

LOGAN WASH MINE ANNUAL REPORT

Mine Permit No. M-1977-424
Anniversary Date: March 28, 2025

Prepared for

Glenn Springs Holdings, Inc.
5 Greenway Plaza, Suite 110
Houston, TX 77046

WWL Project No. 10202.01

Prepared by

Western Water & Land, Inc.
743 Horizon Court, Suite 330
Grand Junction, CO 81506

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Annual Report
March 28th, 2024 – March 27th, 2025
Permit No. M-1977-424

1.0 Introduction

This annual report has been prepared in accordance with regulations of the State of Colorado Division of Reclamation, Mining and Safety (DRMS) and the regulations promulgated by the Colorado Mined Land Reclamation Board. The information presented in this report pertains to the period March 27, 2024 to March 27, 2025 (reporting period). Projected reclamation activities for the following year are also presented.

The Logan Wash Mine, located approximately 12 miles northeast of De Beque, Colorado, is managed by Glenn Springs Holdings, Inc. (GSHI) for Occidental Oil Shale, Inc. (OOSI). The main mine portals are located in Section 25, Township 7 South, Range 97 West. A general site location map for the Logan Wash Mine is presented in Figure 1.

This annual report summarizes the reclamation status of the Logan Wash Mine. The Logan Wash Mine is currently under closure and reclamation status. During the reporting period reclamation and maintenance work was conducted on the OOSI property. GSHI anticipates reclamation maintenance activities to continue in 2025, focusing on maintenance and operation of mine water discharge and the associated Evaporation Pond.

In 2006, at the request of DRMS, OOSI prepared and submitted Amendment No. 1: Retort Water Pipeline and Evaporation Pond. Although these structures were constructed in 1984 after receiving permits from the U.S. Bureau of Land Management (BLM) and Garfield County, for unknown reasons the structures were not incorporated into the existing mine permit.

The remainder of this annual report is organized as follows:

- Section 2: Disturbed Acreage Status
- Section 3: Monitoring Activities in 2024
- Section 4: Reclamation Activities in 2024
- Section 5: Maintenance Activities in 2024
- Section 6: Anticipated Reclamation in the Year 2025
- Section 7: Anticipated Disturbance in the Year 2025
- Section 8: Threatened Species Designation

Please refer to Figure 1, the Logan Wash Mine Location Map, Figure 2, Logan Wash Mine Facilities, and Figure 3, the Logan Wash Mine Monitoring Wells for features discussed in this report. This report also refers to Exhibit E, the original Reclamation Plan, and Exhibit F, the Reclamation Map. Please see Exhibit E in the permit document files; a copy of Exhibit F is attached. In the report text, all acreage amounts have been rounded to the nearest tenth of an acre. The interpreted total disturbed acreage, estimated acres reclaimed, acres released, and acres under reclamation may not sum perfectly, due to different interpretations of actual disturbed areas, measurement methods that have evolved over the years, and numeric rounding.

2.0 Disturbed Acreage Status

During the reporting period no additional acreage was disturbed. According to Exhibit E of the Reclamation Plan (1981) for Logan Wash Mine, 134.7 acres were approved for disturbance within the permit area with an actual disturbance of 113.6 acres. Over the years, this acreage has been revised to account for subsequent new disturbance and incorporation of the Evaporation Pond (Amendment No. 1) into the permit. Table 1.0 shows a summary of the original designated reclamation areas and their reclamation status based on historical reclamation reporting.

However, during preparations to submit a reclamation release in 2022, WWL learned from DRMS that the permitted acreage shown in their records indicated a total of 108.55 acres, and that it was preferable to examine what acreage would remain after the forthcoming reclamation release request of August 2022. The balance in acreage would therefore be acreage previously released and acreage likely to be released in the new request. A subsequent DRMS site inspection on October 12, 2022, resulted in the release of all lands requested, an estimated 21.65 acres and an estimated 26.0 acres remaining as unreclaimed. Areas released in 2022 include Areas 1, 2, 4, 10, 13, and the Soil Barrow Area.

Figures 4A and 4B illustrate the current reclamation status of disturbed areas and roads. The reclamation status of previously disturbed areas is discussed below.

2.1 Mine Areas

Other than roads and the Evaporation Pond and associated retort pipeline, the Lower Bench is the only remaining mine area (Area 1) that is not reclaimed. This area consists of 2.1 acres and is currently being used as mine access to monitor hydrological stations and general revegetation progress at other parts of the mine property, including Parachute beardtongue (Parachute Penstemon or *Penstemon debilis*) surveys. However, over the last decade or so, the Lower Bench has naturally revegetated and a large portion (except the Lower Bench Vault and weather station) may qualify for reclamation release.

2.2 Roads

2.2.1 Area 18: Logan Wash Access Road

Disturbed acreage associated with the Logan Wash Road or the “tramroad” was originally shown in the mine permit to be 53.4 acres. This road extends from its intersection with Road 45 up Logan Wash to and beyond the mine property. BLM records indicate that the original Logan Wash Road right-of-way (COC-223027) was 58.6 acres and includes all of the Upper Access Road up to the BLM-OOSI property boundary near the intersection of the Upper and Lower Bench Roads. However, the OOSI reclamation plan included the Upper Access Road in Area 13, Miscellaneous Access Roads.

Logan Wash Road is commonly used for access to BLM and private lands and during reclamation release discussions in 2022, Logan Wash Road was formally removed from the Logan Wash Mine Reclamation Plan with DRMS’s approval.

Several road turn-outs or cut and fill areas were constructed along Logan Wash Road under the mine permit. These areas are shown as “B1 through B-10” in Table 1. All of the “B” reclamation areas were released of reclamation responsibility by DMRS in October 2022.

2.1.2 Area 13: Miscellaneous Access Roads

Documentation that defines the locations of the Miscellaneous Access Roads (Area 13) in detail in the original reclamation plan is limited (see Table 2). Based on field observations, a number of older roads have been reclaimed and are no longer used. These roads are located on the slope above the Upper Bench and on the slope between the Upper Access Road and the Lower Access Road (see Figure 4A). These roads were released from reclamation responsibility because of previous requests, some as early as 1986.

The remaining roads that may have been included in Area 13 are: 1) Upper Access Road, 4.8 acres; 2) Lower Access Road, 1.8 acres; 3) Upper Bench Road, 1.4 acres; 4) Lower Bench Road, 1.5 acres; and 5) Evaporation Pond Road, 1.3 acres. The lower portion of the Lower Access Road (approximately 1.36 acres) was associated with the Heater/Treater reclamation area (Table 2). The Upper Bench Road was released from reclamation in October 2022. All other miscellaneous roads mentioned remain in an unreclaimed state as they are used for ongoing monitoring operations. Table 2 lists the various Miscellaneous Access Roads identified in the early Reclamation Plans. Roads currently not reclaimed total approximately 9.4 acres.

2.3 Structures

2.3.1 Vaults, Pipelines, and Evaporation Pond

Structures that remain at the mine site include two vault structures, one on the Lower Bench and one on the Research Mine Bench, one sealed ventilation shaft, and one capped and vented ventilation shaft. Pipelines include 1) the retort water pipeline which conveys retort mine water from the sealed L-1 portal at the mine site to the Evaporation Pond; 2) the Logan Wash Mine mine water drainage pipeline (LW-001) which extends from the sealed L1 portal to the Lower Bench Vault and then to an infiltration gallery on the Lower Bench; and 3) the Research Mine mine water drainage pipeline (LW-002) which extends from the sealed Research Mine portal through the Research Mine Vault to the Lower Bench Vault and on to Lower Bench discharge point. See Figure 2 for the locations of these structures. The retort water (LW-Retort) and mine water (LW-001) are sampled for water quality at the Lower Bench Vault on a semi-annual basis.

Two other vaults are located at the Evaporation Pond. One vault forms a concrete spillway from the Settling Pond to the Evaporation Pond, and the other vault was used as a leak detection monitoring structure for the Evaporation Pond, and is located on the west side of the Evaporation Pond. A third vault will be installed in 2025 at the retort pipeline emergency bypass valve.

All vaults are administered as confined space concrete structures with surface access-ways constructed just above grade. Depending on the final mine closure method, these structures may remain as permanent structures on the mine site to manage and monitor mine water drainage.

The retort water pipeline was constructed with manhole clean-outs approximately every 2,500 to 3,000 feet. Two manholes, the Upper Manhole and Lower Manhole (also confined spaces), are accessed periodically to measure retort water discharge rates. The Upper Manhole is in the vicinity of the former Heater Treater (Area 15), in the upper part of Logan Wash near the confluence with Dry Gulch. The Lower Manhole is located immediately north of the Evaporation Pond, approximately 40 feet from the pond gate. The other 10 manholes exist on the retort water pipeline that are buried by shallow road fill, colluvium, and vegetative litter, and have not been accessed in recent years (some near the Evaporation Pond were welded shut many years ago).

2.3.2 Monitoring Wells

Monitoring wells associated with the Logan Wash Mine were constructed within and outside of the immediate mine area. Past reconnaissance has been conducted to locate and confirm the existence of these well sites. Eight wells were located and identified within the mine area and within Logan Wash. Several other wells were located at some distance from the mine (see Figure 3 and Table 3). Of the 8 identified wells in the mine area, two wells, Well LWCW-1A and Well LW-22A, have been sampled for water quality on a semi-annual basis. Well LW-22A, located on private land some distance downgradient of the mine, was dropped from the sampling program in 2020. The landowner has been contacted to inquire as to whether they may be interested in taking over ownership of the well; they have yet to respond to this inquiry. Well LWCW-1A will remain in place as a monitoring well until final permit closure.

Wells LW-108, LW-112, and LW-242 were abandoned in 2005 in accordance with Colorado Division of Water Resources rules. The other 3 wells, LW-32, LW-45, and LW-116, remain in place but will be scheduled for abandonment in the future. Casing access and downhole conditions are unknown for these wells. Reconnaissance to date has not revealed any other monitoring wells within the permit area and the Logan Wash drainage.

Reconnaissance for wells located outside the permitted area in distant drainages was conducted in past reporting periods. Wells LW-102 and LW-243 were in Smith Gulch, Well LW-103 was in Kelly Gulch, and Well LW-104 was in Riley Gulch. Wells LW-121, LW-46, LW-47, LW-47A, and LW-106 were not located after a thorough search and are assumed to be abandoned. Wells LW-102, LW-104 and LW-243 were abandoned in 2007. Table 3 shows the status of well abandonment as of this reporting period.

2.4 Status Summary

2.4.1 Areas Released of Warranty

Reclamation areas released from warranty by DRMS prior to 2022 include: Areas 5, 7, 21, and 22, and areas A5, A7, A21, A22, B1, B4, B6, B9, B10, and B11. In October 2022, Areas 1, 2, 4, 10, 13, all remaining B Road Areas, and the Soil Barrow Area were released from reclamation responsibility by DRMS. Table 4 shows the areas requested for release of reclamation warranty in 2022. According to the DRMS acreage release letter of October 31, 2022, a total of approximately 82.55 acres have been released of warranty for the mine permit.

2.4.2 Areas Under Reclamation

Areas that began 2022 under reclamation (revegetation in progress) included Areas 1, 2, 3, 4, 10, the 0.7-acre Soil Barrow Area, parts of Area 13, and road Areas B2, B3, B7 and B8. Areas 1 through 4 include the Upper and Lower Mine Dumps (face areas), Upper Mine Bench, Lower Mine Bench, and the Research Mine Bench and Dump, respectively. Area 10 is the former Helo Pad. Area 13 is Miscellaneous Access Roads.

As a result of the recent reclamation release on October 31, 2022, all the above-mentioned areas were released of reclamation warranty.

2.4.3 Areas Not Under Reclamation

Areas not under reclamation include all areas shown in Table 5. These areas are currently being used for mine monitoring purposes and are not under reclamation at this time. These areas consist of the Lower Bench, the Lower Bench Road, the Upper Access Road, the Lower Access Road, the Evaporation Pond Access Road, and the Evaporation Pond and Pipeline (Area 23, 14.9 acres). Area 11, the Guard Gate, and Area 18, Logan Wash Road will not be reclaimed as they are no longer included in Reclamation Plan. The total estimated acreage not under reclamation and remaining to be reclaimed is 26.0 acres.

2.4.4 Areas to Be Requested for Release

No areas are expected to be requested for reclamation release of warranty in 2025.

Table 6 summarizes reclamation status at Logan Wash Mine.

3.0 Monitoring Activities in 2024

Monitoring activities at the Logan Wash Mine during the reporting period consisted of periodic monitoring of mine water discharge and related sampling activities. These activities included:

- 1) Monthly monitoring (when safe access is possible)
 - a. Discharge measurement of the mine water at LW-001 (former Colorado Discharge Permit System [CDPS] Outfall 001) at the Lower Bench
 - b. Discharge measurement of the mine retort water at the Upper and Lower Manhole locations
 - c. Measurement of the manometer installed in the Research Mine Vault (LW-002)
 - d. Salinity of the Evaporation Pond and Settling Pond
 - e. Water level measurements of leak detection sumps at the Evaporation Pond and Settling Pond
 - f. Precipitation and other meteorological parameters at the Lower Bench and precipitation at the Evaporation Pond
- 2) Semi-annual water quality sampling
 - a. Mine-water discharge at the Lower Bench Vault (LW-001)
 - b. Retort-water discharge at the Lower Bench Vault (LW-Retort), the Lower Manhole (LW-LM), the Upper Manhole (LW-UM), and at the Evaporation Pond (LW-POND)
 - c. Groundwater at well LWCW-1A

Monitoring of mine discharge waters, the Research Mine manometer, and the Evaporation Pond salinity and leak detection system is done on a monthly frequency except during access restrictions due to road conditions, mostly during the winter months. As mentioned, water quality sampling is done on a semi-annual basis in May and October. A summary of monitoring events for the reporting period is shown in Table 7.

3.1 CDPS (NPDES) Permit Termination

The former CDPS permit for Logan Wash Mine (permit no. CO0048816) that permitted two outfalls, Outfall 001 (Logan Wash Mine, main lower portal [L1 Portal] discharge) and Outfall 002 (Research Mine discharge), was terminated on July 1, 2014. Any mine discharge from the former Outfalls 001 and 002 is being infiltrated into the Lower Mine Bench. For more information regarding the Research Mine portal closure and management of the Research Mine drainage see TR No. 4 and TR No. 6, which present revisions to Exhibit E, the Reclamation Plan for Logan Wash Mine.

3.2 Mine-Water and Retort-Water Discharge

Long-term monitoring of retort water and mine water discharge is necessary to assess mine drainage behavior from the mine. The trend in discharge rates combined with water quality have implications for the future fate of the mine drainage water. Discharge measurements of mine water (LW-001) and retort water (LW-Retort) are conducted monthly as access allows. Continuous flow (meter) monitoring of LW-001 water came online in August 2011 as part of a requirement of the former CDPS permit. These data were collected by OOSI to assess and evaluate mine closure effectiveness, to support operation and maintenance of the Evaporation Pond and future water management options, and to meet state requirements.

During the summer of 2020, the LW-001 flow meter flow measurements recorded on the data logger experienced periods of false readings not representative of readings indicated on the flow meter display. The data logger was removed and tests were run on the flow meter and converter. These tests were not conclusive and further testing must be conducted. The flow meter will be restored to normal operating conditions as soon as practicable. In the meantime, flow measurements will be manually recorded monthly from the flow meter display.

Retort water discharge is measured manually at the Upper Manhole and Lower Manhole locations. Table 7 is a summary of monitoring events conducted at the mine in 2023, and Figure 5 shows the results for the LW-001 flow meter and the measured discharge for retort water at the Upper Manhole. The figure shows that the LW-001 discharge has decreased since 2011 but appears to have stabilized at a flow rate of approximately 0.7 gallons per minute (gpm). Note that during the Spring runoff period (March through June), mine water (LW-001 water) also enters the Lower Bench Vault by underground seepage along the buried pipeline from the mine. This flow appears to be greater than the flow indicated by the LW-001 flow meter. This water flows through and out the vault by infiltration into the Lower Bench waste rock.

3.3 Water Quality Monitoring

Water quality monitoring continued at the mine site on a semi-annual schedule. Sampling usually occurs in May and October. As mentioned in the above section, knowledge of the water quality of mine drainage waters and its potential change over time is needed to assess the long-term fate of this water and final mine closure options.

OOSI considers evaporation as the preferred method of treatment for the retort water for the long-term. A new liner was installed in the Evaporation Pond in 2018. Hydrologic biannual sampling at the mine currently includes sites: 1) mine water (LW-001), 2) retort mine water (LW-Retort), 3) groundwater at the point of compliance well (LWCW-1A), 4) retort water at the Lower Manhole (LW-LM), and 5) LW-Pond (Evaporation Pond (retort) water). Sampling of LW-001 and LW-Retort is conducted at the Lower Bench Vault. Well LWCA-1A, is a compliance well

located in Dry Gulch below the toe of the Lower Mine Dump. The LW-LM location is located just upstream of the Settling Pond. Under stipulations for the Evaporation Pond BLM right-of-way, water quality sampling of the Evaporation Pond (sample ID LW-Pond) was added to the semi-annual sampling schedule in 2019. In addition, water quality field parameters are measured at the Evaporation Pond during most monthly mine monitoring visits.

In 2020, monitoring locations Big Seep, an upgradient location, and well LW-22, a downgradient location, were dropped from the sampling program. These sites have provided adequate baseline data and are not critically needed currently.

In 2024, biannual water quality sampling was conducted at all five locations mentioned above, plus one duplicate sample.

Locations sampled during the 2024 semi-annual sampling events are shown in Figure 6. The 2024 analytical data compared to historical summary statistics and state surface water standards for Roan Creek are shown in Appendix A.

3.4 Research Mine Manometer Monitoring

The manometer installed in the Research Mine Vault is monitored and recorded on a monthly basis as access conditions allow. During snowmelt periods, monitoring of the manometer may occur on a more frequent basis, or until the peak runoff season begins to subside. The manometer measures the pressure head inside the pipe installed into the mine on the upstream side of a concrete sack dam just inside the portal. This dam serves to retain seasonal groundwater infiltration in the mine. If manometer measurements were to indicate a high level (≥ 36 inches) for more than a week's time, the water in the mine can be released and allowed to infiltrate at the Lower Bench. See Table 7 for monometer readings in 2023.

3.5 Evaporation Pond Leak Detection System

Monitoring of the Evaporation Pond Leak Detection Systems is conducted as part of monthly monitoring events as access conditions allow. The historic Evaporation Pond Leak Detection Vault was constructed as part of the original Evaporation Pond system in 1984. A new liner system was installed in 2018 on top of the old liner. Two Evaporation Pond Leak Detection Sumps were constructed for the new overlying pond liner, one on the west side and the other on the east side of the pond. One leak detection sump was also constructed during relining of the Settling Pond, also in 2018. Each detection sump was constructed by installing a PVC monitoring pipe from the top edge of pond liner down the pond slope and in between the new secondary and primary liners. The PVC pipe allows for monitoring of the presence of collected pond water that may have leaked through the primary liner. However, note that the Evaporation Pond is not sloped, so water that may leak through the primary liner may not always flow immediately to the detection sumps.

Monitoring of the Evaporation Pond Leak Detection Vault is conducted by visual observations. The continuous measurement of water pressure (depth) in the vault sump using an installed pressure transducer was discontinued after the new pond liner was installed in 2018. A metal cap was placed over the concrete collar of the vault in 2020; this cap prevents leakage into the vault from precipitation events.

Field observations showed that the vault was dry until December 2024. The metal cap was not in place when field personnel arrived for monitoring in December. On March 26th, 2025 the water in

the detection vault was measured to be four feet deep. The leak detection vault pump was used to pump water out of the vault and into the pond on March 26th and 27th, 2025. Approximately 3,000 gallons were pumped from the vault nearly emptying it before personnel left the site on March 27th. The water level had been reduced to less than 1 ft deep within the inner sump area, but water continued to flow in the vault through the PVC header piping that connects to drainage pipes under the pond liner. The pump was left in place and connected to a solar panel/battery power source. Parameters were collected from the water in the vault to determine a possible source. Specific conductivity was 9,603 uS/cm, much lower than the salinity of water in the evaporation pond (80,369 uS/cm), but similar to salinity of water in the settling pond (9,889 uS/cm).

In 2024, the West Sump Detection Pipe was dry, and the East Sump Detection Pipe showed depth to water ranging from 25.45 to 26.67 below top of pipe (total depth is ~26.88 ft below top of pipe). Water was first detected in the Settling Pond Sump in September, 2021. The total depth of the Settling Pond Sump Detection Pipe is 24.70 ft below top of pipe. In the 2024, the depth to water in the settling pond sump ranged from 24.2 to 24.6 ft below top of pipe.

3.6 Climatic Data

Climatic data are monitored on the Lower Bench through the use of an Onset U30-NRC weather (MET) station. Precipitation is also monitored at the Lower Bench and Evaporation Pond using Novalynx Corporation Model 260-2101SK-P rain gauges. When deployed, these instruments operate continuously but must be accessed for data downloads. The rain gauges are not equipped with wind screens. Each gauge measures precipitation with an automated logger that is downloaded several times a year. During winter months, the rain gauges may be temporarily removed from service.

On Wednesday, February 28th 2024, WWL personnel installed a new rain gauge at the evaporation pond. Problems downloading data during the summer of 2024 resulted in a period of several months without precipitation data from the pond. Precipitation data collected in the calendar year 2024 showed a total precipitation of 14.59 and 4.77 inches, for the Lower Bench and Evaporation Pond, respectively (see Figure 7). Between January 1st and March 15st of 2025 the total precipitation data showed 1.66 and 0.09 inches for the Lower Bench and Evaporation Pond, respectively. The NWS Cooperative Network Altenburn, CO station (Coop # 050214, elevation 5,690 feet AMSL), located 13.3 miles northwest of the mine, recorded total precipitation of 18.89 inches for the calendar year of 2024 and 1.72 inches between January 1st and March 15st 2024. The annual average precipitation for this station is 16.26 inches (WRCC, 2022).

4.0 Reclamation Activities in 2024

Monitoring activities described in Section 3 are considered activities that contribute to successful overall mine reclamation. Other reclamation activities conducted at the Logan Wash Mine in 2024 are discussed in the following sections.

4.1 Revegetation Maintenance

Areas seeded during past revegetation work are self-sustaining. Unfortunately, despite installed fencing, cattle accessed the mine area several times in 2019 and seriously damaged reclamation grasses on the Upper Mine Bench and Road and the Lower Mine Bench and Road. This vegetation recovered sufficiently to meet reclamation release requirements in areas released from

warranty in October, 2022. Some hand seeding may be implemented to maintain the desired vegetation cover and diversity.

Areas within the designated Evaporation Pond area were disturbed during pond relining construction in 2018 (see Section 5.2). These areas were seeded with a native seed mix and biodegradable erosion blankets were placed on the steeper, more vulnerable slopes. Good germination and growth of grasses was evident in the spring of 2020 and has continued to improve in these areas. The steeper slopes have remained stable.

4.2 Well Abandonment

No monitoring wells were abandoned during the reporting period.

5.0 Maintenance Activities in 2024

Maintenance activities included periodic inspections of mine roads, benches, portals, high walls, mine water drainage systems associated with the retorts and general mine workings, as well as the inspection of Evaporation Pond facilities including the pond's liner, security fencing, operation, and leak detection systems. Maintenance activities conducted at the mine, mine Retort Pipeline, and Evaporation Pond are summarized in the following sections.

5.1 Mine Maintenance

During the reporting period, inspections of the Logan Wash Mine site occurred primarily on a monthly basis depending on site access conditions. Inspections focused on mine roads, headwalls, portal closures, bench surfaces, dump faces, road conditions, and constructed stormwater drainage and rip-rap channels. Maintenance of mine roads including the Evaporation Pond Road, Lower Access Road, Upper Access Road, Lower Bench Road, and Logan Wash Road are done on an as-needed basis to mitigate stormwater impacts to the road surface. No other mine maintenance was required during the reporting period.

5.2 Evaporation Pond Maintenance

Maintenance of the Settling Pond and Evaporation Pond include inspection of: 1) discharge rates to the ponds from the mine retort water plumbing system; 2) pond liner, 3) egress ladder integrity, 4) leak detection systems; 5) wildlife security fence; and 6) stormwater drainage ditches and access road conditions. The stormwater drainage ditch system was regraded in November 2023.

Figures 8 and 9 show the liner design and layout and as-built features of the Evaporation Pond, respectively.

In November 2024, a new layer of gravel was placed on the road leading the evaporation pond.

5.3 Retort Water Pipeline Maintenance and Repair

On Tuesday January 16th, 2024, WWL received notice of a possible leak in the retort pipeline from Laramie Energy staff. WWL located the emanation point of the water and confirmed it was unrelated to the retort pipeline.

In November of 2024, a pre-cast concrete vault was delivered to the site to be installed at the retort pipeline bypass valve that was added to the pipeline in 2023. However, early snow storms prevented access to the site to install the vault. The vault will be installed in spring of 2025. The exterior portion of the vault will be backfilled with the excavated soil; the soils will be hand-seeded.

6.0 Anticipated Reclamation in the Year 2025

Because the fate of retort water discharge is currently being assessed under Amendment No. 1, OOSI does not anticipate revegetation or reclamation of any unreclaimed roads or disturbed surface areas at the mine site in 2025.

Saplings that were planted on the mine dump faces will be assessed for overall health and mortality. No mechanical irrigation of these saplings is anticipated. Roads not reclaimed will be maintained. Transplanting of *P. debilis* will be conducted if deemed necessary for plants located on the Lower Bench Road; plants will be moved to the fill slope area adjacent to the road (see Section 8.0).

Evaporation Pond maintenance will include access road and stormwater control maintenance, weed and brush control, leak detection sump pump maintenance, liner repair, and other maintenance as needed.

7.0 Anticipated Disturbance in the Year 2025

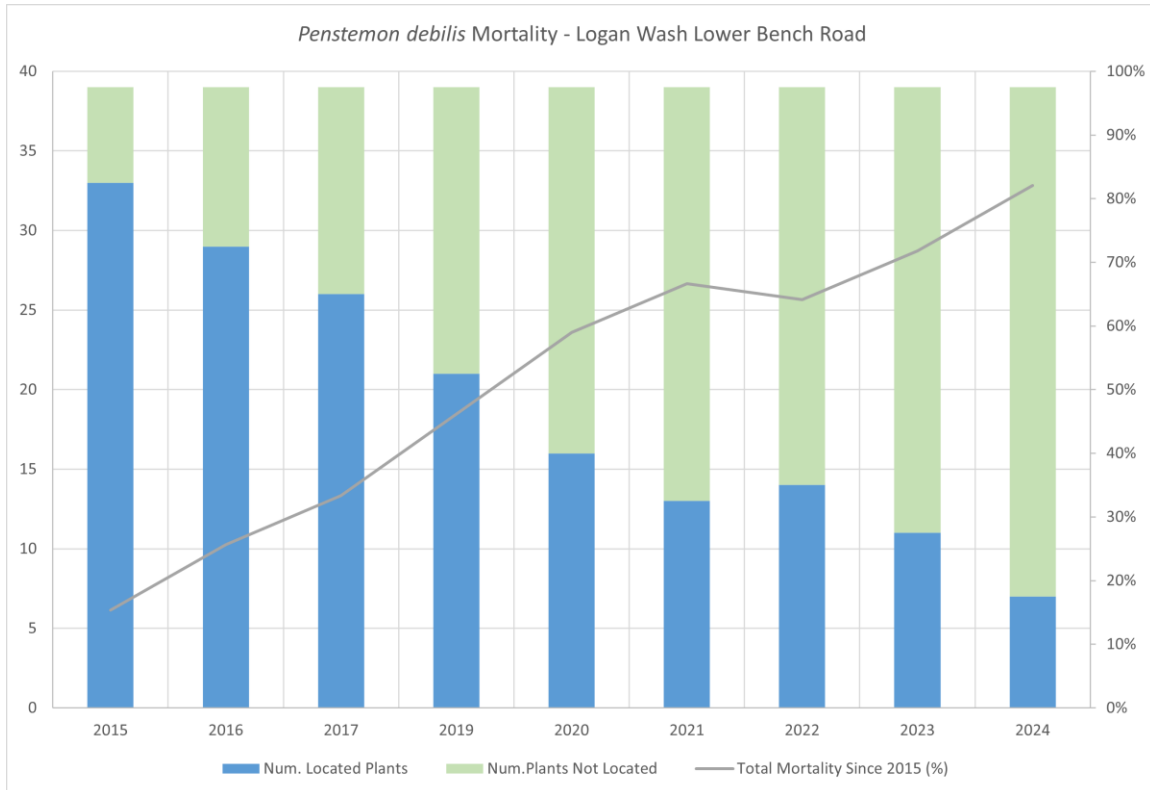
No new disturbance is anticipated to occur in 2025 and 2026 within the mine permit area associated with OOSI mine permit activities. Minor ground disturbance may occur on the Lower Bench Road during transplanting of *P. debilis* species, if needed (see Section 8.0). Maintenance of mine roads and stormwater control features will be conducted as necessary.

8.0 Threatened Species Designation

On July 27, 2011, the U.S. Department of Interior, Fish and Wildlife Service (USFW), listed the plant *Penstemon debilis* (Parachute beardtongue or *P. debilis*) as “threatened” status under the Endangered Species Act of 1973 (Act). The critical habitat for the plant is in Garfield County and the Logan Wash Mine site falls within this critical habitat. Numerous *P. debilis* plants have been observed growing within and along the flanks of the Upper Access Road from the Research Mine portal area to the north on the Upper Mine Bench Road and Lower Mine Bench Road. An Article of Designation (AOD) was signed by Colorado Parks and Wildlife (CPW), OOSI, and Oxy WTP in early 2015 and finalized on February 3, 2015. The AOD allows for OOSI to mitigate impact to *P. debilis* habitat while conducting reclamation obligations under the DRMS mine permit.

A site plant survey conducted by BLM, USFWS, CPW (Colorado Natural Areas Program [CNAP]), and WWL in September, 2014 resulted in several *P. debilis* locations being mapped on both OOSI and BLM lands from the Research Mine to the Lower Bench (Figure 10). On March 25, 2015, 39 *P. debilis* plants were transplanted from the Lower Bench Road to the nearby road cut slope that is undisturbed by vehicle/equipment traffic (Figure 11). The transplanted *P. debilis* have been monitored for production and mortality on an annual basis, providing safe access was achievable and snow cover negligible. Results from monitoring of the transplanted *P. debilis*

indicate a current mortality rate of approximately 72 percent. The chart below shows the mortality rate for each year since transplanting in 2015. No mortality rate was measured in 2018, but casual observations indicate that overall plant numbers have decreased, both in the transplanted plants and new volunteer plants in the area on and immediately adjacent to the Lower Bench Access Road.



On June 24, 2024, WWL staff, Taralee Mautz and Kori Straub, visited Logan Wash Mine with five visitors to conduct quantitative monitoring on a population of *P. debilis* near the Lower Bench Road. Attendees included the following: Jessica Smith, Delia Malone, and Alicia Langton, from the Colorado Natural Heritage Program (CNHP), contracted by Colorado Parks and Wildlife; and Jake Gottschalk and Katie Hissing from the Fish and Wildlife Service (FWS).

REFERENCES

WRCC, 2022. Western Region Climate Center website: <<https://wrcc.dri.edu/cgi-bin/cliMAIN.pl?co0214>>