted in the water levels in both piezometers falling back to normal levels within a few days over the next few years, with the average water level in P4 dropping by more than 4.00 feet.

In 2015, the water level rise in P4 was small due to the water level in the pond being kept below the elevation of the 2001 repair. In 2016, the water in the pond increased to 9888 feet amsl elevation for approximately 2 weeks in May due to snow melt with little rise in the water level in P4. A similar event occurred in 2017, with May being the month the pond increased to 9888 feet amsl, elevating the piezometer reading for approximately 3 weeks.

The flushing of P-7 and P-8 in late 2015, along with clearing of the drain line in 2009 has continued to keep water levels low in the downstream and toe section of the embankment. In 2016, with precipitation the lowest in the past 3 years, all piezometer levels were down relative to 2015 and 2014. In 2014, the water level in P4 increased by 6.31 feet but fell back rapidly. In 2016, the increase was only 0.36 feet. The high-pressure flushing of P7 and P8 in late 2015 allowed water levels in both piezometers to rise and fall back quickly compared to their behavior in 2013 and 2014.

In 2014, maintenance included adding a debris trap above the outlet pipe and removal of pine seedlings on the downstream face of the embankment. The debris trap was cleaned in 2016, and pine seedlings were removed from the downstream face once again. No significant maintenance activities occurred in 2017.

3.0 2024 PHYSICAL INSPECTION

A physical inspection of the Sediment Control Embankment and related facilities was undertaken by the EOR on August 14, 2024. The upstream and downstream embankment toes were inspected, along with the crest.

No signs of physical distress or movement were noted. The emergency spillway is in good operating condition, with no sign of being used during the past year. The primary outlet system,

which was reconstructed in 2020, is in good operating condition. No excessive vegetation or burrowing animals were noted.

4.0 RECOMMENDATIONS

Strata-Geo has the following recommendations after reviewing the 2024 data and pertaining documents focusing on the Sediment Control Embankment:

- Reduce the piezometer data to an average daily reading and provide the data to the EOR on a monthly basis; and
- Develop Trigger Action Response Plans (TARPs) for the piezometers in the embankment, that should be integrated into the site operating procedures. These TARPs would consist of yellow and red maximum piezometer levels.

5.0 CONCLUSION

The 2024 survey results continue to indicate that the total vertical movement in the embankment is minimal, within historic levels, and lies within the range of survey error.

Water level trends measured in the piezometers for 2024 are consistent with historic readings, except for anomalous readings as discussed above, and show that the embankment is operating as expected.

Yours sincerely,

Strata-Geo LLC

Michael Henderson, PE
Engineer of Record

APPENDIX D

Radioactive Materials License #150-01 Amendment 22

COLORADO
Department of Public Health & Environment

Radioactive Materials License

Pursuant to the Colorado Radiation Control Act, Title 25, Article 11, Colorado Revised Statutes, and the State of Colorado Rules and Regulations Pertaining to Radiation Control (the Regulations), and in reliance on statements and representations heretofore made by the licensee designated below; a license is hereby issued authorizing such licensee to transfer, receive, possess and use the radioactive material(s) designated below; and to use such radioactive material(s) for the purpose(s) and at the place(s) designated below. This license is subject to all applicable rules, regulations, and orders now or hereafter in effect of the Colorado Department of Public Health and Environment and to any conditions specified below.

1. Licensee: Homestake Mining Company of California

2. Mailing address: P.O. Box 40, Sargents, CO 81248

3. License number: CO 150-01, amendment number 22

4. Expiration date: April 30, 2029

5. Authorized storage/use location: approximately 10 miles east of Sargents, Colorado in portions of Sections 29, 30, 31, and 32, T48N, R6E, New Mexico Principal Meridian. 112 Marshall St., Sargents, CO 81248. Specifically, in the clay-lined and bermed low-grade ore stockpiles situated on the Indian Creek and Tie Camp waste rock-disposal sites and in a storage cell at the toe of the Indian Creek waste rock disposal site; the sediment collection pond and associated embankment; and the water treatment facilities and storage locations on site.

6. Designated Radiation Safety Officer: Dan Workman
   Designated Alternate Radiation Safety Officer: Randy Whicker

7. Radiation Safety Officer contact number: (970) 218-5978

8. Fee category: 3.Q, 2.C

9. Reference number: SUA-940 (Pinnacle Exploration Company)

Conditions

10. Authorized radioactive material and uses:

A. The licensee is authorized to possess any amount of naturally occurring uranium-series radionuclides, in particular radium-226 in any naturally occurring form contained in soils, sediments, and water. The licensee is authorized to maintain the sediment collection capabilities and, as required by final project closure, properly dispose of sediment in the sediment collection pond or in an on-site disposal cell.

B. The licensee is authorized to possess, handle, and store natural uranium and radium-226 bound to water treatment absorptive media collected through the Phosphate Injection System, Engineered Treatment Cell, Phosphate Residuals Management System, Ion Exchange, or Passive Water Treatment Pilot Systems as described in the license renewal request dated March 28, 2023; not to exceed either:

   i. 1.0 Ci (37 GBq) total activity or 325,000 pCi (5.846 kBq) of natural uranium per gram of media; or

   ii. 0.1 Ci (3.7 GBq) total activity or 6,300 pCi (0.23 KBq) of radium-226 per gram of media.

   The total volume of such water treatment wastes stored at any one time on site shall not exceed 5,500 cubic feet. Final disposition of such wastes shall be conducted in accordance with Item 15.C.

11. Authorized radioactive material users:

A. Radioactive material shall be used by individuals, designated as users by the Radiation Safety Officer (RSO), who have successfully completed the training course as provided on March 28, 2023, and have been designated as authorized users by the RSO.

B. The licensee shall maintain a list of all individuals currently authorized to use radioactive materials. This list and documentation of each authorized user's training shall be available for review by the department.

C. The licensee shall maintain at least one authorized user, which shall include the RSO, until termination of the license.

D. An authorized user shall be at the facility or immediately available at all times during licensed related activities.

E. Prior to designating an individual as RSO, the licensee shall provide the department with documentation of the individual's training and experience.

F. Refresher training in health physics is required at least every two years for the RSO. The licensee shall maintain documentation of the date and content of the refresher training for review by the department.

12. General requirements:

A. The licensee shall comply with the provisions of the Regulations: Part 1, "General Provisions"; Part 3, "Licensing of Radioactive Material"; Part 4, "Standards for Protection Against Radiation"; Part 10, "Notices, Instructions and Reports to Workers; Inspections"; and Part 17, "Transportation of Radioactive Material".

B. The licensee shall not transfer possession and/or control of radioactive materials or items contaminated with radioactive material except: by transfer of waste to an authorized recipient; by transfer to a specifically licensed recipient; or, as provided otherwise by specific condition of this license pursuant to the requirements of Section 3.22 of the Regulations.

C. The licensee shall ensure that information listed in this license is correct and accurate. The licensee shall notify the department in writing within 10 days whenever the information contained in Items 1 through 7 above is no longer current or determined to be incorrect.

D. The licensee may transport radioactive material or deliver radioactive material to a carrier for transport in accordance with the provisions of Part 17 of the Regulations and the requirements of U.S. Department of Transportation (49 CFR), except for small quantities used to characterize site materials.

E. The licensee shall not make any false statement, representation, or certification in any application, record, report, plan, or other document regarding radiation levels, tests performed or radiation safety conditions or practices.

F. Within the scope of applicable statutes and lawful regulations thereunder, the licensee shall operate in full compliance with the requirements of each other division of the department. Violation of such other requirements shall not by itself constitute violation of this license, unless the department makes an independent finding of violation of the Regulations, or a condition of this license.

G. Unless otherwise provided in this license, terms used herein are as defined in the Regulations.

H. Where statements in referenced documents conflict, the most recent document shall prevail unless the department determines otherwise.

I. When required, department “approval”, “authorization”, or “concurrence” shall be obtained in writing from the department, unless otherwise specified.

J. If any part of this license is held invalid, the remainder shall not be affected.

13. Occupational dose monitoring:

A. Dose monitoring and evaluation shall be consistent with Item 14.B.

14. Specific radiation safety requirements:

A. The licensee is hereby exempted from the requirements of Section 4.28 of the Regulations for areas within any exclusion area boundary, provided all entrances to the property are conspicuously posted with the sign:

“Any Area or Container on this Property
May Contain Radioactive Materials.”

B. All operations involving the handling or use of radioactive materials authorized in Item 10 or items contaminated with such radioactive material shall be conducted in accordance with the Radiation Protection Program Manual approved by the department; the license renewal request dated March 28, 2023; or a Radiation Work Permit (RWP) approved by the RSO.

C. The licensee shall maintain a comprehensive written radiation safety program manual, approved by the department, governing licensed activities. The manual shall contain safety, monitoring, decontamination, and emergency procedures, including:

   i. Administrative and operating procedures relating to radiological health and safety;
   ii. Instructions and precautions to keep exposures and releases ALARA;
   iii. Specific information on analytical equipment, laboratories, and procedures for each aspect of the monitoring program;
   iv. All procedures manual revisions shall be submitted to the department for review and approval prior to implementation; and
   v. No reduction in monitoring provisions shall be made without department approval.

D. Immediately upon discovery of any failure, or imminent threat of failure, in any process, diversion, or retention system which results or may result in a release of radioactive material into unrestricted areas, or unexpected contaminants or concentrations exceeding the authorization in Item 10, the licensee shall notify the department by telephone at (303) 877-9757 (24-hour, 7-day emergency number).

   i. The licensee shall document and maintain records for all incidents, accidents, spills, and emergencies. The documentation shall be available for review by the department.

E. The licensee shall use plans approved by the department to respond to emergencies such as radioactive material spills or treatment pond embankment failure. These plans shall include provisions for warning of personnel and for prompt retrieval of radioactive material released to uncontrolled areas.

F. Periodic gamma exposure rate measurements, contamination surveys, and radon monitoring, with frequency determined by the RSO, shall be taken near the treatment facilities and waste storage areas during the period when the water treatment activities authorized in Item 10.B are conducted. Survey records shall be maintained and available for review by the department.

G. Water treatment wastes authorized in Item 10.B shall be periodically characterized for natural uranium, radium-226, and radium-228, and in accordance with the renewal application provided on March 28, 2023. The Phosphate Residuals Management System waste collected shall also be characterized for natural uranium, radium-226, and radium-228 at least once at the end of the field season if the system was operated during that season.

H. All personnel and equipment in contact with the licensed material authorized in Item 10.B shall be thoroughly surveyed for contamination before leaving the site. The licensee shall ensure that said personnel or equipment meet department approved unrestricted release criteria for levels of contamination prior being released. Surveys for the release of equipment shall be documented and maintained and available for review by the department.

I. The licensee shall maintain sufficient models and numbers of radiation detection instruments on site during the period when the water treatment activities authorized in Item 10.B are conducted. The licensee shall calibrate all radiation detection instruments at least annually and after repair.

15. Special license requirements:

A. The licensee shall not operate any on-site water treatment plant without department approval through a license amendment.

B. The on-site building used for storage of treatment wastes resulting from the activities authorized in Item 10.B shall be locked at all time when authorized personnel are not present.

C. All wastes or contaminated equipment resulting from the activities authorized in Item 10.B shall be disposed off-site at facilities authorized to accept such material, unless otherwise approved by the department.

D. The licensee shall maintain in effect a financial warranty acceptable to the department in accordance with the requirements of Section 3.9.5 of the Regulations:

i. The licensee shall maintain in force a surety pursuant to Part 3 of the Regulations for decommissioning, decontamination, and reclamation of the site; past and present transport routes to the sediment pond; the on-site disposal areas; the radioactivity-laden fraction of pond sediments; and disposal of water treatment wastes and contaminated equipment.

ii. The licensee shall maintain in effect a financial assurance warranty acceptable to the department, specific to the material authorized in Item 10.B, in the amount of $970,000 in 2024 dollars in accordance with the requirements of Section 3.9.5 of the Regulations.

iii. Item 16.F specifies provisions in effect, as provided by the financial warranty for Division of Reclamation, Mining, and Safety Permit M1977-004, totaling $24,451,940.

iv. Department incorporation into this license of the licensee's Financial Warranty for Permit M1977-004 relies on Section 3.9.5.4(5) of the Regulations and the Memorandum of Understanding between the department and the Division of Reclamation, Mining, and Safety of the Department of Natural Resources.

v. Any surety agreement and surety instruments required by this license shall be subject to annual review for adequacy by the department, and such other agencies as the department designates, in accordance with Section 3.9.5.7 of the Regulations. Cost estimates may be adjusted upward or downward as current circumstances (including, but not limited to, inflation, regulations, technology, and work completed) require. The licensee shall provide in writing to the department, no later than June 30th of each calendar year, an annual report demonstrating proof of the value of existing financial warranties and any proposed changes to the financial assurance warranties, including updated Decommissioning Funding Plan.

vi. The license and adequate surety shall remain in effect until final reclamation complies with applicable State and Federal regulations and final action on release is taken by the department as provided by the license and financial assurance agreements between the licensee and the State.

vii. Prior to seeking release of surety pursuant to this license, the licensee shall notify the department of the request for release. The licensee shall also notify the department of any intent to request modification, reduction or release of this surety. Upon determination by the department that reclamation has been performed in compliance with this license, the Regulations, and the State law, the licensee shall be released from the surety requirements.

E. The results of sampling, analyses, surveys, instrument calibrations, inspections, audits, employee training, as well as any related reviews, investigations and corrective actions shall be documented and stored. The licensee shall maintain adequate safeguards against tampering and loss of records.

i. All such documentation shall be maintained until disposition is authorized by the department. Personnel exposure records shall be preserved indefinitely.

F. The licensee shall, for the previous year ending December 31st, provide the department by May 31st of each year, a report that (i) states that no activity took place, or describing any activity that took place; (ii) evaluates the occupational and public exposures resulting from the licensed activities of the year; (iii) summarizes the survey or sampling activities; (iv) summarizes any incidents occurred; (v) provides a current storage inventory of the licensed material authorized in Item 10.B on site and the characterization results required in Item 14.G; and (vi) summarizes any water treatment wastes disposed off-site. A copy of the Reclamation Report to the Division of Reclamation, Mining, and Safety within the Colorado Department of Natural Resources shall be provided to the department annually.

G. Prior to site closure, to assess radum-226 concentrations in all Radium Treatment Plant (RTP) drainage channels, the licensee shall conduct a soil and sediment sampling program approved by the department. The risk assessment used for the removal of soils at the RTP will form the basis for cleanup levels in the sediment pond.

   i. Sediment pond solids shall be disposed of in place or within the on-site disposal cells in accordance with a design approved by the Division of Reclamation, Mining, and Safety as per Items 16.C and 16.D. If it is deemed viable to dispose of the solids within a disposal cell in the sediment pond area, an engineering design report will be prepared and submitted to the department for approval. Disposal of any soils and sediments containing radium-226 concentrations above applicable standards shall be by a program approved by the department. Any disposal on-site shall require a license amendment.

   ii. These decommissioned areas shall be returned to unrestricted use by decontamination to background radiation and toxic contaminant ranges acceptable to the department, based on statistically defensible tests of contamination with depth, in accordance with applicable State and Federal regulations and policies in effect at the time.

H. The licensee shall have an RWP which establishes and specifies appropriate radiological and safety controls for any work, including maintenance, at any location of the licensed facility or site, which has radiation safety implications and for which no written procedure exists. The RSO shall be familiar with ongoing activities at the site, and make the determination if a RWP is required for a given task. All such RWPs shall be reviewed and approved in writing by the RSO prior to any activity that a RWP governs. All workers who will conduct the task a RWP governs shall be trained with the provisions in the RWP and the training shall be documented. A copy of all RWPs shall be retained for no less than 5 years for inspection by the department.

   i. RWPs are not to be a substitute for written procedures. Should the activities governed under a RWP become routine or frequently performed activities, the licensee shall develop these work permits into written procedures and provide copies to the department for review, approval and incorporation into the license.

I. The licensee shall provide the department with 90 days an advance notification of any proposed change in ownership or control of all properties used or to be used for activities authorized by this license.

   i. The licensee may not transfer ownership or vacate any portion of the licensed site(s) without prior written authorization from the department in accordance with Section 3.15.2 of the Regulations.

J. The licensee shall notify the department, in writing, immediately following the filing of a voluntary or involuntary petition for bankruptcy under any Chapter of Title 11 (Bankruptcy) of the United States Code by or against:

i. The licensee;

ii. An entity [as that term is defined in 11 U.S.C. 101 (14)] controlling the licensee or listing the licensed facility or licensee as property of the estate; or

iii. An affiliate [as that term is defined in 11 U.S.C. 101 (2)] of the licensee.

iv. This notification must indicate the bankruptcy court in which the petition for bankruptcy was filed and the date of the filing of the petition.

16. Licensee commitments and reference documents:

The State of Colorado Rules and Regulations Pertaining to Radiation Control shall govern unless the licensee's statements, representations, and procedures contained in the application and correspondence are more restrictive than the Regulations. Except as specifically provided otherwise by this license, the licensee shall possess and use radioactive material described in Item 10 of this license in accordance with the statements, representations, and procedures contained in:

A. The license renewal application dated March 13, 2008, March 15, 2013, and March 2018, and the correspondences dated November 13, 2018, and December 14, 2018;

B. The Division of Reclamation, Mining, and Safety permit, including Homestake's original 1977 application to this Division's predecessor the Mined Land Reclamation division (MLRD), as amended by the Homestake letters of January 16, August 31, and October 19, 1984 to MLRD, and as subsequently approved by the MLRD or Division of Reclamation, Mining, and Safety;

C. The letter with attachment of May 3, 1989 from John Hardaway of Homestake to Edd Kray of the department containing revised reclamation and surety commitments;

D. The request for amendment dated May 31, 1994;

E. The letters with attachments dated June 2, 1994, and July 31, 1994, from Luke Russell of the Homestake Mining Company to Bruce Humphries and James Dillie of the Division of Minerals and Geology containing revised reclamation plans;

F. The application for renewal submitted January 8, 1998;

G. The Verification Sampling for Radium Treatment Plant Cleanup of the Pitch Reclamation Project report by Shepherd Miller dated April 2002;

H. The request for amendment dated April 1, 2004;

I. The license amendment request dated April 30, 2019, and the correspondence dated May 20, 2019, May 26, 2019, and June 11, 2019;

J. The modification request dated January 22, 2020;

K. The license amendment request dated July 22, 2020;

L. The license amendment request dated June 7, 2021;

M. the applications and attachments dated March 21, 2023; and

N. the license correspondence and attachments dated March 28, 2023; January 18, 2024.

For the Colorado Department of Public Health and Environment

Date: 09/27/2024 By: Digitally signed by Phillip J. Peterson
Date: 2024.09.27 11:33:57 -06'00'

APPENDIX E

Letter of Surety

COLORADO
Division of Reclamation, Mining and Safety
Department of Natural Resources

1313 Sherman Street, Room 215
Denver, CO 80203

Effective January 9, 2020 this bond replaces Safeco Insurance Company Bond No. 6068126.

FINANCIAL WARRANTY
CORPORATE SURETY

Operator: Homestake Mining Company
Operation: Pitch Mine
Permit No.: M-1977-004 Bond No.: 070206093

Warrantor: Liberty Mutual Insurance Company
Street: 175 Berkeley Street
City: Boston
State: MA Zip Code: 02116
Area Code: 617-357-9500 Telephone: 617-574-5955

This form has been approved by the Mined Land Reclamation Board pursuant to sections 34-32-117, C.R.S., of the Mined Land Reclamation Act and 34-32.5-117, C.R.S., of the Colorado Land Reclamation Act for the Extraction of Construction Materials. Any alteration or modification of this form, without approval by the Board shall result in the financial warranty being invalid and result in the voiding of any permit issued in conjunction with such invalid financial warranty and subject the operator to cease and desist orders and civil penalties for operating without a permit pursuant to sections 34-32-123, C.R.S., of the Mined Land Reclamation Act and 34-32.5-123, C.R.S., of the Colorado Land Reclamation Act for the Extraction of Construction Materials.

KNOW ALL MEN BY THESE PRESENTS, THAT:

WHEREAS, the Colorado Mined Land Reclamation Act, C.R.S. 1973, 34-32-101 et seq. (the "Act"), as amended, provides that no permit may be issued under the Act until the Mined Land Reclamation Board (the "Board") receives a Financial Warranty (or Warranties) as described in the Act.

WHEREAS, Homestake Mining Company (the "Operator"), a California corporation, has applied for a permit to conduct a mining operation known as Pitch Mine (the "Operation"), on certain lands in Saguache County, Colorado. These lands are described in the permit application, as amended and supplemented, and are referred to herein as the "Affected Lands".

WHEREAS, in the application for the permit, the Operator has agreed to be bound by all requirements of the Act and all applicable rules and regulations of the Board, as amended from time to time.

WHEREAS, in the application for the permit, the Operator has agreed with the Board to provide for reclamation of the Affected Lands that are now, or may become, subject to the permit, as required by law.

WHEREAS, the Operator and Liberty Mutual Insurance Company (the "Warrantor"), a corporation organized and existing under the laws of the State of Massachusetts and duly authorized to transact a bonding and surety business in the State of Colorado are hereby and firmly bound unto the State in the sum of Twenty Four Million Four Hundred Fifty One Thousand Nine Hundred Forty & No/100 Dollars ($24,451,940.00) for the life of mine or until such time as replacement is received, for the payment of which sum, well and truly made, we hereby bind ourselves and our personal representatives, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, the Board has determined, in accordance with the Act, that the estimated costs of reclamation of the Affected Lands are those amounts for the stated periods of time as set forth herein. Said amount may be amended from time to time to reflect revised estimates of said costs of reclamation.

WHEREAS, the Operator and the Warrantor, in accordance with the Act, has promised and hereby promises the Board that it will be responsible for all the estimated costs of reclamation with regard to the Affected Lands.

WHEREAS, the Board has determined that this Financial Warranty by the Warrantor equals the estimated costs of reclamation, as approved by the Board, with regard to the Affected Lands.

NOW, THEREFORE, the Operator and the Warrantor are held hereby firmly unto the State of Colorado in the amount of those sums for those periods of time as set forth herein, until this Financial Warranty is amended or released in accordance with applicable law.

The Board may, for good cause shown, increase or decrease the amount and duration of this Financial Warranty. The Operator shall have sixty (60) days after the date of notice of any such adjustment to increase the surety amount, but no such increase shall bind the Warrantor unless and until it shall have consented thereto in writing by the issuance of an additional Financial Warranty or by an endorsement to this Financial Warranty.

The Operator and the Warrantor shall notify the Board immediately of any event which may impair this Financial Warranty. If the Board receives such notice, or otherwise has reason to believe that this Financial Warranty has been materially impaired, it may convene a hearing in accordance with the Act for the purpose of determining whether impairment has occurred.

The obligation of the Operator and the Warrantor shall continue until the Board has released this Financial Warranty or has ordered it forfeited in accordance with applicable provisions of the Act. It is understood that periods of years may necessarily be required before determination can be made that reclamation of the Affected Lands has been satisfactorily completed. It is also recognized that, as reclamation is accomplished, the amount of this Financial Warranty may be reduced with the approval of the Board so that it reflects the then current estimated cost of the remaining reclamation of the Affected Lands. No revision, extension, or renewal of the permit, or of the time allowed to complete reclamation, shall diminish the Operator's or Warrantor's obligation under this Financial Warranty. No misrepresentation by the Operator which may have induced the Warrantor to execute this Financial Warranty shall be any defense to demand by the State under this agreement.

In any single year during the life of the permit, the amount of the Financial Warranty shall not exceed the estimated cost of fully reclaiming all lands to be affected in said year, plus all lands affected in previous permit years and not yet fully reclaimed. Reclamation costs shall be computed with reference to current reclamation costs.

The amount of this Financial Warranty is based upon estimates as to the cost of reclamation, and does not operate to liquidate, limit, enlarge or restrict the Operator's obligations to complete reclamation and to comply in all respects with the permit and with applicable laws and regulations governing reclamation, even though the actual cost thereof may substantially exceed the amount of this Financial Warranty.

The Mined Land Reclamation Board or the Office of Mined Land Reclamation may recover the necessary costs, including attorney's fees or fees incurred in foreclosing on or realizing the collateral used in the event this Financial Warranty is forfeited. The face amount of this Financial Warranty shall be increased by five hundred dollars ($500.00) to cover these costs.

The Warrantor shall not be liable under this Financial Warranty for an amount greater than the sum designated herein, unless increased by a later amendment to this Financial Warranty. This Financial Warranty shall be reviewed by the Board from time to time, and the Board may require an increase in the principal sum of this Financial Warranty (and a corresponding increase in the surety amount) to cover increases in the estimated costs of reclamation, but no such increase shall bind the Warrantor unless and until it shall have consented thereto in writing by the issuance of an additional Financial Warranty or by an endorsement to this Financial Warranty.

The Warrantor reserves the right to cancel this Financial Warranty, effective only upon an anniversary date, and only by giving written notice to that effect, mailed by Certified Mail, at least ninety (90) days prior to such anniversary date, addressed to both the Operator at its address herein stated, and to the Board at the address herein stated. In the event of such cancellation, this Financial Warranty shall nevertheless remain in full force and effect as respects the reclamation of all areas disturbed prior to the effective date of such cancellation, unless and until the Operator shall file a substitute Financial Warranty which: (1) assumes liability for all reclamation obligations which shall have arisen at any time while this Financial Warranty is in force; and (2) is accepted in writing by the Board.

In the event of such cancellation, if the Financial Warranty is not fully released, the amount of the continuing Financial Warranty available for the reclamation of areas disturbed and unreclaimed at the date of cancellation shall be fixed by the Board at the amount it determines necessary to complete such reclamation (which amount may not exceed the sum designated herein) and the Board shall concurrently identify such areas in writing, and notify the Warrantor and the Operator thereof. Thereafter, the obligation of the Warrantor shall be limited to reclamation of the areas so identified.

The consideration for the Warrantor's execution of this agreement is the promise of the Operator to pay the premiums, but failure by the Operator to pay such premiums shall not invalidate or diminish the Warrantor's obligation hereunder.

The Board may make demand upon the Warrantor for payment hereunder if the Board determines that reclamation which ought to have been performed by the Operator, or its successors or assigns, remains unperformed, and if Financial Warranty forfeiture procedures required by law have been initiated. No other condition precedent need be fulfilled to entitle the State to receive the amount so demanded. However, if, upon completion of reclamation by the State, the amounts expended for reclamation shall be less than the amount received from the Warrantor, the excess shall be promptly refunded to the Warrantor.

If demand is made upon the Warrantor for payment of an amount due to the Board hereunder, and if the Warrantor fails to make payment of such amount within ninety (90) days after the date of receipt of such demand, or if it should thereafter be determined, by agreement of the Warrantor or by final judgment of court, that the amount demanded was properly payable, the Warrantor agrees to pay to the Board, in addition to the amount demanded, interest at the

current published Wall Street Journal Prime Rate for the period commencing at the end of such ninety-day period and ending on the date of actual payment.

If the Board shall notify the Warrantor that the Operator is in default, and if the Board shall initiate any Financial Warranty forfeiture procedures required by law or regulation, the Warrantor may, in lieu of making payment to the Board of the amount due hereunder, cause the reclamation to be timely performed in accordance with all requirements of the Act and all applicable rules and regulations. In such event, when and if the reclamation has been timely performed to the satisfaction of the Board or Division, this Financial Warranty shall be released. If the reclamation shall not be so performed to the satisfaction of the Board or Division, this Financial Warranty shall remain in full force and effect.

This Financial Warranty shall be subject to forfeiture whenever the Board determines that any one or more of the following circumstances exist:

1. A Cease and Desist Order entered pursuant to Section 34-32-124 of the Act has been violated, and the corrective action proposed in such Order has not been completed, although ample time to have done so has elapsed; or

2. The Operator is in default under its Performance Warranty, and such default has not been cured, although written notice and ample time to cure such default has been given; or

3. The Operator and/or the Warrantor has failed to maintain its Financial Warranty in good standing as required by the Act; or

4. The Warrantor no longer has the financial ability to carry out its obligations in accordance with the Act.

The description of lands herein is for convenience of reference only, and no error in such description, nor any revision of the permitted mining area, nor the disturbance by the Operator of lands outside of the permitted mining area shall alter or diminish the obligations of the Operator and/or Warrantor hereunder, which shall extend to the reclamation of all such lands disturbed.

If this Financial Warranty applies to National Forest System lands, and if this Financial Warranty is accepted by the United States Forest Service ("U.S.F.S.") as the bond required under 36 C.F.R. 228.13, then the Operator, having requested that the Board and the U.S.F.S. accept this single Financial Warranty in lieu of the separate bonds which would otherwise be required by applicable law, hereby agrees that, notwithstanding any other provision hereof, or of law, this Financial Warranty shall remain in full force and effect until U.S.F.S. has advised the Board by written notice that the Operator's obligations to U.S.F.S., for which this Warranty is executed, have been satisfied, and until the financial warranty has been released by the Board.

If this Financial Warranty applies to lands under the jurisdiction of the State Board of Land Commissioners ("Land Board"), and if this Financial Warranty, in whole or in part, is accepted by the Land Board as the bond required under its applicable law and procedures, then the Operator, having requested that the State accept this Financial Warranty in lieu of the separate bonds which would otherwise be required by the Colorado Mined Land Reclamation Board or Division of Reclamation, Mining and Safety and by the Land Board, hereby agrees that, notwithstanding any other provision hereof, or of law, this Financial Warranty shall remain in full force and effect until the Board is notified in writing by the Land Board that the Operator's obligations to the Land Board, for which this Warranty is executed, have been satisfied, and until the financial warranty has been released by the Board.

If all or any part of the Affected Lands are under the jurisdiction of the Bureau of Land Management, United States Department of the Interior (the "BLM"), and if, at the request of the Operator on this Financial Warranty, the BLM has, pursuant to 43 C.F.R. 3809.1-9, accepted this Financial Warranty in lieu of requiring a separate reclamation bond

payable to the United States, then, notwithstanding any other provision of this Financial Warranty, or of law, the Operator and Warrantor hereby agree that this Financial Warranty shall not be released until the Board is advised in writing by the BLM that the Operator's obligations to the BLM, for which this Warranty is executed, have been satisfied, and until the financial warranty has been released by the Board.

This Financial Warranty may be executed in multiple copies, each of which shall be treated as an original, but together they constitute only one agreement, the validity and interpretation of which shall be governed by the laws of the State of Colorado.

The provisions hereof shall bind and inure to the benefit of the parties hereto and their successors and assigns.

SIGNED, SEALED AND DATED this 9th day of January, 2020.

Liberty Mutual Insurance Company (SEAL)
Warrantor

By: Sandra L Ham
Sandra L. Ham, Attorney-In-Fact

Homestake Mining Company (SEAL)
Operator

By:

NOTARIZATION OF WARRANTOR'S ACKNOWLEDGEMENT

STATE OF Missouri)
) ss.
COUNTY OF St. Louis City)

The foregoing instrument was acknowledged before me this 9th day of January, 2020,
by Sandra L. Ham as Attorney-In-Fact of Liberty Mutual Insurance Company.

LEAH L JUENGER
Notary Public, Notary Seal
State of Missouri
St. Louis City
Commission # 17302084
My Commission Expires 09-05-2021

NOTARY PUBLIC

My Commission expires: 09/05/2021

NOTARIZATION OF OPERATOR'S ACKNOWLEDGEMENT

~~STATE~~ PROVINCE OF ONTARIO)
) ss.
~~COUNTY~~ CITY OF TORONTO)

The foregoing instrument was acknowledged before me this 14th day of January, 2020 by Leo van Wyk as Treasurer of Homestake Mining Company.

NOTARY PUBLIC

My Commission expires: never

APPROVED:

State of Colorado
Mined Land Reclamation Board
Division of Reclamation, Mining and Safety

By: _____ Date: _____
Division Director

M:\min\share\bondforms\Corporate Surety REVISED 25Jul2016

Liberty Mutual SURETY

This Power of Attorney limits the acts of those named herein, and they have no authority to bind the Company except in the manner and to the extent herein stated.

Liberty Mutual Insurance Company
The Ohio Casualty Insurance Company
West American Insurance Company

Certificate No: 8201331

POWER OF ATTORNEY

KNOWN ALL PERSONS BY THESE PRESENTS: That The Ohio Casualty Insurance Company is a corporation duly organized under the laws of the State of New Hampshire, that Liberty Mutual Insurance Company is a corporation duly organized under the laws of the State of Massachusetts, and West American Insurance Company is a corporation duly organized under the laws of the State of Indiana (herein collectively called the "Companies"), pursuant to and by authority herein set forth, does hereby name, constitute and appoint, Sandra L. Ham all of the city of St. Louis, state of Missouri each individually if there be more than one named, its true and lawful attorney-in-fact, with full power and authority hereby conferred to sign, execute and acknowledge the above-referenced surety bond.

IN WITNESS WHEREOF, this Power of Attorney has been subscribed by an authorized officer or official of the Companies and the corporate seals of the Companies have been affixed thereto this 30th day of May, 2019.

Liberty Mutual Insurance Company
The Ohio Casualty Insurance Company
West American Insurance Company

By: _____
David M. Carey, Assistant Secretary

STATE OF PENNSYLVANIA ss
COUNTY OF MONTGOMERY

On this 30th day of May, 2019, before me personally appeared David M. Carey, who acknowledged himself to be the Assistant Secretary of Liberty Mutual Insurance Company, The Ohio Casualty Company, and West American Insurance Company, and that he, as such, being authorized so to do, execute the foregoing instrument for the purposes therein contained by signing on behalf of the corporations by himself as a duly authorized officer.

IN WITNESS WHEREOF, I have hereunto subscribed my name and affixed my notarial seal at King of Prussia, Pennsylvania, on the day and year first above written.

COMMONWEALTH OF PENNSYLVANIA
Notarial Seal
Teresa Pastella, Notary Public
Upper Merion Twp., Montgomery County
My Commission Expires March 28, 2021
Member, Pennsylvania Association of Notaries

By: _____
Teresa Pastella, Notary Public

This Power of Attorney is made and executed pursuant to and by authority of the following By-laws and Authorizations of The Ohio Casualty Insurance Company, Liberty Mutual Insurance Company, and West American Insurance Company which resolutions are now in full force and effect reading as follows:

ARTICLE IV – OFFICERS: Section 12. Power of Attorney.
Any officer or other official of the Corporation authorized for that purpose in writing by the Chairman or the President, and subject to such limitation as the Chairman or the President may prescribe, shall appoint such attorneys-in-fact, as may be necessary to act in behalf of the Corporation to make, execute, seal, acknowledge and deliver as surety any and all undertakings, bonds, recognizances and other surety obligations. Such attorneys-in-fact, subject to the limitations set forth in their respective powers of attorney, shall have full power to bind the Corporation by their signature and execution of any such instruments and to attach thereto the seal of the Corporation. When so executed, such instruments shall be as binding as if signed by the President and attested to by the Secretary. Any power or authority granted to any representative or attorney-in-fact under the provisions of this article may be revoked at any time by the Board, the Chairman, the President or by the officer or officers granting such power or authority.

ARTICLE XIII - Execution of Contracts: Section 5. Surety Bonds and Undertakings.
Any officer of the Company authorized for that purpose in writing by the chairman or the president, and subject to such limitations as the chairman or the president may prescribe, shall appoint such attorneys-in-fact, as may be necessary to act in behalf of the Company to make, execute, seal, acknowledge and deliver as surety any and all undertakings, bonds, recognizances and other surety obligations. Such attorneys-in-fact, subject to the limitations set forth in their respective powers of attorney, shall have full power to bind the Company by their signature and execution of any such instruments and to attach thereto the seal of the Company. When so executed such instruments shall be as binding as if signed by the president and attested by the secretary.

Certificate of Designation – The President of the Company, acting pursuant to the Bylaws of the Company, authorizes David M. Carey, Assistant Secretary to appoint such attorneys-infact as may be necessary to act on behalf of the Company to make, execute, seal, acknowledge and deliver as surety any and all undertakings, bonds, recognizances and other surety obligations.

Authorization – By unanimous consent of the Company's Board of Directors, the Company consents that facsimile or mechanically reproduced signature of any assistant secretary of the Company, wherever appearing upon a certified copy of any power of attorney issued by the Company in connection with surety bonds, shall be valid and binding upon the Company with the same force and effect as though manually affixed.

I, Renee C. Llewellyn, the undersigned, Assistant Secretary, of Liberty Mutual Insurance Company, The Ohio Casualty Insurance Company, and West American Insurance Company do hereby certify that this power of attorney executed by said Companies is in full force and effect and has not been revoked.

IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed the seals of said Companies this 9th day of January, 2020.

By: _____
Renee C. Llewellyn, Assistant Secretary

Not valid for mortgage, note, loan, letter of credit, currency rate, interest rate or residual value guarantees.

To confirm the validity of this Power of Attorney call 1-610-832-8240 between 9:00am and 4:30pm EST on any business day.