

NEVADA GOLD MINES LLC
1655 Mountain City Hwy
Elko, Nevada 89801

www.nevadagoldmines.com

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Thank you for your understanding.

Nevada Gold Mines

**2025 GOLDEN EAGLE AND RAPTOR NESTING SURVEYS
ORE TRANSPORT PROJECT
ELKO, EUREKA, AND LANDER COUNTIES, NEVADA**

Prepared for:

Nevada Gold Mines LLC
1655 Mountain City Highway
Elko, Nevada 89801

Prepared by:



Nexus Environmental Consultants, Inc.
P.O. Box 18922
Reno, Nevada 89511

Nexus Project Number P0474

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ACRONYMS & ABBREVIATIONS

BGEPA	Bald and Golden Eagle Protection Act of 1940 (as amended)
NGM	Nevada Gold Mines LLC
MBTA	Migratory Bird Treaty Act of 1918
NDOW	Nevada Department of Wildlife
Project	Ore Transport Project
U.S.C.	United States Code
USFWS	United States Fish and Wildlife Service

1.0 INTRODUCTION

Nexus Environmental Consultants, Inc. completed nesting golden eagle (*Aquila chrysaetos*) and raptor surveys at Nevada Gold Mines LLC's (NGM) proposed Ore Transport Project (Project) in 2025. This report presents the 2025 golden eagle and raptor nesting survey results.

1.1 Project Location

The Project is located in Elko, Eureka, and Lander counties (**Figure 1**). The uppermost portion of the Project is near Goldstrike Mine approximately 25 miles north of Carlin Nevada, and the southernmost portion of the Project is at the southern end of Crescent Valley approximately 20 miles south of Crescent Valley, Nevada.

1.2 Regulatory Framework

The Migratory Bird Treaty Act of 1918 (MBTA) (16 United States Code [U.S.C.] 703-712), which is administered by the United States Fish and Wildlife Service (USFWS), is the basis of migratory bird conservation and protection in the United States. It implements four treaties that provide for international protection of migratory birds. In 1972, an amendment to the MBTA resulted in bald eagles (*Haliaeetus leucocephalus*) and other birds of prey being included in the definition of a migratory bird. The MBTA currently protects more than 800 migratory bird species, including waterfowl, shorebirds, seabirds, wading birds, raptors, and songbirds.

Under the authority of the Bald and Golden Eagle Protection Act of 1940 (as amended) (BGEPA) (16 U.S.C. 668-668d), bald eagles and golden eagles are provided additional legal protection. The BGEPA makes it unlawful to import, export, sell, purchase, barter, or take any bald eagle or golden eagle, their parts, products, nests, or eggs. As defined in the BGEPA, "take" includes pursuing, shooting, poisoning, wounding, killing, capturing, trapping, collecting, molesting, or disturbing an eagle.

1.3 General Habitat Description

Elevations at the Projects range from approximately 4,600 feet above mean sea level near Beowawe, Nevada at the Humboldt River to about 9,160 feet above mean sea level at Mount Tenabo. Numerous rocky outcrops, open pit highwalls, transmission lines, and trees in the area provide nesting substrate for various raptor species. Surface water resources in the area include various seeps and springs which support perennial and ephemeral flow in several drainages, as well as the Humboldt River. Roads in the survey area consist of graded dirt roads, mine haul roads, and access roads, as well as paved roads including Interstate 80, State Route 278, and State Route 306.

2.0 METHODOLOGIES

Golden eagle and raptor nest surveys were completed in 2025 following the protocols outlined in the *Interim Golden Eagle and Breeding Survey Recommendations in Nevada: FWS R8 Migratory Birds June 13, 2023* (USFWS 2023) and *Interim Golden Eagle Inventory and Monitoring Protocols; and other recommendations* (Pagel et al. 2010). Additionally, a Golden Eagle and Raptor Nest Monitoring Plan (Monitoring Plan) was provided to the USFWS for review and comment in February 2025. Following a meeting to discuss questions and comments on the Monitoring Plan, it was finalized on February 20, 2025 (Nexus 2025a). Per the guidance documents and Monitoring Plan, surveys were to occur within the areas described in **Table 1**. The Project boundary and survey area buffer are shown on **Figure 2**.

Table 1 2025 Survey Details for the Ore Transport Project

Take Permit Number	Survey 1		Survey 2	Survey 3
	Occupancy Survey		Follow-up Occupancy Survey	Productivity Survey
	Ground Survey (January-February)	Aerial Survey (Early March)	Aerial Survey (Mid-April)	Aerial Surveys (Late May)
Not Applicable - No Take Permits have been requested or issued for the Project	Not applicable for the Project; however, GOEA territories authorized for take and suitable habitat as described in permits issued for the Cortez, Robertson, and Goldrush mines overlap the Project survey area.	Aerial survey of raptor nesting habitat and previously identified raptor nests within the four-mile buffer of the Project boundary.	Aerial survey of raptor nesting habitat and previously identified raptor nests within the four-mile buffer of the Project boundary.	Not applicable for the Project; however, GOEA territories authorized for take and suitable habitat as described in permits issued for the Cortez, Robertson, and Goldrush mines overlap the Project survey area.

GOEA = golden eagle

Monitoring included recording global positioning system points and tracks, taking photographs of each nest during each survey, and recording notes on observations, including nest and territory status. Biologists documented direct observations of adults, eggs, or young, as well as whether nests have fresh decoration and their condition. Additionally, monitoring data recorded included:

- Date and length of time eagles were observed;
- Time of day;
- Type of survey conducted (aerial or ground);
- Occupancy status of eagle territories;
- Number and age of eagles observed;
- Observed behavior; and
- Descriptions of other activities, including human activity, observed during the monitoring event.

Prior to conducting surveys, Nexus coordinated with NGM regarding logistics and safety considerations (e.g., blasting times, NGM drone use locations, etc.) and the Nevada Department of Wildlife (NDOW) to inform them of when and where aerial surveys were occurring, as well as to determine if there were any wildlife concerns that could occur from helicopter surveys (i.e., bighorn sheep lambing areas).

For golden eagle monitoring, territories were described as occupied, unoccupied, or unknown, and nests were described as in-use, alternate, unknown, or not found. Definitions used to assign these terms as described below:

- Occupied territory – Eagles observed in the territory. Criteria used for establishing early season GOEA territory occupancy are:
 - a. An adult eagle within 500 meters of a nest within the territory, when the bird is clearly in view of the nest, and when the eagle's presence is clearly not a rapid pass-over of the nest.
 - b. Two adults, or an adult and a sub-adult bird paired within the territory.
 - c. Reproductive or territorial behavior within the territory:
 - i. Courtship behavior, undulating flight, copulation
 - ii. Territorial defense
 - iii. Nest building behaviors (stick carrying, nest maintenance) (USFWS, 2023).
- Unoccupied territory – Eagle occupancy not observed in the territory (USFWS, 2023).
- Unknown territory – Data is inconclusive to make a determination of territory status.
- In-use nest – Bald eagle or golden eagle nest that contains one or more viable eggs or dependent young, or, for golden eagles only, has had adult eagles on the nest within the past 10 days during the breeding season (50 CFR 22.3).
- Alternate nest – One of potentially several nests within a nesting territory that is not an in-use nest at the current time. When there is no in-use nest, all nests in the territory are alternate nests (50 CFR 22.3).
- Unknown nest – Data is inconclusive to make a determination of nest status.
- Not found – A nest was not found during any of the surveys.

For all other raptor species, nests definitions include the following:

- Occupied – A nest that is attended by an adult or has eggs or young present at the time of the survey (NDOW, 2021)
- Unoccupied – Nest is not attended by an adult or does not have eggs or young present at the time of survey.
- Unknown – Data is inconclusive to make a determination of nest status. Nests not found during a survey are recorded as unknown.
- Not found – A nest was not found during any of the surveys.

Three surveys were completed in 2025 using the methods described in Sections 2.1, 2.2, and 2.3.

2.1 First Survey – Ground and Aerial

2.1.1 Ground Methods

Nests and territories covered by Incidental Take Permits were surveyed from January through February to assess golden eagle territory occupancy. These ground surveys focused on the territories and nests listed in **Table 2**, as well as any other golden eagle nests found within the territories specified in **Section H** of each permit.

Note not all the territories listed in **Table 2** of the Cortez take permits are located within the Ore Transport Project survey area. Due to this overlap, the methodologies and results from these surveys are included in this report. Detailed results from the 2025 monitoring for all territories in the table below are provided in the report titled *2025 Golden Eagle and Raptor Nesting Surveys Cortez Mine, Robertson Mine, Goldrush Mine, REN, Swift (proposed), Buck Exploration, New Buck Exploration, Buckhorn Exploration, HCCUEP, Mill Canyon Exploration, Bullion Hills Decline (proposed) (BHD), and West Pine Valley Exploration Projects Elko, Eureka, and Lander Counties, Nevada* (Nexus 2025b).

Table 2 2025 First Survey – Ground Survey Territories and Nests Included in Take Permits

Project	Take Permit Number	Early Occupancy Ground Survey Area (January-February)	Territories (and associated nests) to be Monitored
Cortez Mine	MB75031D	GOEA territories and suitable habitat within one mile of surface disturbance and two miles blasting.	USFWS 1 (CC-01, CC-03, CC-04) USFWS 2 (GAP-01, GAP-02, GAP-05, GAP-06, GAP-07) USFWS 3 (MC-03, MC-04) USFWS 4 (RP-01, RP-02)
Robertson Mine	MBPER14037974	GOEA territories and suitable habitat within two-miles of the Robertson Mine activities.	GQM (GQM-01 and GQM-03)
Goldrush Mine	MB75819D	GOEA territories and suitable habitat within one mile of surface disturbance.	USFWS 1 (FC-01) USFWS 2 (FC-08, FC-09, FC-10) USFWS 3 (HC-02, HC-03) USFWS 4 (HC-08, MT-01) USFWS 5 (MC-01, MC-02) USFWS 6 (MT-02) USFWS 7 (WC-02, WC-03) USFWS 8 (WC-04)

Sources: USFWS 2024a, 2024b, 2024c

Bold =Territory and Nest(s) Associated with a Take Permit and Within the Ore Transport Project Survey Area.

Nexus biologists followed the USFWS-recommended specific observation criteria used for establishing golden eagle territory occupancy which include, but are not limited to:

- An adult eagle within 500 meters of a nest within the territory, when the bird is clearly in view of the nest, and when the eagle's presence is clearly not a rapid pass-over of the nest.
- Two adults, or an adult and a sub-adult bird paired within the territory.
- Reproductive or territorial behavior within the territory:
 - Courtship behavior, undulating flight, copulation,
 - Territorial defense, and
 - Nest building behaviors (stick carrying, nest maintenance).

Ground surveys occurred in each territory for four hours unless golden eagles were confirmed to be occupying the territory. Surveyors were instructed to stay at least 300 to 400 meters away from known nest locations to avoid disturbing the eagles. Surveyors were instructed to watch for any signs of agitation by the eagles and to leave the area immediately if a behavior change was suspected to be a result of their presence.

2.1.2 Aerial Methods

Aerial surveys were completed within a four-mile radius of the Project in all areas not covered under an eagle take permit. Additionally all previously identified raptor nests were surveyed as well as areas searched for the presence of new or previously unidentified nests.

Aerial (rotor-wing) surveys were contracted with El Aero Services. An air-to-ground navigation system was used to record points of interest and flight lines. Additionally, back up points and flight lines were recorded by the surveying biologist. In addition to the methods described above for ground surveys, surveyors closely looked at and photographed nests to identify the presence of fresh greenery or other signs of occupancy from the helicopter. Biologists also scanned the areas around nests for presence of golden eagles during the flights.

2.2 Second Survey – Aerial

The second survey was conducted aurally, within the preferred survey window of at least 30 days after the first survey and within the areas specified in **Table 1**. Aerial (rotor-wing) surveys were again contracted with El Aero Services. An air-to-ground navigation system was used to record points of interest and flight lines. Additionally, back up points and flight lines were recorded by the surveying biologist.

The survey complied with the Pagel et al. (2010) protocol to clarify territory occupancy and evaluate all golden eagle nests for in-use status and assess suitable nesting habitat to locate any previously undocumented golden eagle nests. Additionally all previously identified raptor nests were surveyed, and potential nesting habitat in the survey area searched for the presence of previously undocumented raptor species nests (i.e., cliffs, outcrops, transmission lines, etc.).

2.3 Third Survey – Aerial

While a third and final surveys is not required for the Project, it was completed for Cortez, Robertson, and Goldrush mines, all of which have been issued take permits by the USFWS. These methodologies and results are included in this report due to the overlap of several of the nests with the Project survey area. Detailed results from the 2025 monitoring for all territories in **Table 2** are provided in the report titled *2025 Golden Eagle and Raptor Nesting Surveys Cortez Mine, Robertson Mine, Goldrush Mine, REN, Swift (proposed), Buck Exploration, New Buck Exploration, Buckhorn Exploration, HCCUEP, Mill Canyon Exploration, Bullion Hills Decline (proposed) (BHD), and West Pine Valley Exploration Projects Elko, Eureka, and Lander Counties, Nevada (Nexus 2025b)*.

The final survey, which the USFWS guidance states can be conducted aurally or ground-based, should occur ideally in late May to mid-June, and was conducted at previously identified in-use nests when golden eagles were expected to have late-stage nestlings to assess breeding success and productivity. Breeding attempts are considered successful when ≥ 1 nestling reaches ≥ 51

days old. In addition, all territories associated with take permits, regardless of previous findings for these nests and territories, were surveyed to add to the final description of territory occupancy for 2025. This survey was conducted aerially using rotor-wing methods using the same data recording methodologies described for the first and second surveys.

2.4 Nest Naming

Most nests surveyed in 2025 have been previously assigned a nest ID. These IDs were continued to be referenced during the 2025 surveys and in this report. For any nests newly identified during the 2025 surveys, were assigned a nest ID consistent with those in the existing dataset. The IDs are generally in alignment with USFWS protocols to help the proponent, agency representatives, and biologists more consistently and efficiently organize and track each nest over time. Each nest site ID consists of a two- or three-letter acronym identifying the nearest geographic place or feature (e.g., nest sites near Toiyabe Range bear the acronym 'TR'). Sites are generally named after a nearby drainage, mountain, or spring feature.

Each nest site gets a unique two-digit site number (e.g., TR-01). If two or more nests occur within proximity to one another, one unique nest site ID is assigned to the entire group. The delineation of individual sites is based on the surveying biologist's professional judgement and review of nest locations with regards to topography.

Nest ID Example: The nest ID appears as XX^1-XX^2 where XX^1 equals the two- to three-letter place name and XX^2 equals the two-digit site number (e.g., Toiyabe Range [XX^1] has a nest site [XX^2], which is assigned the nest ID of TR-01).

For nest sites with two or more individual nests, nests are assigned a letter to differentiate each nest (e.g., AC-01-A, AC-01-B, etc.).

3.0 RESULTS

Nexus biologists conducted the 2025 surveys on the following dates:

- First Survey (Ground and Aerial)
 - Ground – February 4, 7, 10, 11, 12, 14, 17, and 18, 2025
 - Aerial – March 10 and 11, 2025
- Second Survey (Aerial) – April 17 and 18, 2025
- Third Survey (Aerial) – May 29, 2025

Coordination with NDOW found potential survey overlap near the REN project with an adjacent, non-NGM project. NDOW requested that survey efforts in these overlapping areas not be duplicated. As such, Nexus collected the data in this overlapping area and is providing the results to the other consultant for their project.

3.1 Golden Eagle Survey Results

Below are the 2025 survey results for territories included in golden eagle take permits that overlap the Project survey area. **Table 3** presents the results of the territory and nest surveys completed for the Cortez Mine Incidental Take Permit (MB75031D), Robertson Mine Incidental Take Permit (MBPER14037974), and Goldrush Mine Incidental Take Permit (MB75819D) and that overlap the Project survey area. Applicable photographs and datasheets are provided in **Appendix A**. Detailed results associated with these projects and their associated take permits are provided in Nexus 2025b.

Within the Project survey area, there are five territories made up of 13 nests associated with previously issued incidental take permits that were surveyed.

3.2 Raptor Nest Survey Results

During the surveys, 185 previously identified nest sites were surveyed. This does not include the 13 nests reported in Section 3.1 above. One new nest was located during the March aerial survey and three new nests were located during the April aerial survey, for a total of 189 nests sites surveyed in 2025 for the Project.

Results of the surveys completed at the 189 nest sites are provided in **Table 4**. Photographs of the nests are provided in **Appendix B**. A table that includes the historic monitoring results of the nests within the survey area from 2013 through 2025 is provided in **Appendix C**.

4.0 SUMMARY

In 2025, 202 nest sites were surveyed within the Project survey area:

- 13 nest sites associated five territories included in previously issued incidental take permits for other projects;
- 185 previously identified nest sites; and
- 4 newly identified nest sites.

Of the five territories included in incidental take permits:

- 4 territories were Unoccupied or Unoccupied/Unknown
- 1 territory was Occupied

Of the 13 nests associated with the five territories included in incidental take permits:

- 10 nests had no GOEA activity observed and were described as Alternate nests;
 - 2 of the 10 nests were occupied by other species;
 - 1 occupied by a prairie falcon;
 - 1 occupied by a common raven;
- 1 nest was not found;
- 1 nest had large amounts of vegetation added to the nest and other areas of the rock face in late May and no other activity observed earlier in the breeding season; therefore was described as Alternate/Unknown; and
- 1 nest had a golden eagle sitting in the nest with fresh decoration in March and an egg in the nest in April; however, the nest was empty in May indicating that the nest did not successfully produce young. This nest was described as in-use, but likely unsuccessful.

Of the remaining 189 nests, the following species specific results were found:

- Golden Eagle – 40 Nest Sites
 - 12 In-use
 - 26 Alternate
 - 2 not found during any of the surveys
- Barn Owl – 1 Nest Site
 - 1 Occupied

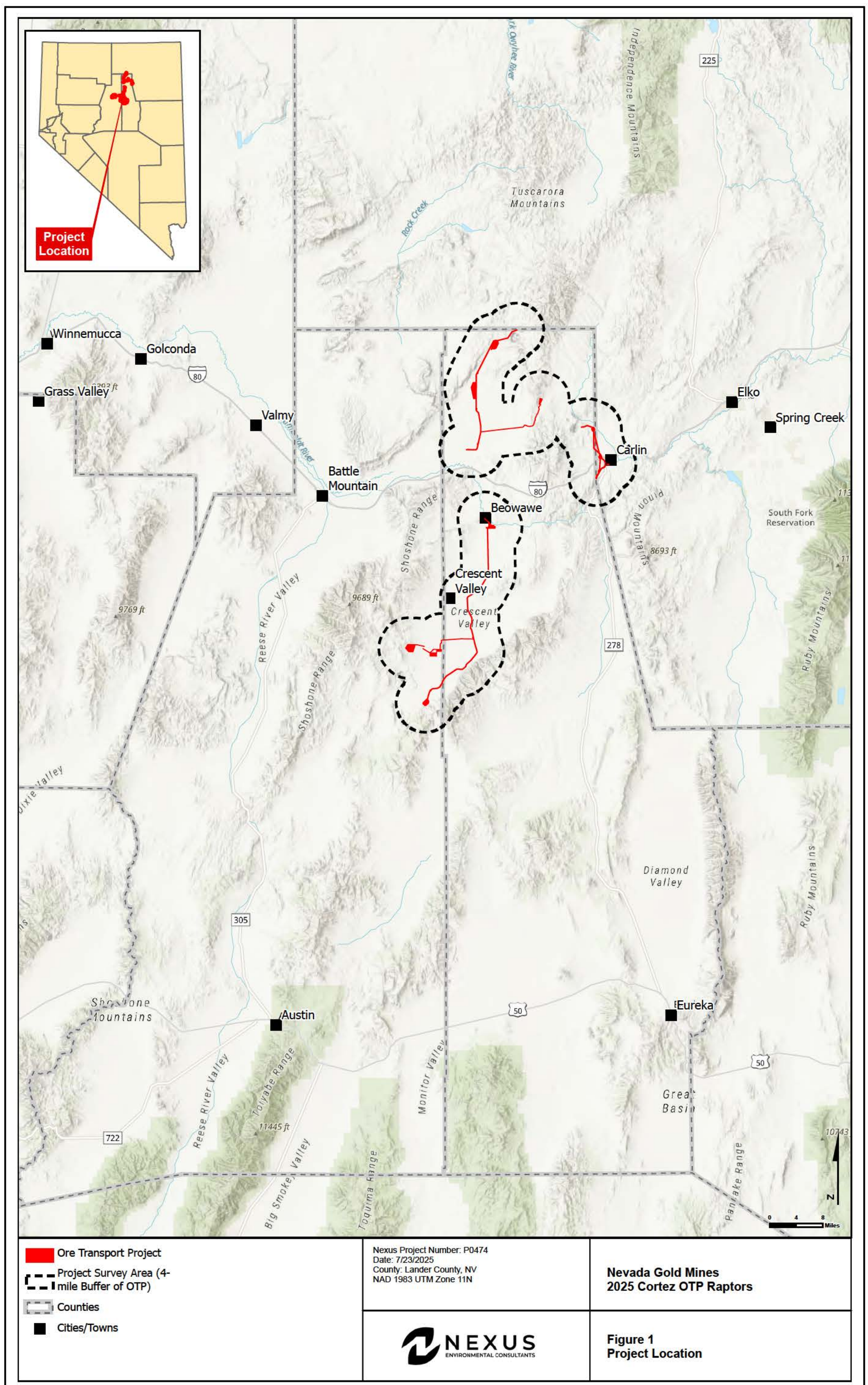
- Common Raven – 66 Nest Sites
 - 28 Occupied
 - 22 Unoccupied
 - 13 Nest Fallen
 - 2 Nest Not Found
 - 1 Unknown because it was found during the March flight but not found during the April flight; therefore, nest status could not be determined
- Ferruginous Hawk – 8 Nest Sites
 - 3 Occupied
 - 1 Unoccupied
 - 1 Nest Not Found
 - 3 Nest Fallen
- Great Horned Owl – 3 Nest Sites
 - 3 Occupied
- Prairie Falcon – 13 Nest Sites
 - 3 Occupied
 - 5 Unoccupied
 - 5 Nest Not Found
- Red-tailed Hawk – 12 Nest Sites
 - 6 Occupied
 - 3 Unoccupied
 - 1 Nest Fallen
 - 2 Nest Not Found
- Red-tailed Hawk/Canada Goose – 1 Nest Site
 - 1 tree with two nests. One nest occupied by red-tailed hawk, one nest occupied by Canada goose.
- Swainson's Hawk – 1 Nest Site
 - 1 Unoccupied
- Turkey Vulture – 1 Nest Site
 - 1 Unoccupied

- Unknown Species – 43 Nest Sites
 - o 1 Occupied because new nest material was observed during the April flight, but the species was not able to be identified.
 - o 20 Unoccupied
 - o 4 Unknown because they were found during the March flight but not found during the April flight; therefore, nest status could not be determined.
 - o 5 Nest Fallen
 - o 13 Nest Not Found

5.0 REFERENCES

- Nexus Environmental Consultants, Inc. 2025a. 2025 Golden Eagle and Raptor Nesting Surveys Monitoring Plan for Cortez Mine, Robertson Mine, Goldrush Mine, Ore Transport Project, REN, Swift (Proposed), Buck Exploration, New Buck Exploration, Buckhorn Exploration, HCCUEP, Mill Canyon Exploration, Bullion Hills Decline (Proposed), and West Pine Valley Exploration Projects Elo, Eureka, and Lander Counties, Nevada. February 5, 2025, Revised February 20, 2025.
- Nexus Environmental Consultants, Inc. 2025b. 2025 Golden Eagle and Raptor Nesting Surveys Cortez Mine, Robertson Mine, Goldrush Mine, REN, Swift (Proposed), Buck Exploration, New Buck Exploration, Buckhorn Exploration, HCCUEP, Mill Canyon Exploration, Bullion Hills Decline (Proposed), and West Pine Valley Exploration Projects Elo, Eureka, and Lander Counties, Nevada. August 2025.
- Pagel, J.E., D.M. Whittington, and G.T. Allen. 2010. Interim Golden Eagle Inventory and Monitoring Protocols; and other recommendations in support of golden eagle management and permit issuance. U.S. Fish and Wildlife Service.
- United States Fish and Wildlife Service (USFWS). 2023. GOEA Survey Guidance: FWS R8 Migratory Birds 2-10-23. Provided to First Majestic from Joe Barnes with the USFWS on February 10, 2023.
- United States Fish and Wildlife Service (USFWS). 2024a. Long-Term Eagle Incidental Take Permit Number MB75819D. Effective 2024-05-07, Expires 2048-01-14. Signed May 8, 2024.
- United States Fish and Wildlife Service (USFWS). 2024b. Long-Term Eagle Incidental Take Permit Number MB75031D. Effective 2023-12-15, Expires 2053-07-31. Signed May 24, 2024.
- United States Fish and Wildlife Service (USFWS). 2024c. Long-Term Eagle Incidental Take Permit Number MBPER14037974. Effective 2024-12-15, Expires 2039-12-14. Signed November 26, 2024.

FIGURES



APPENDIX A

Take Permit Nest Data

CZ-T1 Datasheet and Photographs

APPENDIX B

Nest Photographs



BC-06 Nest A – March 10/11, 2025 Flight



BC-06 Nest B – March 10/11, 2025 Flight



BC-06 Nest A– April 17/18, 2025 Flight

No Photo Available – Third Flight Not Applicable

BC-06 – May 29, 2025 Flight



BC-06 Nest B – April 17/18, 2025 Flight



BC-07 – March 10/11, 2025 Flight



BC-07 – April 17/18, 2025 Flight

No Photo Available – Third Flight Not Applicable

BC-07 – May 29, 2025 Flight



BC-08 – March 10/11, 2025 Flight



BC-08 – April 17/18, 2025 Flight



BC-08 Nest A – May 29, 2025 Flight



BC-08 Nest B – May 29, 2025 Flight



BC-09 – March 10/11, 2025 Flight



BC-09 – April 17/18, 2025 Flight

No Photo Available – Third Flight Not Applicable

BC-09 – May 29, 2025 Flight



BC-10 – March 10/11, 2025 Flight



BC-10 – April 17/18, 2025 Flight

No Photo Available – Third Flight Not Applicable

BC-10 – May 29, 2025 Flight



BC-11 – March 10/11, 2025 Flight



BC-11 – April 17/18, 2025 Flight

No Photo Available – Third Flight Not Applicable

BC-11 – May 29, 2025 Flight

No Photo Available – Nest Not Found	No Photo Available – Nest Not Found
BC-12 – March 10/11, 2025 Flight	BC-12 – April 17/18, 2025 Flight
No Photo Available – Third Flight Not Applicable	
BC-12 – May 29, 2025 Flight	



BC-13 – March 10/11, 2025 Flight



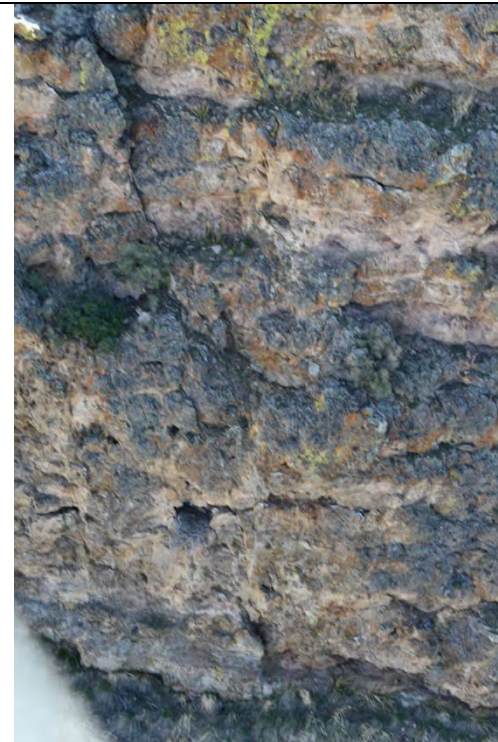
BC-13 – April 17/18, 2025 Flight

No Photo Available – Third Flight Not Applicable

BC-13 – May 29, 2025 Flight



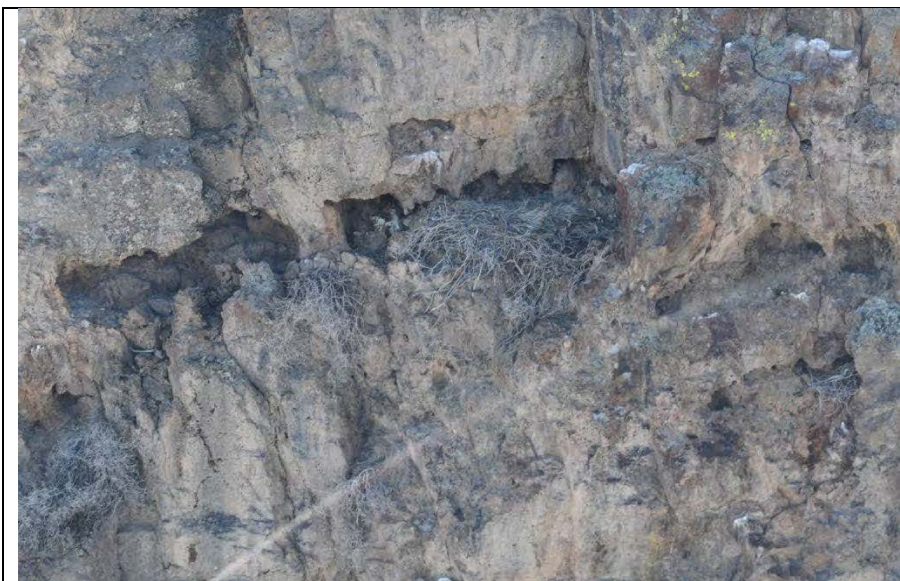
BC-14 – March 10/11, 2025 Flight



BC-14 – April 17/18, 2025 Flight

No Photo Available – Third Flight Not Applicable

BC-14 – May 29, 2025 Flight

	
BC-15 – March 10/11, 2025 Flight	BC-15 – April 17/18, 2025 Flight
No Photo Available – Third Flight Not Applicable	
BC-15 – May 29, 2025 Flight	



BC-16 – March 10/11, 2025 Flight



BC-16 – April 17/18, 2025 Flight

No Photo Available – Third Flight Not Applicable

BC-16 – May 29, 2025 Flight



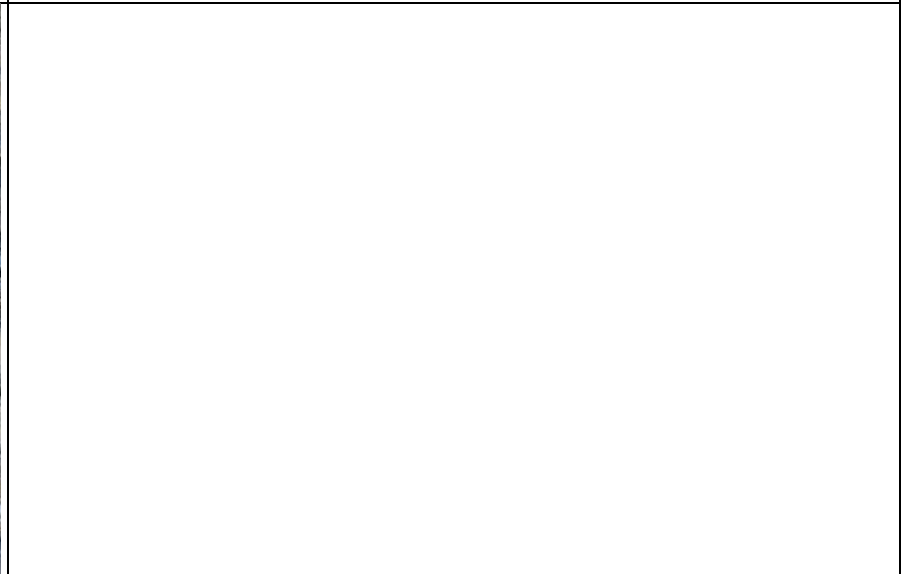
BC-17 – March 10/11, 2025 Flight

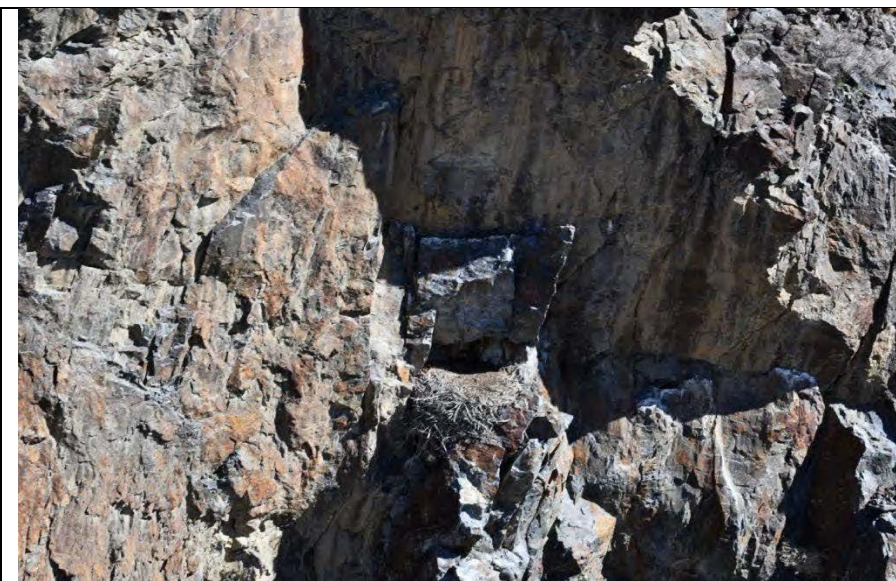


BC-17 – April 17/18, 2025 Flight



BC-17 – May 29, 2025 Flight





BC-18 – March 10/11, 2025 Flight



BC-18 – April 17/18, 2025 Flight

No Photo Available – Third Flight Not Applicable

BC-18 – May 29, 2025 Flight



BC-19 – March 10/11, 2025 Flight



BC-19 – April 17/18, 2025 Flight

No Photo Available – Third Flight Not Applicable

BC-19 – May 29, 2025 Flight

No Photo Available – Nest Not Found	
BC-20 – March 10/11, 2025 Flight	BC-20 – April 17/18, 2025 Flight
No Photo Available – Third Flight Not Applicable	
BC-20 – May 29, 2025 Flight	



BC-21 – March 10/11, 2025 Flight



BC-21 – April 17/18, 2025 Flight

No Photo Available – Third Flight Not Applicable

BC-21 – May 29, 2025 Flight



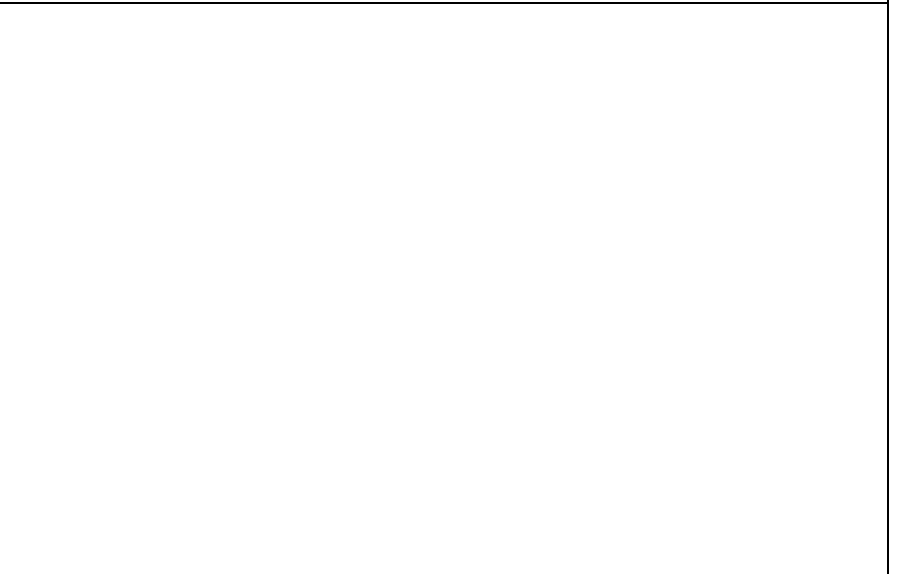
BC-22 – March 10/11, 2025 Flight



BC-22 – April 17/18, 2025 Flight



BC-22 – May 29, 2025 Flight



No Photo Available – Nest Not Found



BC-25 – March 10/11, 2025 Flight

BC-25 – April 17/18, 2025 Flight



BC-25 – May 29, 2025 Flight

No Photo Available – Nest Not Found	No Photo Available – Nest Not Found
BC-26 – March 10/11, 2025 Flight	BC-26 – April 17/18, 2025 Flight
No Photo Available – Third Flight Not Applicable	
BC-26 – May 29, 2025 Flight	



BL-01 – March 10/11, 2025 Flight



BL-01 – April 17/18, 2025 Flight

No Photo Available – Third Flight Not Applicable

BL-01 – May 29, 2025 Flight

No Photo Available – Nest Not Found	No Photo Available – Nest Not Found
BLM-01 – March 10/11, 2025 Flight	BLM-01 – April 17/18, 2025 Flight
No Photo Available – Third Flight Not Applicable	
BLM-01 – May 29, 2025 Flight	

No Photo Available – Nest Not Found



BLM-03 – March 10/11, 2025 Flight

BLM-03 – April 17/18, 2025 Flight



BLM-03 – May 29, 2025 Flight

No Photo Available – Nest Not Found	No Photo Available – Nest Not Found
BLM-04 – March 10/11, 2025 Flight	BLM-04 – April 17/18, 2025 Flight
No Photo Available – Third Flight Not Applicable	
BLM-04 – May 29, 2025 Flight	



BOC-02 – March 10/11, 2025 Flight



BOC-02 – April 17/18, 2025 Flight

No Photo Available – Third Flight Not Applicable

BOC-02 – May 29, 2025 Flight



BOC-03 – March 10/11, 2025 Flight



BOC-03 – April 17/18, 2025 Flight

No Photo Available – Third Flight Not Applicable

BOC-03 – May 29, 2025 Flight



BOC-04 – March 10/11, 2025 Flight



BOC-04 – April 17/18, 2025 Flight

No Photo Available – Third Flight Not Applicable

BOC-04 – May 29, 2025 Flight



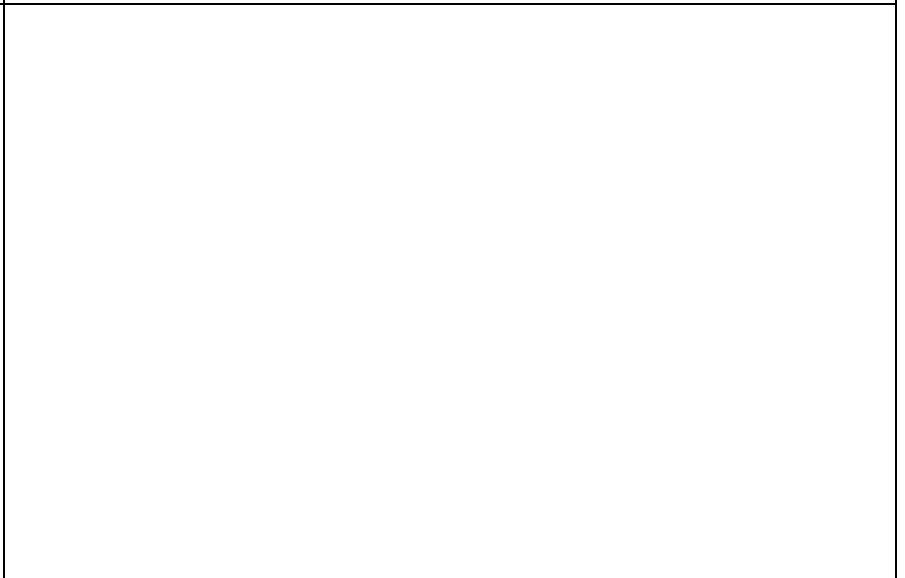
BOC-05 – March 10/11, 2025 Flight



BOC-05 – April 17/18, 2025 Flight



BOC-05 – May 29, 2025 Flight





BOC-06 – March 10/11, 2025 Flight



BOC-06 – April 17/18, 2025 Flight

No Photo Available – Third Flight Not Applicable

BOC-06 – May 29, 2025 Flight

No Photo Available – Nest Not Found	No Photo Available – Nest Not Found
BOC-07 – March 10/11, 2025 Flight	BOC-07 – April 17/18, 2025 Flight
No Photo Available – Third Flight Not Applicable	
BOC-07 – May 29, 2025 Flight	

No Photo Available – Nest Not Found	No Photo Available – Nest Not Found
BOC-08 – March 10/11, 2025 Flight	BOC-08 – April 17/18, 2025 Flight
No Photo Available – Third Flight Not Applicable	
BOC-08 – May 29, 2025 Flight	



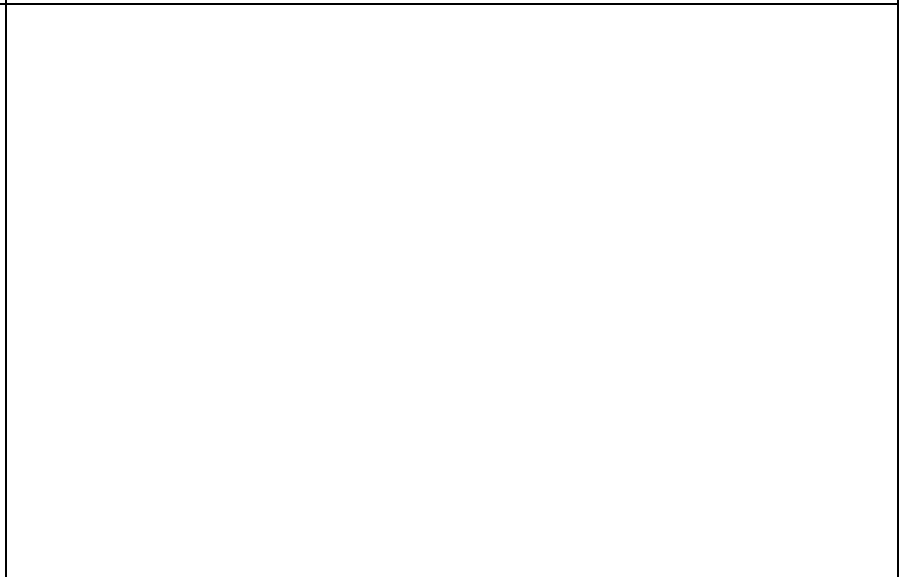
BOC-09 – March 10/11, 2025 Flight



BOC-09 – April 17/18, 2025 Flight



BOC-09 – May 29, 2025 Flight



No Photo Available – Nest Not Found	No Photo Available – Nest Not Found
BOC-10 – March 10/11, 2025 Flight	BOC-10 – April 17/18, 2025 Flight
No Photo Available – Third Flight Not Applicable	
BOC-10 – May 29, 2025 Flight	



BOC-11 – March 10/11, 2025 Flight



BOC-11 – April 17/18, 2025 Flight

No Photo Available – Third Flight Not Applicable

BOC-11 – May 29, 2025 Flight



BOC-12 – March 10/11, 2025 Flight



BOC-12 – April 17/18, 2025 Flight

No Photo Available – Third Flight Not Applicable

BOC-12 – May 29, 2025 Flight



BOC-13 – March 10/11, 2025 Flight

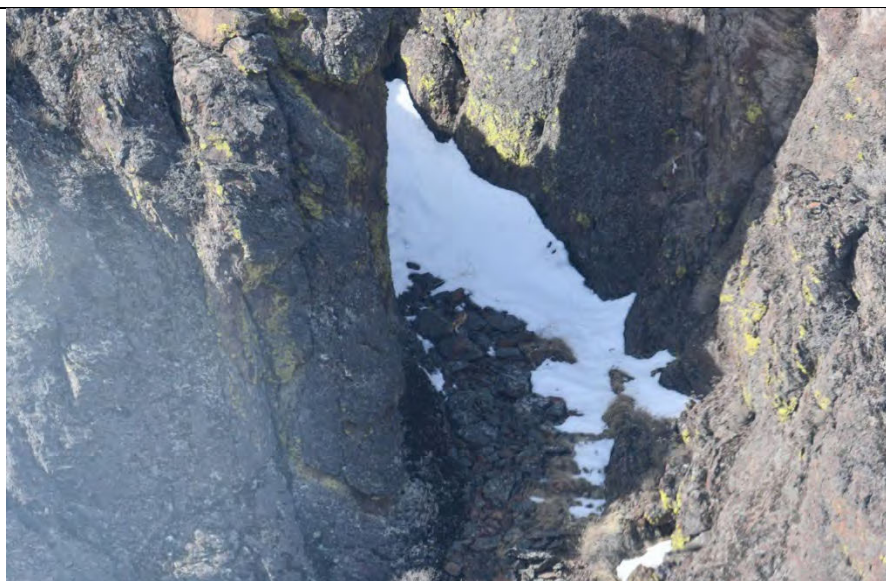


BOC-13 – April 17/18, 2025 Flight

No Photo Available – Third Flight Not Applicable

BOC-13 – May 29, 2025 Flight

No Photo Available	
BOC-15 – March 10/11, 2025 Flight	BOC-15 – April 17/18, 2025 Flight
No Photo Available – Third Flight Not Applicable	
BOC-15 – May 29, 2025 Flight	



BOC-17 – March 10/11, 2025 Flight



BOC-17 – April 17/18, 2025 Flight

No Photo Available – Nest Not Found

BOC-17 – May 29, 2025 Flight



BOC-18 – March 10/11, 2025 Flight

No Photo Available – Nest Not Found

BOC-18 – April 17/18, 2025 Flight

No Photo Available – Third Flight Not Applicable

BOC-18 – May 29, 2025 Flight



BOC-19 – March 10/11, 2025 Flight



BOC-19 – April 17/18, 2025 Flight

No Photo Available – Third Flight Not Applicable

BOC-19 – May 29, 2025 Flight



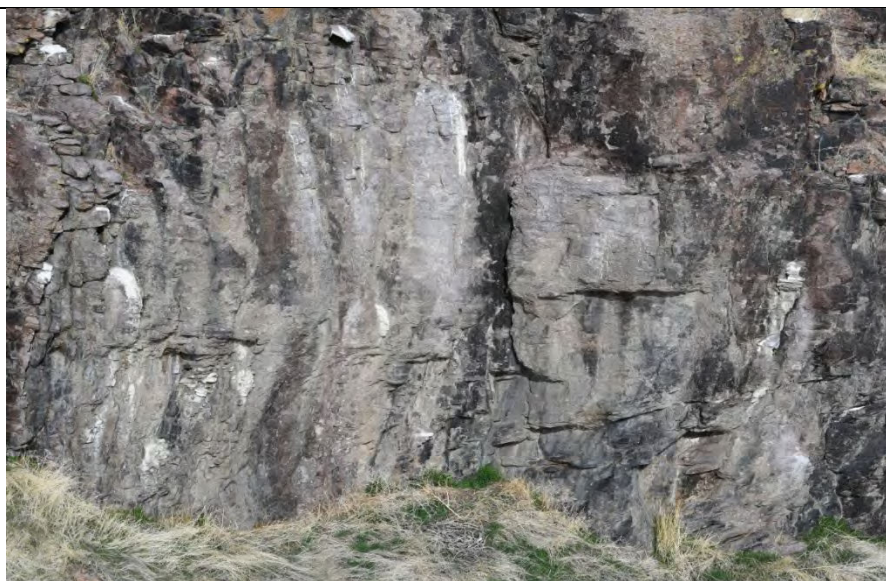
BOC-20 – March 10/11, 2025 Flight



BOC-20 – April 17/18, 2025 Flight

No Photo Available – Third Flight Not Applicable

BOC-20 – May 29, 2025 Flight



BOC-21 – March 10/11, 2025 Flight



BOC-21 – April 17/18, 2025 Flight

No Photo Available – Third Flight Not Applicable

BOC-21 – May 29, 2025 Flight

No Photo Available – Nest Not Found	No Photo Available – Nest Not Found
BOC-22 – March 10/11, 2025 Flight	BOC-22 – April 17/18, 2025 Flight
No Photo Available – Third Flight Not Applicable	
BOC-22 – May 29, 2025 Flight	



BOC-23 Nest A – March 10/11, 2025 Flight



BOC-23 Nest B – March 10/11, 2025 Flight



BOC-23 Nest A – April 17/18, 2025 Flight



BOC-23 Nest B – April 17/18, 2025 Flight

No Photo Available – Third Flight Not Applicable

BOC-23 – May 29, 2025 Flight



BOC-24 – March 10/11, 2025 Flight



BOC-24 – April 17/18, 2025 Flight

No Photo Available – Third Flight Not Applicable

BOC-24 – May 29, 2025 Flight



BOC-25 – March 10/11, 2025 Flight



BOC-25 – April 17/18, 2025 Flight

No Photo Available – Third Flight Not Applicable

BOC-25 – May 29, 2025 Flight



BOC-26 – March 10/11, 2025 Flight



BOC-26 – April 17/18, 2025 Flight

No Photo Available – Third Flight Not Applicable

BOC-26 – May 29, 2025 Flight



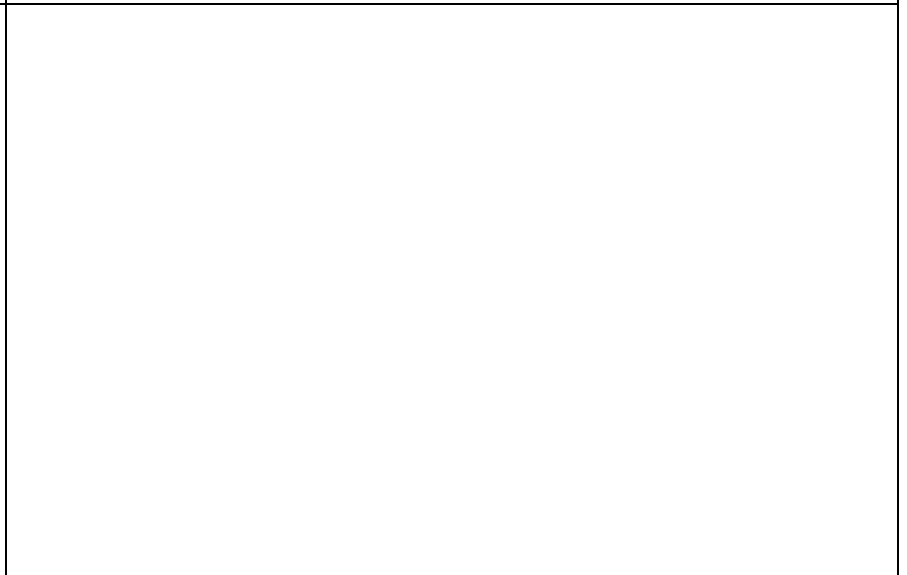
BOC-27 – March 10/11, 2025 Flight



BOC-27 – April 17/18, 2025 Flight



BOC-27 – May 29, 2025 Flight





BOC-28 – March 10/11, 2025 Flight

No Photo Available – Nest Not Found

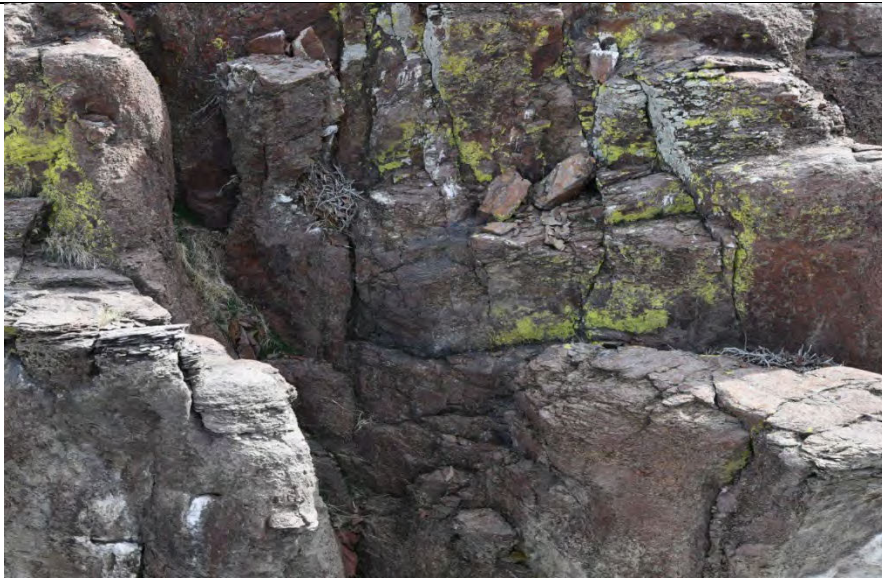
BOC-28 – April 17/18, 2025 Flight

No Photo Available – Third Flight Not Applicable

BOC-28 – May 29, 2025 Flight

No Photo Available – Nest Not Found	
BOC-29 – March 10/11, 2025 Flight	BOC-29 – April 17/18, 2025 Flight
No Photo Available – Third Flight Not Applicable	
BOC-29 – May 29, 2025 Flight	

No Photo Available – Nest Not Found	No Photo Available – Nest Not Found
BOC-30 – March 10/11, 2025 Flight	BOC-30 – April 17/18, 2025 Flight
No Photo Available – Third Flight Not Applicable	
BOC-30 – May 29, 2025 Flight	



BOC-31 – March 10/11, 2025 Flight



BOC-31 – April 17/18, 2025 Flight

No Photo Available – Third Flight Not Applicable

BOC-31 – May 29, 2025 Flight

No Photo Available – Nest Not Found	No Photo Available – Nest Not Found
BOC-32 – March 10/11, 2025 Flight	BOC-32 – April 17/18, 2025 Flight
No Photo Available – Third Flight Not Applicable	
BOC-32 – May 29, 2025 Flight	



BOC-33 – March 10/11, 2025 Flight

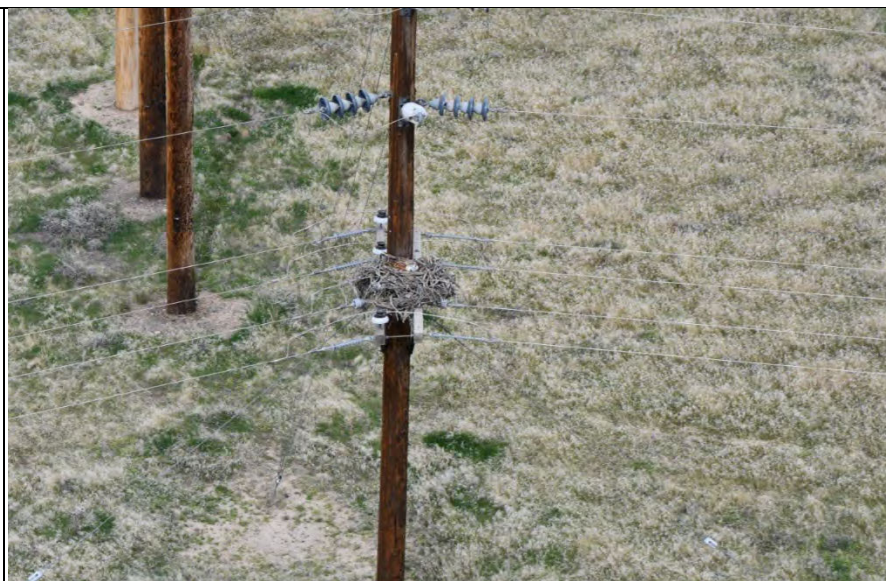


BOC-33 – April 17/18, 2025 Flight

No Photo Available – Third Flight Not Applicable

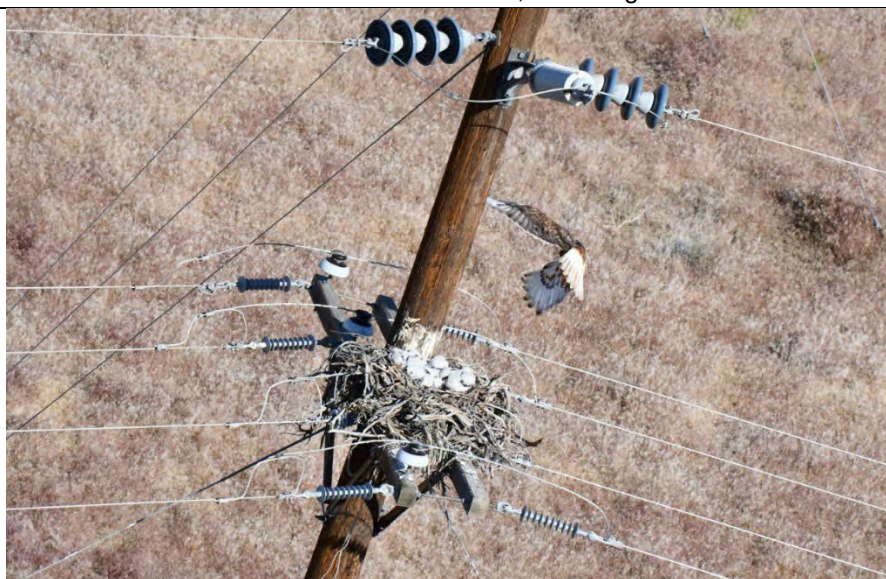
BOC-33 – May 29, 2025 Flight

No Photo Available – Nest Located During March 10/11, 2025 Flight



BOC-34 – March 10/11, 2025 Flight

BOC-34 – April 17/18, 2025 Flight



BOC-34 – May 29, 2025 Flight



BR-01 – March 10/11, 2025 Flight



BR-01 – April 17/18, 2025 Flight

No Photo Available – Third Flight Not Applicable

BR-01 – May 29, 2025 Flight



BV-01 – March 10/11, 2025 Flight



BV-01 – April 17/18, 2025 Flight

No Photo Available – Third Flight Not Applicable

BV-01 – May 29, 2025 Flight



BV-02 – March 10/11, 2025 Flight



BV-02 – April 17/18, 2025 Flight

No Photo Available – Third Flight Not Applicable

BV-02 – May 29, 2025 Flight



CC-02 – March 10/11, 2025 Flight



CC-02 – April 17/18, 2025 Flight

No Photo Available – Third Flight Not Applicable

CC-02 – May 29, 2025 Flight



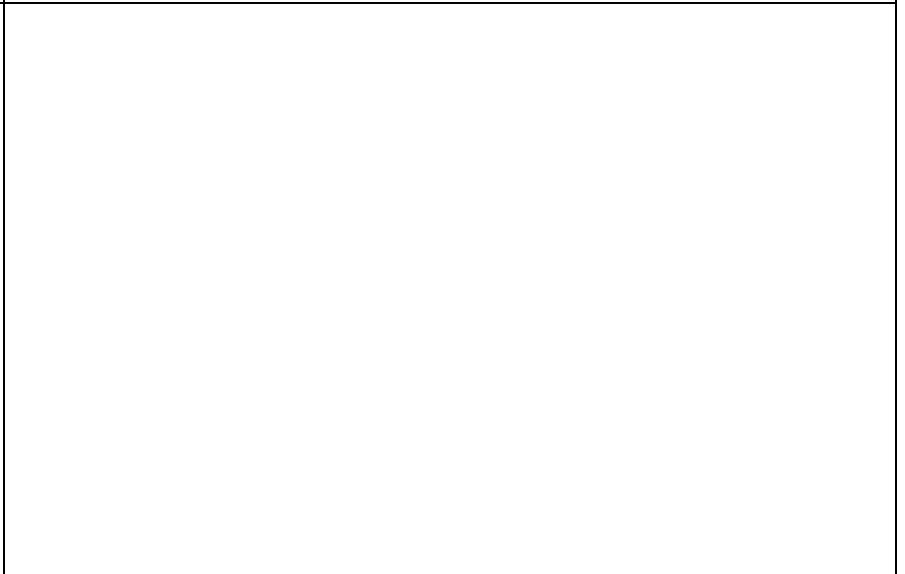
CM-01 – March 10/11, 2025 Flight



CM-01 – April 17/18, 2025 Flight



CM-01 – May 29, 2025 Flight





No Photo Available – Not surveyed Due to High Winds and Safety Concerns Entering Canyon

CM-02 – March 10/11, 2025 Flight

CM-02 – April 17/18, 2025 Flight



CM-02 – May 29, 2025 Flight



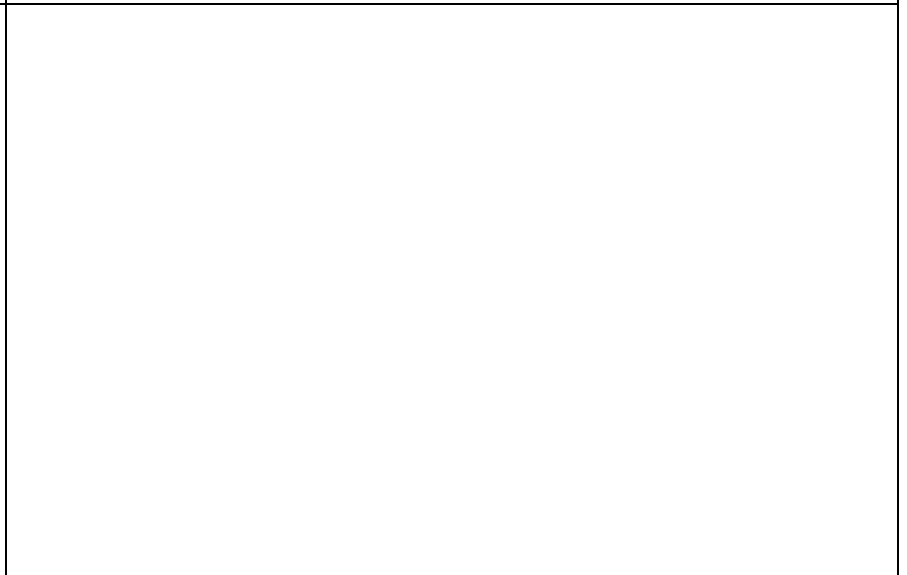
CM-03 – March 10/11, 2025 Flight



CM-03 – April 17/18, 2025 Flight



CM-03 – May 29, 2025 Flight





CM-04 – March 10/11, 2025 Flight



CM-04 – April 17/18, 2025 Flight

No Photo Available – Third Flight Not Applicable

CM-04 – May 29, 2025 Flight



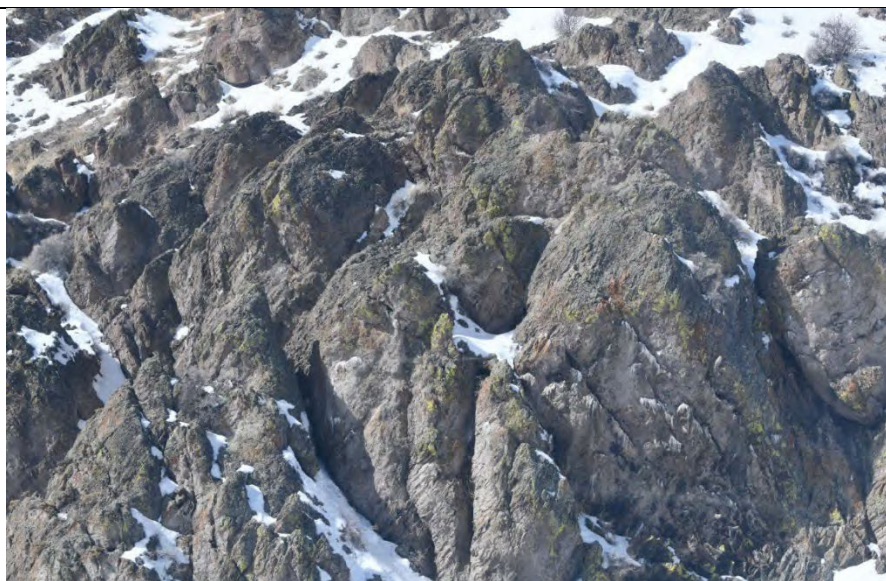
CP-01 – March 10/11, 2025 Flight



CP-01 – April 17/18, 2025 Flight

No Photo Available – Third Flight Not Applicable

CP-01 – May 29, 2025 Flight



CP-02 – March 10/11, 2025 Flight



CP-02 – April 17/18, 2025 Flight

No Photo Available – Third Flight Not Applicable

CP-02 – May 29, 2025 Flight



CP-03 Nest A – March 10/11, 2025 Flight



CP-03 Nest A – April 17/18, 2025 Flight



CP-03 Nest B – April 17/18, 2025 Flight



CP-03 Nest A – May 29, 2025 Flight



CP-03 Nest B – May 29, 2025 Flight



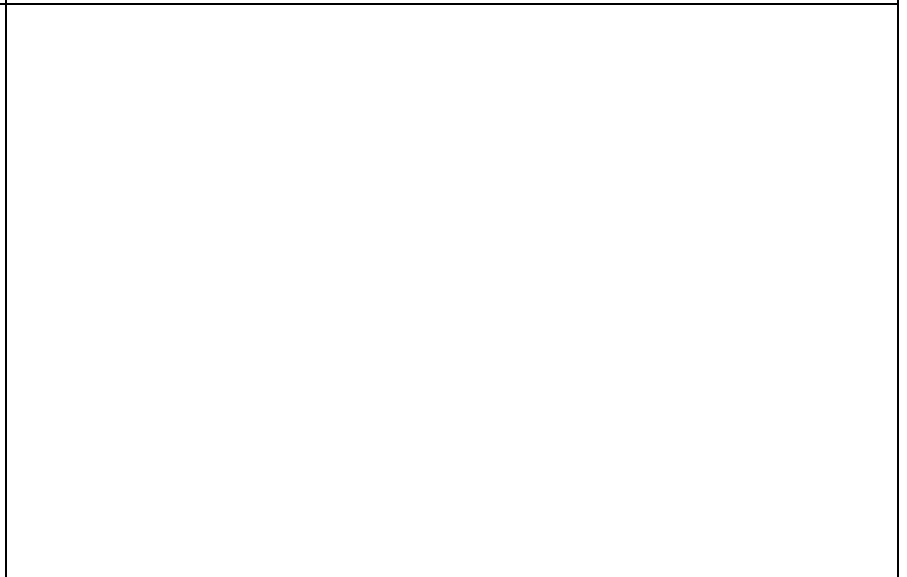
CP-04 – March 10/11, 2025 Flight



CP-04 – April 17/18, 2025 Flight



CP-04 – May 29, 2025 Flight





CP-05 – March 10/11, 2025 Flight



CP-05 – April 17/18, 2025 Flight

No Photo Available – Third Flight Not Applicable

CP-05 – May 29, 2025 Flight



CP-06 Nest A – March 10/11, 2025 Flight



CP-06 Nest B – March 10/11, 2025 Flight



CP-06 Nest A – April 17/18, 2025 Flight



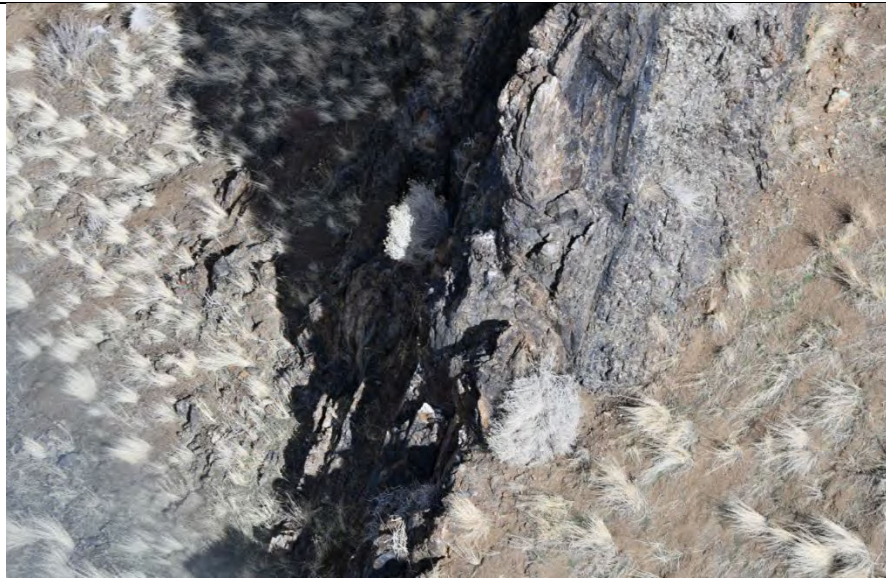
CP-06 Nest B – April 17/18, 2025 Flight



CP-06 Nest A – May 29, 2025 Flight



CP-06 Nest B – May 29, 2025 Flight



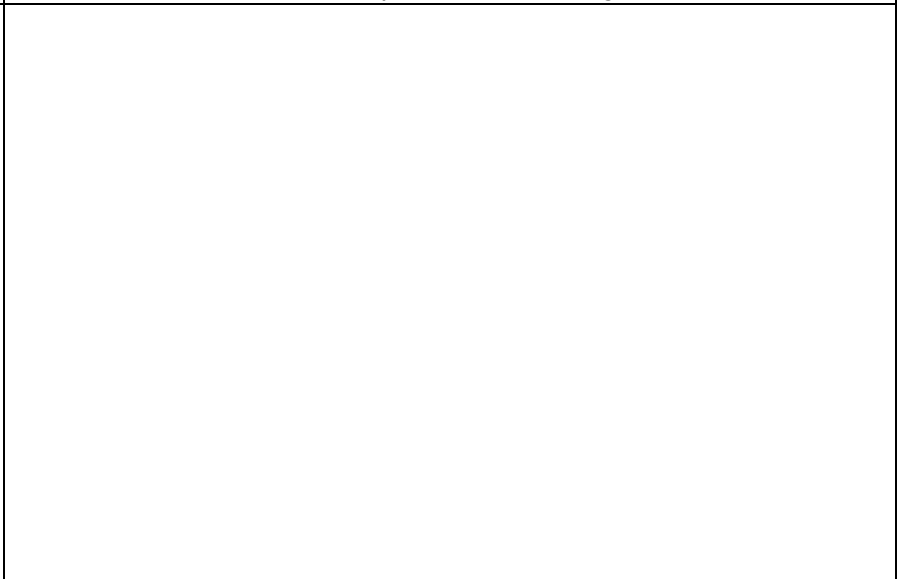
CP-09 – March 10/11, 2025 Flight



CP-09 – April 17/18, 2025 Flight



CP-09 – May 29, 2025 Flight





CWC-03 Nest A – March 10/11, 2025 Flight



CWC-03 Nest B – March 10/11, 2025 Flight



CWC-03 Nest A – April 17/18, 2025 Flight



CWC-03 Nest B – April 17/18, 2025 Flight

No Photo Available – Third Flight Not Applicable

CWC-03 – May 29, 2025 Flight



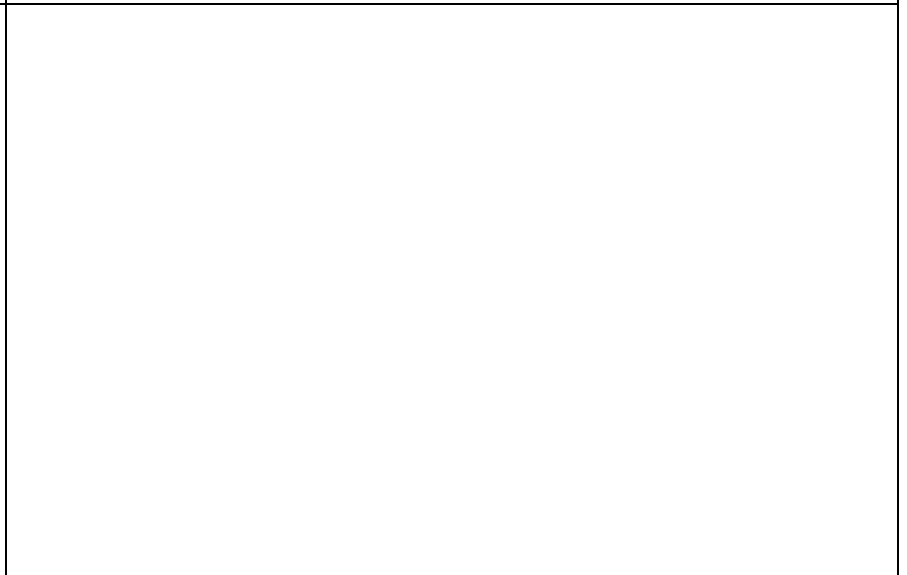
CWC-04 – March 10/11, 2025 Flight

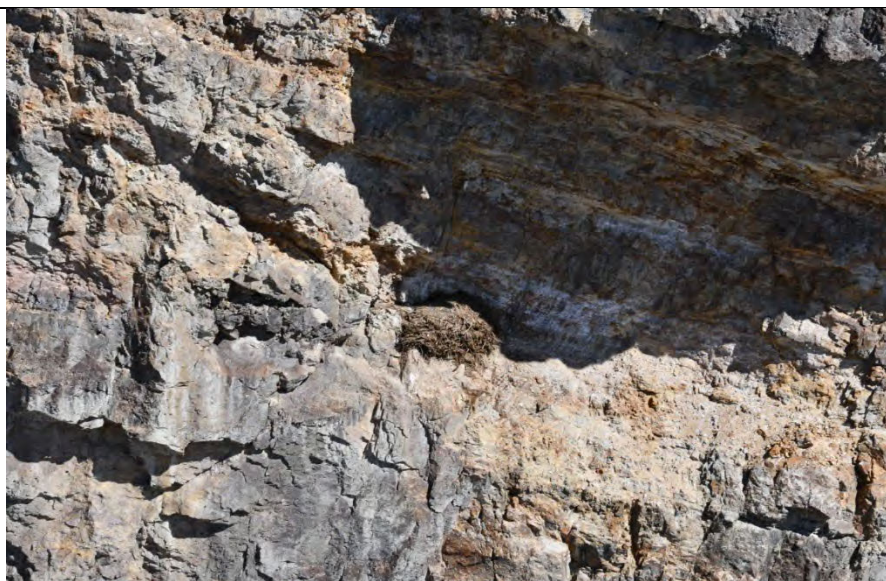


CWC-04 – April 17/18, 2025 Flight



CWC-04 – May 29, 2025 Flight





CWC-05 – March 10/11, 2025 Flight



CWC-05 – April 17/18, 2025 Flight



CWC-05 – May 29, 2025 Flight





CWC-06 – March 10/11, 2025 Flight



CWC-06 – April 17/18, 2025 Flight

No Photo Available – Third Flight Not Applicable

CWC-06 – May 29, 2025 Flight



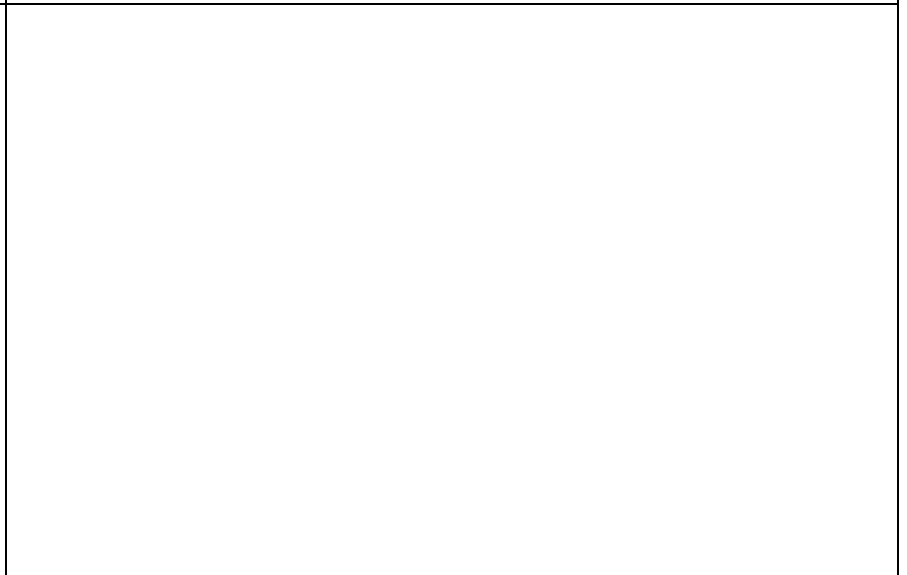
CWC-07 – March 10/11, 2025 Flight



CWC-07 – April 17/18, 2025 Flight



CWC-07 – May 29, 2025 Flight



No Photo Available – Nest Not Found



CWC-08 – March 10/11, 2025 Flight

CWC-08 – April 17/18, 2025 Flight



CWC-08 – May 29, 2025 Flight

No Photo Available – Nest Not Found



CWC-09 – March 10/11, 2025 Flight

CWC-09 – April 17/18, 2025 Flight



CWC-09 – May 29, 2025 Flight



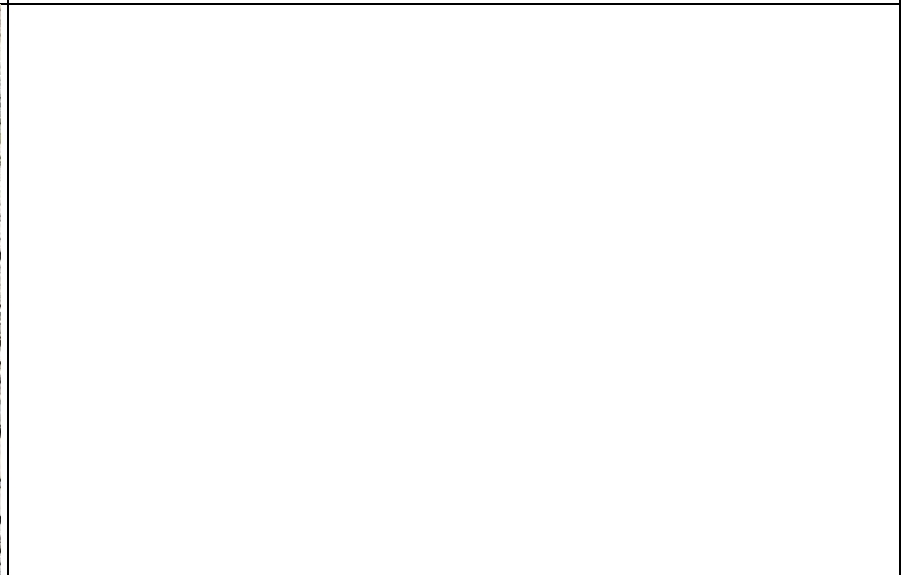
CWC-10 – March 10/11, 2025 Flight



CWC-10 – April 17/18, 2025 Flight



CWC-10 – May 29, 2025 Flight



No Photo Available – Nest Not Found	No Photo Available – Nest Not Found
CWC-11 – March 10/11, 2025 Flight	CWC-11 – April 17/18, 2025 Flight
No Photo Available – Third Flight Not Applicable	
CWC-11 – May 29, 2025 Flight	



CWC-13 – March 10/11, 2025 Flight



CWC-13 – April 17/18, 2025 Flight

No Photo Available – Third Flight Not Applicable

CWC-13 – May 29, 2025 Flight

No Photo Available – Nest Not Found



CWC-14 – March 10/11, 2025 Flight

CWC-14 – April 17/18, 2025 Flight



CWC-14 – May 29, 2025 Flight



CWC-15 – March 10/11, 2025 Flight



CWC-15 – April 17/18, 2025 Flight

No Photo Available – Third Flight Not Applicable

CWC-15 – May 29, 2025 Flight



CWC-16 – March 10/11, 2025 Flight

No Photo Available – Nest Not Found

CWC-16 – April 17/18, 2025 Flight



CWC-16 – May 29, 2025 Flight



DH-04 – March 10/11, 2025 Flight



DH-04 – April 17/18, 2025 Flight

No Photo Available – Third Flight Not Applicable

DH-04 – May 29, 2025 Flight



DH-05 – March 10/11, 2025 Flight



DH-05 – April 17/18, 2025 Flight

No Photo Available – Third Flight Not Applicable

DH-05 – May 29, 2025 Flight



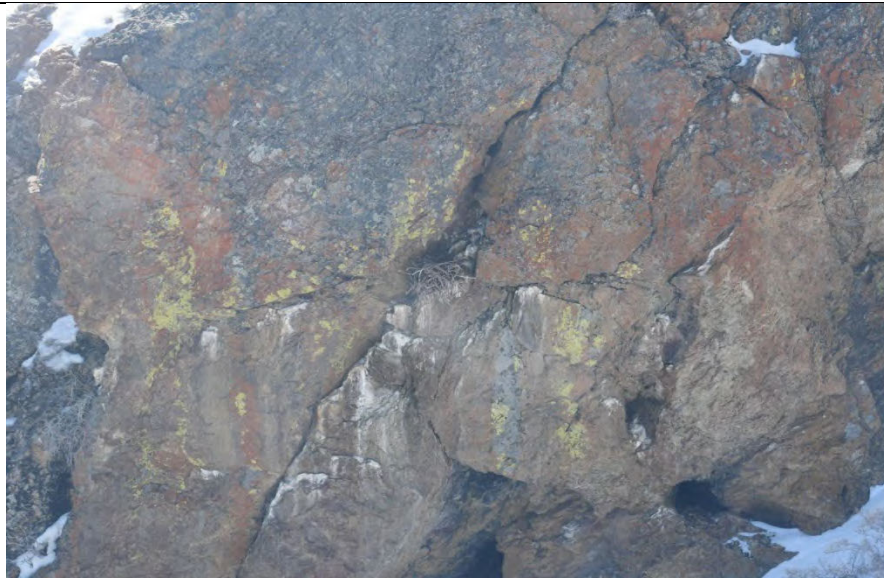
FC-04 – March 10/11, 2025 Flight



FC-04 – April 17/18, 2025 Flight

No Photo Available – Third Flight Not Applicable

FC-04 – May 29, 2025 Flight



FC-05 – March 10/11, 2025 Flight



FC-05 – April 17/18, 2025 Flight

No Photo Available – Third Flight Not Applicable

FC-05 – May 29, 2025 Flight



FC-06 – March 10/11, 2025 Flight



FC-06 – April 17/18, 2025 Flight

No Photo Available – Third Flight Not Applicable

FC-06 – May 29, 2025 Flight

No Photo Available – Nest Not Found	No Photo Available – Nest Not Found
FC-07 – March 10/11, 2025 Flight	FC-07 – April 17/18, 2025 Flight
No Photo Available – Third Flight Not Applicable	
FC-07 – May 29, 2025 Flight	



FRC-05 – March 10/11, 2025 Flight



FRC-05 – April 17/18, 2025 Flight

No Photo Available – Third Flight Not Applicable

FRC-05 – May 29, 2025 Flight



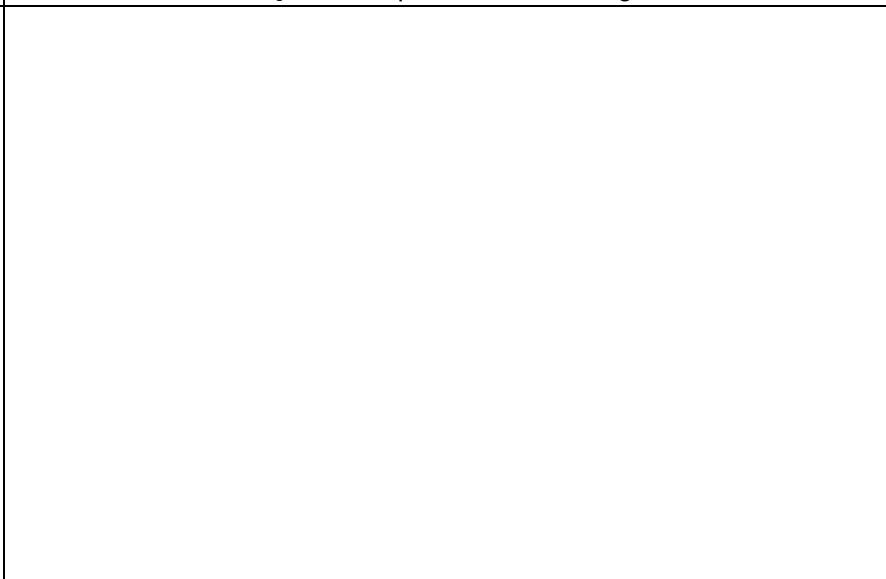
GQM-04 – March 10/11, 2025 Flight



GQM-04 – April 17/18, 2025 Flight



GQM-04 – May 29, 2025 Flight





GQM-05 – March 10/11, 2025 Flight



GQM-05 – April 17/18, 2025 Flight

No Photo Available – Third Flight Not Applicable

GQM-05 – May 29, 2025 Flight



GQM-06 – March 10/11, 2025 Flight



GQM-06 – April 17/18, 2025 Flight

No Photo Available – Third Flight Not Applicable

GQM-06 – May 29, 2025 Flight



GQM-07 – March 10/11, 2025 Flight



GQM-07 – April 17/18, 2025 Flight

No Photo Available – Third Flight Not Applicable

GQM-07 – May 29, 2025 Flight



GQM-08 – March 10/11, 2025 Flight



GQM-08 – April 17/18, 2025 Flight

No Photo Available – Third Flight Not Applicable

GQM-08 – May 29, 2025 Flight



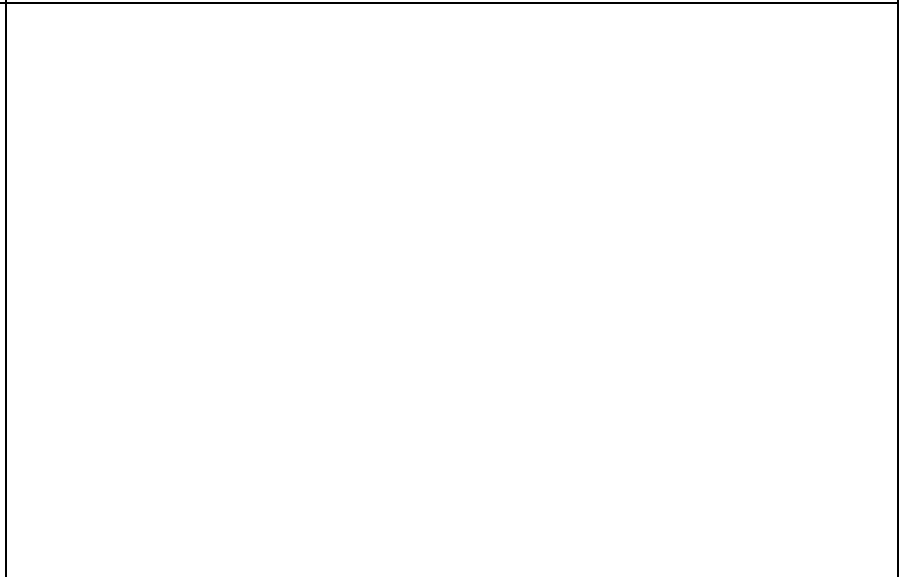
GQM-09 – March 10/11, 2025 Flight



GQM-09 – April 17/18, 2025 Flight



GQM-09 – May 29, 2025 Flight





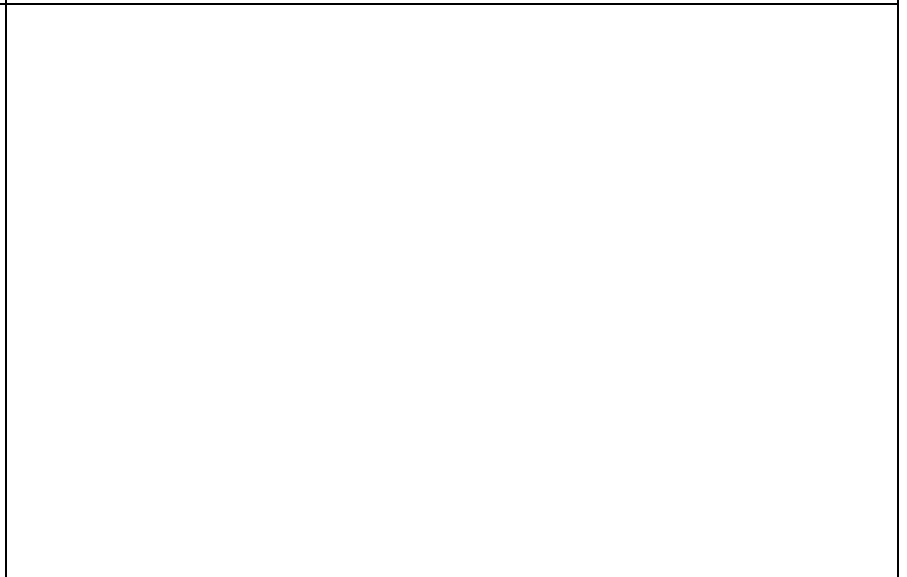
GQM-11 – March 10/11, 2025 Flight



GQM-11 – April 17/18, 2025 Flight



GQM-11 – May 29, 2025 Flight





GQM-12 – March 10/11, 2025 Flight



GQM-12 – April 17/18, 2025 Flight

No Photo Available – Third Flight Not Applicable

GQM-12 – May 29, 2025 Flight



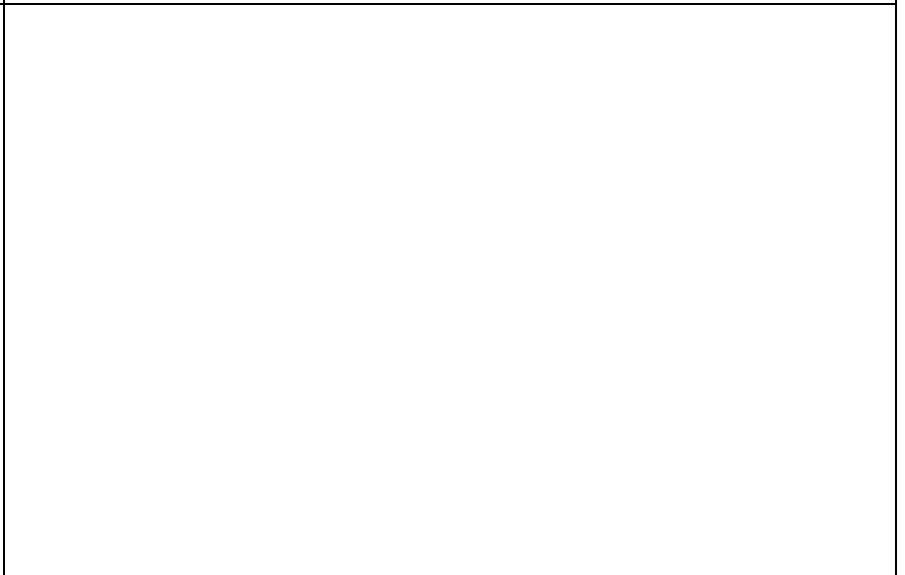
HDC-02 – March 10/11, 2025 Flight



HDC-02 – April 17/18, 2025 Flight



HDC-02 – May 29, 2025 Flight





HR-15 – March 10/11, 2025 Flight



HR-15 – April 17/18, 2025 Flight

No Photo Available – Third Flight Not Applicable

HR-15 – May 29, 2025 Flight



HR-16 – March 10/11, 2025 Flight



HR-16 – April 17/18, 2025 Flight

No Photo Available – Third Flight Not Applicable

HR-16 – May 29, 2025 Flight

No Photo Available – Nest Not Found	No Photo Available – Nest Not Found
HR-17 – March 10/11, 2025 Flight	HR-17 – April 17/18, 2025 Flight
No Photo Available – Third Flight Not Applicable	
HR-17 – May 29, 2025 Flight	



HR-18 – March 10/11, 2025 Flight



HR-18 – April 17/18, 2025 Flight

No Photo Available – Third Flight Not Applicable

HR-18 – May 29, 2025 Flight



HR-19 Nest A – March 10/11, 2025 Flight



HR-19 Nest B – March 10/11, 2025 Flight



HR-19 Nest A – April 17/18, 2025 Flight

No Photo Available – Third Flight Not Applicable

HR-19 – May 29, 2025 Flight



HR-20 Nest A – March 10/11, 2025 Flight



HR-20 Nest B – March 10/11, 2025 Flight



HR-20 Nest B – April 17/18, 2025 Flight

No Photo Available – Third Flight Not Applicable

HR-20 – May 29, 2025 Flight



No Photo Available – Nest Not Found

HR-21 – March 10/11, 2025 Flight

HR-21 – April 17/18, 2025 Flight

No Photo Available – Third Flight Not Applicable

HR-21 – May 29, 2025 Flight



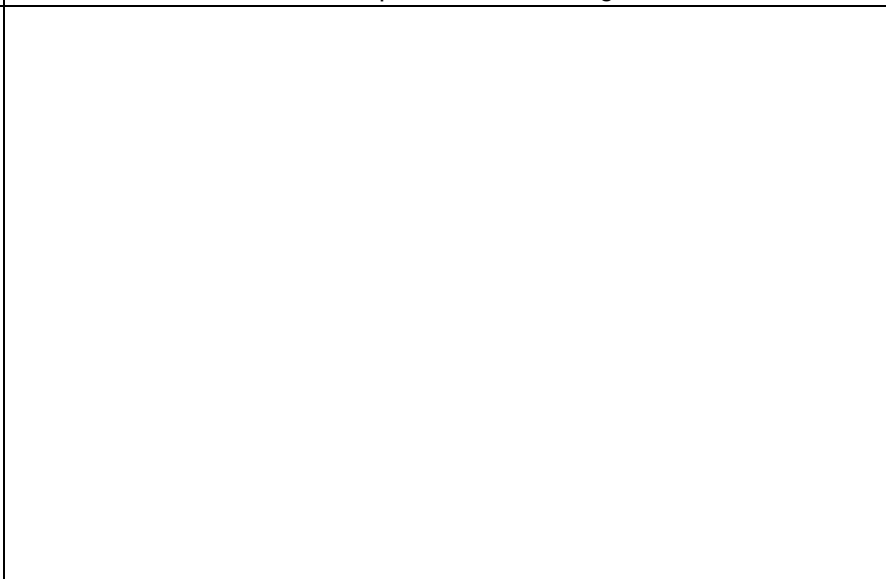
HR-22 – March 10/11, 2025 Flight



HR-22 – April 17/18, 2025 Flight



HR-22 – May 29, 2025 Flight





HR-23 Nest A – March 10/11, 2025 Flight



HR-23 Nest B – March 10/11, 2025 Flight



HR-23 Nest A – April 17/18, 2025 Flight



HR 23 Nest B – April 17/18, 2025 Flight

No Photo Available – Third Flight Not Applicable

HR-23 – May 29, 2025 Flight

No Photo Available – Nest Not Found	No Photo Available – Nest Not Found
HR-24 – March 10/11, 2025 Flight	HR-24 – April 17/18, 2025 Flight
No Photo Available – Third Flight Not Applicable	
HR-24 – May 29, 2025 Flight	

No Photo Available – Nest Not Found	No Photo Available – Nest Not Found
HR-25 – March 10/11, 2025 Flight	HR-25- – April 17/18, 2025 Flight
No Photo Available – Third Flight Not Applicable	
HR-25 – May 29, 2025 Flight	

No Photo Available – Nest Not Found	
HR-26 – March 10/11, 2025 Flight	HR-26 – April 17/18, 2025 Flight
No Photo Available – Third Flight Not Applicable	
HR-26 – May 29, 2025 Flight	



HR-39 – March 10/11, 2025 Flight



HR-39 – April 17/18, 2025 Flight

No Photo Available – Third Flight Not Applicable

HR-39 – May 29, 2025 Flight



HR-40 – March 10/11, 2025 Flight

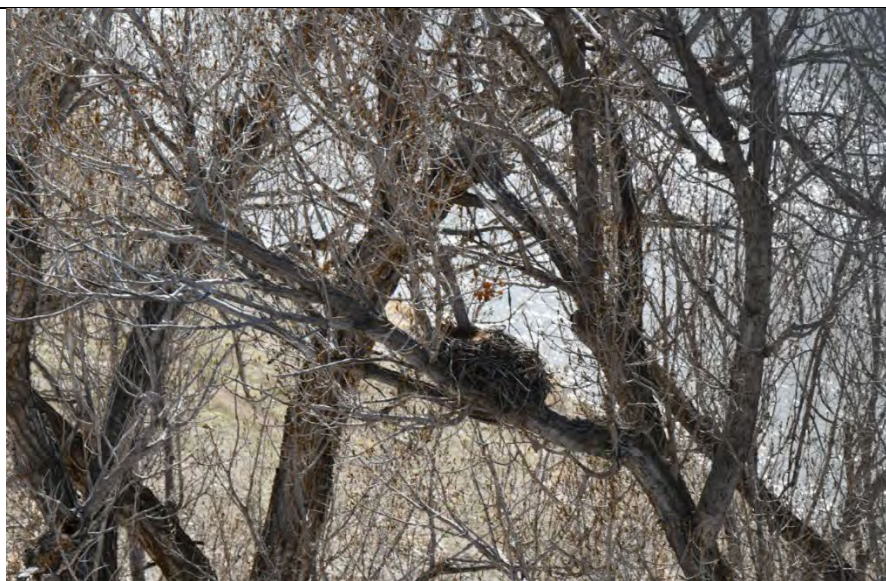


HR-40 – April 17/18, 2025 Flight

No Photo Available – Third Flight Not Applicable

HR-40 – May 29, 2025 Flight

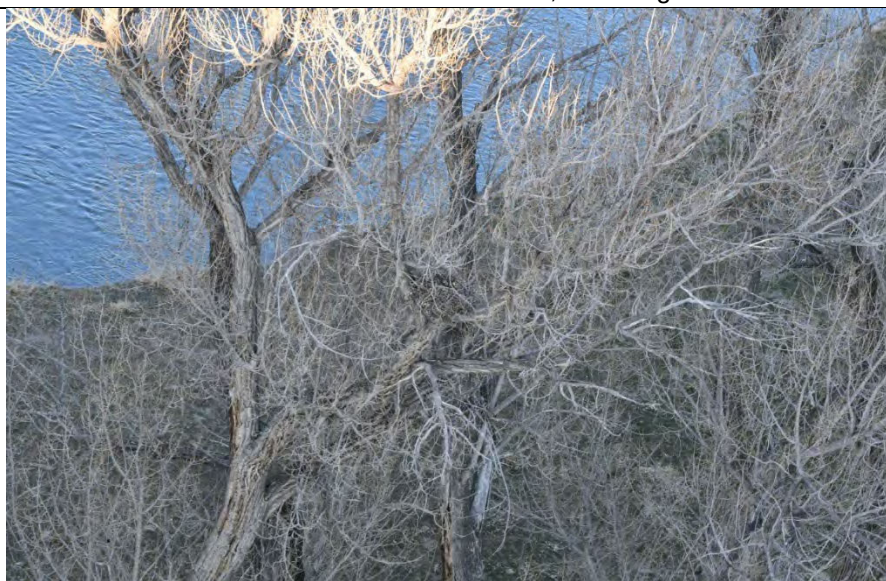
No Photo Available – Nest Not Found	No Photo Available – Nest Not Found
HR-41 – March 10/11, 2025 Flight	HR-41 – April 17/18, 2025 Flight
No Photo Available – Third Flight Not Applicable	
HR-41 – May 29, 2025 Flight	



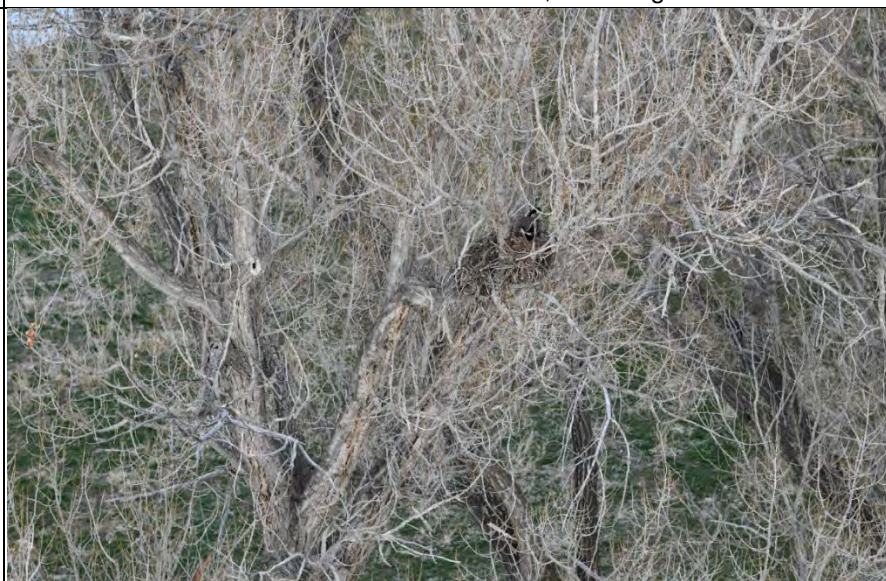
HR-42 Nest A – March 10/11, 2025 Flight



HR-42 Nest B – March 10/11, 2025 Flight



HR-42 Nest A – April 17/18, 2025 Flight



HR-42 Nest B – April 17/18, 2025 Flight



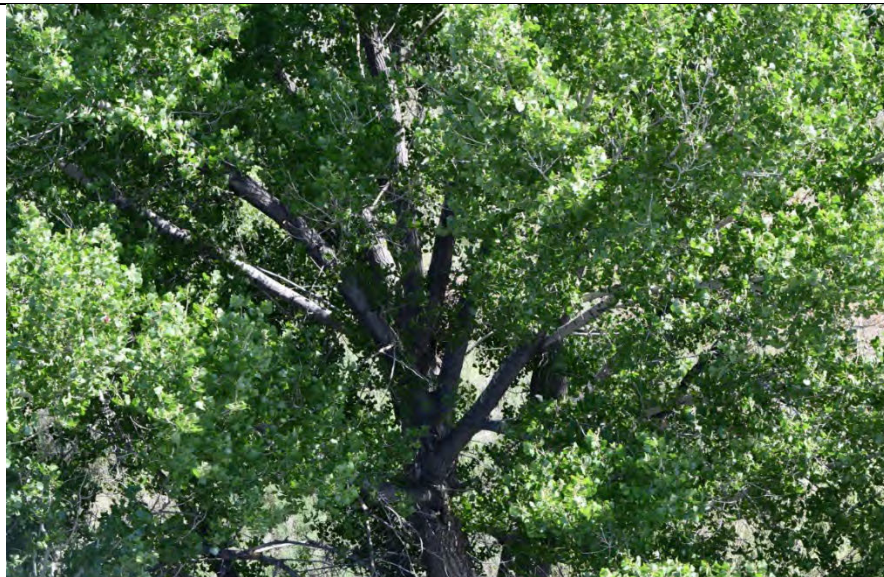
HR-42 Nest A – May 29, 2025 Flight



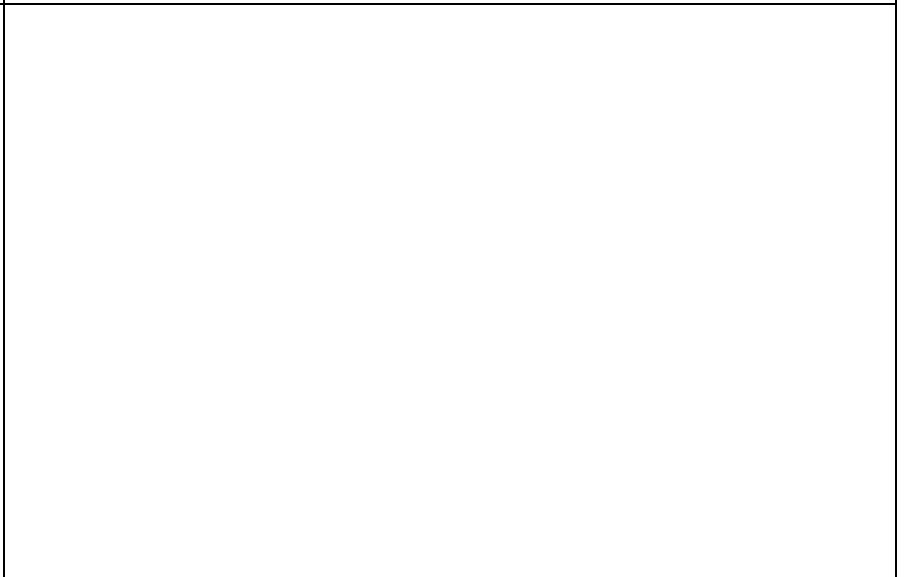
HR-44 – March 10/11, 2025 Flight



HR-44 – April 17/18, 2025 Flight



HR-44 – May 29, 2025 Flight





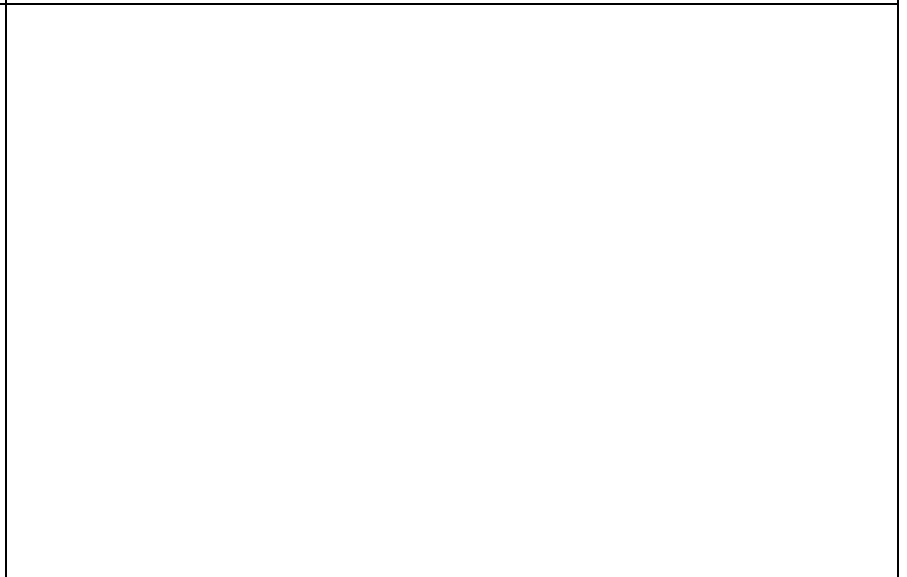
HR-45 – March 10/11, 2025 Flight



HR-45 – April 17/18, 2025 Flight



HR-45 – May 29, 2025 Flight





HR-49 – March 10/11, 2025 Flight



HR-49 – April 17/18, 2025 Flight

No Photo Available – Third Flight Not Applicable

HR-49 – May 29, 2025 Flight



LBB-01 – March 10/11, 2025 Flight



LBB-01 – April 17/18, 2025 Flight

No Photo Available – Third Flight Not Conducted at Nest

LBB-01 – May 29, 2025 Flight



LBB-02 – March 10/11, 2025 Flight



LBB-02 – April 17/18, 2025 Flight

No Photo Available – Third Flight Not Applicable

LBB-02 – May 29, 2025 Flight

No Photo Available – Nest Not Found



LBB-03 – March 10/11, 2025 Flight

LBB-03 – April 17/18, 2025 Flight



LBB-03 – May 29, 2025 Flight

No Photo Available – Nest Not Found	No Photo Available – Nest Not Found
LCC-01 – March 10/11, 2025 Flight	LCC-01 – April 17/18, 2025 Flight
No Photo Available – Third Flight Not Applicable	
LCC-01 – May 29, 2025 Flight	



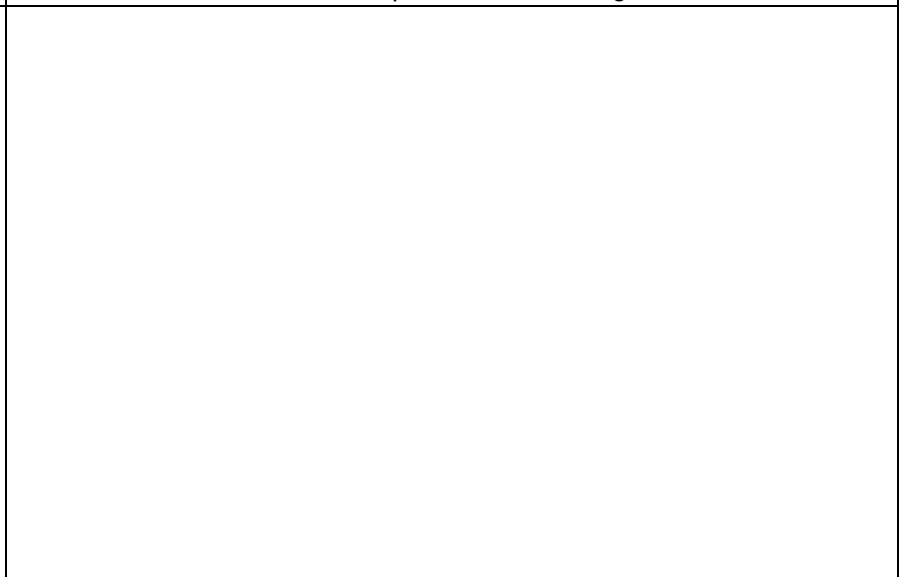
LCC-02 – March 10/11, 2025 Flight



LCC-02 – April 17/18, 2025 Flight



LCC-02 – May 29, 2025 Flight



No Photo Available – Nest Not Found	No Photo Available – Nest Not Found
LCC-03 – March 10/11, 2025 Flight	LCC-03 – April 17/18, 2025 Flight
No Photo Available – Third Flight Not Applicable	
LCC-03 – May 29, 2025 Flight	

No Photo Available – Nest Not Found	No Photo Available – Nest Not Found
LCV-04 – March 10/11, 2025 Flight	LCV-04 – April 17/18, 2025 Flight
No Photo Available – Third Flight Not Applicable	
LCV-04 – May 29, 2025 Flight	



LCV-05 – March 10/11, 2025 Flight



LCV-05 – April 17/18, 2025 Flight



LCV-05 – May 29, 2025 Flight

No Photo Available – Nest Not Found



LCV-06 – March 10/11, 2025 Flight

LCV-06 – April 17/18, 2025 Flight

No Photo Available – Third Flight Not Applicable

LCV-06 – May 29, 2025 Flight



LCV-07 – March 10/11, 2025 Flight



LCV-07 – April 17/18, 2025 Flight

No Photo Available – Third Flight Not Applicable

LCV-07 – May 29, 2025 Flight



LCV-11 – March 10/11, 2025 Flight



LCV-11 – April 17/18, 2025 Flight

No Photo Available – Third Flight Not Applicable

LCV-11 – May 29, 2025 Flight



LCV-12 – March 10/11, 2025 Flight



LCV-12 – April 17/18, 2025 Flight

No Photo Available – Third Flight Not Applicable

LCV-12 – May 29, 2025 Flight



LCV-13 – March 10/11, 2025 Flight

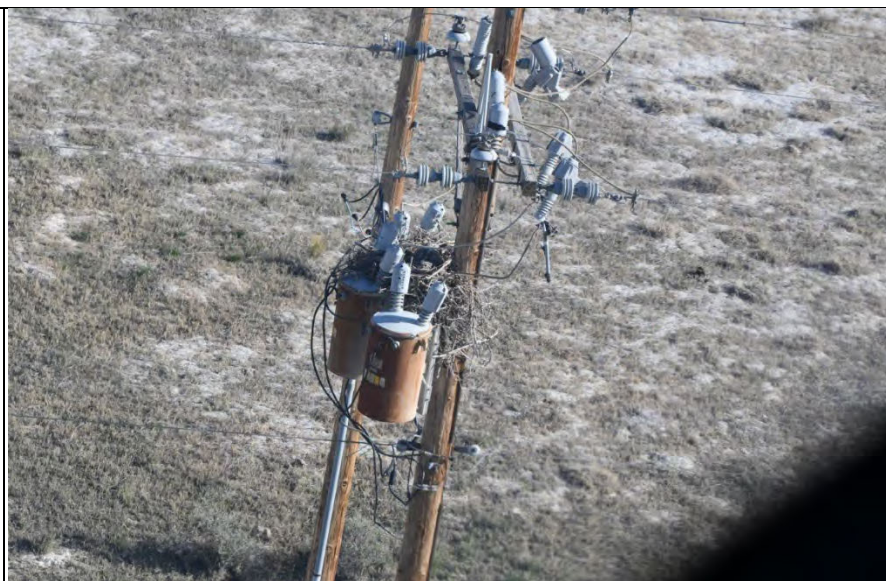


LCV-13 – April 17/18, 2025 Flight

No Photo Available – Third Flight Not Applicable

LCV-13 – May 29, 2025 Flight

No Photo Available – Nest Not Found



LCV-14 – March 10/11, 2025 Flight

LCV-14 – April 17/18, 2025 Flight



LCV-14 – May 29, 2025 Flight



LCV-15 – March 10/11, 2025 Flight



LCV-15 – April 17/18, 2025 Flight

No Photo Available – Third Flight Not Applicable

LCV-15 – May 29, 2025 Flight



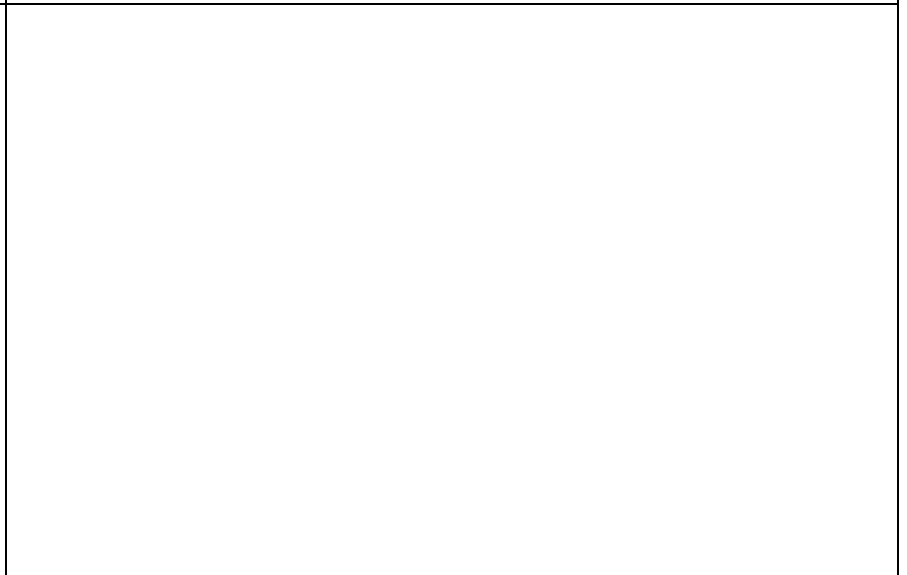
LCV-16 – March 10/11, 2025 Flight



LCV-16 – April 17/18, 2025 Flight

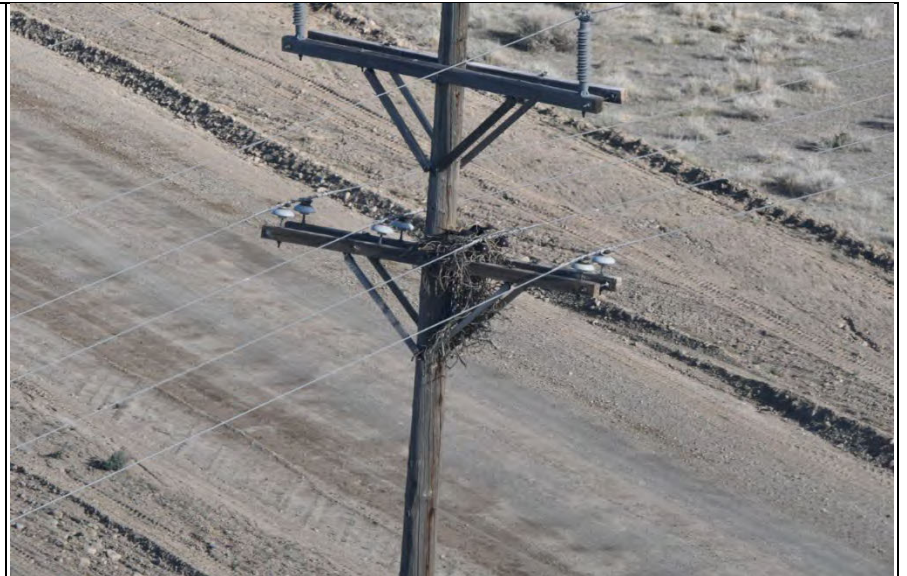


LCV-16 – May 29, 2025 Flight





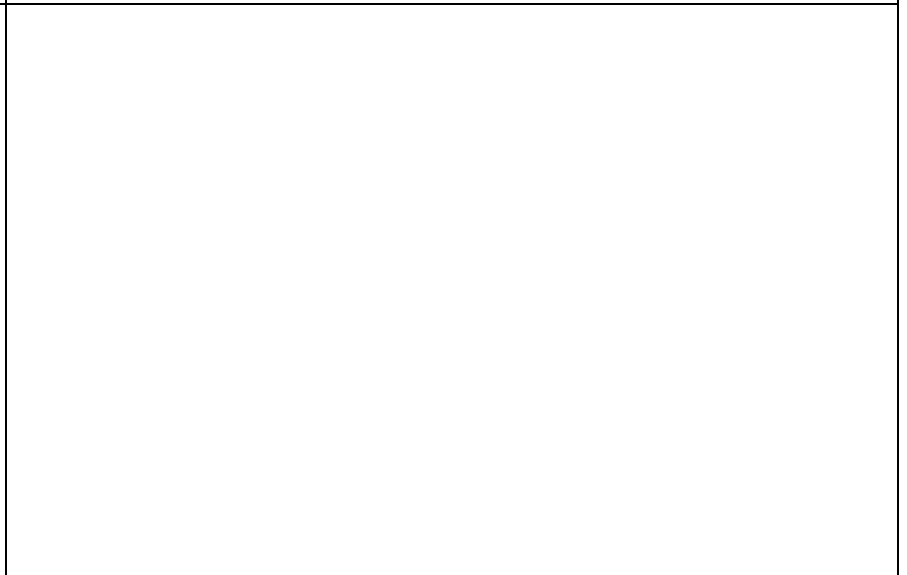
LCV-17 – March 10/11, 2025 Flight



LCV-17 – April 17/18, 2025 Flight



LCV-17 – May 29, 2025 Flight





LCV-18 – March 10/11, 2025 Flight



LCV-18 – April 17/18, 2025 Flight



LCV-18 – May 29, 2025 Flight



LCV-19 – March 10/11, 2025 Flight



LCV-19 – April 17/18, 2025 Flight

No Photo Available – Nest Not Found

LCV-19 – May 29, 2025 Flight



LCV-20 – March 10/11, 2025 Flight



LCV-20 – April 17/18, 2025 Flight

No Photo Available – Third Flight Not Applicable

LCV-20 – May 29, 2025 Flight



LCV-21 – March 10/11, 2025 Flight



LCV-21 – April 17/18, 2025 Flight

No Photo Available – Third Flight Not Applicable

LCV-21 – May 29, 2025 Flight



LCV-22 – March 10/11, 2025 Flight



LCV-22 – April 17/18, 2025 Flight

No Photo Available – Third Flight Not Applicable

LCV-22 – May 29, 2025 Flight



LCV-23 – March 10/11, 2025 Flight



LCV-23 – April 17/18, 2025 Flight

No Photo Available – Third Flight Not Applicable

LCV-23 – May 29, 2025 Flight



No Photo Available – Nest Not Found

LCV-27 – March 10/11, 2025 Flight

LCV-27 – April 17/18, 2025 Flight

No Photo Available – Third Flight Not Applicable

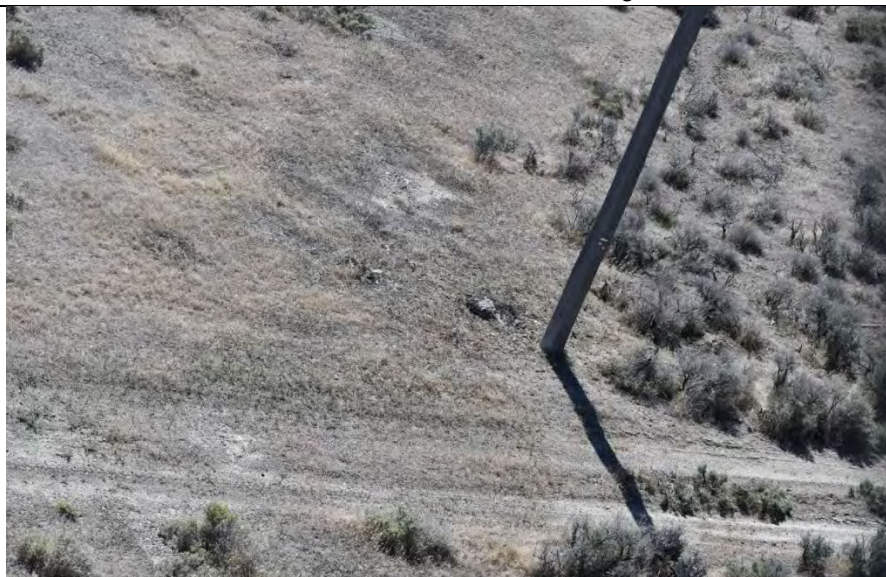
LCV-27 – May 29, 2025 Flight

No Photo Available – Nest Not Found



LCV-28 – March 10/11, 2025 Flight

LCV-28 – April 17/18, 2025 Flight



LCV-28 – May 29, 2025 Flight



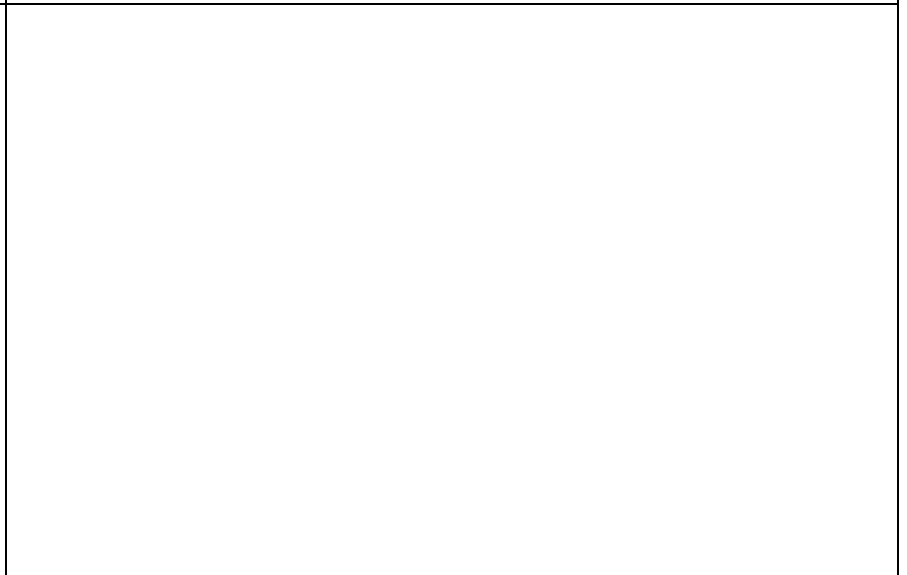
LCV-29 – March 10/11, 2025 Flight



LCV-29 – April 17/18, 2025 Flight



LCV-29 – May 29, 2025 Flight





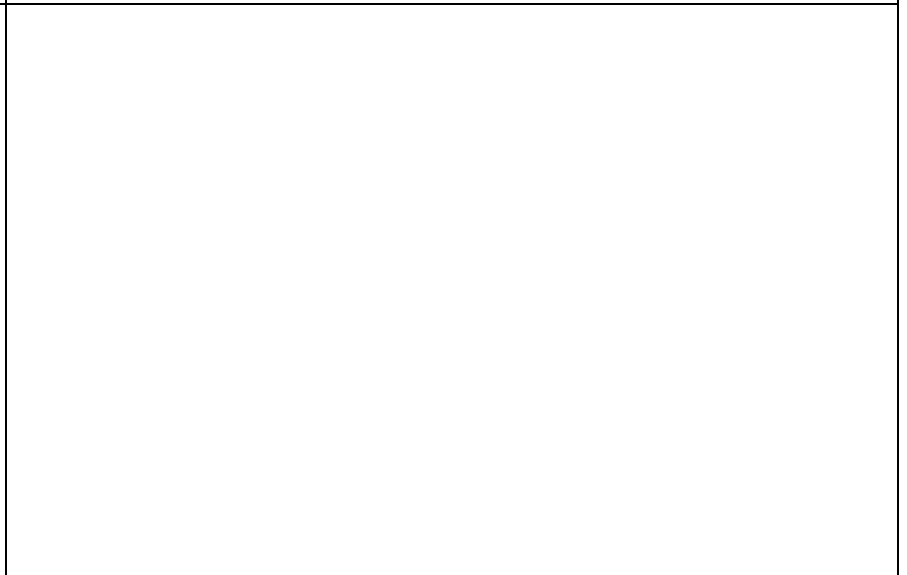
LCV-30 – March 10/11, 2025 Flight



LCV-30 – April 17/18, 2025 Flight



LCV-30 – May 29, 2025 Flight





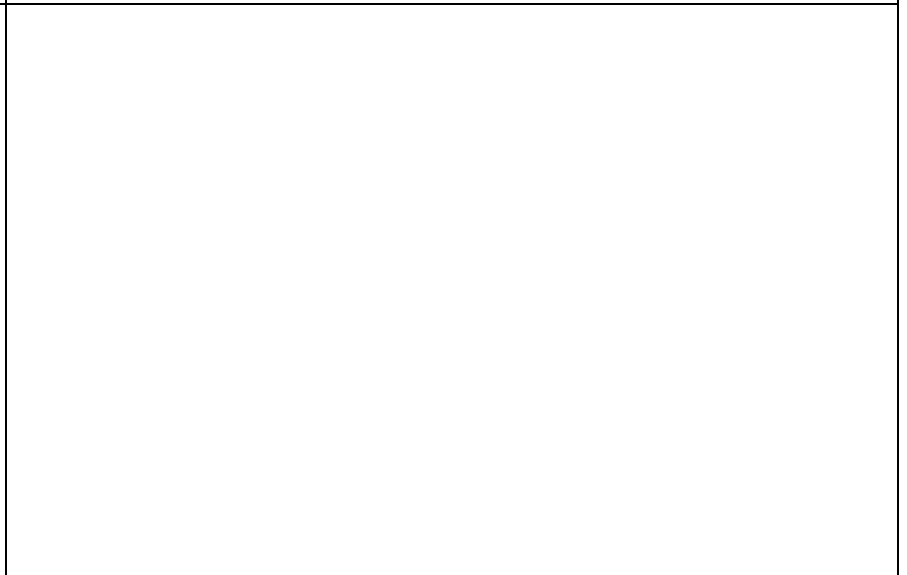
LCV-31 – March 10/11, 2025 Flight



LCV-31 – April 17/18, 2025 Flight



LCV-31 – May 29, 2025 Flight





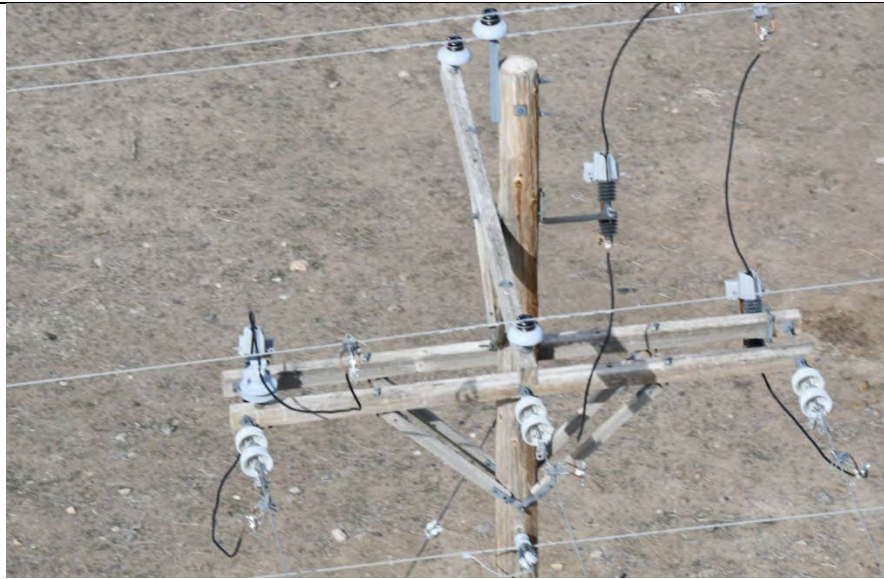
LCV-32 – March 10/11, 2025 Flight



LCV-32 – April 17/18, 2025 Flight

No Photo Available – Third Flight Not Applicable

LCV-32 – May 29, 2025 Flight



LCV-33 – March 10/11, 2025 Flight



LCV-33 – April 17/18, 2025 Flight

No Photo Available – Third Flight Not Applicable

LCV-33 – May 29, 2025 Flight



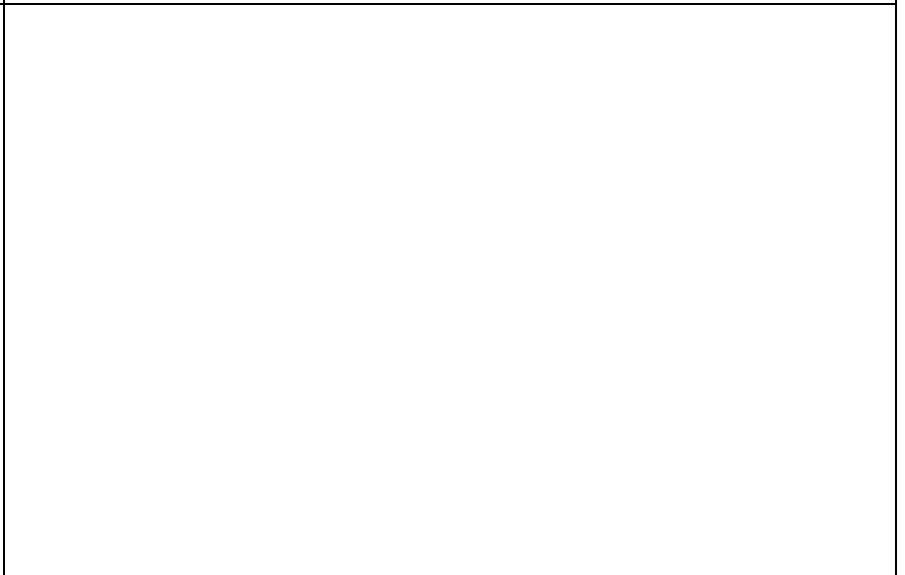
LCV-34 – March 10/11, 2025 Flight



LCV-34 – April 17/18, 2025 Flight



LCV-34 – May 29, 2025 Flight





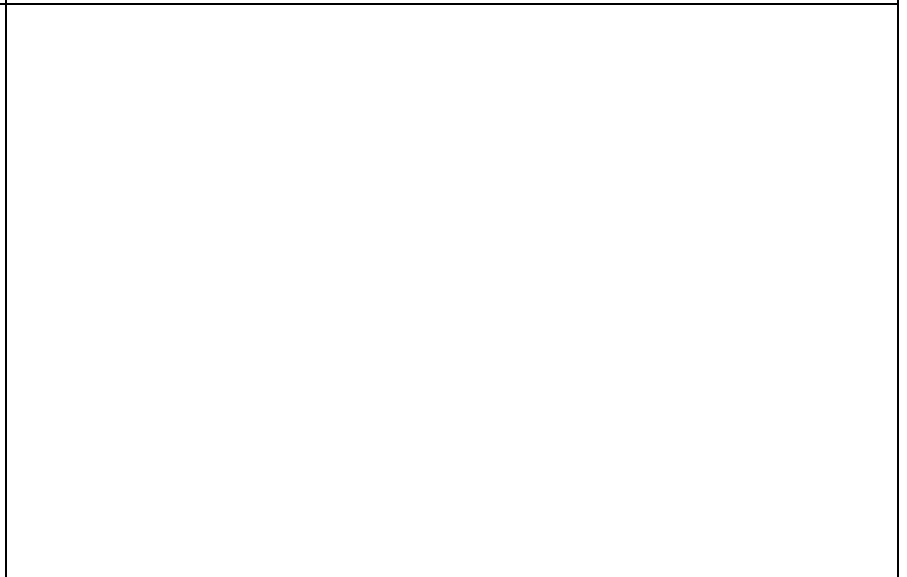
LCV-35 – March 10/11, 2025 Flight



LCV-35 – April 17/18, 2025 Flight



LCV-35 – May 29, 2025 Flight



No Photo Available – Nest Located During March 10/11, 2025 Flight



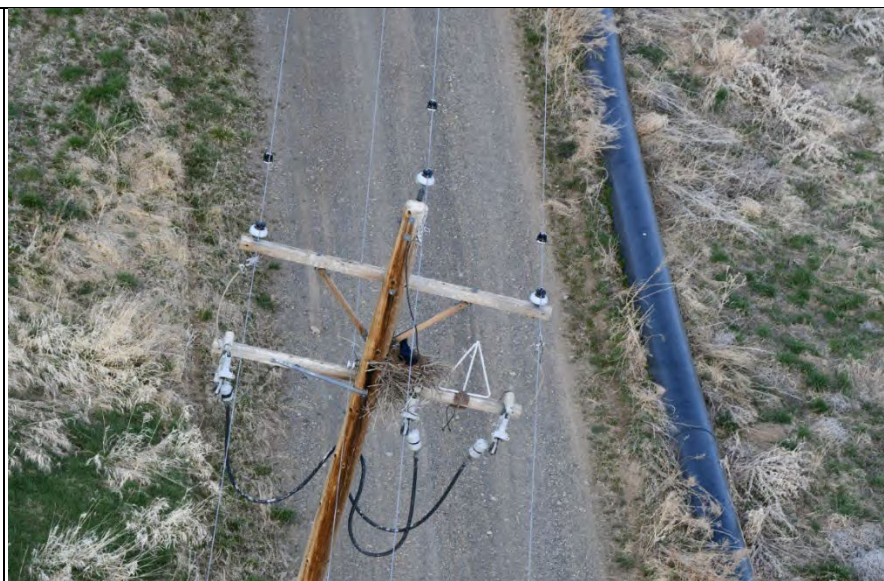
LCV-38 – March 10/11, 2025 Flight

LCV-38 – April 17/18, 2025 Flight



LCV-38 – May 29, 2025 Flight

No Photo Available – Nest Located During March 10/11, 2025 Flight



LCV-39 – March 10/11, 2025 Flight

LCV-39 – April 17/18, 2025 Flight



LCV-39 – May 29, 2025 Flight



MC-05 – March 10/11, 2025 Flight



MC-05 – April 17/18, 2025 Flight

No Photo Available – Third Flight Not Applicable

MC-05 – May 29, 2025 Flight



MLC-01 – March 10/11, 2025 Flight



MLC-01 – April 17/18, 2025 Flight

No Photo Available – Third Flight Not Applicable

MLC-01 – May 29, 2025 Flight



MLC-02 Nest A and B – March 10/11, 2025 Flight



MLC-02 Nest C – March 10/11, 2025 Flight



MLC-02 Nest D – March 10/11, 2025 Flight



MLC-02 Nest A and B – April 17/18, 2025 Flight



MLC-02 Nest C – April 17/18, 2025 Flight



MLC-02 Nest C– May 29, 2025 Flight



MLC-03 – March 10/11, 2025 Flight



MLC-03 – April 17/18, 2025 Flight

No Photo Available – Third Flight Not Applicable

MLC-03 – May 29, 2025 Flight



MLC-04 Nest A – March 10/11, 2025 Flight



MLC-04 Nest B – March 10/11, 2025 Flight



MLC-04 Nest B – April 17/18, 2025 Flight

No Photo Available – Third Flight Not Applicable

MLC-04 – May 29, 2025 Flight



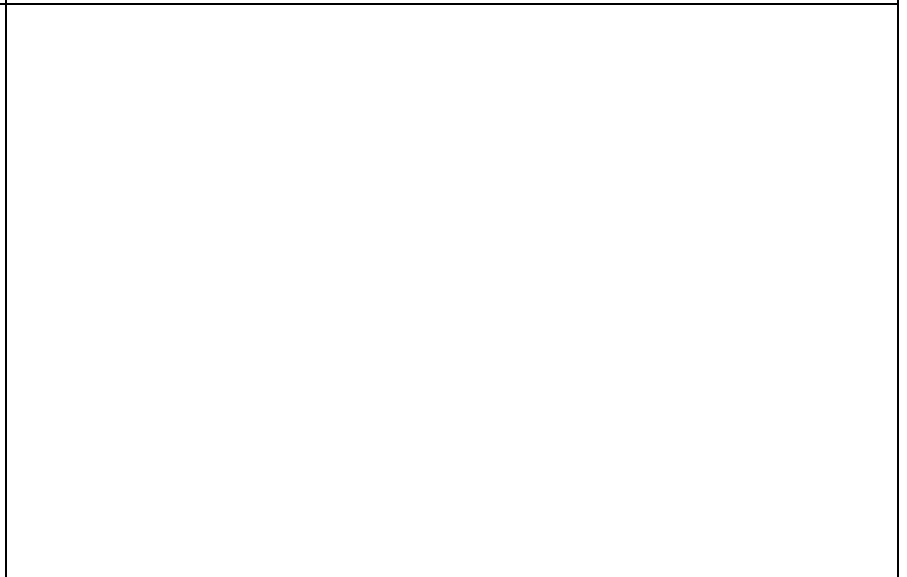
MLC-05 – March 10/11, 2025 Flight



MLC-05 – April 17/18, 2025 Flight



MLC-05 – May 29, 2025 Flight



No Photo Available – Nest Not Found	No Photo Available – Nest Not Found
MT-03 – March 10/11, 2025 Flight	MT-03 – April 17/18, 2025 Flight
No Photo Available – Third Flight Not Applicable	
MT-03 – May 29, 2025 Flight	



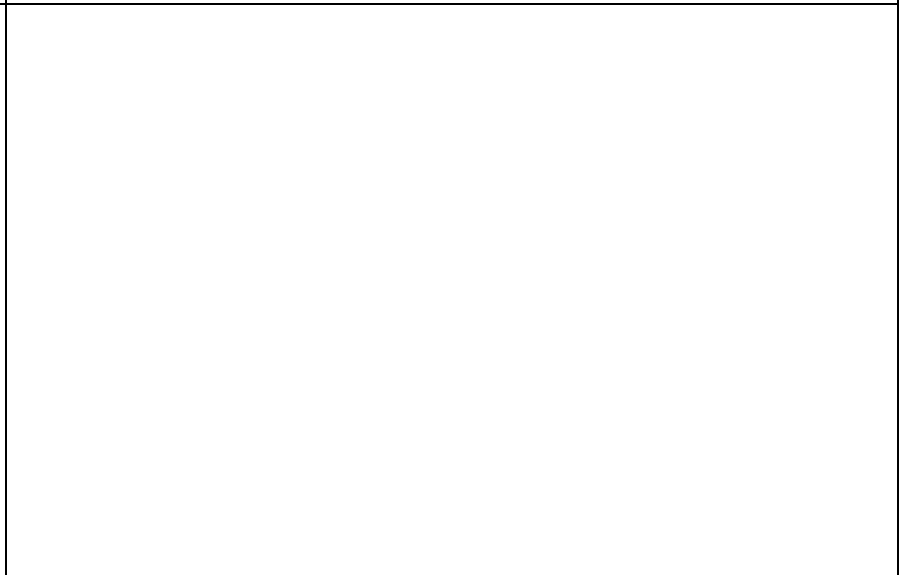
MT-04 – March 10/11, 2025 Flight



MT-04 – April 17/18, 2025 Flight



MT-04 – May 29, 2025 Flight





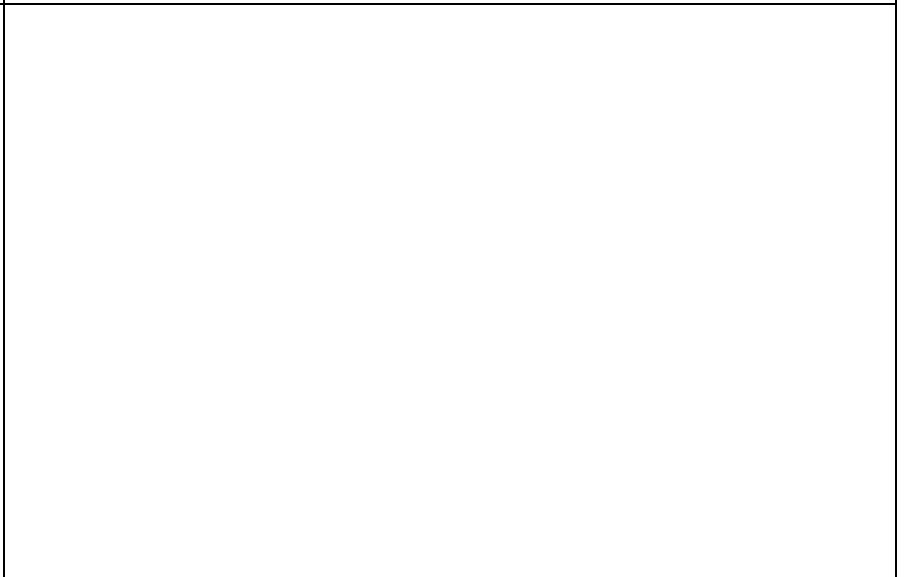
PL-01 – March 10/11, 2025 Flight



PL-01 – April 17/18, 2025 Flight



PL-01 – May 29, 2025 Flight





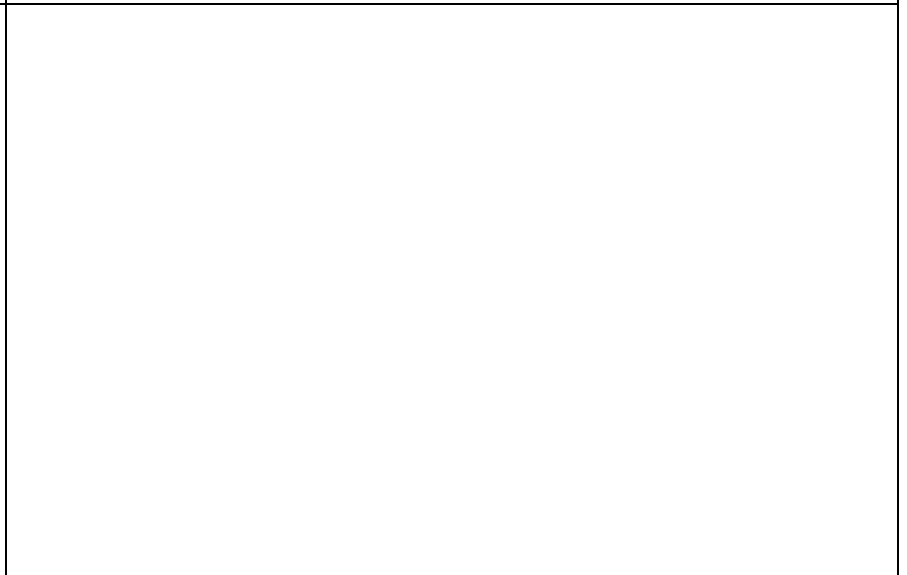
PL-03 – March 10/11, 2025 Flight



PL-03 – April 17/18, 2025 Flight



PL-03 – May 29, 2025 Flight



No Photo Available – Nest Not Found	
PL-04 – March 10/11, 2025 Flight	PL-04 – April 17/18, 2025 Flight
No Photo Available – Third Flight Not Applicable	
PL-04 – May 29, 2025 Flight	

No Photo Available – Nest Not Found	No Photo Available – Nest Not Found
PR-01 – March 10/11, 2025 Flight	PR-01 – April 17/18, 2025 Flight
No Photo Available – Third Flight Not Applicable	
PR-01 – May 29, 2025 Flight	



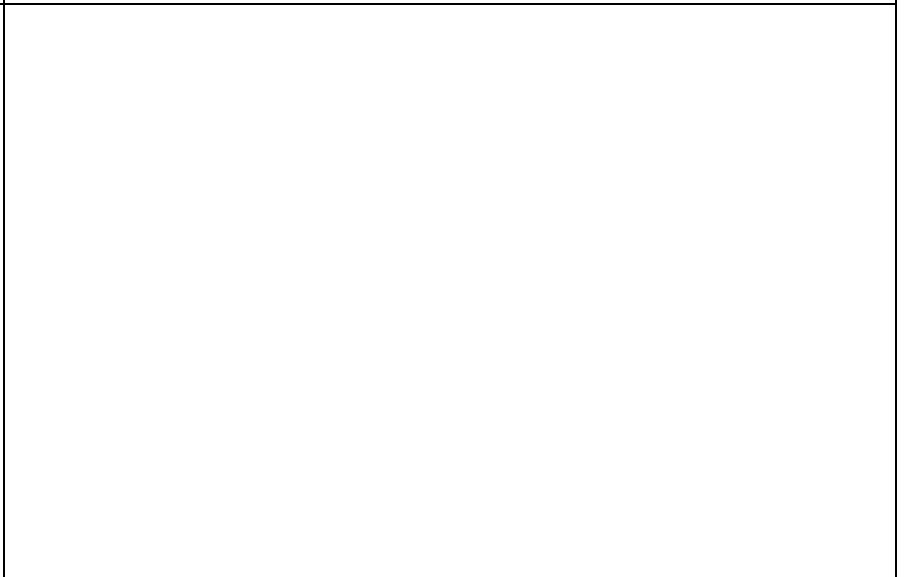
PR-02 – March 10/11, 2025 Flight



PR-02 – April 17/18, 2025 Flight



PR-02 – May 29, 2025 Flight



No Photo Available – Nest Not Found	No Photo Available – Nest Not Found
PR-03 – March 10/11, 2025 Flight	PR-03 – April 17/18, 2025 Flight
No Photo Available – Third Flight Not Applicable	
PR-03 – May 29, 2025 Flight	

No Photo Available – Nest Not Found



PR-10 – March 10/11, 2025 Flight

PR-10 – April 17/18, 2025 Flight



PR-10 – May 29, 2025 Flight

No Photo Available – Nest Not Found	No Photo Available – Nest Not Found
PR-11 – March 10/11, 2025 Flight	PR-11 – April 17/18, 2025 Flight
No Photo Available – Third Flight Not Applicable	
PR-11 – May 29, 2025 Flight	



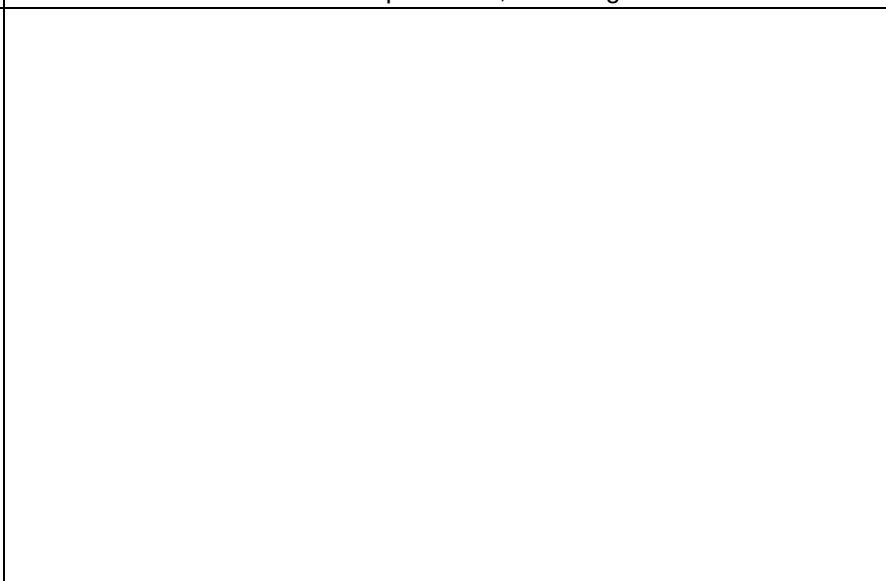
RIM-01 – March 10/11, 2025 Flight



RIM-01 – April 17/18, 2025 Flight



RIM-01 – May 29, 2025 Flight





RIM-02 – March 10/11, 2025 Flight



RIM-02 – April 17/18, 2025 Flight

No Photo Available – Third Flight Not Applicable

RIM-02 – May 29, 2025 Flight

No Photo Available – Nest Not Found	
SC-01 – March 10/11, 2025 Flight	SC-01 – April 17/18, 2025 Flight
No Photo Available – Third Flight Not Applicable	
SC-01 – May 29, 2025 Flight	



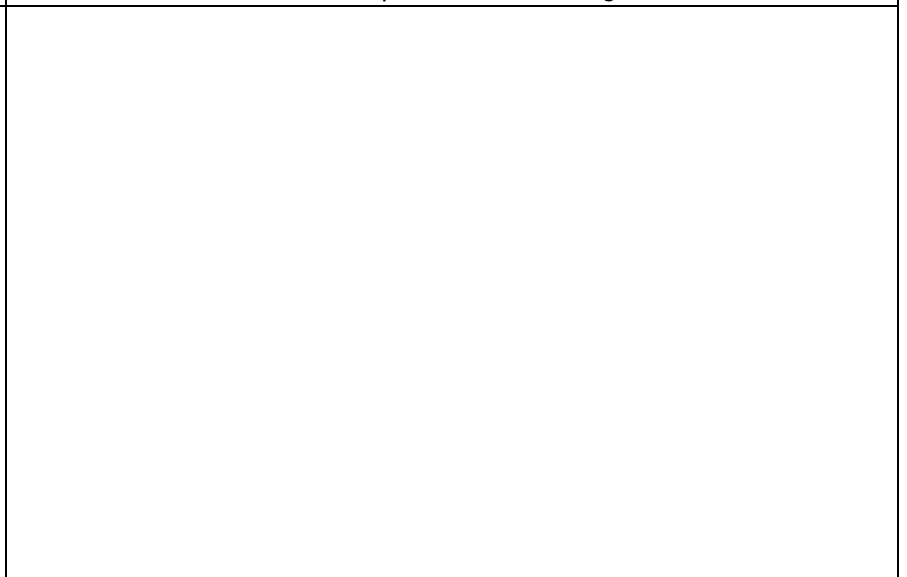
SC-07 – March 10/11, 2025 Flight



SC-07 – April 17/18, 2025 Flight



SC-07 – May 29, 2025 Flight





SM-01 Nest A – March 10/11, 2025 Flight



SM-01 Nest B – April 17/18, 2025 Flight



SM-01 Nest C – April 17/18, 2025 Flight



SM-01 Nest B – May 29, 2025 Flight



SM-01 Nest D – May 29, 2025 Flight



SM-02 – March 10/11, 2025 Flight



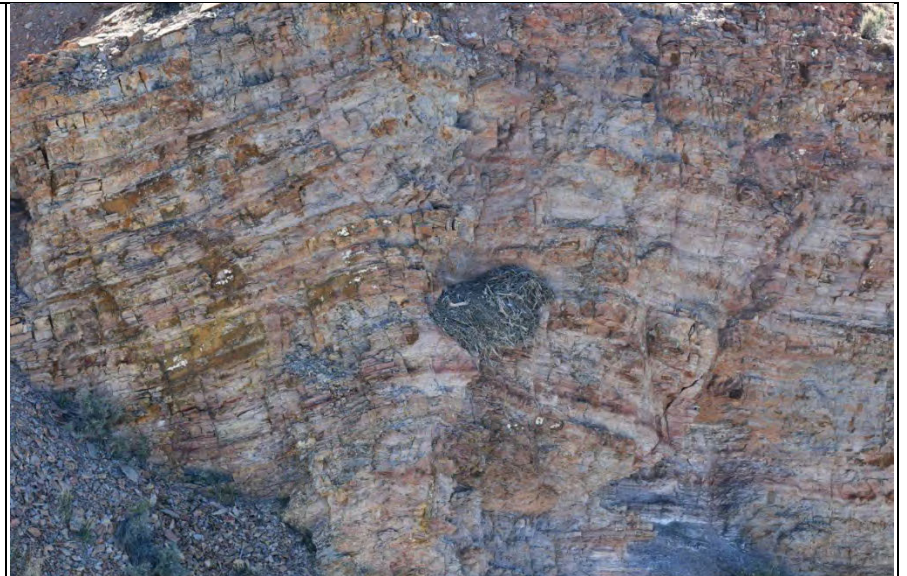
SM-02 – April 17/18, 2025 Flight

No Photo Available – Third Flight Not Conducted at Nest

SM-02 – May 29, 2025 Flight



SM-03 Nest A – March 10/11, 2025 Flight



SM-03 Nest A – April 17/18, 2025 Flight



SM-03 Nest B – April 17/18, 2025 Flight

No Photo Available – Third Flight Not Applicable

SM-03 – May 29, 2025 Flight



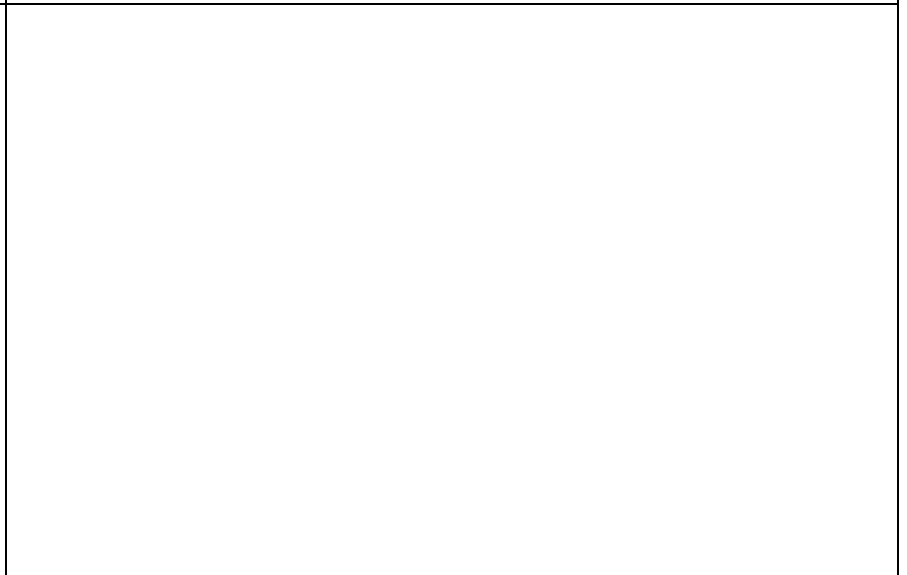
SM-04 – March 10/11, 2025 Flight



SM-04 – April 17/18, 2025 Flight



SM-04 – May 29, 2025 Flight



No Photo Available – Nest Not Found	
SM-05 – March 10/11, 2025 Flight	SM-05 – April 17/18, 2025 Flight
No Photo Available – Third Flight Not Applicable	
SM-05 – May 29, 2025 Flight	



SR-13 – March 10/11, 2025 Flight



SR-13 – April 17/18, 2025 Flight

No Photo Available – Third Flight Not Applicable

SR-13 – May 29, 2025 Flight



SR-14 – March 10/11, 2025 Flight



SR-14 – April 17/18, 2025 Flight

No Photo Available – Third Flight Not Applicable

SR-14 – May 29, 2025 Flight



No Photo Available – Nest Not Found

SR-26 – March 10/11, 2025 Flight

SR-26 – April 17/18, 2025 Flight

No Photo Available – Third Flight Not Applicable

SR-26 – May 29, 2025 Flight

No Photo Available – Nest Not Found



TR-07 – March 10/11, 2025 Flight

TR-07 – April 17/18, 2025 Flight



TR-07 – May 29, 2025 Flight



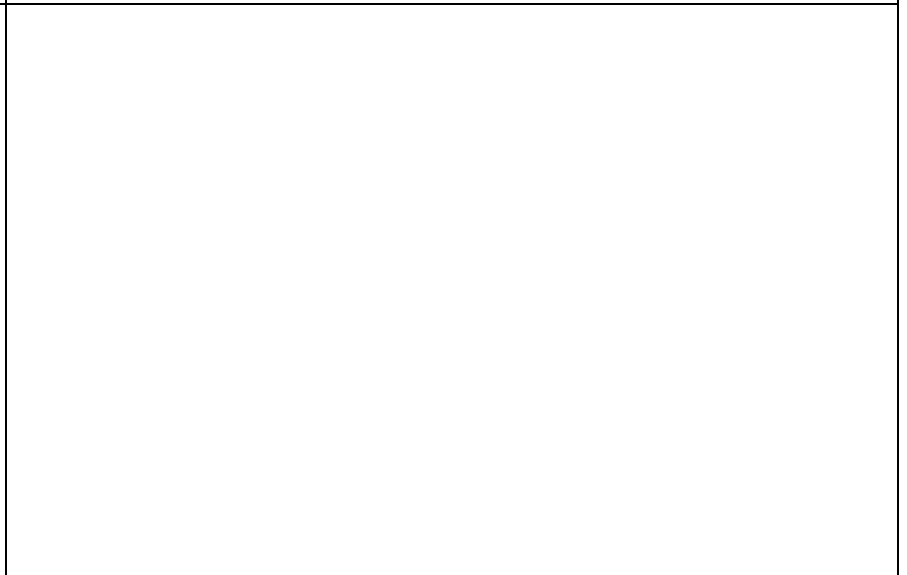
TR-09 – March 10/11, 2025 Flight



TR-09 – April 17/18, 2025 Flight



TR-09 – May 29, 2025 Flight



No Photo Available – Nest Not Found	No Photo Available – Nest Not Found
TR-10 – March 10/11, 2025 Flight	TR-10 – April 17/18, 2025 Flight
No Photo Available – Third Flight Not Applicable	
TR-10 – May 29, 2025 Flight	



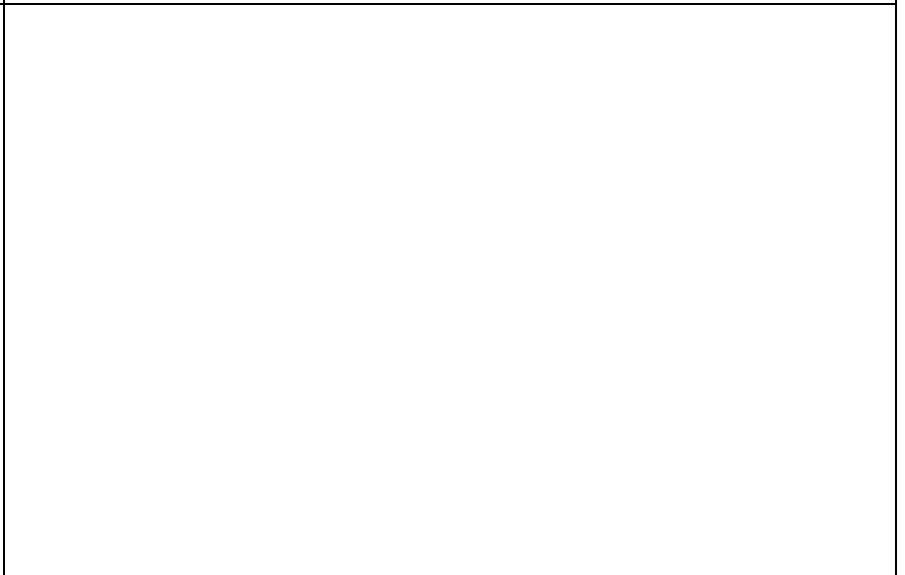
TR-11 – March 10/11, 2025 Flight



TR-11 – April 17/18, 2025 Flight



TR-11 – May 29, 2025 Flight



No Photo Available – Nest Not Found	No Photo Available – Nest Not Found
TR-14 – March 10/11, 2025 Flight	TR-14 – April 17/18, 2025 Flight
No Photo Available – Third Flight Not Applicable	
TR-14 – May 29, 2025 Flight	



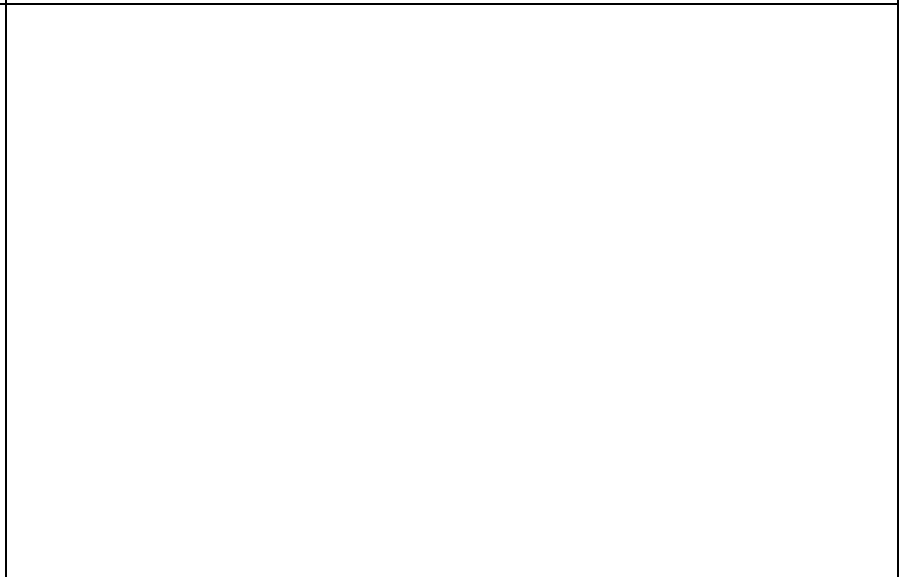
UM-02 – March 10/11, 2025 Flight



UM-02 – April 17/18, 2025 Flight



UM-02 – May 29, 2025 Flight





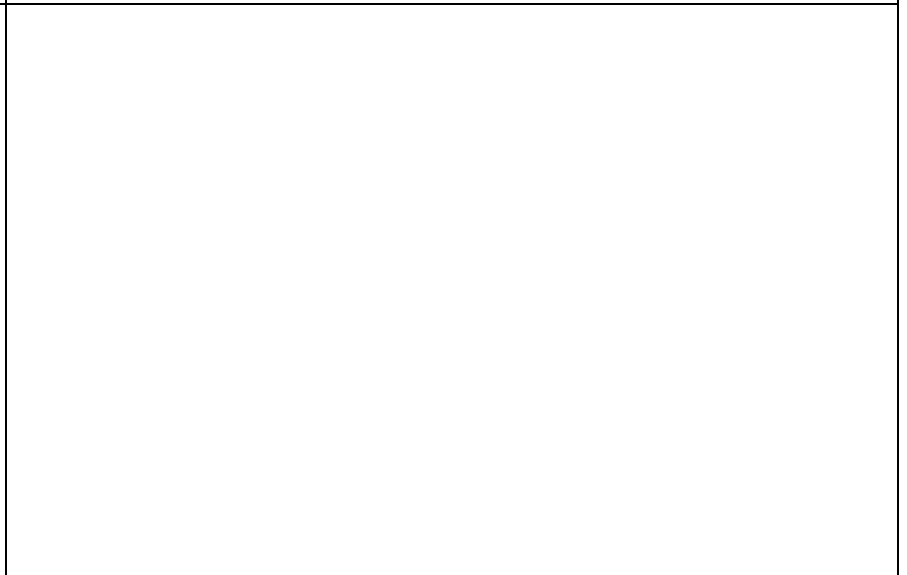
WEC-01 – March 10/11, 2025 Flight



WEC-01 – April 17/18, 2025 Flight



WEC-01 – May 29, 2025 Flight





WEC-02 – March 10/11, 2025 Flight



WEC-02 – April 17/18, 2025 Flight

No Photo Available – Third Flight Not Applicable

WEC-02 – May 29, 2025 Flight



WEC-03 – March 10/11, 2025 Flight



WEC-03 – April 17/18, 2025 Flight

No Photo Available – Third Flight Not Applicable

WEC-03 – May 29, 2025 Flight



WV-01 – March 10/11, 2025 Flight



WV-01 – April 17/18, 2025 Flight

No Photo Available – Third Flight Not Applicable

WV-01 – May 29, 2025 Flight

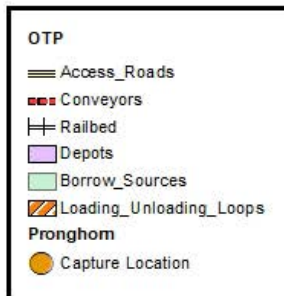
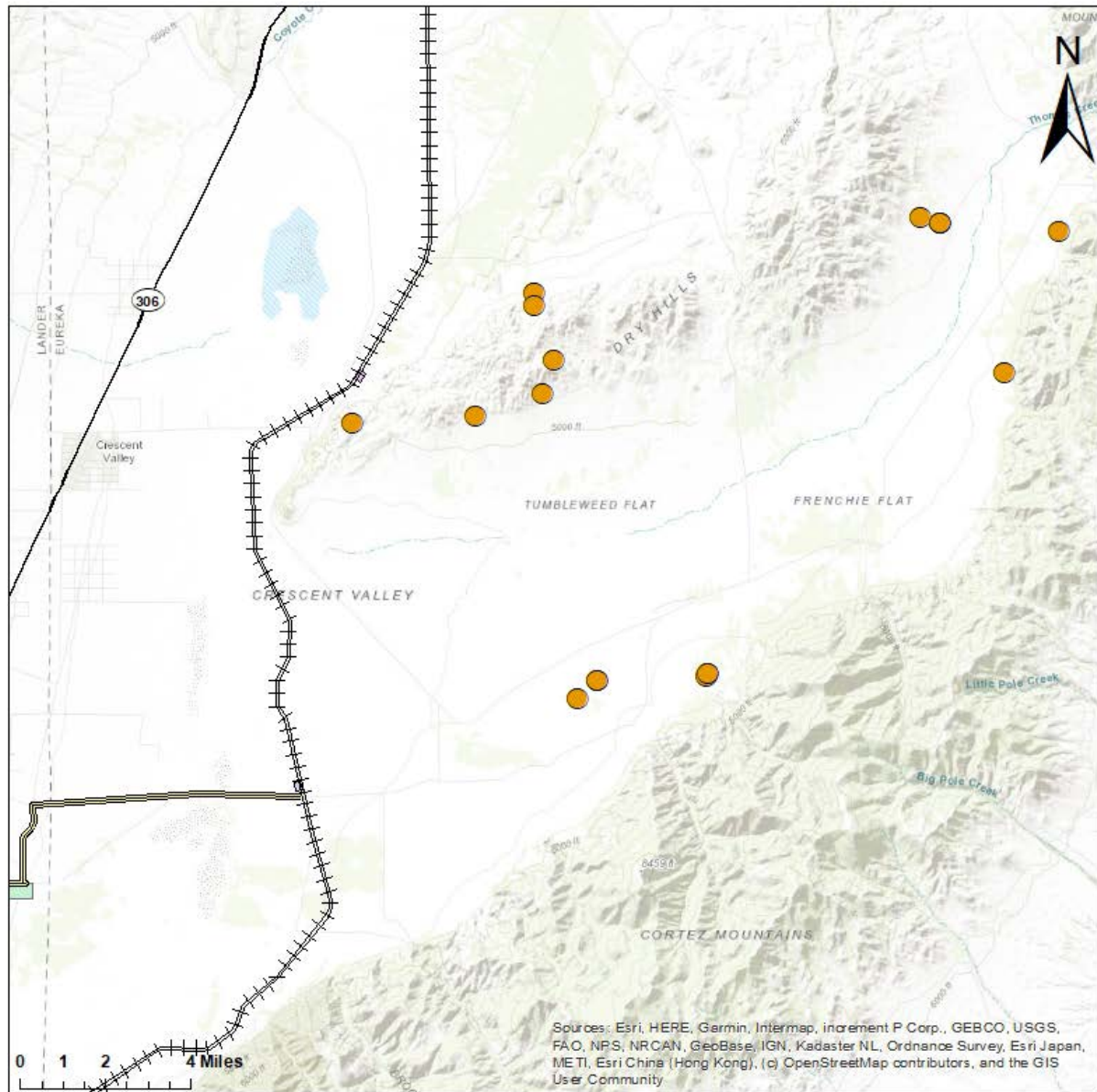
APPENDIX C

Historic Nest Monitoring Results 2013–2025

Nevada Gold Mines,

As per the *Ore Transportation Project (OTP) Baseline Pronghorn Data Collection Agreement*, a capture operation, funded by Nevada Gold Mines, took place in Crescent Valley on February 16, 2022, to deploy Lotek GPS/VHF collars on 18 adult pronghorn does. The Nevada Department of Wildlife contracted Heliwild to perform the capture work. Capture conditions were moderate, with temperatures (30F-40F), cloudy skies, light snow flurries, and moderate wind. All 18 collars were successfully deployed, with no mortalities during or following the capture as of March 4th. Capture locations were distributed throughout Crescent Valley and the Dry Hills (Figure 1; note: more than one animal was collared/group in some cases, so there are less than 18 capture locations are visible on the map). The original agreement requested that 20 collars be deployed in the Crescent Valley pronghorn herd. Unfortunately, due to complications with the collar manufacturer supply relating to the covid-19 pandemic, only 18 of the 20 purchased collars arrived on time for capture work, the remaining two collars will be scheduled for deployment during the 2022-2023 capture season along with any redeployments from pronghorn mortalities that occur. The capture crew indicated they observed several hundred pronghorn in Crescent Valley during the capture, but did not get actual count numbers.

Capture work continued northward along the OTP path on February 17, 2022, in Boulder Valley, where the agreed upon 10 remaining adult female pronghorn collars were deployed. Capture conditions were again moderate, warm temperatures and lack of snow cover created conditions not necessarily ideal for pronghorn capture but tolerable and consistent with other recent captures. Unfortunately, there were two mortalities in the few days post capture that were attributed to capture myopathy. The carcasses were however completely scavenged so any formal diagnosis is unavailable. As mentioned above, these two collars, along with any from other future mortalities will be redeployed during the 2022-2023 capture season. Distribution of collars throughout the valley and among groups was favorable (Figure 2; note: more than one animal was collared/group in some cases, so there are less than 10 capture locations are visible on the map). Only in groups of 100 plus pronghorn were two collars deployed, this happened on two instances, all other collar deployments occurred in groups of less than 100 pronghorn, at one collar per group, in six instances. This hopefully will result in little pseudo replication of movements (although still possible). During scouting the day before for the capture, biologists counted over 450 pronghorn in Boulder Valley from the ground, the capture crew indicated at least 500 (however they did not physically count animals).



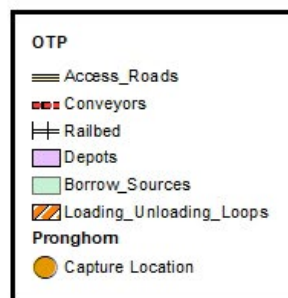
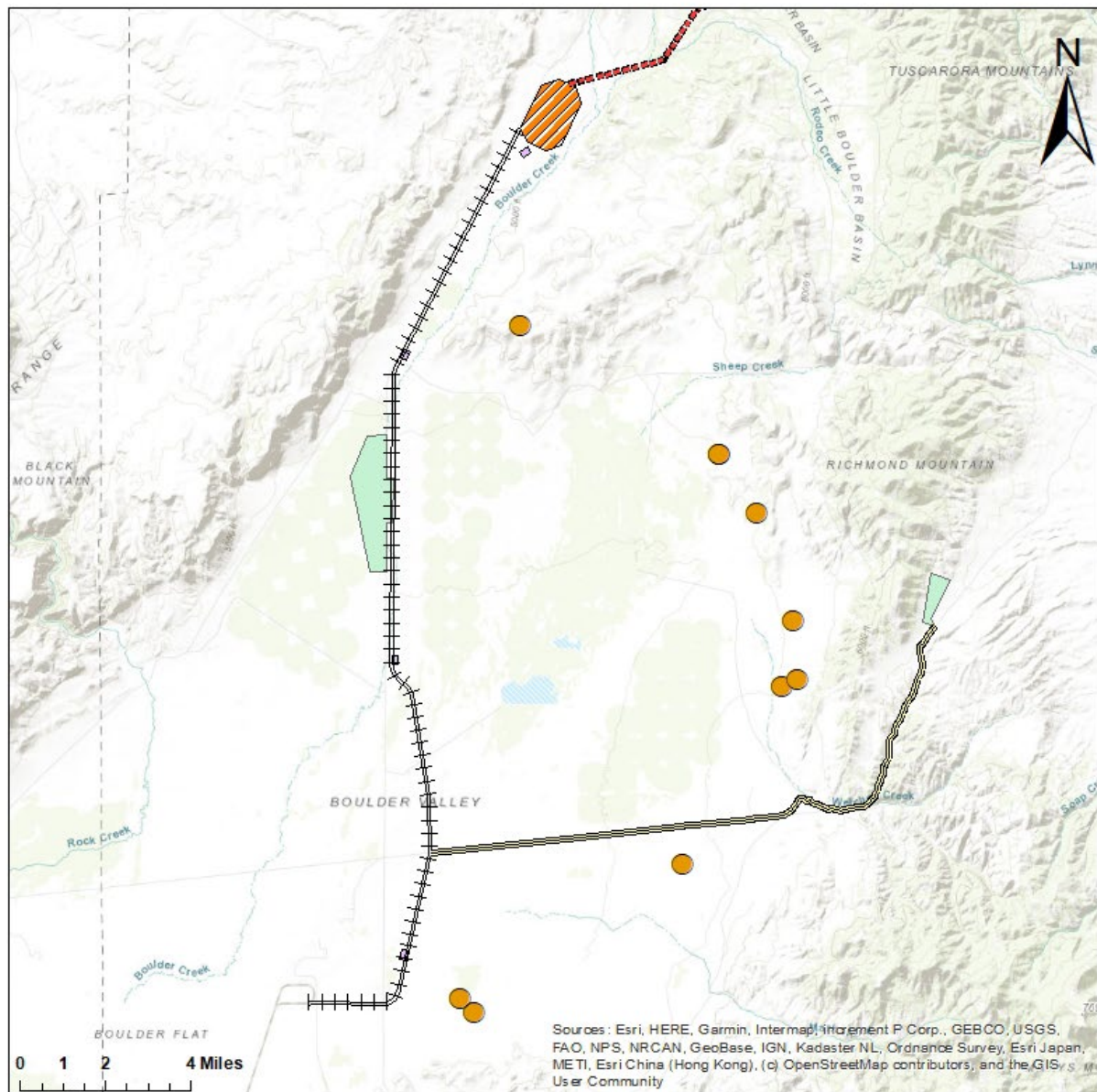
Nevada Gold Mines Ore Transportation Project Pronghorn Capture Locations Crescent Valley

2/28/2022

Projection: UTM Zone 11 North, NAD83
No warranty is made by the Nevada Department of Wildlife as to the accuracy, reliability, or completeness of the data for individual use or aggregate use with other data.



Figure 1: Pronghorn capture locations in relation to Nevada Gold Mines Ore Transportation Project in Crescent Valley, 2/16/2022.



Nevada Gold Mines Ore Transportation Project Pronghorn Capture Locations Boulder Valley

2/28/2022

Projection: UTM Zone 11 North, NAD83
No warranty is made by the Nevada Department of Wildlife as to the accuracy, reliability, or completeness of the data for individual use or aggregate use with other data.



Figure 2: Pronghorn capture locations in relation to Nevada Gold Mines Ore Transportation Project in Boulder Valley, 2/17/2022.

Ore Transport Project

Nevada Pronghorn

2022-2024 Project Update
9/2024

Nevada Gold Mines,

As per the *Ore Transportation Project (OTP) Baseline Pronghorn Data Collection Agreement*, ongoing capture and monitoring continued into 2024 concerning pronghorn antelope in Boulder and Crescent Valleys along the proposed Ore Transport Projects path.

Captures (Figures 1-2)

In February 2022, 28 solar enhanced GPS collars were deployed between the Boulder and Crescent Valleys, 10 and 18 collars respectively. In Boulder Valley, pronghorn were heavily concentrated on the southern end, but collars were distributed across multiple groups throughout this winter range to monitor individuals/groups with differing movement and seasonal use strategies (Figure 1). In Crescent Valley, pronghorn were largely concentrated in the Dry Hills, so all 18 collars were deployed in this area (Figure 5). Two Crescent Valley collars did not arrive with the original shipment and were unable to be deployed in year one. Because of several mortalities occurred over the course of the first year (Table 1) in February 2023 a redeployment effort took place where eight collars were redeployed, four in Boulder Valley and 4 in Crescent Valley (including the two collars that arrived late in 2022). 2024 marks the third year of monitoring these two pronghorn herds within the OTP boundary. Due to a lack of funding and time constraints during the 2023/24 winter capture schedule, no redeployments occurred this season. However, OTP collars we have in hand have been deactivated and are not accruing data transmission costs or utilizing battery life. As of this update 8 collars remain active on pronghorn in Boulder Valley and 10 active collars remain in Crescent Valley. Those collars that have not been damaged beyond repair can be redeployed during the 2024/25 winter capture season, paid for by the NDOW.

Mortalities 2022-2024

Boulder Valley:

Seven mortalities have occurred since the beginning of the project. It was originally thought that no post-capture myopathy related mortalities occurred in 2022, as reported in the 2022 capture update. However, due to data transmission delays, we now know there were two post-capture related mortalities that occurred within four days of the initial 2022 capture. Additionally, two mortalities of natural causes occurred in January 2023, however, specific cause of death remains unknown due to immediate scavenging. A fifth mortality occurred during capture in 2023 (broken back), and another individual was immediately caught to replace this doe. In both May 2023 and April 2024, the sixth and seventh mortalities took place, unfortunately yet again rapid scavenging eliminated cause of death determination for those individuals.

Crescent Valley:

Eleven mortalities have occurred in the Crescent Valley population since the beginning of the project. Ten were from natural causes (three were most likely due to mountain lion predation, but seven were too scavenged to accurately determine cause of death), and one was in relation to the 2023 collar re-deployment effort.

Sub-herd	Pronghorn ID	Mort Date	Cause of Death
Boulder Valley	13107	2/20/2022	Post-Capture Related
Boulder Valley	13111	2/21/2022	Post-Capture Related
Boulder Valley	13102	1/10/2023	Unknown
Boulder Valley	13109	1/27/2023	Unknown
Boulder Valley	No ID	2/16/2023	During Capture
Boulder Valley	13103	5/14/2023	Unknown
Boulder Valley	13350	4/11/2024	Unknown
Crescent Valley	12187	4/11/2022	Likely Mountain Lion
Crescent Valley	13125	5/29/2022	Likely Mountain Lion
Crescent Valley	13124	6/12/2022	Likely Mountain Lion
Crescent Valley	13129	9/20/2022	Unknown
Crescent Valley	12586	12/20/2022	Unknown
Crescent Valley	13121	2/10/2023	Unknown
Crescent Valley	13370	2/24/2023	Post-Capture Related
Crescent Valley	13369	3/27/2023	Unknown
Crescent Valley	13131	5/28/2023	Unknown
Crescent Valley	13126	8/26/2023	Unknown
Crescent Valley	13140	11/11/2023	Unknown

Table 1. Collared pronghorn mortalities in the Boulder and Crescent Valley populations, February 2022 – present.

Movements 2022-2024

GPS collars have provided valuable information about how pronghorn utilize habitats in Boulder Valley, Crescent Valley, and the surrounding areas. Location and movement data has begun to illustrate where possible interactions and/or conflicts may occur between pronghorn and the proposed OTP, in addition to the areas that will likely have no impact.

Boulder Valley:

All the pronghorn monitored were captured and collared on winter range in Boulder Valley during the 2022 and 2023 capture seasons (See figure 1). Since those initial captures Boulder Valley has been the primary winter range for collared pronghorn, however three additional winter ranges have been utilized: the west face of the Sheep Creeks, Maggie/Suzie Creek Confluence, Rock/Antelope Creek Confluence. It is not uncommon for pronghorn within a population to utilize different strategies, as observed by this monitoring, especially with the differences in winter conditions experienced during the last three years. While all original individuals came from the same winter range, several different seasonal and movement strategies have been documented. Summer habitats exist within the project area in Boulder Valley, Black Mountain, Willow Creek Ridge, Independence Valley, the Owyhee Desert

and along Maggie and Suzie Creeks. An interesting observation is the large movement documented by one collared individual which made an approximately 375-mile loop across northern Nevada and parts of both southern Idaho and Oregon, traversing multiple mountain ranges and deserts before returning to a winter range typical for this population (Figure 5). See figures 2, 3, 4 & 9 below for maps concerning movements and seasonal uses. While still preliminary, collar data indicates northern Boulder Valley to be an area with high overlap with the proposed rail line, unloading loop, conveyor, and western borrow source. As seen in figure 2, pronghorn in the northern portion of the valley occupy that habitat during all seasons: summer, transition, and winter. In eastern Boulder Valley there also will be significant overlap with the access road leading to the eastern borrow source during both winter and transition seasons. The documentation of these movements in Boulder Valley can help guide design features to mitigate impacts from the implementation of the OTP project.

Crescent Valley:

GPS/VHF collars have already provided valuable information about how pronghorn use Crescent Valley and the surrounding area, and where potential conflicts may occur along NGM's proposed OTP rail line (Figures 6-8). Except for one individual that moved 80 miles south to Antelope Valley, east of the Monitor Range, collared pronghorn in the Crescent Valley population remained in Crescent Valley and adjacent areas from 2022-2024. In relation to the proposed OTP, several areas appear to have greater potential for pronghorn-train interactions, but the risk varies among seasons. The northern portion of the proposed rail line (the stretch adjacent to the Dry Hills, between Beowawe and the town of Crescent Valley) was frequently crossed by pronghorn during the fall, winter, and spring. The southern portion of the proposed rail line (the stretch running from the southwestern tip of the Dry Hills to the Cortez Gold Mine) intersects several corridors that pronghorn use to cross the valley primarily during the spring and fall.

Population Status

Boulder Valley:

The overall Unit 067-068 pronghorn population which includes the Boulder Valley sub-herd continues to do well. The 2024 January survey resulted in the total classification of 949 pronghorn. This is down from the 2023 survey of 1,271 but is primarily due to road conditions in Boulder Valley which made survey challenging in the region. The majority of this sample came from the other known winter ranges for this herd. Fawn recruitment has been strong for two consecutive years now and the 2024 population estimate for the Unit 067-068 pronghorn herd is 1,400 animals.

Crescent Valley:

Post-season surveys of the Area 14/15 pronghorn herd indicated that this herd continues to grow. In 2024 a total of 1,943 pronghorn classified. This is up from the 1,034 pronghorn classified in 2023. Crescent Valley is a large part of the over all population in Area 14/15. The current 2024 population estimation for Area 14/15 is 5,300 pronghorn. Continually strong fawn recruitment in Crescent Valley represents the population growth in recent years.

Analysis

Figures 1-9 below display capture and movement data from the Boulder Valley and Crescent Valley pronghorn populations. These maps include GPS locations from all collared individuals which generally collect a location every 3.5 hours. The maps displaying animal movements were produced with the *Points to Line* tool in ESRI ArcMap, which generates a date/time and location string based on each individual collar through time. Preliminary seasonal habitat mapping was generated through date range selections with added distance buffers (allowing for possible places an individual could be between points). While this preliminary seasonal analysis was done at a rough scale and rather simplistically, it is provided to illustrate pronghorn use throughout the year, which is not easily interpreted in the other figures. A more formal and comprehensive spatial and movement analysis will be conducted once all collars have reached their battery life expectancy and are collected from the landscape. At that point the areas of greatest concern will be identified. With the collar sample sizes utilized for this project, it will be important to collect the full suite of data before such analysis is conducted to best inform the models. However, if requested sooner than the full expected lifespan of the collars, analysis could be conducted on a less than complete dataset.

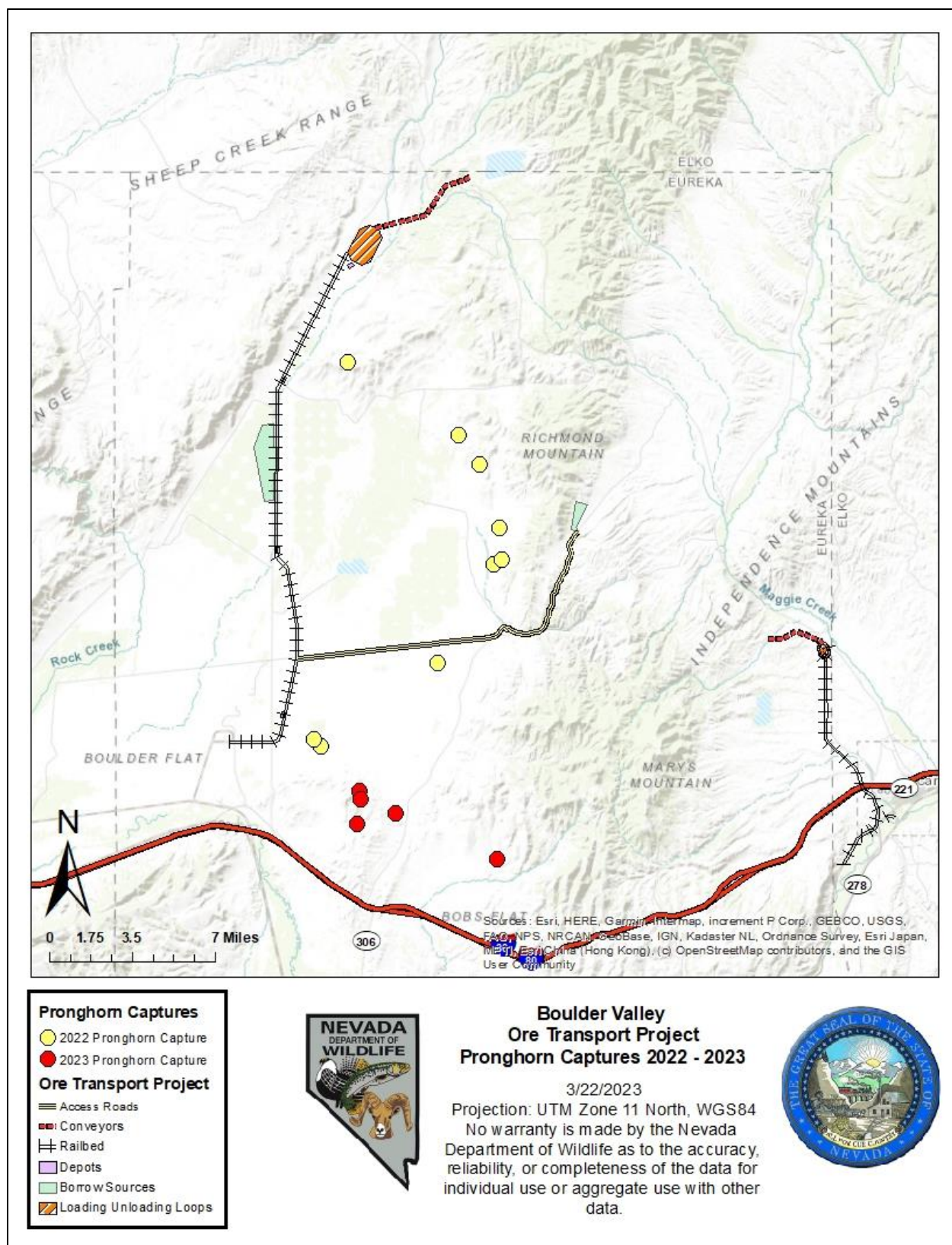
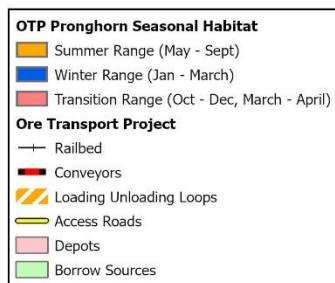
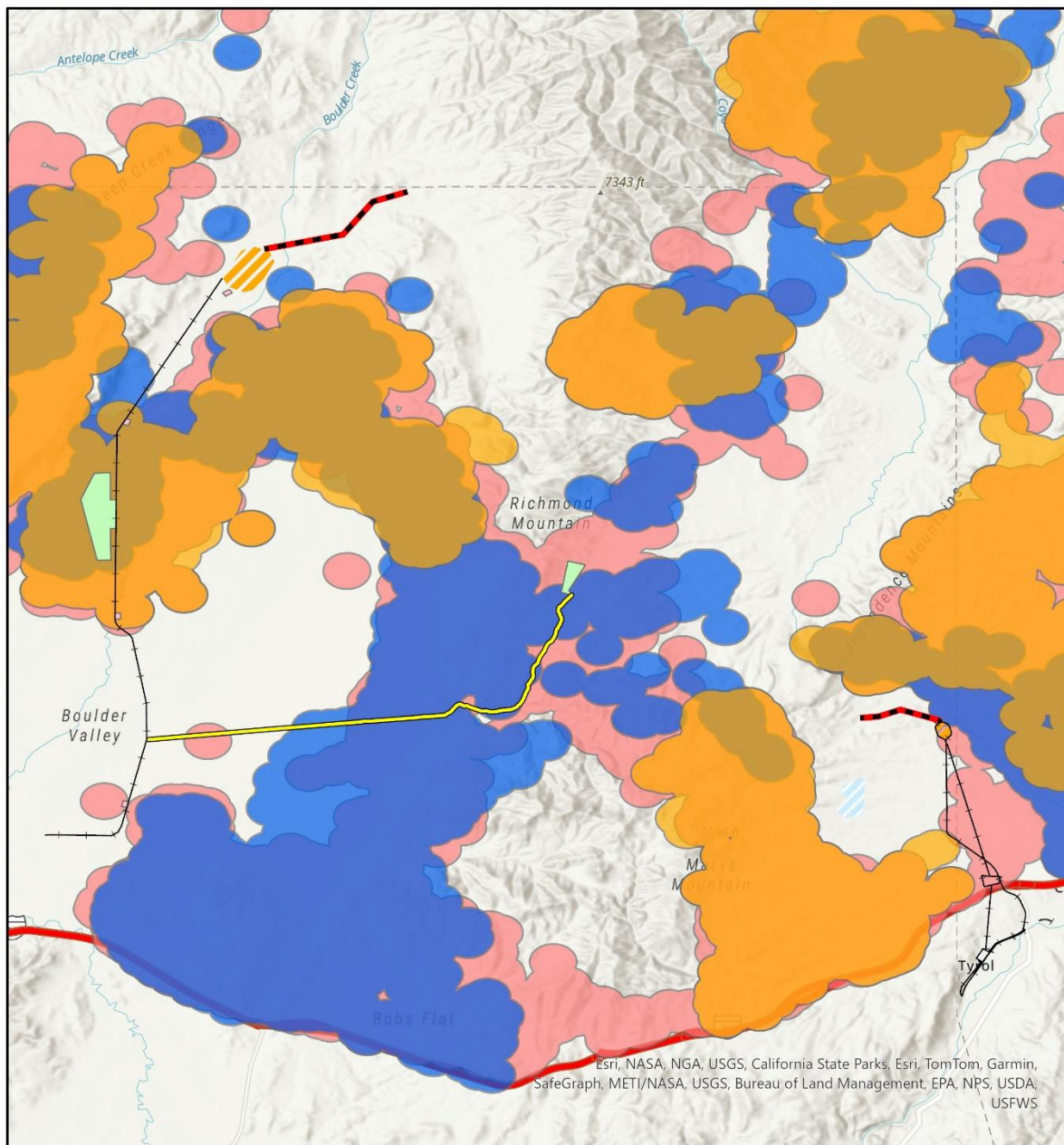


Figure 1. Boulder Valley capture locations from 2022 and 2023 capture seasons in relation to the Ore Transport Project provided footprint.

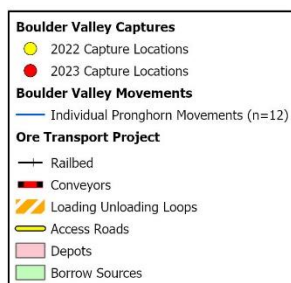
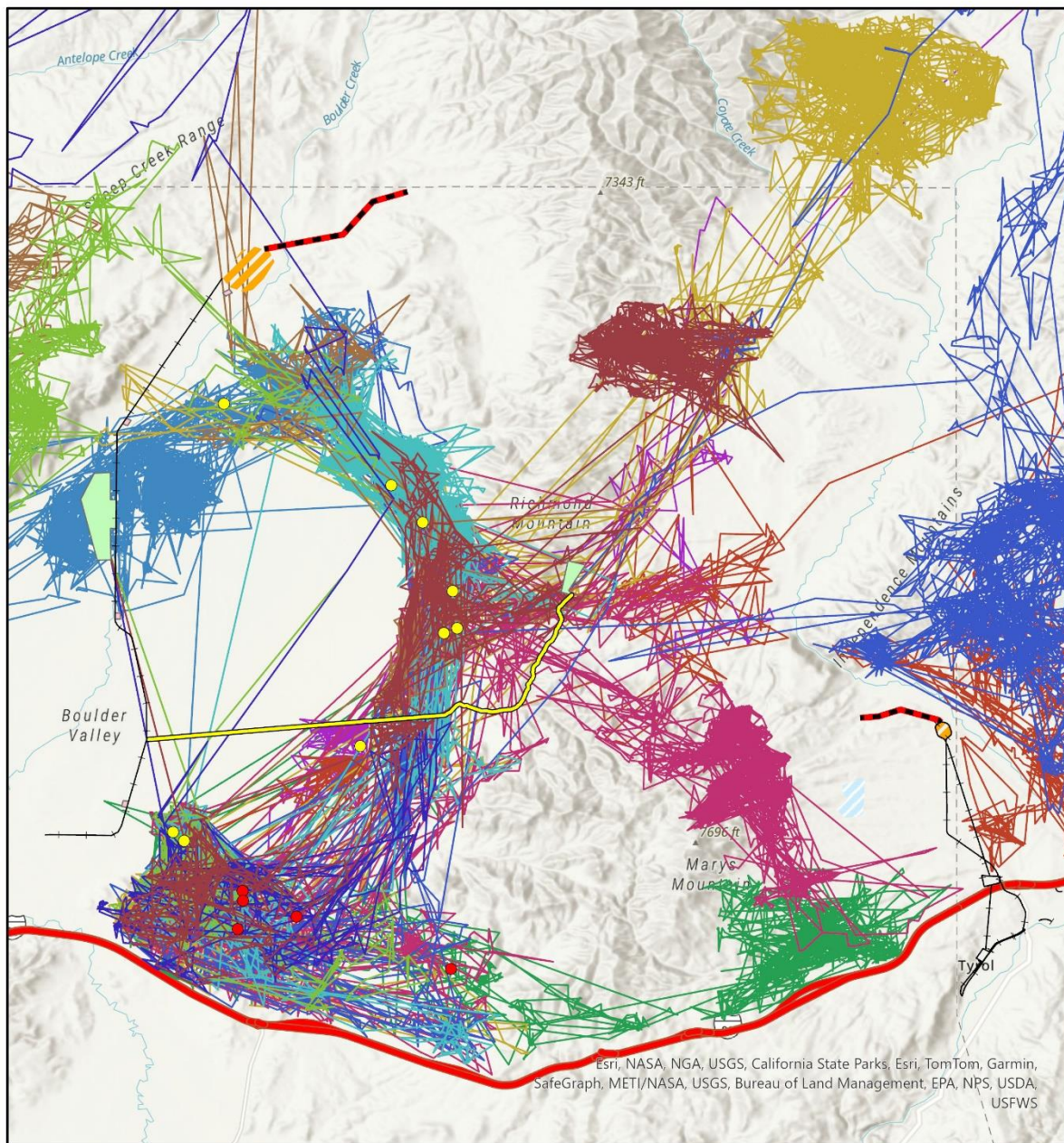


Ore Transport Project Pronghorn Monitoring Boulder Valley Project Area 2022-2024

Projection: UTM Zone 11 North, WGS84
No warranty is made by the Nevada Department of Wildlife as to the accuracy, reliability, or completeness of the data for individual use or aggregate use with other data.



Figure 2. Boulder Valley pronghorn seasonal habitat use in relation to the proposed OTP. Different colors indicate different seasons identified in the legend. Preliminary data*

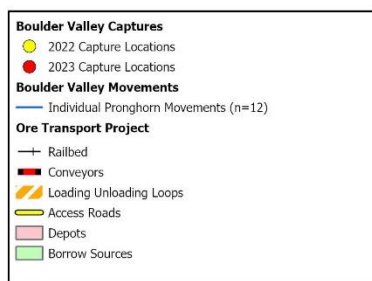
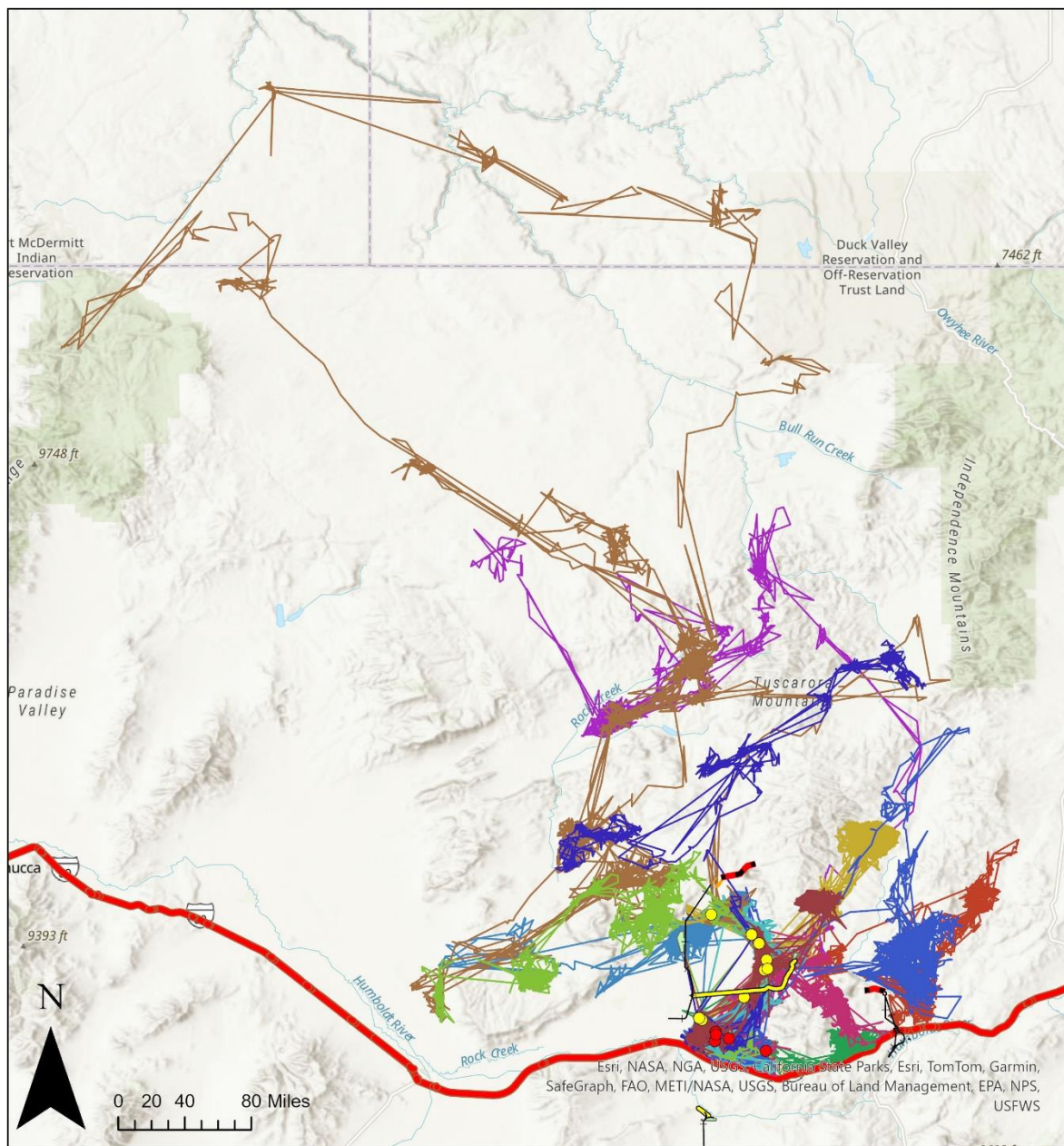


Ore Transport Project Pronghorn Monitoring Boulder Valley Project Area 2022-2024

Projection: UTM Zone 11 North, WGS84
No warranty is made by the Nevada Department of Wildlife as to the accuracy, reliability, or completeness of the data for individual use or aggregate use with other data.



Figure 3. Boulder Valley pronghorn movement lines in relation to the proposed OTP. Different colors indicate different individual pronghorn. Preliminary data*



Ore Transport Project Pronghorn Monitoring Boulder Valley Sub-herd 2022-2024

Projection: UTM Zone 11 North, WGS84
No warranty is made by the Nevada Department of Wildlife as to the accuracy, reliability, or completeness of the data for individual use or aggregate use with other data.



Figure 4. All Boulder Valley pronghorn movements. Different colors indicate different individual pronghorn. Preliminary data*

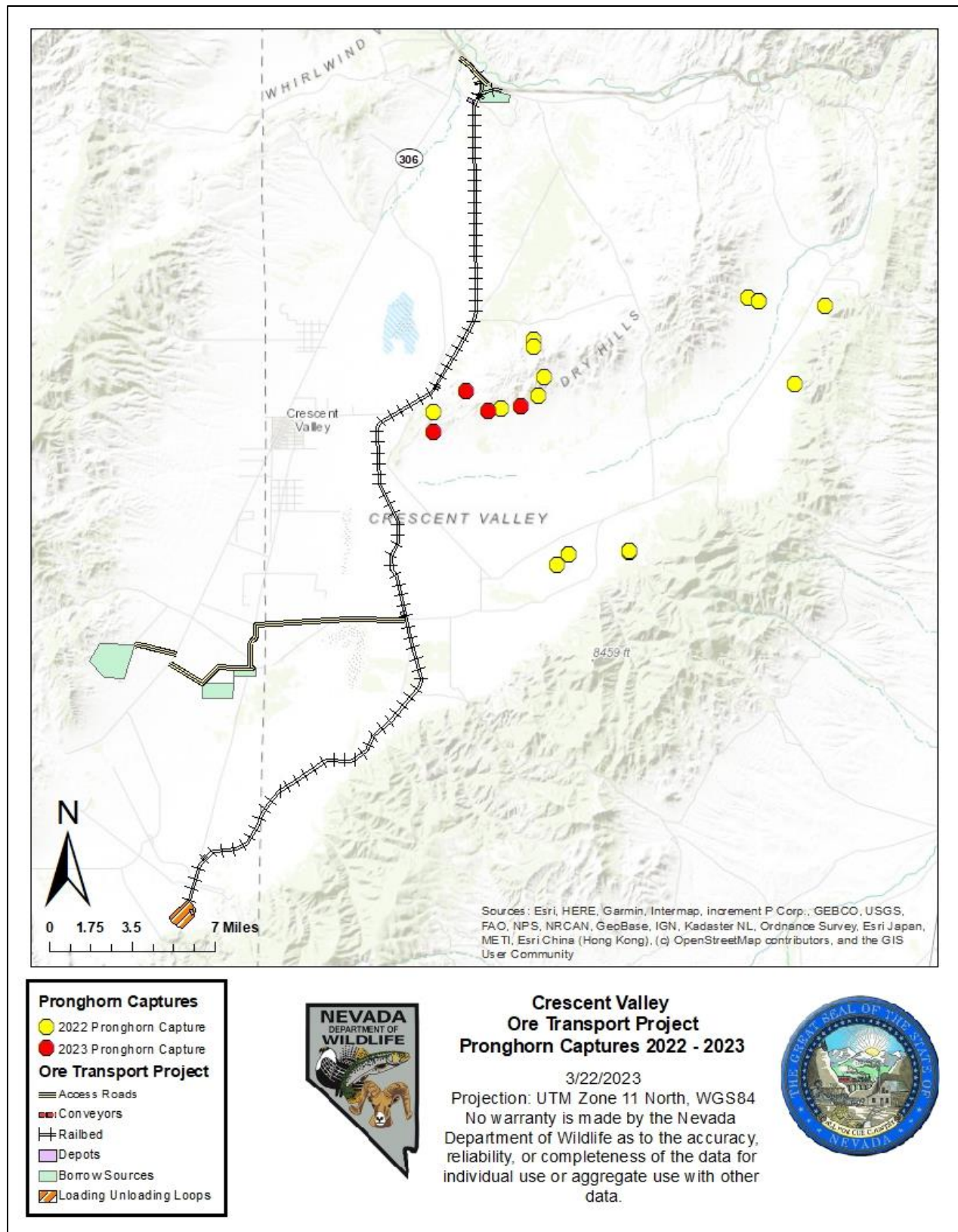


Figure 5. Crescent Valley capture locations from 2022 and 2023 capture seasons in relation to the Ore Transport Project.

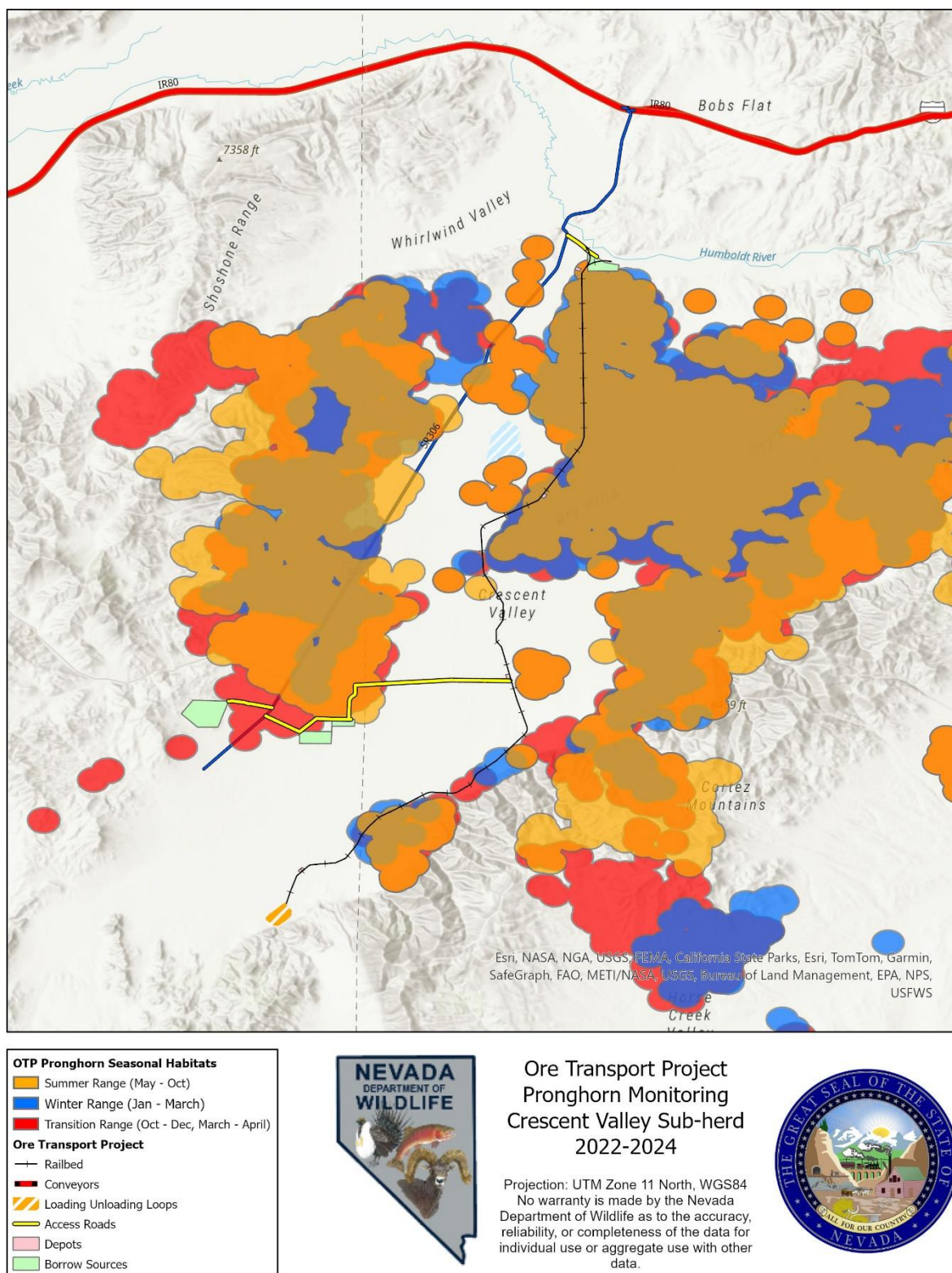
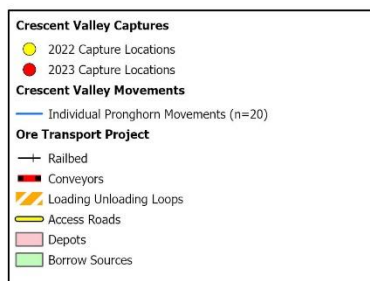
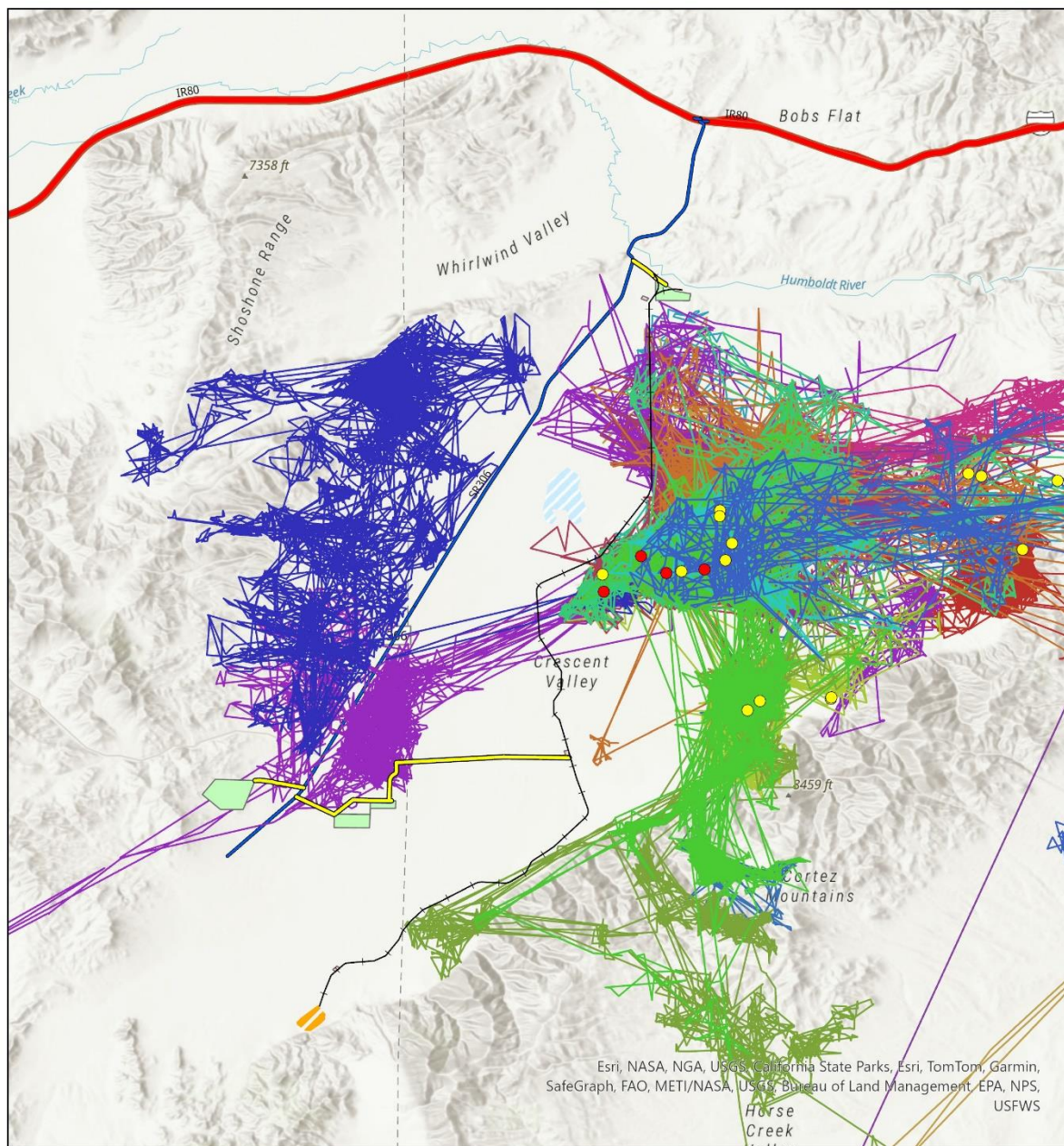


Figure 6. Crescent Valley pronghorn seasonal habitat use in relation to the proposed OTP. Different colors indicate different seasons identified in the legend. Preliminary data*

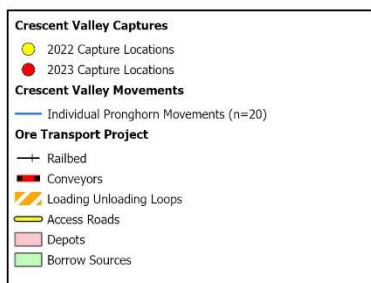
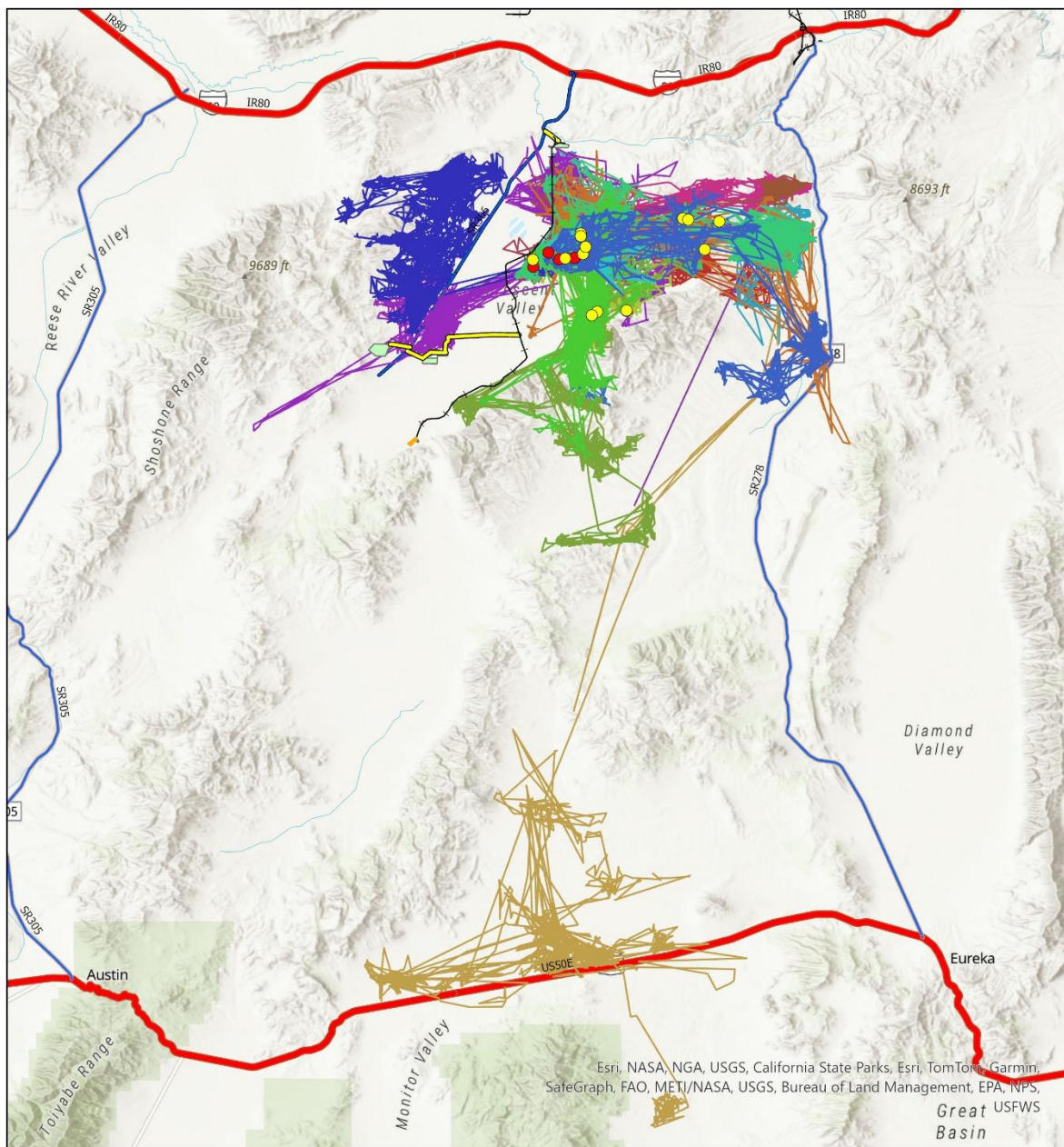


Ore Transport Project Pronghorn Monitoring Crescent Valley Sub-herd 2022-2024

Projection: UTM Zone 11 North, WGS84
No warranty is made by the Nevada Department of Wildlife as to the accuracy, reliability, or completeness of the data for individual use or aggregate use with other data.



Figure 7. Crescent Valley pronghorn movements in relation to the proposed OTP. Different colors indicate different individual pronghorn. Preliminary data*



Ore Transport Project Pronghorn Monitoring Crescent Valley Sub-herd 2022-2024

Projection: UTM Zone 11 North, WGS84
No warranty is made by the Nevada Department of Wildlife as to the accuracy, reliability, or completeness of the data for individual use or aggregate use with other data.



Figure 8. All Crescent Valley pronghorn movements. Different colors indicate different individual pronghorn. Preliminary data*

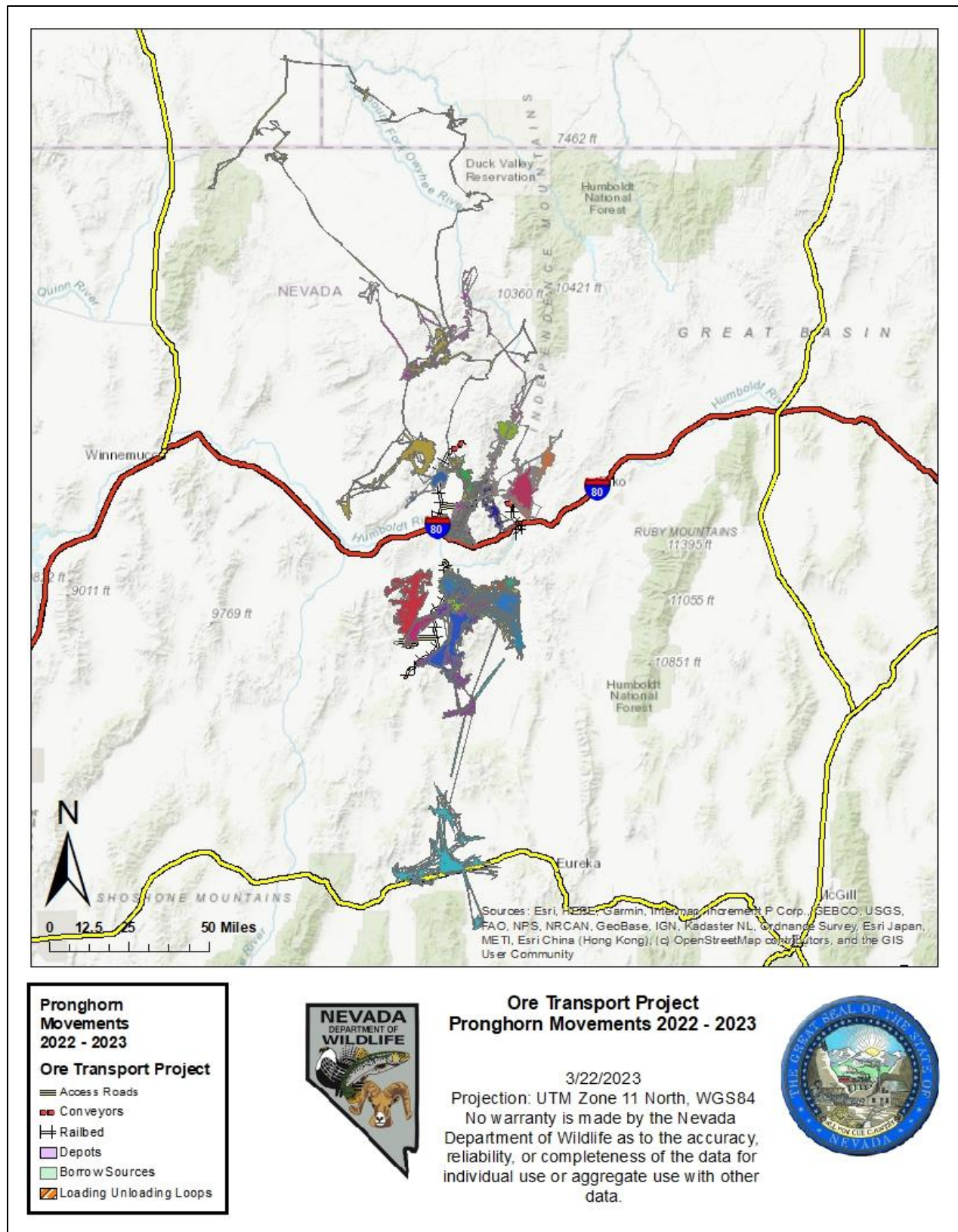


Figure 9. All Boulder Valley and Crescent Valley pronghorn movements. Different colors indicate different individual pronghorn. Preliminary data*

**WATERS OF THE UNITED STATES
JURISDICTIONAL DETERMINATION
GREATER GOLD QUARRY PROJECT
EUREKA AND ELKO COUNTIES, NEVADA**

Prepared for:

Newmont Mining Corporation
1655 Mountain City Highway
Elko, Nevada 89801

Prepared by:

JBR Environmental Consultants, Inc.
595 Double Eagle Court, Suite 2000
Reno, Nevada 89521

Contact: Matthew McKissick
(775) 747-5777

JBR Project Number: B.A12128.00

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LIST OF ACRONYMS & ABBREVIATIONS

ACOE	United States Army Corps of Engineers
AMSL	Above Mean Sea Level
CFR	Code of Federal Regulation
cfs	Cubic Feet Per Second
°F	Degrees Fahrenheit
DP-1	Data Point 1
EPA	Environmental Protection Agency
FAC	Facultative
FACU	Facultative Upland
FACW	Facultative Wetland
GPS	Global Positioning System
JBR	JBR Environmental Consultants, Inc.
NAIP	National Agricultural Imagery Program
Newmont	Newmont Mining Corporation
NI	No Indicator
NRCS	Natural Resources Conservation Service
OBL	Obligate Wetland
OHWM	Ordinary High Water Mark
P-1	Pit 1
SWANCC	Solid Waste Agency of Northern Cook County
SWReGAP	Southwest Regional Gap Analysis Program
TNW	Traditional Navigable Waters
UPL	Obligate Upland
USFWS	United States Fish and Wildlife Service
USGS	United States Geologic Survey
WOUS	Waters of the United States

EXECUTIVE SUMMARY

JBR Environmental Consultants, Inc. (JBR) performed field investigations from June 11 through 14, 2012, and on August 6 through 10, 2012, evaluating the potential jurisdictional status of channels and delineating waters of the United States (WOUS) for the Greater Gold Quarry Project located approximately five miles northwest of Carlin in Eureka and Elko counties, Nevada.

JBR inventoried all drainages and drainage-like features within the survey area in order to determine whether they had a potential tributary connection to the Humboldt River, a navigable-in-fact waterway. Mapped and potential springs and wetlands were investigated, and those meeting the technical criteria were delineated to their extents.

The majority of drainages in the survey area have been impacted by existing mining activities to some extent. Several drainages have been completely eradicated by the mine's footprint, while others have been re-routed through the mine's storm water system. However, four drainages, including Maggie Creek, James Creek, Mary's Creek, and Drainage 49, exhibit an ordinary high water mark (OHWM) and have a surface connection with the Humboldt River. It was determined that 15.86 acres of jurisdictional drainages exist within the survey area.

Four wetlands were located within the survey area. These wetlands each support wetland vegetation and exhibit adequate wetland hydrology and hydric soils to be considered jurisdictional WOUS. However, only two of these wetlands share a surface connection with an adjacent jurisdictional drainage. The other two are isolated and do not share any type of connection to a jurisdictional waterway. Therefore, only two of the four inventoried wetlands are considered jurisdictional WOUS. A total of 6.47 acres of jurisdictional wetlands were delineated within the survey area.

The total jurisdictional acreage for all WOUS within the survey area is 22.33 acres. These findings should be considered preliminary until the United States Army Corps of Engineers (ACOE) makes a final approved determination in coordination with the United States Environmental Protection Agency (EPA).

**WATERS OF THE UNITED STATES
JURISDICTIONAL DETERMINATION
GREATER GOLD QUARRY PROJECT
EUREKA AND ELKO COUNTIES, NEVADA**

1.0 INTRODUCTION

Newmont Mining Corporation (Newmont) is currently conducting mineral extraction and processing activities at its existing operation at the Gold Quarry Mine, located approximately five miles northwest of Carlin, Nevada (Figure 1). To prepare for upcoming expansion efforts, Newmont contracted JBR Environmental Consultants Inc. (JBR) to conduct surveys of drainages and wetlands within the survey area, which is located on private land and public land managed by the Bureau of Land Management's (BLM) Elko District Office.

The Gold Quarry Mine project boundary (survey area) encompasses approximately 22,086 acres (34.50 square miles) in Eureka and Elko counties, Nevada (Figure 2) including all or portions of Section 32, Township 35 North (T35N), Range 51 East (R51E); Sections 4, 5, 8, 9, 16, 21-29, and 32-36, T34N, R51E; Sections 19, 20, and 29-32, T34N, R52E; Sections 1-5 and 10-15, T33N, R51E; and Sections 5-8 and 17-20, T33N, R52E. The survey area is located approximately five miles east of the Carlin Peaks and approximately five miles northeast of Carlin, Nevada. Elevations in the survey area range from approximately 5,000 feet above mean sea level (AMSL) to 6,400 feet AMSL.

To access the survey area from Carlin, head north on Highway 766/Maggie Creek Road for approximately 5.5 miles. The main entrance to the mine is on the left.

JBR has prepared an inventory of drainage/wetland features in the survey area in accordance with the Final Map and Drawing Standards for the South Pacific Division Regulatory Program Special Public Notice which was issued on August 6, 2012 (ACOE, 2012). The data was collected in June of 2012, prior to the mapping standards being issued (August 6, 2012); however, JBR met as many of the mapping standards as possible. JBR's evaluation is considered preliminary until verified by the ACOE.

During the field investigations, JBR referred to the *Corps of Engineers Wetland Delineation Manual* (ACOE, 1987), the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region Version 2.0* (ACOE, 2008); and the *Updated Datasheet for the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States* (ACOE, 2010) for all required information regarding this jurisdictional determination.

2.0 DEFINITIONS

2.1 WATERS OF THE UNITED STATES

WOUS are defined by 33 Code of Federal Regulation (CFR) 328.3 as:

1. All waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;
2. All interstate waters including interstate wetlands;
3. All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation or destruction of which could affect interstate or foreign commerce including any such waters:
 - i. Which are or could be used by interstate or foreign travelers for recreational or other purposes; or
 - ii. From which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or
 - iii. Which are used or could be used for industrial purpose by industries in interstate commerce;
4. All impoundments of waters otherwise defined as waters of the United States under the definition;
5. Tributaries of waters identified in paragraphs (a)(1)-(4) of this section;
6. The territorial seas; and
7. Wetlands adjacent to waters (other than waters that are themselves wetlands) identified in paragraphs (1)-(6) of this section.

The following terms are defined by 33 CFR 328.3:

The term "adjacent" means bordering, contiguous, or neighboring. Wetlands separated from other waters of the United States by man-made dikes or barriers, natural river berms, beach dunes and the like are "adjacent wetlands."

The term "ordinary high water mark" means that line on the shore established by the fluctuations of water and indicated by physical characteristics such as clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas.

2.2 SWANCC RULING REGARDING ISOLATED WATERS

In 2001, the United States Supreme Court ruled in the Solid Waste Agency of Northern Cook County (SWANCC) case that the ACOE cannot invoke migratory bird use as the sole basis to establish jurisdiction over certain isolated WOUS, including isolated wetlands. Prior to the ruling, the ACOE considered migratory bird use of isolated wetlands to be a tie to interstate or foreign commerce, and thus claimed jurisdiction of isolated water bodies and wetlands. The SWANCC determination found that wetlands that are not adjacent to, and do not share a physical connection to an otherwise jurisdictional water body, could be considered isolated, and not subject to jurisdiction by the ACOE. Likewise, drainages that did not have a tributary connection to a jurisdictional water body would also be considered isolated and not subject to jurisdiction.

For the purposes of this report, water bodies that do not meet the criteria of WOUS are termed “non-jurisdictional,” and would not be subject to regulation under Section 404 of the Clean Water Act.

2.3 RAPANOS GUIDANCE REGARDING TRIBUTARY STREAMS

The EPA and ACOE issued a joint legal guidance memoranda regarding Clean Water Act jurisdiction of tributary streams based on the United States Supreme Court’s decision in *Rapanos v. United States* and *Carabell v. United States*. The guidance memos state that the agencies will assert jurisdiction over the following categories of water bodies:

- Traditional navigable waters (TNW);
- Wetlands adjacent to TNW;
- Non-navigable tributaries of traditional navigable waters that are relatively permanent where the tributaries typically flow year-round or have continuous flow at least seasonally (e.g., typically three months); and
- Wetlands that directly abut such tributaries.

The Rapanos guidance memo further stated:

“In addition, the agencies will assert jurisdiction over those adjacent wetlands that have a continuous surface connection with a relatively permanent, non-navigable tributary, without the legal obligation to make a significant nexus finding. As explained above, the plurality opinion and the dissent agree that such wetlands are jurisdictional. The plurality opinion indicates that “continuous surface connection” is a “physical connection requirement.” Therefore, a continuous surface connection exists between a wetland and a relatively permanent tributary

where the wetland directly abuts the tributary (e.g., they are not separated by uplands, a berm, dike, or similar feature)."

Since issuance of the Rapanos guidance, jurisdictional determinations must include a written assessment of the relative permanence of flow in each tributary. For any stream and/or stream reach that does not have relatively permanent flow, the flow and ecological characteristics must be evaluated to determine if the tributary has a significant nexus to a TNW.

2.4 WETLANDS

Wetlands are defined by the ACOE and EPA in 40 CFR 230.3 and 33 CFR 328.3 as:

"Those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas."

Wetlands have the following general diagnostic environmental characteristics:

Hydrophytic Vegetation

Hydrophytic vegetation is defined as "...macrophytes that are typically adapted to areas having hydrological and soil conditions described in above. Hydrophytic species, due to morphological, physiological, and/or reproductive adaptation(s), have the ability to grow, effectively complete, reproduce and/or persist in anaerobic soil conditions" (ACOE, 1987). The ACOE's Wetland Delineation Manual requires that, in most cases, more than 50 percent of the dominant vegetation consists of plants that meet the wetland plant technical criteria.

A wetland indicator status is assigned to vegetation species and is used to determine a dominant presence of hydrophytic vegetation. According to the *National List of Plant Species that Occur in Wetlands: Intermountain (Region 8) - Biological Report 88 (26.8)*, (Reed, 1988), the indicator categories are defined as:

Obligate Wetland (OBL) Occur almost always (estimated probability >99%) under natural conditions in wetlands.

Facultative Wetland (FACW) Usually occur in wetlands (estimated probability 67%-99%), but occasionally found in non-wetlands.

Facultative (FAC) Equally likely to occur in wetlands or non-wetlands (estimated probability 34%-66%).

Facultative Upland (FACU) Usually occur in non-wetlands (estimated probability 67%-99%), but occasionally found in wetlands (estimated probability 1-33%).

Obligate Upland (UPL) Occur almost always (estimated probability >99%) under natural conditions in non-wetlands in the region specified.

No Indicator (NI) Insufficient information available to determine an indicator status. If required, status was determined by the investigator using the above mentioned references (Cronquist et al., 1972 and later).

Hydric Soils

Hydric soils are defined as "... soils that are saturated, flooded, or ponded long enough during the growing season to develop anaerobic conditions that favor the growth and regeneration of hydrophytic vegetation. Hydric soils usually include all histosols except Folists; soils in Aquic suborders, Aquic subgroups, Albolls suborder, Salorthids great group, or Pell great groups of Vertisols that are: somewhat poorly drained, poorly drained, or very poorly drained; soils that are ponded for long or very long duration during the growing season; or soils that are frequently flooded for long duration or very long duration during the growing season" (ACOE, 1987).

Hydric soil indicators are found in the major portions of the herbaceous plant rooting zone, generally between six to 12 inches from the soil surface. Common hydric soils indicators include low chroma (depleted matrix) color, mottling, gleying, iron or manganese concretions, organic matter streaking, reddish staining or streaks, hydrogen sulfide odor, and/or a muck or peat layer (histic epipedon).

Wetland Hydrology

Wetland hydrology is defined as when an "... area is inundated either permanently or periodically at mean water depths of 6.6 ft, or the soil is saturated to the surface at some time during the growing season of the prevalent vegetation" (ACOE, 1987). Primary indicators of hydrology in the Arid West Region include saturated soils, high water table, surface water, water marks, sediment deposits, drift deposits, soil surface cracks, water-stained leaves, salt crust, biotic crust, aquatic invertebrates, hydrogen sulfide odor, oxidized rhizopheres along living roots, reduced iron, and a thin muck surface.

3.0 METHODOLOGY

Prior to the field investigation, topographic maps and aerial photographs of the survey area were reviewed for indications of ephemeral, intermittent, and perennial drainages as well as mapped wetlands and spring locations. The United States Fish and Wildlife Service (USFWS) National Wetlands Inventory and the United States Geologic Survey (USGS) National Hydrography dataset were reviewed for these features as well. The Carlin West, Schroeder Mountain, and Welches Canyon 7.5 Minute USGS quadrangle maps were utilized to identify potentially jurisdictional features. JBR also reviewed the National Agricultural Imagery Program (NAIP) 2006 and 2010 aerial photographs to help determine where potential unmapped drainage and spring locations may exist within the survey area. USGS gage data for Maggie Creek and Mary's Creek is available online (<http://waterdata.usgs.gov/>) and was used in determining the hydrologic regime of these waterways.

All drainages, including named drainages, within the survey area were numbered sequentially from the north to the south (Figure 3). Wetlands were numbered sequentially in the order that they were visited. Data points, documenting the presence or absence of an OHWM, were collected along each potentially jurisdictional drainage and assigned a data point number that corresponds to the drainage number. For example, Data Point 1 (DP-1) was collected along Drainage 1. If multiple data points were collected along the same drainage, the data point number was also assigned a letter to distinguish between the data points. The letter "a" symbolizes the highest point along the drainage. Any letter past "a" signifies the next data point, downgradient from the previous data point. For example, Maggie Creek is labeled as Drainage 25. Therefore, the data points along Maggie Creek are as follows: DP-25a is upgradient from DP-25b, which is upgradient from DP-25c.

JBR visited the survey area from June 11 through 14, 2012, and again on August 6 through 10, 2012. JBR personnel traversed the survey area, investigating all drainage and drainage-like features as well as potential springs utilizing Trimble Global Positioning System (GPS) units to mark points of interest. Special attention was given to USGS-recognized drainages and spring locations and where aerial photography suggested a channel feature or spring exists.

3.1 WATERS OF THE UNITED STATES

3.1.1 DRAINAGES

Drainages within the survey area were assessed for the presence of an OHWM and some evidence that the drainage experiences surface water flows on a frequent and regular basis (more than three months a year). These characteristics were considered to be indicative of a jurisdictional WOUS. An Arid West Ephemeral and Intermittent Streams OHMW Datasheet was completed for each drainage within the survey area with the presence of OHWM indicators.

These OHWM datasheets are labeled DP-1 through DP-76. If the drainage had OHWM indicators present, the drainage was followed to determine if the drainage flowed into another drainage with OHWM indicators, or if these indicators terminated. Where the drainage exhibited OHWM indicators, width measurements were taken for use in determining an average width of the drainage. When drainages with OHWM indicators left the survey area, the drainage was followed to determine where OHWM indicators terminated. If OHWM indicators terminated, the location of the termination was recorded with a GPS unit, the area was described, and photographs were taken. Photographs and notes regarding site conditions were taken at each data point. Appendix A contains the photographs taken at each data point. All OHWM datasheets are provided in Appendix B.

3.1.2 WETLANDS

Mapped and potential wetlands, including springs, were investigated in the field. Four wetlands were encountered during the field investigation and all four wetlands support wetland vegetation. However, only two of these wetlands are located adjacent to and share a surface connection with a nearby jurisdictional drainage. Each wetland was delineated, photographed, and the boundaries were recorded with a Trimble GPS unit for documentation. At least two soil pits (one inside and one outside of the wetland boundaries) were dug at each wetland location, and a wetland determination data form was filled out in correspondence with each soil pit. Appendix C contains the photographs of the wetlands. The wetland determination data forms are labeled Pit 1 (P-1) through P-8 and are provided in Appendix D.

4.0 FINDINGS

The survey area is located within two neighboring watersheds, the Maggie Creek Area (Basin Number 51) and the Mary's Creek Area (Basin Number 52), which together encompass approximately 292,480 acres (457 square miles) within the Upper Humboldt Basin (HUC Number 16040101) (Figure 4A). Both watersheds have been classified as "designated groundwater basins." Designated groundwater basins are basins where permitted groundwater rights are approaching or exceed the estimated average annual recharge (NDWR, 2012).

There are four USGS-recognized drainages within the survey area, Maggie Creek, James Creek, Soap Creek, and Mary's Creek, all of which contribute to the Humboldt River. Maggie Creek and James Creek were flowing at the time the survey was performed, while Soap Creek failed to meet the criteria to be considered jurisdictional WOUS. Mary's Creek was not flowing at the time of the survey, but did meet the requirements of a jurisdictional WOUS. The majority of drainages and drainage-like features in the survey area have either been completely eradicated or impacted to some extent by existing mining disturbance. Most of the channels that would have naturally flowed through the mine's footprint, either no longer exist or have been re-routed through the mine's storm water system. Figure 4B illustrates the USGS map for the survey area, including all recognized water features.

The terrain is gentle to moderately steep throughout most of the survey area. Elevations within the survey area range from approximately 5,000 to 6,400 feet AMSL.

The climate in the survey area is typical for the high desert of northern Nevada and the Basin and Range province. Newmont had a mobile weather station placed within the survey area in Section 23 of T34N, R51E. Unfortunately, climate data for the complete year preceding the survey was not available. However, climate data is available from 1991 through March 2012, and is provided in Table 1. This data indicates that the survey area averages 9.89 inches of precipitation per year, with daytime temperatures ranging from 50.40 degrees Fahrenheit (°F) in the winter to 97.04°F in the summer, and nighttime temperatures ranging from 0.28°F in the winter to 47.91°F in the summer.

Table 1 **Average Weather Conditions (Period of Record: 1991 – 2012)**

Month	Precipitation (inches)	Min. Temperature (°F)	Max. Temperature (°F)
January	1.13	0.28	50.40
February	0.91	6.02	53.92
March	0.82	15.49	66.14
April	1.19	22.19	72.34
May	1.12	28.07	82.42
June	0.61	35.43	90.74
July	0.28	47.91	97.04
August	0.27	44.56	94.61
September	0.46	32.24	88.34
October	0.73	21.03	78.60
November	0.93	6.01	63.76
December	1.05	1.58	52.24
Annual Average	9.89	21.77	74.29

4.1 SOILS

Soils within the survey area have been mapped by the Natural Resources Conservation Service (NRCS) and are described in the *Soil Survey of Eureka County Area, Nevada* (NRCS, 1989) and the *Soil Survey of Elko County, Central Part, Nevada* (NRCS, 1997). These soils descriptions, as well as their respective locations, can also be found online at the NRCS web soil survey. The survey area includes 20 soil units (Figure 5). The NRCS descriptions of these soil associations are as follows:

Au–Alluvial land

This soil unit is found on flood plains at no specific elevation. The composition of this soil is 100 percent alluvial land. It is classified as being poorly drained, and the depth to the water table is about zero to 36 inches. This soil has a high frequency of flooding and exhibits a slope relief of zero to one percent.

BZm–Bucan-Malpais association

This soil unit is found throughout hills and mountains at elevations between 5,200 and 5,800 feet AMSL. The composition of this soil consists of approximately 60 percent Bucan and similar soils, and 20 percent Malpais and similar soils. The Bucan series is found on slopes from 15 to 30 percent, is classified as being well drained, and the depth to the water table is more than 80 inches. The Malpais series is found on slopes from 50 to 75 percent, is classified as being well drained, and the depth to the water table is more than 80 inches. Neither soil series experiences any flooding.

CF-Cherry Spring-Berning association

This soil unit occurs on fan remnants at elevations between 5,100 and 5,400 feet AMSL. The composition of this soil is approximately 70 percent Cherry Spring and similar soils, and 20 percent Berning and similar soils. The Cherry Spring series is found on slopes from two to eight percent, is classified as being well drained, and the depth to the water table is more than 80 inches. The Berning series is found on slopes from 15 to 30 percent, is classified as being well drained, and the depth to the water table is more than 80 inches. Neither of these soil series experience any flooding.

CH-Cherry Spring-Cortez-Tomera association

This soil unit occurs on fan remnants at elevations between 4,800 and 5,200 feet AMSL. The composition of this soil is approximately 40 percent Cherry Spring and similar soils, 20 percent Tomera and similar soils, and 20 percent Cortez and similar soils. The Cherry Spring series is found on slopes from two to eight percent, is classified as being well drained, and the depth to the water table is more than 80 inches. The Cortez series is found on slopes from two to eight percent, is classified as being well drained, and the depth to the water table is more than 80 inches. The Tomera series is found on slopes from two to eight percent, is classified as being well drained, and the depth to the water table is more than 80 inches. None of these soil series experiences any flooding.

CK-Cherry Spring-Orovada association

This soil unit is found on fan remnants and inset fans at elevations between 4,800 and 5,200 feet AMSL. The composition of this soil type is approximately 60 percent Cherry Spring and similar soils, and 20 percent Orovada and similar soils. The Cherry Spring series is found on slopes from two to eight percent, is classified as being well drained, and the depth to the water table is more than 80 inches. The Orovada series is found on slopes from four to 15 percent, is classified as being well drained, and the depth to the water table is more than 80 inches. Both the Cherry Spring and Orovada series do not experience any flooding.

DM-Donna-Simon association

This soil unit occurs on fan remnants at elevations between 5,800 and 6,200 feet AMSL. The composition of this soil is approximately 60 percent Donna and similar soils, and 20 percent Simon and similar soils. The Donna series is found on slopes from two to eight percent, is classified as being well drained, and the depth to the water table is more than 80 inches. The Simon series is found on slopes from two to eight percent slopes, is classified as being well drained, and the depth to the water table is more than 80 inches. Neither of these soil series experiences any flooding.

Fm--Four Star loam, drained

This soil unit is found in flood plains at elevations between 4,700 and 5,200 feet AMSL. The composition of this soil is approximately 95 percent Four Star and similar soils. This soil is found on slopes from zero to two percent, is classified as being poorly drained, and the depth to bedrock is more than 80 inches. The frequency of flooding for this soil is occasional.

OSB--Orovada gravelly fine sandy loam, 2 to 4 percent slopes

This soil unit is found on inset fans and flood plains at elevations between 4,700 and 5,200 feet AMSL. The composition of this soil is approximately 95 percent Orovada and similar soils, with five percent minor inclusions. This soil is found on slopes from two to four percent, is classified as being well drained, and the depth to bedrock is more than 80 inches. This soil does not experience any flooding.

OU--Orovada-Humdun association

This soil unit occurs on inset fans, hills, and mountains at elevations between 4,900 and 5,300 feet AMSL. The composition of this soil is approximately 50 percent Orovada and similar soils, 20 percent Humdun and similar soils, and 15 percent Puett and similar soils. The Orovada series is found on slopes from four to 15 percent, is classified as being well drained, and the depth to the water table is more than 80 inches. The Humdun series is found on slopes from 15 to 30 percent, is classified as being well drained, and the depth to the water table is more than 80 inches. The Puett series is found on slopes from 15 to 30 percent, is classified as being well drained, and the depth to the water table is more than 80 inches. None of these soil series experiences any flooding.

OV--Orovada-Puett association

This soil unit is found in inset fans and hills at elevations between 5,000 and 5,300 feet AMSL. The composition of this soil consists of approximately 50 percent Orovada and similar soils, and 35 percent Puett and similar soils. The Orovada series is found on slopes from four to 15 percent, is classified as being well drained, and the depth to the water table is more than 80 inches. The Puett series is found on slopes from 15 to 30 percent, is classified as being well drained, and the depth to the water table is more than 80 inches. Neither soil series experiences flooding.

Od--Ocala silt loam, drained, slightly saline

This soil unit is found in flood plains at elevations between 4,500 and 4,700 feet AMSL. The composition of this soil is 100 percent Ocala and similar soils. This soil is found on slopes from zero to one percent, is classified as being somewhat poorly drained, and the depth to the water table is about 42 to 60 inches. The frequency of flooding of this soil is rare.

OtA–Orovada silt loam, drained, slightly saline

This soil unit is found on inset fans at elevations between 4,800 and 5,600 feet AMSL. The composition of this soil is 100 percent Orovada and similar soils. This soil is found on slopes from zero to two percent, is classified as being well drained, and the depth to the water table is more than 80 inches. This soil does not experience any flooding.

PC–Pie Creek-Susie Creek association

This soil unit occurs throughout hills and mountains at elevations between 5,500 and 6,300 feet AMSL. The composition of this soil is approximately 40 percent Pie Creek and similar soils, 20 percent Toeja and similar soils, 20 percent Susie Creek and similar soils, and five percent minor inclusions. The Pie Creek series is found on slopes from 15 to 30 percent, is classified as being well drained, and the depth to the water table is more than 80 inches. The Susie Creek series is found on slopes from four to 15 percent, is classified as being well drained, and the depth to the water table is more than 80 inches. The Toeja series is found on slopes from 15 to 30 percent, is classified as being well drained, and the depth to the water table is more than 80 inches. None of these soil series experiences any flooding.

SD–Slaven-Mascamp association

This soil unit is found throughout mountains at elevations between 5,500 and 6,500 feet AMSL. The composition of the soil consists of approximately 70 percent Slaven and similar soils, 20 percent Mascamp and similar soils, and 10 percent minor inclusions. The Slaven series is found on slopes from 15 to 30 percent, is classified as being well drained, and the depth to the water table is more than 80 inches. The Mascamp series is found on slopes from 30 to 50 percent slopes, is classified as well drained, and the depth to the water table is more than 80 inches. Neither of these soil series experiences any flooding.

SR–Stampede-Donna association

This soil unit is found on fan remnants at elevations between 5,500 and 6,200 feet AMSL. The composition of this soil consists of approximately 40 percent Donna and similar soils, and 40 percent Stampede and similar soils. The Stampede series is found on slopes from four to 15 percent, is classified as being well drained, and the depth to the water table is more than 80 inches. The Donna series is found on slopes from two to eight percent, is classified as being well drained, and the depth to the water table is more than 80 inches. Neither of these soil series experiences any flooding.

SU–Susie Creek-Pattani association

This soil unit is found throughout hills and mountains at elevations between 5,300 and 6,000 feet AMSL. The composition of this soil consists of approximately 40 percent Pattani and similar soils, and 40 percent Susie creek and similar soils. The Susie Creek series is found on slopes

from four to 15 percent, is classified as being well drained, and the depth to the water table is more than 80 inches. The Pattani series is found on slopes from four to 15 percent, is classified as being well drained, and the depth to the water table is more than 80 inches. Neither of these soil series experiences flooding.

SW-Susie Creek-Short Creek association

This soil unit is found in mountains and fan remnants at elevations between 5,500 and 6,200 feet AMSL. The composition of this soil is approximately 40 percent Susie Creek and similar soils, 20 percent Toeja and similar soils, 20 percent Short Creek and similar soils, and five percent minor inclusions. The Susie Creek series is found on slopes from four to 15 percent, is classified as being well drained, and the depth to the water table is more than 80 inches. The Short Creek series is found on slopes from 30 to 50 percent, is classified as being well drained, and the depth to the water table is more than 80 inches. The Toeja series is found on slopes from 15 to 30 percent, is classified as being well drained, and the depth to the water table is more than 80 inches. None of these soils experience flooding.

Wd-Welch loam, drained

This soil unit is found in flood plains at elevations between 4,800 and 6,000 feet AMSL. The composition of this soil consists of 95 percent Welch and similar soils, and four percent minor inclusions. The Welch series is found on slopes from zero to two percent, is classified as being somewhat poorly drained, and the depth to the water table is about 48 to 72 inches. This soil is frequently flooded.

WE-Welch-Bosco association

This soil unit is found in flood plains at elevations between 5,000 and 6,000 feet AMSL. This soil consists of approximately 70 percent Welch and similar soils, 20 percent Bosco and similar soils, and five percent minor inclusions. The Welch series is found on slopes from zero to two percent, is classified as being somewhat poorly drained, and the depth to the water table is about 48 to 72 inches. The Bosco series is found on slopes from zero to two percent, is classified as being somewhat excessively drained, and the depth to the water table is more than 80 inches. The Welch series experiences frequent flooding while the Bosco series experiences no flooding.

WIA-Wholan silt loam, 0 to 2 percent slopes

This soil unit is found in flood plains at elevations between 4,400 and 4,800 feet AMSL. The composition of this soil is 100 percent Wholan and similar soils. This soil is found on slopes from zero to two percent, is classified as being well drained, and the depth to the water table is more than 80 inches. The frequency of flooding on this soil is rare.

4.2 VEGETATION

The Southwest Regional Gap Analysis Program (SWReGAP) documented land cover types are presented on Figure 6. The SWReGAP is a national program administered by the USGS Biological Resources Discipline, aimed at documenting the distribution of plant communities and selected animal species. This data is then used to compare these distributions to land stewardship with the intention of promoting conservation by providing broad geographic information on biological diversity to resource managers, planners, and policy makers who can use the information to make informed decisions. According to this dataset, the most abundant communities that exist within the survey area are Inter-Mountain Basin Big Sagebrush Shrubland, Great Basins Xeric Mixed Sagebrush Shrubland, and recently mined or quarried habitat, all of which occur throughout the Great Basin. General descriptions of these vegetation communities are provided below.

Inter-Mountain Basins Big Sagebrush Shrubland

These shrublands are dominated by basin big sagebrush (*Artemisia tridentata* ssp. *tridentata*) and/or Wyoming big sagebrush (*Artemisia* ssp. *wyomingensis*), with occasional component shrubs such as rabbitbrush (*Chrysothamnus* spp.), antelope bitterbrush (*Purshia tridentata*), and winterfat (*Krascheninnikovia lanata*). Scattered greasewood (*Sarcobatus vermiculatus*) and saltbush (*Atriplex* spp.) may be present in some stands. Rubber rabbitbrush (*Ericameria nauseosa*) or yellow rabbitbrush (*Chrysothamnus viscidiflorus*) may codominate disturbed stands. Perennial herbaceous components typically contribute less than 25 percent vegetative cover. Common graminoid species include Indian ricegrass (*Achnatherum hymenoides*), blue grama (*Bouteloua gracilis*), Geyer's sedge (*Carex geyeri*), thickspike wheatgrass (*Elymus lanceolatus*), Idaho fescue (*Festuca idahoensis*), Thurber's fescue (*Festuca thurberi*), needle and thread (*Hesperostipa comata*), basin wildrye (*Leymus cinereus*), James' galleta (*Pleuraphis jamesii*), western wheatgrass (*Pascopyrum smithii*), Sandberg bluegrass (*Poa secunda*), or bluebunch wheatgrass (*Pseudoroegneria spicata*). Sage-grouse (*Centrocercus* spp.) is an indicator of a healthy sagebrush shrubland (CNHP, 2005).

Great Basins Xeric Mixed Sagebrush Shrubland

This ecological system occurs in the Great Basin on dry flats and plains, alluvial fans, rolling hills, rocky hillslopes, saddles, and ridges at elevations between 1,000 and 2,600 meters. Sites are dry, often exposed to desiccating winds, with typically shallow, rocky non-saline soils. Shrublands are dominated by black sagebrush (*Artemisia nova*) at mid and low elevations, little sagebrush (*Artemisia arbuscula*) (higher elevation) and may be codominated by Wyoming big sagebrush or yellow rabbitbrush. Other shrubs that may be present include shadscale saltbush (*Atriplex confertifolia*), mormon tea (*Ephedra* spp.), rabbitbrush (*Ericameria* spp.), spiny hopsage (*Grayia spinosa*), Shockley's desert-thorn (*Lyceum shockleyi*), bud sagebrush (*Picrothamnus desertorum*), greasewood, and horsebrush (*Tetradymia* spp.). The herbaceous

layer is likely sparse and composed of perennial bunch grasses such as Indian ricegrass, desert needlegrass (*Achnatherum speciosum*), Thurber's needlegrass (*Achnatherum thurberianum*), squirreltail (*Elymus elymoides*), or Sandberg bluegrass (NatureServe, 2005).

Recently Mined or Quarried

This habitat type is generally characterized by a preponderance of annual, highly competitive species that are the first to colonize bare and disturbed soils. Commonly observed exotic annuals include filaree (*Erodium cicutarium*), tumble mustard (*Thelypodopsis* Rydb), and cheatgrass (*Bromus tectorum*), with flixweed tansymustard (*Descurainia sophia*), Russian thistle (*Salsola* sp.), and yard knotweed (*Polygonum aviculare*) also occasionally present. Native species that occupy this niche include birdnest buckwheat (*Eriogonum nidularium*), bristly fiddleneck (*Amsinckia tessellata*), and spiny skeletonweed (*Stephanomeria spinosa*). Additional herbaceous colonizers include Nevada sumpweed (*Chorisiva nevadensis*) and common horehound (*Marrubium vulgare*); with native shrubs including rubber rabbitbrush and sagebrush species also observed colonizing these habitats. Two state of Nevada noxious weeds, tall whitetop (*Lepidium latifolium*) and salt cedar (*Tamarix* sp.) also frequently occur in this habitat type.

4.3 HYDROLOGY

Surface water within the survey area consists of three perennial drainages, one intermittent drainage, and numerous ephemeral drainages that convey storm water and snowmelt runoff. The annual average precipitation is approximately 9.89 inches. The annual average precipitation for the year preceding the survey effort was approximately 7.42 inches which is slightly drier than normal. The general direction of surface water in the survey area is southeast, but more specifically, towards Maggie Creek. All drainages in the survey area flow into either Maggie Creek or Mary's Creek, both of which are jurisdictional and connect to the Humboldt River.

4.4 DRAINAGE INVENTORY

The geographic extent of streams, including ephemeral drainages, is determined by the presence of an OHWM. ACOE regulations define OHWM at 33 CFR 328.3(e), which states: "The term *ordinary high water mark* means that line on the shore established by the fluctuations of water and indicated by physical characteristics such as a clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas." Most common characteristics used in this survey to identify OHWM were the absence or lack of vegetation, sediment sorting, changes in sediment texture, the presence of a bed and bank, and flowing water.

The USGS topographic map for the survey area shows all or portions of four USGS-recognized drainages (Figure 4B). Maggie Creek, James Creek, Drainage 19, and Drainage 49 were all

conveying surface water within the survey area at the time of the survey. Areas that have been disturbed by mining activities have been noted.

The drainage inventory of the survey area is included in Table 2. Displayed in the table are determinations of the length and average width of the drainage along portions where OHWM indicators are present within the survey area. Photographs documenting these findings are located in Appendix A. Arid West Ephemeral and Intermittent Streams OHWM Datasheets for drainages within the survey area are located in Appendix B. The datasheets are organized in sequential order from DP-1 through DP-76. Characteristics of the drainages are discussed further below and shown on Figures 7 through 17.

Drainages or portions of drainages, that did not show evidence of an OHWM were photographed and documented as well. However, a datasheet was not filled out for data points that did not exhibit an OHWM. Several of the drainages that would have historically flowed through the mine's footprint either no longer exist, or have been impacted to some extent by existing mining disturbance. Data points were not collected on drainages or portions of drainages, which either no longer exist or were unnecessary to visit due to sufficient data being collected further downgradient through the drainage network. These drainages were omitted from the drainage inventory and are not included in Table 2.

Table 2 Drainage Inventory

Drainage Number or Name	Length of Drainage with OHWM Indicators ¹ (feet)	Average Width (feet)	Acres of Drainage With OHWM Indicators	Data Point Number(s)	Figure Number(s)	Photographs
Drainage 1	0	-	-	DP-1	7	A1
Drainage 2	0	-	-	DP-2	7	A2
Drainage 3	0	-	-	DP-3	7	A3
Drainage 4	0	-	-	DP-4	7	A4
Drainage 5	0	-	-	DP-5	7, 8	A5
Drainage 6	0	-	-	DP-6	7, 8	A6
Drainage 7	0	-	-	DP-7	8	A7
Drainage 8	0	-	-	DP-8	8	A8
Drainage 9	0	-	-	DP-9	8	A9
Drainage 10	0	-	-	DP-10	8	A10
Drainage 11	0	-	-	DP-11	8	A11
Drainage 12	0	-	-	DP-12	8, 9	A12
Drainage 13	0	-	-	DP-13	8, 9	A13
Drainage 14	4,828	2.5	0.28	DP-14a – DP-14c	9, 11	A14-1 – A14-3
Drainage 15	0	-	-	DP-15	9	A15
Drainage 16	0	-	-	DP-16	9	A16

Drainage Number or Name	Length of Drainage with OHWM Indicators ¹ (feet)	Average Width (feet)	Acres of Drainage With OHWM Indicators	Data Point Number(s)	Figure Number(s)	Photographs
Soap Creek (Drainage 17)	0	-	-	DP-17a & DP-17b	9, 11	A17-1 & A17-2
Drainage 19	0	-	-	DP-19	9, 11	A19
Drainage 21	0	-	-	DP-21	9	A21
Drainage 22	0	-	-	DP-22	11	A22
Drainage 23	0	-	-	DP-23	11	A23-1 & A23-2
Drainage 24	0	-	-	DP-24	11	A24
Maggie Creek (Drainage 25)	36,066	14.3	11.84	DP-25a – DP25e	9, 11, 12, 14, 17	A25-1 – A25-5
Drainage 26	0	-	-	DP-26a – DP-26d	10, 12	A26-1 – A26-3
Drainage 28	0	-	-	DP-28a & DP-28b	10	A28-1 & A28-2
Drainage 29	0	-	-	DP-29a & DP-29b	10, 12	A29-1 & A29-2
Drainage 30	0	-	-	DP-30a & DP-30b	12, 14	A30-1 & A30-2
Drainage 31	0	-	-	DP-31	9, 11	A31
Drainage 32	0	-	-	DP-32	9, 11	A32
Drainage 33	0	-	-	DP-33a – DP-33c	10, 12	A33-1 – A33-3
Drainage 34	0	-	-	DP-34	10	A34
Drainage 35	0	-	-	DP-35	10, 12	A35
Drainage 36	0	-	-	DP-36a & DP-36b	10, 12	A36-1 & A36-2
Drainage 37	0	-	-	DP-37a – DP-37b	10, 12	A37-1 & A37-2
Drainage 38	0	-	-	DP-38	10, 12	A38
Drainage 39	0	-	-	DP-39	10, 12	A39
Drainage 40	0	-	-	DP-40	10, 12	A40
Drainage 41	0	-	-	DP-41	10	A41
Drainage 42	0	-	-	DP-42	11, 12, 13	A42-1 & A42-2
Drainage 44	0	-	-	DP-44	11	A44
James Creek/James Creek Diversion (Drainage 46)	34,960	3.3	2.65	DP-46a – DP-46d	13, 14	A46-1 – A46-4
Drainage 47	0	-	-	DP-47	13	A47
Drainage 49	781	1.0	0.02	DP-49	13	A49
Drainage 50	0	-	-	DP-50	13	A50
Drainage 54	0	-	-	DP-54	12	A54
Drainage 55	0	-	-	DP-55	12	A55
Drainage 56	0	-	-	DP-56	12	A56
Drainage 57	0	-	-	DP-57	14	A57
Drainage 58	0	-	-	DP-58	14	A58
Drainage 59	0	-	-	DP-59	14	A59
Drainage 60	0	-	-	DP-60	13, 14	A60
Drainage 64	0	-	-	DP-64	14, 16	A64

Drainage Number or Name	Length of Drainage with OHWM Indicators ¹ (feet)	Average Width (feet)	Acres of Drainage With OHWM Indicators	Data Point Number(s)	Figure Number(s)	Photographs
Drainage 65	0	-	-	DP-65	16	A65
Drainage 68	0	-	-	DP-68	13, 15	A68
Drainage 69	0	-	-	DP-69	15	A69
Drainage 71	0	-	-	DP-71	13	A71
Drainage 72	0	-	-	DP-72a & DP-72b	15, 16	A72-1 & A72-2
Mary's Creek (Drainage 73)	11,725	5.0	1.35	DP-73a – DP73d	15, 16, 17	A73-1 – A73-4
Drainage 74	0	-	-	DP-74	15	A74
Drainage 75	0	-	-	DP-75	16	A75
Drainage 76	0	-	-	DP-76	16, 17	A76

¹This is the length of the drainage within the survey.

Drainages 1-13

Drainages 1 through 13 all flow through the northern haul road, connecting the mine's extraction areas to the processing facilities which are located approximately six miles northwest of the mine's pits (Figures 7 and 8). These drainages are all ephemeral, flowing east towards Maggie Creek. The mine's storm water system discharges the run-off from spray trucks and precipitation events into sumps located within or adjacent to these drainages.

Drainages 1 through 13 all exhibit upland vegetation inside and around the channel, with little evidence that water is conveyed through these waterways (Photos A1 through A13). Subsequently, these drainages did not meet the technical criteria for jurisdictional drainages. Therefore, these drainages are considered to be non-jurisdictional and are not subject to regulation under the Clean Water Act.

Drainage 14

Drainage 14 enters the survey area on the western edge of the project boundary, travels for approximately 4,000 feet, exits the survey area, travels for another 7,200 feet and re-enters the survey area along the northern haul road (Figures 9 and 11). The drainage is intermittent, originating at a spring source located outside of the survey area upgradient from where the drainage enters the survey area. A cattle pond has been installed, capturing some of the water being discharged by the spring. The water that leaves this cattle pond flows through Drainage 14.

Drainage 14 was conveying water in the upper portion of the drainage, near the cattle pond, at the time of the survey (Photo A14-1). Flow leaving the cattle pond was less than one cubic foot per second. The channel has been incised and is being colonized by a variety of willows and

other riparian vegetation. However, the channel stops conveying water approximately 2,000 feet from the point where it enters the survey area, as the water infiltrates the ground surface and contributes to the aquifer system below.

OHWI indicators along Drainage 14 persist to DP-14b (Figure 9), where the drainage exits the survey area. Here, the drainage exhibits a minor bed and bank, the absence of vegetation, some sediment sorting, and scour (Photo A14-2). However, these OHWI indicators do not continue downgradient to DP-14c (Figure 14), where the drainage re-enters the survey area at the northern haul road. Here, the channel has been colonized by the surrounding upland vegetation and evidence of sediment sorting begins to dissipate (Photo A14-3). Since Drainage 14 does not connect to any jurisdictional drainage before losing these OHWI indicators, it is considered to be isolated. Therefore, Drainage 14 is considered to be non-jurisdictional and is not subject to regulation under the Clean Water Act.

Drainages 15 & 16

Much like Drainages 1 through 13, Drainages 15 and 16 are ephemeral and flow northeast through the mine's northern haul road toward Maggie Creek (Figure 9). Neither drainage exhibits any evidence of an OHWI and both were completely colonized by the surrounding upland vegetation (Photos A15 and A16). Therefore, these drainages are considered to be non-jurisdictional and are not subject to regulation under the Clean Water Act.

Soap Creek (Drainage 17)

Soap Creek originates in the Tuscarora Mountains to the west of the survey area, travels for approximately 11,000 feet, exits the survey area, travels an additional 2,500 feet, and re-enters the survey area at the northern haul road (Figures 9 and 11). The USGS topographic map of the area shows a spring occurring along this drainage; however, no spring was located. This area has been disturbed by mining exploration, and is currently being developed for extraction. Soap Creek did not exhibit any OHWI indicators in its upper reach near the USGS-recognized spring (Photo A17-1), nor did it exhibit any OHWI indicators where it re-enters the survey area at the northern haul road (Photo A17-2). In both locations, the channel was colonized with upland vegetation. Therefore, Soap Creek is considered to be non-jurisdictional and is not subject to regulation under the Clean Water Act.

Drainage 19

Drainage 19 originates at spring sources in the Tuscarora Mountains and enters the survey area in the northwest portion of the survey area (Figure 9). It is ephemeral and flows northwest, converging with Drainage 14 outside of the survey area. Drainage 19 did not exhibit any OHWI indicators and was completely colonized with the surrounding upland vegetation (Photo

A19). Therefore, Drainage 19 is considered to be non-jurisdictional and is not subject to regulation under the Clean Water Act.

Drainages 21-24

Drainages 21 through 24 are all located in the mine's current exploration and expansion area (Figure 11). These drainages all originate in this expansion area and none exhibit any OHWM indicators (Photos A21 through A24). These channels were all colonized with upland vegetation. The convergence of Drainages 22 and 23 no longer exist as an open pit has been constructed at this location (Photo A23-2), and Drainage 24 is now used as a haul road (Photo A24). Therefore, Drainages 21 through 24 are considered to be non-jurisdictional and are not subject to regulation under the Clean Water Act.

Note: the aerial photography used in the figures for this report does not reflect the most recent disturbance that has been made within the survey area. Specifically, the open pit that now exists at the convergence of Drainages 22 and 23 is not shown on the drainage inventory figures.

Maggie Creek (Drainage 25)

Maggie Creek is the primary receiving waterway for all surface water being discharged between the Tuscarora Mountains and the Independence Mountains, from Carlin to Highway 266. The headwaters of Maggie Creek originate where these two mountain ranges join together approximately 30 miles north of the survey area. Maggie Creek is a perennial waterway and supports several emergent wetland communities as it travels south from its origins towards the Humboldt River. USGS gage data is available for Maggie Creek. Table 3 displays the average monthly discharge of Maggie Creek at Carlin (USGS Gage Station 10322000).

Table 3 Average Monthly Discharge of Maggie Creek (Period of Record: 1913-2011)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Average Monthly Discharge (cfs)	21	28	64	107	94	29	12	8.5	7.3	11	15	15

cfs = cubic feet per second
USGS, 2012a

Maggie Creek enters the survey area at the northern edge of the project area boundary (Photo A25-1 and Figure 9) and travels southeast for approximately five miles before exiting the survey area (Figure 14). The middle portion of Maggie Creek, inside the survey area, was not flowing during the survey. Groundwater is being pumped from the area immediately north of Maggie Creek in the northeast portion of the survey area. This water can either be conveyed through Newmont's cooling towers prior to discharge back into Maggie Creek or may be stored in Newmont's reservoir for later discharge to the creek. The discharge point for this water into Maggie Creek is located near DP-25b (Figure 12). From there, Maggie Creek maintains flowing

water until it converges with the Humboldt River at DP-25e (Photo A25-5 and Figure 17). Since Maggie Creek has a direct connection with the Humboldt River, it is considered to be jurisdictional WOUS and is subject to regulation under the Clean Water Act.

Drainages 26 and 28-30

Drainages 26, 28, 29, and 30 are all located in the northeastern corner of the survey area, and all originate in the Independence Mountains (Figures 10 and 12). They all flow south towards Maggie Creek; however, none of these drainages exhibits an OHWM (Photos A26-A30), and all of these channels were colonized with upland vegetation. A reservoir has been installed along Drainage 26, severing the connection that Drainage 26 historically had to Maggie Creek. These drainages are considered to be non-jurisdictional and are not subject to regulation under the Clean Water Act.

Drainages 31 and 32

Drainages 31 and 32 are located near the northern edge of the survey area boundary, near the location where Maggie Creek enters the survey area (Figure 9). Access to these sites was limited. Both drainages were colonized with upland vegetation, and neither drainage exhibited evidence of an OHWM (Photos A31 and A32). Therefore, Drainages 31 and 32 are considered to be non-jurisdictional and are not subject to regulation under the Clean Water Act.

Drainages 33-41

Drainages 33 through 41 are located in the northeast portion of the survey area (Figures 10 and 12). All of these drainages originate in the Independence Mountains and flow south towards Maggie Creek. However, none of these drainages exhibit any evidence of an OHWM, and all channels were colonized with upland vegetation (Photos A33-A40). Therefore, Drainages 33 through 41 are considered to be non-jurisdictional and are not subject to regulation under the Clean Water Act.

Drainages 42 & 44

Drainages 42 and 44 are located in the northern portion of the survey area near the main road to Newmont's offices at the mine (Figures 11 and 12). Neither Drainage 42, nor Drainage 44, exhibited an OHWM, and both were colonized with upland vegetation (Photos A42 and A44). Therefore, Drainages 42 and 44 are considered to be non-jurisdictional and are not subject to regulation under the Clean Water Act.

James Creek/James Creek Diversion (Drainage 46)

James Creek enters the survey area on the western edge of the project boundary and flows perennially (Figures 13 and 14). Originating in the Tuscarora Mountains, James Creek flows east into the survey area and receives additional surface water from Drainage 49 as well as

several spring sources, including a spring complex (Wetland 2) located adjacent to the drainage. James Creek travels for approximately 5,000 feet within the survey area before it runs into the mine's footprint. An earthen dam was constructed across the drainage (James Creek Diversion Dam Permit #J-218) and acts as an impoundment to the drainage, causing the water in James Creek to inundate the surrounding area and form a substantial wetland (Wetland 1).

An overflow bypass pipe has been installed in the wetland formed by the impoundment along James Creek. This pipe draws water in and re-directs it to an engineered diversion channel (James Creek Diversion) through the mine, where it eventually exits near DP-46b (Photo A46-2). Once the James Creek Diversion has left the mine's footprint, it is directed into the relic channel of Drainage 60 (Figure 14). From there, it continues to flow in the relic channel of Drainage 60 until its convergence with Maggie Creek. For the purposes of this report, once the James Creek Diversion drains into the historic Drainage 60 channel, it is referred to as Drainage 46 (Figure 14).

No water was being conveyed in the James Creek Diversion (Figure 14) at the time of the survey. However, an OHWM was present and persists throughout the length of the drainage until it converges with Maggie Creek (Drainage 25) (Photo A46-4). OHWM indicators that were observed included the presence of a bed and bank, sediment sorting, and the absence of vegetation. Therefore, James Creek, including the James Creek Diversion, is considered to be jurisdictional WOUS and is subject to regulation under the Clean Water Act. The stream length and jurisdictional acreage calculated for James Creek includes the length of the man-made ditch through the mine as well as the remaining length of Drainage 46.

Drainage 47

Drainage 47 is located along the western edge of the survey area boundary, near James Creek (Drainage 46) (Figure 13). This drainage did not exhibit any OHWM indicators, and the channel was colonized with upland vegetation (Photo A47). Therefore, this drainage is considered to be non-jurisdictional and is not subject to regulation under the Clean Water Act.

Drainage 49

Drainage 49 enters the survey area along the western edge of the survey area boundary, near James Creek (Figure 13). Originating in the headwaters south of Mary's Mountain, Drainage 49 flows perennially and heads northeast into the project area, converging with James Creek (Drainage 46). Flowing water was observed in the drainage at the time of the survey (Photo A49). Since Drainage 49 shares a connection with James Creek, a jurisdictional drainage, it is considered to be jurisdictional and is subject to regulation under the Clean Water Act.

Drainage 50

Drainage 50 is located in the western portion of the survey area, near James Creek (Drainage 46) and Wetland 1 (Figure 13). The headwaters of Drainage 50 have been disturbed by mining activities. The drainage flows south and converges with James Creek near Wetland 1. However, Drainage 50 did not exhibit any OHWM indicators, and the channel was colonized with upland vegetation (Photo A50). Therefore, Drainage 50 is considered to be non-jurisdictional and is not subject to regulation under the Clean Water Act.

Drainages 54 and 55

Drainages 54 and 55 are located in the central portion of the survey area, near the main road that leads to Newmont's mine offices from Highway 766 (Figure 12). Most of Drainage 54, and some of Drainage 55, has been disturbed by the construction of Newmont's offices and the road that leads to them. Neither Drainage 54, nor Drainage 55, exhibited an OHWM, and both channels were colonized with upland vegetation. Drainages 54 and 55 are considered to be non-jurisdictional and are not subject to regulation under the Clean Water Act.

Drainages 56-59

Drainages 56 through 59 are located along Highway 766 in the eastern portion of the survey area (Figures 12 and 14). The headwaters of Drainages 56 and 57 have been heavily disturbed by the mine's footprint, while Drainages 58 and 59 have received minimal disturbance. None of the drainages; however, exhibited evidence of an OHWM, and all channels were colonized with upland vegetation. Therefore, Drainages 56 through 59 are considered to be non-jurisdictional and are not subject to regulation under the Clean Water Act.

Drainage 60

Drainage 60 enters the survey area along the western edge of the project boundary near James Creek (Figure 13). Originating to the east of Mary's Mountain, Drainage 60 would naturally head east through the mine's footprint. However, Newmont has constructed a storm water ditch along the southwest corner of the mine that intercepts all storm water from Drainages 60, 68, 69, and 71 (Figures 13 and 15) and re-directs it around the mine's facilities, eventually discharging it into Drainage 72, south of the mine. The historic channel of Drainage 60, after exiting the mine, effectively becomes the James Creek Diversion (Figure 14), which is a jurisdictional drainage. Prior to converging with James Creek, Drainage 60 does not exhibit any evidence of an OHWM, and the channel is colonized with upland vegetation (Photo A60). Therefore, Drainage 60 is considered to be non-jurisdictional and is not subject to regulation under the Clean Water Act.

Drainages 64 & 65

Drainages 64 and 65 are located near the central portion of the survey area (Figures 14 and 16). The headwaters of both drainages have been disturbed by the mine, and they flow east towards

Highway 766. Drainage 65 converges with Drainage 64 southwest of the mine's open pits and processing facilities. Drainage 64 continues on to converge with the James Creek Diversion outside the survey area. Neither Drainage 64, nor Drainage 65, exhibit an OHWM, and both channels are colonized with upland vegetation (Photos A64 and A65). Therefore, these drainages are both considered to be non-jurisdictional and are not subject to regulation under the Clean Water Act.

Drainages 68, 69, and 71

Drainages 68, 69, and 71 are located along the western edge of the survey area (Figures 13 and 15). Drainages 68 and 69 converge near the survey area boundary. All three drainages originate east of Mary's Mountain, and flow east into the mine area. However, none of these drainages exhibits an OHWM, and all three are colonized with upland vegetation (Photos A68, A69, and A71). Therefore, Drainages 68, 69, and 71 are considered to be non-jurisdictional and are not subject to regulation under the Clean Water Act. Storm water that could potentially be conveyed by these drainages is intercepted by the storm water ditch along the southwest corner of the mine and re-routed into Drainage 72.

Drainage 72

Drainage 72 is located in the southern portion of the survey area (Figures 14, 15, and 16). Originating southeast of Mary's Mountain, Drainage 72 heads east through the survey area and eventually converges with the James Creek Diversion outside of the survey area. Drainage 72 is the receiving waterway of the storm water ditch installed around the southwest corner of the mine. However, despite receiving storm water from the mine site, Drainage 72 does not exhibit an OHWM above (DP-72a; Photo A72-1) or below (DP-72b; Photo A72-2) the point where the storm water ditch empties into the drainage. Therefore, Drainage 72 is considered to be non-jurisdictional and is not subject to regulation under the Clean Water Act.

Mary's Creek (Drainage 73)

Mary's Creek enters the survey area along the southern edge of the project boundary (Figures 16 and 17). Mary's Creek originates to the west of Mary's Mountain, flows south for approximately 2.5 miles and turns east, wrapping around the southern side of Mary's Mountain, and continues heading northeast towards the survey area. No water was observed in Mary's Creek within the survey area, although the drainage is known to convey water further downgradient near its convergence with the Humboldt River. USGS gage data is available for Mary's Creek. Table 4 displays the average monthly discharge for Mary's Creek at Carlin (USGS Gage Station 10322150).

Table 4 Average Monthly Discharge of Mary's Creek (Period of Record: 1989-2011)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Average Monthly Discharge (cfs)	5.3	5.8	11	11	7.2	4.4	4.1	3.9	4.3	4.5	5.1	4.9

USGS, 2012b

Mary's Creek exhibits a low-flow channel, as well as an active floodplain. Where Mary's Creek enters the survey area, the low-flow channel and active floodplain are clearly defined. As Mary's Creek progresses through the survey area, the low-flow channel begins to braid, forming several low-flow channels within the active floodplain. Mary's Creek maintains an OHWM after leaving the survey area (Photos A73-3), and begins conveying water until its convergence with the Humboldt River (Photo A73-4). OHWM indicators observed along Mary's Creek include the presence of a bed and bank, the absence of vegetation, sediment sorting, and scour. Therefore, Mary's Creek is considered to be jurisdictional WOUS and is subject to regulation under the Clean Water Act.

Drainage 74

Drainage 74 enters the survey area near the southwest corner of the project boundary (Figure 15). It is ephemeral and flows southeast for approximately 1,800 feet within the project boundary before exiting the survey area. Upon exiting the project boundary, Drainage 74 travels for an additional 2,100 feet outside of the survey area before converging with Mary's Creek (Drainage 73). Drainage 74 did not exhibit an OHWM (Photo A74). Therefore, Drainage 74 is considered to be non-jurisdictional and is not subject to regulation under the Clean Water Act.

Drainage 75

Drainage 75 enters the survey area along the southern edge of the project boundary and travels east before converging with Mary's Creek (Figure 16). Drainage 75 did not exhibit an OHWM and the channel has been colonized with upland vegetation (Photo A75). Therefore, Drainage 75 is considered to be non-jurisdictional and is not subject to regulation under the Clean Water Act.

Drainage 76

Drainage 76 is located near the southeast corner of the survey area (Figure 16). Originating in this same area, the drainage heads east before eventually converging with Mary's Creek outside of the survey area. Drainage 76 did not exhibit an OHWM, and the channel has been colonized by upland vegetation (Photo A76). Therefore, Drainage 76 is considered to be non-jurisdictional and is not subject to regulation under the Clean Water Act.

4.5 WETLANDS

The USGS topographic map for the survey area identifies four springs occurring within the survey area. According to the USFWS National Wetland Inventory, there are no mapped

wetlands within the survey area; however, JBR identified four areas where wetland communities existed.

All wetlands that were inventoried during the field investigation are displayed in Table 5 and discussed in detail in the following sections. Appendix C contains the photographs of the wetlands and Appendix D contains the wetland determination data forms for each soil pit. These data forms are labeled P-1 through P-8.

Table 5 Wetlands Inventory

Wetland Number	Area (acres)	Data Form Numbers	Figure Number	Photograph(s)
1	6.35	P-1 & P-2	18	C1
2	0.12	P-3 & P-4	18	C2
3	0.02	P-5 & P-6	18	C3
4	0.22	P-7 & P-8	18	C4

Wetland 1

Wetland 1 is located on James Creek, where the drainage meets the mining footprint near the western edge of the project boundary (Figure 18). An earthen dam was constructed across the drainage (James Creek Diversion Dam Permit #J-218) causing the water in James Creek to back up and inundate the area (Photo C1). An overflow pipe has been installed in the wetland, drawing water in and re-routing it to an engineered diversion channel through the mine.

The hydrophytic vegetation at Wetland 1 consists of mint (*Mentha* sp.), Nebraska sedge (*Carex nebrascensis*), cattail (*Typha* L.), narrowleaf plantain (*Plantago lanceolata*), and American speedwell (*Veronica americana*). P-1 exhibited the hydrogen sulfide (A4) and the depleted below dark surface (A11) hydric soil indicators. The soil profile for P-1 is as follows: 0-8 inches below the ground surface was 100% 10 YR 2/1, and 9-18 inches was 100% 10 YR 2/2. Surface water was present at Wetland 1, and the soil column was completely saturated. Since Wetland 1 is located on James Creek, a jurisdictional drainage, Wetland 1 is subsequently considered to be jurisdictional WOUS and is subject to regulation under the Clean Water Act.

Wetland 2

Wetland 2 is located near the western edge of the project boundary where James Creek enters the survey area (Figure 18). This wetland is supported by a spring complex, with a total of five springs. Each spring discharges surface water, which all converge into a flowing stream that connects to James Creek (Photo C2).

The hydrophytic vegetation at Wetland 2 consists of arctic rush (*Juncus arcticus*), Nebraska sedge, watercress (*Nasturtium officinale*), and Nevada goldenrod (*Solidago spectabilis*). P-3

exhibited the loamy mucky mineral hydric soil indicator. The soil profile for P-3 is as follows: 0-1 inches below the ground surface was 100% 10 YR 3/1, 2-8 inches was 50% 10 YR 3/2 and 50% 10 YR 2/1 with redox features, and 8-10 inches was 100% 10 YR 4/2. Surface water was present at this wetland, and the soil column was completely saturated. Since Wetland 2 is located adjacent to and is hydrologically connected with James Creek, a jurisdictional drainage, it is also considered to be jurisdictional WOUS and is subject to regulation under the Clean Water Act.

Wetland 3

Wetland 3 is located in a slight depression on a hillside near the western edge of the project boundary (Figure 18). The wetland is supported by a USGS-recognized spring located in an area of what appear to be historic cattle ponds (Photo C3). Several minor depressions are located around Wetland 3 with some man-made ditches connecting some of them. However, after investigating these surrounding depressions, none of them successfully met the criteria to be classified as a wetland.

The hydrophytic vegetation at Wetland 3 consists of cattail, water hemlock (*Cicuta* L.), sheep sorrel (*Rumex acetosella* L.), American speedwell, and arctic rush, and Sandberg bluegrass. P-5 exhibited the black histic and hydrogen sulfide hydric soil indicators. The soil profile for P-5 is as follows: 0-8 inches below the ground surface was 100% 10 YR 2/1, and 8-19 inches was 100% 10 YR 2/1 with some roots. Surface water was present at this wetland, and the soil column was completely saturated. However, since Wetland 3 is not located adjacent to, and does not share any hydrologic connection with a nearby jurisdictional drainage, Wetland 3 is considered to be non-jurisdictional and is not subject to regulation under the Clean Water Act.

Wetland 4

Wetland 4 is located along Drainage 60, where the drainage meets the mine's footprint near the western edge of the project boundary (Figure 18). At this location, Drainage 60 is undefined and does not exhibit an OHWM. In fact, the wetland community seems to be supported solely by the run-off from a nearby water fill-up station used by the mine's water trucks for dust control. The constant supply of water from this station trickles down into the wetland and supports this community (Photo C4).

The hydrophytic vegetation at Wetland 4 consists of narrowleaf willow (*Salix exigua*), arctic rush, yellow sweetclover (*Melilotus indicus*), and Sandberg bluegrass. The soil profile for P-7 is as follows: 0-4 centimeters below the ground surface was 100% 10 YR 2/1 with muck, and 4 centimeters-17 inches was 100% 10 YR 5/4. P-7 exhibited the one centimeter muck hydric soil indicator. Surface water was present in parts of the wetland, and the soil column of P-7 was completely saturated. However, since Wetland 4 is not located adjacent to, and does not share

any hydrologic connection with a nearby drainage, this wetland is considered to be non-jurisdictional and is not subject to regulation under the Clean Water Act.

4.6 SIGNIFICANT NEXUS DETERMINATION

In accordance with Rapanos Guidance procedures for any stream and/or stream reach that does not have relatively permanent flow (more than 3 months a year), a significant nexus analysis must be conducted. Since Maggie Creek, James Creek, Drainage 49, and all connected wetlands (Wetlands 1 and 2) all flow on a relatively permanent basis, a significant nexus determination is not necessary to establish jurisdiction of these features. However, Mary's Creek does not flow on a relatively permanent basis, and does require a significant nexus determination to establish jurisdiction of this drainage.

A significant nexus analysis was conducted for Mary's Creek within the survey area. The determination is as follows:

Physical Integrity

Although Mary's Creek does not flow permanently throughout the entire length of the drainage, it does connect directly to the Humboldt River. Mary's Creek could potentially impact the flow characteristics, hydroperiod, and/or sediment load of the Humboldt River in the event of a significant precipitation event.

Chemical Integrity

Due to Mary's Creek sharing a connection to the Humboldt River, it is possible for pollutants to be delivered via this drainage. However, this would be very unlikely due to the fact that Newmont's facilities at the Greater Gold Quarry Project are designed and operated as zero-discharge facilities. In the occurrence of a significant precipitation event (greater than a 100-year event), various chemicals involved in mining activities could be conveyed through the survey area and potentially impact the chemical integrity of the Humboldt River.

Biological Integrity

Mining activities conducted within the survey area could potentially have a significant effect on the biological integrity of Mary's Creek. However, since all of Newmont's facilities at the Greater Gold Quarry Project are designed and operated as zero-discharge facilities, this occurrence would be very unlikely. Existing mining operations have not shown an impact to Mary's Creek. In the occurrence of a significant precipitation event (greater than a 100-year event), mining activities impacting Mary's Creek have the potential to affect the biological integrity of the Humboldt River.

Based on this information, a significant nexus between Mary's Creek and the Humboldt River does exist.

5.0 CONCLUSION

The survey area is located within two neighboring watersheds, the Maggie Creek Area (Basin Number 51) and the Mary's Creek Area (Basin Number 52), which together encompass approximately 292,480 acres (457 square miles) within the Upper Humboldt Basin (HUC Number 16040101) (Figure 4A). JBR investigated 61 drainages, of which 5 had the potential to be considered jurisdictional WOUS within the survey area during the surveys conducted in June and August. Additionally, JBR inventoried four wetlands within the survey area.

A total of 15.86 acres of jurisdictional drainages are present within the survey area.

The total acreage of jurisdictional wetlands in the survey area is 6.47 acres.

A grand total of 22.33 acres of ACOE jurisdictional features are present on the Greater Gold Quarry Project.

A summary of the total jurisdictional acreages from all drainages and wetlands located within the survey area is provided in Table 6. These jurisdictional acreages, as well as their locations within the survey area, are also provided on Figure 19a and Figure 19b.

Table 6 Summary of Drainages and Wetlands Surveyed

Drainage Number/Name	Wetland Number	Acres Jurisdictional Waters ¹	Flow Regime	Connection to Jurisdictional Drainage	Justification
Drainage 1	-	0	Ephemeral	No OHWM	This drainage did not exhibit an OHWM.
Drainage 2	-	0	Ephemeral	No OHWM	This drainage did not exhibit an OHWM.
Drainage 3	-	0	Ephemeral	No OHWM	This drainage did not exhibit an OHWM.
Drainage 4	-	0	Ephemeral	No OHWM	This drainage did not exhibit an OHWM.
Drainage 5	-	0	Ephemeral	No OHWM	This drainage did not exhibit an OHWM.
Drainage 6	-	0	Ephemeral	No OHWM	This drainage did not exhibit an OHWM.
Drainage 7	-	0	Ephemeral	No OHWM	This drainage did not exhibit an OHWM.
Drainage 8	-	0	Ephemeral	No OHWM	This drainage did not exhibit an OHWM.
Drainage 9	-	0	Ephemeral	No OHWM	This drainage did not exhibit an OHWM.
Drainage 10	-	0	Ephemeral	No OHWM	This drainage did not exhibit an OHWM.
Drainage 11	-	0	Ephemeral	No OHWM	This drainage did not exhibit an OHWM.
Drainage 12	-	0	Ephemeral	No OHWM	This drainage did not exhibit an OHWM.
Drainage 13	-	0	Ephemeral	No OHWM	This drainage did not exhibit an OHWM.
Drainage 14	-	0	Intermittent	Isolated	This drainage does not connect to a jurisdictional drainage.
Drainage 15	-	0	Ephemeral	No OHWM	This drainage did not exhibit an OHWM.
Drainage 16	-	0	Ephemeral	No OHWM	This drainage did not exhibit an OHWM.
Soap Creek (Drainage 17)	-	0	Ephemeral	No OHWM	This drainage did not exhibit an OHWM.
Drainage 19	-	0	Ephemeral	No OHWM	This drainage did not exhibit an OHWM.
Drainage 21	-	0	Ephemeral	No OHWM	This drainage did not exhibit an OHWM.
Drainage 22	-	0	Ephemeral	No OHWM	This drainage did not exhibit an OHWM.
Drainage 23	-	0	Ephemeral	No OHWM	This drainage did not exhibit an OHWM.
Drainage 24	-	0	Ephemeral	No OHWM	This drainage did not exhibit an OHWM.
Maggie Creek (Drainage 25)	-	11.84	Perennial	Connected	This drainage maintains flowing water and an OHWM through the survey area until it converges with the Humboldt River.
Drainage 26	-	0	Ephemeral	No OHWM	This drainage did not exhibit an OHWM.
Drainage 28	-	0	Ephemeral	No OHWM	This drainage did not exhibit an OHWM.
Drainage 29	-	0	Ephemeral	No OHWM	This drainage did not exhibit an OHWM.
Drainage 30	-	0	Ephemeral	No OHWM	This drainage did not exhibit an OHWM.

Drainage Number/Name	Wetland Number	Acres Jurisdictional Waters ¹	Flow Regime	Connection to Jurisdictional Drainage	Justification
Drainage 31	-	0	Ephemeral	No OHWM	This drainage did not exhibit an OHWM.
Drainage 32	-	0	Ephemeral	No OHWM	This drainage did not exhibit an OHWM.
Drainage 33	-	0	Ephemeral	No OHWM	This drainage did not exhibit an OHWM.
Drainage 34	-	0	Ephemeral	No OHWM	This drainage did not exhibit an OHWM.
Drainage 35	-	0	Ephemeral	No OHWM	This drainage did not exhibit an OHWM.
Drainage 36	-	0	Ephemeral	No OHWM	This drainage did not exhibit an OHWM.
Drainage 37	-	0	Ephemeral	No OHWM	This drainage did not exhibit an OHWM.
Drainage 38	-	0	Ephemeral	No OHWM	This drainage did not exhibit an OHWM.
Drainage 39	-	0	Ephemeral	No OHWM	This drainage did not exhibit an OHWM.
Drainage 40	-	0	Ephemeral	No OHWM	This drainage did not exhibit an OHWM.
Drainage 41	-	0	Ephemeral	No OHWM	This drainage did not exhibit an OHWM.
Drainage 42	-	0	Ephemeral	No OHWM	This drainage did not exhibit an OHWM.
Drainage 44	-	0	Ephemeral	No OHWM	This drainage did not exhibit an OHWM.
James Creek/James Creek Diversion (Drainage 46)	-	2.65	Perennial	Connected	This drainage maintains an OHWM throughout the survey area and connects directly to Maggie Creek, a jurisdictional drainage.
Drainage 47	-	0	Ephemeral	No OHWM	This drainage did not exhibit an OHWM.
Drainage 49	-	0.02	Perennial	Connected	This drainage maintains flowing water and connects directly to James Creek, a jurisdictional drainage.
Drainage 50	-	0	Ephemeral	No OHWM	This drainage did not exhibit an OHWM.
Drainage 54	-	0	Ephemeral	No OHWM	This drainage did not exhibit an OHWM.
Drainage 55	-	0	Ephemeral	No OHWM	This drainage did not exhibit an OHWM.
Drainage 56	-	0	Ephemeral	No OHWM	This drainage did not exhibit an OHWM.
Drainage 57	-	0	Ephemeral	No OHWM	This drainage did not exhibit an OHWM.
Drainage 58	-	0	Ephemeral	No OHWM	This drainage did not exhibit an OHWM.
Drainage 59	-	0	Ephemeral	No OHWM	This drainage did not exhibit an OHWM.
Drainage 60	-	0	Ephemeral	No OHWM	This drainage did not exhibit an OHWM.
Drainage 64	-	0	Ephemeral	No OHWM	This drainage did not exhibit an OHWM.
Drainage 65	-	0	Ephemeral	No OHWM	This drainage did not exhibit an OHWM.
Drainage 68	--	0	Ephemeral	No OHWM	This drainage did not exhibit an OHWM.
Drainage 69	-	0	Ephemeral	No OHWM	This drainage did not exhibit an OHWM.

Drainage Number/Name	Wetland Number	Acres Jurisdictional Waters ¹	Flow Regime	Connection to Jurisdictional Drainage	Justification
Drainage 71	-	0	Ephemeral	No OHWM	This drainage did not exhibit an OHWM.
Drainage 72	-	0	Ephemeral	No OHWM	This drainage did not exhibit an OHWM.
Mary's Creek (Drainage 73)	-	1.35	Ephemeral	Connected	This drainage maintains an OHWM through the survey area and connects directly to the Humboldt River.
Drainage 74	-	0	Ephemeral	No OHWM	This drainage did not exhibit an OHWM.
Drainage 75	-	0	Ephemeral	No OHWM	This drainage did not exhibit an OHWM.
Drainage 76	-	0	Ephemeral	No OHWM	This drainage did not exhibit an OHWM.
-	Wetland 1	6.35	-	Connected	This wetland is a part of James Creek and shares a direct surface connection with the jurisdictional drainage.
-	Wetland 2	0.12	-	Connected	This wetland shares a surface connection with, and contributes directly, to James Creek.
-	Wetland 3	0	-	Isolated	This wetland is not located adjacent to, and does not share a connection with, any jurisdictional drainage.
-	Wetland 4	0	-	Isolated	This wetland is not located adjacent to, and does not share a connection with, any jurisdictional drainage.
TOTAL		22.33			

¹This is the acreage of the drainage/wetland within the survey area

6.0 REFERENCES

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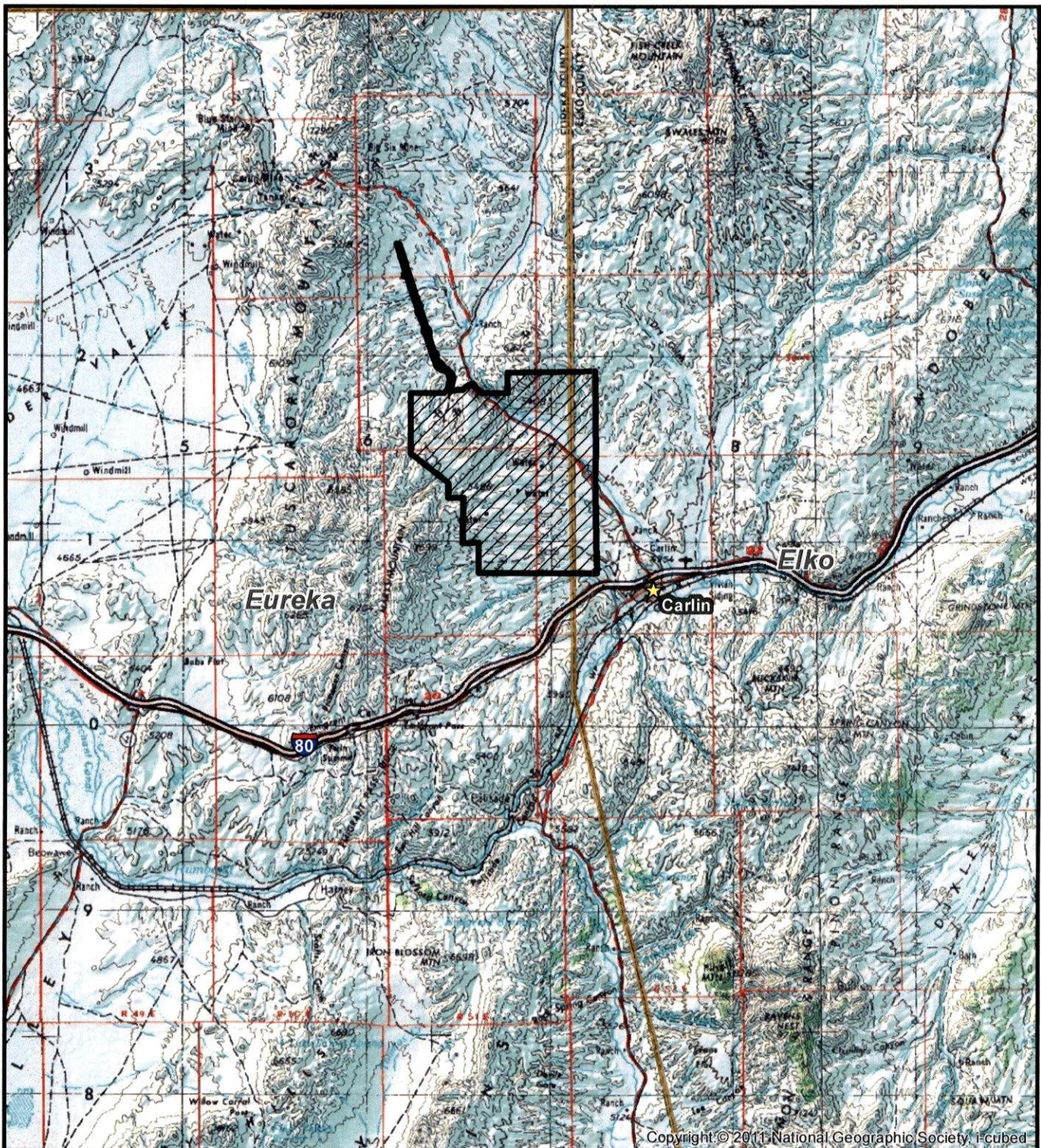
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<http://waterdata.usgs.gov/nv/nwis/current/?type=flow>

FIGURES

Path: M:\STATES\NV\Clients\Newmont\MXD\WOU\Figure_1_Project_Location.mxd



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BASE MAP: U.S. Topographic Map accessed at ArcGISOnline.com



Greater Gold Quarry PoO

0 1.25 2.5 5
Miles

N



NEWMONT
NORTH AMERICA

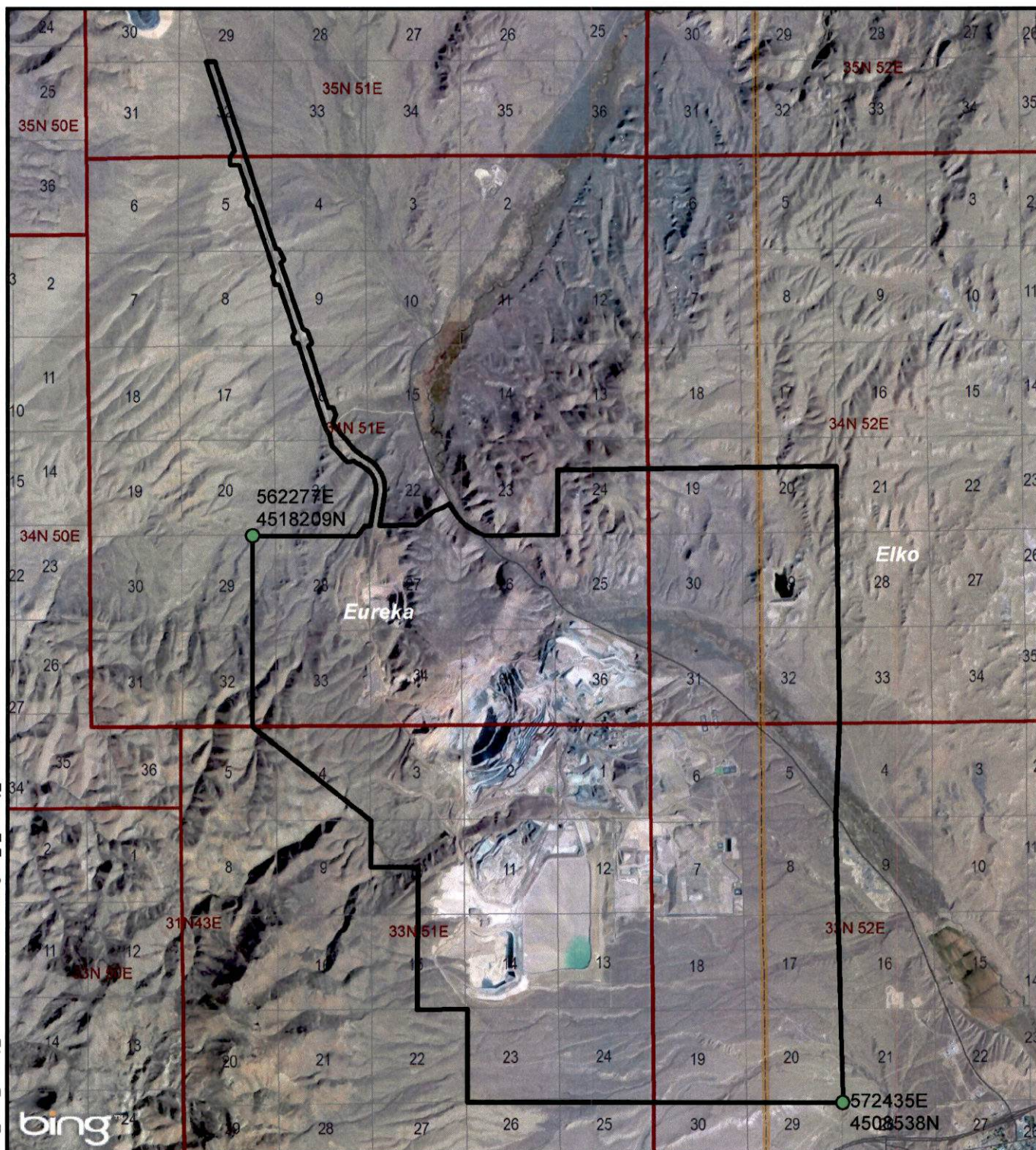
**GREATER GOLD
QUARRY PROJECT**

**FIGURE 1
PROJECT LOCATION**



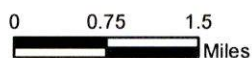
DRAWN BY	JCV	DATE DRAWN	11/15/2012
SCALE		1 in = 5 miles	

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 Greater Gold Quarry PoO
(22086 acres)



GREATER GOLD
QUARRY PROJECT

FIGURE 2
SURVEY AREA



DRAWN BY

JCV

DATE
DRAWN

11/15/2012

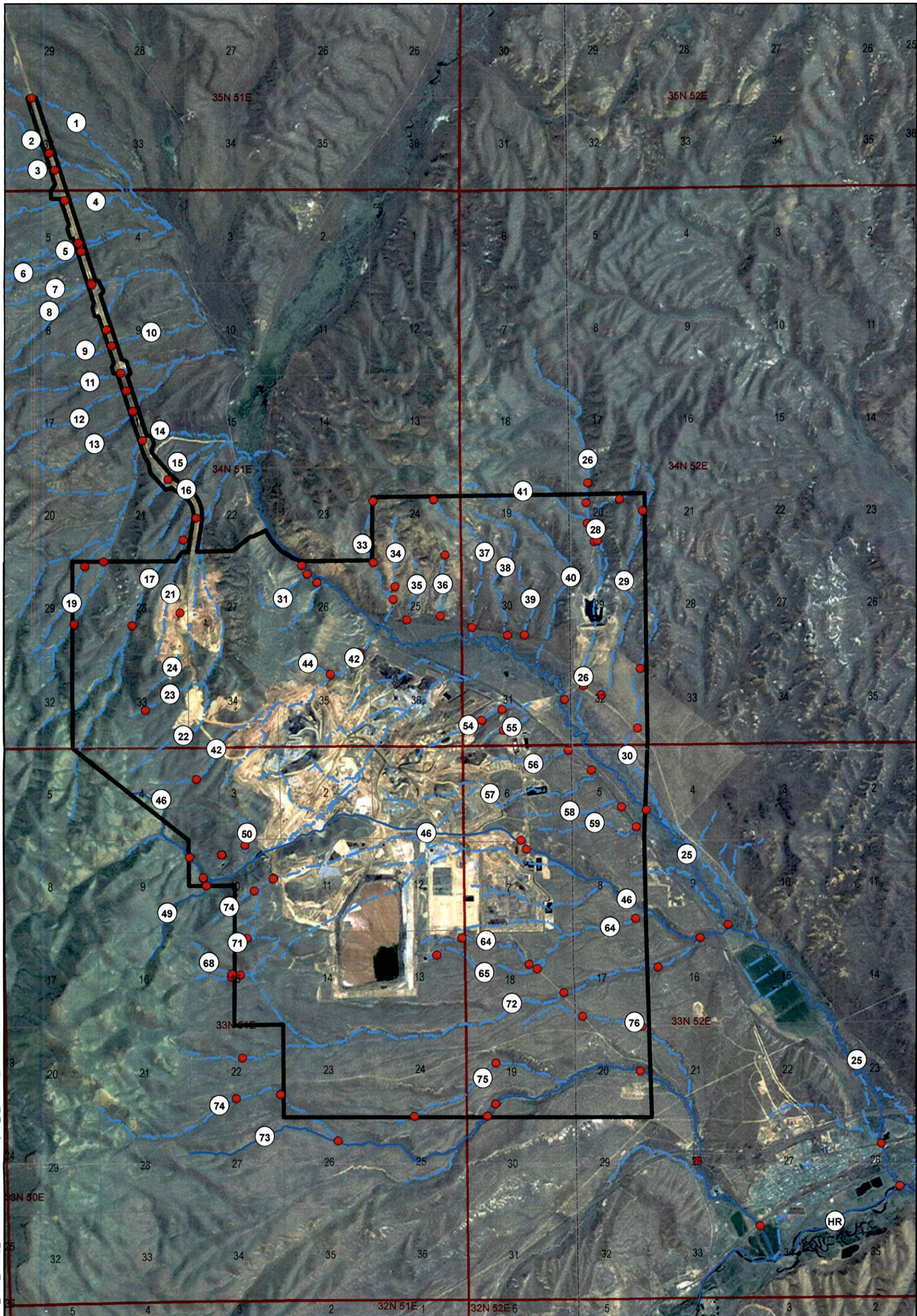
SCALE

1 in = 1.5 miles

Path: M:\STATES\NV\Clients\Newmont\Greater_Gold_Quarry_Baseline\MXD\Figure_2_Survey_Area.mxd

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Source: Esri, i-cubed, USDA, USGS, AEX, GeoEye, Getmapping, Aerogrid, IGN, IGP, and the GIS User Community

- Data Points
- ▭ Greater Gold Quarry PoO
- Non-Jurisdictional Drainage
- Jurisdictional Drainage
- HR Humboldt River



GREATER GOLD QUARRY PROJECT

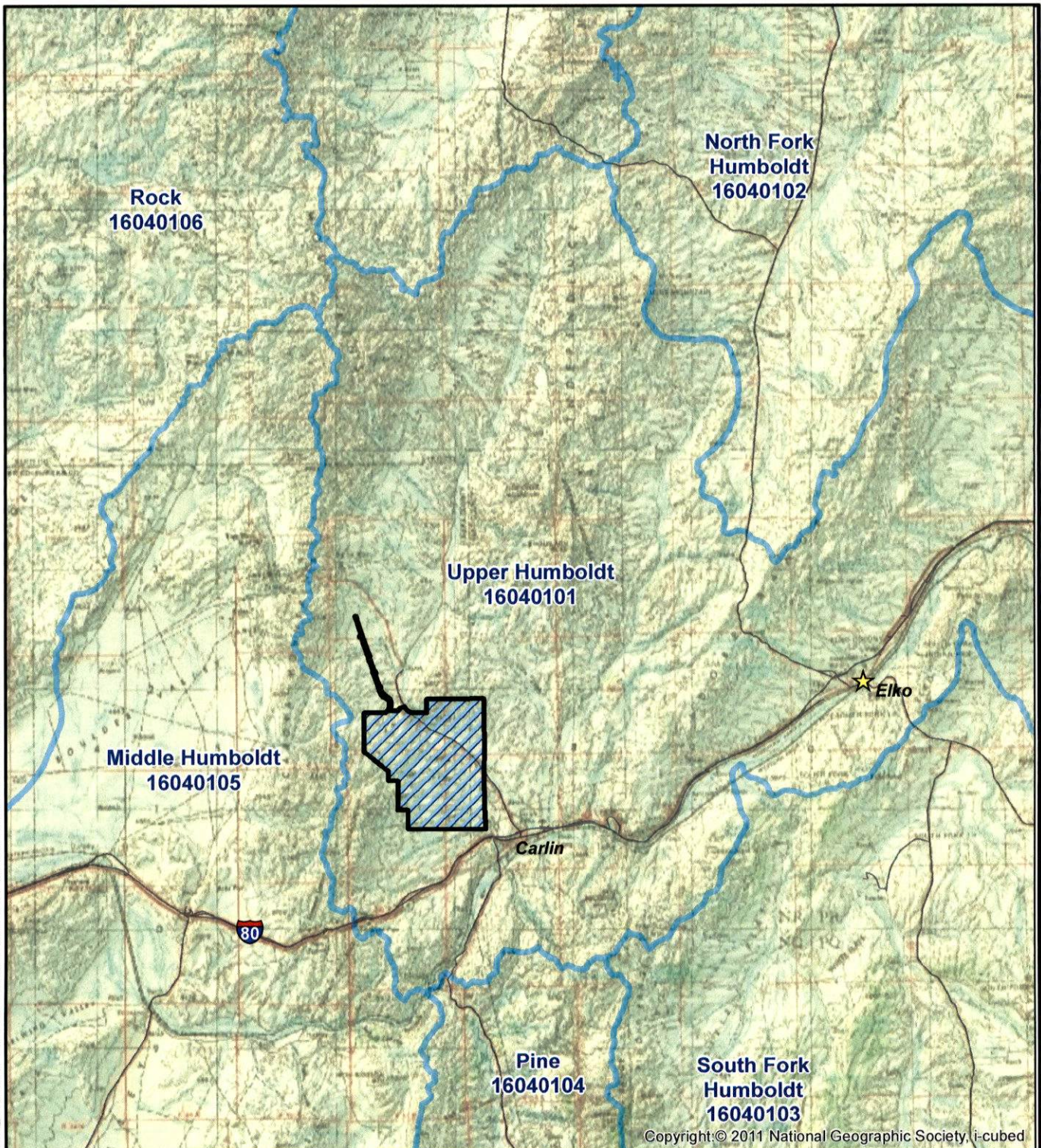
FIGURE 3
DEFINED DRAINAGES



DRAWN BY	JCV	DATE DRAWN	11/9/2012
SCALE	1 in = 1 miles		

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Path: M:\STATES\NV\Clients\Newmont\Greater_Gold_Quarry_Baseline\MXDs\WOU\Figure_4A_Watershed_Basins.mxd



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BASE MAP: USA Topographic Maps

-  Greater Gold Quarry PoO
-  USGS Hydrologic Units

0 3.75 7.5 15
Miles



NEWMONT
NORTH AMERICA

**GREATER GOLD
QUARRY PROJECT**

**FIGURE 4A
WATERSHED BASINS**



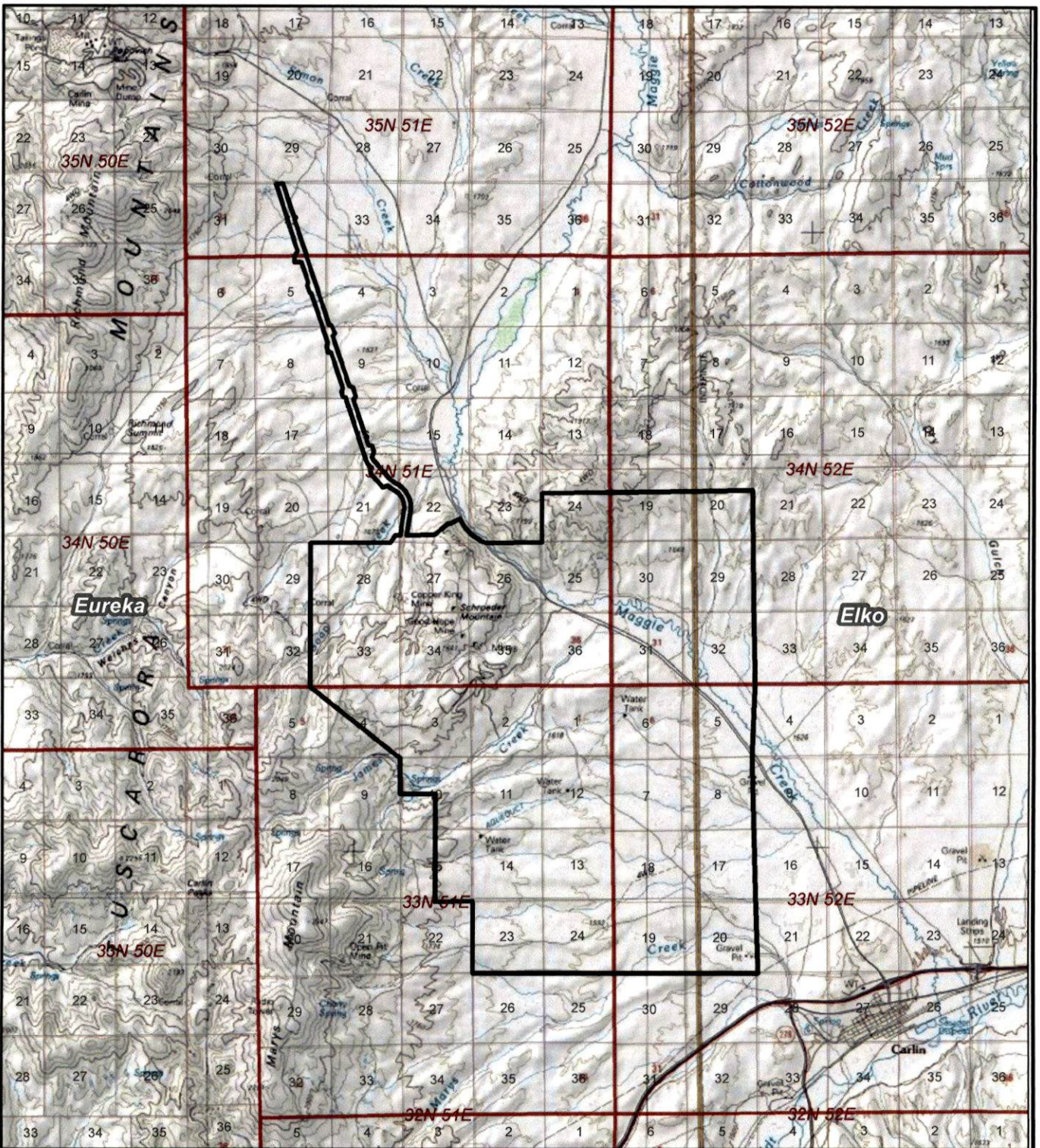
DRAWN
BY CHJ

DATE
DRAWN 11/9/2012

SCALE
1 in = 7 miles

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Path: M:\STATES\NV\Clients\Newmont\Greater_Gold_Quarry_Baseline\MXD\WOU\Figure_4B_USGS_Topography.mxd



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 Greater Gold Quarry PoO

0 1 2 4
Miles


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GREATER GOLD
QUARRY PROJECT

FIGURE 4B
USGS TOPOGRAPHY

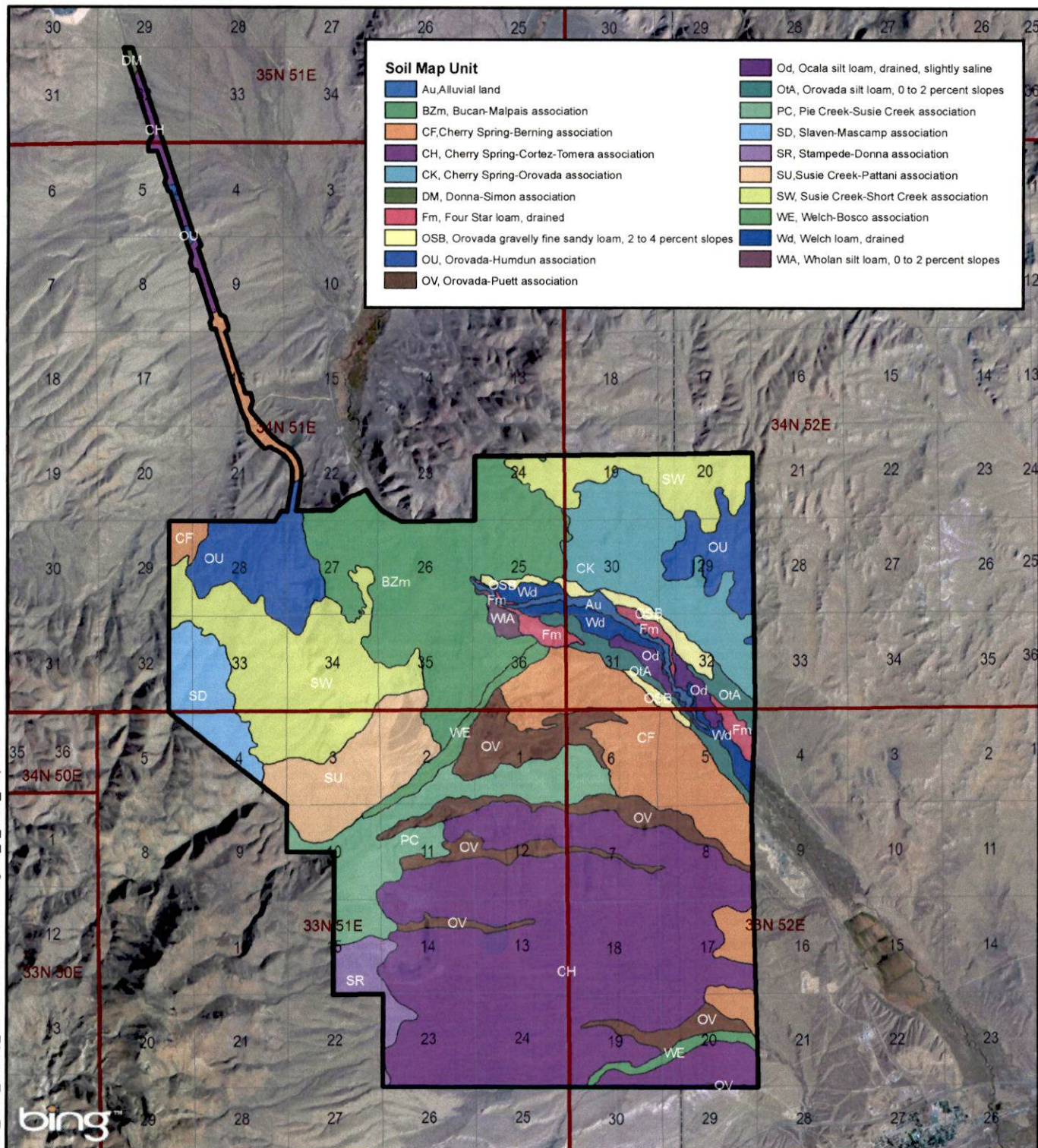

JBR

DRAWN BY CHJ DATE DRAWN 11/9/2012

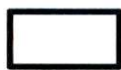
SCALE 1 in = 2 miles

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Greater Gold Quarry PoO

0 0.75 1.5
Miles



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NORTH AMERICA

**GREATER GOLD
QUARRY PROJECT**

**FIGURE 5
SOILS**

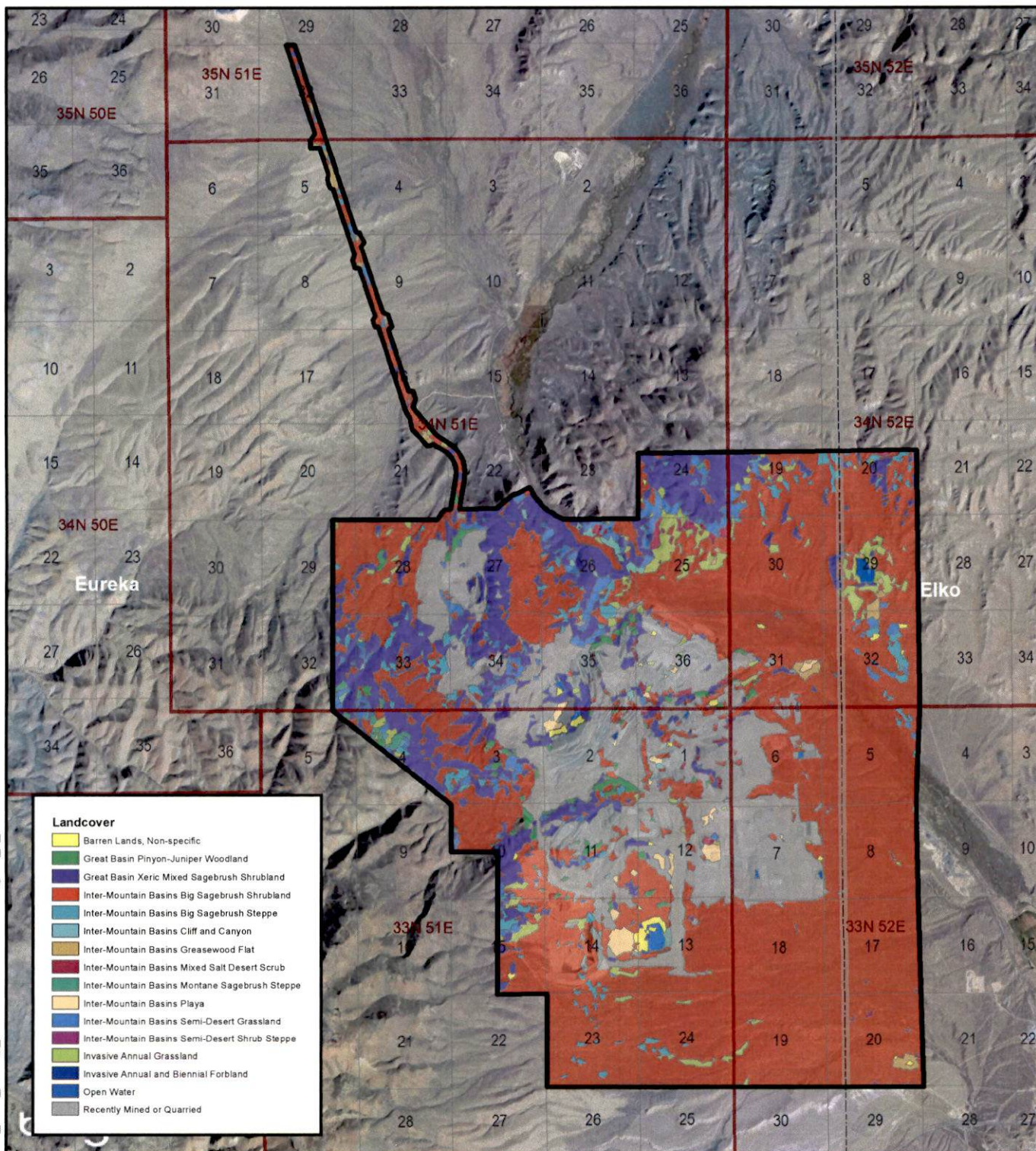


DRAWN BY: CHJ/JCV DATE DRAWN: 11/9/2012

SCALE: 1 in = 1.5 miles

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Greater Gold Quarry PoO

0 0.75 1.5
Miles

N

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**GREATER GOLD
QUARRY PROJECT**

**FIGURE 6
LANDCOVER**

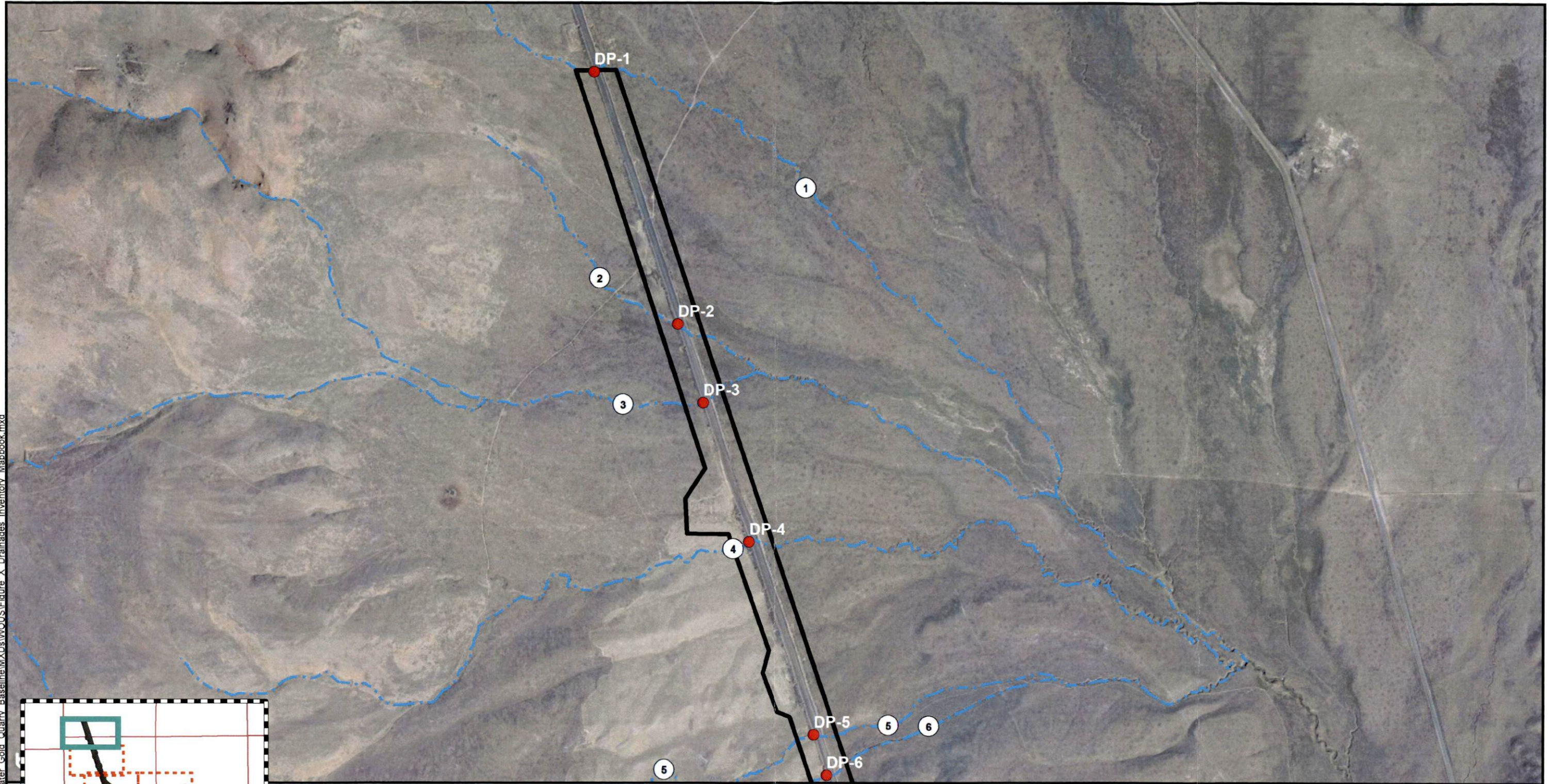


DRAWN BY CHJ DATE DRAWN 11/9/2012

SCALE 1 in = 1.5 miles

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Path: M:\STATES\N\Clients\Newmont\Greater Gold Quarry Baseline\MXDs\W\OUS\Figure X Drainages Inventory Mapbook.mxd



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- Greater Gold Quarry PoO
- Non-Jurisdictional Drainage
- Jurisdictional Drainage
- Data Points
- Drainage Number

1,200 600 0 1,200
Feet



GREATER GOLD QUARRY PROJECT

FIGURE 7
DRAINAGES 1-6 INVENTORY



DRAWN BY	JCV	DATE DRAWN	11/12/2012
SCALE	1 in = 1,200 feet		

Path: M:\STATES\NAClients\Newmont\Greater Gold Quarry_Baseline\MXD\WQOUS\Figure 8 Drainages Inventory.mxd

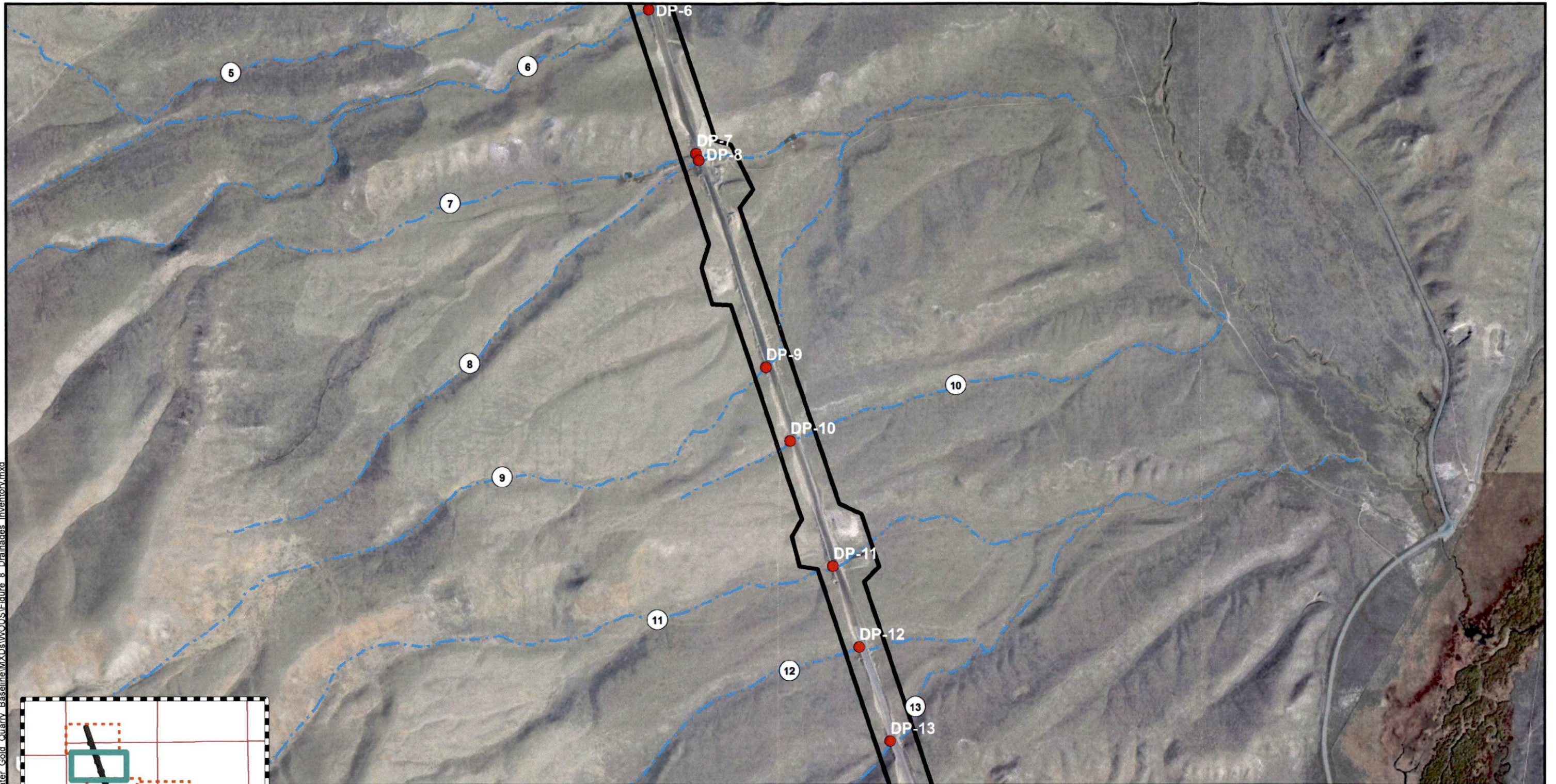
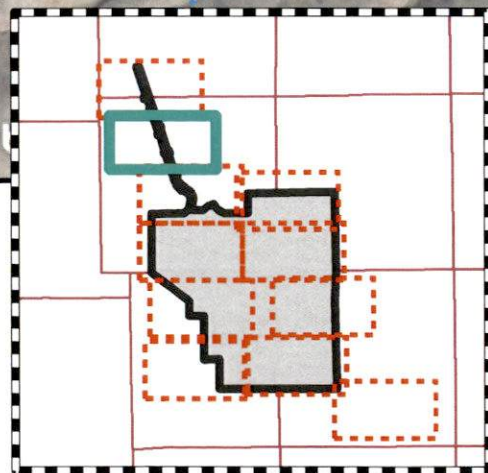
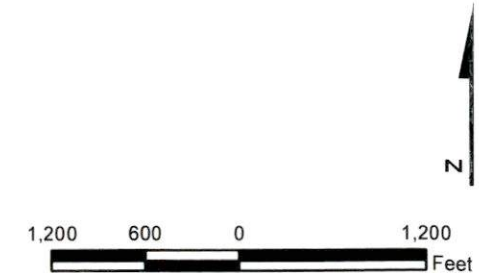


Image courtesy of USGS Image courtesy of the Nevada State Mapping Advisory Committee © 2012 Microsoft Corporation



-  Greater Gold Quarry PoO
-  Non-Jurisdictional Drainage
-  Jurisdictional Drainage
-  Data Points
-  Drainage Number



NEWMONT
NORTH AMERICA

GREATER GOLD QUARRY PROJECT

FIGURE 8
DRAINAGES 5-13 INVENTORY



DRAWN BY	JV	DATE DRAWN	12/10/2012
SCALE	1 in = 1,200 ft		

Path: M:\STATES\NV\Clients\Newmont\Greater Gold Quarry Baseline\MXDs\WV\OUS\Figure 9 Drainages Inventory.mxd

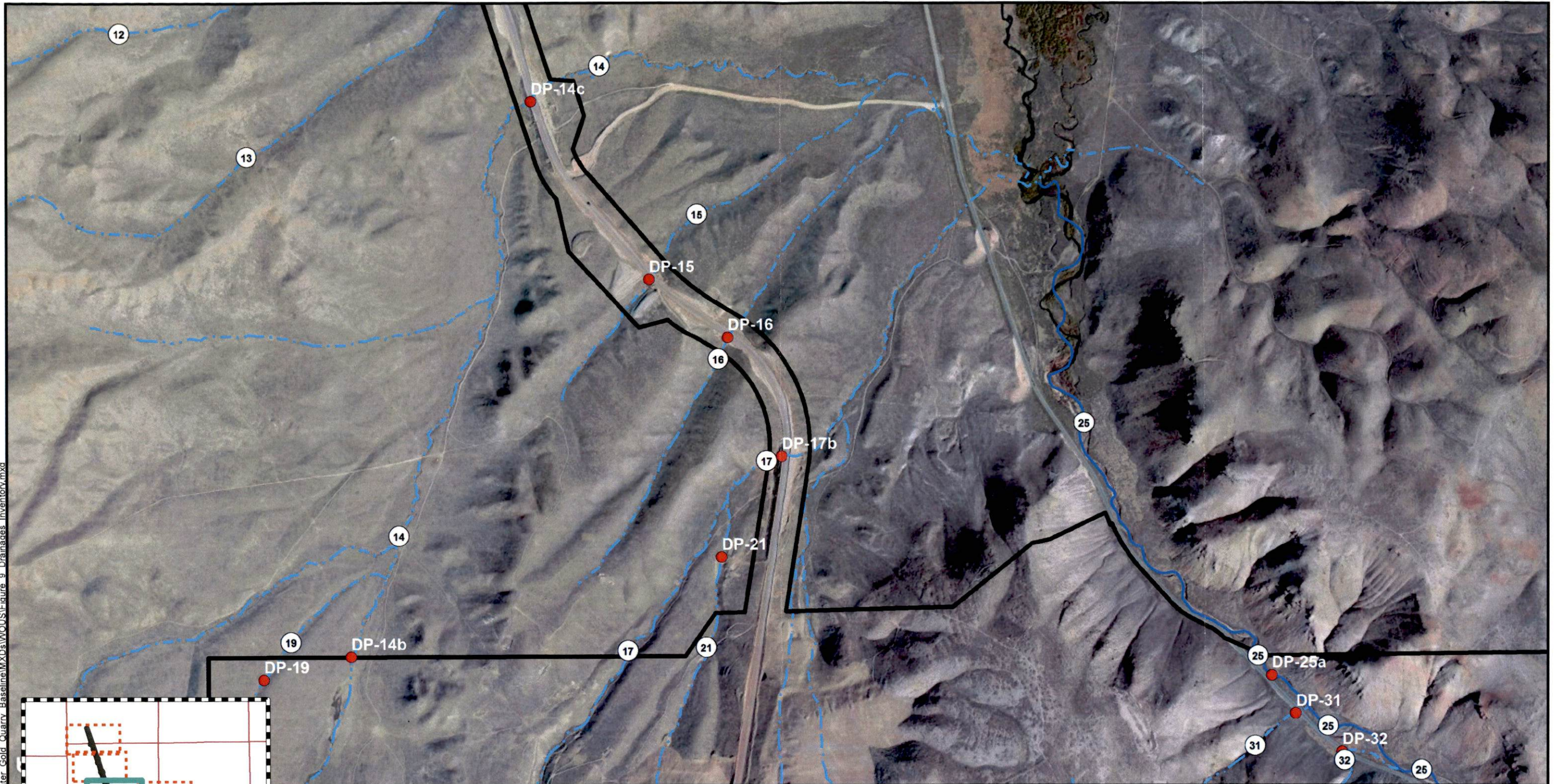


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- Greater Gold Quarry PoO
- Non-Jurisdictional Drainage
- Jurisdictional Drainage
- Data Points
- Drainage Number

1,200 600 0 1,200
Feet

NEWMONT
NORTH AMERICA

**GREATER GOLD
QUARRY PROJECT**

FIGURE 9
DRAINAGES 12-17, 19, 21, 25, 31-32 INVENTORY



DRAWN BY	JV	DATE DRAWN	12/10/2012
SCALE		1 in = 1,200 ft	

Path: M:\STATES\N\Newmont\Greater Gold Quarry Baseline\MXDs\WQOUS\Figure 10 Drainages Inventory.mxd

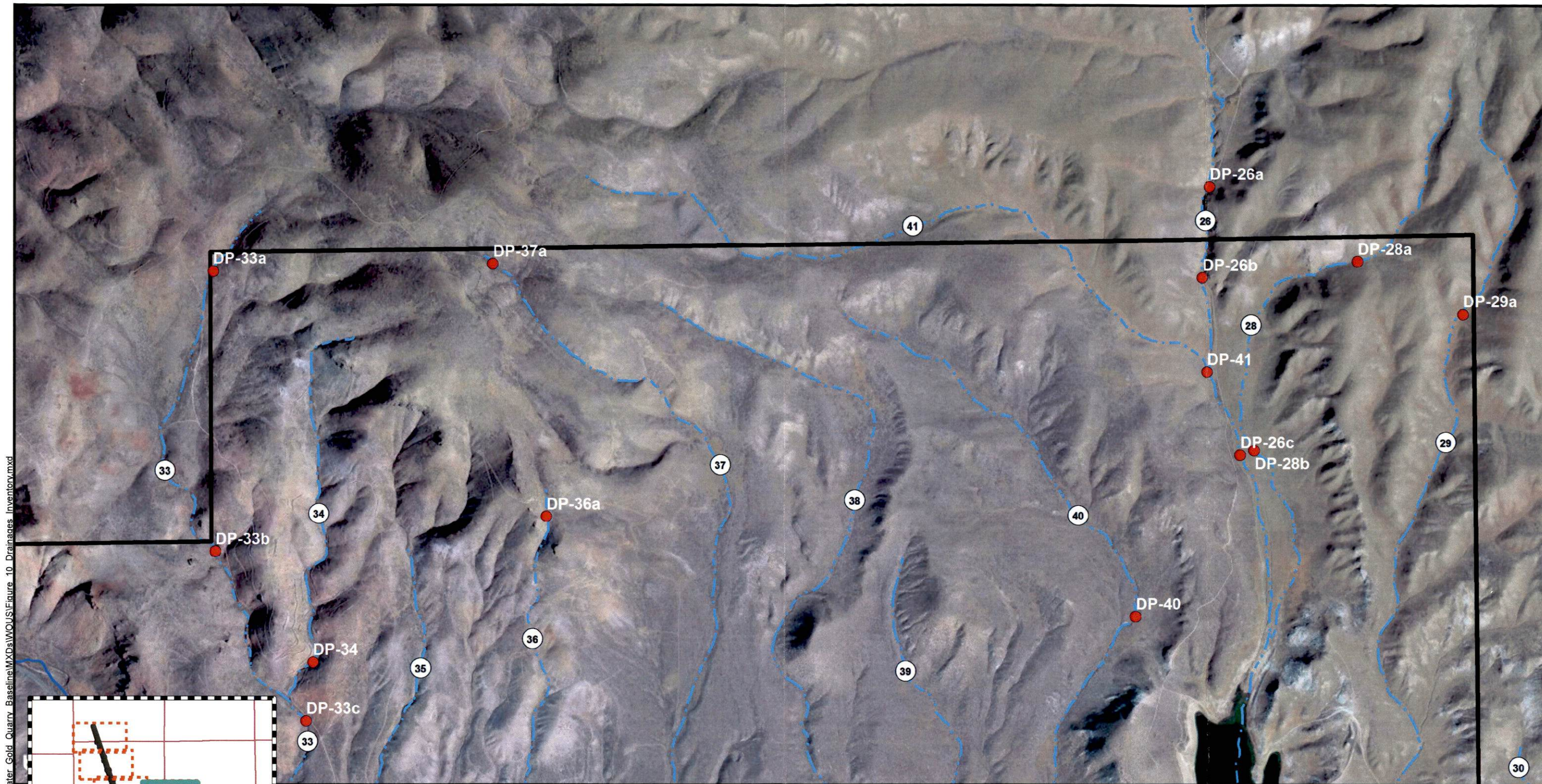
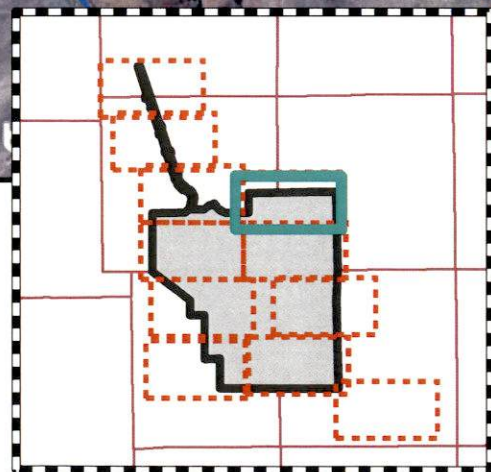
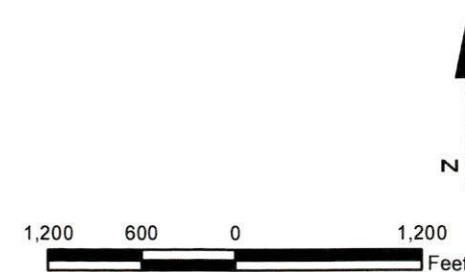


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- Greater Gold Quarry PoO
- Non-Jurisdictional Drainage
- Jurisdictional Drainage
- Data Points
- Drainage Number



NEWMONT
NORTH AMERICA

**GREATER GOLD
QUARRY PROJECT**

FIGURE 10
DRAINAGES 26, 28-30, 33-41 INVENTORY



DRAWN BY	JV	DATE DRAWN	12/10/2012
SCALE	1 in = 1,200 ft		

Path: M:\STATES\NV\clients\Newmont\Greater Gold Quarry Baseline\MXDs\WQOUS\Figure 11 Drainages Inventory.mxd

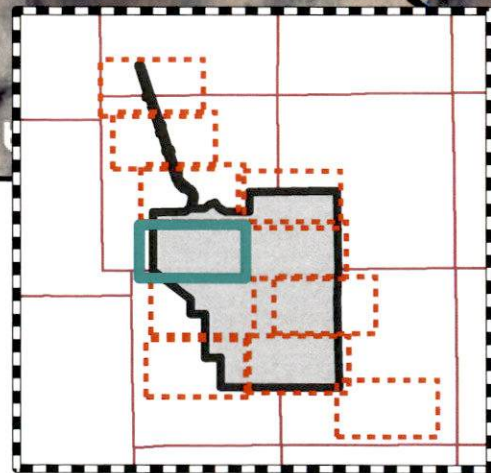
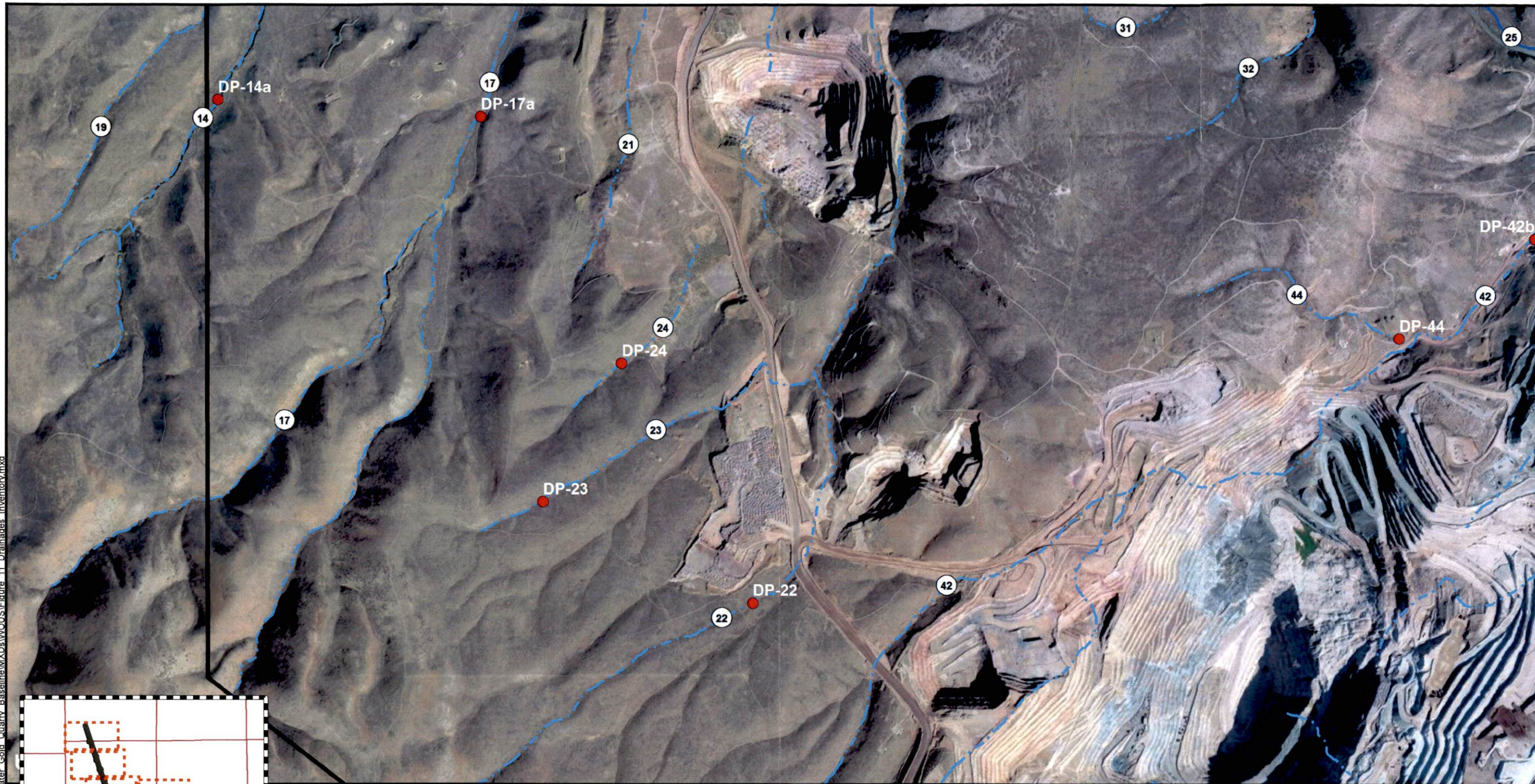
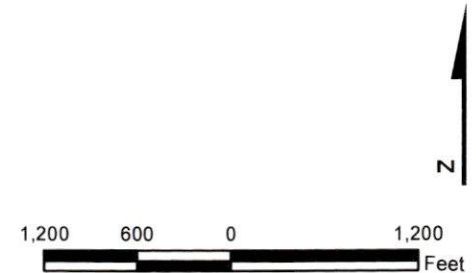


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- Greater Gold Quarry PoO
- Non-Jurisdictional Drainage
- Jurisdictional Drainage
- Data Points
- Drainage Number



**GREATER GOLD QUARRY PROJECT**

FIGURE 11
DRAINAGES 14, 17, 19, 22-25, 31-32, 42, 44 INVENTORY



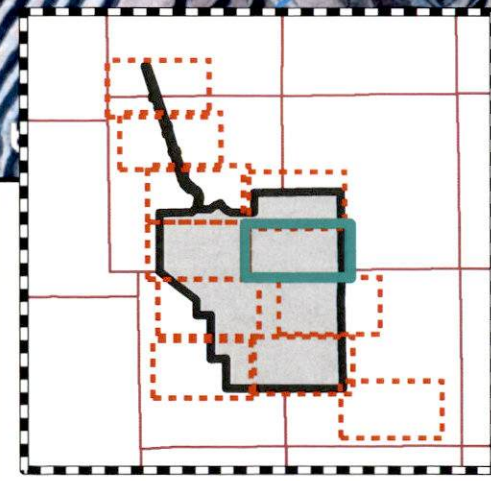
DRAWN BY	JV	DATE DRAWN	12/10/2012
SCALE		1 in = 1,200 ft	

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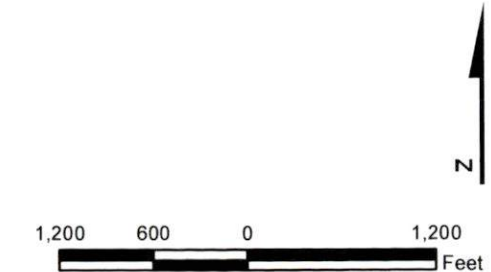
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- Greater Gold Quarry PoO
- Non-Jurisdictional Drainage
- Jurisdictional Drainage
- Data Points
- Drainage Number



GREATER GOLD QUARRY PROJECT

FIGURE 12
DRAINAGES 25-26, 29-30, 33, 35-40, 42, 54-56
INVENTORY

DRAWN BY	JV	DATE DRAWN	12/10/2012
SCALE	1 in = 1,200 ft		

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Path: M:\STATES\NV\Clients\Newmont\Greater Gold Quarry Baseline\MXDs\WQOUS\Figure 13 Drainages Inventory.mxd

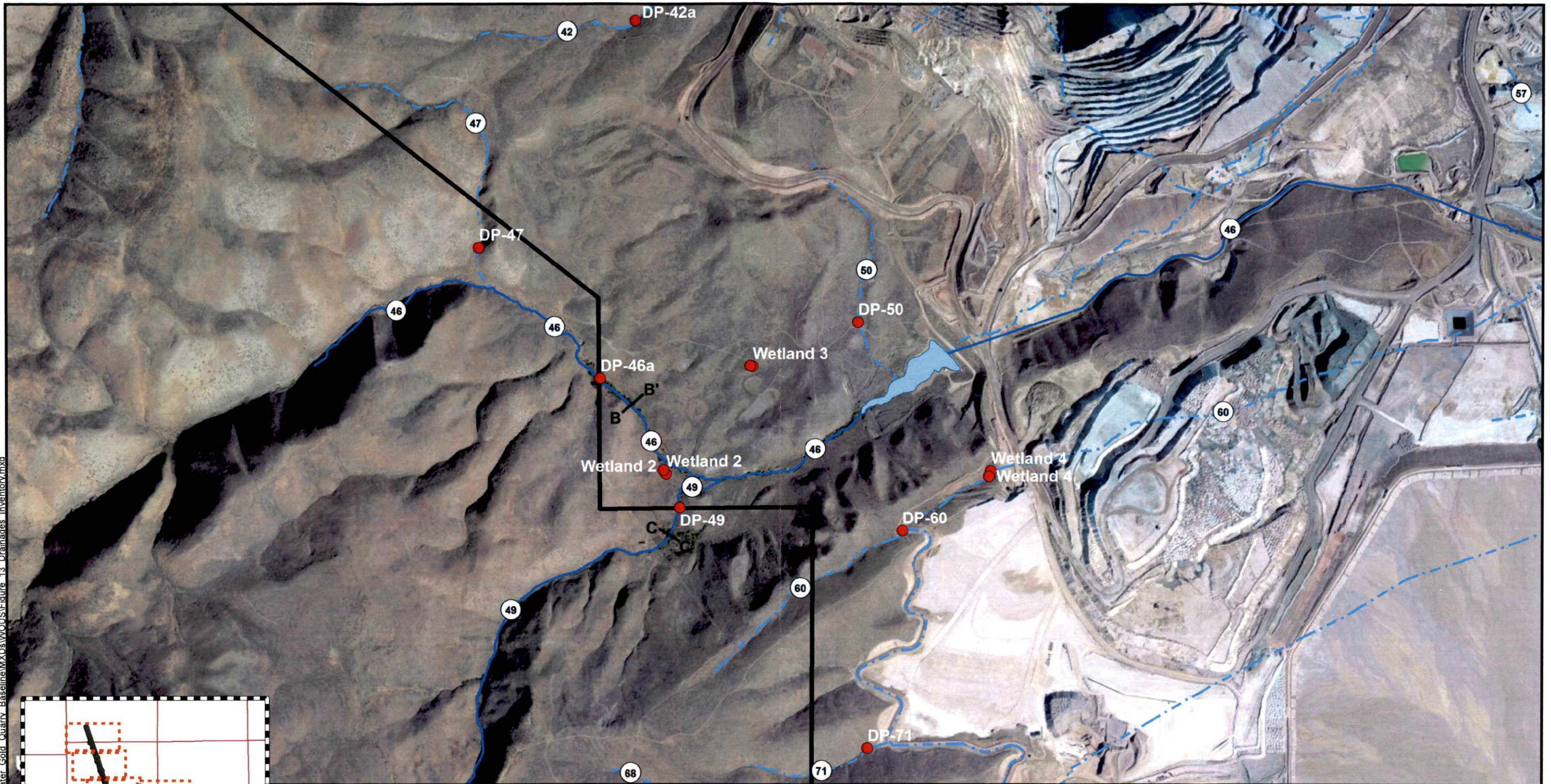
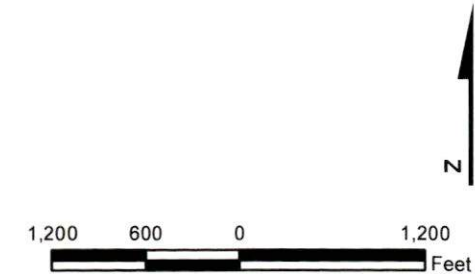


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- Greater Gold Quarry PoO
- Non-Jurisdictional Drainage
- Jurisdictional Drainage
- Data Points
- Drainage Number

B-B' average width: 3.0 ft (not to scale)
C-C' average width: 1.0 ft (not to scale)



GREATER GOLD QUARRY PROJECT

FIGURE 13
DRAINAGES 42, 46-47, 49-50, 60, 68, 71 INVENTORY



DRAWN BY	JV	DATE DRAWN	12/10/2012
SCALE	1 in = 1,200 ft		

Path: M:\STATES\NV\Clients\Newmont\Greater Gold Quarry Baseline\MXDs\WQOUS\Figure 14 Drainages Inventory.mxd

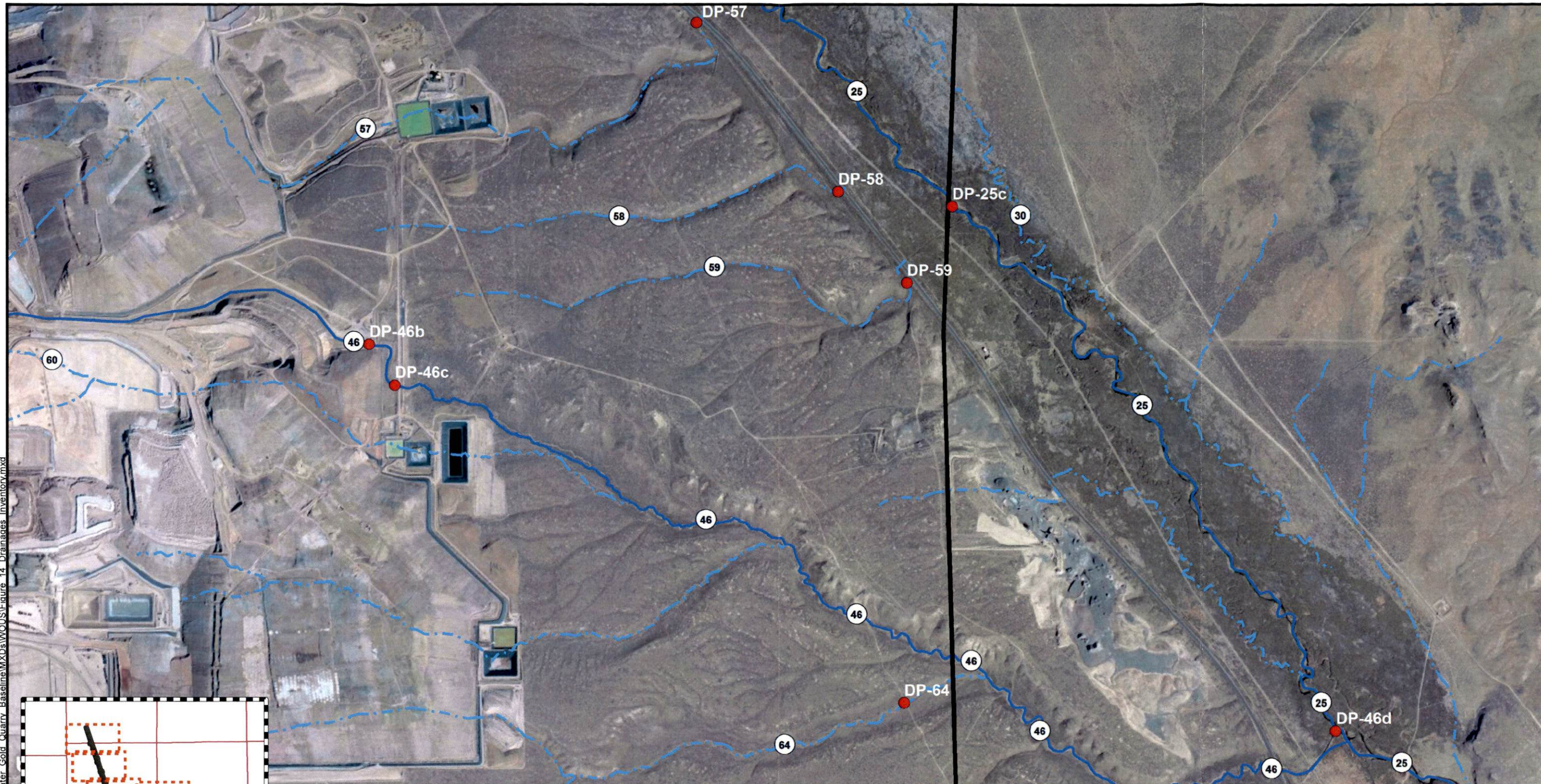
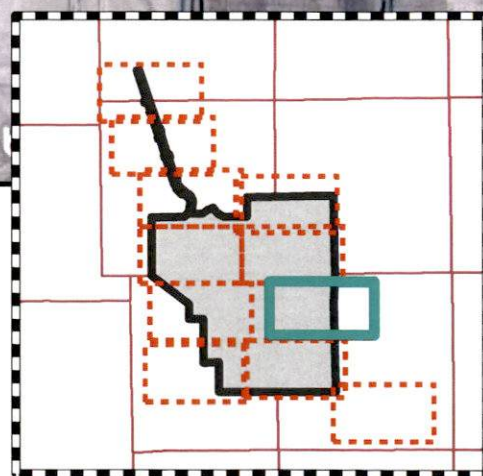
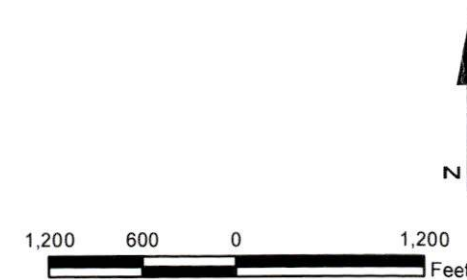


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- Greater Gold Quarry PoO
- Non-Jurisdictional Drainage
- Jurisdictional Drainage
- Data Points
- Drainage Number



NEWMONT
NORTH AMERICA

**GREATER GOLD
QUARRY PROJECT**

FIGURE 14
DRAINAGES 25, 30, 46, 57-60, 64 INVENTORY



DRAWN BY	JV	DATE DRAWN	12/10/2012
SCALE	1 in = 1,200 ft		

Path: M:\STATES\NV\Clients\Newmont\Greater Gold Quarry Baseline\MXD\WQUS\Figure 15 Drainages Inventory.mxd

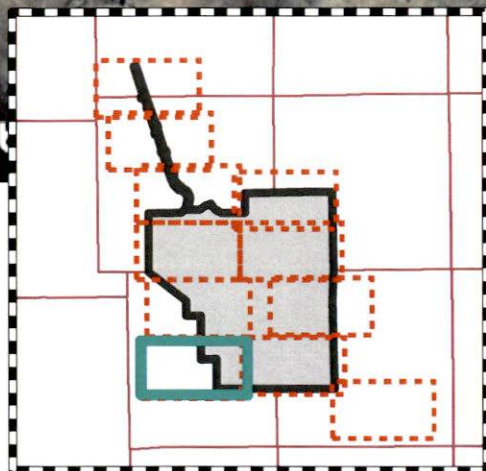
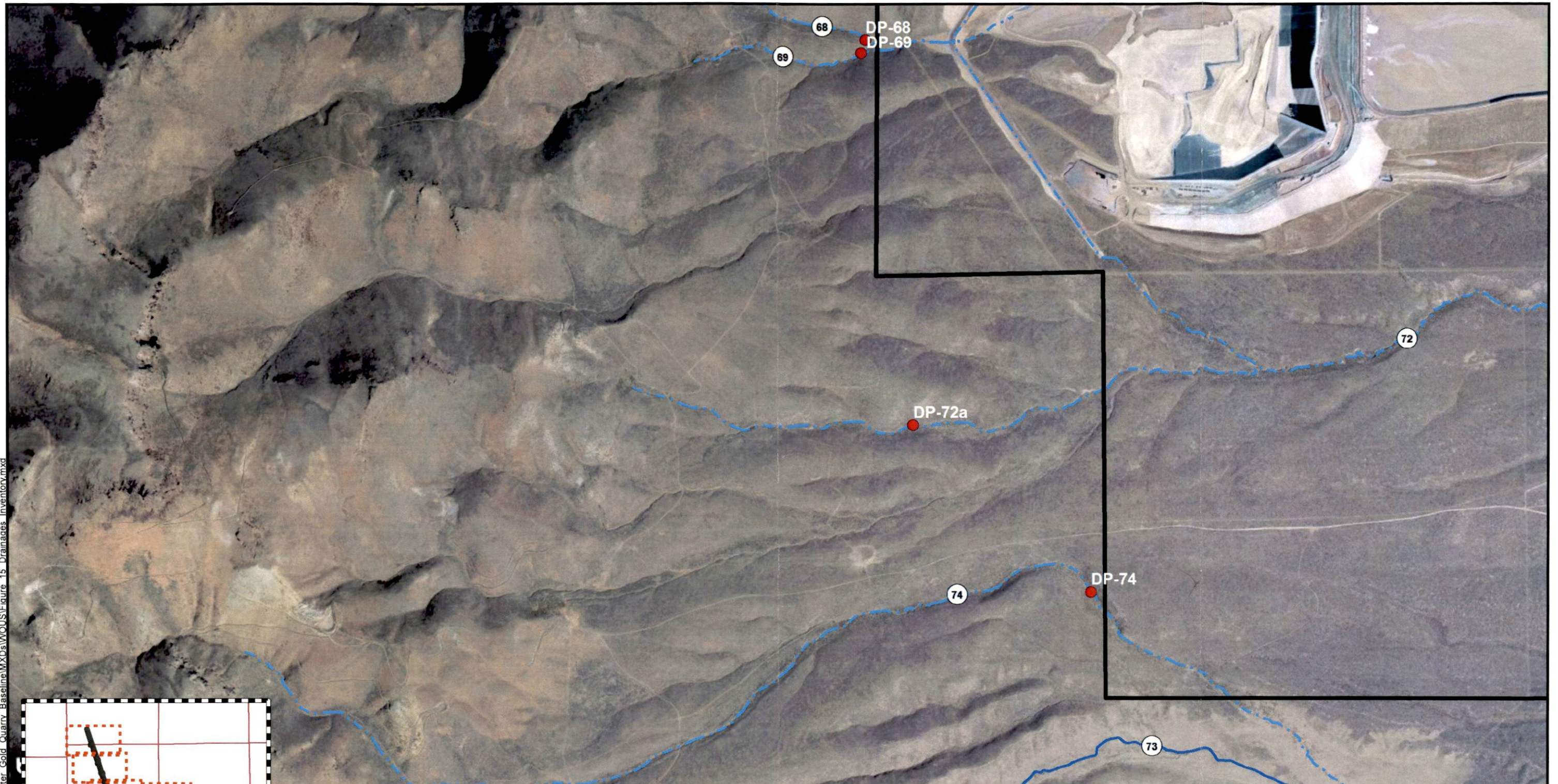
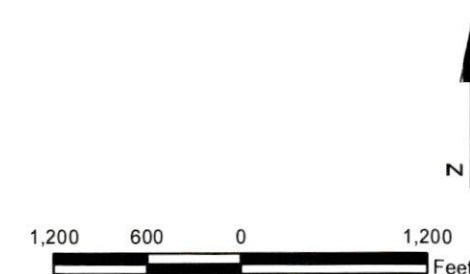


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- Greater Gold Quarry PoO
- Non-Jurisdictional Drainage
- Jurisdictional Drainage
- Data Points
- Drainage Number

B-B' average width: 3.0 ft (not to scale)
C-C' average width: 1.0 ft (not to scale)



GREATER GOLD QUARRY PROJECT

FIGURE 15
DRAINAGES 68-69, 72-74 INVENTORY



DRAWN BY	JV	DATE DRAWN	12/10/2012
SCALE	1 in = 1,200 ft		

Path: M:\STATES\NV\Clients\Newmont\Greater Gold Quarry Baseline\MXDs\WQUS\Figure 16 Drainages Inventory.mxd

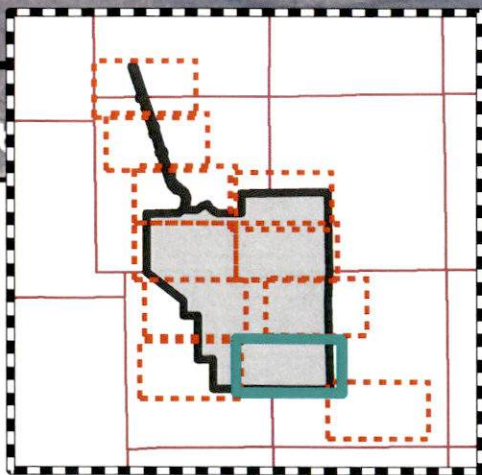
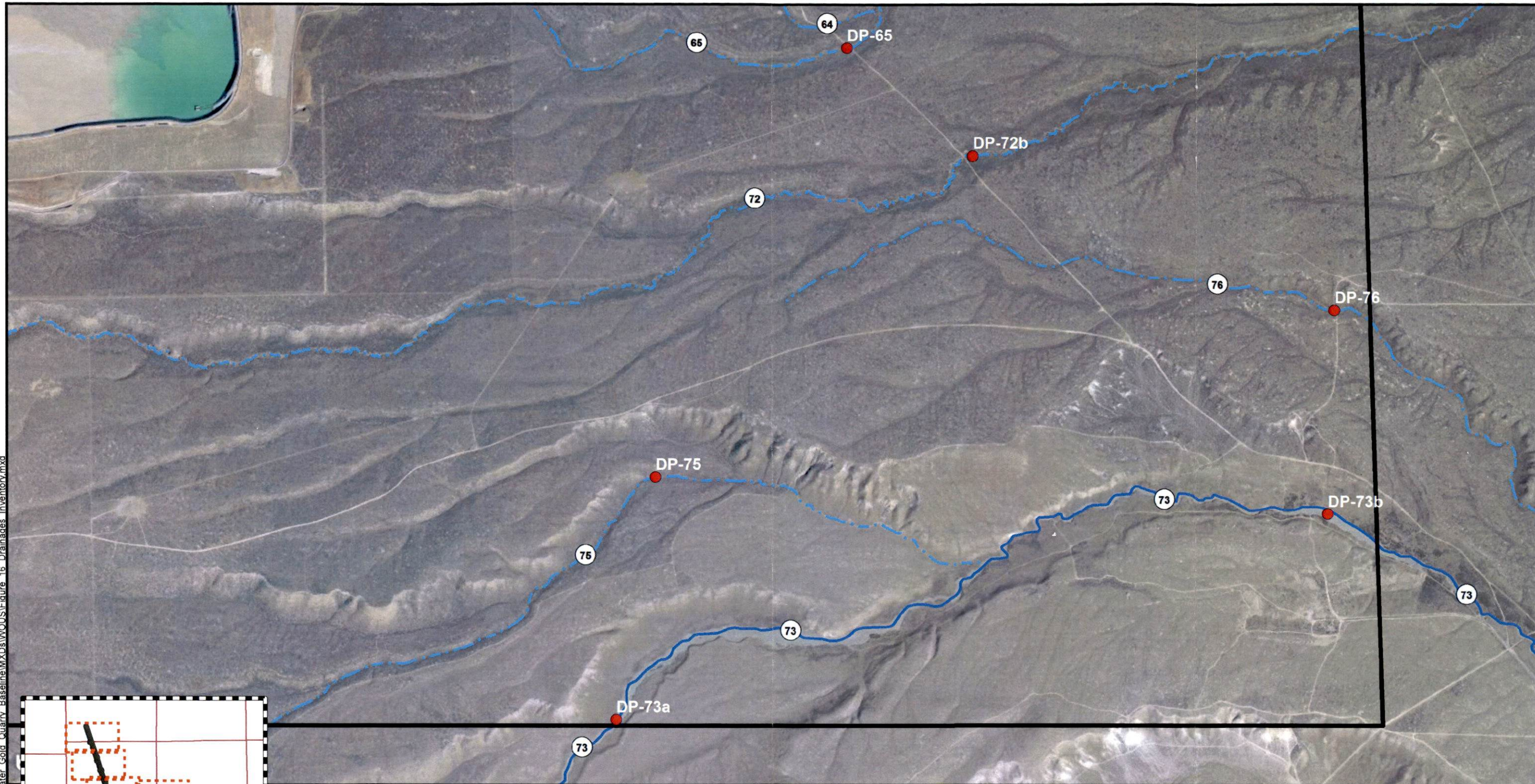
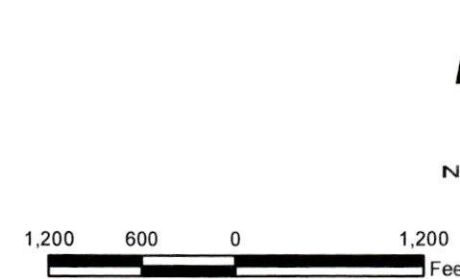


Image courtesy of USGS Image courtesy of the Nevada State Mapping Advisory Committee © 2012 Microsoft Corporation

- Greater Gold Quarry PoO
- Non-Jurisdictional Drainage
- Jurisdictional Drainage
- Data Points
- Drainage Number



GREATER GOLD QUARRY PROJECT

FIGURE 16
DRAINAGES 64-65, 72-73, 75-76 INVENTORY

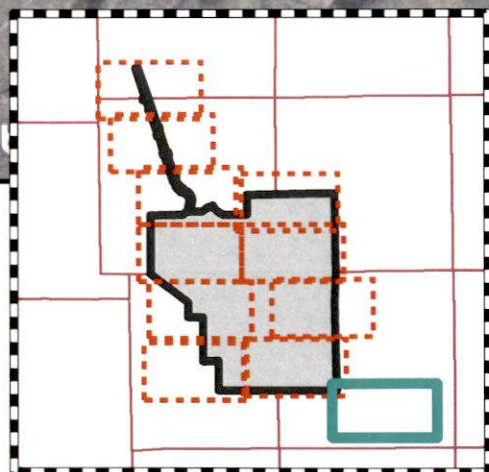


DRAWN BY	JV	DATE DRAWN	12/10/2012
SCALE	1 in = 1,200 ft		

Path: M:\STATES\NV\Clients\Newmont\Greater Gold Quarry Baseline\MXDs\WQOUS\Figure 17 Drainages Inventory.mxd



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-  Greater Gold Quarry PoO
-  Non-Jurisdictional Drainage
-  Jurisdictional Drainage
-  Data Points
-  Drainage Number

1,200 600 0 1,200
Feet

NEWMONT
NORTH AMERICA

**GREATER GOLD
QUARRY PROJECT**

FIGURE 17
DRAINAGES 25, 73, 76 INVENTORY



DRAWN BY	JV	DATE DRAWN	12/10/2012
SCALE	1 in = 1,200 ft		

Path: M:\STATES\WV\Clients\Newmont\Greater_Gold_Quarry_Baseline\MXD\WOU\Figure_18_Wetlands.mxd



Image courtesy of USGS Image courtesy of the Nevada State Mapping Advisory Committee © 2012 Microsoft Corporation

- Data Points
- OHWM
- Wetlands (6.5 acres)
- Non-Jurisdictional Drainage
- Jurisdictional Drainage



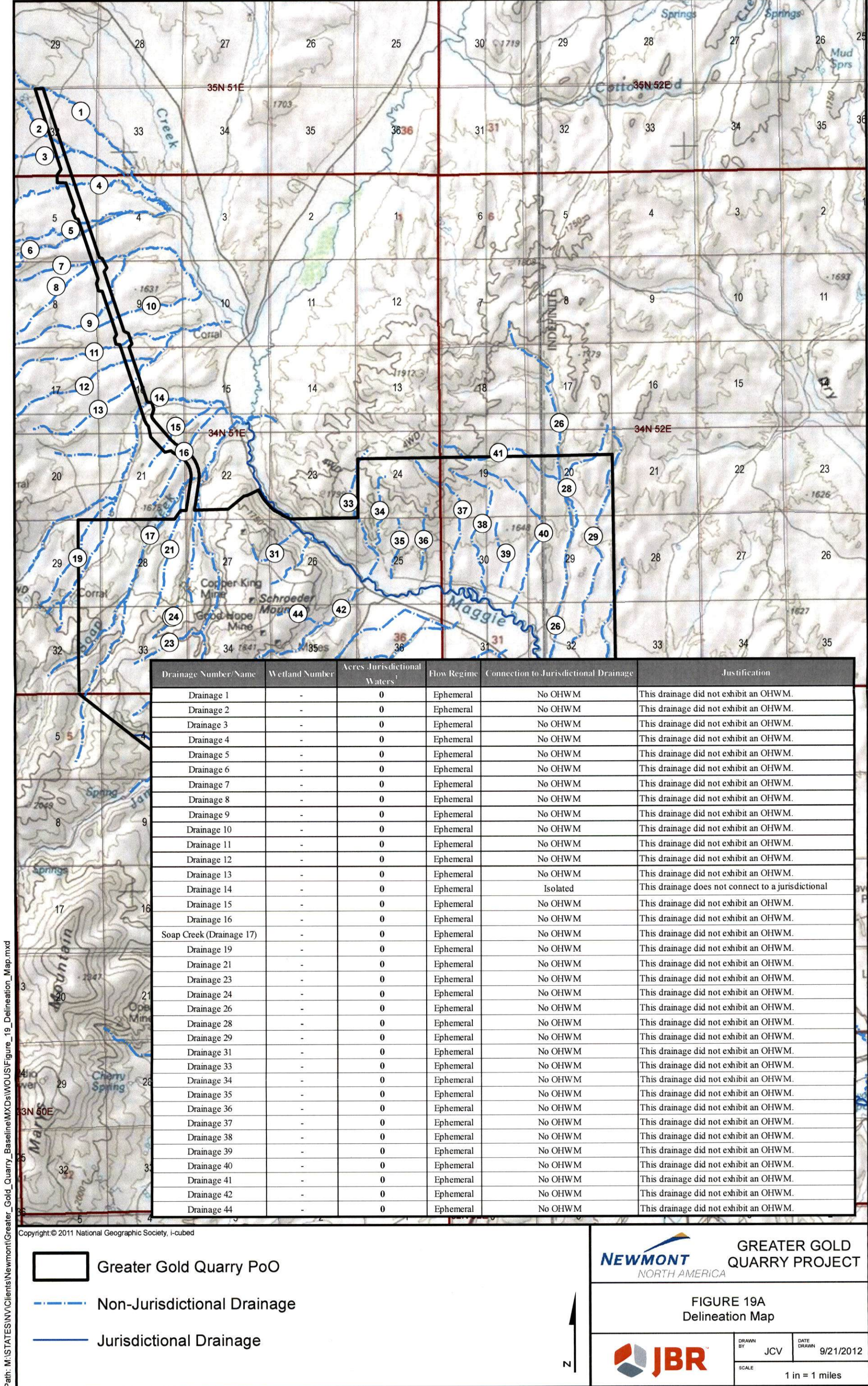
GREATER GOLD
QUARRY PROJECT

FIGURE 18
WETLANDS

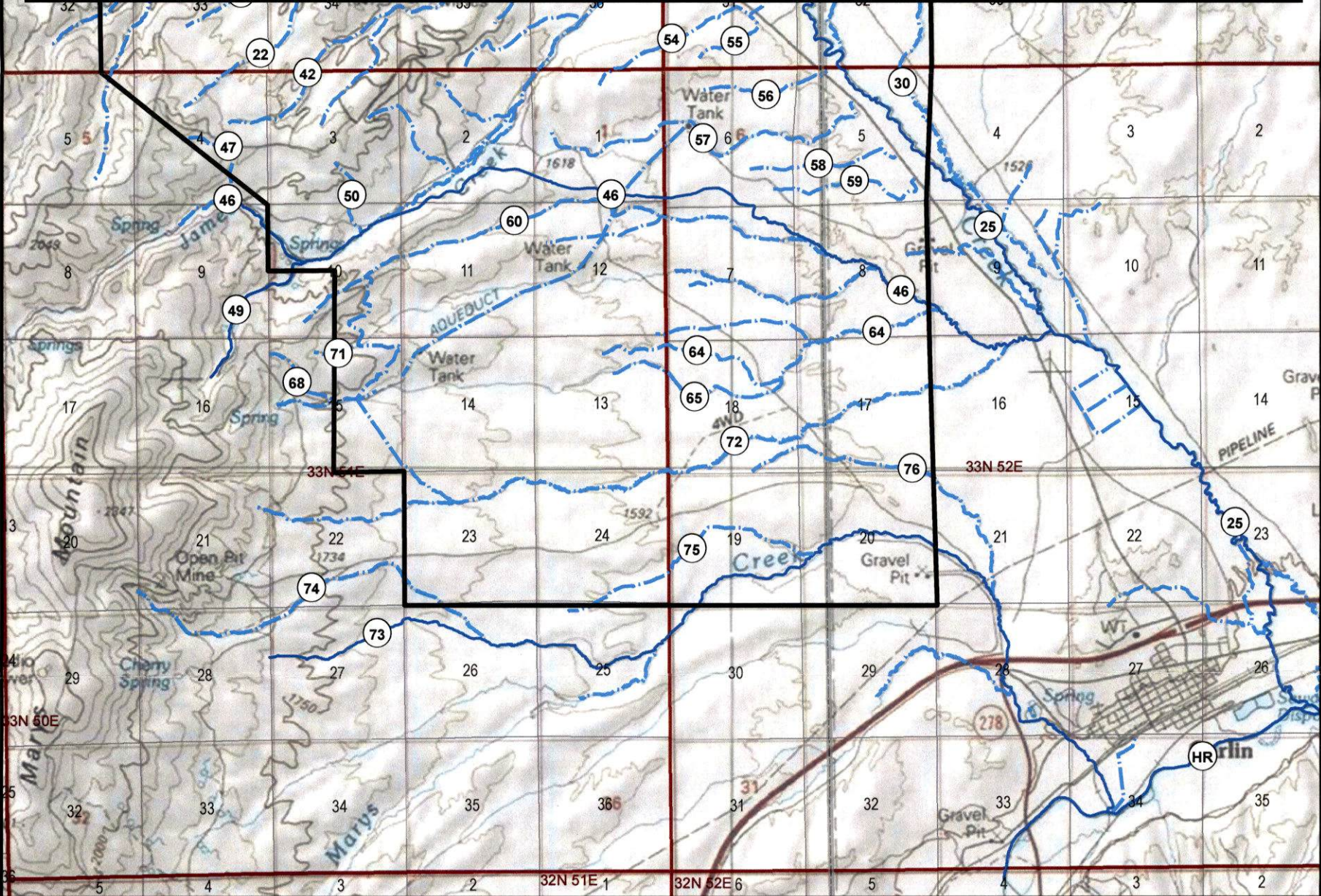


DRAWN BY	JCV	DATE DRAWN	9/18/2012
SCALE		1 in = 500 feet	

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Drainage Number/Name	Wetland Number	Average Width (ft)	Acres Jurisdictional Waters ¹	Flow Regime	Connection to Jurisdictional Drainage	Justification
Drainage 22	-	-	0	Ephemeral	No OHWM	This drainage did not exhibit an OHWM.
Maggie Creek (Drainage 25)	-	14.3	11.84	Perennial	Connected	This drainage maintains flowing water and an OHWM through the survey area until it converges with the Humboldt River.
Drainage 30	-	-	0	Ephemeral	No OHWM	This drainage did not exhibit an OHWM.
Drainage 32	-	-	0	Ephemeral	No OHWM	This drainage did not exhibit an OHWM.
James Creek/James Creek Diversion (Drainage 46)	-	3.3	2.41	Perennial	Connected	This drainage maintains an OHWM throughout the survey area and connects directly to Maggie Creek, a jurisdictional drainage.
Drainage 47	-	-	0	Ephemeral	No OHWM	This drainage did not exhibit an OHWM.
Drainage 49	-	1.0	0.02	Perennial	Connected	This drainage maintains flowing water and connects directly to James Creek, a jurisdictional drainage.
Drainage 50	-	-	0	Ephemeral	No OHWM	This drainage did not exhibit an OHWM.
Drainage 54	-	-	0	Ephemeral	No OHWM	This drainage did not exhibit an OHWM.
Drainage 55	-	-	0	Ephemeral	No OHWM	This drainage did not exhibit an OHWM.
Drainage 56	-	-	0	Ephemeral	No OHWM	This drainage did not exhibit an OHWM.
Drainage 57	-	-	0	Ephemeral	No OHWM	This drainage did not exhibit an OHWM.
Drainage 58	-	-	0	Ephemeral	No OHWM	This drainage did not exhibit an OHWM.
Drainage 59	-	-	0	Ephemeral	No OHWM	This drainage did not exhibit an OHWM.
Drainage 60	-	-	0	Ephemeral	No OHWM	This drainage did not exhibit an OHWM.
Drainage 64	-	-	0	Ephemeral	No OHWM	This drainage did not exhibit an OHWM.
Drainage 65	-	-	0	Ephemeral	No OHWM	This drainage did not exhibit an OHWM.
Drainage 68	-	-	0	Ephemeral	No OHWM	This drainage did not exhibit an OHWM.
Drainage 69	-	-	0	Ephemeral	No OHWM	This drainage did not exhibit an OHWM.
Drainage 71	-	-	0	Ephemeral	No OHWM	This drainage did not exhibit an OHWM.
Drainage 72	-	-	0	Ephemeral	No OHWM	This drainage did not exhibit an OHWM.
Mary's Creek (Drainage 73)	-	5.0	1.35	Ephemeral	Connected	This drainage maintains an OHWM through the survey area and connects directly to the Humboldt River.
Drainage 75	-	-	0	Ephemeral	No OHWM	This drainage did not exhibit an OHWM.
Drainage 76	-	-	0	Ephemeral	No OHWM	This drainage did not exhibit an OHWM.
-	Wetland 1	-	6.35	-	Connected	This wetland is a part of James Creek and shares a direct surface connection with the jurisdictional drainage.
-	Wetland 2	-	0.12	-	Connected	This wetland shares a surface connection with, and contributes directly, to James Creek.
-	Wetland 3	-	0	-	Isolated	This wetland is not located adjacent to, and does not share a connection with, any jurisdictional drainage.
-	Wetland 4	-	0	-	Isolated	This wetland is not located adjacent to, and does not share a connection with, any jurisdictional drainage.



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-  Greater Gold Quarry PoO
-  Non-Jurisdictional Drainage
-  Jurisdictional Drainage



GREATER GOLD QUARRY PROJECT

FIGURE 19B
Delineation Map



DRAWN BY	JCV	DATE DRAWN	11/21/2012
SCALE	1 in = 1 miles		

This document is for reference purposes only and should not be used as a legal document. JBR makes no guarantees to the accuracy of the data contained herein or any loss resulting therefrom.

APPENDIX A

Drainage Inventory Photographs



Photo A1: Looking upgradient at DP-1 along Drainage 1



Photo A2: Looking upgradient at DP-2 along Drainage 2

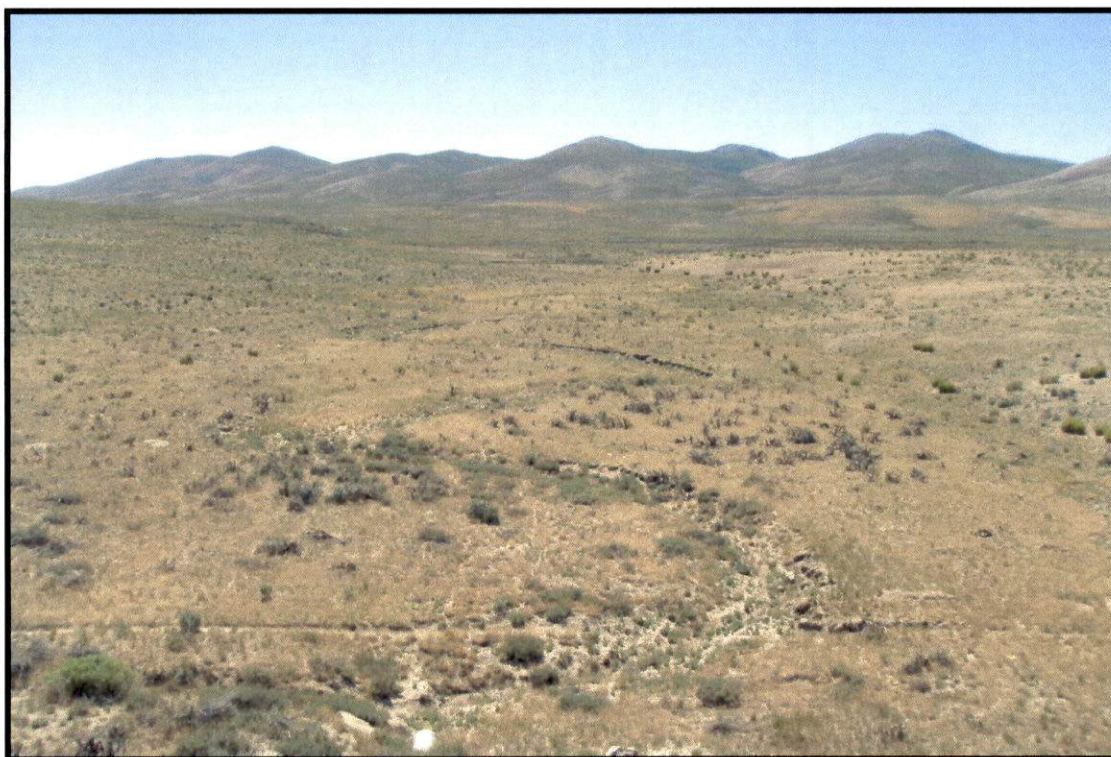


Photo A3: Looking upgradient at DP-3 along Drainage 3



Photo A4: Looking upgradient at DP-4 along Drainage 4. Drainage seems to have been ditched in the past, and several grasses have since colonized the empty channel.

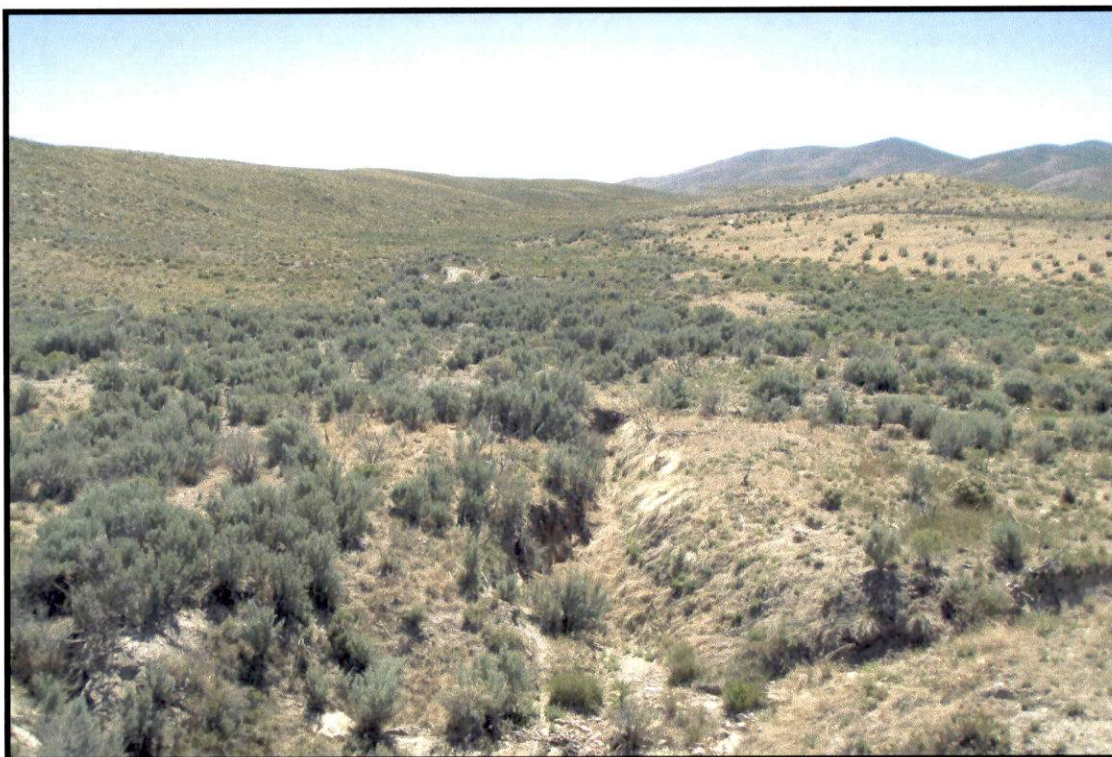


Photo A5: Looking upgradient at DP-5 along Drainage 5

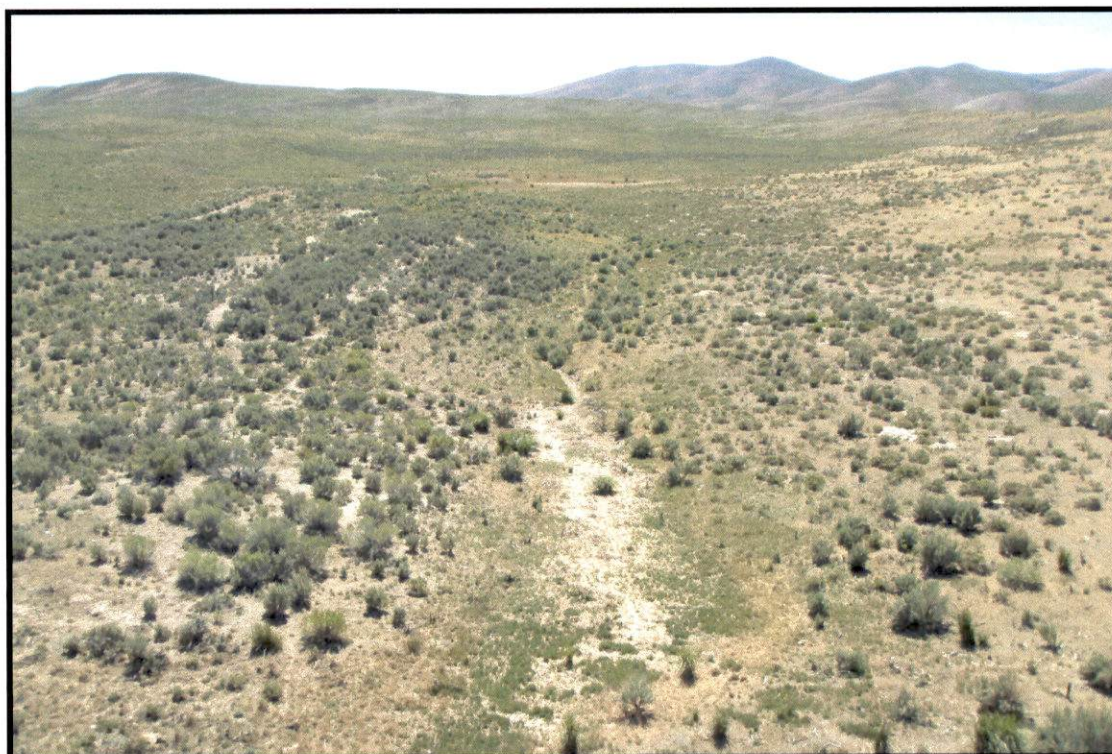


Photo A6: Looking upgradient at DP-6 along Drainage 6

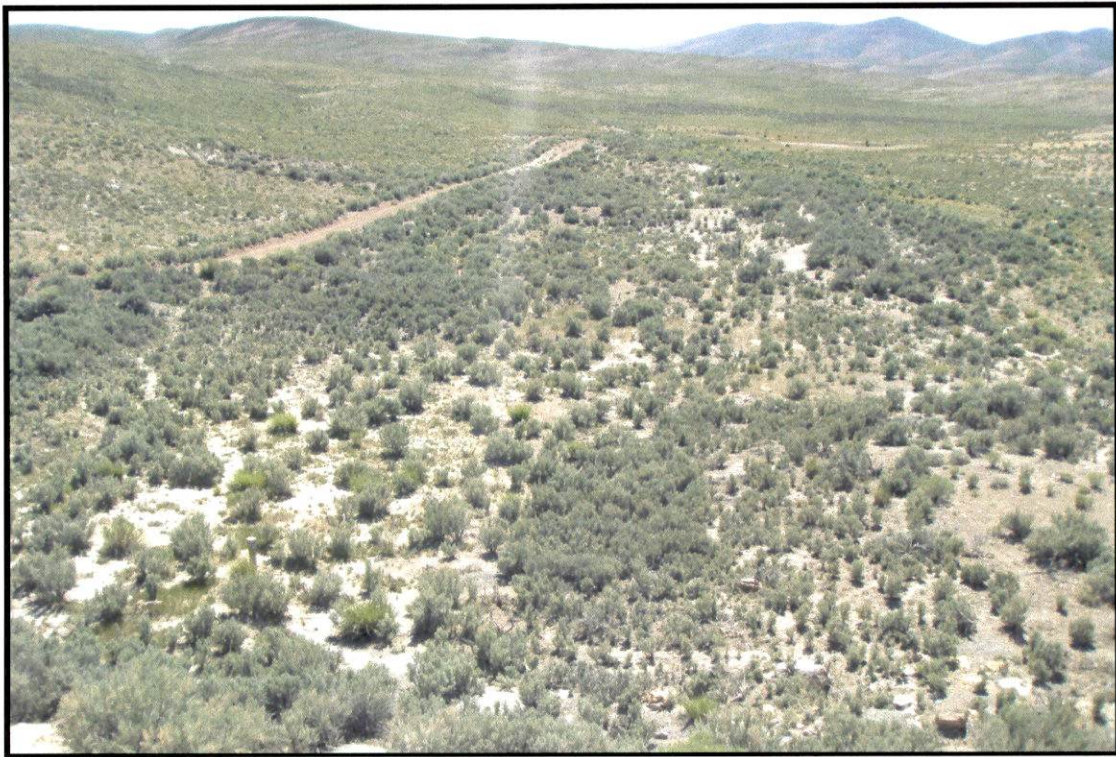


Photo A7/A8: Looking upgradient at DP-7 and DP-8, at the convergence of Drainage 7 and Drainage 8

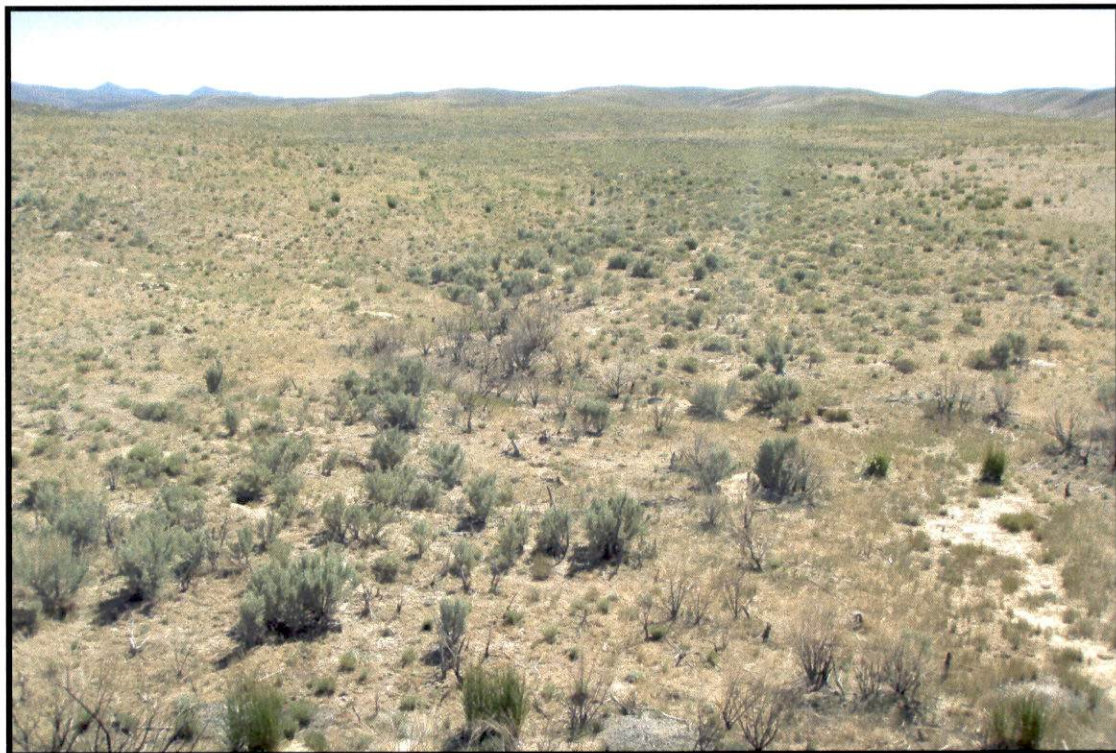


Photo A9: Looking upgradient at DP-9 along Drainage 9

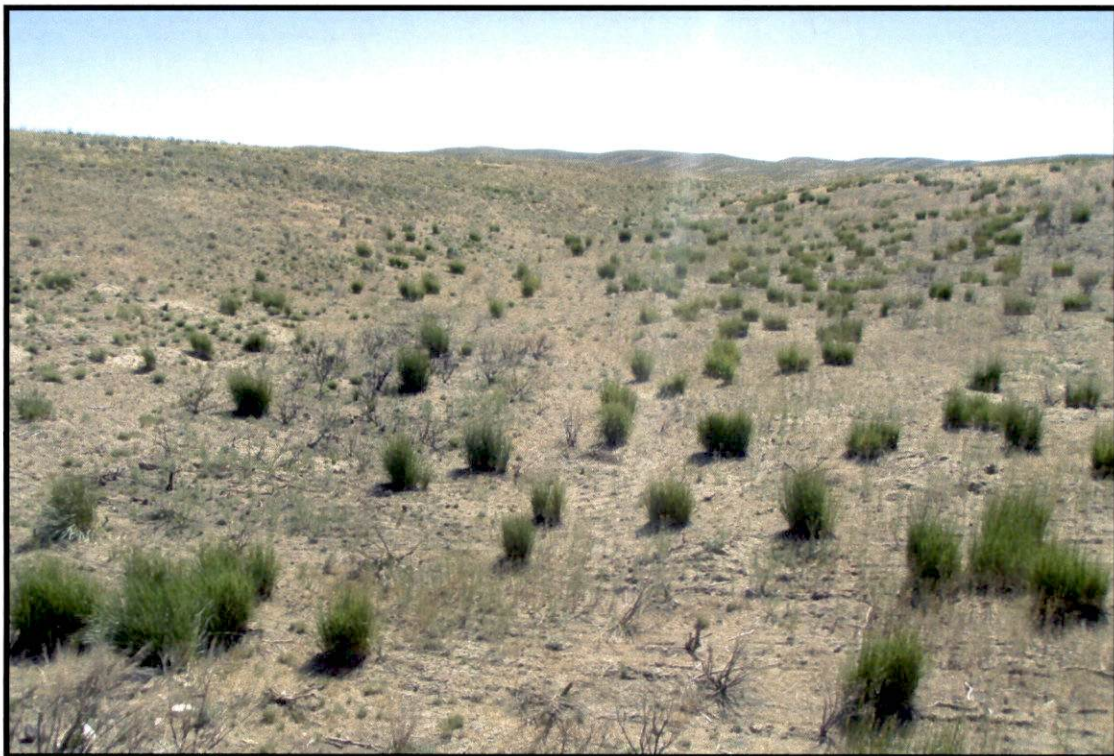


Photo A10: Looking upgradient at DP-10 along Drainage 10

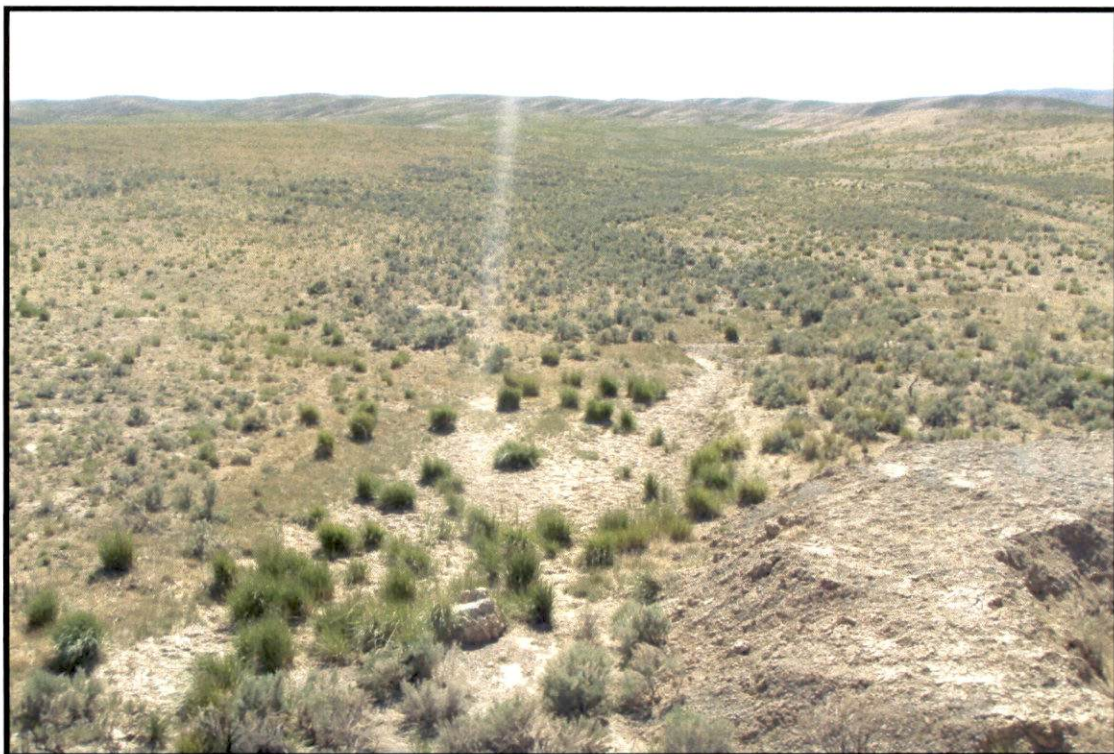


Photo A11: Looking upgradient at DP-11 along Drainage 11

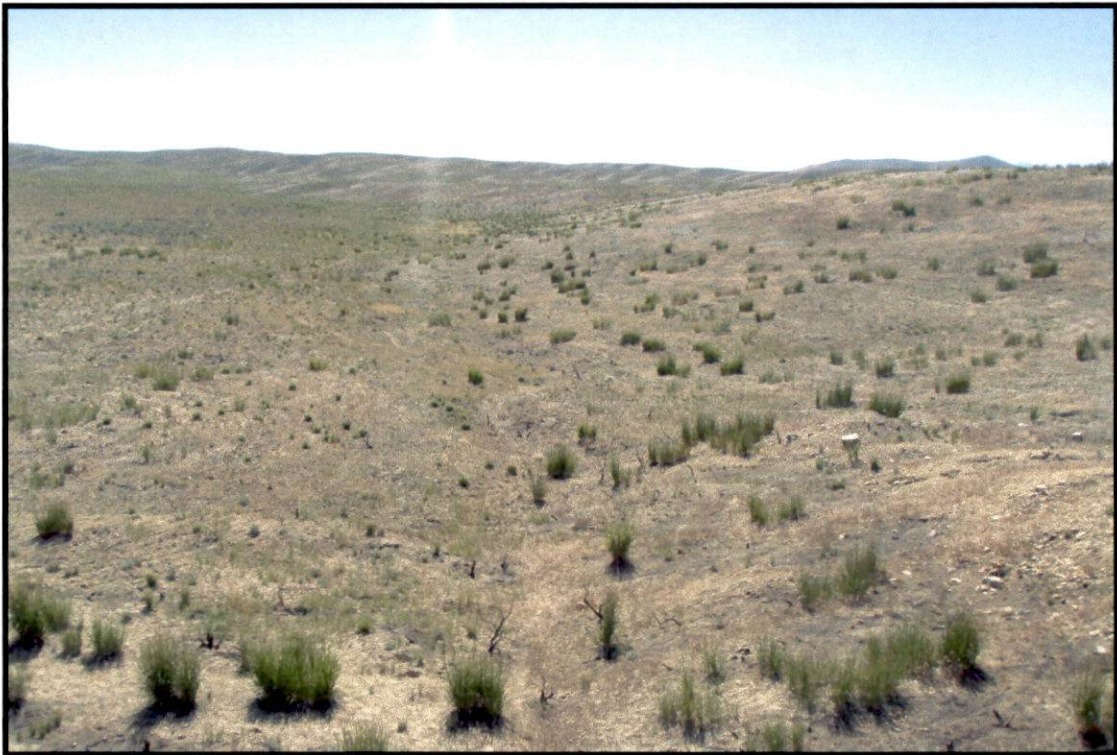


Photo A12: Looking upgradient at DP-12 along Drainage 12

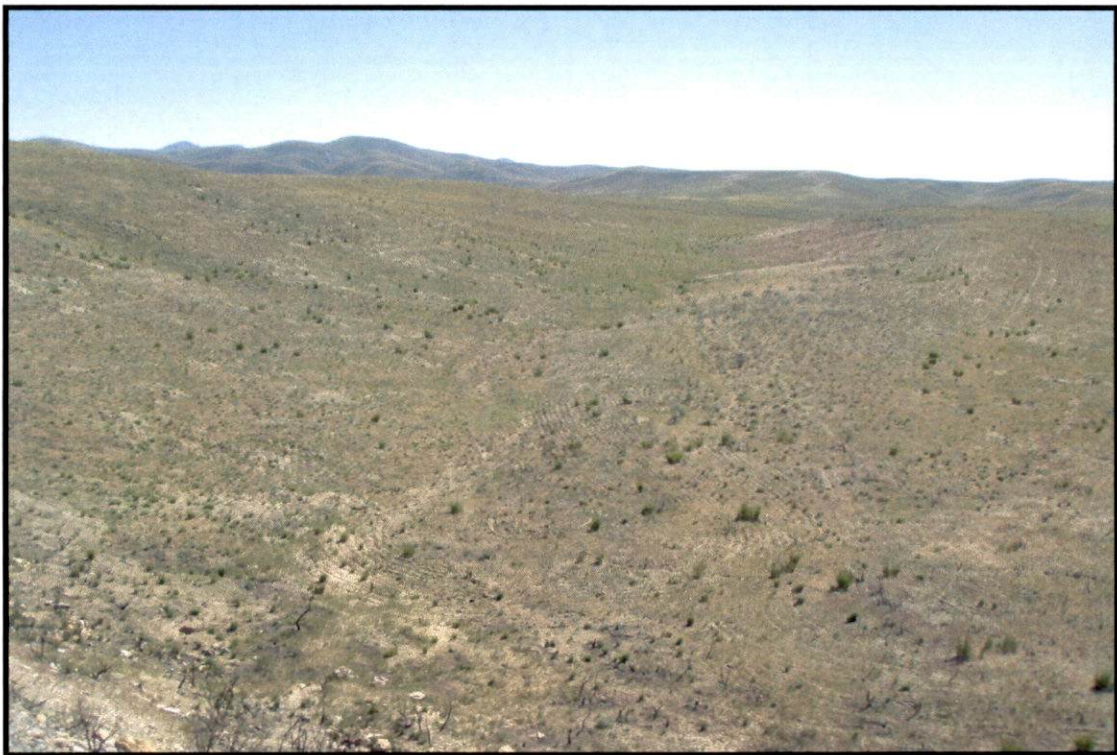


Photo A13: Looking upgradient at DP-13 along Drainage 13



Photo A14-1: Looking upgradient at DP-14a along Soap Creek (Drainage 14).
Stream reach exhibited flowing water during survey.



Photo A14-2: Looking upgradient at DP-14b along Drainage 14. Stream reach was not
conveying water during survey, but does exhibit an OHWM.



Photo A14-3: Looking upgradient at DP-14c along Drainage 14.
Location along Drainage 14 where OHWM terminates.

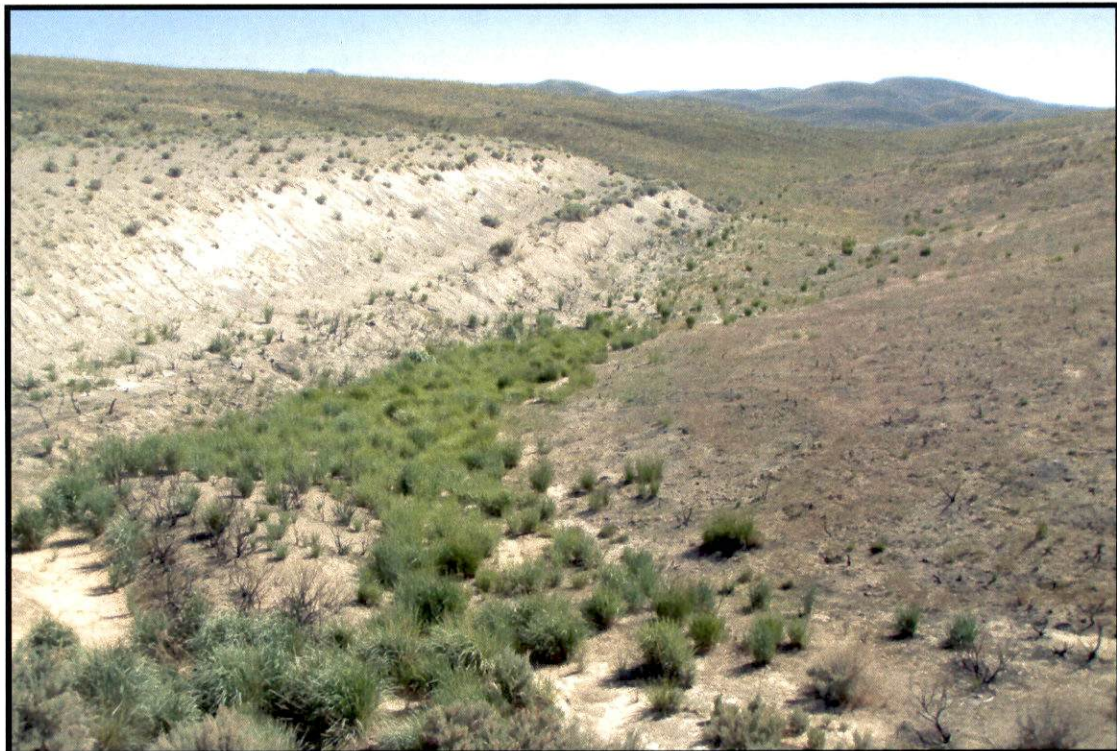


Photo A15: Looking upgradient at DP-15 along Drainage 15

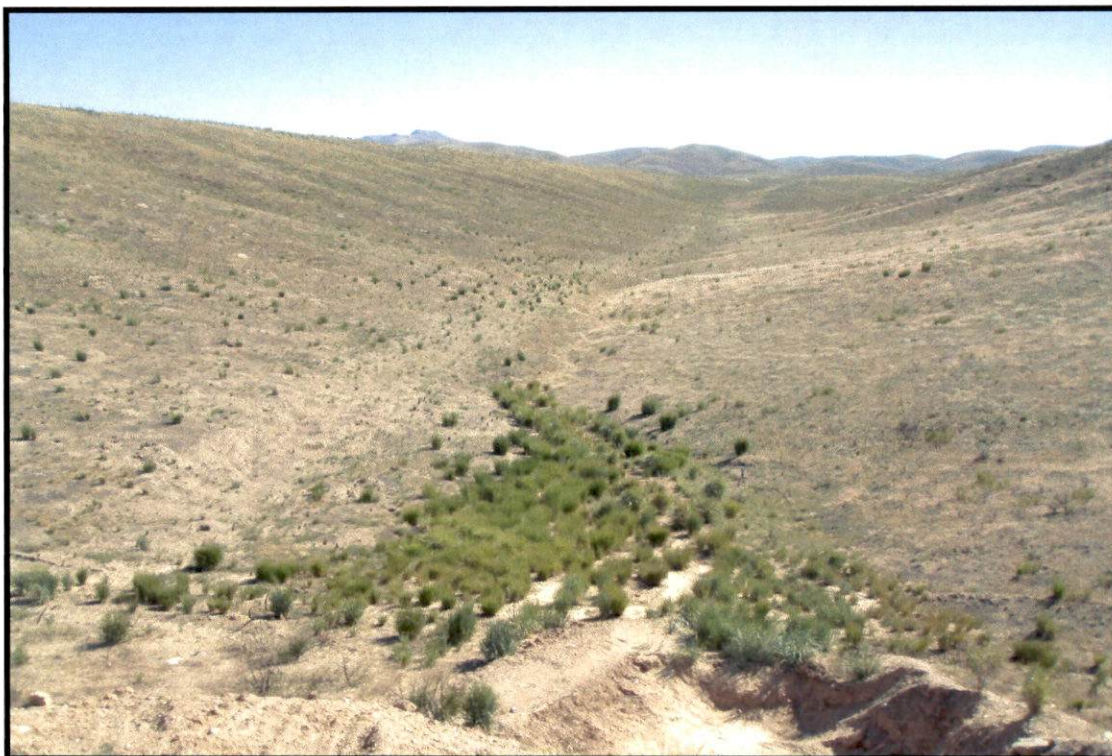


Photo A16: Looking upgradient at DP-16 along Drainage 16



Photo A17-1: Looking upgradient at DP-17a along Soap Creek (Drainage 17)

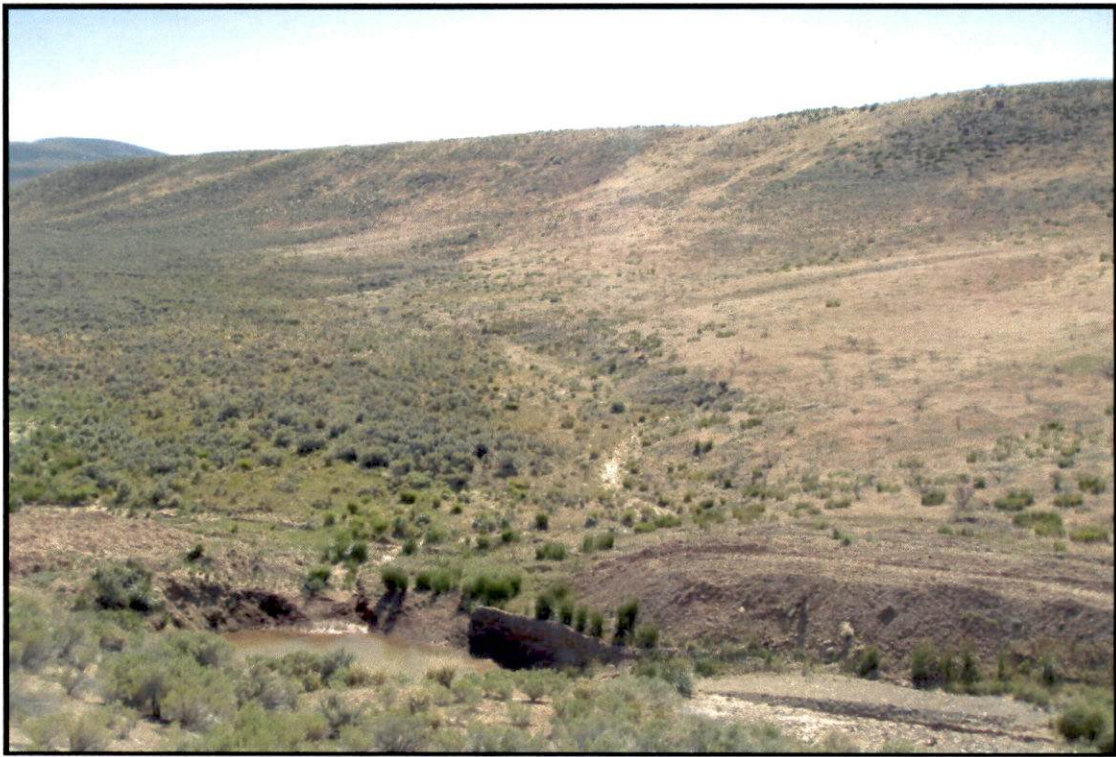


Photo A17-2: Looking upgradient at DP-17b along Soap Creek (Drainage 17). Standing water in foreground is the result of run-off from dust control measures on the nearby haul road.



Photo A19: Looking upgradient at DP-19 along Drainage 19



Photo A21: Looking upgradient at DP-21 along Drainage 21



Photo A22: Looking upgradient at DP-22 along Drainage 22



Photo A23-1: Looking upgradient at DP-23 along Drainage 23

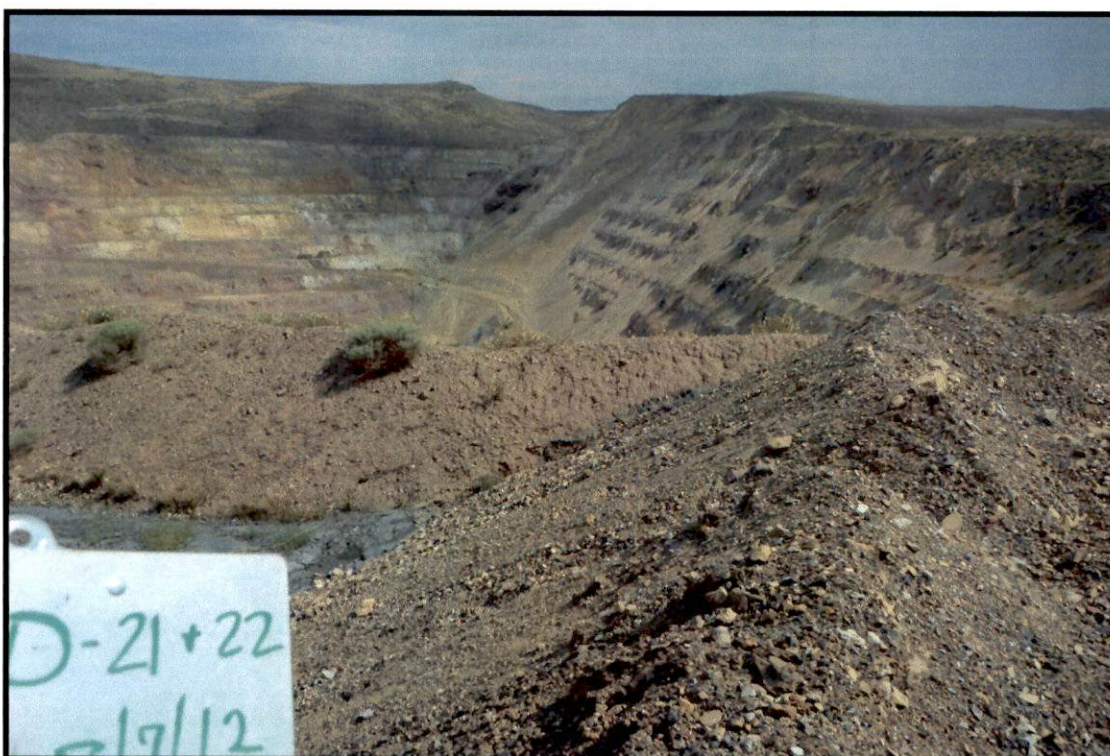


Photo A23-2: Looking downgradient at the convergence of Drainage 22 and Drainage 23 (misabeled in photograph as convergence of Drainages 21 and 22). The convergence has been completely eradicated by mining disturbance.



Photo A24: Looking upgradient at DP-24 along Drainage 24.
Drainage is now used as a haul road.



Photo A25-1: Looking upgradient at DP-25a along Maggie Creek (Drainage 25)
as the drainage enters the survey area

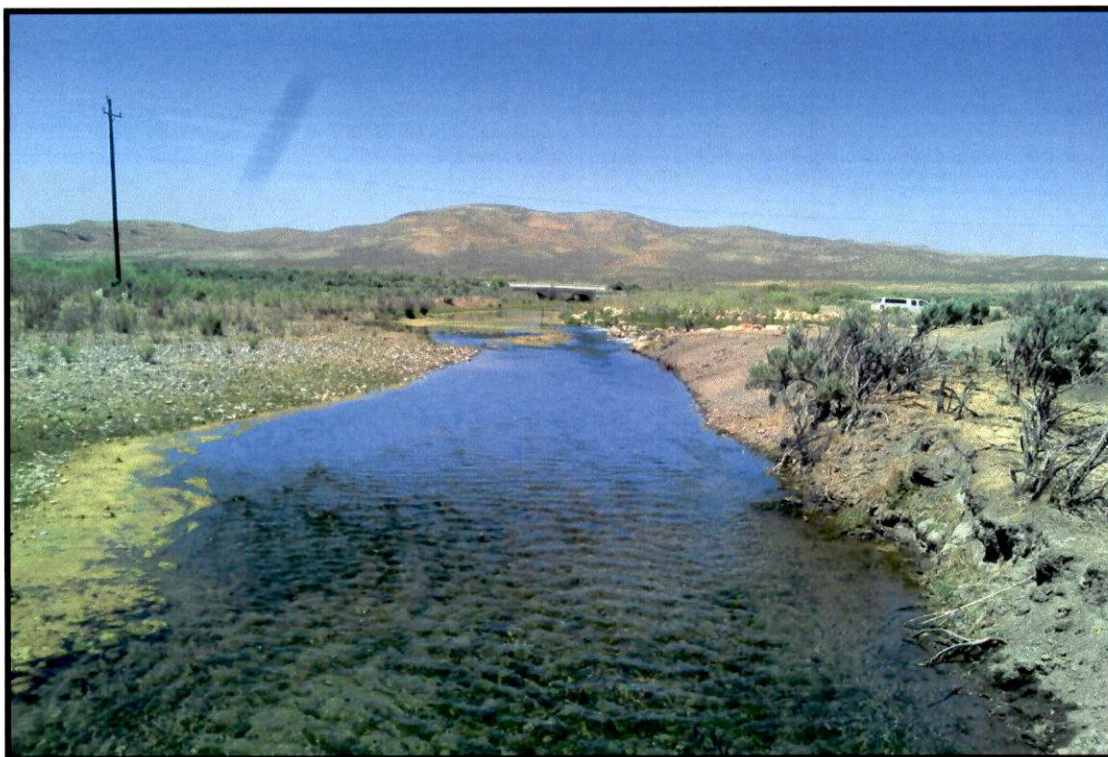


Photo A25-2: Looking upgradient at DP-25b along Maggie Creek (Drainage 25)
near the cooling plant



Photo A25-3: Looking upgradient at DP-25c along Maggie Creek (Drainage 25)
as it exits the survey area



Photo A25-4: Looking upgradient along Maggie Creek (Drainage 25) as it passes through Carlin



Photo A25-5: Looking downgradient at the convergence of Maggie Creek (Drainage 25) and the Humboldt River



Photo A26-1: Looking upgradient at DP-26a along Drainage 26



Photo A26-2: Looking upgradient at DP-26b along Drainage 26



Photo A26-3: Looking upgradient at DP-26c along Drainage 26



Photo A26-4: Looking upgradient at DP-26d along Drainage 26.



Photo A28-1: Looking upgradient at DP-28a along Drainage 28



Photo A28-2: Looking upgradient at DP-28b along Drainage 28



Photo A29-1: Looking upgradient at DP-29a along Drainage 29



Photo A29-2: Looking upgradient at DP-29b along Drainage 29



Photo A30-1: Looking upgradient at DP-30a along Drainage 30



Photo A30-2: Looking upgradient at DP-30b along Drainage 30

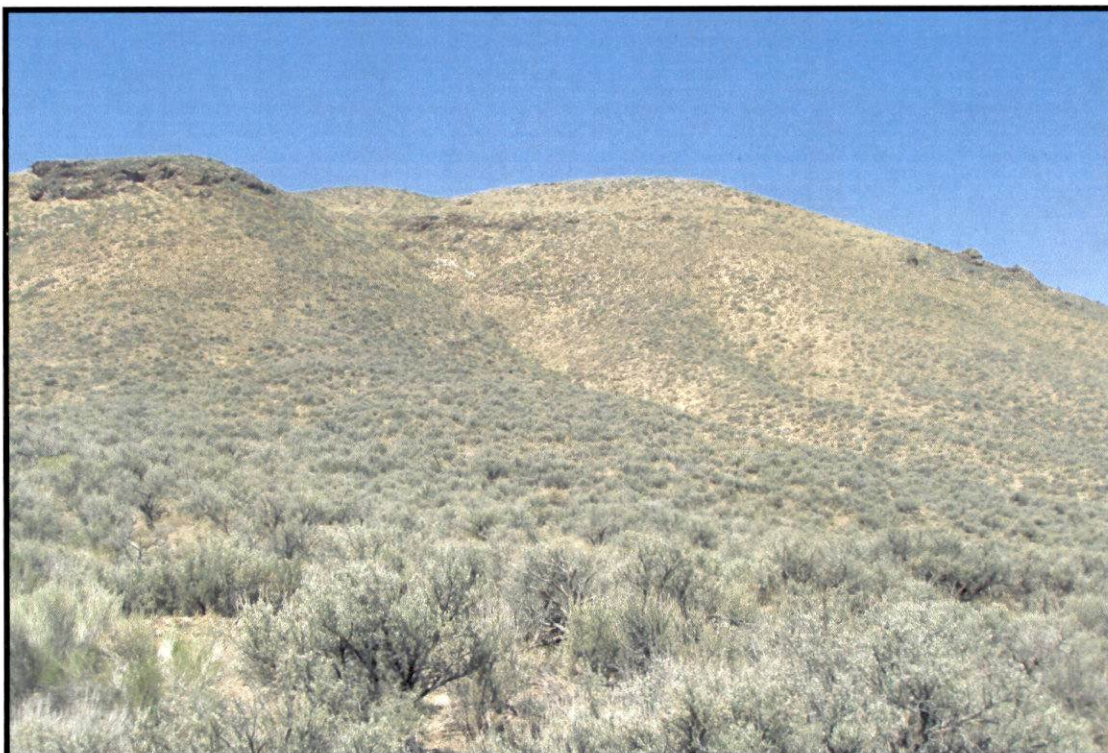


Photo A31: Looking upgradient at DP-31 along Drainage 31. Access to Drainage 31 was limited.



Photo A32: Looking upgradient at DP-32 along Drainage 32. Access to Drainage 32 was limited.



Photo A33-1: Looking upgradient at DP-33a along Drainage 33



Photo A33-2: Looking upgradient at DP-33b along Drainage 33



Photo A33-3: Looking upgradient at DP-33c along Drainage 33



Photo A34: Looking upgradient at DP-34 along Drainage 34



Photo A35: Looking upgradient at DP-35 along Drainage 35



Photo A36-1: Looking downgradient at DP-36a along Drainage 36



Photo A36-2: Looking upgradient at DP-36b along Drainage 36



Photo A37-1: Looking upgradient at DP-37a along Drainage 37

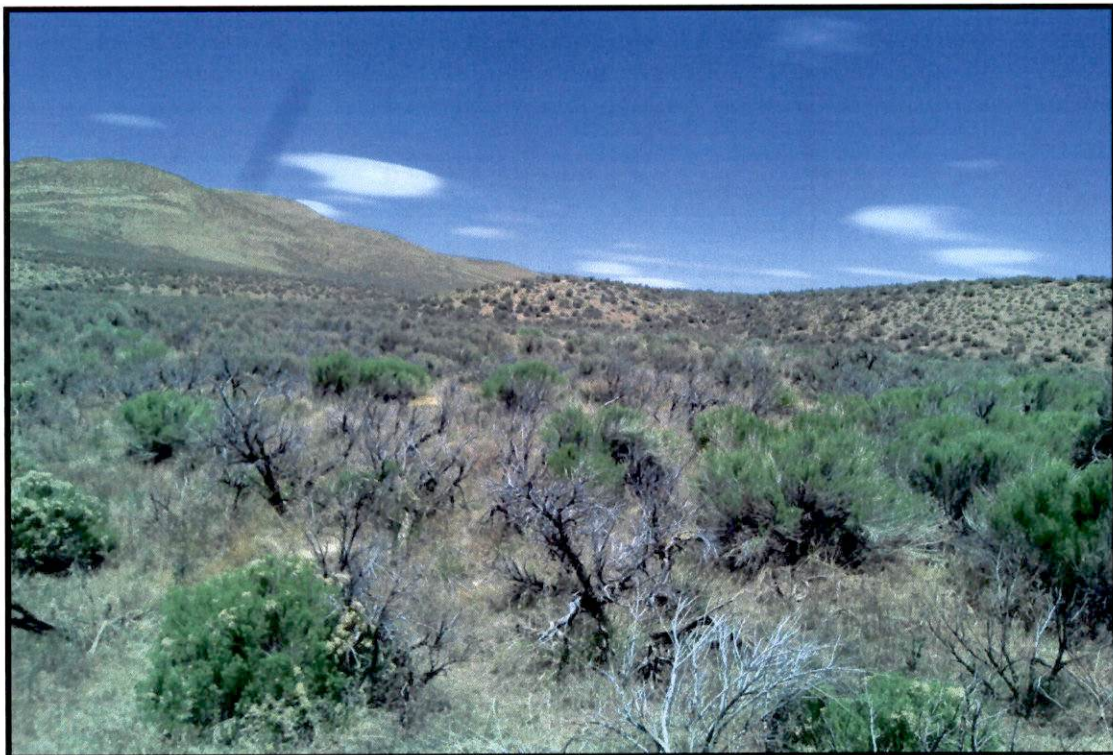


Photo A37-2: Looking upgradient at DP-37b along Drainage 37



Photo A38: Looking upgradient at DP-38 along Drainage 38



Photo A39: Looking upgradient at DP-39 along Drainage 39



Photo A40: Looking upgradient at DP-40 along Drainage 40



Photo A41: Looking upgradient at DP-41 along Drainage 41



Photo A42-1: Looking upgradient at DP-42a along Drainage 42



Photo A42-2: Looking upgradient at DP-42 along Drainage 42.
Most of Drainage 42 has been eradicated by mining disturbance.



Photo A44: Looking upgradient at DP-44 along Drainage 44



Photo A46-1: Looking upgradient at DP-46a along James Creek (Drainage 46)
as it enters into the survey area



Photo A46-2: Looking upgradient at DP-46b along James Creek (Drainage 46)
after having passed through the mine



Photo A46-3: Looking downgradient at DP-46c after James Creek (Drainage 46) passes through a culvert underneath a haul road. James Creek is re-routed into Drainage 60 after leaving the mine.



Photo A46-4: Looking downgradient at DP-46d where James Creek (Drainage 60) converges with Maggie Creek (in background).



Photo A47: Looking upgradient at DP-47 along Drainage 47



Photo A49: Looking downgradient at DP-49 along Drainage 49 before converging with James Creek. Surface water is present in drainage.



Photo A50: Looking downgradient at DP-50 along Drainage 50



Photo A54: Looking downgradient at DP-54 along Drainage 54.
Most of the drainage has been eradicated by mining disturbance.



Photo A55: Looking downgradient at DP-55 along Drainage 55



Photo A56: Looking upgradient at DP-56 along Drainage 56



Photo A57: Looking upgradient at DP-57 along Drainage 57



Photo A58: Looking upgradient at DP-58 along Drainage 58

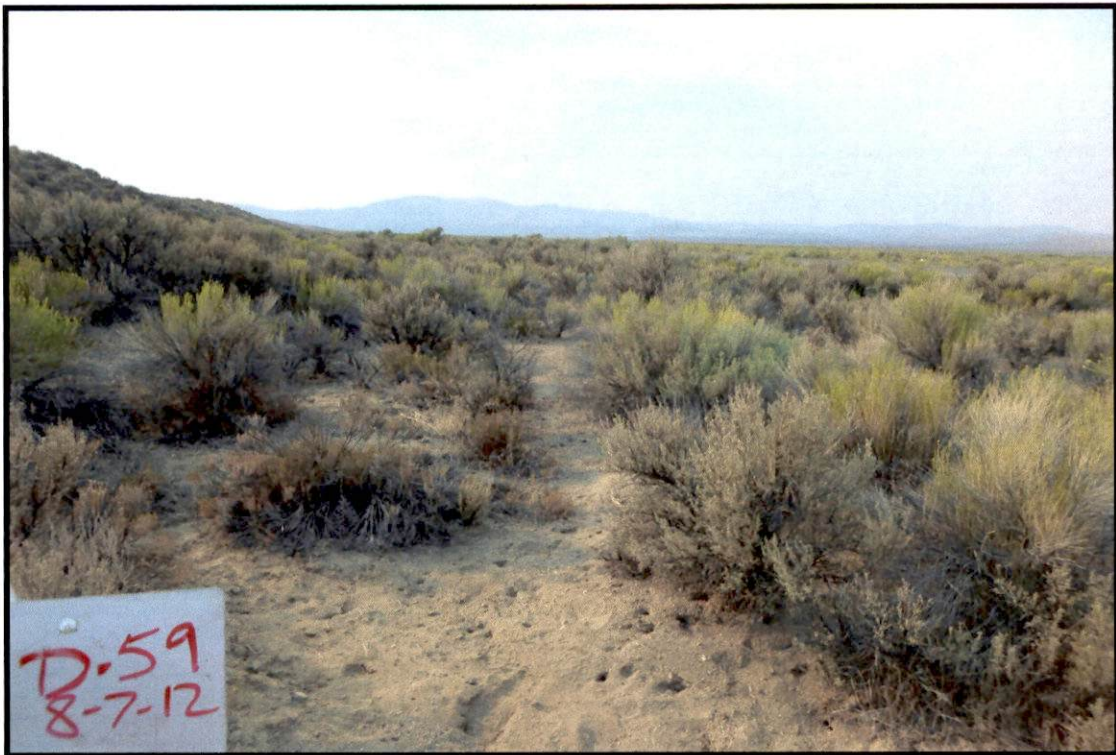


Photo A59: Looking upgradient at DP-59 along Drainage 59



Photo A60: Looking downgradient at DP-60 along Drainage 60 before it enters the mine

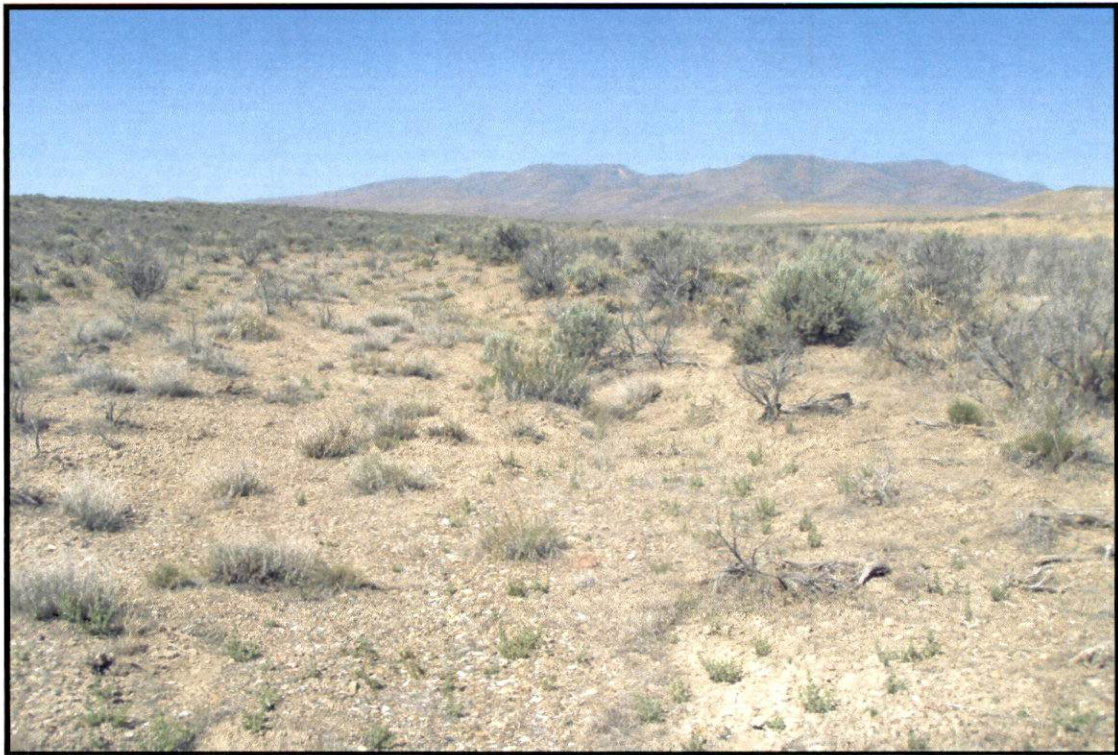


Photo A64: Looking upgradient at DP-64 along Drainage 64



Photo A65: Looking downgradient at DP-65 along Drainage 65



Photo A68: Looking upgradient at DP-68 along Drainage 68 before it enters the survey area



Photo A69: Looking upgradient at DP-69 along Drainage 69



Photo A71: Looking upgradient at DP-71 along Drainage 71



Photo A72-1: Looking upgradient at DP-72a along Drainage 72



Photo A72-2: Looking upgradient at DP-72b along Drainage 72



Photo A73-1: Looking upgradient at DP-73a along Mary's Creek (Drainage 73) where it enters the survey area



Photo A73-2: Looking upgradient at DP-73b along Mary's Creek (Drainage 73)
where it exits the survey area



Photo A73-3: Looking downgradient along Mary's Creek (Drainage 73)
as it passes underneath I-80 after leaving the survey area



Photo A73-4: Looking downgradient at DP-73d along Mary's Creek (Drainage 73) near it's convergence with the Humboldt River



Photo A74: Looking downgradient at DP-74b along Drainage 74



Photo A75: Looking upgradient at DP-75 along Drainage 75

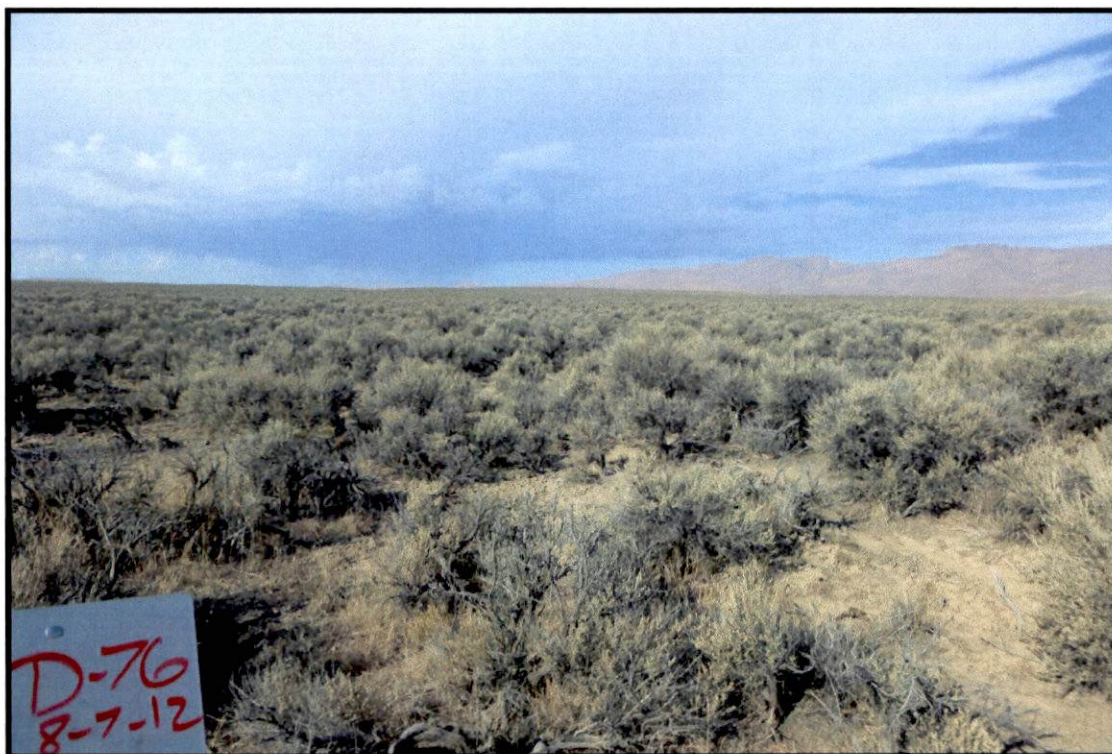


Photo A76: Looking upgradient at DP-76 along Drainage 76

APPENDIX B

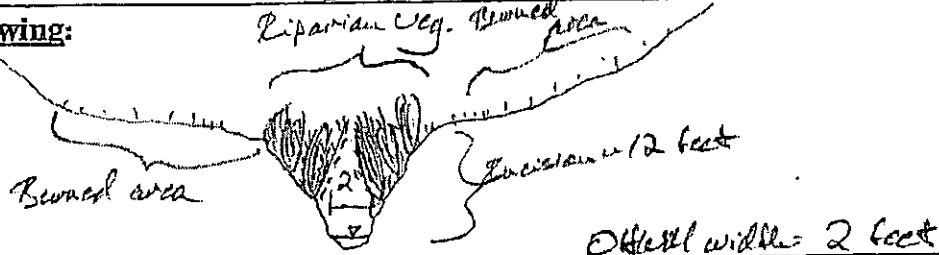
Arid West Ephemeral and Intermittent Stream OHWM Datasheets

Arid West Ephemeral and Intermittent Streams OTHM Datasheet

Project: <i>Gold Quarry - W005</i> Project Number: <i>TS.A.228.cas</i> Stream: <i>DP.14a (Drainage 14)</i> Investigator(s): <i>ML, JA</i>		Date: <i>6/13/12</i> Time: <i>15:50</i> Town: <i>Carlin</i> State: <i>NV</i> Photo begin file#: <i>106</i> Photo end file#: <i>109</i>					
Y ☒ N ☐ Do normal circumstances exist on the site? Y ☐ N ☒ Is the site significantly disturbed?		Location Details: Projection: <i>UTM</i> Datum: <i>NAD 83</i> Coordinates: <i>562279.77mE; 4517120.76mN</i>					
Potential anthropogenic influences on the channel system: <i>Spring sources have been dammed near headwaters to make a cattle pond. Area burned last fall. Channel has become deeply incised by ~12 feet.</i>							
Brief site description: <i>Intermittent stream (flowing near spring sources) flowing NE eventually connecting to a larger creek. Drainage is W of Soap Creek.</i>							
Checklist of resources (if available): <table border="0"> <tr> <td> ☒ Aerial photography Dates: ☐ Topographic maps ☒ Geologic maps ☒ Vegetation maps ☒ Soils maps ☐ Rainfall/precipitation maps ☐ Existing delineation(s) for site ☐ Global positioning system (GPS) ☐ Other studies </td> <td> ☐ Stream gage data Gage number: Period of record: ☐ History of recent effective discharges ☐ Results of flood frequency analysis ☐ Most recent shift-adjusted rating ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event </td> </tr> </table>				☒ Aerial photography Dates: ☐ Topographic maps ☒ Geologic maps ☒ Vegetation maps ☒ Soils maps ☐ Rainfall/precipitation maps ☐ Existing delineation(s) for site ☐ Global positioning system (GPS) ☐ Other studies	☐ Stream gage data Gage number: Period of record: ☐ History of recent effective discharges ☐ Results of flood frequency analysis ☐ Most recent shift-adjusted rating ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event		
☒ Aerial photography Dates: ☐ Topographic maps ☒ Geologic maps ☒ Vegetation maps ☒ Soils maps ☐ Rainfall/precipitation maps ☐ Existing delineation(s) for site ☐ Global positioning system (GPS) ☐ Other studies	☐ Stream gage data Gage number: Period of record: ☐ History of recent effective discharges ☐ Results of flood frequency analysis ☐ Most recent shift-adjusted rating ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event						
Hydrogeomorphic Floodplain Units							
Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM: 1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site. 2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units. 3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units. a) Record the floodplain unit and GPS position. b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit. c) Identify any indicators present at the location. 4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section. 5. Identify the OHWM and record the indicators. Record the OHWM position via: <table border="0"> <tr> <td>☐ Mapping on aerial photograph</td> <td>☒ GPS</td> </tr> <tr> <td>☐ Digitized on computer</td> <td>☐ Other:</td> </tr> </table>				☐ Mapping on aerial photograph	☒ GPS	☐ Digitized on computer	☐ Other:
☐ Mapping on aerial photograph	☒ GPS						
☐ Digitized on computer	☐ Other:						

Project ID: BA 1218 Cross section ID: DP-14a Date: 6/13/12 Time: 15:50

Cross section drawing:



OHWM

GPS point: DP-14a

Indicators:

- ☒ Change in average sediment texture
- ☒ Change in vegetation species
- ☒ Change in vegetation cover

☐ Break in bank slope

☒ Other: Flowing water

☐ Other: _____

Comments:

- ☒ Natural line impressed on the bank
- ☐ Shelving
- ☐ Changes in the character of soil (rock and sand or silt)
- ☐ Destruction of terrestrial vegetation
- ☒ Presence of litter and debris
- ☐ Wracking (marks limit of flow tide)
- ☒ Vegetation matted down, bent, or absent
- ☐ Sediment sorting

☐ Leaf litter disturbed or washed away (small twigs and leaves)

☒ Scour (Soil and debris movement)

☐ Deposition

☐ Multiple observed flow events

☒ Bed and Banks

☐ Water staining

☒ Change in plant community

Floodplain unit: ☒ Low-Flow Channel ☒ Active Floodplain ☐ Low Terrace

GPS point: DP-14a

Characteristics of the floodplain unit:

Average sediment texture: water

Total veg cover: 80 % Tree: % Shrub: 80 % Herb: 20 %

Community successional stage:

☐ NA

☐ Early (herbaceous & seedlings)

☒ Mid (herbaceous, shrubs, saplings)

☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches

☐ Soil development

☐ Surface relief

☒ Other: Flowing water

☐ Other: _____

☐ Other: _____

Comments: Flowing water during survey.

Arid West Ephemeral and Intermittent Streams OTHM Datasheet

Project: *Cold Quarry - WOLIS* Date: *6/13/12* Time: *16:05*
 Project Number: *P.A. 2/28.05* Town: *Carlin* State: *NV*
 Stream: *DP-146 (Drainage 14)* Photo begin file#: *113* Photo end file#: *114*
 Investigator(s): *MAI, JA*

Y ☒ / N ☐ Do normal circumstances exist on the site?

Y ☐ / N ☒ Is the site significantly disturbed?

Location Details:

Projection: *UTM*

Datum: *NAD83*

Coordinates: *562801.11N; 4518213.28E*

Potential anthropogenic influences on the channel system:

See DP-14a.

Brief site description:

Site is downstream from DP14a along Drainage 14.

Checklist of resources (if available):

☒ Aerial photography

Dates:

☒ Topographic maps

☒ Geologic maps

☒ Vegetation maps

☒ Soils maps

☐ Rainfall/precipitation maps

☐ Existing delineation(s) for site

☐ Global positioning system (GPS)

☐ Other studies

☐ Stream gage data

Gage number:

Period of record:

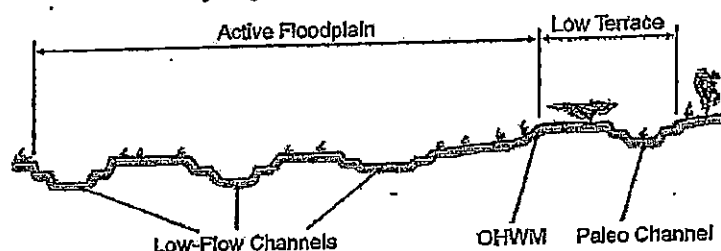
☐ History of recent effective discharges

☐ Results of flood frequency analysis

☐ Most recent shift-adjusted rating

☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units



Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
 - a) Record the floodplain unit and GPS position.
 - b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
 - c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:

☐ Mapping on aerial photograph

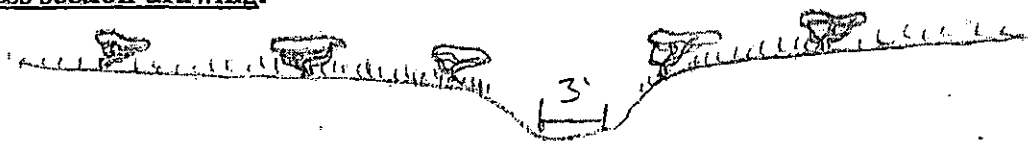
☐ Digitized on computer

☒ GPS

☐ Other:

Project ID: BA 1218.00 Cross section ID: DP 146 Date: 6/13/12 Time: 16:05

Cross section drawing:



Channel width: 3 feet

OHWL

GPS point: DP-146

Indicators:

- ☒ Change in average sediment texture
- ☐ Change in vegetation species
- ☐ Change in vegetation cover

- ☐ Break in bank slope
- ☐ Other: _____
- ☐ Other: _____

Comments:

- ☐ Natural line impressed on the bank
- ☐ Shelving
- ☐ Changes in the character of soil (rock and sand or silt)
- ☐ Destruction of terrestrial vegetation
- ☐ Presence of litter and debris
- ☐ Wracking (marks limit of flow tide)
- ☒ Vegetation matted down, bent, or absent
- ☒ Sediment sorting
- ☐ Leaf litter disturbed or washed away (small twigs and leaves)
- ☒ Scour (Soil and debris movement)
- ☐ Deposition
- ☐ Multiple observed flow events
- ☒ Bed and Banks
- ☐ Water staining
- ☐ Change in plant community

Floodplain unit: ☒ Low-Flow Channel ☒ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Sandy loam

Total veg cover: 5 % Tree: 0 % Shrub: 0 % Herb: 100 % (grass)

Community successional stage:

- ☐ NA
- ☒ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☒ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

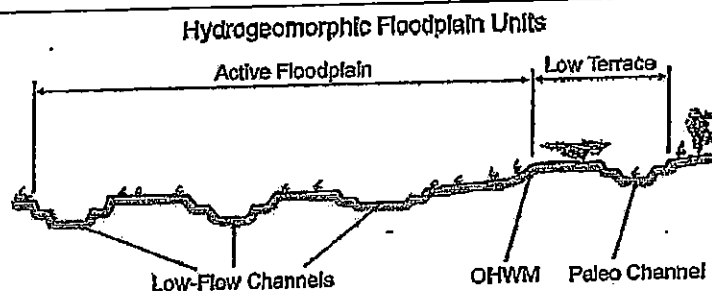
Project: *Gold Quarry - WOLLS* Date: *6/11/12* Time: *17:15*
 Project Number: *BA 12/28.00* Town: *Carlin* State: *NV*
 Stream: *DP-25a Maggie Creek* Photo begin file#: *7* Photo end file#: *11*
 Investigator(s): *MM*

Y ☒ / N ☐ Do normal circumstances exist on the site?
 Y ☐ / N ☒ Is the site significantly disturbed?
 Location Details:
 Projection: *UTM* Datum: *NAD83*
 Coordinates: *566083.43 NE; 4518143.09 mN*

Potential anthropogenic influences on the channel system:
Highway 76 parallels Maggie Creek and there's cattle grazing along and inside drainage.

Brief site description:
Data point where Maggie Creek enters the survey area. Pounded, stagnant water within the deeply incised channel.

Checklist of resources (if available):
☒ Aerial photography ☐ Stream gage data
 Dates: Gage number:
☒ Topographic maps Period of record:
☒ Geologic maps ☐ History of recent effective discharges
☒ Vegetation maps ☐ Results of flood frequency analysis
☒ Soils maps ☐ Most recent shift-adjusted rating
☐ Rainfall/precipitation maps ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event
☐ Existing delineation(s) for site
☐ Global positioning system (GPS)
☐ Other studies



Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

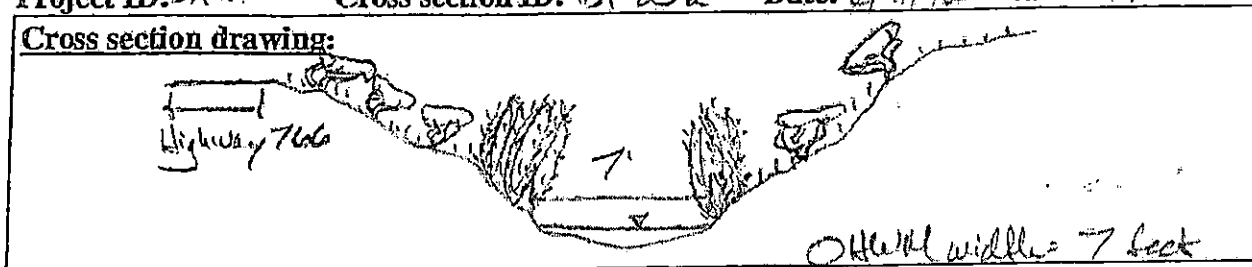
1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
 - a) Record the floodplain unit and GPS position.
 - b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
 - c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:

☐ Mapping on aerial photograph
☐ Digitized on computer

☒ GPS
☐ Other:

Project ID: BA 1228.00 Cross section ID: DP-25a Date: 6/11/12 Time: 17:15

Cross section drawing:



OHWM

GPS point: DP-25a

Indicators:

- ☒ Change in average sediment texture
- ☒ Change in vegetation species
- ☒ Change in vegetation cover

- ☐ Break in bank slope
- ☒ Other: Stagnant water
- ☐ Other:

Comments:

- ☐ Natural line impressed on the bank
- ☐ Shelving
- ☐ Changes in the character of soil (rock and sand or silt)
- ☐ Destruction of terrestrial vegetation
- ☐ Presence of litter and debris
- ☐ Wracking (marks limit of flow tide)
- ☒ Vegetation matted down, bent, or absent
- ☐ Sediment sorting
- ☐ Leaf litter disturbed or washed away (small twigs and leaves)
- ☒ Scour (Soil and debris movement)
- ☐ Deposition
- ☐ Multiple observed flow events
- ☒ Bed and Banks
- ☐ Water staining
- ☒ Change in plant community

Floodplain unit: ☒ Low-Flow Channel ☒ Active Floodplain ☐ Low Terrace

GPS point: DP-25a

Characteristics of the floodplain unit:

Average sediment texture: water

Total veg cover: 0% Tree: 0% Shrub: 0% Herb: 0%

Community successional stage:

- ☒ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☒ Other: Stagnant water
- ☐ Other:
- ☐ Other:

Comments:

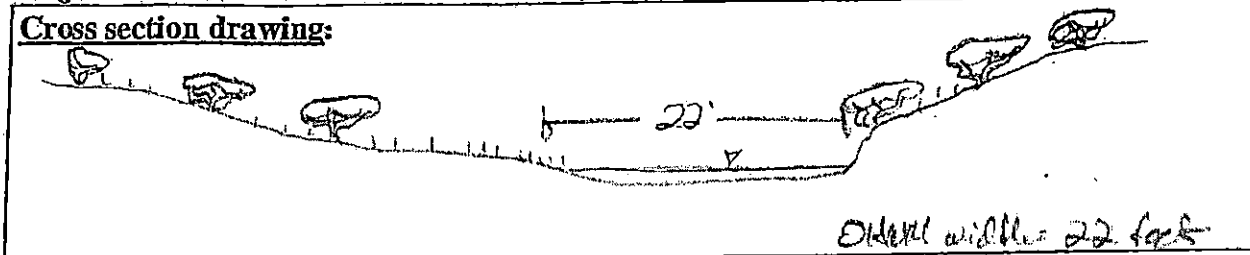
Stagnant water present during survey.

Arid West Ephemeral and Intermittent Streams OHW M Datasheet

Project: <i>Gold Priority - Wells</i> Project Number: <i>PA/2008.005</i> Stream: <i>DP-256 (Maggie Creek)</i> Investigator(s): <i>ALH</i>		Date: <i>6/12/12</i> Town: <i>Carlin</i> Photo begin file#: <i>28</i>		Time: <i>13:25</i> State: <i>NV</i> Photo end file#: <i>30</i>					
Location Details: Projection: <i>UTM</i> Datum: <i>NAD 83</i> Coordinates: <i>570908.94mE; 4515811.77mN</i>			Y ☒ / N ☐ Do normal circumstances exist on the site? Y ☐ / N ☒ Is the site significantly disturbed?						
Potential anthropogenic influences on the channel system: <i>Surrounding area is being dewatered. Groundwater is being run through a cooling plant and is being discharged back into Maggie Creek near site.</i>									
Brief site description: <i>Mid-point data point along Maggie Creek near cooling plant. Flowing water with additional contribution from cooling plant.</i>									
Checklist of resources (if available): <table style="width: 100%; border: none;"> <tr> <td style="vertical-align: top; width: 50%;"> ☒ Aerial photography Dates: ☒ Topographic maps ☒ Geologic maps ☒ Vegetation maps ☒ Soils maps ☐ Rainfall/precipitation maps ☐ Existing delineation(s) for site ☐ Global positioning system (GPS) ☐ Other studies </td> <td style="vertical-align: top; width: 50%;"> ☐ Stream gage data Gage number: Period of record: ☐ History of recent effective discharges ☐ Results of flood frequency analysis ☐ Most recent shift-adjusted rating ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event </td> </tr> </table>						☒ Aerial photography Dates: ☒ Topographic maps ☒ Geologic maps ☒ Vegetation maps ☒ Soils maps ☐ Rainfall/precipitation maps ☐ Existing delineation(s) for site ☐ Global positioning system (GPS) ☐ Other studies	☐ Stream gage data Gage number: Period of record: ☐ History of recent effective discharges ☐ Results of flood frequency analysis ☐ Most recent shift-adjusted rating ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event		
☒ Aerial photography Dates: ☒ Topographic maps ☒ Geologic maps ☒ Vegetation maps ☒ Soils maps ☐ Rainfall/precipitation maps ☐ Existing delineation(s) for site ☐ Global positioning system (GPS) ☐ Other studies	☐ Stream gage data Gage number: Period of record: ☐ History of recent effective discharges ☐ Results of flood frequency analysis ☐ Most recent shift-adjusted rating ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event								
Hydrogeomorphic Floodplain Units									
Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM: 1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site. 2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units. 3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units. a) Record the floodplain unit and GPS position. b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit. c) Identify any indicators present at the location. 4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section. 5. Identify the OHWM and record the indicators. Record the OHWM position via: <table style="width: 100%; border: none; margin-top: 5px;"> <tr> <td style="width: 50%;">☐ Mapping on aerial photograph</td> <td style="width: 50%;">☒ GPS</td> </tr> <tr> <td>☐ Digitized on computer</td> <td>☐ Other:</td> </tr> </table>						☐ Mapping on aerial photograph	☒ GPS	☐ Digitized on computer	☐ Other:
☐ Mapping on aerial photograph	☒ GPS								
☐ Digitized on computer	☐ Other:								

Project ID: 13.41228.00 Cross section ID: DP-256 Date: 6/2/12 Time: 13:25

Cross section drawing:



OHWM

GPS point: DP-256

Indicators:

- ☒ Change in average sediment texture
- ☒ Change in vegetation species
- ☒ Change in vegetation cover

- ☐ Break in bank slope
- ☒ Other: Flowing water
- ☐ Other: _____

- Comments:
- ☒ Natural line impressed on the bank
 - ☐ Shelving
 - ☐ Changes in the character of soil (rock and sand or silt)
 - ☐ Destruction of terrestrial vegetation
 - ☐ Presence of litter and debris
 - ☐ Wracking (marks limit of flow tide)
 - ☒ Vegetation matted down, bent, or absent
 - ☒ Sediment sorting

- ☐ Leaf litter disturbed or washed away (small twigs and leaves)
- ☒ Scour (Soil and debris movement)
- ☐ Deposition
- ☐ Multiple observed flow events
- ☒ Bed and Banks
- ☒ Water staining
- ☒ Change in plant community

Floodplain unit: ☒ Low-Flow Channel ☒ Active Floodplain ☐ Low Terrace

GPS point: DP-256

Characteristics of the floodplain unit:

Average sediment texture: water

Total veg cover: 0 % Tree: 0 % Shrub: 0 % Herb: 0 %

Community successional stage:

- ☒ NA
- ☐ Early (herbaceous & seedlings)

- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches

- ☐ Soil development
- ☐ Surface relief
- ☒ Other: Flowing water
- ☐ Other: _____
- ☐ Other: _____

Comments: Flowing water present during survey.

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Gold Quarry - WOLCS Project Number: R.A. 1228.00 Stream: DP-25c (Maggie Creek) Investigator(s): MK	Date: 6/12/12 Time: 17:40 Town: Carbon State: NV Photo begin file#: 78 Photo end file#: 80
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Y ☒ / N ☐ Do normal circumstances exist on the site? Y ☐ / N ☒ Is the site significantly disturbed?	Location Details: Projection: UTM Datum: NAD 83 Coordinates: 572345.46 mE; 4513876.21 mN
--	--

Potential anthropogenic influences on the channel system:

See DP-25a and DP-25b.

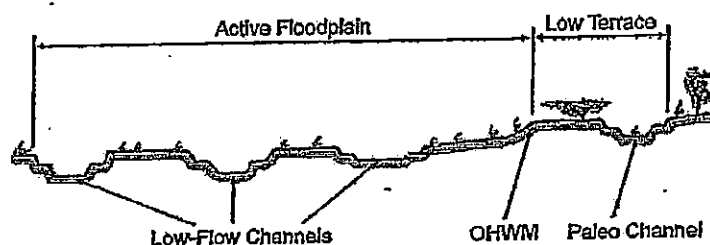
Brief site description:

Data point where Maggie Creek exits the survey area. Flowing water all the way to the Humboldt River.

Checklist of resources (if available):

- | | |
|---|---|
| ☒ Aerial photography
Dates:
☒ Topographic maps
☒ Geologic maps
☒ Vegetation maps
☒ Soils maps
☐ Rainfall/precipitation maps
☐ Existing delineation(s) for site
☐ Global positioning system (GPS)
☐ Other studies | ☐ Stream gage data
Gage number:
Period of record:
☐ History of recent effective discharges
☐ Results of flood frequency analysis
☐ Most recent shift-adjusted rating
☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event |
|---|---|

Hydrogeomorphic Floodplain Units



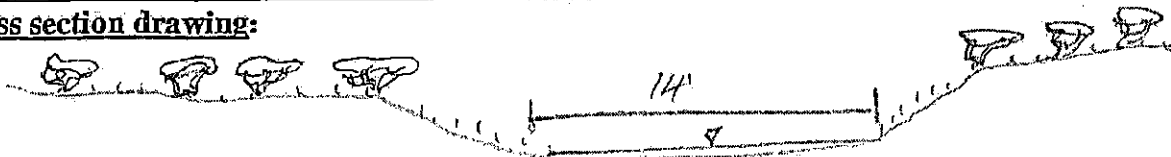
Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
 - a) Record the floodplain unit and GPS position.
 - b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
 - c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:

☐ Mapping on aerial photograph	☒ GPS
☐ Digitized on computer	☐ Other:

Project ID: BA 1208.00 Cross section ID: DP-25c Date: 6/12/12 Time: 17:40

Cross section drawing:



Channel width: 14 feet

OHWL

GPS point: DP-25c

Indicators:

- ☒ Change in average sediment texture
- ☒ Change in vegetation species
- ☒ Change in vegetation cover

☐ Break in bank slope

☒ Other: Flowing water

☐ Other: _____

☒ Natural line impressed on the bank

☐ Shelving

☒ Changes in the character of soil (rock and sand or silt)

☐ Destruction of terrestrial vegetation

☐ Presence of litter and debris

☐ Wracking (marks limit of flow tide)

☐ Vegetation matted down, bent, or absent

☐ Sediment sorting

☐ Leaf litter disturbed or washed away (small twigs and leaves)

☐ Scour (Soil and debris movement)

☐ Deposition

☐ Multiple observed flow events

☒ Bed and Banks

☒ Water staining

☒ Change in plant community

Comments:

Floodplain unit: ☒ Low-Flow Channel

☒ Active Floodplain

☐ Low Terrace

GPS point: DP-25c

Characteristics of the floodplain unit:

Average sediment texture: water

Total veg cover: 10 % Tree: 0 % Shrub: 0 % Herb: 100 % (algae)

Community successional stage:

☐ NA

☒ Early (herbaceous & seedlings)

☐ Mid (herbaceous, shrubs, saplings)

☐ Late (herbaceous, shrubs, mature trees)

Indicators:

☐ Mudcracks

☐ Ripples

☐ Drift and/or debris

☐ Presence of bed and bank

☐ Benches

☐ Soil development

☐ Surface relief

☒ Other: Flowing water

☐ Other: _____

☐ Other: _____

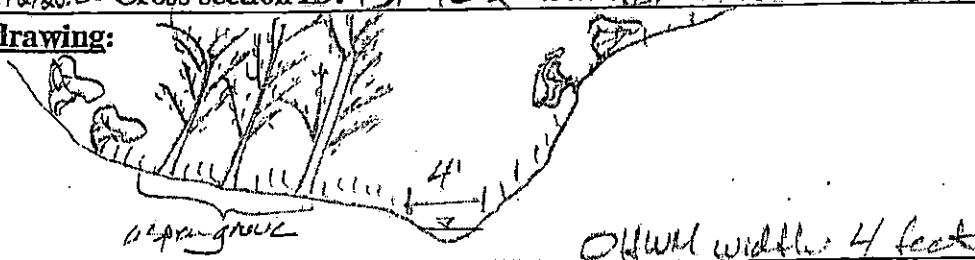
Comments: Flowing water during survey.

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: <i>Cold Quarry - WOLIS</i> Project Number: <i>BA 1228-003</i> Stream: <i>DP-460 (James Creek)</i> Investigator(s): <i>ALM</i>		Date: <i>6/13/12</i> Town: <i>Carlin</i> Photo begin file#: <i>100</i>		Time: <i>13:40</i> State: <i>NV</i> Photo end file#: <i>103</i>					
Y ☒ / N ☐ Do normal circumstances exist on the site? Y ☒ / N ☐ Is the site significantly disturbed?		Location Details: Projection: <i>UTM</i> Datum: <i>NAD 83</i> Coordinates: <i>564300.70 mE; 4513051.45 mN</i>							
Potential anthropogenic influences on the channel system: <i>Fire last fall burned the area, including the aspen grove directly around the drainage.</i>									
Brief site description: <i>Perennial creek flowing SE (James Creek), supporting aspens and riparian veg. Creek is dammed at river creating a wetland/fish pond.</i>									
Checklist of resources (if available): <table border="0"> <tr> <td> ☒ Aerial photography Dates: ☒ Topographic maps ☒ Geologic maps ☒ Vegetation maps ☒ Soils maps ☐ Rainfall/precipitation maps ☐ Existing delineation(s) for site ☐ Global positioning system (GPS) ☐ Other studies </td> <td> ☐ Stream gage data Gage number: Period of record: ☐ History of recent effective discharges ☐ Results of flood frequency analysis ☐ Most recent shift-adjusted rating ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event </td> </tr> </table>						☒ Aerial photography Dates: ☒ Topographic maps ☒ Geologic maps ☒ Vegetation maps ☒ Soils maps ☐ Rainfall/precipitation maps ☐ Existing delineation(s) for site ☐ Global positioning system (GPS) ☐ Other studies	☐ Stream gage data Gage number: Period of record: ☐ History of recent effective discharges ☐ Results of flood frequency analysis ☐ Most recent shift-adjusted rating ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event		
☒ Aerial photography Dates: ☒ Topographic maps ☒ Geologic maps ☒ Vegetation maps ☒ Soils maps ☐ Rainfall/precipitation maps ☐ Existing delineation(s) for site ☐ Global positioning system (GPS) ☐ Other studies	☐ Stream gage data Gage number: Period of record: ☐ History of recent effective discharges ☐ Results of flood frequency analysis ☐ Most recent shift-adjusted rating ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event								
Hydrogeomorphic Floodplain Units									
Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM: 1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site. 2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units. 3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units. a) Record the floodplain unit and GPS position. b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit. c) Identify any indicators present at the location. 4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section. 5. Identify the OHWM and record the indicators. Record the OHWM position via: <table border="0"> <tr> <td>☐ Mapping on aerial photograph</td> <td>☒ GPS</td> </tr> <tr> <td>☐ Digitized on computer</td> <td>☐ Other:</td> </tr> </table>						☐ Mapping on aerial photograph	☒ GPS	☐ Digitized on computer	☐ Other:
☐ Mapping on aerial photograph	☒ GPS								
☐ Digitized on computer	☐ Other:								

Project ID: BA12/28.00 Cross section ID: DP-46a Date: 6/13/12 Time: 13:40

Cross section drawing:



OHWM

GPS point: DP-46a

Indicators:

- ☒ Change in average sediment texture
- ☒ Change in vegetation species
- ☒ Change in vegetation cover

☐ Break in bank slope

☒ Other: Flowing water

☐ Other: _____

☒ Natural line impressed on the bank

- Comments:
- ☐ Shelving
 - ☐ Changes in the character of soil (rock and sand or silt)
 - ☐ Destruction of terrestrial vegetation
 - ☐ Presence of litter and debris
 - ☐ Wracking (marks limit of flow tide)
 - ☒ Vegetation matted down, bent, or absent
 - ☐ Sediment sorting
 - ☐ Leaf litter disturbed or washed away (small twigs and leaves)
 - ☐ Scour (Soil and debris movement)
 - ☐ Deposition
 - ☐ Multiple observed flow events
 - ☒ Bed and Banks
 - ☐ Water staining
 - ☒ Change in plant community

Floodplain unit:

☒ Low-Flow Channel

☒ Active Floodplain

☐ Low Terrace

GPS point: DP-46a

Characteristics of the floodplain unit:

Average sediment texture: water

Total veg cover: 80 % Tree: 0 % Shrub: 0 % Herb: 100 % (Aquatic veg)

Community successional stage:

☐ NA

☒ Early (herbaceous & seedlings)

☐ Mid (herbaceous, shrubs, saplings)

☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches

☐ Soil development

☐ Surface relief

☒ Other: Flowing water

☐ Other: _____

☐ Other: _____

Comments: Flowing water during survey

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: *Gold Quarry WOLs* Date: *8/9/12* Time:
 Project Number: *8.42.18.03* Town: *Carlin* State: *NV*
 Stream: *DP 461 James Creek* Photo begin file#: *48* Photo end file#: *102*
 Investigator(s): *ET*

Y ☐ / N ☒ Do normal circumstances exist on the site?

Location Details:

Y ☒ / N ☐ Is the site significantly disturbed?

Projection:

Datum:

Coordinates:

Potential anthropogenic influences on the channel system:

James Creek gets re-routed after leaving fish pond through the mine. Data point taken where it enters the mine.

Brief site description:

James Creek diversion has been lined with rip-rap and filled in w/ fine sediment. Willows have begun colonizing channel.

Checklist of resources (if available):

☒ Aerial photography

Dates:

☒ Topographic maps

☒ Geologic maps

☒ Vegetation maps

☒ Soils maps

☐ Rainfall/precipitation maps

☐ Existing delineation(s) for site

☐ Global positioning system (GPS)

☐ Other studies

☐ Stream gage data

Gage number:

Period of record:

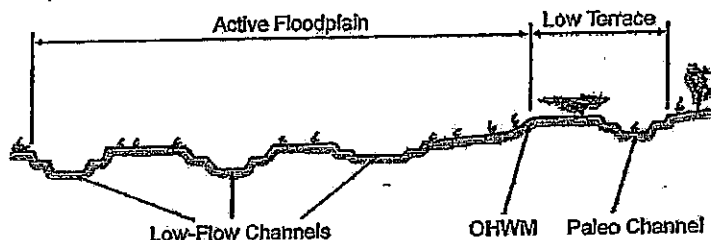
☐ History of recent effective discharges

☐ Results of flood frequency analysis

☐ Most recent shift-adjusted rating

☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units



Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
 - a) Record the floodplain unit and GPS position.
 - b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
 - c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:

☐ Mapping on aerial photograph

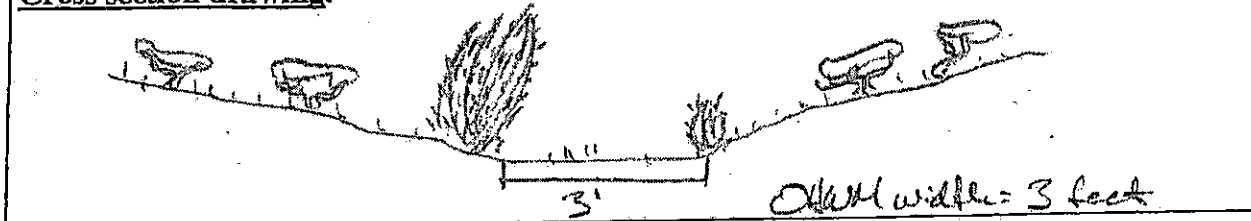
☐ Digitized on computer

☒ GPS

☐ Other:

Project ID: BA12/28.00 Cross section ID: DP-466 Date: 8/9/12 Time:

Cross section drawing:



OHWM

GPS point: DP-466

Indicators:

- ☒ Change in average sediment texture
- ☒ Change in vegetation species
- ☐ Change in vegetation cover

- ☐ Break in bank slope
- ☐ Other: _____
- ☐ Other: _____

Comments:

- ☐ Natural line impressed on the bank
- ☐ Shelving
- ☐ Changes in the character of soil (rock and sand or silt)
- ☐ Destruction of terrestrial vegetation
- ☐ Presence of litter and debris
- ☐ Wracking (marks limit of flow tide)
- ☐ Vegetation matted down, bent, or absent
- ☐ Sediment sorting
- ☐ Leaf litter disturbed or washed away (small twigs and leaves)
- ☐ Scour (Soil and debris movement)
- ☒ Deposition
- ☐ Multiple observed flow events
- ☒ Bed and Banks
- ☐ Water staining
- ☐ Change in plant community

Floodplain unit: ☒ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: DP-466

Characteristics of the floodplain unit:

Average sediment texture: silt + fine sand

Total veg cover: 5 % Tree: 0 % Shrub: 0 % Herb: 100 %

Community successional stage:

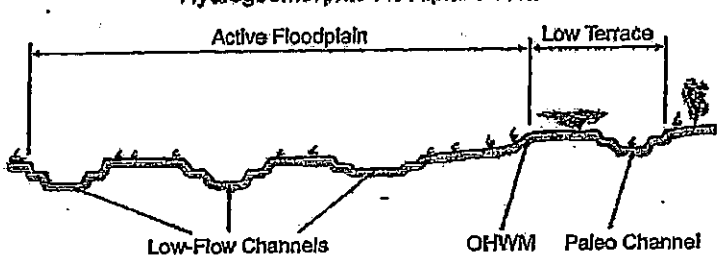
- ☒ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☒ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

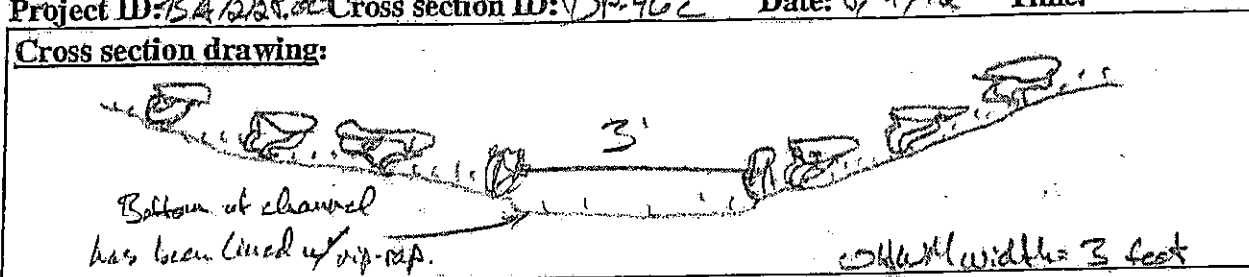
Comments:

Arid West Ephemeral and Intermittent Streams OTHM Datasheet

Project: <i>Gold Quarry - W063</i> Project Number: <i>B.412/28.00</i> Stream: <i>DP.466</i> Investigator(s): <i>KT</i>	Date: <i>8/9/12</i> Town: <i>Carlton</i> Photo begin file#: Time: State: <i>NV</i> Photo end file#:
Y ☐ / N ☒ Do normal circumstances exist on the site? Y ☒ / N ☐ Is the site significantly disturbed?	Location Details: Projection: Datum: Coordinates:
Potential anthropogenic influences on the channel system: <i>See DP.466. James Creek is re-routed into Drainage 60 after leaving the mine.</i>	
Brief site description: <i>Data point taken where James passes under a haul road after passing through the mine.</i>	
Checklist of resources (if available): ☒ Aerial photography Dates: ☒ Topographic maps ☒ Geologic maps ☒ Vegetation maps ☒ Soils maps ☐ Rainfall/precipitation maps ☐ Existing delineation(s) for site ☐ Global positioning system (GPS) ☐ Other studies ☐ Stream gage data Gage number: Period of record: ☐ History of recent effective discharges ☐ Results of flood frequency analysis ☐ Most recent shift-adjusted rating ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event	
Hydrogeomorphic Floodplain Units 	
Procedure for identifying and characterizing the floodplain units to assist in identifying the OTHM: 1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site. 2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units. 3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units. a) Record the floodplain unit and GPS position. b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit. c) Identify any indicators present at the location. 4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section. 5. Identify the OTHM and record the indicators. Record the OTHM position via: ☐ Mapping on aerial photograph ☐ Digitized on computer ☒ GPS ☐ Other:	

Project ID: BA/228 Cross section ID: DP-46c Date: 8/9/12 Time:

Cross section drawing:



OHWM

GPS point: DP-46c

Indicators:

- ☒ Change in average sediment texture
- ☐ Change in vegetation species
- ☐ Change in vegetation cover

- ☐ Break in bank slope
- ☐ Other: _____
- ☐ Other: _____

Comments:

- ☐ Natural line impressed on the bank
- ☐ Shelving
- ☐ Changes in the character of soil (rock and sand or silt)
- ☐ Destruction of terrestrial vegetation
- ☒ Presence of litter and debris
- ☐ Wracking (marks limit of flow tide)
- ☐ Vegetation matted down, bent, or absent
- ☐ Sediment sorting

- ☐ Leaf litter disturbed or washed away (small twigs and leaves)
- ☐ Scour (Soil and debris movement)
- ☒ Deposition
- ☐ Multiple observed flow events
- ☒ Bed and Banks
- ☐ Water staining
- ☐ Change in plant community

Floodplain unit:

☒ Low-Flow Channel

☐ Active Floodplain

☐ Low Terrace

GPS point: DP-46c

Characteristics of the floodplain unit:

Average sediment texture: rip-rap + fine silt

Total veg cover: 5 % Tree: 0 % Shrub: 0 % Herb: 100 %

Community successional stage:

- ☒ NA
- ☐ Early (herbaceous & seedlings)

- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☒ Drift and/or debris
- ☒ Presence of bed and bank
- ☐ Benches

- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: <i>Cold Quarry - WCCS</i>	Date: <i>6/13/12</i>	Time:
Project Number: <i>BA/208.00</i>	Town: <i>Carlisle</i>	State: <i>NU</i>
Stream: <i>Drainage 44</i>	Photo begin file#:	Photo end file#:
Investigator(s): <i>JA</i>		

Y ☒ / N ☐ Do normal circumstances exist on the site?

Location Details:

Y ☐ / N ☒ Is the site significantly disturbed?

Projection:

Datum:

Coordinates:

Potential anthropogenic influences on the channel system:

Surrounding area burned last fall.

Brief site description:

Perennial? stream flowing NE, converging with James Creek, upstream of the fish pond. Flowing water during survey.

Checklist of resources (if available):

☒ Aerial photography

Dates:

☒ Topographic maps

☒ Geologic maps

☒ Vegetation maps

☒ Soils maps

☐ Rainfall/precipitation maps

☐ Existing delineation(s) for site

☐ Global positioning system (GPS)

☐ Other studies

☐ Stream gage data

Gage number:

Period of record:

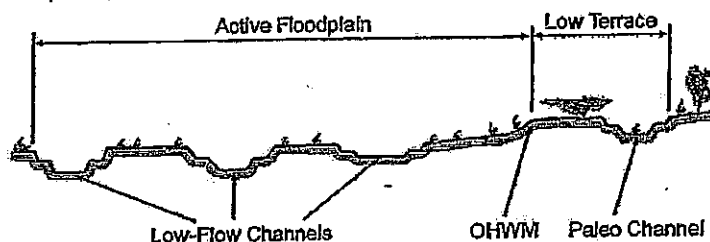
☐ History of recent effective discharges

☐ Results of flood frequency analysis

☐ Most recent shift-adjusted rating

☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units



Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
 - a) Record the floodplain unit and GPS position.
 - b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
 - c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:

☐ Mapping on aerial photograph

☐ Digitized on computer

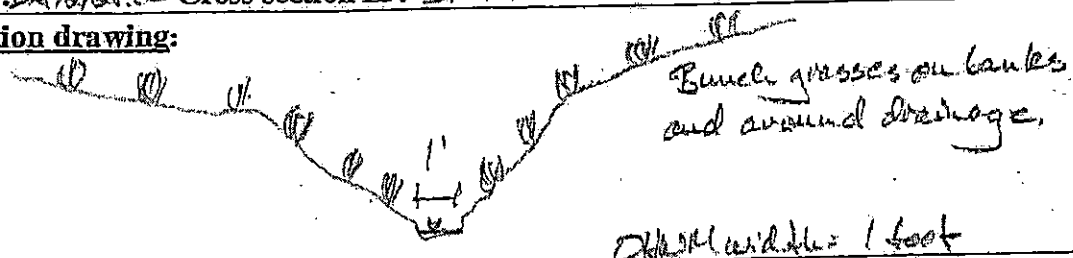
☒ GPS

☐ Other:

Project ID: BA12/28.00 Cross section ID: DP-49

Date: 6/13/12 Time:

Cross section drawing:



OHWM

GPS point: DP-49

Indicators:

- ☐ Change in average sediment texture
- ☒ Change in vegetation species
- ☒ Change in vegetation cover

- ☐ Break in bank slope
- ☒ Other: Flowing water
- ☐ Other: _____

Comments:

- ☐ Natural line impressed on the bank
- ☐ Shelying
- ☐ Changes in the character of soil (rock and sand or silt)
- ☐ Destruction of terrestrial vegetation
- ☐ Presence of litter and debris
- ☐ Wracking (marks limit of flow tide)
- ☐ Vegetation matted down, bent, or absent
- ☐ Sediment sorting
- ☐ Leaf litter disturbed or washed away (small twigs and leaves)
- ☐ Scour (Soil and debris movement)
- ☐ Deposition
- ☐ Multiple observed flow events
- ☒ Bed and Banks
- ☐ Water staining
- ☐ Change in plant community

Floodplain unit: ☒ Low-Flow Channel

☐ Active Floodplain

☐ Low Terrace

GPS point: DP-49

Characteristics of the floodplain unit:

Average sediment texture: water

Total veg cover: 0 % Tree: _____ % Shrub: _____ % Herb: _____ %

Community successional stage:

- ☐ NA
- ☒ Early (herbaceous & seedlings)

- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches

- ☐ Soil development
- ☐ Surface relief
- ☒ Other: Flowing water
- ☐ Other: _____
- ☐ Other: _____

Comments:

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Gold Quarry - W065 Project Number: B/L 12/12 P.062 Stream: DP-73a (Clay's Creek) Investigator(s): ALM	Date: 8/2/12 Town: Lawton Photo begin file#:	Time: State: NV Photo end file#:
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Y ☒ / N ☐ Do normal circumstances exist on the site? Y ☐ / N ☒ Is the site significantly disturbed?	Location Details: <table style="width: 100%;"> <tr> <td style="width: 50%;">Projection:</td> <td style="width: 50%;">Datum:</td> </tr> <tr> <td colspan="2">Coordinates:</td> </tr> </table>	Projection:	Datum:	Coordinates:	
Projection:	Datum:				
Coordinates:					

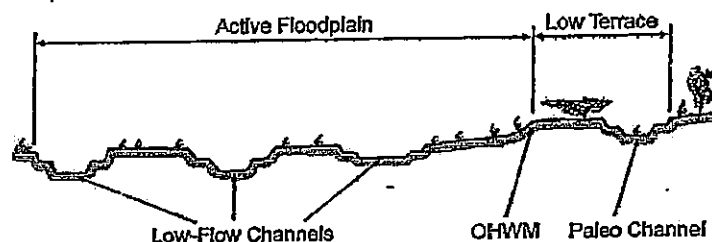
Potential anthropogenic influences on the channel system:
 the drainage is a wide, historic wash, that receives 4WD vehicle traffic through portions of the drainage.

Brief site description:
 channel is a wash with a low-flow channel in the drainage.

Checklist of resources (if available):

- | | |
|--|---|
| ☐ Aerial photography
Dates:
☐ Topographic maps
☐ Geologic maps
☐ Vegetation maps
☐ Soils maps
☐ Rainfall/precipitation maps
☐ Existing delineation(s) for site
☐ Global positioning system (GPS)
☐ Other studies | ☐ Stream gage data
Gage number:
Period of record:
☐ History of recent effective discharges
☐ Results of flood frequency analysis
☐ Most recent shift-adjusted rating
☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event |
|--|---|

Hydrogeomorphic Floodplain Units

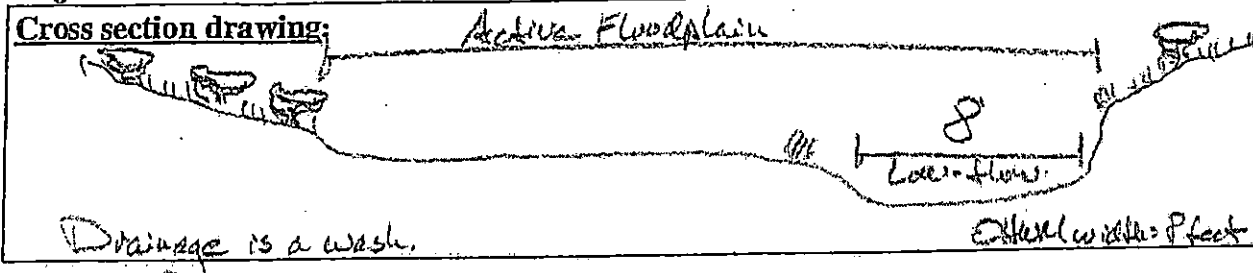


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
 - a) Record the floodplain unit and GPS position.
 - b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
 - c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:

☐ Mapping on aerial photograph	☐ GPS
☐ Digitized on computer	☐ Other:

Project ID: BA 128.2 Cross section ID: DP-73a Date: 8/9/12 Time:



OHWM

GPS point: DP-73a

Indicators:

- ☒ Change in average sediment texture
- ☐ Change in vegetation species
- ☐ Change in vegetation cover

☐ Break in bank slope

☐ Other: _____

☐ Other: _____

Comments:

☐ Natural line impressed on the bank

☒ Shelving

☐ Changes in the character of soil (rock and sand or silt)

☐ Destruction of terrestrial vegetation

☐ Presence of litter and debris

☐ Wracking (marks limit of flow tide)

☒ Vegetation matted down, bent, or absent

☐ Sediment sorting

☐ Leaf litter disturbed or washed away (small twigs and leaves)

☒ Scour (Soil and debris movement)

☐ Deposition

☐ Multiple observed flow events

☒ Bed and Banks

☐ Water staining

☐ Change in plant community

Floodplain unit: ☒ Low-Flow Channel

☐ Active Floodplain

☐ Low Terrace

GPS point: DP-73a

Characteristics of the floodplain unit:

Average sediment texture: gravel & cobble

Total veg cover: 0 % Tree: 0 % Shrub: 0 % Herb: 0 %

Community successional stage:

☒ NA

☐ Early (herbaceous & seedlings)

☐ Mid (herbaceous, shrubs, saplings)

☐ Late (herbaceous, shrubs, mature trees)

Indicators:

☐ Mudcracks

☐ Ripples

☐ Drift and/or debris

☒ Presence of bed and bank

☐ Benches

☐ Soil development

☐ Surface relief

☒ Other: Scour

☒ Other: Absence of veg

☐ Other: _____

Comments:

Project ID: BA 12/28/02 Cross section ID: DP-73a Date: 8/9/12 Time: _____

Floodplain unit: ☐ Low-Flow Channel ☒ Active Floodplain ☐ Low Terrace

GPS point: DP-73a

Characteristics of the floodplain unit:

Average sediment texture: gravel & cobble

Total veg cover: 5 % Tree: 0 % Shrub: 50 % Herb: 50 %

Community successional stage:

☒ NA

☐ Early (herbaceous & seedlings)

☐ Mid (herbaceous, shrubs, saplings)

☐ Late (herbaceous, shrubs, mature trees)

Indicators:

☐ Mudcracks

☐ Ripples

☐ Drift and/or debris

☒ Presence of bed and bank

☐ Benches

☐ Soil development

☐ Surface relief

☒ Other: Scow

☒ Other: Absence of veg

☐ Other: _____

Comments:

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____ % Shrub: _____ % Herb: _____ %

Community successional stage:

☐ NA

☐ Early (herbaceous & seedlings)

☐ Mid (herbaceous, shrubs, saplings)

☐ Late (herbaceous, shrubs, mature trees)

Indicators:

☐ Mudcracks

☐ Ripples

☐ Drift and/or debris

☐ Presence of bed and bank

☐ Benches

☐ Soil development

☐ Surface relief

☐ Other: _____

☐ Other: _____

☐ Other: _____

Comments:

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: <i>Cold Chummy-Lewis</i> Project Number: <i>B.4/2/28.00</i> Stream: <i>DP-736 Calways Creek</i> Investigator(s): <i>MLL</i>	Date: <i>8/2/12</i> Town: <i>Carlin</i> Photo begin file#: Photo end file#:
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Y ☒ / N ☐ Do normal circumstances exist on the site? Y ☐ / N ☒ Is the site significantly disturbed?	Location Details: <table style="width: 100%;"> <tr> <td style="width: 50%;">Projection:</td> <td style="width: 50%;">Datum:</td> </tr> <tr> <td colspan="2">Coordinates:</td> </tr> </table>	Projection:	Datum:	Coordinates:	
Projection:	Datum:				
Coordinates:					

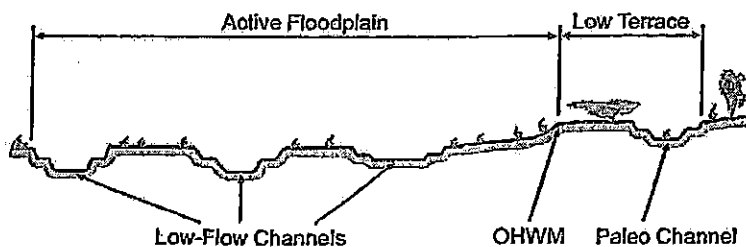
Potential anthropogenic influences on the channel system:
See DP-73a.

Brief site description:
See DP-73a.

Checklist of resources (if available):

☒ Aerial photography Dates: ☒ Topographic maps ☒ Geologic maps ☒ Vegetation maps ☒ Soils maps ☐ Rainfall/precipitation maps ☐ Existing delineation(s) for site ☐ Global positioning system (GPS) ☐ Other studies	☐ Stream gage data Gage number: Period of record: ☐ History of recent effective discharges ☐ Results of flood frequency analysis ☐ Most recent shift-adjusted rating ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event
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Hydrogeomorphic Floodplain Units



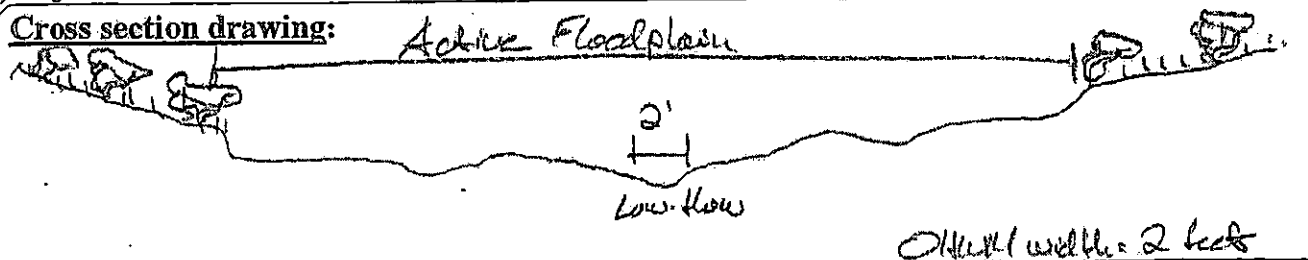
Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
 - a) Record the floodplain unit and GPS position.
 - b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
 - c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:

☐ Mapping on aerial photograph	☒ GPS
☐ Digitized on computer	☐ Other:

Project ID: BA/228.22 Cross section ID: DP-736 Date: 8/9/12 Time:

Cross section drawing:



OHWL

GPS point: DP-736

Indicators:

- ☒ Change in average sediment texture
- ☐ Change in vegetation species
- ☐ Change in vegetation cover

☐ Break in bank slope

☒ Other: Veg is absent

☒ Other: Scour

Comments:

Floodplain unit: ☒ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: DP-736

Characteristics of the floodplain unit:

Average sediment texture: gravel & sand

Total veg cover: 0% Tree: % Shrub: % Herb: %

Community successional stage:

☒ NA

☐ Early (herbaceous & seedlings)

☐ Mid (herbaceous, shrubs, saplings)

☐ Late (herbaceous, shrubs, mature trees)

Indicators:

☐ Mudcracks

☐ Ripples

☐ Drift and/or debris

☒ Presence of bed and bank

☐ Benches

☐ Soil development

☐ Surface relief

☒ Other: Scour

☒ Other: Absence of veg

☐ Other:

Comments:

Project ID: BA/408.00 Cross section ID: DP-736 Date: 8/9/12 Time:

Floodplain unit: ☐ Low-Flow Channel ☒ Active Floodplain ☐ Low Terrace

GPS point: DP-736

Characteristics of the floodplain unit:

Average sediment texture: gravel + sand

Total veg cover: 0 % Tree: 0 % Shrub: 0 % Herb: 0 %

Community successional stage:

☒ NA

☐ Early (herbaceous & seedlings)

☐ Mid (herbaceous, shrubs, saplings)

☐ Late (herbaceous, shrubs, mature trees)

Indicators:

☐ Mudcracks

☐ Ripples

☐ Drift and/or debris

☒ Presence of bed and bank

☐ Benches

☐ Soil development

☐ Surface relief

☒ Other: slow

☒ Other: Absence of veg.

☐ Other:

Comments:

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point:

Characteristics of the floodplain unit:

Average sediment texture:

Total veg cover: 0 % Tree: 0 % Shrub: 0 % Herb: 0 %

Community successional stage:

☐ NA

☐ Early (herbaceous & seedlings)

☐ Mid (herbaceous, shrubs, saplings)

☐ Late (herbaceous, shrubs, mature trees)

Indicators:

☐ Mudcracks

☐ Ripples

☐ Drift and/or debris

☐ Presence of bed and bank

☐ Benches

☐ Soil development

☐ Surface relief

☐ Other:

☐ Other:

☐ Other:

Comments:

APPENDIX C

Wetland Photographs

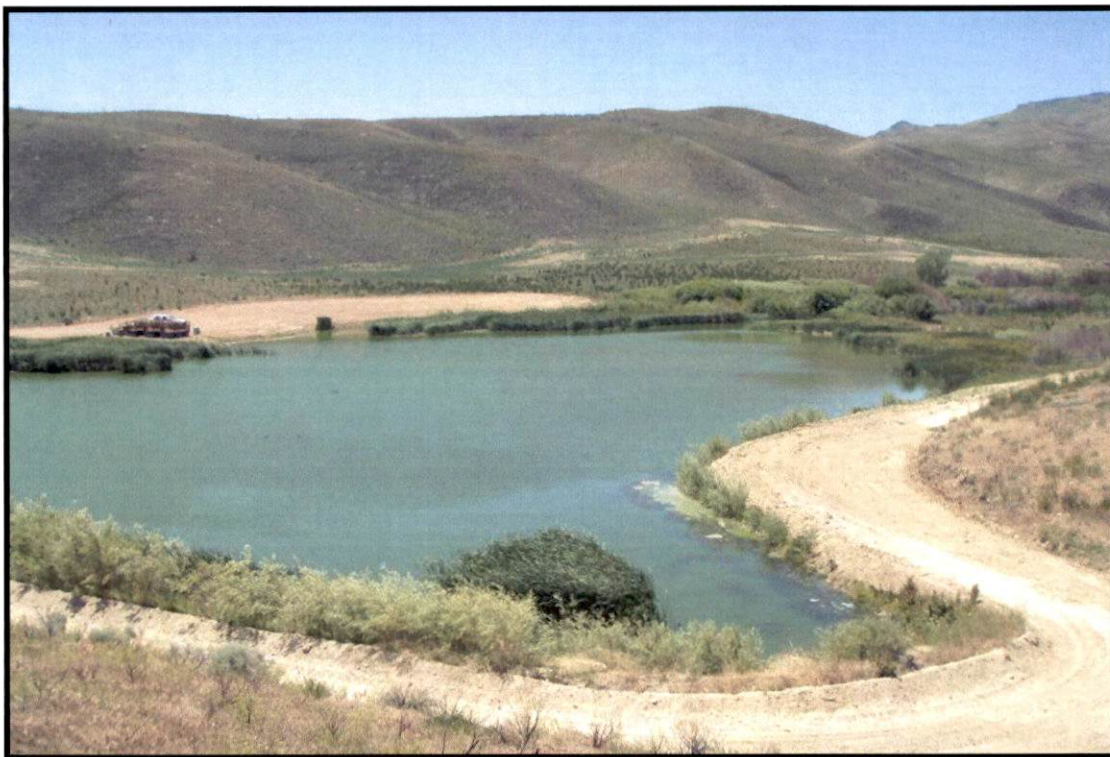


Photo C1: Wetland 1 – the James Creek fish pond was created as the result of installing an earthen dam across the creek (Dam Permit #J-218), causing water to back up and inundate the area.



Photo C2: Wetland 2 – spring complex connected to James Creek. A total of five springs converge together and contribute surface water to James Creek.



Photo C3: Wetland 3 – a spring supports this isolated wetland community. It is not located adjacent to, and does not share a surface connection with any jurisdictional waterway.



Photo C4: Wetland 4 – this isolated wetland community is supported by run-off from a nearby water station (on right) used by spray trucks for dust control.

APPENDIX D

Wetland Determination Data Forms Arid West Region

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Greater Gold Quarry Project City/County: Eureka Sampling Date: 6/14/12

Applicant/Owner: Newmont Mining Corporation State: NV Sampling Point: P-1

Investigator(s): Matt McKissick, Jenny Addy Section, Township, Range: _____

Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): concave Slope (%): 1

Subregion (LRR): _____ Lat: _____ Long: _____ Datum: NAD 83

Soil Map Unit Name: _____ NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes _____ No ☒

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ☒ No _____	Is the Sampled Area within a Wetland? Yes ☒ No _____
Hydric Soil Present? Yes ☒ No _____	
Wetland Hydrology Present? Yes ☒ No _____	

Remarks:

Wetland created by ponding and diversion of James Creek to the west of existing mine. Wildfire burned areas surrounding pond in 2011.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:	
1. _____				Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u>	(A)
2. _____				Total Number of Dominant Species Across All Strata: <u>2</u>	(B)
3. _____				Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50</u>	(A/B)
4. _____					
	<u>0</u>	= Total Cover			
Sapling/Shrub Stratum (Plot size: _____)				Prevalence Index worksheet:	
1. <u>Salix exigua</u>	<u>30</u>	<u>y</u>	<u>FACW</u>	Total % Cover of: <u>55</u>	Multiply by: _____
2. _____				OBL species <u>55</u>	x 1 = <u>55</u>
3. _____				FACW species _____	x 2 = _____
4. _____				FAC species _____	x 3 = _____
5. _____				FACU species <u>5</u>	x 4 = <u>20</u>
	<u>30</u>	= Total Cover		UPL species <u>40</u>	x 5 = <u>200</u>
Herb Stratum (Plot size: _____)				Column Totals: <u>100</u>	(A) <u>275</u> (B)
1. <u>Veronica americana</u>	<u>10</u>		<u>OBL</u>	Prevalence Index = B/A = <u>2.75</u>	
2. <u>Carex nebrascensis</u>	<u>10</u>		<u>OBL</u>	Hydrophytic Vegetation Indicators:	
3. <u>Typha sp.</u>	<u>5</u>		<u>OBL</u>	___ Dominance Test is >50%	
4. <u>Plantago lanceolata</u>	<u>5</u>		<u>FACU</u>	☒ Prevalence Index is ≤3.0 ¹	
5. <u>Agastache urticifolia</u>	<u>40</u>	<u>Y</u>	<u>FACU</u>	___ Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)	
6. _____				___ Problematic Hydrophytic Vegetation ¹ (Explain)	
7. _____					
8. _____					
	<u>70</u>	= Total Cover		¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
Woody Vine Stratum (Plot size: _____)				Hydrophytic Vegetation Present? Yes ☒ No _____	
1. _____					
2. _____					
	<u>0</u>	= Total Cover			
% Bare Ground in Herb Stratum <u>0</u> % Cover of Biotic Crust <u>0</u>					
Remarks:					

Sampling Point: P-1

HYDROLOGY

Primary Indicators (minimum of one required; check all that apply)

US Army Corps of Engineers

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Greater Gold Quarry Project City/County: Eureka Sampling Date: 6/14/12

Applicant/Owner: Newmont Mining Corporation State: NV Sampling Point: P-1

Investigator(s): Matt McKissick, Jenny Addy Section, Township, Range: _____

Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): concave Slope (%): 1

Subregion (LRR): _____ Lat: _____ Long: _____ Datum: NAD 83

Soil Map Unit Name: _____ NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes _____ No ☒

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☒ No _____	Is the Sampled Area within a Wetland? Yes ☒ No _____
Hydric Soil Present?	Yes ☒ No _____	
Wetland Hydrology Present?	Yes ☒ No _____	

Remarks:

Wetland created by ponding and diversion of James Creek to the west of existing mine. Wildfire burned areas surrounding pond in 2011.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50</u> (A/B)														
1. _____																		
2. _____																		
3. _____																		
4. _____																		
_____ = Total Cover				Prevalence Index worksheet: <table border="0"> <tr> <td>Total % Cover of:</td> <td>Multiply by:</td> </tr> <tr> <td>OBL species <u>55</u></td> <td>x 1 = <u>55</u></td> </tr> <tr> <td>FACW species _____</td> <td>x 2 = _____</td> </tr> <tr> <td>FAC species _____</td> <td>x 3 = _____</td> </tr> <tr> <td>FACU species <u>5</u></td> <td>x 4 = <u>20</u></td> </tr> <tr> <td>UPL species <u>40</u></td> <td>x 5 = <u>200</u></td> </tr> <tr> <td>Column Totals: <u>100</u> (A)</td> <td><u>275</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>2.75</u>	Total % Cover of:	Multiply by:	OBL species <u>55</u>	x 1 = <u>55</u>	FACW species _____	x 2 = _____	FAC species _____	x 3 = _____	FACU species <u>5</u>	x 4 = <u>20</u>	UPL species <u>40</u>	x 5 = <u>200</u>	Column Totals: <u>100</u> (A)	<u>275</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>55</u>	x 1 = <u>55</u>																	
FACW species _____	x 2 = _____																	
FAC species _____	x 3 = _____																	
FACU species <u>5</u>	x 4 = <u>20</u>																	
UPL species <u>40</u>	x 5 = <u>200</u>																	
Column Totals: <u>100</u> (A)	<u>275</u> (B)																	
Sapling/Shrub Stratum (Plot size: _____)																		
1. <u>Salix exigua</u>	<u>30</u>	<u>y</u>	<u>FACW</u>															
2. _____																		
3. _____																		
4. _____																		
5. _____																		
_____ = Total Cover																		
Herb Stratum (Plot size: _____)																		
1. <u>Veronica americana</u>	<u>10</u>		<u>OBL</u>															
2. <u>Carex nebrascensis</u>	<u>10</u>		<u>OBL</u>															
3. <u>Typha sp.</u>	<u>5</u>		<u>OBL</u>															
4. <u>Plantago lanceolata</u>	<u>5</u>		<u>FACU</u>															
5. <u>Agastache urticifolia</u>	<u>40</u>	<u>Y</u>	<u>FACU</u>															
6. _____																		
7. _____																		
8. _____																		
_____ = Total Cover																		
Woody Vine Stratum (Plot size: _____)																		
1. _____																		
2. _____																		
_____ = Total Cover																		
% Bare Ground in Herb Stratum <u>0</u> % Cover of Biotic Crust <u>0</u>																		
Hydrophytic Vegetation Indicators: _____ Dominance Test is >50% ☒ Prevalence Index is ≤3.0 ¹ _____ Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) _____ Problematic Hydrophytic Vegetation ¹ (Explain)																		
¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																		
Hydrophytic Vegetation Present? Yes ☒ No _____																		
Remarks:																		

Sampling Point: P-1

[illegible]

HYDROLOGY

Wetland Hydrology Indicators:		
Primary Indicators (minimum of one required; check all that apply)		Secondary Indicators (2 or more required)
☒ Surface Water (A1)	☐ Salt Crust (B11)	☐ Water Marks (B1) (Riverine)
☒ High Water Table (A2)	☐ Biotic Crust (B12)	☐ Sediment Deposits (B2) (Riverine)
☒ Saturation (A3)	☐ Aquatic Invertebrates (B13)	☐ Drift Deposits (B3) (Riverine)
☐ Water Marks (B1) (Nonriverine)	☐ Hydrogen Sulfide Odor (C1)	☐ Drainage Patterns (B10)
☐ Sediment Deposits (B2) (Nonriverine)	☐ Oxidized Rhizospheres along Living Roots (C3)	☐ Dry-Season Water Table (C2)
☐ Drift Deposits (B3) (Nonriverine)	☐ Presence of Reduced Iron (C4)	☐ Crayfish Burrows (C8)
☐ Surface Soil Cracks (B6)	☐ Recent Iron Reduction in Tilled Soils (C6)	☐ Saturation Visible on Aerial Imagery (C9)
☐ Inundation Visible on Aerial Imagery (B7)	☐ Thin Muck Surface (C7)	☐ Shallow Aquitard (D3)
☐ Water-Stained Leaves (B9)	☐ Other (Explain in Remarks)	☐ FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes ☒ No ☐ Depth (inches): <u>0.5</u> Water Table Present? Yes ☒ No ☐ Depth (inches): <u>6</u> Saturation Present? Yes ☒ No ☐ Depth (inches): <u>0</u> (includes capillary fringe)		Wetland Hydrology Present? Yes ☒ No ☐
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Aerial Photos Remarks:		

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Greater Gold Quarry Project City/County: Eureka Sampling Date: 6/14/12
 Applicant/Owner: Newmont Mining Corporation State: NV Sampling Point: P-1
 Investigator(s): Matt McKissick, Jenny Addy Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): concave Slope (%): 1
 Subregion (LRR): _____ Lat: _____ Long: _____ Datum: NAD 83
 Soil Map Unit Name: _____ NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes _____ No ☒
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☒ No _____	Is the Sampled Area within a Wetland? Yes ☒ No _____
Hydric Soil Present?	Yes ☒ No _____	
Wetland Hydrology Present?	Yes ☒ No _____	
Remarks: Wetland created by ponding and diversion of James Creek to the west of existing mine. Wildfire burned areas surrounding pond in 2011.		

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50</u> (A/B)														
1. _____	_____	_____	_____															
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
<u>0</u> = Total Cover				Prevalence Index worksheet: <table border="0"> <tr> <td>Total % Cover of:</td> <td>Multiply by:</td> </tr> <tr> <td>OBL species <u>55</u></td> <td>x 1 = <u>55</u></td> </tr> <tr> <td>FACW species _____</td> <td>x 2 = _____</td> </tr> <tr> <td>FAC species _____</td> <td>x 3 = _____</td> </tr> <tr> <td>FACU species <u>5</u></td> <td>x 4 = <u>20</u></td> </tr> <tr> <td>UPL species <u>40</u></td> <td>x 5 = <u>200</u></td> </tr> <tr> <td>Column Totals: <u>100</u> (A)</td> <td><u>275</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>2.75</u>	Total % Cover of:	Multiply by:	OBL species <u>55</u>	x 1 = <u>55</u>	FACW species _____	x 2 = _____	FAC species _____	x 3 = _____	FACU species <u>5</u>	x 4 = <u>20</u>	UPL species <u>40</u>	x 5 = <u>200</u>	Column Totals: <u>100</u> (A)	<u>275</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>55</u>	x 1 = <u>55</u>																	
FACW species _____	x 2 = _____																	
FAC species _____	x 3 = _____																	
FACU species <u>5</u>	x 4 = <u>20</u>																	
UPL species <u>40</u>	x 5 = <u>200</u>																	
Column Totals: <u>100</u> (A)	<u>275</u> (B)																	
Sapling/Shrub Stratum (Plot size: _____)																		
1. <u>Salix exigua</u>	<u>30</u>	<u>y</u>	<u>FACW</u>															
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
<u>30</u> = Total Cover				Hydrophytic Vegetation Indicators: ___ Dominance Test is >50% ☒ Prevalence Index is ≤3.0 ¹ ___ Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation ¹ (Explain)														
Herb Stratum (Plot size: _____)																		
1. <u>Veronica americana</u>	<u>10</u>	_____	<u>OBL</u>															
2. <u>Carex nebrascensis</u>	<u>10</u>	_____	<u>OBL</u>															
3. <u>Typha sp.</u>	<u>5</u>	_____	<u>OBL</u>															
4. <u>Plantago lanceolata</u>	<u>5</u>	_____	<u>FACU</u>															
5. <u>Agastache urticifolia</u>	<u>40</u>	<u>y</u>	<u>FACU</u>															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
8. _____	_____	_____	_____															
<u>70</u> = Total Cover				¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.														
Woody Vine Stratum (Plot size: _____)																		
1. _____	_____	_____	_____															
2. _____	_____	_____	_____															
<u>0</u> = Total Cover																		
% Bare Ground in Herb Stratum <u>0</u> % Cover of Biotic Crust <u>0</u>																		
Hydrophytic Vegetation Present? Yes ☒ No _____																		
Remarks:																		

Sampling Point: P-1

HYDROLOGY

Primary Indicators (minimum of one required; check all that apply)

US Army Corps of Engineers

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Greater Gold Quarry Project City/County: Eureka Sampling Date: 6/14/12

Applicant/Owner: Newmont Mining Corporation State: NV Sampling Point: P-1

Investigator(s): Matt McKissick, Jenny Addy Section, Township, Range: _____

Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): concave Slope (%): 1

Subregion (LRR): _____ Lat: _____ Long: _____ Datum: NAD 83

Soil Map Unit Name: _____ NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes _____ No ☒

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☒ No _____	Is the Sampled Area within a Wetland? Yes ☒ No _____
Hydric Soil Present?	Yes ☒ No _____	
Wetland Hydrology Present?	Yes ☒ No _____	
Remarks: Wetland created by ponding and diversion of James Creek to the west of existing mine. Wildfire burned areas surrounding pond in 2011.		

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50</u> (A/B)
1. _____				
2. _____				
3. _____				
4. _____				
<u>0</u> = Total Cover				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: OBL species <u>55</u> x 1 = <u>55</u> FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species <u>5</u> x 4 = <u>20</u> UPL species <u>40</u> x 5 = <u>200</u> Column Totals: <u>100</u> (A) <u>275</u> (B) Prevalence Index = B/A = <u>2.75</u>
Sapling/Shrub Stratum (Plot size: _____) 1. <u>Salix exigua</u> <u>30</u> <u>y</u> <u>FACW</u> 2. _____ 3. _____ 4. _____ 5. _____				
<u>30</u> = Total Cover				
Herb Stratum (Plot size: _____) 1. <u>Veronica americana</u> <u>10</u> _____ <u>OBL</u> 2. <u>Carex nebrascensis</u> <u>10</u> _____ <u>OBL</u> 3. <u>Typha sp.</u> <u>5</u> _____ <u>OBL</u> 4. <u>Plantago lanceolata</u> <u>5</u> _____ <u>FACU</u> 5. <u>Agastache urticifolia</u> <u>40</u> <u>Y</u> <u>FACU</u> 6. _____ 7. _____ 8. _____				
<u>70</u> = Total Cover				
Woody Vine Stratum (Plot size: _____) 1. _____ 2. _____ _____ = Total Cover				Hydrophytic Vegetation Indicators: _____ Dominance Test is >50% ☒ Prevalence Index is ≤3.0 ¹ _____ Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) _____ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
_____ = Total Cover % Bare Ground in Herb Stratum <u>0</u> % Cover of Biotic Crust <u>0</u>				
Hydrophytic Vegetation Present? Yes ☒ No _____				
Remarks:				

SOIL

Sampling Point: P-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)							
Depth (inches)	Matrix		Redox Features			Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹		
0-8	10yr 2/1	100				Mucky loam	
8-18	10yr 2/2	100				Mucky clay	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)	Indicators for Problematic Hydric Soils ³ :
☐ Histosol (A1)	☐ Sandy Redox (S5)
☐ Histic Epipedon (A2)	☐ Stripped Matrix (S6)
☐ Black Histic (A3)	☐ Loamy Mucky Mineral (F1)
☒ Hydrogen Sulfide (A4)	☐ Loamy Gleyed Matrix (F2)
☐ Stratified Layers (A5) (LRR C)	☐ Depleted Matrix (F3)
☐ 1 cm Muck (A9) (LRR D)	☐ Redox Dark Surface (F6)
☒ Depleted Below Dark Surface (A11)	☐ Depleted Dark Surface (F7)
☐ Thick Dark Surface (A12)	☐ Redox Depressions (F8)
☐ Sandy Mucky Mineral (S1)	☐ Vernal Pools (F9)
☐ Sandy Gleyed Matrix (S4)	

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes ☒ No ☐
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Remarks:

HYDROLOGY

Wetland Hydrology Indicators:			
Primary Indicators (minimum of one required; check all that apply)		Secondary Indicators (2 or more required)	
☒ Surface Water (A1)	☐ Salt Crust (B11)	☐ Water Marks (B1) (Riverine)	
☒ High Water Table (A2)	☐ Biotic Crust (B12)	☐ Sediment Deposits (B2) (Riverine)	
☒ Saturation (A3)	☐ Aquatic Invertebrates (B13)	☐ Drift Deposits (B3) (Riverine)	
☐ Water Marks (B1) (Nonriverine)	☐ Hydrogen Sulfide Odor (C1)	☐ Drainage Patterns (B10)	
☐ Sediment Deposits (B2) (Nonriverine)	☐ Oxidized Rhizospheres along Living Roots (C3)	☐ Dry-Season Water Table (C2)	
☐ Drift Deposits (B3) (Nonriverine)	☐ Presence of Reduced Iron (C4)	☐ Crayfish Burrows (C8)	
☐ Surface Soil Cracks (B6)	☐ Recent Iron Reduction in Tilled Soils (C6)	☐ Saturation Visible on Aerial Imagery (C9)	
☐ Inundation Visible on Aerial Imagery (B7)	☐ Thin Muck Surface (C7)	☐ Shallow Aquitard (D3)	
☐ Water-Stained Leaves (B9)	☐ Other (Explain in Remarks)	☐ FAC-Neutral Test (D5)	

Field Observations: Surface Water Present? Yes ☒ No ☐ Depth (inches): 0.5 Water Table Present? Yes ☒ No ☐ Depth (inches): 6 Saturation Present? Yes ☒ No ☐ Depth (inches): 0 (Includes capillary fringe)		Wetland Hydrology Present? Yes ☒ No ☐
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Aerial Photos

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Greater Gold Quarry Project City/County: Eureka Sampling Date: 6/14/12

Applicant/Owner: Newmont Mining Corporation State: NV Sampling Point: P-1

Investigator(s): Matt McKissick, Jenny Addy Section, Township, Range: _____

Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): concave Slope (%): 1

Subregion (LRR): _____ Lat: _____ Long: _____ Datum: NAD 83

Soil Map Unit Name: _____ NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes _____ No ☒

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☒ No _____	Is the Sampled Area within a Wetland? Yes ☒ No _____
Hydric Soil Present?	Yes ☒ No _____	
Wetland Hydrology Present?	Yes ☒ No _____	

Remarks:

Wetland created by ponding and diversion of James Creek to the west of existing mine. Wildfire burned areas surrounding pond in 2011.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50</u> (A/B)														
1. _____																		
2. _____																		
3. _____																		
4. _____																		
<u>0</u> = Total Cover				Prevalence Index worksheet: <table border="0"> <tr> <td>Total % Cover of:</td> <td>Multiply by:</td> </tr> <tr> <td>OBL species <u>55</u></td> <td>x 1 = <u>55</u></td> </tr> <tr> <td>FACW species _____</td> <td>x 2 = _____</td> </tr> <tr> <td>FAC species _____</td> <td>x 3 = _____</td> </tr> <tr> <td>FACU species <u>5</u></td> <td>x 4 = <u>20</u></td> </tr> <tr> <td>UPL species <u>40</u></td> <td>x 5 = <u>200</u></td> </tr> <tr> <td>Column Totals: <u>100</u> (A)</td> <td><u>275</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>2.75</u>	Total % Cover of:	Multiply by:	OBL species <u>55</u>	x 1 = <u>55</u>	FACW species _____	x 2 = _____	FAC species _____	x 3 = _____	FACU species <u>5</u>	x 4 = <u>20</u>	UPL species <u>40</u>	x 5 = <u>200</u>	Column Totals: <u>100</u> (A)	<u>275</u> (B)
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FACW species _____	x 2 = _____																	
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Column Totals: <u>100</u> (A)	<u>275</u> (B)																	
<u>30</u> = Total Cover																		
Sapling/Shrub Stratum (Plot size: _____)																		
1. <u>Salix exigua</u>	<u>30</u>	<u>y</u>	<u>FACW</u>															
2. _____																		
3. _____																		
4. _____																		
5. _____																		
<u>30</u> = Total Cover																		
Herb Stratum (Plot size: _____)																		
1. <u>Veronica americana</u>	<u>10</u>		<u>OBL</u>															
2. <u>Carex nebrascensis</u>	<u>10</u>		<u>OBL</u>															
3. <u>Typha sp.</u>	<u>5</u>		<u>OBL</u>															
4. <u>Plantago lanceolata</u>	<u>5</u>		<u>FACU</u>															
5. <u>Agastache urticifolia</u>	<u>40</u>	<u>y</u>	<u>FACU</u>															
6. _____																		
7. _____																		
8. _____																		
<u>70</u> = Total Cover																		
Woody Vine Stratum (Plot size: _____)																		
1. _____																		
2. _____																		
<u>0</u> = Total Cover																		
% Bare Ground in Herb Stratum <u>0</u> % Cover of Biotic Crust <u>0</u>																		
Hydrophytic Vegetation Indicators: ___ Dominance Test is >50% ☒ Prevalence Index is ≤3.0 ¹ ___ Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation ¹ (Explain)																		
¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																		
Hydrophytic Vegetation Present? Yes ☒ No _____																		
Remarks:																		

Sampling Point: P-1

HYDROLOGY

US Army Corps of Engineers

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Greater Gold Quarry Project City/County: Eureka Sampling Date: 6/14/12

Applicant/Owner: Newmont Mining Corporation State: NV Sampling Point: P-1

Investigator(s): Matt McKissick, Jenny Addy Section, Township, Range: _____

Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): concave Slope (%): 1

Subregion (LRR): _____ Lat: _____ Long: _____ Datum: NAD 83

Soil Map Unit Name: _____ NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes _____ No ☒

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☒	No _____	Is the Sampled Area within a Wetland? Yes ☒ No _____
Hydric Soil Present?	Yes ☒	No _____	
Wetland Hydrology Present?	Yes ☒	No _____	

Remarks:

Wetland created by ponding and diversion of James Creek to the west of existing mine. Wildfire burned areas surrounding pond in 2011.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50</u> (A/B)														
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FACW species _____	x 2 = _____																	
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Column Totals: <u>100</u> (A)	<u>275</u> (B)																	
<u>30</u> = Total Cover																		
Sapling/Shrub Stratum (Plot size: _____)																		
1. <u>Salix exigua</u>	<u>30</u>	<u>y</u>	<u>FACW</u>															
2. _____																		
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5. _____																		
<u>30</u> = Total Cover																		
Herb Stratum (Plot size: _____)																		
1. <u>Veronica americana</u>	<u>10</u>		<u>OBL</u>															
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4. <u>Plantago lanceolata</u>	<u>5</u>		<u>FACU</u>															
5. <u>Agastache urticifolia</u>	<u>40</u>	<u>Y</u>	<u>FACU</u>															
6. _____																		
7. _____																		
8. _____																		
<u>70</u> = Total Cover																		
Woody Vine Stratum (Plot size: _____)																		
1. _____																		
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Hydrophytic Vegetation Indicators: _____ Dominance Test is >50% ☒ Prevalence Index is ≤3.0 ¹ _____ Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) _____ Problematic Hydrophytic Vegetation ¹ (Explain)																		
¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																		
Hydrophytic Vegetation Present? Yes ☒ No _____																		
Remarks:																		

Sampling Point: P-1

HYDROLOGY

Wetland Hydrology Indicators:US Army Corps of Engineers

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Greater Gold Quarry Project City/County: Eureka Sampling Date: 6/14/12
 Applicant/Owner: Newmont Mining Corporation State: NV Sampling Point: P-1
 Investigator(s): Matt McKissick, Jenny Addy Section, Township, Range: _____
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 Subregion (LRR): _____ Lat: _____ Long: _____ Datum: NAD 83
 Soil Map Unit Name: _____ NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes _____ No ☒
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ☒ No _____	Is the Sampled Area within a Wetland? Yes ☒ No _____
Hydric Soil Present? Yes ☒ No _____	
Wetland Hydrology Present? Yes ☒ No _____	
Remarks: Wetland created by ponding and diversion of James Creek to the west of existing mine. Wildfire burned areas surrounding pond in 2011.	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50</u> (A/B)
1. _____				
2. _____				
3. _____				
4. _____				
0 = Total Cover				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species <u>55</u> x 1 = <u>55</u> FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species <u>5</u> x 4 = <u>20</u> UPL species <u>40</u> x 5 = <u>200</u> Column Totals: <u>100</u> (A) <u>275</u> (B) Prevalence Index = B/A = <u>2.75</u>
Sapling/Shrub Stratum (Plot size: _____) 1. <u>Salix exigua</u> 30 Y FACW 2. _____ 3. _____ 4. _____ 5. _____				
30 = Total Cover				
Herb Stratum (Plot size: _____) 1. <u>Veronica americana</u> 10 OBL 2. <u>Carex nebrascensis</u> 10 OBL 3. <u>Typha sp.</u> 5 OBL 4. <u>Plantago lanceolata</u> 5 FACU 5. <u>Agastache urticifolia</u> 40 Y FACU 6. _____ 7. _____ 8. _____				
70 = Total Cover				
Woody Vine Stratum (Plot size: _____) 1. _____ 2. _____ _____ = Total Cover				Hydrophytic Vegetation Indicators: _____ Dominance Test is >50% ☒ Prevalence Index is ≤3.0 ¹ _____ Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) _____ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
% Bare Ground in Herb Stratum <u>0</u> % Cover of Biotic Crust <u>0</u>				
Hydrophytic Vegetation Present? Yes ☒ No _____				
Remarks:				

SOIL

Sampling Point: P-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)							
Depth (inches)	Matrix		Redox Features			Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹		
0-8	10yr 2/1	100				Mucky log	
8-18	10yr 2/2	100				Mucky clg	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)	Indicators for Problematic Hydric Soils ³ :
☐ Histosol (A1)	☐ Sandy Redox (S5)
☐ Histic Epipedon (A2)	☐ Stripped Matrix (S6)
☐ Black Histic (A3)	☐ Loamy Mucky Mineral (F1)
☒ Hydrogen Sulfide (A4)	☐ Loamy Gleyed Matrix (F2)
☐ Stratified Layers (A5) (LRR C)	☐ Depleted Matrix (F3)
☐ 1 cm Muck (A9) (LRR D)	☐ Redox Dark Surface (F6)
☒ Depleted Below Dark Surface (A11)	☐ Depleted Dark Surface (F7)
☐ Thick Dark Surface (A12)	☐ Redox Depressions (F8)
☐ Sandy Mucky Mineral (S1)	☐ Vernal Pools (F9)
☐ Sandy Gleyed Matrix (S4)	

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes ☒ No ☐
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Remarks:

HYDROLOGY

Wetland Hydrology Indicators:		
Primary Indicators (minimum of one required; check all that apply)	Secondary Indicators (2 or more required)	
☒ Surface Water (A1)	☐ Salt Crust (B11)	☐ Water Marks (B1) (Riverine)
☒ High Water Table (A2)	☐ Biotic Crust (B12)	☐ Sediment Deposits (B2) (Riverine)
☒ Saturation (A3)	☐ Aquatic Invertebrates (B13)	☐ Drift Deposits (B3) (Riverine)
☐ Water Marks (B1) (Nonriverine)	☐ Hydrogen Sulfide Odor (C1)	☐ Drainage Patterns (B10)
☐ Sediment Deposits (B2) (Nonriverine)	☐ Oxidized Rhizospheres along Living Roots (C3)	☐ Dry-Season Water Table (C2)
☐ Drift Deposits (B3) (Nonriverine)	☐ Presence of Reduced Iron (C4)	☐ Crayfish Burrows (C8)
☐ Surface Soil Cracks (B6)	☐ Recent Iron Reduction in Tilled Soils (C6)	☐ Saturation Visible on Aerial Imagery (C9)
☐ Inundation Visible on Aerial Imagery (B7)	☐ Thin Muck Surface (C7)	☐ Shallow Aquitard (D3)
☐ Water-Stained Leaves (B9)	☐ Other (Explain in Remarks)	☐ FAC-Neutral Test (D5)

Field Observations: Surface Water Present? Yes ☒ No ☐ Depth (inches): <u>0.5</u> Water Table Present? Yes ☒ No ☐ Depth (inches): <u>6</u> Saturation Present? Yes ☒ No ☐ Depth (inches): <u>0</u> (includes capillary fringe)	Wetland Hydrology Present? Yes ☒ No ☐
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Aerial Photos

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Greater Gold Quarry Project City/County: Eureka Sampling Date: 6/14/12
 Applicant/Owner: Newmont Mining Corporation State: NV Sampling Point: P-1
 Investigator(s): Matt McKissick, Jenny Addy Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): concave Slope (%): 1
 Subregion (LRR): _____ Lat: _____ Long: _____ Datum: NAD 83
 Soil Map Unit Name: _____ NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes _____ No ☒
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ☒ No _____	Is the Sampled Area within a Wetland? Yes ☒ No _____
Hydric Soil Present? Yes ☒ No _____	
Wetland Hydrology Present? Yes ☒ No _____	

Remarks:

Wetland created by ponding and diversion of James Creek to the west of existing mine. Wildfire burned areas surrounding pond in 2011.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50</u> (A/B)
1. _____				
2. _____				
3. _____				
4. _____				
<u>0</u> = Total Cover				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: OBL species <u>55</u> x 1 = <u>55</u> FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species <u>5</u> x 4 = <u>20</u> UPL species <u>40</u> x 5 = <u>200</u> Column Totals: <u>100</u> (A) <u>275</u> (B) Prevalence Index = B/A = <u>2.75</u>
Sapling/Shrub Stratum (Plot size: _____) 1. <u>Salix exigua</u> <u>30</u> <u>y</u> <u>FACW</u> 2. _____ 3. _____ 4. _____ 5. _____				
<u>30</u> = Total Cover				
Herb Stratum (Plot size: _____) 1. <u>Veronica americana</u> <u>10</u> _____ <u>OBL</u> 2. <u>Carex nebrascensis</u> <u>10</u> _____ <u>OBL</u> 3. <u>Typha sp.</u> <u>5</u> _____ <u>OBL</u> 4. <u>Plantago lanceolata</u> <u>5</u> _____ <u>FACU</u> 5. <u>Agastache urticifolia</u> <u>40</u> <u>Y</u> <u>FACU</u> 6. _____ 7. _____ 8. _____				
<u>70</u> = Total Cover				
Woody Vine Stratum (Plot size: _____) 1. _____ 2. _____ _____ _____ _____ _____ _____ _____				Hydrophytic Vegetation Indicators: _____ Dominance Test is >50% ☒ Prevalence Index is ≤3.0 ¹ _____ Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) _____ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
_____ _____ _____ _____ _____ _____ _____ _____				
<u>0</u> = Total Cover				Hydrophytic Vegetation Present? Yes ☒ No _____
% Bare Ground in Herb Stratum <u>0</u> % Cover of Biotic Crust <u>0</u>				

Remarks:

Sampling Point: P-1

HYDROLOGY

Primary Indicators (minimum of one required; check all that apply)

☒ Surface Water (A1)	☐ Salt Crust (B11)	☐ Water Marks (B1) (Riverline)
☒ High Water Table (A2)	☐ Biotic Crust (B12)	☐ Sediment Deposits (B2) (Riverline)
☒ Saturation (A3)	☐ Aquatic Invertebrates (B13)	☐ Drift Deposits (B3) (Riverline)
☐ Water Marks (B1) (Nonriverine)	☐ Hydrogen Sulfide Odor (C1)	☐ Drainage Patterns (B10)
☐ Sediment Deposits (B2) (Nonriverine)	☐ Oxidized Rhizospheres along Living Roots (C3)	☐ Dry-Season Water Table (C2)
☐ Drift Deposits (B3) (Nonriverine)	☐ Presence of Reduced Iron (C4)	☐ Crayfish Burrows (C8)
☐ Surface Soil Cracks (B6)	☐ Recent Iron Reduction in Tilled Soils (C6)	☐ Saturation Visible on Aerial Imagery (C9)
☐ Inundation Visible on Aerial Imagery (B7)	☐ Thin Muck Surface (C7)	☐ Shallow Aquitard (D3)
☐ Water-Stained Leaves (B9)	☐ Other (Explain in Remarks)	☐ FAC-Neutral Test (D5)

Surface Water Present? Yes ☒ No ☐ Depth (inches): 0.5

Water Table Present? Yes ☒ No ☐ Depth (inches): 6

Saturation Present? Yes ☒ No ☐ Depth (inches): 0
(includes capillary fringe)

Wetland Hydrology Present? Yes ☒ No ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: