West Side Placer

HARDROCK/METAL MINING REGULAR (112) APPLICATION

EXHIBITS

Prepared for the

Colorado Department of Reclamation, Mining & Safety

January 26, 2023

AuPt Industries LLC | Po Box 1424 Edwards, Colorado 81632 | 970 306 1784

Index of Exhibits

6.4.1 EXHIBIT A – Legal Description

(A) Legal Description

The West Side Placer is located on land solely owned by the Colorado State Land Board. The West Side Placer project encompasses 741.05 acres.

The project exists on ground legally described as:
Township 12 North, Range 94 West, 6Th Principal Meridian in Moffat County, Colorado

Section 13 - Lots: 6, 7, 8, 9, 10, 11, 13, 16, 17, 18, 19
Section 14 - Lots: 5, 6, 7, 8, 11, 12, 13, 14, 15, 16, 17
Section 23 - Lots: 1, 2
Section 24 - Lots: 4, 5, 6, 9, 12

Table A.(A).1 Legal Description

Township and Range	
Township 12 North, Range 94 West, 6Th Principal Meridian in Moffat County, Colorado	
Section	**Lots**
13	6, 7, 8, 9, 10, 11, 13, 16, 17, 18, 19
14	5, 6, 7, 8, 11, 12, 13, 14, 15, 16, 17
23	1, 2
24	4, 5, 6, 9, 12

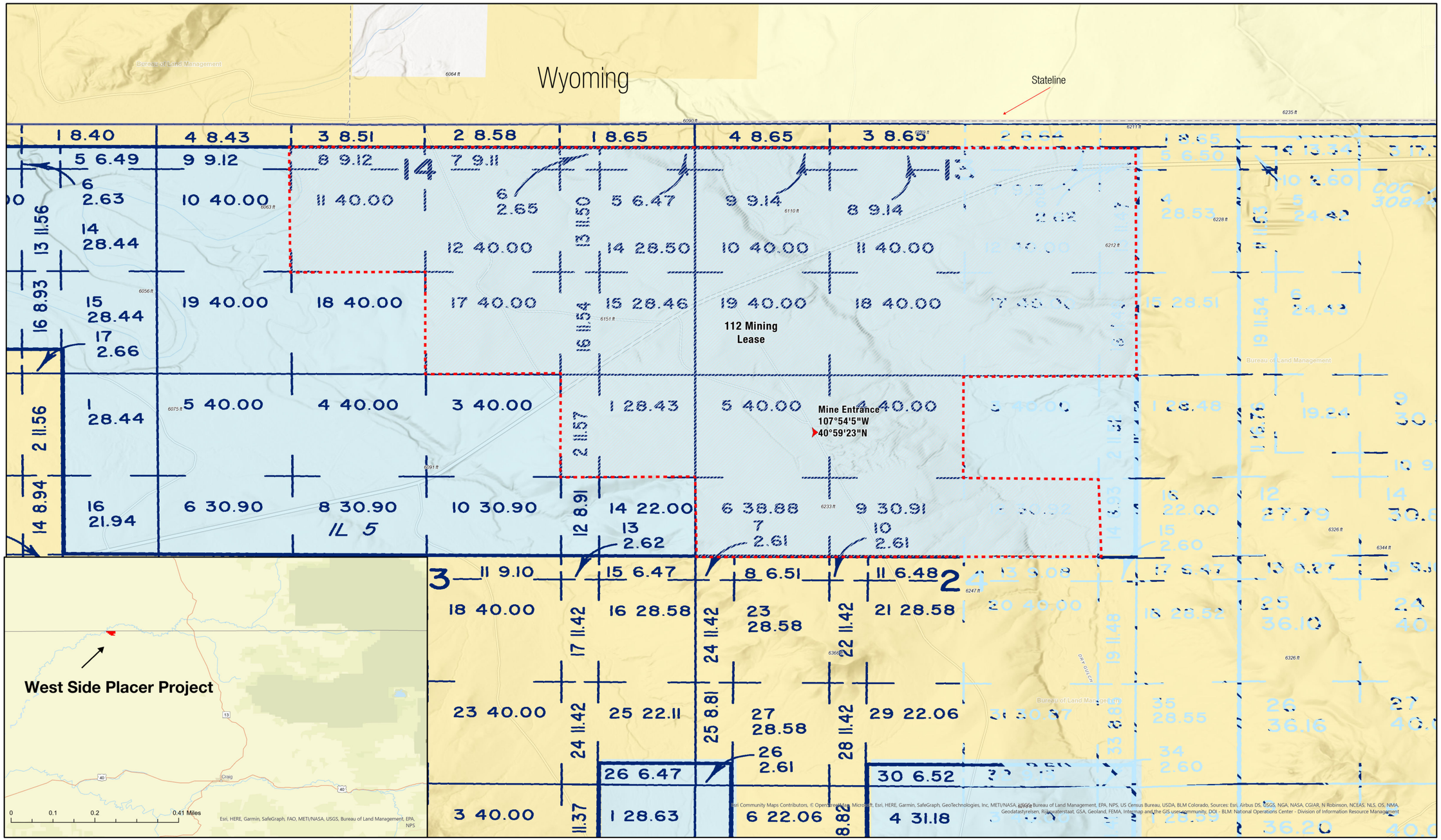
(B) Mine Entrance

The mine entrance is located at 107°54’5”W and 40°59’23”N WGS 84

(C) Map

See *Map A.(C).1 - General Exhibit Map* 2

END
EXHIBIT A



A.(C).1
General Exhibit Map

0 0.34 0.69 1.38 Miles

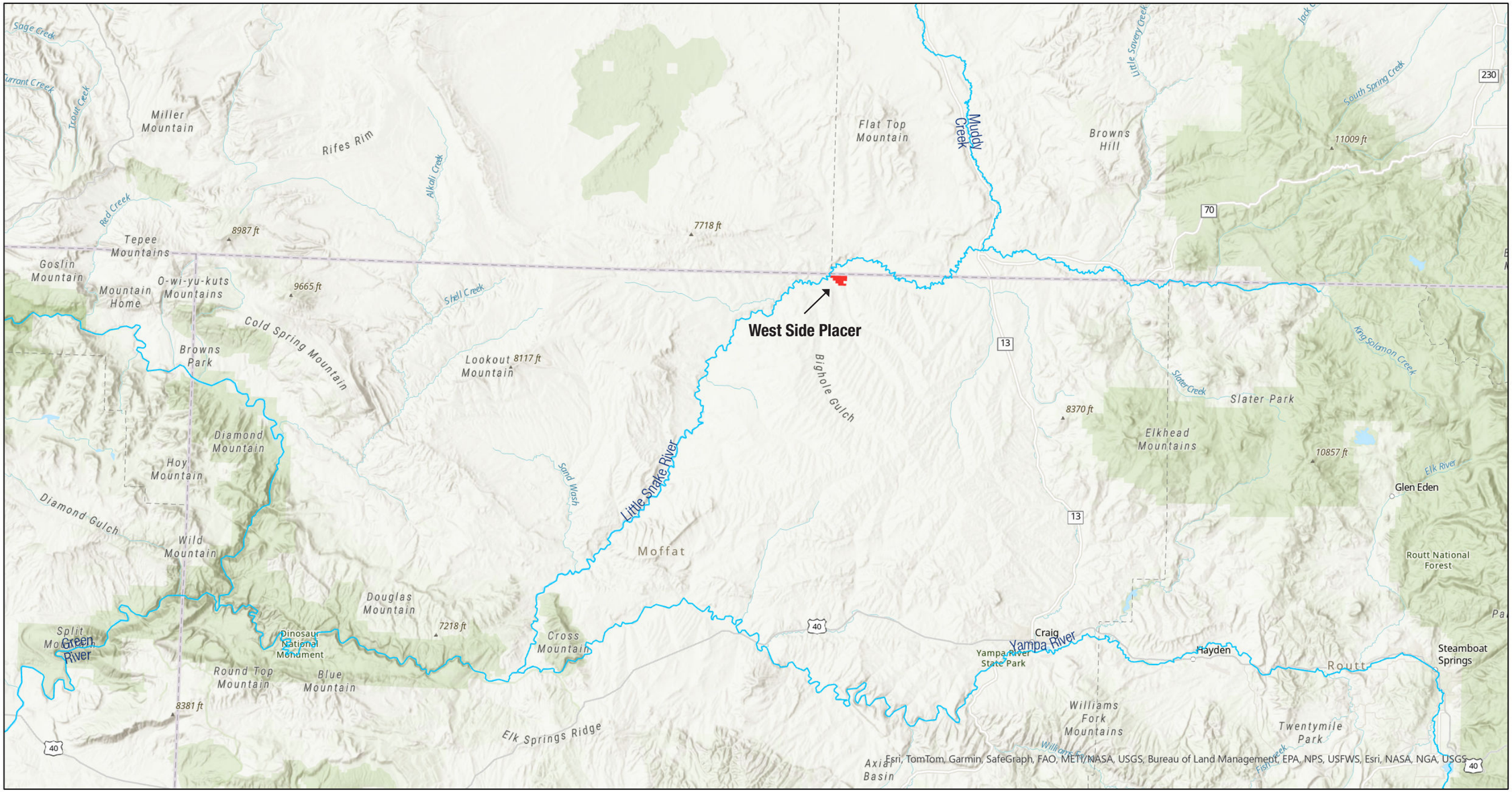
Legend
- Mine Entrance
- West Side Placer - 112 Boarder
- Bureau of Land Management (BLM)
- Bureau of Reclamation (USBR)
- State

6.4.2 EXHIBIT B – Index Map

(A) Map

See *Map B.1 - Regional Index Map* on page 4.

END
EXHIBIT B



Map B.1
Regional Index Map

6.4.3 EXHIBIT C – Pre-mining and Mining Plan Map(s) of Affected Lands

(A) All Immediately Adjoining Surface Owners Of Record

The West Side Placer project is entirely surrounded by the United States Bureau of Land Management land, as indicated in *Map C 1 - General Exhibit*.

(B) The Name and Location of All Creeks, Roads, Buildings, Oil And Gas Wells and Lines, And Power And Communication Lines On The Area Of Affected Land And Within Two Hundred (200) Feet.

See *Map C.1 - General Exhibit.*

(C) The Existing Topography

See *Map C.2 - Topography.*

(D) The Total Area to Be Involved in The Operation.

There are a total of 741.05 Acres.

(E) The Type of Present Vegetation Covering the Affected Lands

See *Map C.3 - Vegetation* .

(F) Water Information

See *Map C.1 - General Exhibit* and *6.4.7 EXHIBIT G - Water Information.*

(G) Show The Owner's Name, Type of Structures, And Location of All Significant, Valuable, And Permanent Man-Made Structures Contained on The Area of Affected Land And Within Two Hundred (200) Feet of The Affected Land

See *Map C.1 - General Exhibit.*

(H) Soils Information

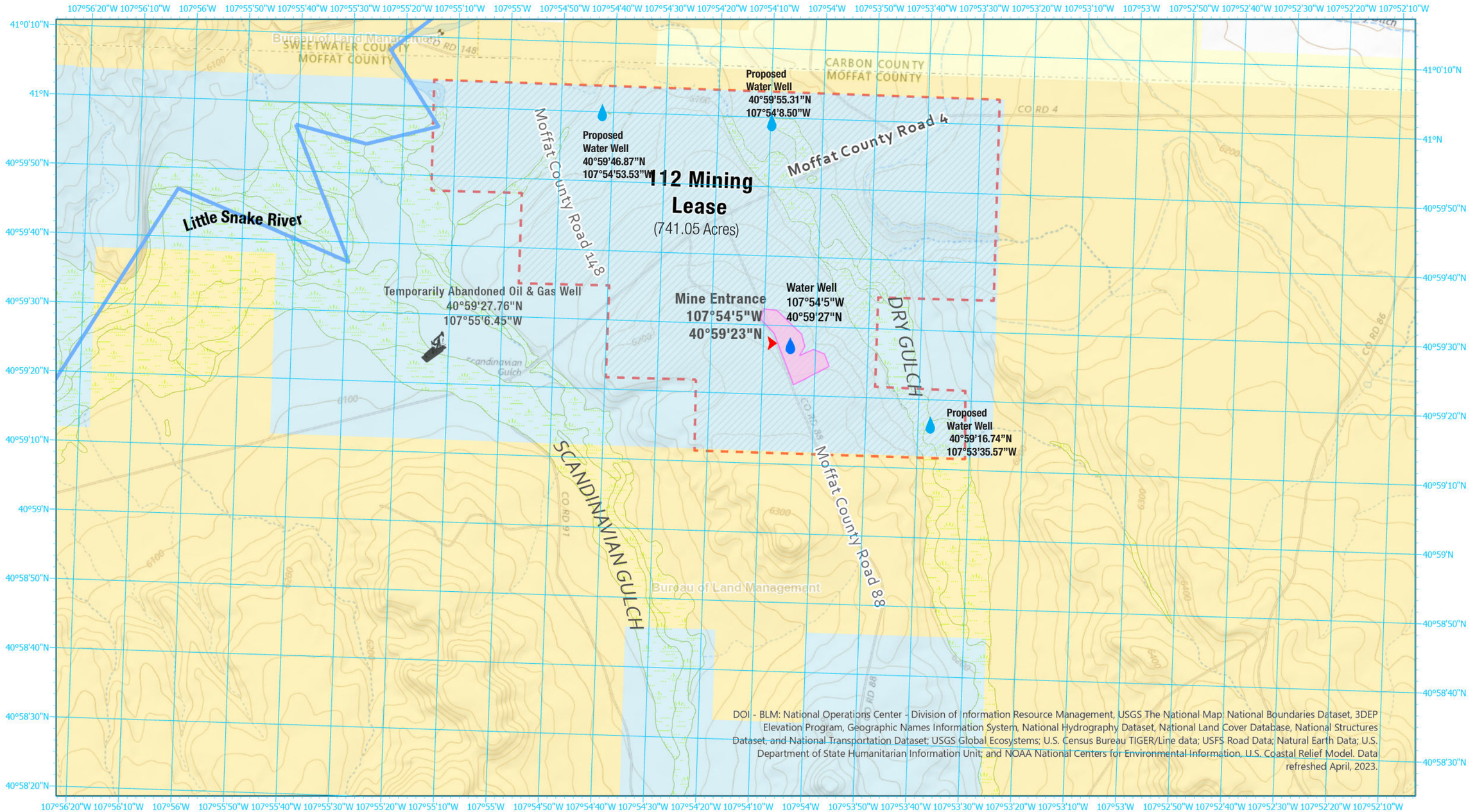
See *Map C.4 - Soils.*

(I) Aerial Photos

Photography will be used to document progression.

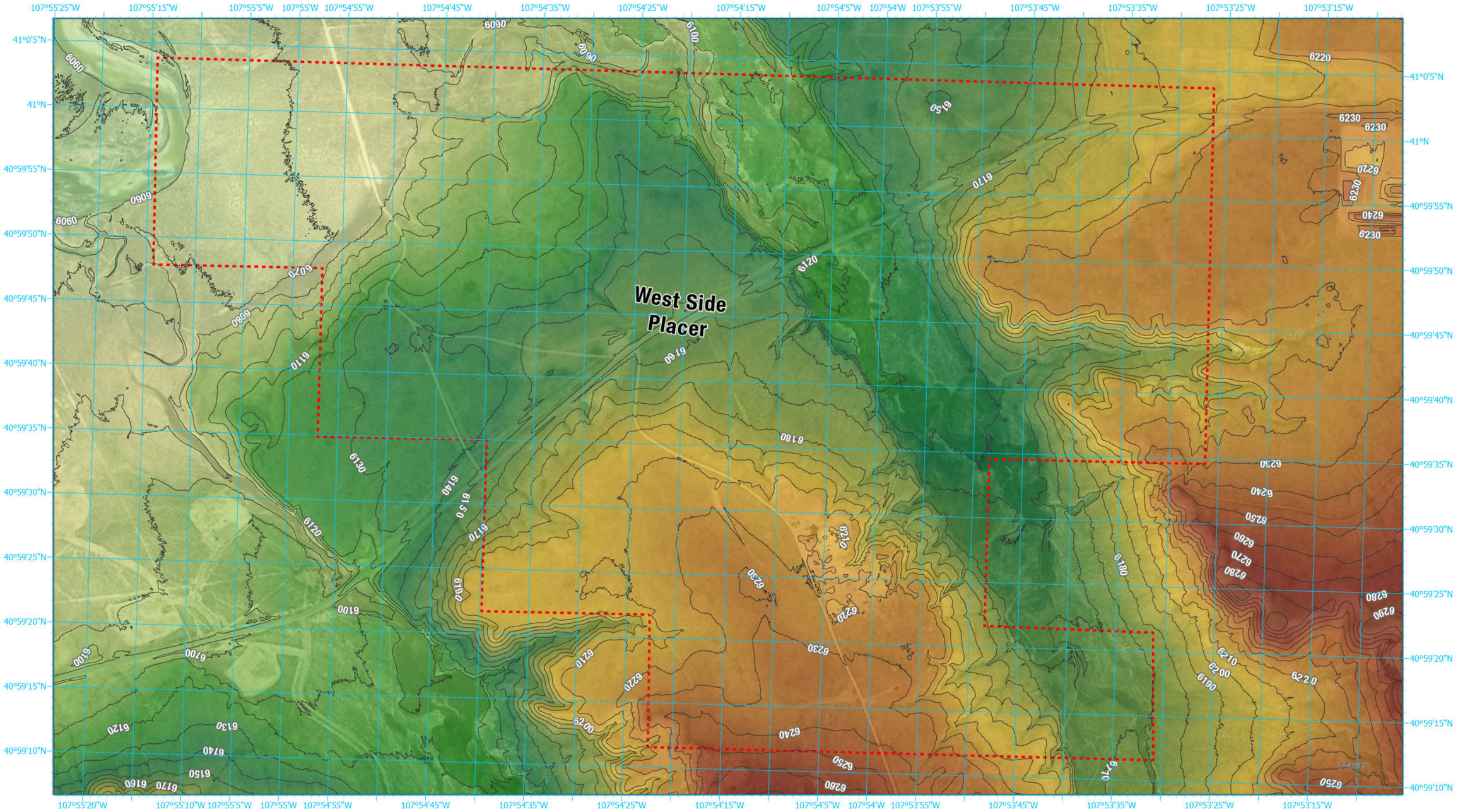
(J) Maps Index

END
EXHIBIT C



DOI - BLM: National Operations Center - Division of Information Resource Management, USGS The National Map: National Boundaries Dataset, 3DEP Elevation Program, Geographic Names Information System, National Hydrography Dataset, National Land Cover Database, National Structures Dataset, and National Transportation Dataset; USGS Global Ecosystems; U.S. Census Bureau TIGER/Line data; USFS Road Data; Natural Earth Data; U.S. Department of State Humanitarian Information Unit; and NOAA National Centers for Environmental Information, U.S. Coastal Relief Model. Data refreshed April, 2023.

Map C.1
General Exhibit Map

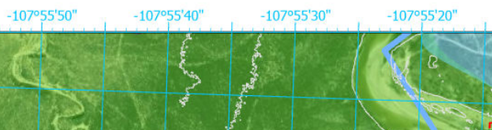


Map C.2
Topography

0.17 0.35 0.7 Miles

Contour_10-foot
West Side Placer - 112 Boarder

Elevation
6519
6050



The sagebrush steppe natural vegetation includes Western Wheatgrass, Needle-and-Thread, Blue grama, Sandberg Bluegrass, Junegrass, Rubber Rabbitbrush, fringed sage, Wyoming big sagebrush, silver sagebrush in lowlands, and Fourwing Saltbush along the Little Snake floodplain.

List of dominant flora species at The West Side Placer project.

Western Wheatgrass	*Agropyron smithii Rydb.*
Needle-And-Thread	*Stipa comata*
Blue Grama	*Bouteloua gracilis*
Sandberg Bluegrass	*Poa secunda J. Presl*
Wyoming Big Sagebrush	*Artemisia tridentata wyomingensis*
Rubber Rabbitbrush	*Ericameria nauseosa*
Fringed Sage	*Artemesia frigida*
Silver Sagebrush	*Artemisia cana*
Fourwing Saltbush	*Atriplex canescens*

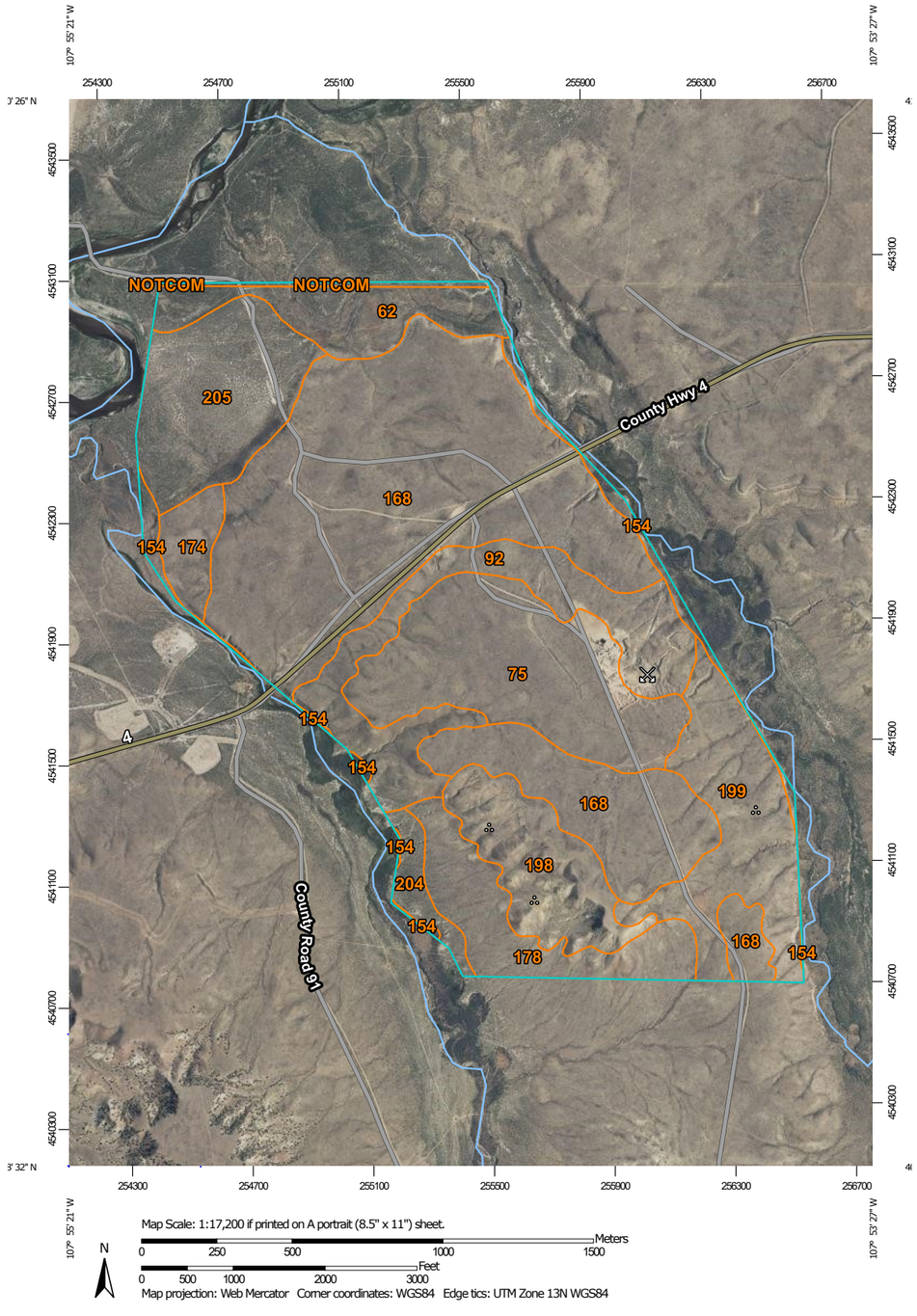
Maxar, Microsoft

0.1 0.2 0.4 Miles

Contour_10-foot
Little Snake River
Moffat County Riparian Polygons
West Side Placer - 112 Boarder
High Quality Sagebrush Steppe - *larger sagebrush, improved wildlife habitat*
Sagebrush Steppe - *lower quality sagebrush steppe, low grazing capacity*
Fourwing Saltbush Flats - *akaline floodplane dominated by saltbrush*

N

Map C.3
Vegetation



Map C.4
Soils

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at scales ranging from 1:24,000 to 1:31,700.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Carbon County Area, Wyoming
Survey Area Data: Version 18, Sep 6, 2023

Soil Survey Area: Moffat County Area, Colorado
Survey Area Data: Version 16, Aug 22, 2023

Soil Survey Area: Sweetwater County Area, Wyoming
Survey Area Data: Version 10, Sep 6, 2023

Your area of interest (AOI) includes more than one soil survey area. These survey areas may have been mapped at different scales, with a different land use in mind, at different times, or at different levels of detail. This may result in map unit symbols, soil properties, and interpretations that do not completely agree across soil survey area boundaries.

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

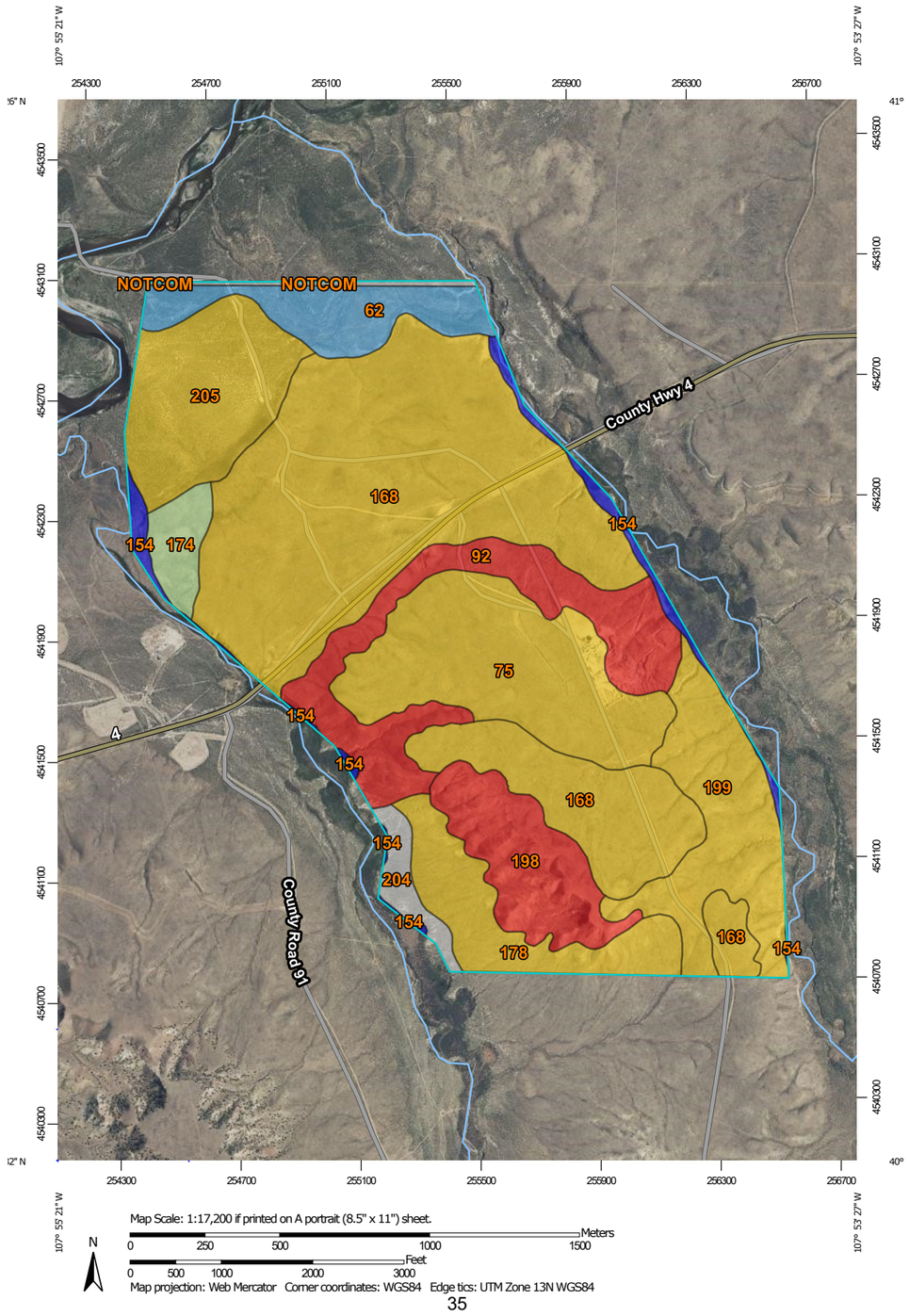
Date(s) aerial images were photographed: Jul 9, 2020—Jul 11, 2020

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
NOTCOM	No Digital Data Available	3.8	0.5%
Subtotals for Soil Survey Area		**3.8**	**0.5%**
Totals for Area of Interest		**807.3**	**100.0%**

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
62	Eghelm loamy fine sand, 0 to 3 percent slopes	40.5	5.0%
75	Fonce sandy loam, 1 to 8 percent slopes	102.0	12.6%
92	Grimm-Ustic Torriorthents, shallow complex, 15 to 45 percent slopes	76.4	9.5%
154	Quealman sand, 0 to 3 percent slopes	15.7	1.9%
168	Ruedloff sandy loam, 1 to 8 percent slopes	304.1	37.7%
174	Ryark-Maybell complex, 1 to 12 percent slopes	15.6	1.9%
178	Simanni-Ruedloff complex, 1 to 10 percent slopes	46.2	5.7%
198	Torriorthents-Rock outcrop, shale complex, 30 to 75 percent slopes	49.9	6.2%
199	Torriorthents-Torripsamments complex, 12 to 40 percent slopes	72.1	8.9%
204	Typic Natrargids, 0 to 5 percent slopes	11.7	1.5%
205	Uffens fine sandy loam, 0 to 3 percent slopes	69.0	8.6%
Subtotals for Soil Survey Area		**803.4**	**99.5%**
Totals for Area of Interest		**807.3**	**100.0%**

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
NOTCOM	No Digital Data Available	0.1	0.0%
Subtotals for Soil Survey Area		**0.1**	**0.0%**
Totals for Area of Interest		**807.3**	**100.0%**



35

Map C.5
Range Production (Normal Year)

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils

Soil Rating Polygons
- <= 250
- > 250 and <= 525
- > 525 and <= 688
- > 688 and <= 1350
- > 1350 and <= 1800
- Not rated or not available

Soil Rating Lines
- <= 250
- > 250 and <= 525
- > 525 and <= 688
- > 688 and <= 1350
- > 1350 and <= 1800
- Not rated or not available

Soil Rating Points
- <= 250
- > 250 and <= 525
- > 525 and <= 688
- > 688 and <= 1350
- > 1350 and <= 1800
- Not rated or not available

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

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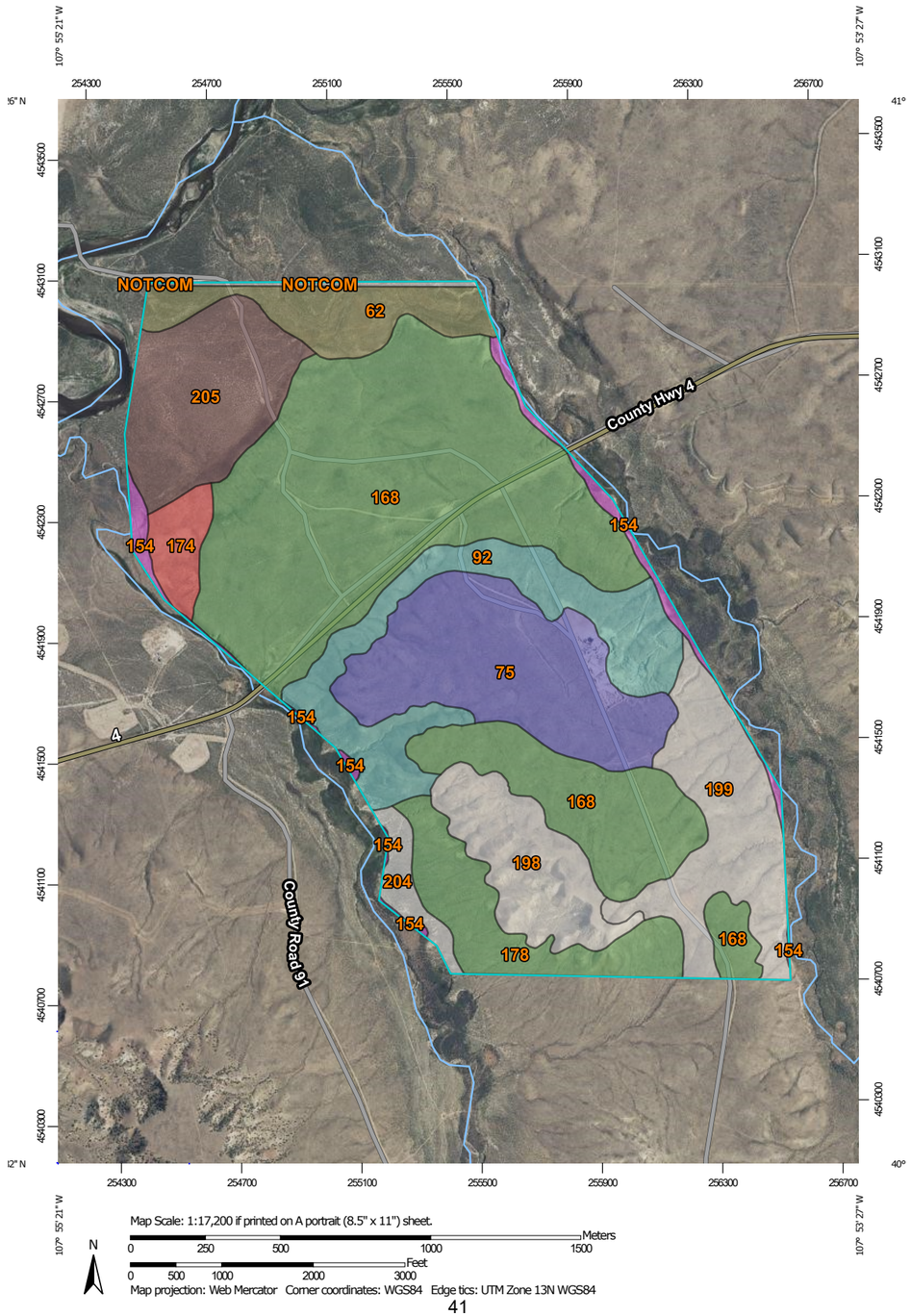

41

Map C.6
Ecological Zones

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils

Soil Rating Polygons
- R034AY112WY
- R034AY140WY
- R034AY150WY
- R034AY298CO
- R034AY424CO
- R034BY009UT
- R034BY012UT
- Not rated or not available

Soil Rating Lines
- R034AY112WY
- R034AY140WY
- R034AY150WY
- R034AY298CO
- R034AY424CO
- R034BY009UT
- R034BY012UT
- Not rated or not available

Soil Rating Points
- R034AY112WY
- R034AY140WY
- R034AY150WY
- R034AY298CO
- R034AY424CO
- R034BY009UT
- R034BY012UT
- Not rated or not available

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Date(s) aerial images were photographed: Jul 9, 2020—Jul 11, 2020

6.4.4 EXHIBIT D – Mining Plan

(A) Description of The Method(s) of Mining to Be Employed

The West Side Placer will employ placer mining methods. This includes the digging, moving ore, processing ore, returning ore to the active mining block and reclaiming.

Within the 741.05 acres that are permitted, approximately 510 acres are suitable for mining. The remaining 231.05 acres are designated for preservation due to their ecological significance, as detailed in *Map C.3 - Vegetation*. This preserved land, known as the high-quality sagebrush steppe and riparian zones, which primarily encompasses the gulch floors. These areas are recognized for their superior vegetation quality and their importance to wildlife and wildlife habitats.

Mining will occur within mining blocks. The mining block will be 5 acres in dimension. Several blocks may be opened at once. No more than 15 acres will be distrubed at one time.

The following methods will sequentially employ when mining; refer to *Table D.(A).1*:

(1) Prepping of Ore Body in The Mining Block

A bulldozer will be employed for the systematic stripping of topsoil across each 5-acre mining block. The bulldozer is tasked with removing a layer of topsoil, ranging from 8 to 16 inches in depth. Once removed, the topsoil will be carefully stockpiled along the perimeter of the mining block. This strategic placement aids in preserving the topsoil for future reclamation purposes. The topsoil removal process within a 24-hour period for each mining block (Three eight-hour shifts).

(2) Mining of the Ore Body

The ore body is situated directly beneath the topsoil layer. The excavator systematically works its way downward, gradually creating a vertical wall along the interface of the ore body. This methodical approach ensures controlled excavation and stability of the mine walls. The excavation will advance methodically towards the far end of the mining block. A maximum of 15 acres (3 mining blocks) of the mining will be exposed for excavation at any given time. Each block will be mined in approximately a month or less.

(3) Moving of Ore to Washplant

Haul trucks or scrapers will be used to move ore from the active mining block to the washplant. County roads and temporary haul roads will be used to move ore from the active mining block to washplant.

(4) Processing Ore at Washplant

The primary role of the wash plant is to sort, wash, and process the excavated material. The wash plant, being modular and mobile, will be relocated as necessary to optimize the efficiency of ore hauling. It is anticipated that the wash plant will operate from four main locations throughout the mining operation. The wash plant will be allocated up to 200 acre-feet of water annually. This allocation is carefully planned to balance operational needs with environmental considerations. To minimize environmental impact, the wash plant will employ man-made water containment vessels and a rapid thickener. In line with sustainable practices, the wash plant will not discharge process water. Instead, water will be collected and channeled back to water storage facilities and the thickener for reuse, thereby conserving water resources and reducing environmental impact.

(5) Return of Washed Ore to Active Mining Block

Following the processing at the washplant, the treated ore will be systematically stacked in preparation for transportation. The stacked ore will then be reloaded onto haul trucks or scrapers and returned back to the active mining block. The return and deposition of the ore will progress methodically towards the direction of the active excavation wall within the pit. This directional approach ensures that the pit is refilled in a manner that is both orderly and efficient, aligning with the overall mining strategy and aiding in land rehabilitation efforts.

(5) Grading and Contouring of Mined Block

After mining activities are completed, a dozer is used to grade the returned washed ore to match the original topographic contour of the site as closely as possible. This step is essential for restoring the physical appearance and functionality of the landscape. Lidar technology will be utilized to create detailed maps of the original topographic profile of the mining site. These maps serve as a reference to ensure accurate grading and restoration of the land to its pre-mining state.

5.3 Return of Topsoil Over Mined Block

Once the grading is complete, the next step involves covering the graded area with topsoil that was stockpiled before or during the mining process. This topsoil is spread evenly over the area to create a suitable medium for vegetation growth. It's a critical step in the reclamation process, as it restores the soil layer, which is necessary for plant life and helps to prevent erosion.

(6) Seeding and Imprinting of Mining Block

The seeding of the reclaimed mining block is scheduled for specific times of the year - either in October or April. These periods are likely chosen based on the climatic conditions that are most favorable for seed germination and growth. The timing can vary depending on the geographic location and the local climate. The seeds used for this process are part of an approved seed mix. This mix consists of the following variety: Indian Ricegrass, Bluebunch Wheatgrass, Thickspike Wheatgrass, Slender Wheatgrass, Basin Wildrye, Needle & Thread and Rubber Rabbitbrush. Past use of this mix has demonstrated successful reclamation. Areas that are compacted, which is common in mining sites due to heavy machinery use, are ripped before seeding. Ripping is a process that involves breaking up compacted soil layers, making it easier for seeds to penetrate the soil and for roots to establish. A seeder is used to evenly distribute the seeds across the mining block. Following this, an imprinter is used to texture the block. An imprinter creates patterns or indentations in the soil surface. The texturing acts as a windbreak, reducing the likelihood of seeds being blown away. It also creates water traps, small indentations that help to retain moisture. These features improve the chances of seed establishment by providing a microenvironment that is conducive to seed germination and growth.

These procedures reflect a dedication to environmental stewardship and sustainable mining practices. The goal is to reduce the environmental footprint of mining activities and rehabilitate the land for future use, focusing particularly on promoting the regrowth of natural vegetation and the restoration of a stable ecosystem.

TABLE D.(A).1 THE METHOD OF MINING TO BE EMPLOYED

Stage	Mining Task		Time
1.0	**Prepping of Ore Body in The Mining Block**	Stripping and stockpiling of topsoil. A dozer will be used to methodically push topsoil ranging from 6" - 16" in thickness to an appropriate edge of a mining block.	Less than seven days
2.0	**Mining of the Ore Body**	Combined use of excavator, haul truck, scraper and loader to systematically excavate the ore body. An excavator will creating a vertical wall and progress towards the far end of the block. Haul trucks or scrapers will move ore to mobile wash plant.	Less than one month per block
3.0	**Moving of Ore to Washplant**	County roads and temporary haul roads will be used to move ore from the active mining block to washplant. Haul trucks or scrapers will be used to used in this phase.	*Continuous with the mining of the block.*
4.0	**Processing Ore at Washplant**	Sort, wash, and process excavated material. Use of gravity separation to extract desirable minerals. Majority of ore will be dewatered and stacked in preparation for return to active mining pit. Loaders and scrapers will be used.	*Continuous with the mining of the block.*
5.0	**Return of Washed Ore to Active Mining Block**	Use of haul truck and scrapers to return ore to active mining block. County roads and temporary haul roads will be used to return the ore to the active mining block. The washed ore will systematically be replaced from the far end of the worked pit progressing towards the active wall of the mining block.	*Continuous with the mining of the block.*
6.0	**Grading and Contouring of Mined Block**	A dozer will be used to grade and contour returned washed ore back to original grade and contour. Lidar mapping will be used to record elevational profiles of before and after states to ensure consistency with premined profile.	Less than seven days
7.0	**Return of Topsoil Over Mined Block**	Topsoil will be evenly spread over mined block. Wheel loader and/or a scraper will be used to distribute topsoil over the mined, graded and contoured block. A tractor will be used to rip and prepare topsoil for final seeding.	Less than seven days
8.0	**Seeding and Imprinting of Mining Block**	Use of Seeder and Imprinter: Evenly distribute seeds and texture the block. Schedule for seeding to occur in October or April.	One day per block

(B) Earthmoving

The earthmoving tasks will use the equipment listed in *Table D.(B).1*.

TABLE D.(B).1 EARTHMOVING EQUIPMENT

Equipment Type	Model (or Equivalent)		Primary Function
Dozer	Caterpillar D8		• Clearing, leveling, and preparing sites within mining area
Excavator	Caterpillar 352		• Excavate ore from mining block • Load ore onto haul trucks
Haul Truck	Komatsu HM400-5		• Transport ore to wash plant • Return processed ore to mining block
Scraper	Caterpillar 637 Scraper		• Move large volumes of soil and other materials on site
Wheeled Loader	Caterpillar 972		• Feed ore into wash plant • Load processed ore into haul trucks • Load final products for offsite processing

(C) All Water Diversions And Impoundments

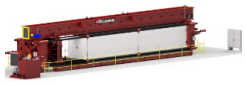
The West Side Placer is committed to efficient water management, employing advanced technologies and methods to reuse water and minimize environmental impact. A key feature of this water management system is the absence of ponds, for both storage and settling. This deliberate decision to reduce environmental impact and potential hazards associated with pond storage.

These principles inclue:

- ***Contained Water Storage:*** Utilization of frac tanks for contained water storage. This will avoid the need for water storage ponds.
- ***Water Processing Technologies:*** Rapid thickeners will be used for liquid/solid separation. Dewatering cyclones for separating solids from liquid efficiently. Dewatering screens to further remove moisture from processed materials.
- ***No Settling Ponds:*** The underflow from thickeners, which is a denser and more concentrated slurry, will be effectively dewatered. This dewatered material will be intermingled with the ore post-washing (tailings), and returned to the active mining block.

TABLE D.(C).1

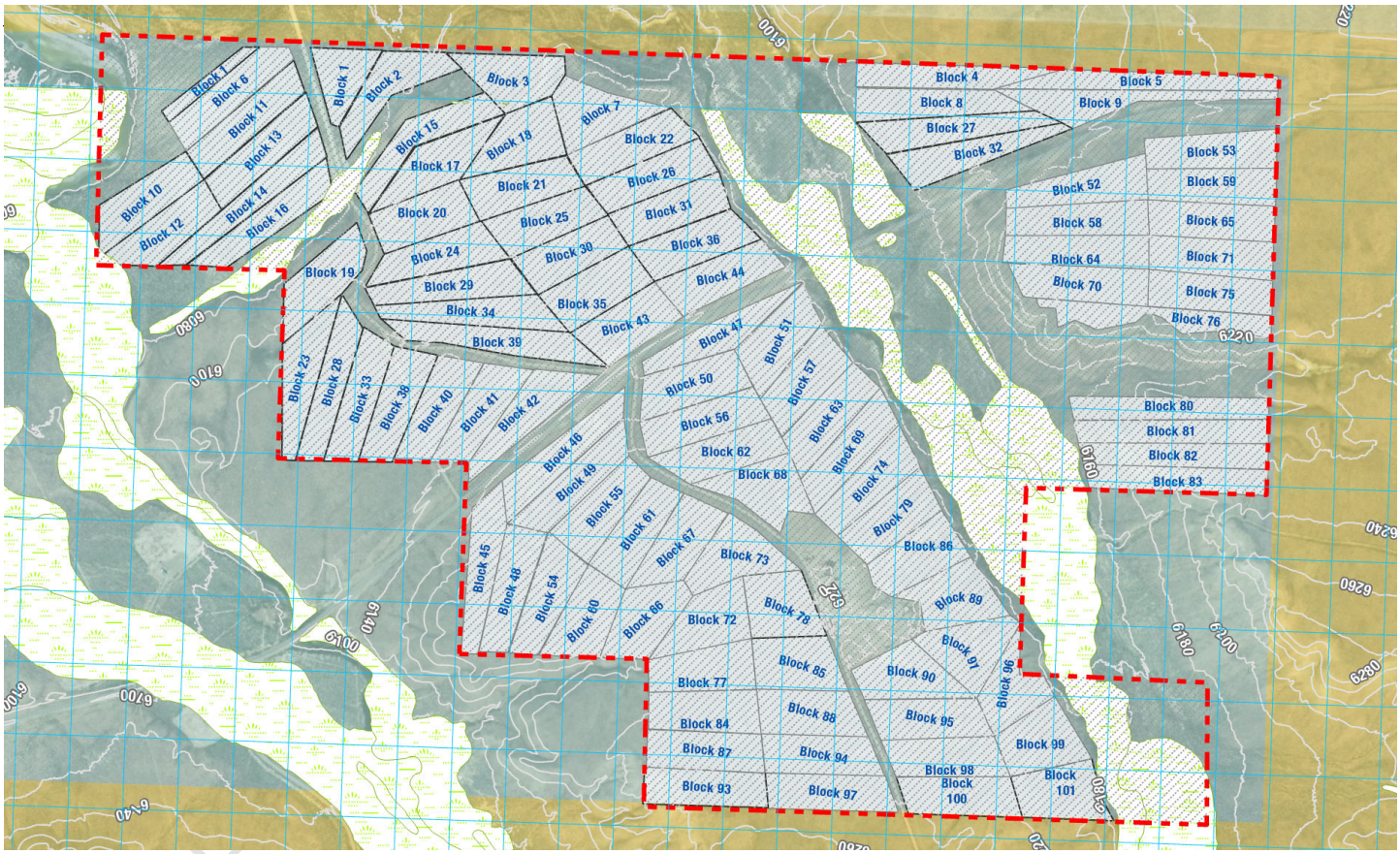
Equipment		Primary Function	Additional Functions
Dewatering Cyclone		Solid-liquid separation, stacking of sands, clays, and product	• Classifies particles based on size and density • Concentrates slurry before further processing
Dewatering Screen		Removal of liquids before stacking of final product and tailings	• Separates solids from liquids in slurry • Improves the quality of the final product by reducing moisture content • Recirculation and economic use of water
Flocculent Injector		Injection of non-toxic polymer for solid-liquid separation	• Enhances the efficiency of sedimentation and filtration processes • Reduces turbidity in water

Equipment		Primary Function	Additional Functions
Frac Tank		Water Storage	• Temporary containment of processed or unprocessed fluids • Facilitates on-site water recycling and management
Thickener		Liquid-solids separation, water storage	• Concentrates slurry by removing excess water • Recovers valuable minerals from the slurry
Press Filter		Liquid-solid separation, creation of clay products	• Produces a dry cake of solids, minimizing waste volume • Recovers water for reuse in the process
Pumps		Move slurry and water between water components.	• Liberation of binding clays.

(D) The Size Of Area(s) To Be Worked At Any One Time

A total area of 514.9 acres will be exploited in this permit. Mining will occur in blocks of 5-acre units. No more than 15 acres will be disturbed at any given time. See Image D.(D).1 for layout of 5-acre mining blocks.

IMAGE D.(D).1 - LAYOUT OF 5 ACRE MINING BLOCKS



(E) An Approximate Timetable To Describe The Mining Operation.

The following *Table D.(E).1 - Mining Timetable* describes the major components of the mining timeline. The majority of time will be spent continuously mining and reclaiming active mining blocks.

TABLE D.(E).1 - MINING TIMETABLE

Stage	Duration
1. Set Up of Wash Plant - Set up of water systems, recovery systems, scrubbers, water well setup.	2 months per location
2. Prepping of Ore Body in the Mining Block (5 acres) - stripping of topsoil.	Less than one week per block
3. Mining of the Ore Body (5 acres) - continuously mining and reclamation mining block.	Less than one month
4. Grading of Mined Block and Covering with Stockpiled Topsoil	Less than one week per block
5. Seeding and Imprinting of Mining Block	One day per block
Total Project Length	**Less than 10 years of mining; 5 years of post-mining environmental monitoring.**

(F) Nature, Depth And Thickness of The Ore Body [Confidential]

The West Side Placer ore body is a surface deposit covered by a thin layer of topsoil. The thickness of the ore body varies from 6 to 80 feet, with an average depth of 30 feet. This deposit is situated on top of the Wasatch Formation, which is estimated to be approximately 1600 feet thick. Refer to *Illustration D.(F).1 - Geologic Cross Section of The Ore Body at The West Side Placer* and T*able D.(F).1 - Ore Body*.

ILLUSTRATION D.(F).1 -GEOLOGIC CROSS SECTION OF THE ORE BODY AT THE WEST SIDE PLACER

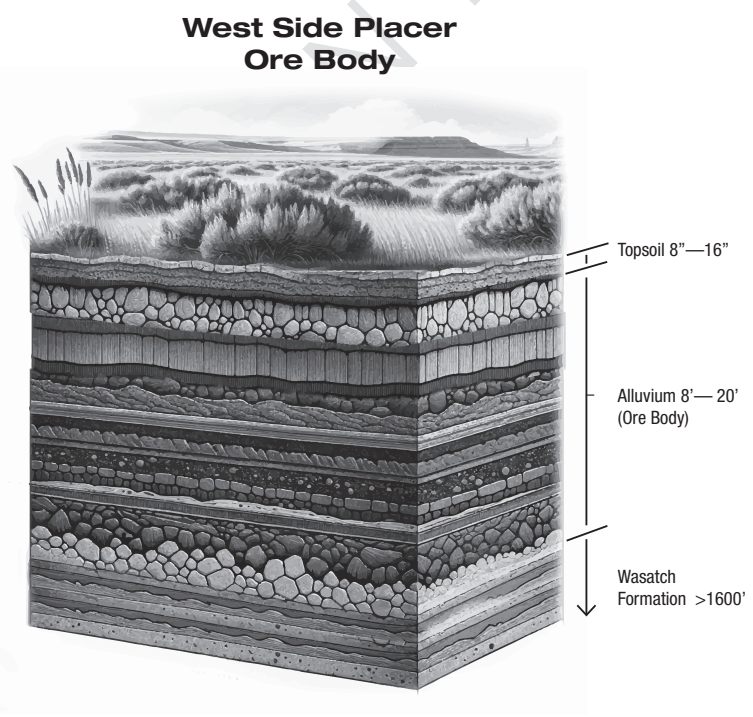


TABLE D.(F).1 - ORE BODY

Layer	Description	Thickness
Topsoil Layer (Overburden)	The topsoil layer above the alluvium is relatively shallow, ranging from 8 to 16 inches in depth. This is the layer of soil that is richest in organic material and is most fertile for plant growth.	8 to 16 inches
Nature of the Ore Body	The primary focus for the ore body at the West Side Placer is the alluvium layer, situated directly beneath the topsoil. This alluvium, derived from Eocene fossil beach and alluvial placers, likely began forming in the late Pliocene or Pleistocene epoch, with the age of mineralization cited as Quaternary. The depth of this layer averages 20 feet, but it varies significantly across the project area, ranging from 8 to 40 feet. Such variability in depth reflects the dynamic ancient water flows that deposited these sediments. Notably, the ore body within this alluvium is considered a surface ore body, which makes it relatively accessible for mining operations.	8 to 40 feet (average 20 feet)
Underlying Geology	Beneath the alluvium, the geological formation changes to Eocene sedimentary rocks, primarily of the Wasatch formation. The Wasatch Formation consists of a series of sedimentary rocks, including sandstones, mudstones, and conglomerates and can be several thousand feet in thickness.	Varies (Eocene sedimentary layer) typically ~ roughly 1600 feet. Averages 2000'.

(G) Identify The Primary and Secondary Commodities to Be Mined/Extracted

Table D.(G).1 Primary and Secondary Commodities shows the list of primary and secondary commodities to be mined at the West Side Placer. Critical minerals are specified from the US Geological Survey[1].

TABLE D.(G).1 PRIMARY AND SECONDARY COMMODITIES

Category	Product	Formula	Applications	Critical Mineral*
Primary	**Gold (Au)** Gold, known for its rarity, malleability, ductility, and resistance to corrosion.	Au	• Jewelry: Gold's primary use is in jewelry-making due to its aesthetic appeal, resistance to tarnishing, and ability to be crafted into intricate designs. It has been used for centuries as a material for jewelry and ornamental objects. • Finance and Investments: Gold is a significant financial asset, often used as a form of currency, in investment portfolios, and as a hedge against inflation and currency devaluation. Many central banks hold substantial gold reserves. • Electronics: Gold's excellent conductivity and resistance to corrosion make it valuable in electronic components, such as connectors, switches, and relay contacts. It's used in cell phones, calculators, GPS units, and large servers, among other devices. • Dentistry: Gold alloys are used in dentistry for fillings, crowns, bridges, and orthodontic appliances. Gold is bio-compatible, easy to work with, and provides a long-lasting dental restoration. • Medicine: Gold compounds are used in some medical treatments, such as injections to treat rheumatoid arthritis. Gold's bio-compatibility also makes it suitable for implants and other medical devices. • Aerospace: Due to its ability to conduct heat and electricity and resist corrosion and radiation, gold is used in spacecraft and satellites. Gold coated parts reflect infrared radiation and stabilize core temperatures of spacecraft.	No
Primary	**Monazite** A rare earth phosphate mineral, typically containing significant amounts of thorium, lanthanum, and cerium, among other rare earth elements.	(Ce,La,Nd,Th) (PO4,SiO4)	• Source of Rare Earth Elements: Monazite is primarily valued for its concentration of rare earth elements (REEs). These REEs are critical in the manufacture of a wide range of high-tech products, electronics, and strategic applications. • Electronics and Magnets: REEs extracted from monazite are crucial in the production of powerful permanent magnets used in electric motors, wind turbines, computer hard drives, and audio equipment. Neodymium and praseodymium, in particular, are used in the manufacture of neodymium-iron-boron (NdFeB) magnets, which are among the strongest types of permanent magnets. • Aerospace and Defense: The REEs from monazite are used in aerospace and defense applications, including jet engine components, guidance systems, and other advanced materials that require properties such as high strength-to-weight ratio and resistance to high temperatures. • Catalysis: Certain REEs from monazite, like cerium, are used as catalysts in petroleum refining and automotive catalytic converters. • Glass and Ceramics: Monazite is sometimes used in the production of glass and ceramics, both as a source of REEs and for its thorium content, which helps increase the refractive index in specialty glasses. • Nuclear Industry: Thorium extracted from monazite is a potential fuel for nuclear reactors, particularly in thorium-based nuclear power, which is an area of growing interest due to thorium's abundance and safety benefits over uranium. • Lighting: Some REEs from monazite are used in lighting applications, including phosphors in fluorescent lamps. • Medical Equipment: REEs are used in medical imaging devices and in the production of medical equipment.	Yes

TABLE D.(G).1 PRIMARY AND SECONDARY COMMODITIES

Category	Product	Formula	Applications	Critical Mineral*
Primary	**Titanium Minerals** (ilmenite, euxenite, columbite and rutile) Titanium minerals, particularly ilmenite (FeTiO3) and rutile (TiO2), are used in a wide range of applications due to their unique properties, such as high strength-to-weight ratio, corrosion resistance, and ability to withstand extreme temperatures.	(Fe,Ti)2O3 (Y, Ca, Ce, U, Th) (Nb, Ta, Ti 2)O 6 TiO2	• Titanium Metal Production: The primary use of titanium minerals is in the production of titanium metal, which is known for its high strength, light weight, and corrosion resistance. Titanium metal is used in aerospace applications for aircraft components and space vehicles, as well as in military equipment. • Pigments: Titanium dioxide (TiO2) is widely used as a white pigment in paints, coatings, plastics, and paper due to its high refractive index, which gives it excellent light-scattering properties. It provides whiteness and opacity to these products. • Welding Rod Coatings: Titanium minerals are used in welding rod coatings, where they help stabilize the arc during welding and improve the properties of the weld. • Cosmetics and Sunscreens: Titanium dioxide is used in cosmetics and sunscreens due to its ability to scatter ultraviolet (UV) light, providing protection from the sun's harmful rays. • Aerospace and Defense: Due to its high strength-to-weight ratio and resistance to extreme temperatures, titanium is used in various aerospace and defense applications, including aircraft frames, engines, and armor plating. • Medical Devices: Titanium's bio-compatibility makes it suitable for medical implants, such as hip and knee replacements, dental implants, and surgical instruments. • Desalination Plants: Titanium is used in desalination plants for its corrosion resistance, particularly in parts exposed to seawater. • Chemical Processing: In chemical processing industries, titanium is used for equipment such as heat exchangers, reactors, and piping systems, especially in environments that are corrosive or involve high temperatures. • Automotive Applications: In high-end and performance vehicles, titanium is used for components like exhaust systems and engine parts, leveraging its strength and light weight.	Yes
Secondary	**Garnet**		• Abrasive Blasting Media: Garnet is widely used as an abrasive blasting material for surface preparation in industrial painting and coating applications. Its hardness and angular shape make it effective for removing rust, paint, and other coatings from metal, wood, and other surfaces. • Waterjet Cutting: Garnet is a preferred abrasive for waterjet cutting machines, which use high-pressure water and garnet abrasives to cut a wide variety of materials including metal, stone, glass, and composites. Its sharp edges and hardness allow for precise and efficient cutting. • Abrasive Powders: Garnet is ground into powders that are used as abrasives in sandpaper for woodworking and automotive industries. It's used for finishing and polishing purposes due to its effectiveness in smoothing surfaces. • Filter Media: Garnet is used as a filtration media for both water and air filtration. Its chemical stability and high specific gravity make it effective in filtering out contaminants. • Waterjet Looms: In textile industries, garnet is used in waterjet looms for the efficient and precise cutting of fabrics. • Surface Preparation in Petrochemical Industries: Garnet is used for blast cleaning surfaces in the petrochemical industry, preparing them for painting or coating. • Grinding Media: In some applications, garnet is used as a grinding media. Its hardness makes it suitable for grinding and sharpening metals. Abrasive materials	No

TABLE D.(G).1 PRIMARY AND SECONDARY COMMODITIES

Category	Product	Formula	Applications	Critical Mineral*
Secondary	**Magnetite**	Fe3O4	• Steel Production: Magnetite is a major source of iron, making it a crucial raw material in the production of steel. Its high iron content makes it a valuable ore for iron and steel industries.Water treatment • Coal Washing: Magnetite is used in the coal washing process. Its magnetic properties enable the separation of coal from impurities. Coal particles are mixed with magnetite and water; the mixture is then subjected to a magnetic field which separates the coal from heavier impurities. • Dense Media Separation: In dense media separation processes, magnetite is used as a dense medium. This is particularly common in mineral processing to separate minerals with different densities, a method often used for separating diamonds from other material. • Magnetic Resonance Imaging (MRI): Due to its magnetic properties, magnetite nanoparticles are used as contrast agents in MRI scanning. • Catalysis: Magnetite is used as a catalyst in certain chemical reactions, including the production of ammonia in the Haber process. • Electronics and Magnetic Storage: Due to its ferromagnetic nature, magnetite is used in magnetic tapes and hard drives for data storage. • Energy Storage: Research is being conducted on the use of magnetite in energy storage systems and as a material for building lithium-ion batteries. • Soundproofing and Insulation: Magnetite's density makes it useful for soundproofing and as an insulating material in construction.	No
Secondary	**Zircon**	ZrSiO4	• Ceramics Industry: Zircon is extensively used in the production of ceramics, particularly in the manufacture of tiles, sanitary ware, and tableware. It acts as an opacifier, imparting a white, opaque appearance and improved strength and toughness to ceramic products. • Refractory Materials: Due to its high heat resistance, zircon is used in the production of refractory materials, like furnace linings and foundry molds. It is especially valuable in high-temperature applications where robust and heat-resistant materials are needed. • Foundry Sands: Zircon's high thermal stability makes it an excellent material for use in foundry sands for casting metals. It can withstand the high temperatures of molten metal without breaking down, ensuring the precision and quality of cast metal products. • Zirconium Production: Zircon is the primary source of zirconium metal, which has applications in nuclear reactors due to its low neutron absorption characteristics. Zirconium is also used in the production of super alloys and in various chemical applications due to its corrosion resistance.	Yes

TABLE D.(G).1 PRIMARY AND SECONDARY COMMODITIES

Category	Product	Formula	Applications	Critical Mineral*
Secondary	**Platinum Group Elements** The platinum group elements (PGEs), which include platinum, palladium, rhodium, ruthenium, iridium, and osmium, have a wide range of applications due to their unique physical and chemical properties.	Platinum (Pt) Palladium (Pd) Rhodium (Rh) Ruthenium (Ru) Iridium (Ir) Osmium (Os)	• Industrial and Medical Applications: PGEs are highly valued in various industrial, medical, and electronic applications. For instance, palladium and platinum are used as catalysts in the petroleum industry, and iridium and platinum find applications in medical implants like pacemakers. • Electronics Industry: In the electronics sector, PGEs are utilized in the manufacturing of computer hard disks, integrated circuits, and multilayer ceramic capacitors. Their properties are essential for the performance and reliability of these electronic components. • Catalytic Applications: Platinum is used as a catalyst in the curing of silicones, which have applications in diverse fields such as baking, bandages, and airplane gasket seals. Moreover, hydrogen fuel cells represent another potential application for PGEs, highlighting their role in emerging energy technologies. • Forensic Science and Chemical Industry: Osmium is used as a stain for fingerprints and DNA, playing a critical role in forensic science. Additionally, rhodium is involved in the production of nitric acid, and ruthenium finds applications in chemicals used for cleaning liquids, adhesives, and paints. • Physical and Chemical Properties: The high melting points, corrosion resistance, and catalytic qualities of PGEs make them indispensable in various industrial processes. Their robustness and reactivity are key factors in their widespread utility.	Yes

(H) Expected Incidental Products

Table D.(H).1 Primary And Secondary Commodities shows the list of incidental/secondary commodities to be mined and extracted.

TABLE D.(H).1 PRIMARY AND SECONDARY COMMODITIES

Category	Product	Formula	Applications	Critical Mineral*
Incidental / Secondary	**Garnet**	[Mg,Fe,Mn]3Al2(SiO4)3	• Abrasive Blasting Media: Garnet is widely used as an abrasive blasting material for surface preparation in industrial painting and coating applications. Its hardness and angular shape make it effective for removing rust, paint, and other coatings from metal, wood, and other surfaces. • Waterjet Cutting: Garnet is a preferred abrasive for waterjet cutting machines, which use high-pressure water and garnet abrasives to cut a wide variety of materials including metal, stone, glass, and composites. Its sharp edges and hardness allow for precise and efficient cutting. • Abrasive Powders: Garnet is ground into powders that are used as abrasives in sandpaper for woodworking and automotive industries. It's used for finishing and polishing purposes due to its effectiveness in smoothing surfaces. • Filter Media: Garnet is used as a filtration media for both water and air filtration. Its chemical stability and high specific gravity make it effective in filtering out contaminants. • Waterjet Looms: In textile industries, garnet is used in waterjet looms for the efficient and precise cutting of fabrics. • Surface Preparation in Petrochemical Industries: Garnet is used for blast cleaning surfaces in the petrochemical industry, preparing them for painting or coating.	No

TABLE D.(H).1 PRIMARY AND SECONDARY COMMODITIES

Category	Product	Formula	Applications	Critical Mineral*
Incidental / Secondary	**Magnetite**	(Fe, Mn)Nb2O6	• Steel Production: Magnetite is a major source of iron, making it a crucial raw material in the production of steel. Its high iron content makes it a valuable ore for iron and steel industries.Water treatment • Coal Washing: Magnetite is used in the coal washing process. Its magnetic properties enable the separation of coal from impurities. Coal particles are mixed with magnetite and water; the mixture is then subjected to a magnetic field which separates the coal from heavier impurities. • Dense Media Separation: In dense media separation processes, magnetite is used as a dense medium. This is particularly common in mineral processing to separate minerals with different densities, a method often used for separating diamonds from other material. • Magnetic Resonance Imaging (MRI): Due to its magnetic properties, magnetite nanoparticles are used as contrast agents in MRI scanning. • Catalysis: Magnetite is used as a catalyst in certain chemical reactions, including the production of ammonia in the Haber process. • Electronics and Magnetic Storage: Due to its ferromagnetic nature, magnetite is used in magnetic tapes and hard drives for data storage. • Energy Storage: Research is being conducted on the use of magnetite in energy storage systems and as a material for building lithium-ion batteries. • Soundproofing and Insulation: Magnetite's density makes it useful for soundproofing and as an insulating material in construction.	
Incidental / Secondary	**Zircon**	ZrSiO4	• Ceramics Industry: Zircon is extensively used in the production of ceramics, particularly in the manufacture of tiles, sanitary ware, and tableware. It acts as an opacifier, imparting a white, opaque appearance and improved strength and toughness to ceramic products. • Refractory Materials: Due to its high heat resistance, zircon is used in the production of refractory materials, like furnace linings and foundry molds. It is especially valuable in high-temperature applications where robust and heat resistant materials are needed. • Foundry Sands: Zircon's high thermal stability makes it an excellent material for use in foundry sands for casting metals. It can withstand the high temperatures of molten metal without breaking down, ensuring the precision and quality of cast metal products. • Zirconium Production: Zircon is the primary source of zirconium metal, which has applications in nuclear reactors due to its low neutron absorption characteristics. Zirconium is also used in the production of super alloys and in various chemical applications due to its corrosion resistance.	Yes
Incidental / Secondary	**Platinum Group Elements** The platinum group elements (PGEs), which include platinum, palladium, rhodium, ruthenium, iridium, and osmium, have a wide range of applications due to their unique physical and chemical properties.	Platinum (Pt) Palladium (Pd) Rhodium (Rh) Ruthenium (Ru) Iridium (Ir) Osmium (Os)	• Industrial and Medical Applications: PGEs are highly valued in various industrial, medical, and electronic applications. For instance, palladium and platinum are used as catalysts in the petroleum industry, and iridium and platinum find applications in medical implants like pacemakers. • Electronics Industry: In the electronics sector, PGEs are utilized in the manufacturing of computer hard disks, integrated circuits, and multilayer ceramic capacitors. Their properties are essential for the performance and reliability of these electronic components. • Catalytic Applications: Platinum is used as a catalyst in the curing of silicones, which have applications in diverse fields such as baking, bandages, and airplane gasket seals. Moreover, hydrogen fuel cells represent another potential application for PGEs, highlighting their role in emerging energy technologies. • Forensic Science and Chemical Industry: Osmium is used as a stain for fingerprints and DNA, playing a critical role in forensic science. Additionally, rhodium is involved in the production of nitric acid, and ruthenium finds applications in chemicals used for cleaning liquids, adhesives, and paints. • Physical and Chemical Properties: The high melting points, corrosion resistance, and catalytic qualities of PGEs make them indispensable in various industrial processes. Their robustness and reactivity are key factors in their widespread utility.	Yes

TABLE D.(H).1 PRIMARY AND SECONDARY COMMODITIES

Category	Product	Formula	Applications	Critical Mineral*
Incidental / On-demand	**Specialty Sand (Spec Sand)** high-purity silica sand with specific characteristics that make it suitable for a variety of industrial applications.	SiO2	• Glassmaking: One of the primary uses of high-purity silica sand is in the production of glass. It provides the essential SiO2 (silicon dioxide) component of glass formulae, which gives glass its transparency, strength, and thermal resistance. • Foundry Sand: In metal casting, specialty sand is used as a molding material, known as foundry sand. Its high melting point and resistance to heat make it ideal for forming molds into which molten metal is poured. • Oil and Gas Recovery (Frac Sand): In the hydraulic fracturing process used to extract oil and natural gas, specialty sand known as frac sand is used. It is pumped into wells to prop open fractures in rock layers, allowing oil or gas to flow out. • Construction: Specialty sand is used in the construction industry for its strength and durability, particularly in the creation of concrete and asphalt. • Water Filtration: Because of its uniform size and shape, specialty sand is used in water filtration systems. It helps to trap and filter out impurities from water, making it cleaner for consumption or use. • Sports and Leisure: Specialty sands are used in sports fields, including golf courses (in bunkers) and in volleyball courts, for their consistent grain size and drainage properties. • Landscaping: In landscaping, specialty sand is used for its aesthetic appeal and for soil aeration and drainage. • Abrasives: High-grade silica sand is used as an abrasive in sandblasting and other abrasive tools, for cleaning and shaping surfaces. • Glass Beads and Other Decoratives: Specialty sand can be processed into glass beads used for decorative and reflective purposes in road marking and other applications. • Chemical Production: Specialty sand is used in the production of certain chemicals, where silica is a required component. • Ceramics and Refractories: In the manufacturing of ceramics and refractory materials, specialty sands are used because of their high silica content and thermal properties. Civil engineering applications	No
Incidental / On-demand	**Gravel**	Typically, gravel includes a mix of rock types and sizes, from small pebbles to larger stones. Common rock types found in gravel are: Quartz Granite Basalt Limestone Sandstone	• Erosion and Drainage Control: Gravel is effective for controlling erosion and managing drainage. It's used in areas that require stabilization against water movement, and in settings where drainage is a concern, such as around structures without gutters. • Landscaping and Decorative Purposes: In landscaping, gravel serves both functional and aesthetic purposes. It's used for creating walkways, as a mulch replacement in gardens, and for decorative effects in landscape design. • Construction and Infrastructure: Gravel is a key component in the construction industry. It's used in making concrete, creating foundations for roads, mixing with asphalt, and filling construction sites. Gravel is also utilized in producing other construction materials like blocks, pipes, and bricks. In some instances, it's even used in blast furnaces as a flux material.	No
Incidental / On-demand	**Road Base**	Gravel & Sand	• Foundation material for road construction	No

TABLE D.(H).1 PRIMARY AND SECONDARY COMMODITIES

Category	Product	Formula	Applications	Critical Mineral*
	Clay		• Ceramic Industry: Clay minerals like kaolinites, micas, and smectites are fundamental in the ceramic industry. They are used to produce various ceramic products, including porcelain, fine ceramics, coarse ceramics, cements, electro-ceramics, tiles, and refractories. • Construction Industry: In construction, clay is a key material for making bricks, cement, and concrete. These applications leverage the structural and binding properties of clay, making it a vital component in building materials. • Soil Mechanics and Agriculture: Clay plays a significant role in soil mechanics and agriculture due to its ability to influence soil structure and fertility. It is also involved in addressing environmental problems related to soil management. • Oil and Gas Industry: In the oil and gas sector, clay minerals are crucial in the origin, migration, and trapping of hydrocarbons. They are also used in petroleum cracking processes, where their catalytic properties are essential for refining hydrocarbons. • Bentonite Clay Applications: Bentonite, a specific type of clay, has several popular uses. It is used as cat litter, oil and industrial spill absorbents, a binder in the iron ore pelletizing process, adsorbents, drilling mud, and as a groundwater barrier. These applications exploit the absorbent and binding properties of bentonite clay. • Industrial Applications: The inertness, stability, and unique rheological properties of clays make them suitable for a wide range of industrial applications. Additionally, their reactivity and catalytic activity are exploited in various industrial processes. The major classes of clays used industrially include common clays, industrial kaolins, bentonites, and palygorskite–sepiolite clays.s	No

(I) Explosives

No explosives will be used in this project.

(J) Specify The Dimensions of Any Existing or Proposed Roads.

The following roads will be used in the operation. Refer to Table *D.(J).1 Roads*.

TABLE D.(J).1 ROADS

Road	Type	Dimensions	Description
Moffat County Road 4	Paved	40’	Will only be crossed, not used extensively. Matts placed across Road 4 for any tracked vehicle.
Moffat County Road 88	Dirt	20’x4000’	This road will be used for 4000 feet south.
Moffat County Road 148	Dirt	20’x3600’	Accessed from both spurs, extending 3600 feet south.

Temporary Mining and Haul Roads

We will establish efficient paths to the wash plant, ensuring they are a maximum of 20 feet in width and can extend up to 2000 feet in length. These paths will traverse mined blocks that have been redeposited with topsoil. When not in use, the roads will be ripped and prepared for final reclamation. The final reclamation process will involve imprint seeding.

Environmental Mitigation

We plan to use trackout control mats, strategically placed at the entrances to County Road 88 and County Road 148 during periods of high activity. This measure aims to protect County Road 4 from dirt and sediment resulting from mining operations. The maintenance of dirt roads will be the responsibility of the West Side Placer throughout the operational phase.

END
EXHIBIT D

6.4.5 EXHIBIT E – Reclamation Plan

(A) Description of The Type of Reclamation

The West Side Placer project is committed to continuous land reclamation as mining progresses. This process involves stripping topsoil, mining blocks, and returning the washed ore to the active mining block. Following this, grading will occur, and the stockpiled topsoil will be spread over the completed mining block. The mined blocks will be seeded in October and April, using an imprint seeder. This process incorporates a proven mix of wild seeds and shrubs, promoting native vegetation growth. Post mining reclamation will be monitored with photography, UAV (unmanned aerial vehicle) and required environmental monitoring.

(B) A Comparison of The Proposed Post Mining Land Use.

Table E.(B).1, compares post-mining land use, including rangeland, wildlife habitat, and renewable energy.

The West Side Placer is strategically located in close proximity to the TransWest Express power lines, creating the potential for carbon-free electrical generation for post-mining use. The site is situated in an area considered good for solar generation and is potentially a favorable zone for wind power generation. Further study on renewable energy would need to be conducted.

See section *6.4.6, EXHIBIT F – Reclamation Plan Maps*, for more information on post-mining land use and related maps.

TABLE E.(B).1

Post Mining Use	Purpose	Environmental Impact	Economic Impact	Sustainability
Rangeland	Livestock grazing and foraging	Restores vegetation and soil, risk of erosion and habitat destruction if overgrazed	Benefits through livestock, supports rural economies	Sustainable with proper management and conservation practices
Wildlife Habitat	Preserving and enhancing habitat for wildlife	Positive for biodiversity and ecological balance	Potential ecotourism, hunting, limited direct economic benefits	Highly sustainable, contributes to long-term environmental health
Renewable Energy	Generating renewable energy (e.g., solar, wind)	Low carbon footprint, can impact local ecosystems	Generates energy, job creation, and technological investments	Sustainable energy production, requires planning to minimize ecological impacts

(C) The Reclamation Plan

Reclamation at the West Side Placer will be a continuous process. This involves carefully stockpiling topsoil, mining, returning ore to the active mining block, contouring, reapplying topsoil, seeding, and monitoring. AuPt Industries has already successfully implemented reclamation under their 110-2 permit with excellent results. *Table E.(C).1, Reclamation Plan*, illustrates the reclamation process in 7 major steps.

TABLE E.(C).1 RECLAMATION PLAN

Step Number	Reclamation Step	Time Of Year	Expected Time-frame	Key Activities and Details	Equipment
1	Prepping of ore body in the mining block	Year-round	24 Hours per 5 acre block	• Stripping of topsoil with a bulldozer • Stockpiling topsoil along the mining block perimeter	• Dozer
2	Mining of block	Year-round	Continuous with mining	• Excavating ore from active mining block • Transport of ore to wash plant • Return processed ore from the wash plant and deposit progressing towards the active excavation wall	• Haul trucks • Excavator • Loader
3	Grading of mined block	Year-round	Less than 7 days	• Grading processed ore that has been redeposited in the active mining pit. • Using lidar technology for land restoration	• Dozer • Scraper • Loader • Lidar
4	Topsoil replacement	Year-round	Less than 7 days	• Covering graded area evenly with stockpiled topsoil • Ripping compacted areas	• Dozer • Scraper • Loader
5	Seeding and imprinting of mining block	October, April	1 Day/block	• Imprinter used to texture topsoil for optimal growing conditions. • Seeder using approved seed mix	• Seeder, • Imprinter • Tractor
6	Decommissioning of plant and facilities.	End of project	3 Months	• Removal of all mining related equipment and facilities. • Plugging of all wells	• Dozer • Excavator, • Loader.
7	Reclamation monitoring	End of project	5 Years	• Monitoring of all reclamation efforts • Documentation of reclamation (photo, uav mapping)	• Camera • UAV • Computer • Database

(D) Revegetation Plan

Completed mining blocks will be seeded in October or April each year. These months are chosen due to the lower nighttime temperatures and moderate daytime temperatures, which provide optimal conditions for seeding at the site.

An imprint seeder will be used for texturing and seeding. No soil augmentation will be applied unless it is deemed necessary.

The approved and tested native seed and shrub mix from Permit No. M-2016-081 will be applied at a rate of 2 Pure Live Seeds (PLS) per acre. This mix includes Indian Ricegrass,

Bluebunch Wheatgrass, Thickspike Wheatgrass, Slender Wheatgrass, Basin Wildrye, Needle & Thread, and Rubber Rabbitbrush. It has been previously applied and tested, yielding excellent results, as demonstrated in *Image E.(D).1, Seed Tag*.

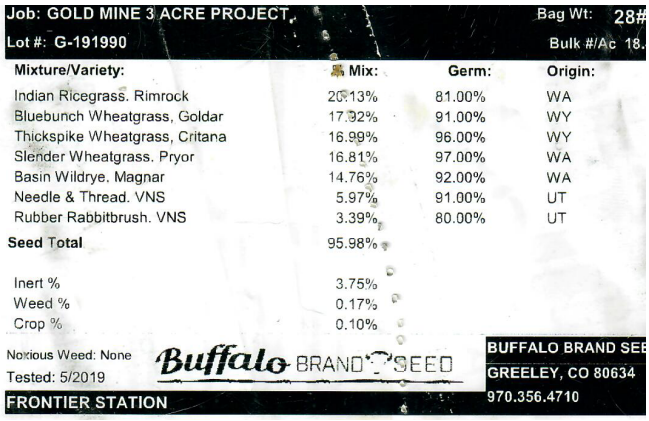
Revegetation monitoring will be conducted for five years following the completion of the project. Should any areas be insufficiently vegetated, appropriate measures will be taken. These may include fertilizing and additional revegetation augmentation as needed.

Photos of revegetation are displayed in Images *E.(D).2 Images of Reclamation*, demonstrating a successful approach to reclamation. The reclamation work was carried out under Permit No. M-2016-081, utilizing the seed mix detailed in *Image E.(D).1 Seed Tag*.

TABLE E.(C).1 REVEGETATION PLAN

Step	Activity	Expected time frame	Details	Equipment used
1	Prepping mined block	Under a week	• Contouring with a dozer using lidar mapping for original profile. • Ripping compacted areas to loosen topsoil.	• Dozer
2	Reapplication of topsoil from stockpile	Under a week	• Redistributing stockpiled topsoil using a dozer and scraper.	• Dozer • Scraper
3	Imprinting and seeding	8 Hours per 5-acre block	• Use of a seeder and imprinter for texturing and seeding. • Seeding and imprinting to occur in October or April. • Approved and tested seed mix	• Tractor • Seeder, • Imprint roller
4	Revegetation monitoring	5 Years	• Monitoring of revegetation • Monitoring of all reclamation efforts • Documentation of reclamation (photo, uav mapping)	• Camera • UAV • Computer database

IMAGE E.(D).1 SEED TAG



Looking west, the reclaimed section is visible. The ground had already been grazed by a local ranching operation.

Reclaimed section.

Reclaimed section.

(E) A Plan Or Schedule Indicating How and When Reclamation Will Be Implemented

Table 6.4.4.-C Table E.(C).1 Revegetation Plan shows the plan on how reclamation will proceed. Reclamation will be an ongoing, continuous program during the entire lifespan of the mine.

(I) An Estimate Of The Periods Of Time Which Will Be Required For The Various Stages Or Phases Of Reclamation.

Table 6.4.4.-C shows estimated periods of time that reclamation will proceed Reclamation will be an ongoing, continuous program during the entire lifespan of the mine.

(II) A Description Of The Size And Location Of Each Area to Be Reclaimed During Each Phase;

Mining will occur in 5 acre blocks. No more than 15 acres will be open at one time.

(III) An Outline Of The Sequence In Which Each Stage Or Phase of Reclamation Will Be Carried Out.

Table 6.4.4.-C shows estimated periods of time that

(IV) Demonstrate A Reasonably Foreseeable End Date

514.9 acres of mineable ground will take approximately 10 years and will aim to cease by or before January 1, 2035; with an additional 5 years of ecological monitoring. Setting the final completion date as January 1, 2040.

(F) Reclamation Descriptions

(i) Final grading

Maximum slope of reclamation will be 5:1.

(ii) Seeding

Seeding to Occur in October and April each year. Seed to applied with imprinter/ seeder combination see *Image E.(F).1 Imprint Seeder.* Seed mix application at a rate of 2 Pure Live Seed (PLS) per acre. Approved Seed Mix see *Table E.(F).1 Seed Mix*

(iii) Fertilization

No fertilizer will be used.

(iv) Revegetation

No revegetation besides imprint seeding approved mix will occur. Monitoring of reclamation will dictate need for fertilizer or other relevant revegetation measures during monitoring phase.

(v) Topsoiling

Native topsoil, ranging between 8” to 16” in depth, will be stockpiled. Upon completion of mining operations in the block, a dozer will contour the block back to its original profile.

This stockpiled topsoil, 8” to 16” in depth, will then be redistributed over the contoured mined block

TABLE E.(F).1 SEED MIX

Seed	Percent of Mix
Indian Ricegrass	20.13%
Bluebunch Wheatgrass	17.92%
Thickspike Wheatgrass	16.99%
Slender Wheatgrass	16.81%
Basin Wildrye	14.76%
Needle & Thread	5.97%
Rubber Rabbitbrush	3.39%

IMAGE E.(F).1 IMPRINT SEEDER

END
EXHIBIT E

6.4.6 EXHIBIT F – Reclamation Plan Maps

(A) Maps

END
EXHIBIT F

Reclamation Steps

- Stripping and stockpiling of topsoil
- Mining of the block and continuous backfilling of the active mining block.
- Grading of the mined block.
- Replacement of topsoil.
- Ripping of mining roads and areas impacted
- Seeding and imprinting of the mining block
- Decommissioning of plant and facilities
- Monitoring of reclamation efforts

WEST SIDE PLACER

Wash

RECLAIMED AND SEEDED

BLOCK MINED- GRADED - TOPSOIL APPLIED

BLOCK MINED- GRADED

BLOCK TO BE MINED

BACK FILLED AND GRADED

BACK FILLED

ACTIVE PIT

HAUL

STOCKPILED TOPSOIL

HAUL TRUCK ROUTE

RECLAIMED AND RIPPED HAUL ROAD

RECLAMAIMED AND SEEDED

County Road 88

County Road 4

6233 ft

Map F.1
Reclamation Narrative Map

West Side Placer
Reclamation
Cycle

1
Stripping of Topsoil

2
Mining of Block

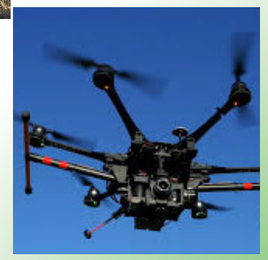
3
Moving of Ore to Wash plant:

4
Returning of Ore to Active Mining Block

Contouring of the mined block

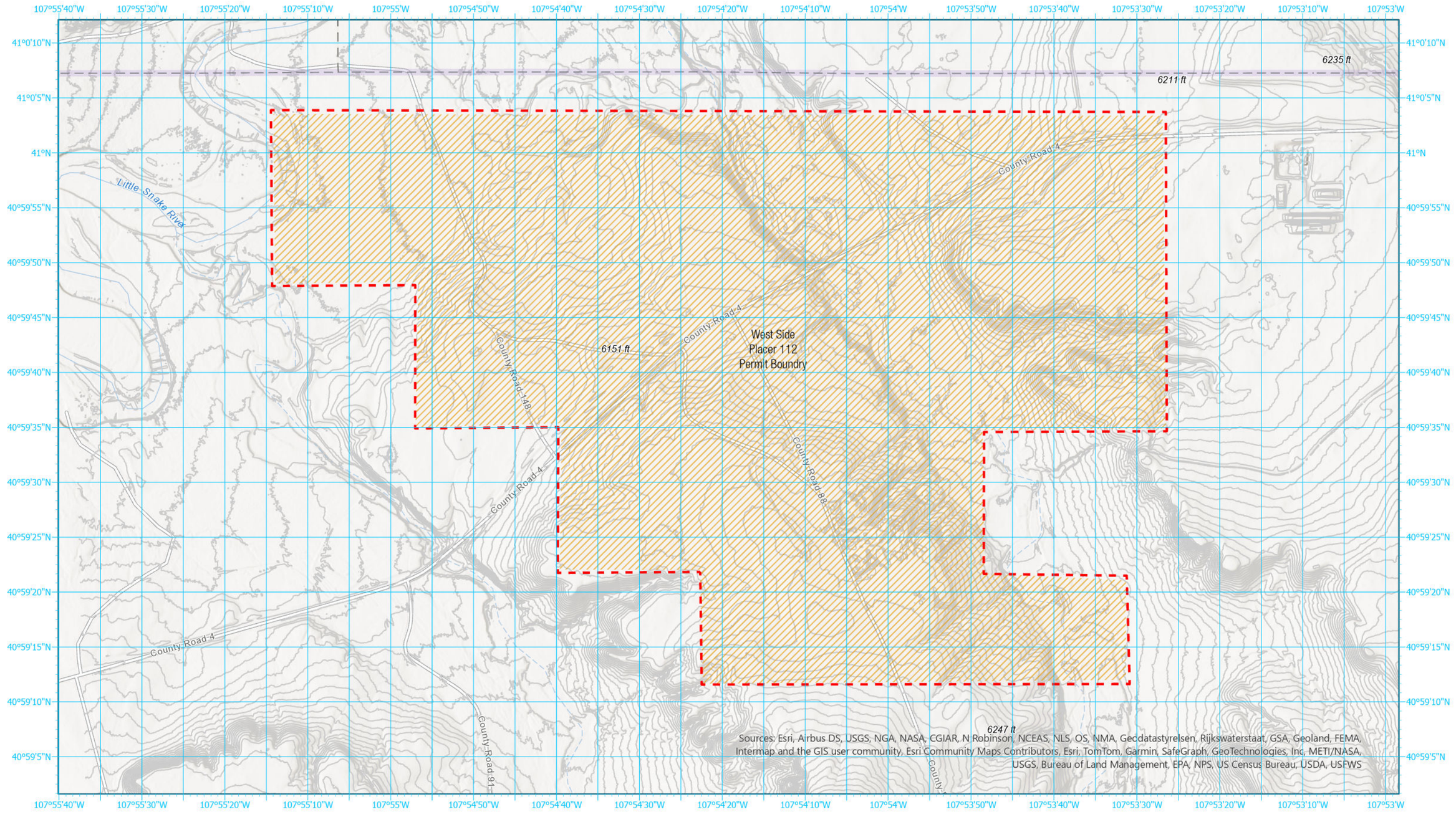
5
Contouring Block and Topsoil Replacement

6
Imprint Seeding



7
Monitor Reclamation

Map F.1
Reclamation Narrative Map

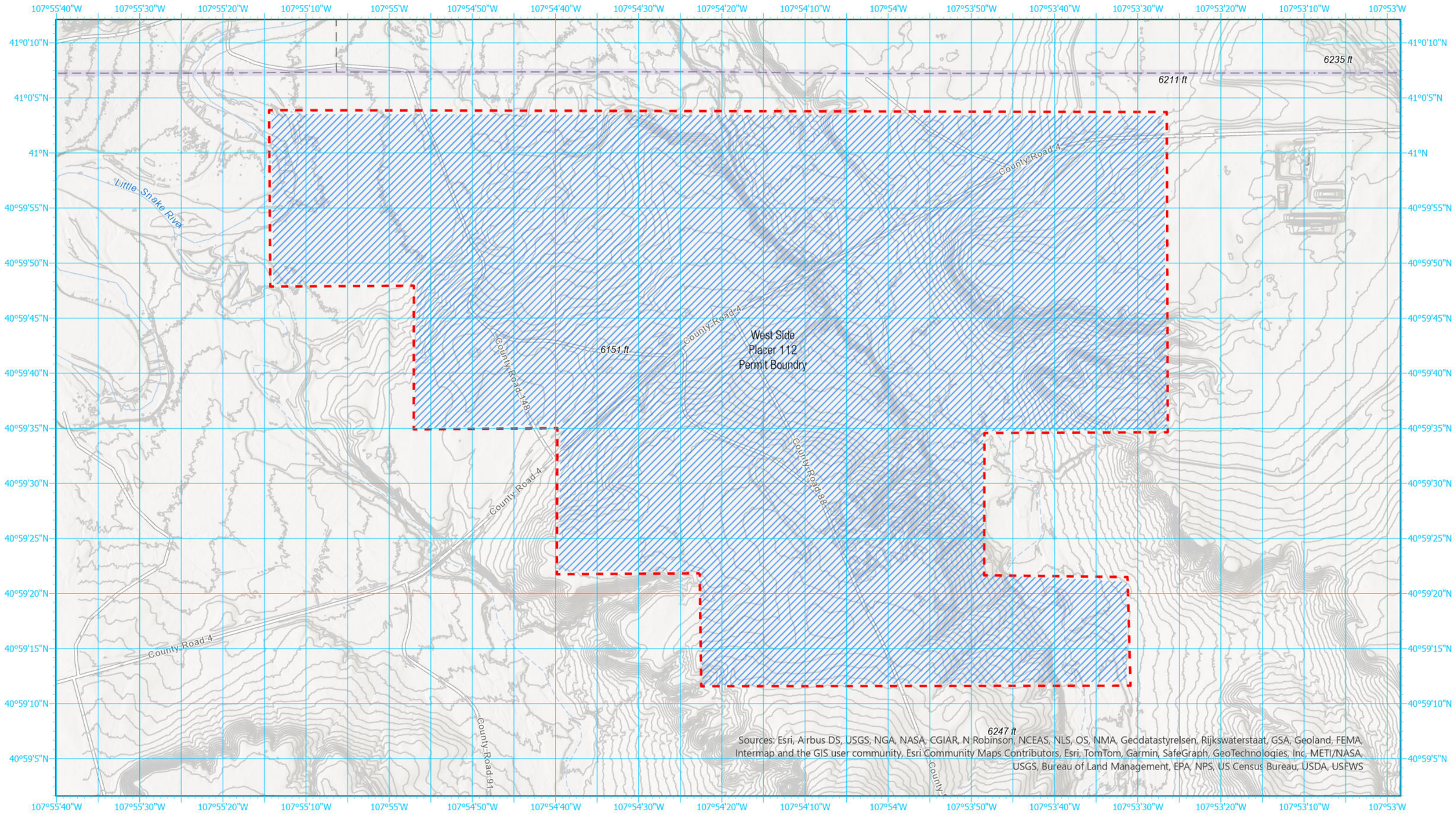


Map F.2
Post Mining Use: Rangeland

0 0.13 0.25 0.5 Miles

West Side Placer - 112 Boarder
5 Foot Contour
Rangeland

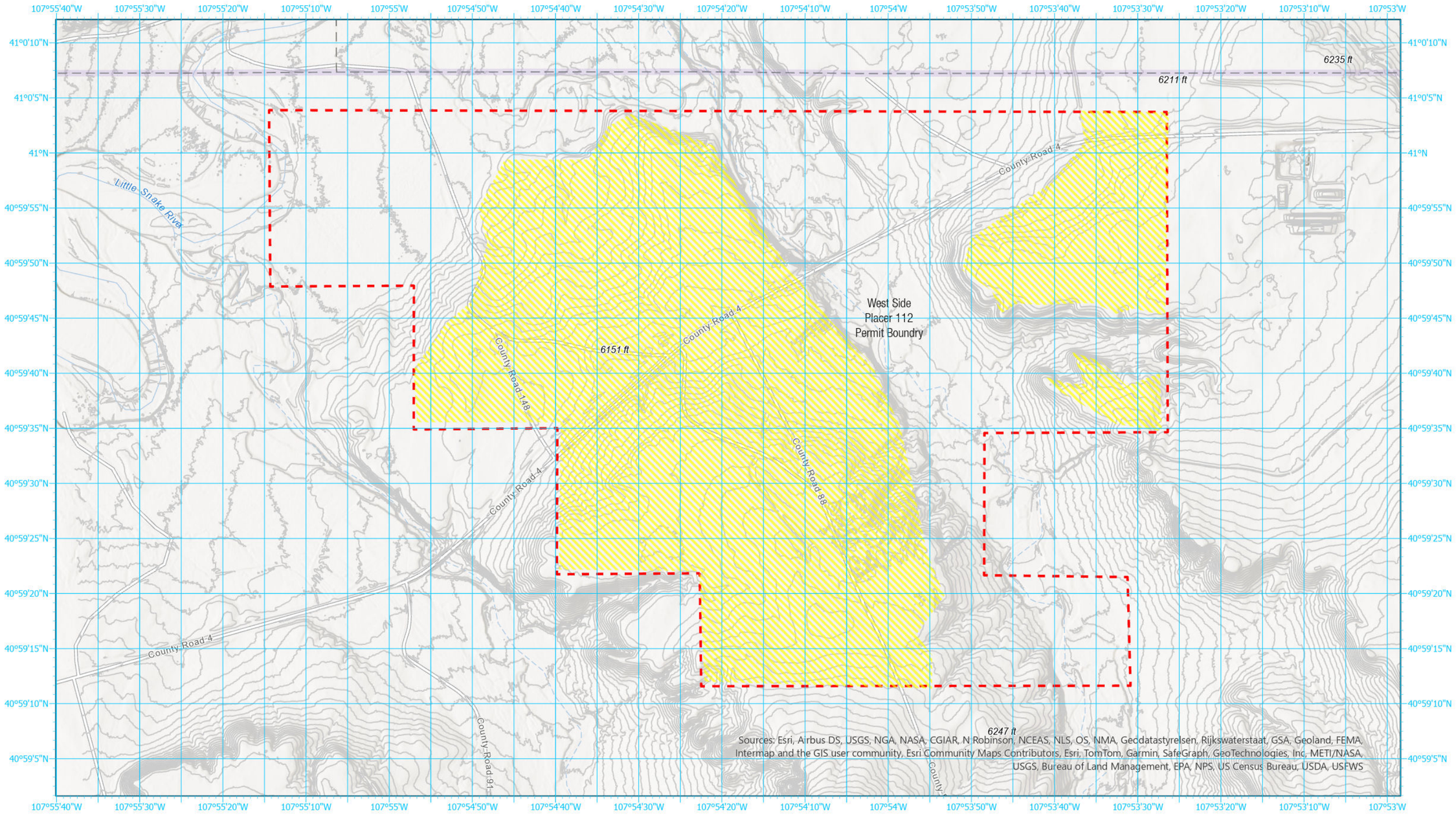
N



Map F.3
Post Mining Use: Wildlife Habitat

0 0.13 0.25 0.5 Miles

West Side Placer - 112 Boarder
5 Foot Contour
Wildlife Habitat



Map F.4
Post Mining Use: Renewable Energy

0 0.13 0.25 0.5 Miles

West Side Placer - 112 Boarder

5 Foot Contour

Renewable Energy

6.4.7 EXHIBIT G – Water Information

(A) Locate On The Map (In Exhibit C) Tributary Water Courses, Wells, Springs, Stock Water Ponds, Reservoirs, And Ditches On The Affected Land And On Adjacent Lands Where Such Structures May Be Affected By The Proposed Mining Operations

See *Map C.1 - General Exhibit Map.*

(B) Demonstrate a Reasonably Foreseeable End Date Respecting Water Quality Treatment

The foreseeable end date for the water quality treatment is projected to be 2040; this will coincide with the completion of the project. At that time, the West Side Placer will be following all applicable water quality standards and laws.

(C) Identify All Known Aquifers

Table G.(C).1, Known Aquifers presents the major aquifers at the West Side Placer. These aquifers have been identified using data from the Colorado Geological Survey ON-010 Colorado Groundwater Atlas (Survey, 2021). Refer to *(H) Maps*.

Table G.(C).1 Known Aquifers

Aquifer Type	Subtype	Basin/Region	Aquifer	Map
Major Alluvial Aquifers		Yampa River Basin	Alluvial	H,1
			Watershed	
Sedimentary Bedrock Aquifers	Regional Aquifer Systems	Colorado Plateaus Region	Dakota Aquifer	H.2
			Entrada Aquifer	
			Mesaverde Aquifer	
			Navajo Aquifer	
	Structural Basin Aquifers	Laramide Basins	Sand Wash Basin	H.3

(D) Water Discharge Management Plan

Table G.(D).1- Water Discharge Management Plan addresses runoff from disturbed areas, piled materials, and operating surfaces in disturbed areas.

TABLE G.(D).1- Water Discharge Management Plan

Plan Step	Component	Details
1	Mining Block Location	• Conduct an analysis of the geography and hydrology of the mining site. • Identify water sources for mining and potential runoff areas. • Consider the selection of the mining block's location with a focus on placing it to avoid all riparian habitats and other ecologically sensitive areas.
2	Wash Plant Location	• Select sites with high water absorption and low run-off potential. • Avoid steep pitches, select areas that are generally flat.
3	Wash Plant Design	• Avoidance of tailing and settling ponds. • Efficient use water re-circulation using manufactured water storage, dewatering and thickener technology. • Dewatering technology including dewatering cyclones, dewatering screens and press filters will be used to deliver a dry stackable tailings product. • Discharge of thickener underflow; dewatered and discharged into general sand tailings pile. • Any associated petrol chemicals will be stored in double containment.
4	Processed Ore / Stacked material	• Selection of site based on high porosity, level ground. • Construction of bermed embankments surrounding the stacked washed ore. • Silt Fencing: Installing silt fences around the perimeter of the sand storage area can help contain sediment-laden water and prevent it from entering nearby water bodies. • Berms: berms surrounding stacked material will help redirect runoff away from sensitive areas and towards treatment or containment areas. • Water Collection: Any runoff water will be collected and for reuse in industrial processes can reduce the volume of runoff and lower the demand for fresh water. • Spill Prevention and Control: Implementing measures to prevent and control spills of oils, chemicals, or other contaminants that might mix with runoff.
5	Dewatering Operations Management	• Select appropriate dewatering techniques for placer mining. • Monitor active processing operations to determine areas of water loss and improvement. • Monitor water quality. • Allow for continuous feedback from plant managers. • Log key events and metrics in a database.
6	Runoff Management for Disturbed Areas	• Implement erosion control methods. • Construct sediment basins or ponds for runoff treatment. • Allow for continuous feedback from plant managers. • Log key events and metrics in a database.
7	Water Treatment for Mining Effluents	• Detailed treatment processes for mining pollutants. • Use of non-toxic flocculants settling of colloids in thickener. • Monitoring, inspection, and documentation of all water treatment. • Monitor treated water to meet Colorado's standards.
8	Monitoring, Inspection, and Documentation	• Rigorous monitoring of potential mining pollutants. • Maintain detailed records of treatment and water quality.
9	Post-Operation Water Management	• Plan for site reclamation and stabilization. • Implement long-term water management strategies. • Seal bore holes
10	Regulatory Compliance and Reporting	• Adhere to Colorado mining and environmental regulations. • Develop a reporting system for local, state and federal compliance.
11	Emergency Response and Contingency Plans	• Develop a spill response plan. • Procedures for notifying authorities in emergencies.
12	Plan Review and Updates	• Schedule annual reviews. • Adapt to new technologies, regulations, or environmental conditions.

(E) Water Requirements

Table G.(E).1 - Water Requirements shows the water requirements for the primary mining phases.

TABLE G.(E).1- Water Requirements

Mining Phase	General	Water Usage	Ground Water Usage
Development	• Development and testing of wash plant • Wash plant will use recirculation technologies. • Water will be sourced from either well source or the Little Snake River.	Water will be used to fill constructed water reservoirs and to test wash plant. Plant water storage expected to be a million gallons.	Less than 10 acre feet
Mining	• Wash plant will efficiently use and recirculate water • Water storage will be man-made structures • No tailings pond • No settling ponds • No water storage ponds	Wash plant usage: 6600 gallons per minute (gpm) of water, recirculated.	Up to 200 acre-feet of groundwater will be used per annum.
Reclamation Phase	• No water requirement	N/A	N/A

(F) Sources Of Water To Supply The Project Water Requirements For The Mining Operation And Reclamation

Table g.(F).1- Water Sources shows the water requirements for the primary mining phases.

TABLE G.(F).1- Water Sources

Mining Phase	Water Source
Development	Well
Mining	Well and Little Snake River
Reclamation Phase	N/A

(G) National Pollutant Discharge Elimination System (NPDES) Permit

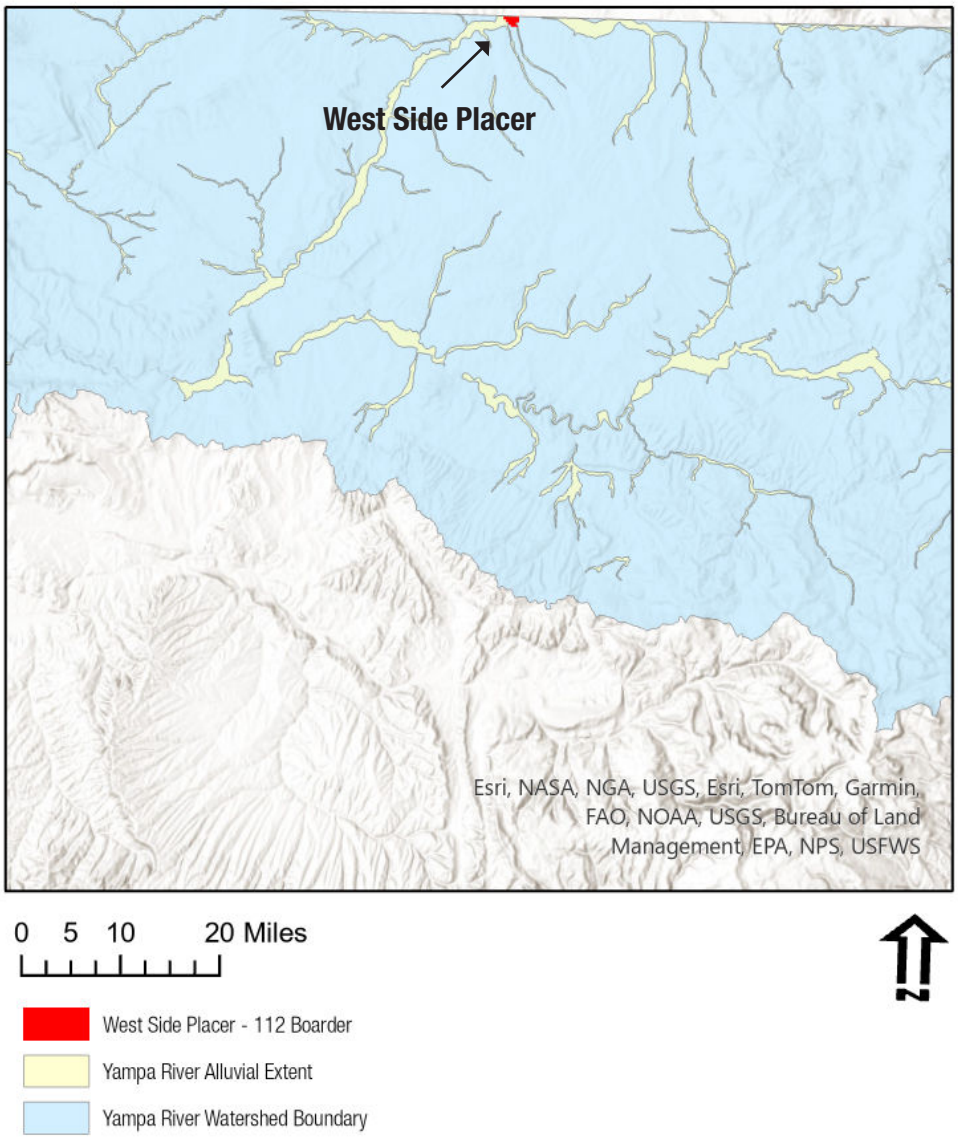
The West Side Placer project is not required to obtain an NPDES permit for its operation. There will be no discharge of pollutants into any waterway. Unused water will be reintroduced into the aquifer in compliance with Managed Aquifer Recharge rules.

(H) Maps

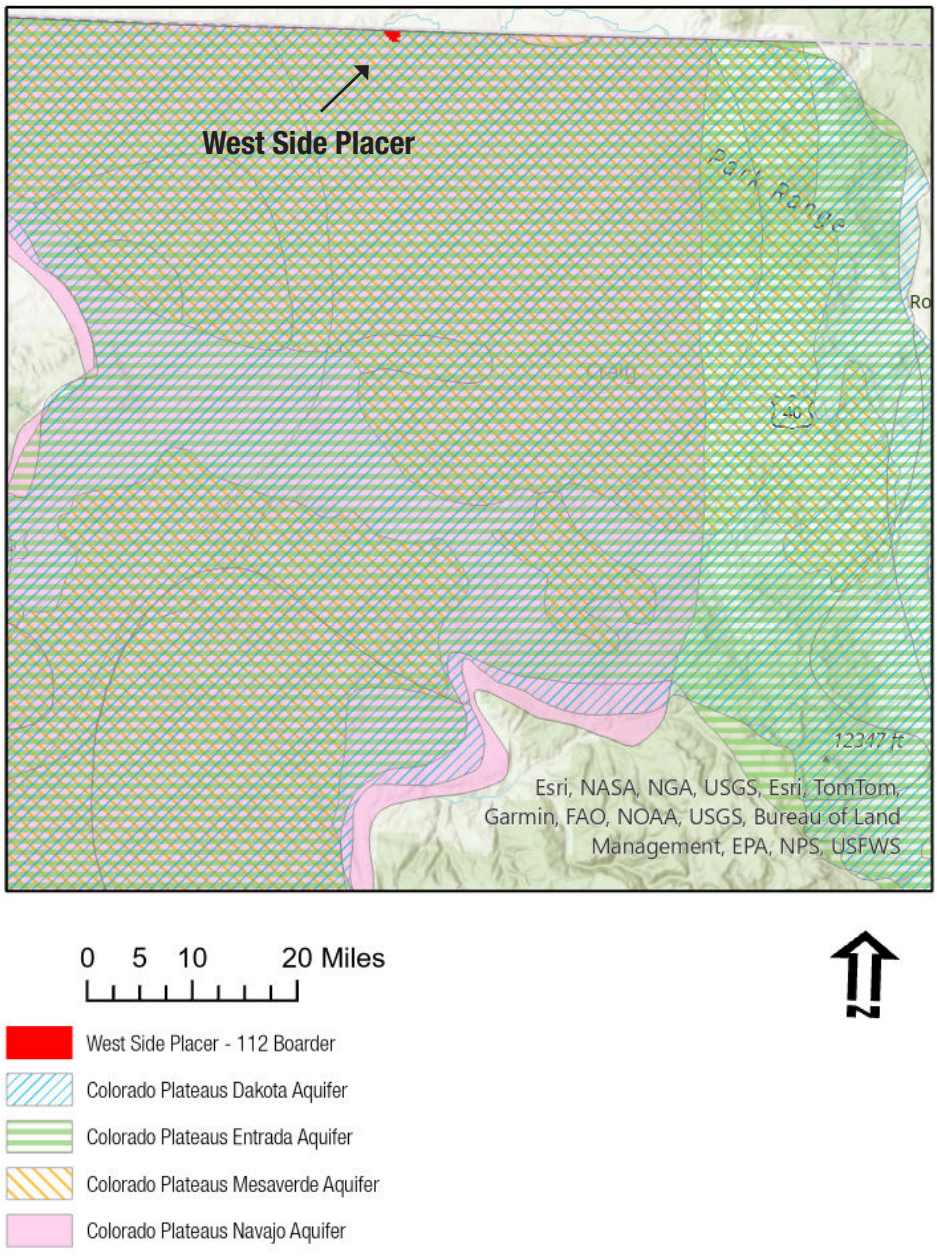
Water related maps.

END
EXHIBIT G

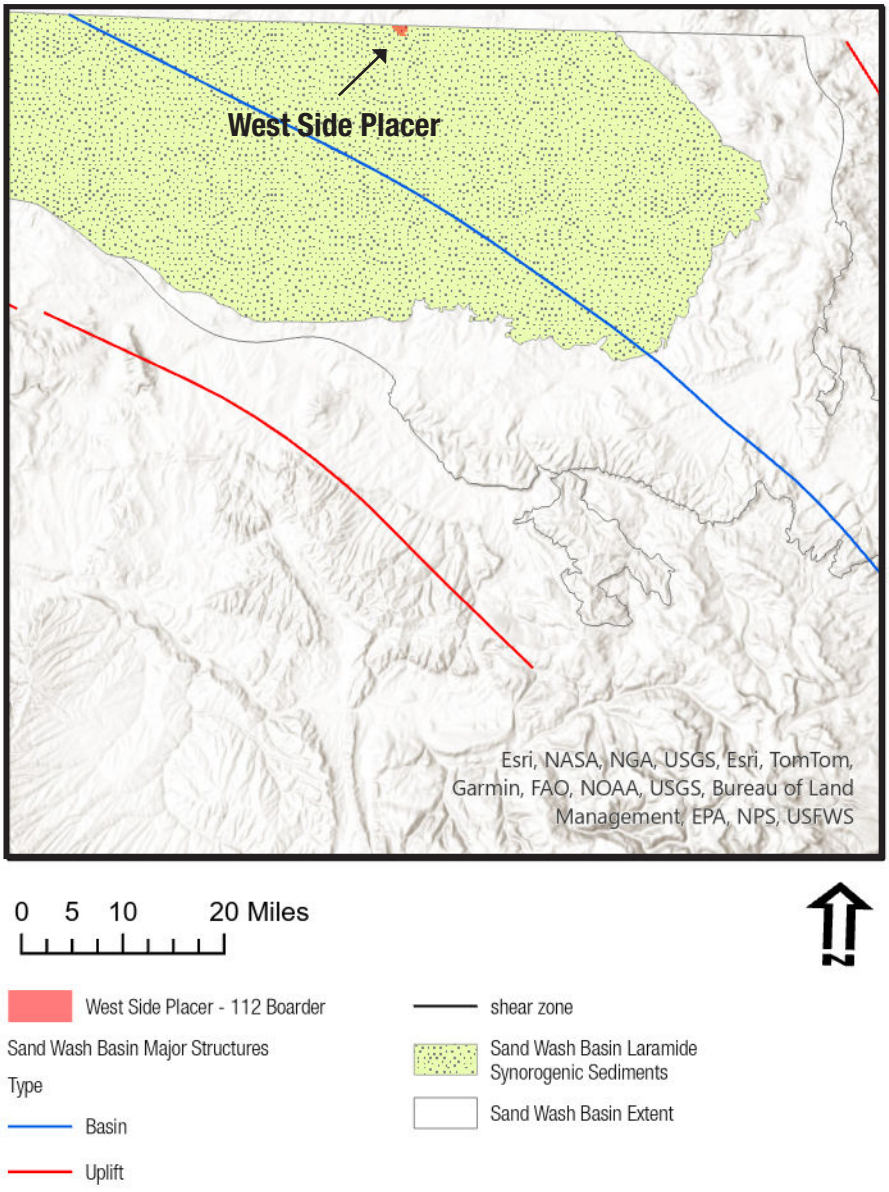
Map G.1
Major Alluvial Aquifers



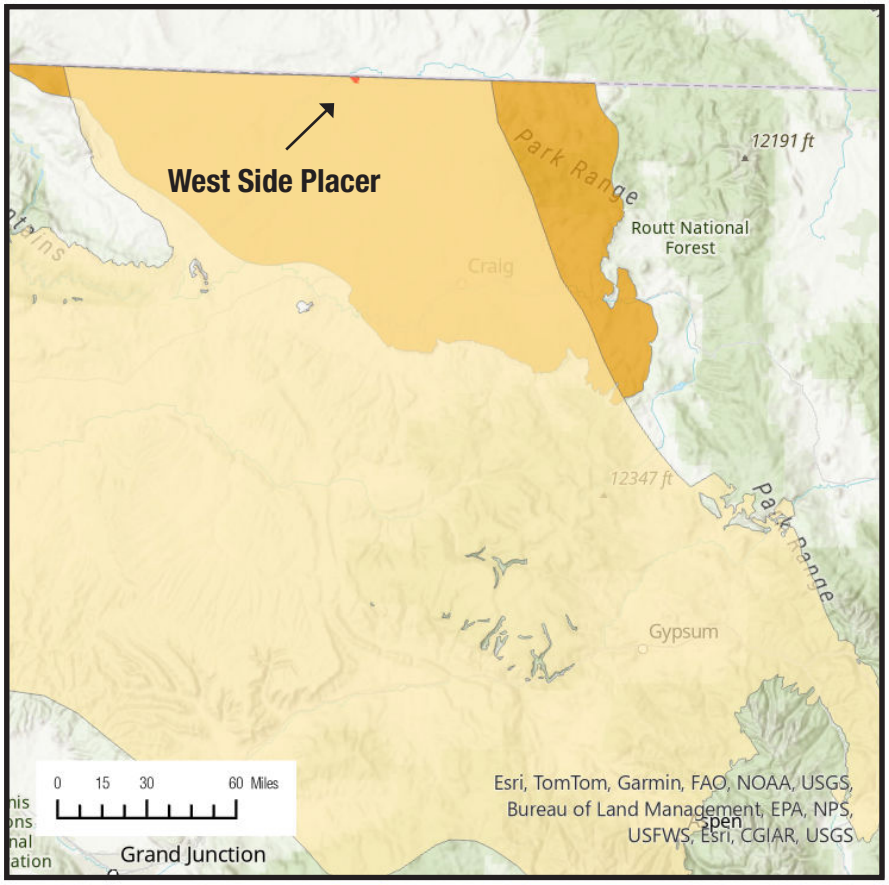
Map G.2
Major Alluvial Aquifers Sedimentary Bedrock Aquifers of The Colorado Plateau



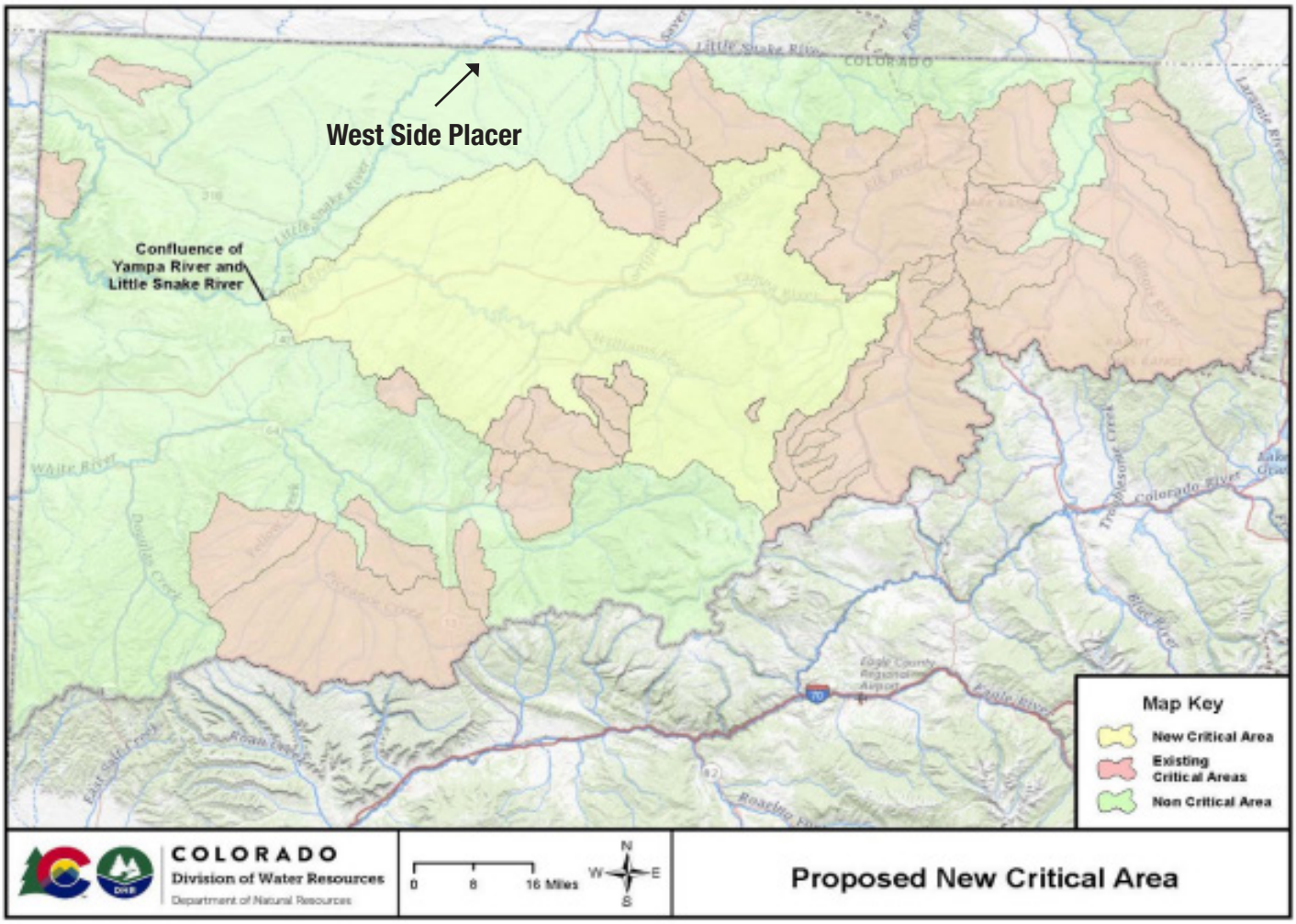
Map G.3
Major Alluvial Aquifers Sedimentary Bedrock Aquifers of The Laramide Basins



Map G.4
Managed Aquifer Recharge



Map G.5
Critical Watershed Area



The West Side Placer is located outside proposed critical water area and in an unappropriated district.

6.4.8 EXHIBIT H – Wildlife Information

(A) Description Of The Significant Wildlife Resources On The Affected Land

The wildlife resources listed in TABLE H.(A).1 were sourced from Colorado Parks and Wildlife listings, the Colorado State University Larval Fish Laboratory, and on-site observations.

TABLE H.(A).1

	Species	Habitat and Characteristics	Estimated Population
MAMMALS			
	Mule Deer *Odocoileus hemionus*	Common in the region, especially in the sagebrush steppe and mountainous areas.	Bears Ears Herd 27,703 2022
	Elk *Cervus canadensis*	Often found in the higher elevations and mountainous terrain.	Bears Ears Herd 15,539 2022
	Pronghorn *Antilocapra americana*	Adapted to the sagebrush steppe and open grasslands.	Great Divide Herd 17,891 2022
	Coyote *Canis latrans*	Versatile predators that can be found in a variety of habitats.	N/A - commonly seen
BIRDS			
	Sage Grouse *Centrocercus urophasianus*	Inhabits sagebrush areas, an iconic species of the region.	N/A
	Golden Eagle *Aquila chrysaetos*	Often found in open landscapes and mountainous regions.	N/A - commonly seen
	Mourning Dove *Zenaida macroura*	Common in grasslands and open areas.	N/A - commonly seen
	Red-tailed Hawk *Buteo jamaicensis*	Frequently seen soaring over diverse habitats.	N/A - commonly seen
	Common Poorwill *Phalaenoptilus nuttallii*	Commonly seen species	N/A - commonly seen
REPTILES AND AMPHIBIANS			
	Bullsnake *Pituophis catenife*	Found in a variety of habitats. Exists at site	N/A - most commonly seen snake at site.
	Western Terrestrial Garter Snake *Thamnophis elegans*	Found in a variety of habitats. Exists at site	N/A
	Bullsnake *Pituophis catenifer*	Found in a variety of habitats. Exists at site	N/A - rarely seen
	Prairie Rattlesnake *Crotalus viridis*	Found in a variety of habitats. Exists at site	N/A - most commonly seen snake at site.
SMALL MAMMALS			
	Uinta Chipmunk *Neotamias umbrinus*	Inhabits coniferous forests and rocky areas.	N/A - occasionaly seen
	White-tailed Jackrabbit *Lepus townsendii*	Found in open areas and sagebrush steppe. Very common on site.	N/A - commonly seen
	Bushy-tailed Woodrat *Neotoma cinerea*	Common in rocky habitats.	N/A - exidence at site
FISH			
	Black Bullead *Ameiurus mela*	Know species to inhabit the Little Snake River	N/A
	Bluehead Sucker *Catostomas discobouls*	Know species to inhabit the Little Snake River	N/A
	Common Carp *Cyprinus carpio*	Know species to inhabit the Little Snake River	N/A
	Channel Catfish *Ictalurus punctatus*	Know species to inhabit the Little Snake River	N/A

(B) Seasonal Use of The Area

The West Side Placer is a critical habitat for various wildlife species year-round. In winter, it offers refuge for Sage Grouse, detailed in the Sage Grouse maps (*map H.6 and map H.7*). It's also a designated severe winter range for Elk (*map H.8*), a winter conservation area for Mule Deer (map H.9), and a winter concentration area for Pronghorn (*map H.10*). These habitats are crucial for the survival and well-being of these species. Recognizing the ecosystem's importance, collaborative efforts between West Side Placer and Colorado Parks and Wildlife are in place to ensure robust environmental protection. This partnership aims to foster harmonious coexistence with the diverse wildlife reliant on this area.

(C) The Presence And Estimated Population Of Threatened Or Endangered Species From Either Federal or State Lists

The table *TABLE H.(C).1- Colorado Threatened, Endangered and Species of Concern* includes species classified as Federally Endangered (FE), Federally Threatened (FT), State Endangered (SE), State Threatened (ST), and State Special Concern (SC) based on the listings provided by Colorado Parks and Wildlife (CPW)[4]. Corresponding maps are listed in the map column.

TABLE H.(C).1- Colorado Threatened, Endangered and Species of Concern

Common Name	Scientific Name	Status*	Map	Occurrence /Population
AMPHIBIANS				
Boreal Toad	Bufo boreas boreas	SE	H.(E).1	Not at site
Couch's Spadefoot	Scaphiopus couchii	SC	H.(E).1	Not at site
Great Plains Narrowmouth Toad	Gastrophryne olivacea	SC	H.(E).1	Not at site
Northern Cricket Frog	Acris crepitans	SC	H.(E).1	Not at site
Northern Leopard Frog	Rana pipiens	SC	H.(E).1	Not at site
Plains Leopard Frog	Rana blairi	SC	H.(E).1	Not at site
Wood Frog	Rana sylvatica	SC	H.(E).1	Not at site
REPTILES				
Triploid Checkered Whiptail	Cnemidophorus neotesselatus	SC	H.(E).2	Not at site
Midget Faded Rattlesnake	Crotalus viridis concolor	SC	H.(E).2	Not at site
Longnose Leopard Lizard	Gambelia wislizenii	SC	H.(E).2	Not at site
Yellow Mud Turtle	Kinosternon flavescens	SC	H.(E).2	Not at site
Common King Snake	Lampropeltis getula	SC	H.(E).2	Not at site
Texas Blind Snake	Leptotyphlops dulcis	SC	H.(E).2	Not at site
Texas Horned Lizard	Phrynosoma cornutum	SC	H.(E).2	Not at site
Roundtail Horned Lizard	Phrynosoma modestum	SC	H.(E).2	Not at site
Massasauga	Sistrurus catenatus	SC	H.(E).2	Not at site
Common Garter Snake	Thamnophis sirtalis	SC	H.(E).2	Not at site
BIRDS				
American Peregrine Falcon	Falco peregrinus anatum	SC	H.(E).3	Not at site
Bald Eagle	Haliaeetus leucocephalus	SC	H.(E).3	In Vicinity - no aerie at site
Burrowing Owl	Athene cunicularia	ST	H.(E).3	Not at site

Common Name	Scientific Name	Status*	Map	Occurrence /Population
Columbian Sharp-Tailed Grouse	Tympanuchus phasianellus columbianus	SC	H.(E).3	Not at site
Ferruginous Hawk	Buteo regalis	SC	H.(E).3	In Vicinity
Greater Sage Grouse	Centrocercus urophasianus	SC	H.(E).3	Not at site
Greater Sandhill Crane	Grus canadensis tabida	SC	H.(E).3	In Vicinity
Gunnison Sage-Grouse	Centrocercus minimus	FT, SC	H.(E).3	In Vicinity - no leks at site
Least Tern	Sterna antillarum	SE	H.(E).3	Not at site
Lesser Prairie-Chicken	Tympanuchus pallidicinctus	FT, ST	H.(E).3	Not at site
Long-Billed Curlew	Numenius americanus	SC	H.(E).3	Not at site
Mexican Spotted Owl	Strix occidentalis lucida	FT, ST	H.(E).3	Not at site
Mountain Plover	Charadrius montanus	SC	H.(E).3	Not at site
Plains Sharp-Tailed Grouse	Tympanuchus phasianellus jamesii	SE	H.(E).3	Not at site
Piping Plover	Charadrius melodus circumcinctus	FT, ST	H.(E).3	Not at site
Southwestern Willow Flycatcher	Empidonax traillii extimus	FE, SE	H.(E).3	Not at site
Western Snowy Plover	Charadrius alexandrinus	SC	H.(E).3	Not at site
Western Yellow-Billed Cuckoo	Coccyzus americanus	SC, FT	H.(E).3	Not at site
Whooping Crane	Grus americana	FE, SE	H.(E).3	Not at site
FISH				
Arkansas Darter	Etheostoma cragini	ST	H.(E).5	Not at site
Bonytail	Gila elegans	FE, SE	H.(E).5	Not at site
Brassy Minnow	Hybognathus hankinsoni	ST	H.(E).5	Not at site
Colorado Pikeminnow	Ptychocheilus lucius	FE, ST	H.(E).5	Possible
Colorado River Cutthroat Trout	Oncorhynchus clarki pleuriticus	SC	H.(E).5	Not at site
Colorado Roundtail Chub	Gila robusta	SC	H.(E).5	Not at site
Common Shiner	Luxilus cornutus	ST	H.(E).5	Not at site
Flathead Chub	Platygobio gracilis	SC	H.(E).5	Not at site
Greenback Cutthroat Trout	Oncorhynchus clarki stomias	FT, ST	H.(E).5	Not at site
Humpback Chub	Gila cypha	FE, ST	H.(E).5	Not at site
Iowa Darter	Etheostoma exile	SC	H.(E).5	Not at site
Lake Chub	Couesius plumbeus	SE	H.(E).5	Not at site
Mountain Sucker	Catostomus playtrhynchus	SC	H.(E).5	Possible
Northern Redbelly Dace	Phoxinus eos	SE	H.(E).5	Not at site
Plains Minnow	Hybognathus placitus	SE	H.(E).5	Not at site
Plains Orangethroat Darter	Etheostoma spectabile	SC	H.(E).5	Not at site
Rio Grande Chub	Gila pandora	SC	H.(E).5	Not at site
Rio Grande Cutthroat Trout	Oncorhynchus clarki virginalis	SC	H.(E).5	Not at site
Rio Grande Sucker	Catostomus plebeius	SE	H.(E).5	Not at site
Razorback Sucker	Xyrauchen texanus	FE, SE	H.(E).5	Not at site
Southern Redbelly Dace	Phoxinus erythrogaster	SE	H.(E).5	Not at site
Stonecat	Noturus flavus	SC	H.(E).5	Not at site
Suckermouth Minnow	Phenacobius mirabilis	SE	H.(E).5	Not at site
MAMMALS				
Black-Footed Ferret	Mustela nigripes	FE, SE	H.5	Not at site
Black-Tailed Prairie Dog	Cynomys ludovicianus	SC	H.5	Not at site
Botta's Pocket Gopher	Thomomy bottae rubidus	SC	H.5	Not at site
Gray Wolf	Canis lupus	SE, FE	H.5	Not at site
Grizzly Bear	Ursus arctos	FT, SE	H.5	Not at site
Kit Fox	Vulpes macrotis	SE	H.5	Not at site

Common Name	Scientific Name	Status*	Map	Occurrence /Population
Lynx	Lynx canadensis	FT, SE	H.5	Not at site
Northern Pocket Gopher	Thomomys talpoides macrotis	SC	H.5	Not at site
Preble's Meadow Jumping Mouse	Zapus hudsonius preblei	FT, ST	H.5	Not at site
River Otter	Lontra canadensis	ST	H.5	Possible
Swift fox	Vulpes velox	SC	H.5	Not at site
Townsend's Big-Eared Bat	Corynorhinus townsendii pallescens	SC	H.5	Not at site
Wolverine	Gulo gulo	SE	H.5	Not at site
REPTILES				
Triploid Checkered Whiptail	Cnemidophorus neotesselatus	SC	H.2	Not at site
Midget Faded Rattlesnake	Crotalus viridis concolor	SC	H.2	Not at site
Longnose Leopard Lizard	Gambelia wislizenii	SC	H.2	Not at site
Yellow Mud Turtle	Kinosternon flavescens	SC	H.2	Not at site
Common King Snake	Lampropeltis getula	SC	H.2	Not at site
Texas Blind Snake	Leptotyphlops dulcis	SC	H.2	Not at site
Texas Horned Lizard	Phrynosoma cornutum	SC	H.2	Not at site
Roundtail Horned Lizard	Phrynosoma modestum	SC	H.2	Not at site
Massasauga	Sistrurus catenatus	SC	H.2	Not at site
Common Garter Snake	Thamnophis sirtalis	SC	H.2	Not at site

(D) General Effect During And After The Proposed Operation on The Existing Wildlife

The proposed mining activities near the site are anticipated to have various environmental impacts. Habitat disruption is expected to be temporary near the mining site, with a strategic avoidance of high-value habitats along major gulches, although some areas may face potential permanent loss. There's also the possibility of enhancing certain habitats post-mining. Food sources may be temporarily affected due to impacts on vegetation and soil, especially in high-value zones along major gulches, leading to long-term alterations in available food sources. However, there's potential for habitat improvement after mining, which could benefit food sources. Migratory routes may be directly impacted due to changes in topography, but waterways are expected to remain unaffected. Nonetheless, indirect effects may arise through habitat alterations. Noise disturbance will be significant during mining operations and continue, albeit at a reduced level, due to infrastructure and maintenance activities. Increased human activity is likely to disturb wildlife behavior, leading to avoidance and potential human-wildlife conflicts, with continued disturbance expected even after mining operations cease.

TABLE H.(D).1- WILDLIFE GENERAL EFFECTS

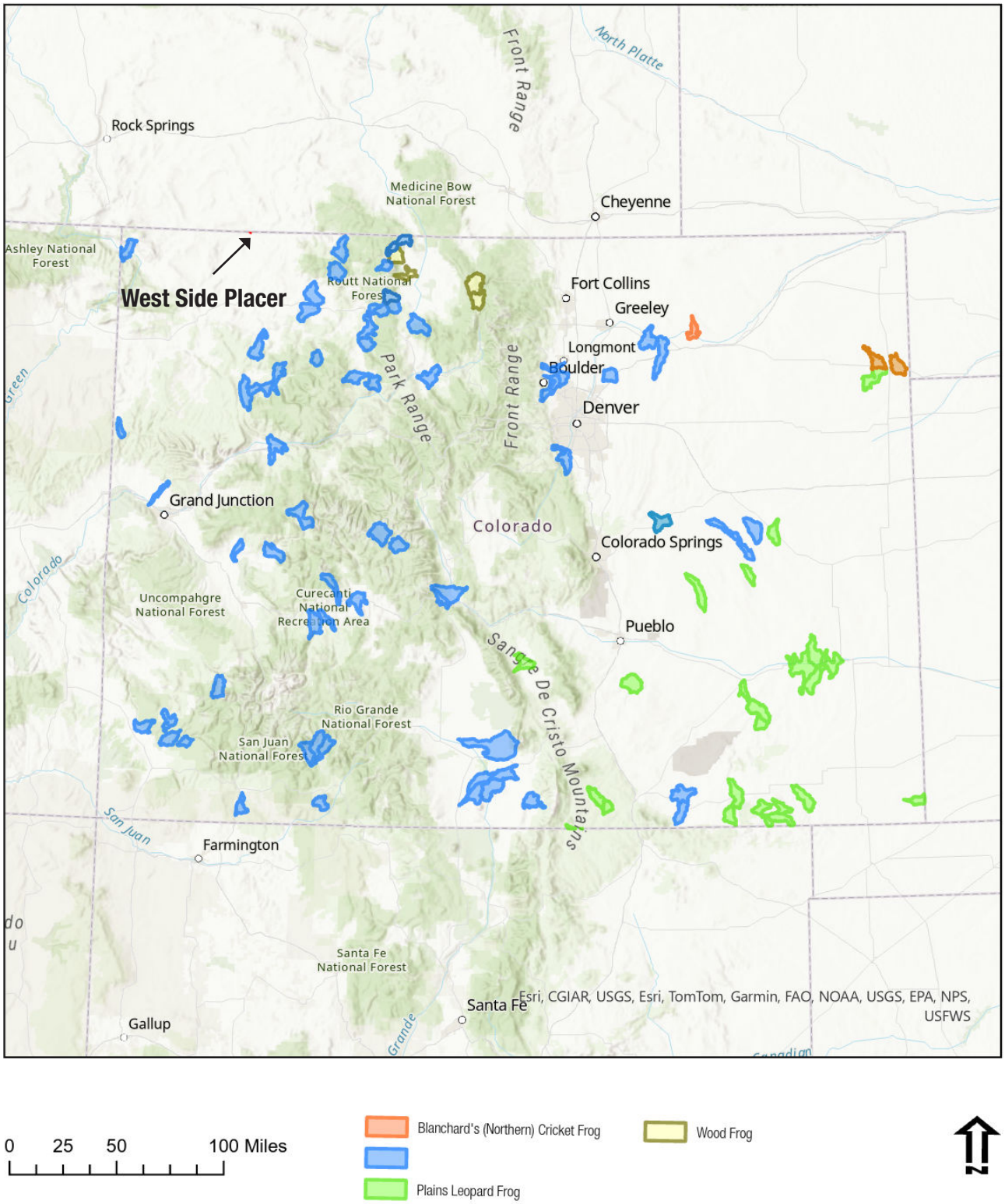
Impact	During Operation	After Operation
Habitat Disruption	Temporary loss near mining site. Avoidance of high value habitat will be avoided (along major gulches).	Potential permanent loss in some areas; ability to improve certain habitats.
Food Source Disruption	Temporary impact on vegetation and soil. High value food zones will be avoided (along major gulches).	Long-term changes to available food sources. Potential for improved habitat after mining.
Interference with Migratory Routes	Direct impact on topography. Water ways will not be impacted.	Indirect impact through habitat alterations
Noise Disturbance	Significant noise from mining activities	Residual noise from infrastructure and maintenance
Increased Human Activity	Disturbance to wildlife behavior, avoidance	Continued disturbance, potential for human-wildlife conflicts

(E) Maps

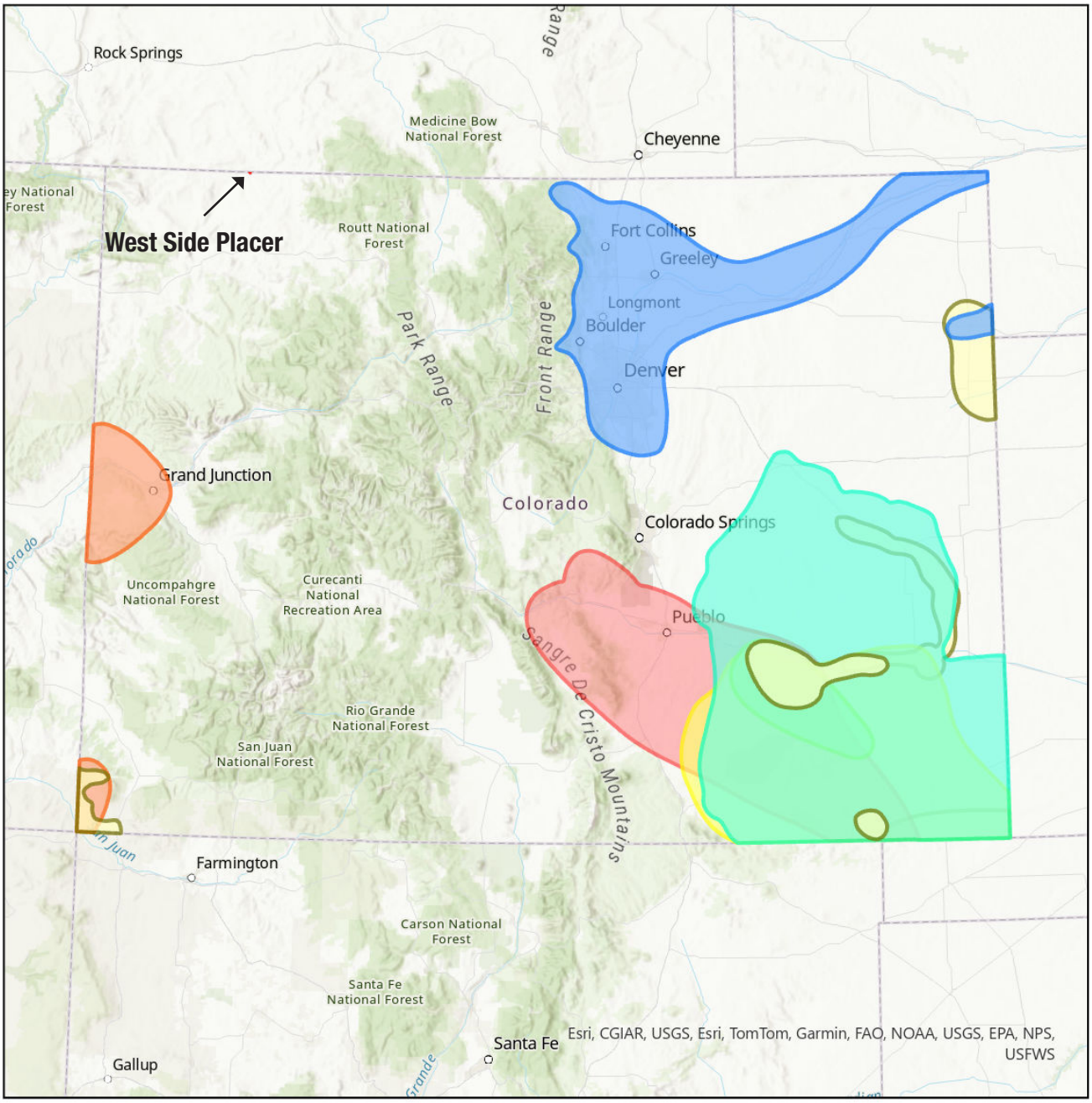
All maps are generated using the latest Public SAM Data from Colorado Parks and Wildlife.

END
EXHIBIT H

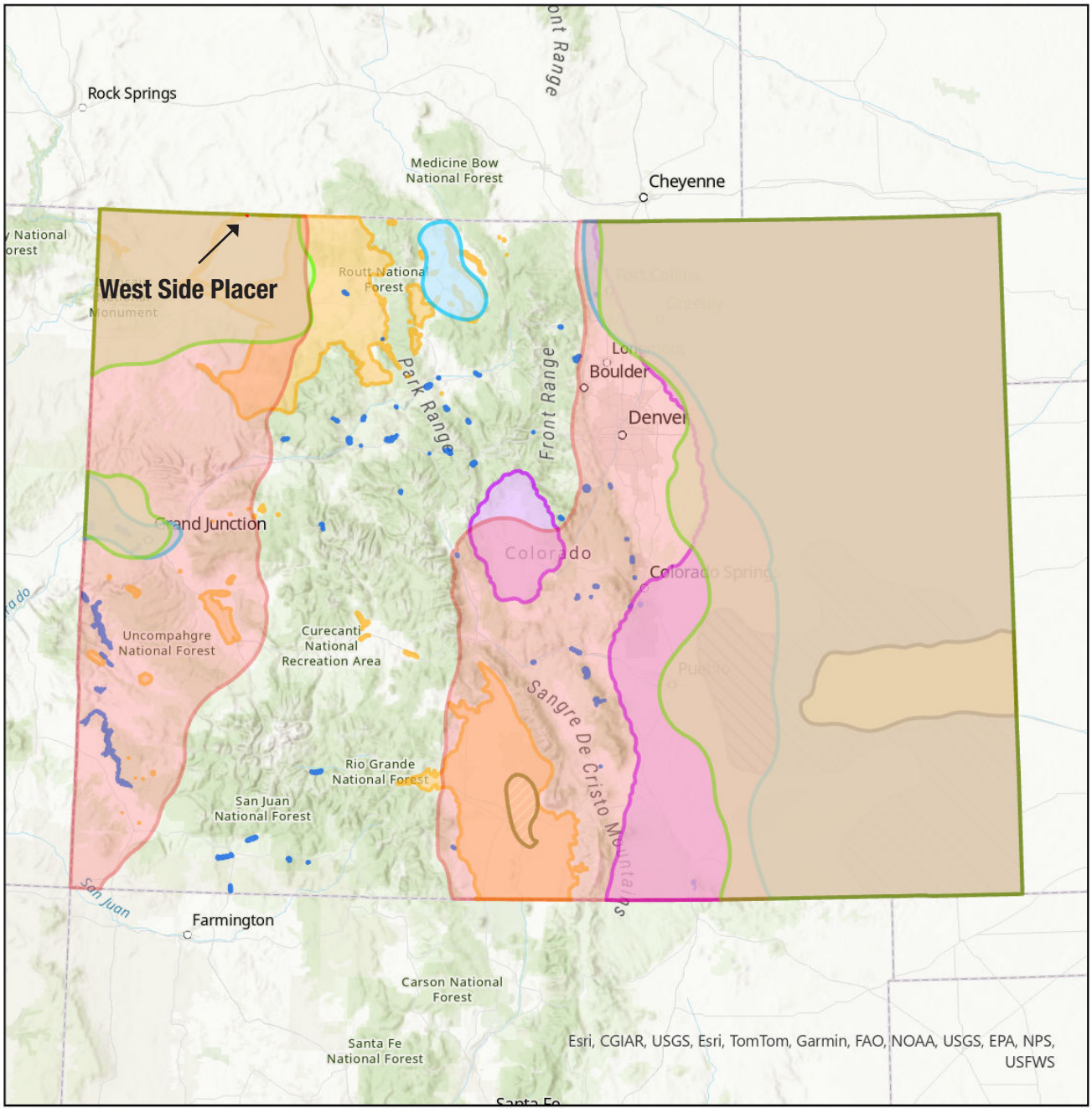
Map H.1
Colorado Threatened and Endangered Species: Amphibians



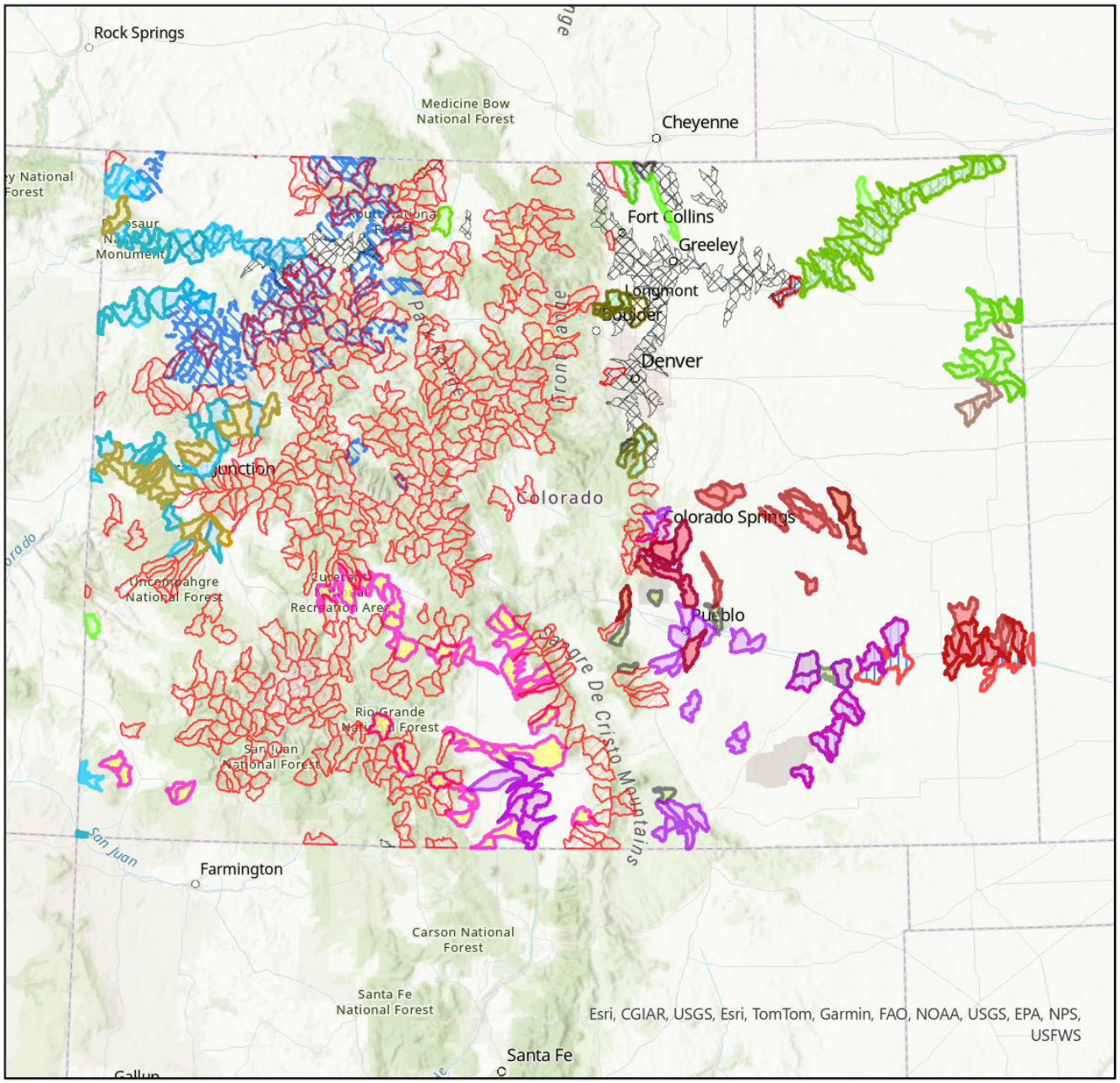
Map H.2
Colorado Threatened and Endangered Species: Reptiles



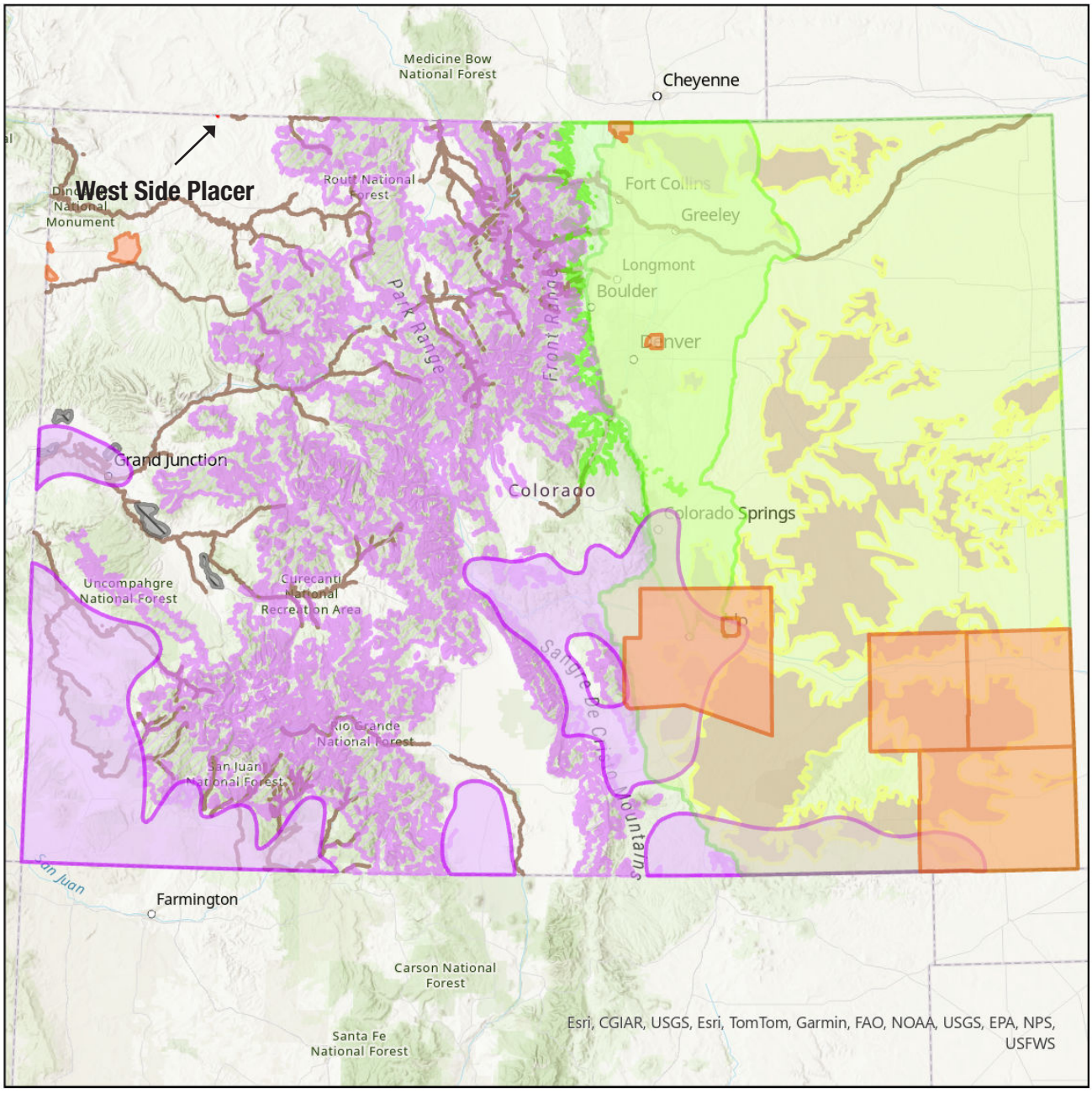
Map H.3
Colorado Threatened and Endangered Species: Birds

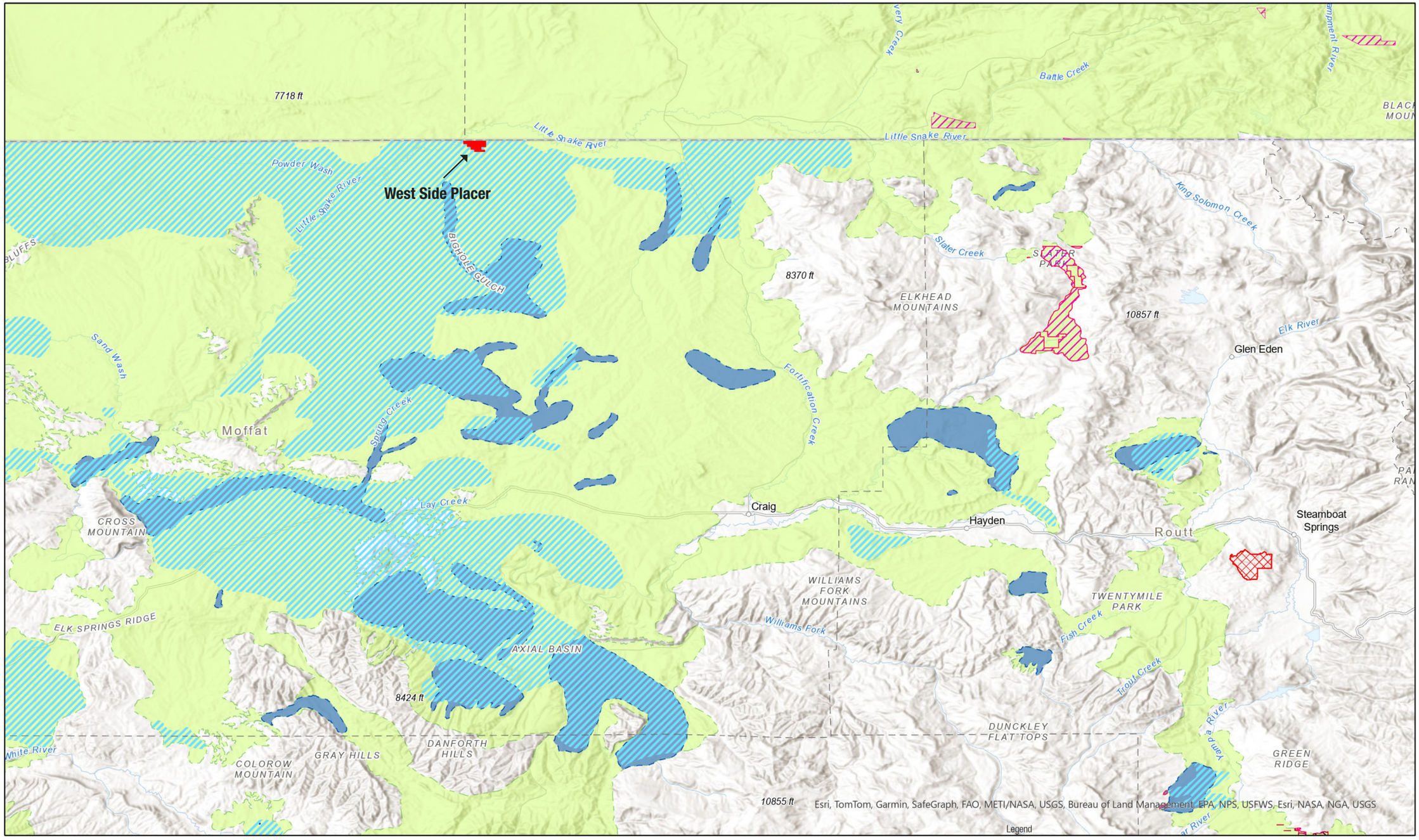


Map H.4
Colorado Threatened and Endangered Species: Fish



Map H.5
Colorado Threatened and Endangered Species: Mammals



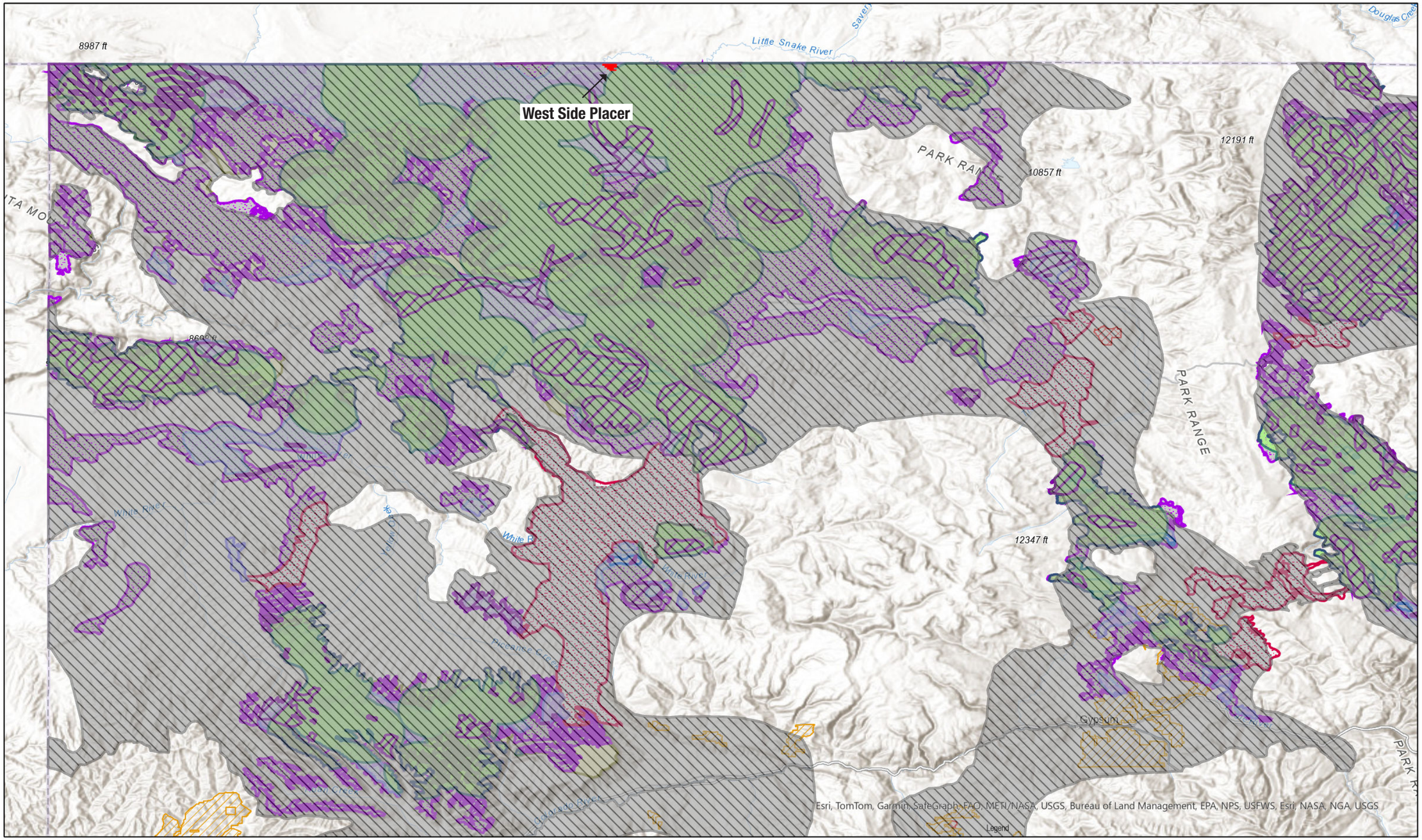


Map H.6
Sage Grouse Map

0 4.25 8.5 17 Miles

- West Side Placer - 112 Boarder
- BLM CO seasonal closure areas
- Closed to all uses
- Closed to motorized and mechanized uses (foot/horse allowed)
- Closed to Motorized
- Limited to over - the snow tracked vehicles
- Colorado Sage Grouse Winter Range
- Colorado Sage Grouse Brood Area

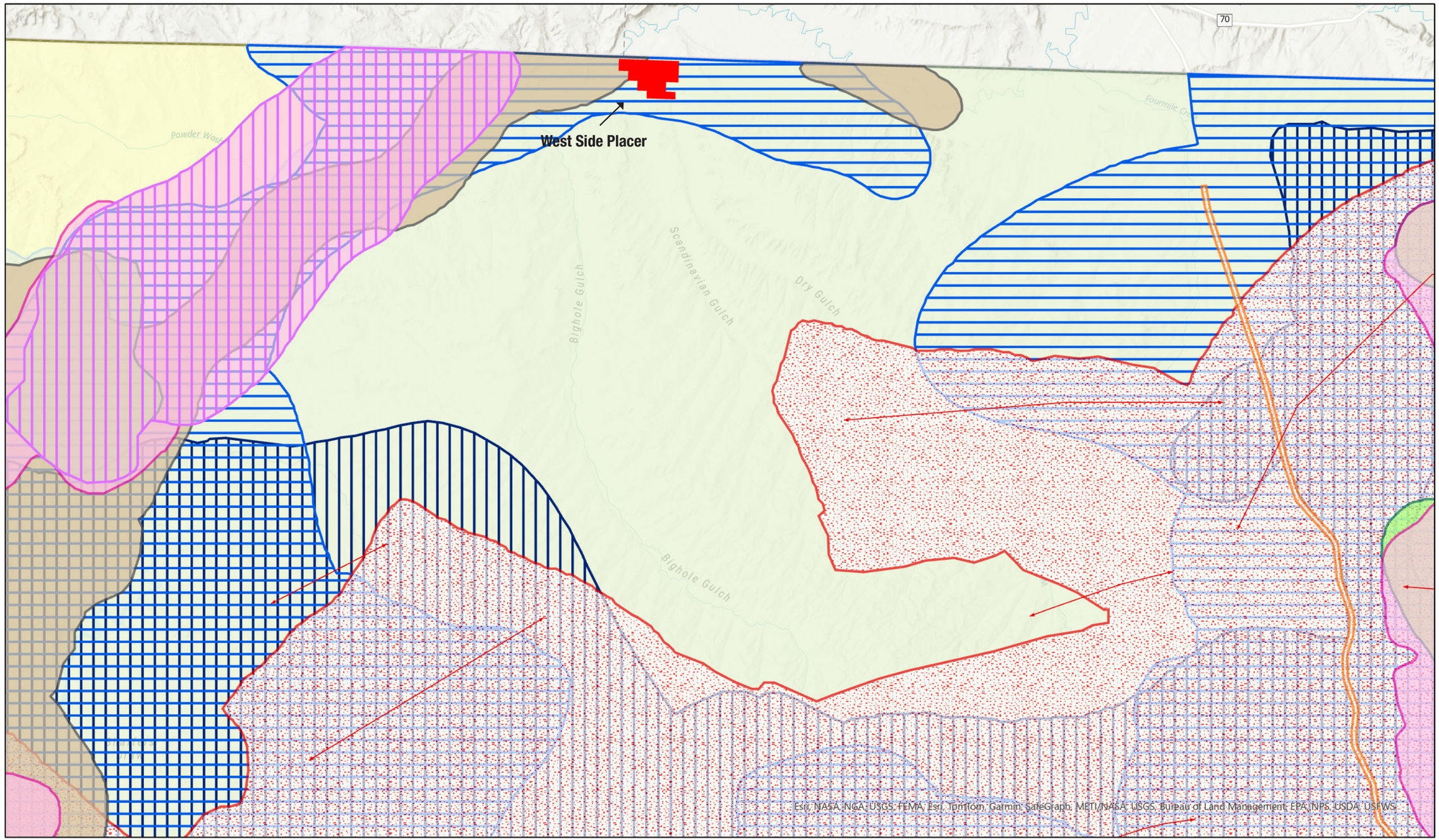
N



Map H.7
Sage Grouse Map 2

0 6.5 13 26 Miles

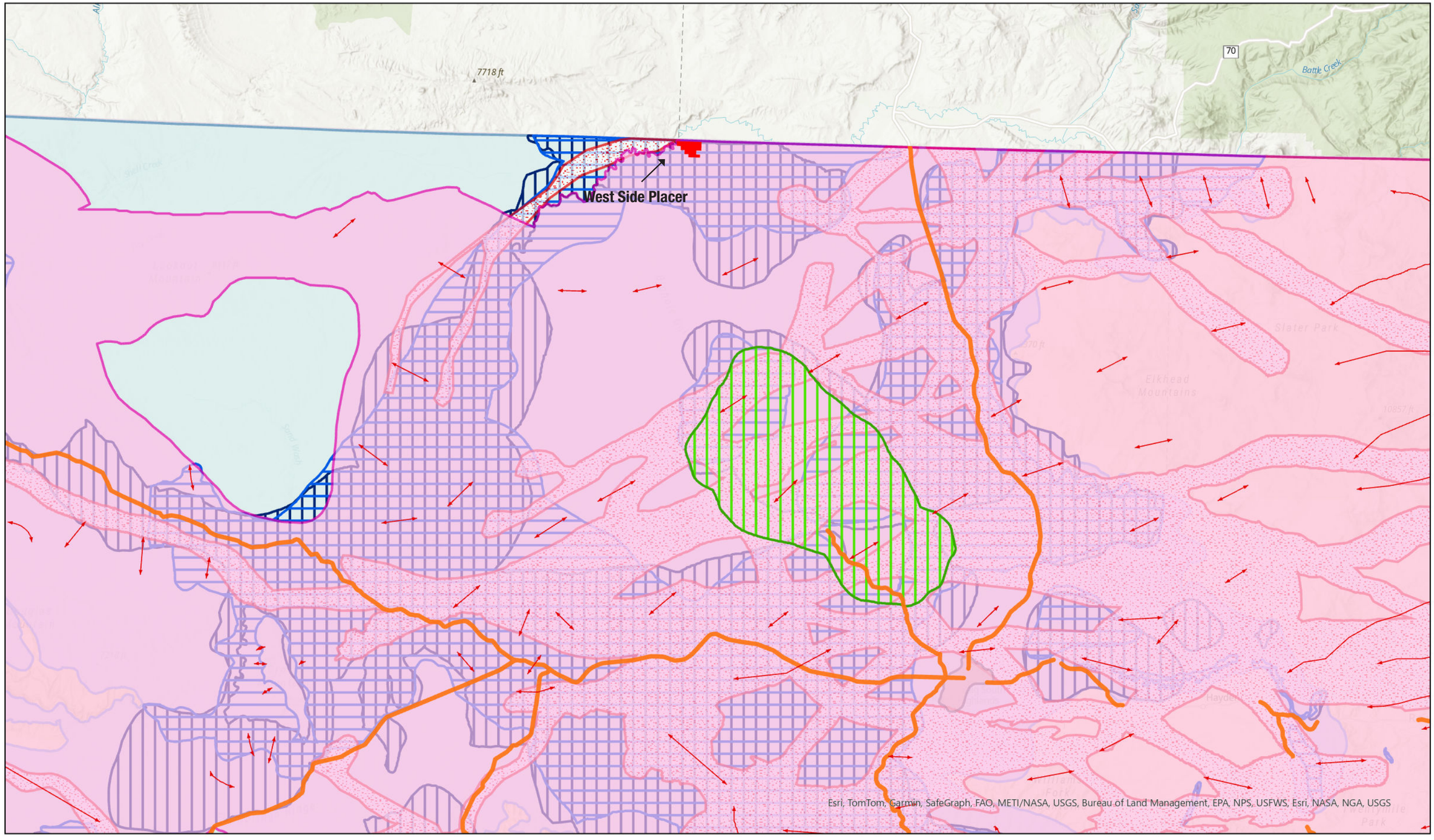
- West Side Placer - 112 Boarder
- Historic Habitat
- Brood Area
- Production Area
- Severe Winter Range
- Winter Range
- Greater Sage Grouse Linkages
- Greater Sage Grouse Priority and General Habitat
- Overall Range
- BLM CO seasonal closure areas
- Closed to all uses
- Closed to motorized and mechanized uses (foot/horse allowed)
- Closed to Motorized
- Limited to over - the snow tracked vehicles



Map H.8
Elk Map

0 1.25 2.5 5 Miles

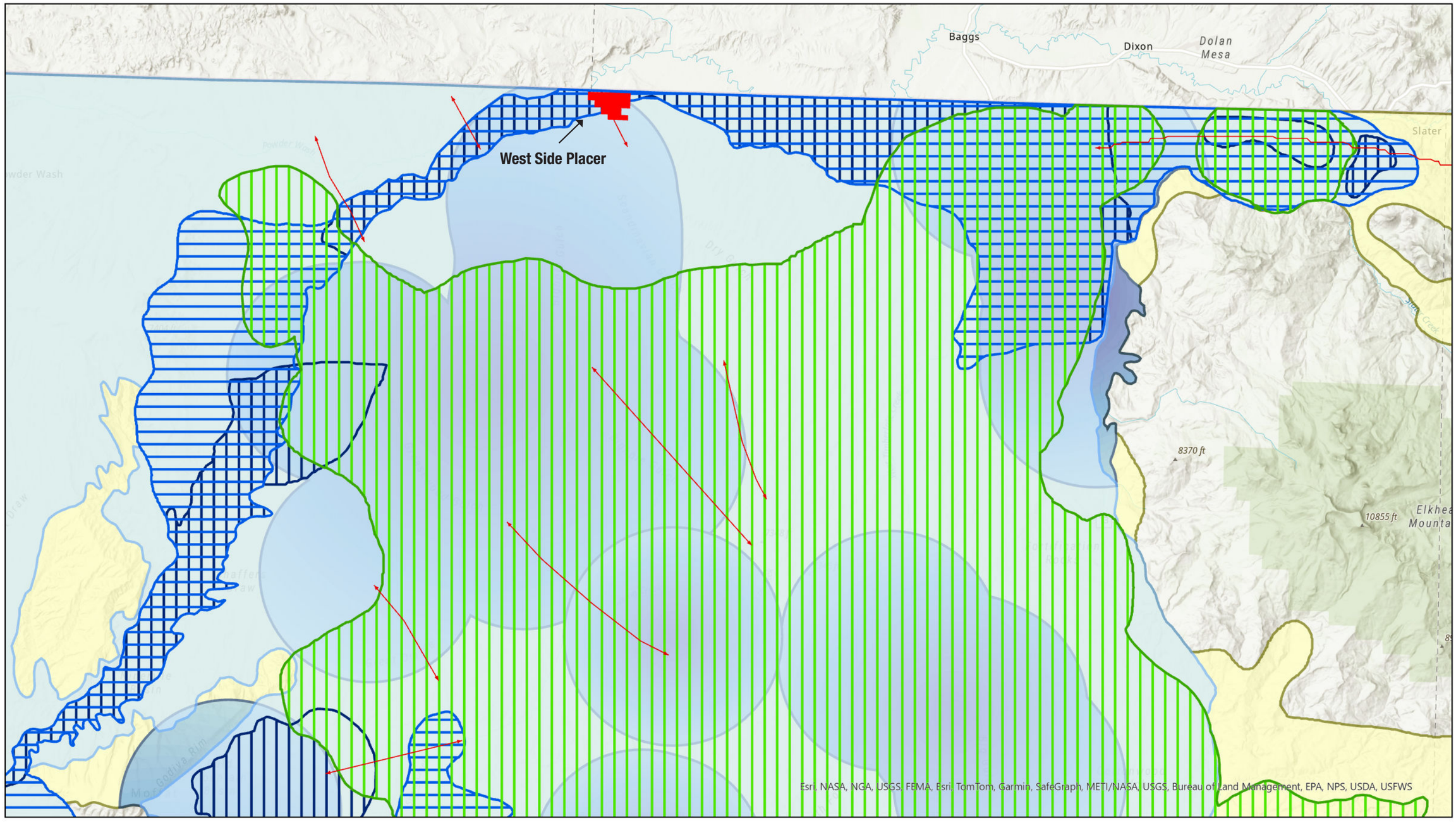
- West Side Placer - 112 Boarder
- Migration Patterns
- Highway Crossings
- Summer Concentration Area
- Summer Range
- Production Area
- Limited Use Area
- Resident Population Area
- Migration Corridors
- Severe Winter Range
- Winter Concentration Area
- Winter Range
- Overall Range



Map H.9
Mule Deer

0 3.5 7 14 Miles

- West Side Placer - 112 Boarder
- Migration Patterns
- Highway Crossing
- Concentration Area
- Summer Range
- Limited Use Area
- Resident Population Area
- Migration Corridors
- Severe Winter Range
- Winter Concentration Area
- Winter Range
- Overall Range



Map H.10
Pronghorn

0 2.25 4.5 9 Miles

- West Side Placer - 112 Boarder
- Migration Patterns
- Concentration Area
- Limited Use Area
- Resident Population Area
- Migration Corridors
- Severe Winter Range
- Winter Concentration
- Winter Range
- Perennial Water
- Overall Range

N

6.4.9 EXHIBIT I – Soils Information

AuPt Industries initiated the development of a *Custom Soil Resource Report* in collaboration with the Natural Resources Conservation Service (NRCS) of the US Department of Agriculture in November 2023. To access the full document, kindly refer to *Addenda 1.0 Soil Report*. The tables provided below showcase data extracted directly from the report, while comprehensive maps can be found at the specified locations:

- 6.4.3 EXHIBIT C – Map 4: Soils
- 6.4.3 EXHIBIT C – Map 5: Range Production (Normal Year)
- 6.4.3 EXHIBIT C – Map 6: Ecological Sites.

(A) Soil Units

There are 11 different soil units defined in the affected area for the West Side Placer. *Table I.(A).1* shows soil units at the West Side Placer. See map *6.4.3 EXHIBIT C – Map 4 - Soils* and *Map I.(B).1* for location of the soil units over affected ground.

TABLE I.(A).1

Map Unit Symbol	Soil Unit Name	Slope Range	Acres	Thickness	Percent of Total Area
168	Ruedloff sandy loam	1 to 8 percent slopes	304.1	20-40’	37.7%
75	Fonce sandy loam	1 to 8 percent slopes	102.0	8-20’	12.6%
92	Grimm-Ustic Torriorthents	15 to 45 percent slopes	76.4	12-30’	9.5%
199	Torriorthents-Torripsamments complex	12 to 40 percent slopes	72.1	8-20’	8.9%
205	Uffens fine sandy loam	0 to 3 percent slopes	69.0	2-8’	8.6%
62	Eghelm loamy fine sand	0 to 3 percent slopes	40.5	8-10’	5.0%
178	Simanni-Ruedloff complex	1 to 10 percent slopes	46.2	UNK	5.7%
198	Torriorthents-Rock outcrop, shale complex	30 to 75 percent slopes	49.9	0-4’	6.2%
154	Quealman sand	0 to 3 percent slopes	15.7	UNK	1.9%
174	Ryark-Maybell complex	1 to 12 percent slopes	15.6	20-40’	1.9%
204	Typic Natrargids	0 to 5 percent slopes	11.7	UNK	1.5%

(B) Range Production (Normal Year)

Table I.(B).1 Soil Units provides details on range production units specifically at the West Side Placer. For a visual representation of the soil units over the affected ground, please refer to *Map 6.4.3 EXHIBIT C – Map 5 - Range Production (Normal Year).*

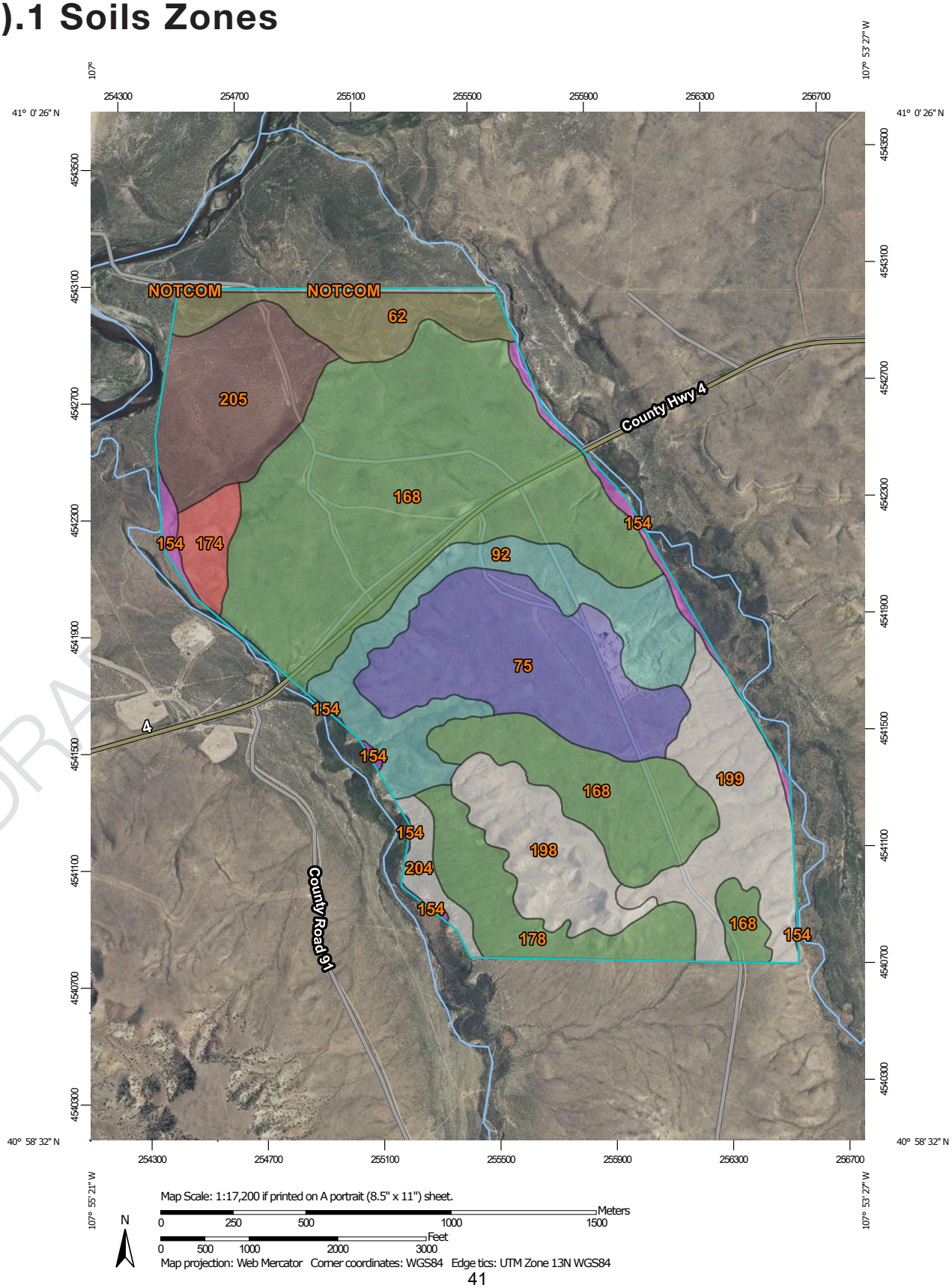
TABLE I.(B).1

Map Unit Symbol	Map Unit Name	Percent of West Side Placer	Rating (lbs/acre/year)
168	Ruedloff sandy loam, 1 to 8 percent slopes	37.7%	425
75	Fonce sandy loam, 1 to 8 percent slopes	12.6%	450
92	Torriorthents-Torripsamments complex, 12 to 40 percent slopes	8.9%	390
199	Uffens fine sandy loam, 0 to 3 percent slopes	8.6%	495
205	Simanni-Ruedloff complex, 1 to 10 percent slopes	5.7%	525
62	Eghelm loamy fine sand, 0 to 3 percent slopes	5.0%	1350
178	Torriorthents-Rock outcrop, shale complex, 30 to 75 percent slopes	6.2%	150
198	Grimm-Ustic Torriorthents, shallow complex, 15 to 45 percent slopes	9.5%	250
154	Quealman sand, 0 to 3 percent slopes	1.9%	1800
174	Ryark-Maybell complex, 1 to 12 percent slopes	1.9%	688
204	Typic Natrargids, 0 to 5 percent slopes	1.5%	11.7

(C) Maps

END
EXHIBIT H

Map
I.(B).1 Soils Zones



6.4.10 EXHIBIT J – Vegetation Information

(A) Descriptions Of Present Vegetation Types

The vegetation at West Side Placer is characterized as sagebrush steppe, with sagebrush and native grasses prevailing in the flora. *Table J.(A).1* provides a listing of the dominant flora species specific to The West Side Placer project.

TABLE J.(A).1

Common Name	Scientific Name	Estimated Distribution Over Surface	Height
Western Wheatgrass	Agropyron smithii Rydb.	83.7%	12 to 36 inches
Needle-And-Thread	Stipa comata	83.7%	12 to 36 inches
Blue Grama	Bouteloua gracilis	83.7%	12 to 24 inches
Sandberg Bluegrass	Poa secunda J. Presl	83.7%	12 to 36 inches
Wyoming Big Sagebrush	Artemisia tridentata wyomingensis	83.7%	12 to 48 inches
Rubber Rabbitbrush	Ericameria nauseosa	83.7%	24 to 36 inches
Fringed Sage	Artemesia frigida	83.7%	24 to 36 inches
Silver Sagebrush	Artemisia cana	83.7%	24 to 48 inches
Fourwing Saltbush	Atriplex canescens	8.6%	36 to 48 inches

(B) Relationship Of Present Vegetation Types To Soil Types

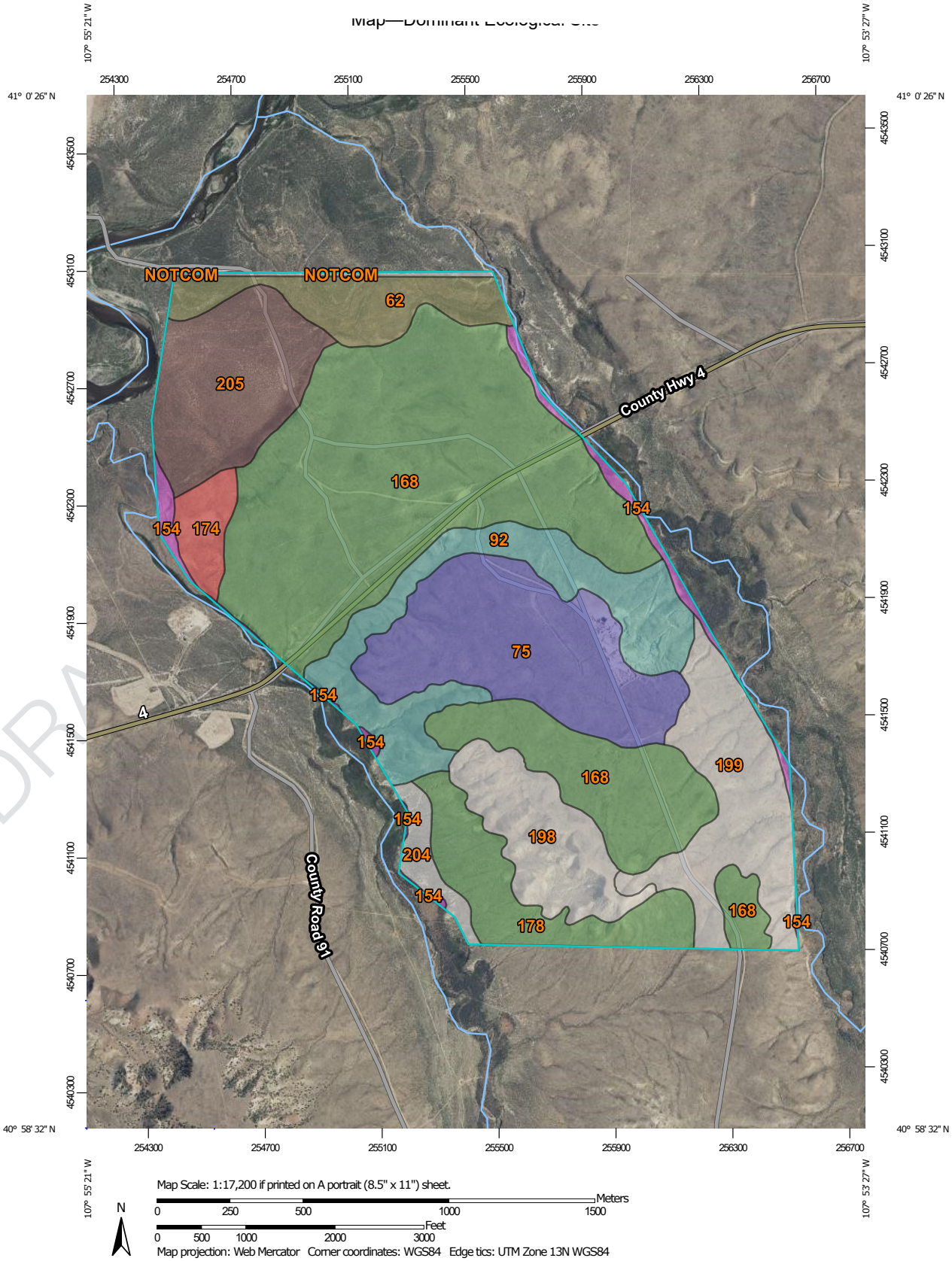
Table J.(B).1 presents the current vegetation types in correlation with soil types. *Map J.(B).1* illustrates the specific locations of these various soil types on the West Side Placer. For a more detailed overview of the soil units across affected ground, refer to *Map 6.4.3 in EXHIBIT C – Map 6: Ecological Sites*.

TABLE J.(B).1

Map Unit	Map Unit Name	Component Name (Percent)	Ecological Site	Dominant plant species	Acres in AOI	Percent of AOI
62	Eghelm loamy fine sand, 0 to 3 percent slopes	Eghelm (90%) Natrargids (5%) Youngston (5%)	R034BY009UT — Loamy Bottom (Basin Big Sagebrush)	Shrub (1) Artemisia tridentata ssp. tridentata Herbaceous (1) Leymus cinereus	40.5	5.0%
75	Fonce sandy loam, 1 to 8 percent slopes	Fonce (90%) Soils with sandy loam upper subsoils (5%) Soils with less than 15 percent calcium carbonate (3%) Soils with very gravelly upper subsoils (2%)	R034AY424CO — Loamy 7-10 PZ	Shrub (1) Artemisia tridentata ssp. wyomingensis Herbaceous (1) Elymus lanceolatus ssp. lanceolatus (2) Achnatherum hymenoides	102.0	12.6%

Map Unit	Map Unit Name	Component Name (Percent)	Ecological Site	Dominant plant species	Acres in AOI	Percent of AOI
92	Grimm-Ustic Torriorthents, shallow complex, 15 to 45 percent slopes	Grimm (50%) Ustic Torriorthents, shallow (40%) Moderately deep soils (10%)	R034AY112WY — Gravelly Green River and Great Divide Basins (Gr)		76.4	9.5%
154	Quealman sand, 0 to 3 percent slopes	Quealman (90%) Medium textured soils (5%) Soils with loamy sand and sand substratums (5%)	R034BY012UT — Sandy Bottom (Fourwing salbush)	Herbaceous Not specified Not specified (1) Achnatherum hymenoides (2) Hilaria jamesii	15.7	1.9%
168	Ruedloff sandy loam, 1 to 8 percent slopes	Ruedloff (85%) Gravelly surfaced soils on sloping to moderately steep break (5%) Kandaly (5%) Tresano (5%)	R034AY150WY — Sandy Green River and Great Divide Basins (Sy)		304.1	37.7%
174	Ryark-Maybell complex, 1 to 12 percent slopes	Ryark (70%) Maybell (15%) Gretivid (5%) Powderwash (5%) Ryan Park (5%)	R034AY298CO — Rolling Loam	Shrub (1) Artemisia tridentata ssp. wyomingensis (2) Chrysothamnus viscidiflorus Herbaceous (1) Pascopyrum smithii (2) Hesperostipa comata	15.6	1.9%
178	Simanni-Ruedloff complex, 1 to 10 percent slopes	Simanni (50%) Ruedloff (40%) R034AY150WY — Sandy Green River and Great Divide Basins (Sy) Kandaly (5%) Tresano (5%)	R034AY150WY — Sandy Green River and Great Divide Basins (Sy)		46.2	5.7%
198	Torriorthents-Rock outcrop, shale complex, 30 to 75 percent slopes	Torriorthents (60%) Rock outcrop, shale (40%)			49.9	6.2%
199	Torriorthents-Torripsamments complex, 12 to 40 percent slopes	Torriorthents (60%) Torripsamments (30%) Ruedloff (4%) Rock River (3%) Ryan Park (3%)			72.1	8.9%
204	Typic Natrargids, 0 to 5 percent slopes	Typic Natrargids (80%) Deaver (5%) Eghelm (5%) Massadona (5%) Turzo (5%)			11.7	1.5%
205	Uffens fine sandy loam, 0 to 3 percent slopes	Uffens (90%)	R034AY140WY — Saline Lowland Drained Green River and Great Divide Basins (SLDr)		69.0	8.6%

Map
J.(B).1 Vegetation Zones



41

(C) Range Production (Normal Year)

Overall, the level of range production at West Side Placer is generally considered to be low. *Table J.(C).1* lists the different ecological sites found in the area. Correspondingly, *Map J.(C).1* illustrates the range production for a normal year, highlighting the relationship between production levels and soil type. Furthermore, Table I.2 presents detailed data on range production units, offering a granular view of the production landscape. For a comprehensive spatial understanding, refer to Map *6.4.3 EXHIBIT C (Map C.5)*, which delineates the location of soil units over the affected ground.

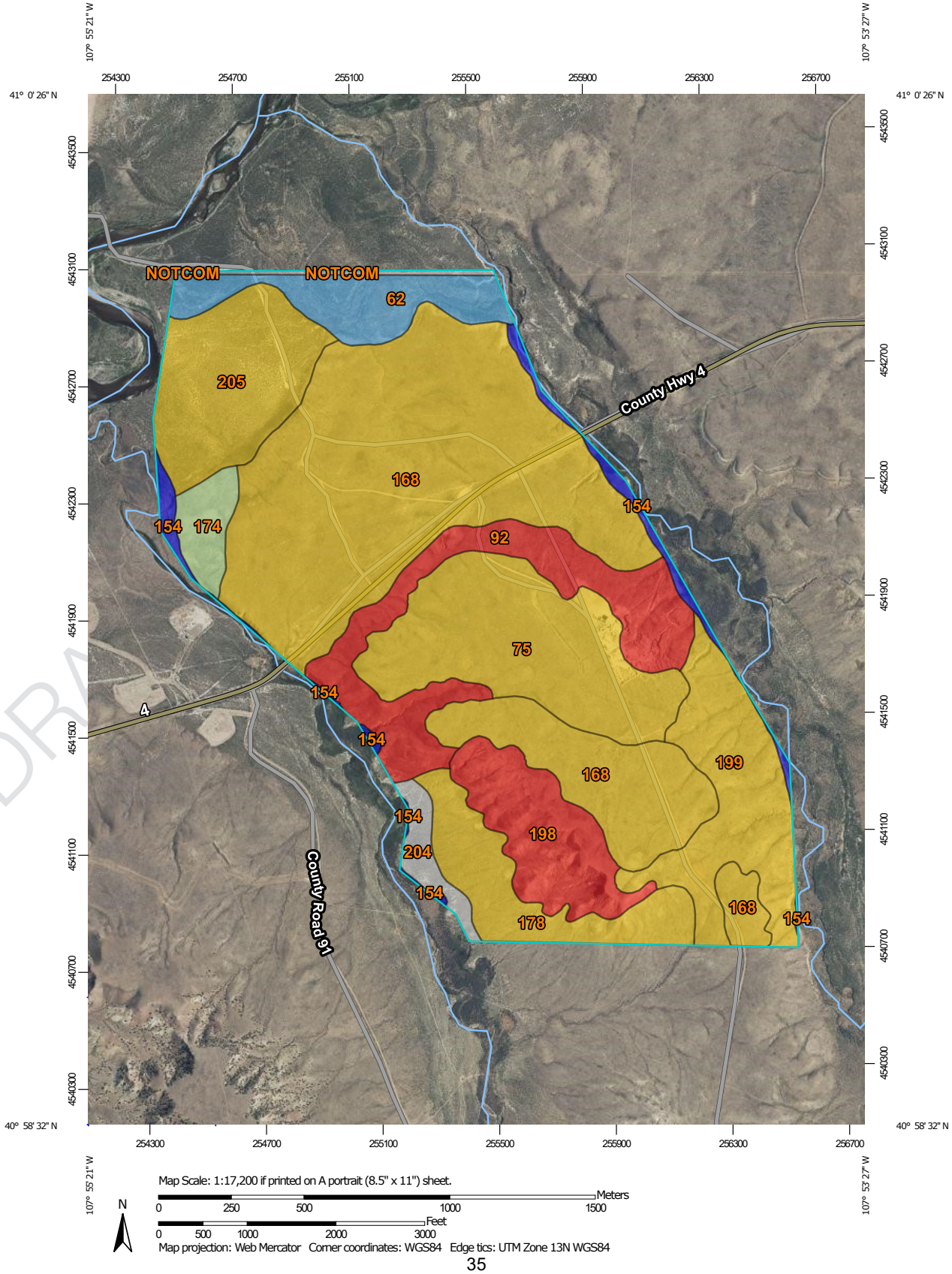
TABLE J.(C).1

Map Unit Symbol	Map Unit Name	Percent of West Side Placer	Rating (lbs/acre/year)
168	Ruedloff sandy loam, 1 to 8 percent slopes	37.7%	425
75	Fonce sandy loam, 1 to 8 percent slopes	12.6%	450
92	Torriorthents-Torripsamments complex, 12 to 40 percent slopes	8.9%	390
199	Uffens fine sandy loam, 0 to 3 percent slopes	8.6%	495
205	Simanni-Ruedloff complex, 1 to 10 percent slopes	5.7%	525
62	Eghelm loamy fine sand, 0 to 3 percent slopes	5.0%	1350
178	Torriorthents-Rock outcrop, shale complex, 30 to 75 percent slopes	6.2%	150
198	Grimm-Ustic Torriorthents, shallow complex, 15 to 45 percent slopes	9.5%	250
154	Quealman sand, 0 to 3 percent slopes	1.9%	1800
174	Ryark-Maybell complex, 1 to 12 percent slopes	1.9%	688
204	Typic Natrargids, 0 to 5 percent slopes	1.5%	11.7

(C) Maps

END
EXHIBIT J

Map
J.(C).1 Range Production



35

6.4.11 EXHIBIT K – Climate

(A) Climate Summary

The West Side Placer is situated in a cold semi-arid climate, classified as BSk in the Köppen climate classification (*see Map K.1*).

Annual precipitation ranges from 7 to 9 inches, with significant variability from year to year, leading to more dry years than those with above-average precipitation. Temperature fluctuations are substantial, attributed to the high elevation and dry air, allowing for rapid radiation exchange. During winter, cold air outbreaks move swiftly from northwest to southeast, causing extreme minimum temperatures. While extreme storms can occur in winter, they most severely impact ranch operations in late winter and spring.

Daytime winds tend to be stronger than nighttime winds, and occasional strong storms may bring brief periods of high winds, reaching gusts of over 50 mph. The growth of native cool-season plants typically begins around April 15 and continues until about July 15. Some greening of cool-season plants may occur in September if moisture is available.

The site is suitable for solar energy production and possibly wind. The TransWest Express Transmission Project lies within 1.5 miles from the West Side Placer Project, making the site well located for potential green energy production.

Key climatic statistics for the region include:

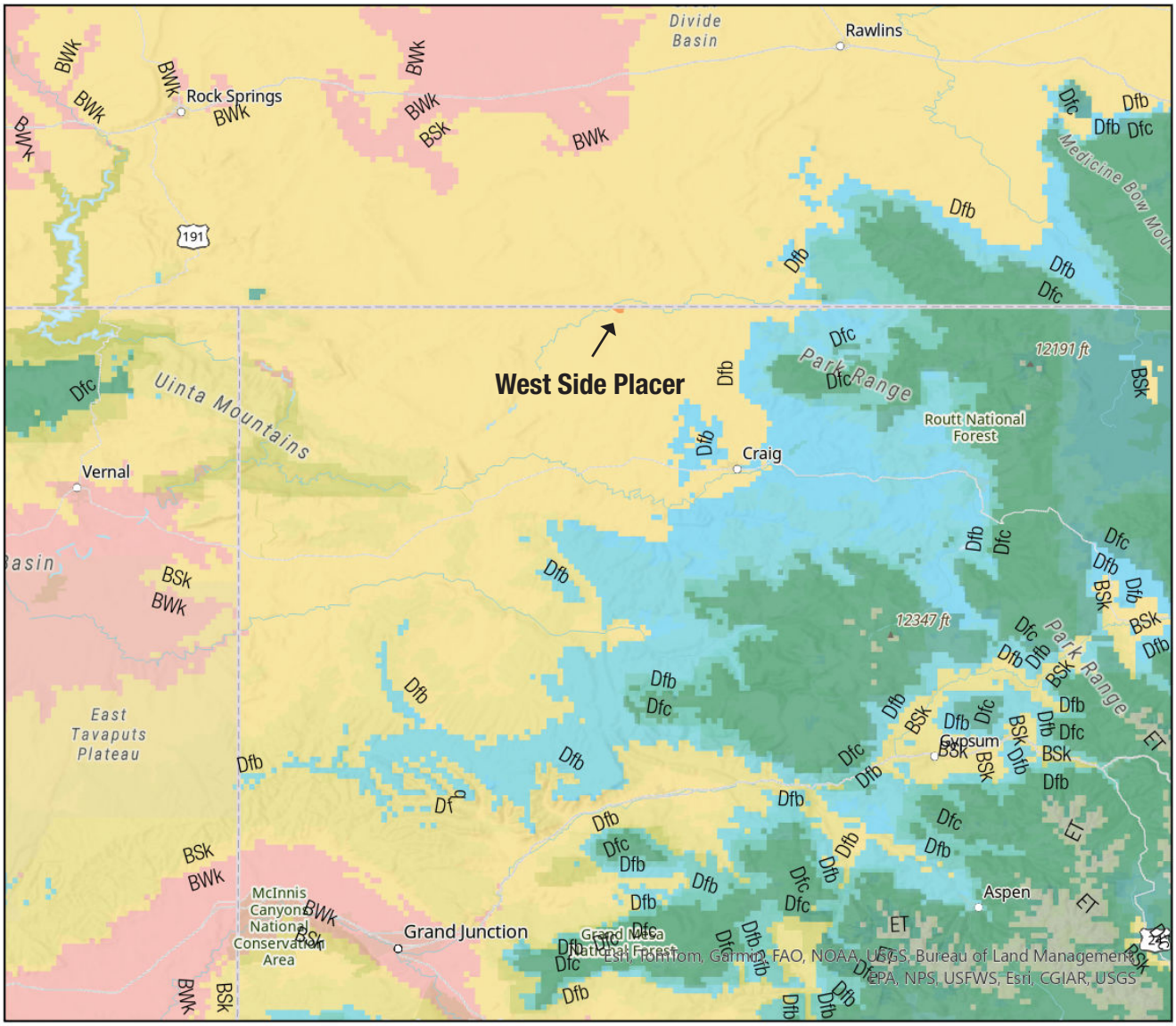
Frost-free period (average): 121 days
Freeze-free period (average): 132 days
Average precipitation: 7 to 9 inches
Average air temperature: 5.56 degrees Celsius.

(B) Maps

The following maps have been prepared to show the different climate factors at the West Side Placer Project

END
EXHIBIT K

Map K.1
Climate: Köppen Climate Zones



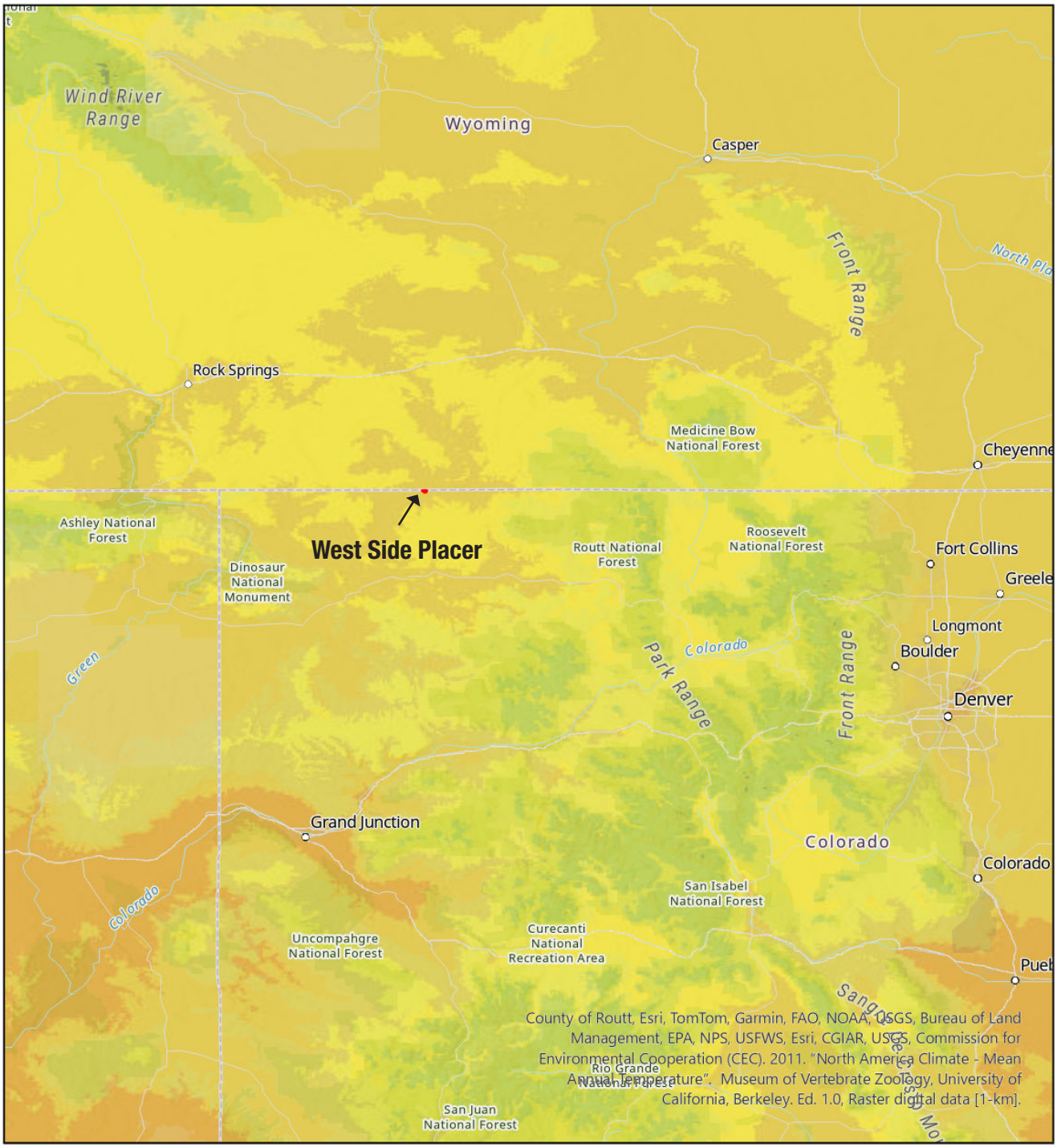
0 15 30 60 Miles

N

North America Climate Zones

- Af: Tropical Rainforest
- Am: Tropical Monsoon
- Aw: Tropical Savanna (Wet and Dry Climate)
- BWh: Hot Desert Climate
- BWk: Cold Desert Climate
- BSh: Hot Semi-Arid Climate
- BSk: Cold Semi-Arid Climate
- Csa: Hot-Summer Mediterranean Climate
- Csb: Warm-Summer Mediterranean Climate
- Csc: Temperate, Dry Summer, Cold Summer
- Cwa: Warm Oceanic Climate / Humid Subtropical Climate
- Cwb: Subtropical Highland Climate or Temperate Oceanic Climate with Dry Winters
- Cwc: Cold Subtropical Highland / Subpolar Oceanic
- Cfa: Humid Subtropical Climate
- Cfb: Temperate Oceanic Climate
- Cfc: Subpolar Oceanic Climate
- Dsa: Humid Continental Climate - Dry Warm Summer
- Dsb: Humid Continental Climate - Dry Cool Summer
- Dsc: Continental Subarctic - Cold Dry Summer
- Dsd: Continental Subarctic - Dry Summer, Very Cold Winter
- Dwa: Humid Continental Hot Summers with Dry Winters
- Dwb: Humid Continental Mild Summer with Dry Winters
- Dwc: Subarctic with Cool Summers and Dry Winters
- Dfa: Humid Continental Hot Summers with Year-round Precipitation
- Dfb: Humid Continental Mild Summer, Wet All Year
- Dfc: Subarctic with Cool Summers and Year-round Precipitation
- Dfd: Subarctic with Cold Winters and Year-round Precipitation
- ET: Tundra Climate
- EF: Ice Cap Climate

Map K.2
Climate: Average Temperature

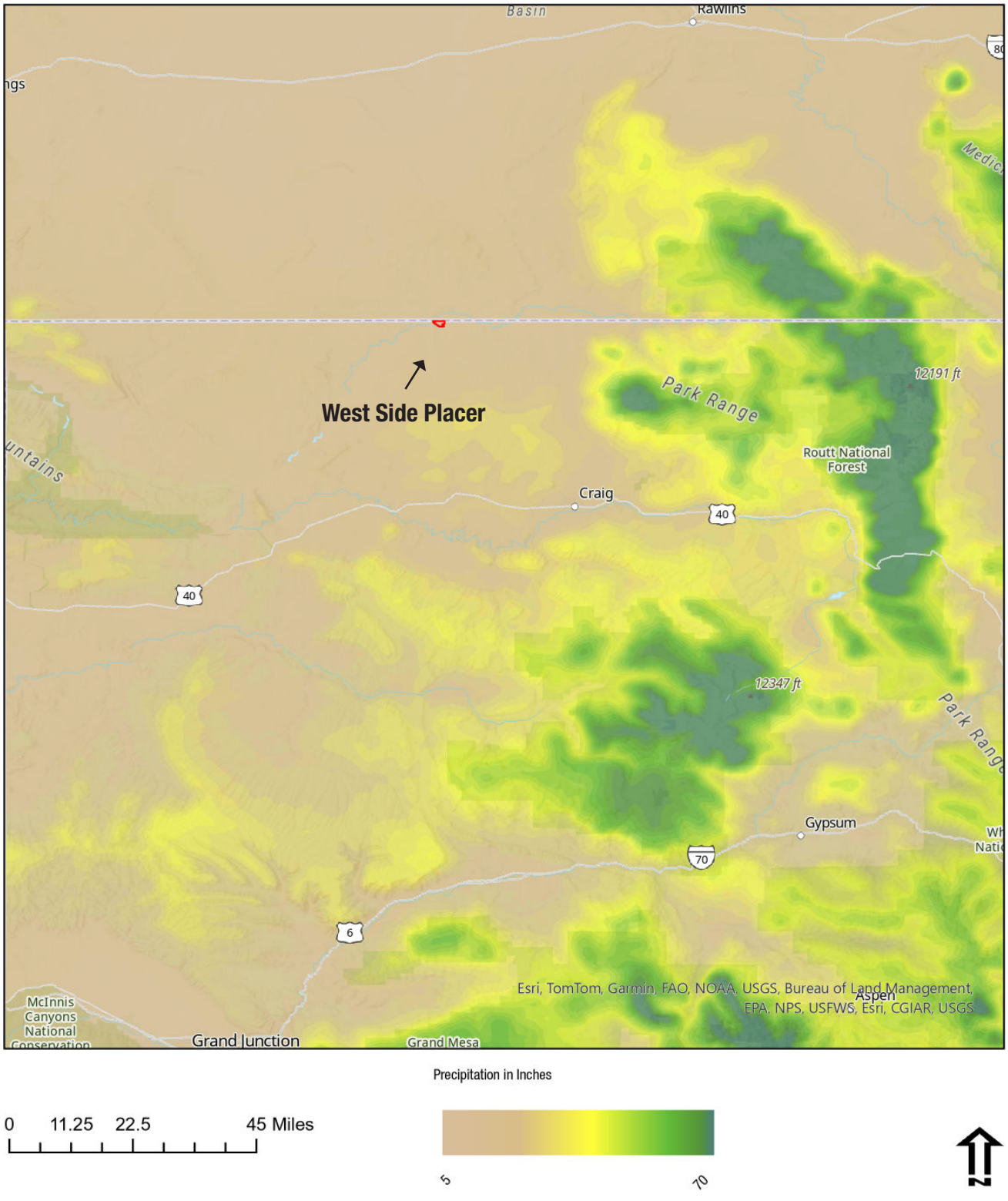


Annual Mean
Temperature (Celsius)

-45.6 - -35 | -35 - -30 | -30 - -25 | -25 - -20 | -20 - -15 | -15 - -10 | -10 - -5 | -5 - 0 | 0 - 5 | 5 - 10 | 10 - 15 | 15 - 20 | 20 - 25 | 25 - 30 | 30 - 37.6

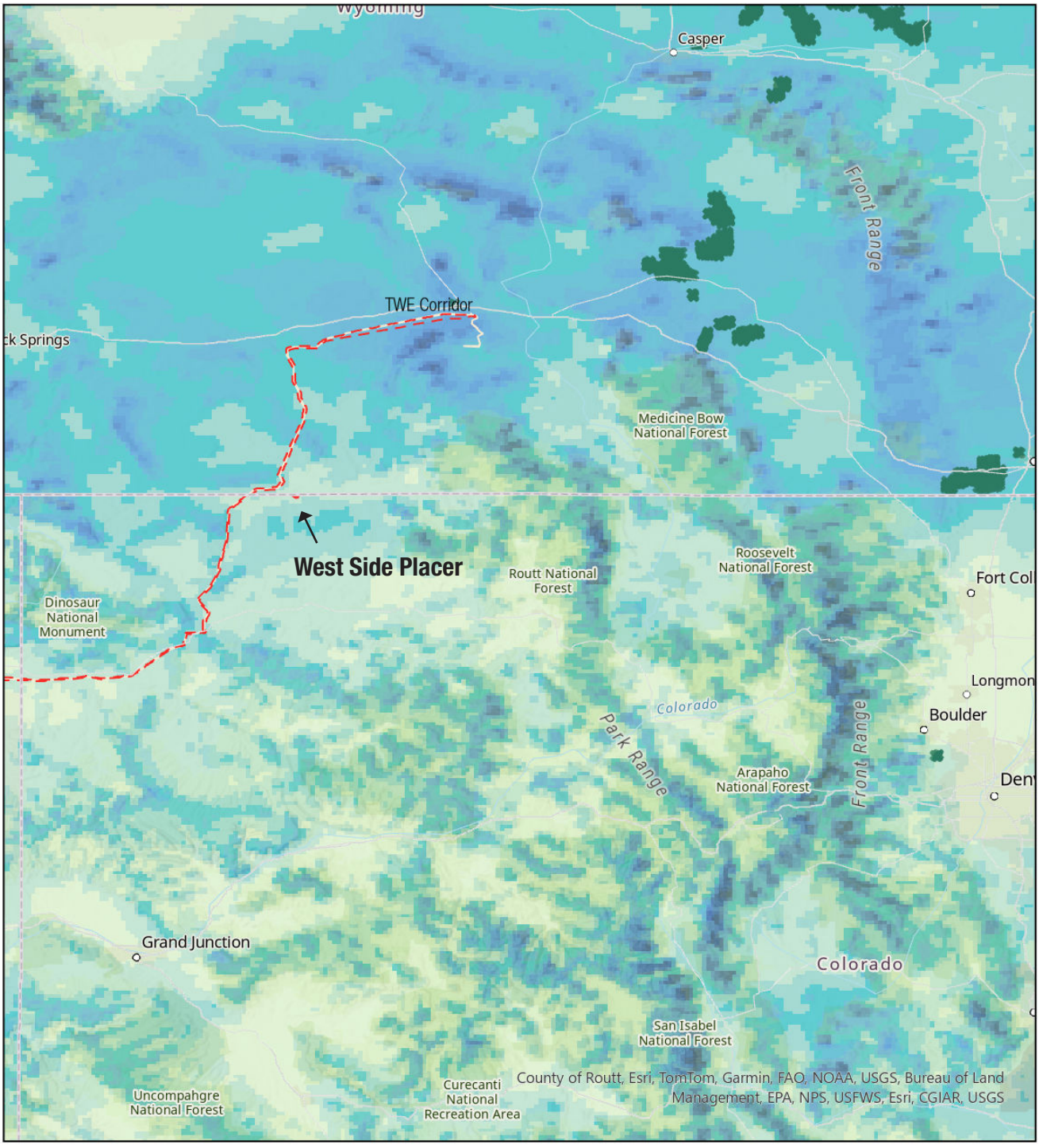
0 21 42 84 Miles

Map K.3
Climate: Precipitation



Map K.4
Climate: Solar

Map K.5
Climate: Wind



6.4.12 EXHIBIT L – Reclamation Costs

(A) Summary

Reclamation costs are based on the estimation work conducted by DRMS in 2019 for Permit No. M-2016-081, as outlined in addenda - *Reclamation Costs Update and Notice of Surety Increase (SI-1) dated August 29, 2019.*

Reclamation costs were estimated at $3,040.82 per acre in 2019. Considering inflation adjustments for 2024, the projected cost for the work is estimated to be $3,953.07per acre. There are 101 mining blocks outlined in Exhibit C Mining Plan, totaling 504.2 acres that will require bonding, resulting in a total estimated bonding requirement of $1,993,142.36 for reclamation.

(B) Reclamation Cost Table

	Task/Description	Equipment Used	Cost
C.1	Borehore Removal x4	Borehole	$10,060.80
C.2	Plant Foundation Demolition	Excavator	$546.00
C.3	Ore and Overburden Replacement From Mining Phases	Scraper	$675367.31
C.4	Grading of Mining Phase	Dozer	$40,397.11
C.5	Topsoil Replacement From Mining Phases	Scraper	$149,548.78
C.6	Ripping Compacted Areas	Ripper	$140,687.07
C.7	Seed Mining Phases	Revegetation Equipment	$483,909.77
	Mobilization Costs		
C.8	Initial Mobilization		$90,235.85
C.9	Secondary Mobilization		$33,376.41
	Total		**$1,624,129.1**
	Indirect Costs		
	Liability Insurance:		$48,464.31
	Performance Bond:		$25,179.44
	Job Superintendent:		$152,054.49
	Total Indirect Costs		**$225,698.24**
	Legal - Engineering - Project Management		
	Financial Warranty Processing (Legal/Related Costs):		$30,557.57
	Engineering Work And/Or Contract/Bid Preparation + Reclamation Management And/Or Administration		$112,757.45
	Total Legal - Engineering - Project Management		**$143,315.02**
	Reclamation Total		
		Total	**$1,993,142.36**

(C)Task Cost - Borehole Removal

Sealing of estimated 4 wells.

BOREHOLE SEALING WORK

Plug water well

UNIT COSTS

Borehole Description	Sealing/Item Method	Diameter	Length	Quantity	Unit	Unit Cost	Total Cost
Plug lower portion of well	Bentonite seal - 8 in. (labor, equip, materials)	7.875	295	295.00	LF	$6.88	$2,433.75
Plug upper portion of well	Portland cement grout - 10 in. (labor, equip, materials)	8.625	5	5.00	LF	$7.14	$49.45
Marker	Borehole location/identification marker (EA, material cost only)	8.625	1	1.00	EA	$32.00	$32.00

Job Hours: **16.00** **Total Cost**: **$10,060.80**

(D) Task Cost - Plant Foundation Demolition

Removal of plant concrete pad

DEMOLITION WORK

Plant Foundation Demolition

UNIT COSTS **Location adjustment: 95.50 %**

Structure or Item Description	Dimensions	Demolition Menu Selection	Quantity	Unit	Unit Cost	Total Cost
Removal of concrete	12"D x 6'L	Footing, concrete, 1.0 ft. x 2 ft. - No reinforcing	18.00	LF	$3.06	$546

Job Hours: **12.00** **Subtotal (unadjusted)**: **$546** **Total Cost (adjusted for location)**: **$546**

(E) Task Cost - Ore and Overburden Replacement

Ore and overburden replacement. The scraper may be substituted with wheeled loader, haul truck and dozer at a similar cost. Based on 15 acres disturbance with 20,000 tons average per acre.

SCRAPER TEAM WORK

Overburden replacement and grading of mining phases

HOURLY EQUIPMENT COSTShift basis: 1 per day

	Equipment Description
-Scraper:	Cat 637G
-Dozer:	NA
Support Equipment -Load Area:	Cat D8T - 8SU
-Dump Area:	Cat D8T - 8SU
Road Maintenance –Motor Grader:	NA
-Water Truck:	NA

Cost Breakdown:

	Scraper Work Team		Support Equipment		Maintenance Equipment	
	Scraper	Dozer	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	NA	100	100	NA	NA
Ownership cost/hour:	$194.42	NA	$124.63	$124.63	NA	NA
Operating cost/hour:	$221.56	NA	$98.71	$98.71	NA	NA
%Utilization-ripper:	NA	NA	NA	NA	NA	NA
Ripper own. cost/hour:	NA	NA	$0.00	$0.00	NA	NA
Ripper op. cost/hour:	NA	NA	$0.00	$0.00	NA	NA
Operator cost/hour:	$37.03	NA	$49.48	$49.48	NA	NA
Unit Subtotals:	453.02	NA	$272.83	$272.83	NA	NA
Number of Units:	1	0	1	1	0	0
Group Subtotals:	Work:	$453.02	Support:	$545.66	Maint:	$0.00

Total work team cost/hour: **$998.68**

MATERIAL QUANTITIES

Initial volume: 9,999 CCY Swell factor: 1.000
Loose volume: **9,999** LCY

Source of estimated volume: 72” x 75’ x 600’ strips
Source of estimated swell factor: Cat Handbook

HOURLY PRODUCTION

		Scraper Bowl (volume) Basis:		
Material weight:	3,400 lbs/LCY	Struck Volume:	24.00	LCY
Material description:	Sand and gravel - Wet	Heaped Volume:	34.00	LCY
Rated Payload:	81,600 pounds	Average Volume:	29.00	LCY
Payload Capacity:	24.00 LCY	Adjusted Capacity:	**24.00**	LCY

Cycle Time:

Scraper Loading Time: 0.80 Minutes
Maneuver and Spread Time: 0.60 Minutes

Job Condition Correction: Site Altitude: 6225 feet

	Scraper	Push Dozer	Source
Altitude Adj:	1.000	NA	(CAT HB)
Job Efficiency:	0.830	NA	(CAT HB)
Net Correction:	0.830	NA	

Travel Time:
Road Condition: Loose sand or gravel 10

Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	600.00	0.00	10.00	10.00	922	0.68

Haul Time: **0.68** minutes

Return Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	600.00	0.00	10.00	10.00	1476	0.45

Return Time: **0.45** minutes

Total Scraper team cycle time: **2.53** minutes
Adjusted for job conditions: 472.41 LCY/Hour
Selected Number of Scrapers: 1 Scraper(s)
Adjusted single scraper team (unit) hourly production: 472.41 LCY/Hour
Adjusted multiple scraper team (fleet) hourly production: **472.41** LCY/Hour

Unadjusted unit production/hour: 569.17 LCY/Hour
Optimal Number of Scrapers per push dozer:

JOB TIME AND COST

Fleet size: 4 Team(s) Total job time: **131.77** Hours

Unit cost: $2.11 /LCY Total job cost: **$675,367.60**

(F) Task Cost - Grading of Mining Phase

Topsoil replacement and grading. The scraper may be substituted with wheeled loader, haul truck and dozer at a similar cost.

BULLDOZER WORK

Grading in mining phase

HOURLY EQUIPMENT COST

Basic Machine:	Cat D8T - 8SU
Horsepower:	310
Blade Type:	Semi-Universal
Attachment:	NA
Shift Basis: Data	1 per day
Source:	(CRG)

Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	$103.86	NA
Operating Cost/Hour:	$82.26	100
Ripper own. Cost/Hour:	$0.00	NA
Ripper op. Cost/Hour:	$0.00	0
Operator Cost/Hour:	$41.24	NA

Total unit Cost/Hour: Total Fleet Cost/Hour: $272.83 **$272.83**

MATERIAL QUANTITIES

Initial Volume:	695
Swell factor:	1.215
Loose volume:	**844** LCY

Source of estimated volume: Half of transported amount
Source of estimated swell factor: Cat Handbook

HOURLY PRODUCTION

Average push distance: Unadjusted hourly production: 200 feet 491.9 LCY/hr

Materials consistency description: Partly consolidated stockpile 1.1

Average push gradient: 0 %
Average site altitude: 6,225 feet

Material weight: 1,600 lbs/LCY

Weight description: Top Soil

Job Condition Correction Factor		Source
Operator Skill: Material	0.750	(AVG.)
consistency: Dozing	1.100	(CAT HB)
method: Visibility:	1.000	(GEN.)
	1.000	(AVG.)

Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.600	(FND-SF)
Push gradient:	1.000	(CAT HB)
Altitude: Material	1.000	(CAT HB)
Weight: Blade	1.438	(CAT HB)
type:	1.000	(PAT)

Net correction: 0.5908

Adjusted unit production: 290.61 LCY/hr

Adjusted fleet production: **290.61** LCY/hr

JOB TIME AND COST

Fleet size: 1 Dozer(s)

Unit cost: $0.938/LCY

Total job time: **148.2** Hours

Total job cost: **$40,397.11**

(G) Task Cost - Topsoil Replacement Of Mining Phases

Topsoil replacement and grading. The scraper may be substituted with wheeled loader, haul truck and dozer at a similar cost.

SCRAPER TEAM WORK

Topsoil replacement of mining phases

HOURLY EQUIPMENT COSTShift basis: 1 per day

	Equipment Description
-Scraper:	Cat 637G
-Dozer:	NA
Support Equipment -Load Area:	Cat D8T - 8SU
-Dump Area:	Cat D8T - 8SU
Road Maintenance –Motor Grader:	NA
-Water Truck:	NA

Cost Breakdown:

	Scraper Work Team		Support Equipment		Maintenance Equipment	
	Scraper	Dozer	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	NA	100	100	NA	NA
Ownership cost/hour:	$194.42	NA	$194.42	$124.63	NA	NA
Operating cost/hour:	$221.56	NA	$221.56	$98.71	NA	NA
%Utilization-ripper:	NA	NA	NA	NA	NA	NA
Ripper own. cost/hour:	NA	NA	$0.00	$0.00	NA	NA
Ripper op. cost/hour:	NA	NA	$0.00	$0.00	NA	NA
Operator cost/hour:	$37.03	NA	$37.03	$49.48	NA	NA
Unit Subtotals:	$453.02	NA	$453.02	$272.83	NA	NA
Number of Units:	1	0	1	1	0	0
Group Subtotals:	Work:	$377.52	Support:	$454.72	Maint:	$0.00

Total work team cost/hour: **$998.68**

MATERIAL QUANTITIES

Initial volume: 1,389 CCY Swell factor: 1.000
Loose volume: **1,389** LCY

Source of estimated volume: 10” x 75’ x 600’ strips
Source of estimated swell factor: Cat Handbook

HOURLY PRODUCTION

Scraper Bowl (volume) Basis:

Material weight:	3,400 lbs/LCY	Struck Volume:	24.00	LCY
Material description:	Sand and gravel - Wet	Heaped Volume:	34.00	LCY
Rated Payload:	81,600 pounds	Average Volume:	29.00	LCY
Payload Capacity:	24.00 LCY	Adjusted Capacity:	**24.00**	LCY

Cycle Time:

Scraper Loading Time: 0.80 Minutes
Maneuver and Spread Time: 0.60 Minutes

Job Condition Correction: Site Altitude: 6225 feet

	Scraper	Push Dozer	Source
Altitude Adj:	1.000	NA	(CAT HB)
Job Efficiency:	0.830	NA	(CAT HB)
Net Correction:	0.830	NA	

Travel Time:
Road Condition: Loose sand or gravel 10

Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	600.00	0.00	10.00	10.00	922	0.68

Haul Time: **0.68** minutes

Return Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	600.00	0.00	10.00	10.00	1476	0.45

Return Time: **0.45** minutes

Total Scraper team cycle time: **2.53** minutes
Adjusted for job conditions: 472.41 LCY/Hour
Selected Number of Scrapers: 1 Scraper(s)
Adjusted single scraper team (unit) hourly production: 472.41 LCY/Hour
Adjusted multiple scraper team (fleet) hourly production: **472.41** LCY/Hour

Unadjusted unit production/hour: 569.17 LCY/Hour
Optimal Number of Scrapers per push dozer:

JOB TIME AND COST

Fleet size: 1 Team(s) Total job time: **179.67** Hours

Unit cost: $2.11 /LCY Total job cost: **$149,548.78**

(H) Task Cost - Ripping Compacted Areas

Ripping compacted areas, haul roads, plant footprint, disturbed areas.

BULLDOZER RIPPING WORK

Ripping compacted areas

HOURLY EQUIPMENT COST

Basic Machine:	Cat D8T - 8SU	Horsepower:	310
Ripper Attachment:	3-Shank Ripper	Shift Basis:	1 per day
		Data Source:	(CRG)

Cost Breakdown:

		Utilization %
Ownership Cost/Hour: Operating	$124.63	NA
Cost/Hour: Ripper Ownership	$98.71	100
Cost/Hour: Ripper Operating	$12.51	NA
Cost/Hour: Operator Cost/Hour:	$10.05	100
Total Unit Cost/Hour:	$49.48	NA
	$295.40	

Total Fleet Cost/Hour: **$295.40**

MATERIAL QUANTITIES Alternate — Selected estimating method: Area

Methods:

Seismic:	NA		Bank Volume:	NA	BCY	NA	
Area:	6.00	acres	Rip Depth (ft):	2.00	Volume:	19,360	BCY or CCY

Source of estimated quantity: Staff estimates, 2018 annual report

HOURLY PRODUCTION

Seismic:

Seismic Velocity:	NA	feet/second

Area:

Average Ripping Depth:	2.56	feet/pass
Average Ripping Width:	7.08	feet/pass
Average Ripping Length:	200.00	feet/pass
Average Dozer Speed:	88.00	feet/minute
Average Maneuver Time:	0.25	minutes/pass
Production per unit area:	0.773	acres/hour

Job Condition Correction Factors

Unadjusted Hourly Unit Production:	0.773	Acres/hr
Site Altitude:	6,225	feet
Altitude Adj: Job	1.00	(CAT HB)
Efficiency: Net	0.83	(1 shift/day)
Correction:	0.83	multiplier
Adjusted Hourly Unit Production:	0.64	Acres/hr
Adjusted Hourly Fleet Production:	**0.64**	Acres/hr

JOB TIME AND COST Fleet

size:	2	Grader(s)	Total job time:	**285.71**	Hours
Unit cost:	$383.620	Per acre	Total job cost:	**$140,687.07**	

(l) Task Cost - Seed Mining Phases

REVEGETATION WORK

Seed mining phases

FERTILIZING

Materials

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
			$	$
			Total Fertilizer Materials Cost/ Acre	**$0.00**

Application

Description	Cost /Acre
	$
Total Fertilizer Application Cost/Acre	**$0.00**

TILLING

Description	Cost /Acre
	$
Total Tilling Cost/Acre	**$0.00**

SEEDING

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Indian Ricegrass - Native	1.85	5.99	$14.43
Galleta	2.19	7.99	$58.74
Western Wheatgrass - Arriba	2.76	6.97	$21.52
Needle and Thread	3.03	8.00	$152.17
Globemallow, Scarlet (or copper)	0.25	2.83	$40.65
Basin Wildrye - Trailhead	3.03	12.31	$56.35
Totals Seed Mix	13.11	44.09	**$412.23**

Reveg Worksheet Cont'd

Application

Description	Cost /Acre
Drill Seeding (DRMS Survey Cost)	$278.4
Total Seed Application Cost/Acre	**$278.4**

MULCHING and MISCELLANEOUS Materials

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
Herbicide - 2,4D @ 1.0 pt/ac	1.00	ACRE	$2.74	$3.28
Total Mulch Materials Cost/Acre				**$3.28**

Application

Description	Cost /Acre
Weed spray, truck, non-aquatic area, nox. [DMG]	$85.8
Total Mulch Application Cost/Acre	**$85.8**

NURSERY STOCK PLANTING

Common Name	No / Acre	Type and Size	Planting Cost	Fertilizer Pellet Cost	Cost /Acre
					$
Totals Nursery Stock Cost / Acre					**$0.00**

JOB TIME AND COST

No. of Acres: 9.9 Estimated
Failure Rate: 40%
*Selected Replanting Work Items: SEEDING

Cost /Acre: $711.02
Cost /Acre*: $621.93

Initial Job Cost: **$360,656.40**
Reseeding Job Cost: **$120,977.44**
Total Job Cost: **$483,909.77**
Job Hours: **855.610**

(J) Task Cost - Initial Mobilization

EQUIPMENT MOBILIZATION/DEMOBILIZATION

Initial Mobilization

EQUIPMENT TRANSPORT RIG COST

Shift basis: 1 per day
Cost Data Source: CRG Data

Description: Truck Tractor — GENERIC ON-HIGHWAY TRUCK TRACTOR, 6X4, DIESEL POWERED, 400 HP (2ND HALF, 2006)

Description: Truck Trailer — GENERIC FOLDING GOOSENECK, DROP DECK EQUIPMENT TRAILER (25T, 50T, AND 100T)

Description:

Cost Breakdown:

Available Rig Capacities	0-25 Tons	26-50 Tons	51+ Tons
Ownership Cost/Hour:	$17.20	$29.63	$38.69
Operating Cost/Hour:	$26.56	$47.02	$55.69
Operator Cost/Hour:	$23.63	$23.63	$23.63
Helper Cost/Hour:	$0.00	$23.53	$23.53
Total Unit Cost/Hour:	$67.39	$123.81	$141.54

NON ROADABLE EQUIPMENT:

Machine Description	Weight/ Unit (TONS)	Owner ship Cost/hr/ unit	Haul Rig Cost/hr/unit	Fleet Size	Haul Trip Cost/hr/ fleet	Return Trip Cost/hr/ fleet	DOT Permit Cost/ fleet
Cat 637G	57.28	$162.02	$141.54	1	$303.56	$141.54	$250.00
Cat D8T - 8SU	53.08	$114.29	$141.54	1	$255.83	$141.54	$250.00
Drill/Broadcast Seeder with Tractor	25.00	$18.15	$67.39	1	$85.54	$67.39	$250.00
Subtotals:					**$644.93**	**$350.47**	**$750.00**

ROADABLE EQUIPMENT:

Machine Description	Total Cost/hr/ unit	Fleet Size	Haul Trip Cost/hr/ fleet	Return Trip Cost/hr/ fleet
Light Duty Pickup, 4x4, 3/4 T.	$40.61	1	$40.61	$40.61
Subtotals:				

EQUIPMENT HAUL DISTANCE and Time

Nearest Major City or Town within project area region: Total one-way travel distance:	CRAIG 52.00	miles
Average Travel Speed:	55.00	mph
Total Non-Roadable Mob/Demob Cost * '* two round trips with haul rig:		
Total Roadable Mob/Demob Cost ** ** one round trip, no haul rig:		

Transportation Cycle Time:

	Non-Roadable Equipment	Roadable Equipment
Haul Time (Hours): Return	0.95	0.95
Time (Hours): Loading Time	0.95	0.95
(Hours): Unloading Time	0.50	NA
(Hours): Subtotals:	0.50	NA
	2.89	1.89

COST

Esitmated Total job cost: **$90,235.85**

(K) Task Cost - Secondary Mobilization

EQUIPMENT MOBILIZATION/DEMOBILIZATION

Secondary Mobilization

EQUIPMENT TRANSPORT RIG COST

Shift basis: 1 per day
Cost Data Source: CRG Data

Description: Truck Tractor — GENERIC ON-HIGHWAY TRUCK TRACTOR, 6X4, DIESEL POWERED, 400 HP (2ND HALF, 2006)

Truck Trailer — GENERIC FOLDING GOOSENECK, DROP DECK EQUIPMENT TRAILER (25T, 50T, AND 100T)

Description:

Cost Breakdown:

Available Rig Capacities	0-25 Tons	26-50 Tons	51+ Tons
Ownership Cost/Hour:	$17.20	$29.63	$38.69
Operating Cost/Hour:	$26.56	$47.02	$55.69
Operator Cost/Hour:	$23.63	$23.63	$23.63
Helper Cost/Hour:	$0.00	$23.53	$23.53
Total Unit Cost/Hour:	$67.39	$123.81	$141.54

NON ROADABLE EQUIPMENT:

Machine Description	Weight/ Unit (TONS)	Owner ship Cost/hr/ unit	Haul Rig Cost/hr/unit	Fleet Size	Haul Trip Cost/hr/ fleet	Return Trip Cost/hr/ fleet	DOT Permit Cost/ fleet
Drill/Broadcast Seeder with Tractor	25.00	$18.15	$67.39	1	$85.54	$67.39	$250.00
Subtotals:					**$85.54**	**$67.39**	**$250.00**

ROADABLE EQUIPMENT:

Machine Description	Total Cost/hr/ unit	Fleet Size	Haul Trip Cost/hr/ fleet	Return Trip Cost/hr/ fleet
Light Duty Pickup, 4x4, 3/4 T.	$40.61	1	$40.61	$40.61
Subtotals:			**$40.61**	**$40.61**

EQUIPMENT HAUL DISTANCE and Time

Nearest Major City or Town within project area region: Total one-way travel distance:	CRAIG 52.00	miles
Average Travel Speed:	55.00	mph
Total Non-Roadable Mob/Demob Cost * ** two round trips with haul rig:	$960.26	
Total Roadable Mob/Demob Cost ** ** one round trip, no haul rig:	$76.79	

Transportation Cycle Time:

	Non-Roadable Equipment	Roadable Equipment
Haul Time (Hours): Return	0.95	0.95
Time (Hours): Loading Time	0.95	0.95
(Hours): Unloading Time	0.50	NA
(Hours): Subtotals:	0.50	NA
	2.89	1.89

JOB TIME AND COST

Total job time:	**186.03**	Hours
Total job cost:	**$33,376.41**	

END
EXHIBIT L

6.4.13 EXHIBIT M – Other Permits and Licenses

In Moffat County, operations require several local permits, including County Road and Equipment Use permits. At the state level, Colorado Department of Public Health and Environment (CDPHE) mandates Water Discharge and Air Pollution Control permits for aquifer recharge and heavy machinery operation, respectively. Additionally, securing water rights or usage permits is crucial due to strict water laws, overseen by the Colorado Division of Water Resources. Federally, various permits and regulations are enforced. The EPA requires Clean Air Act permits, possibly for water extraction from the Little Snake River. The Department of Transportation's (DOT) permits are to be determined. Lastly, the Mine Safety and Health Administration (MSHA) mandates compliance with safety and health standards, including regular inspections and worker training in mines. *See Table M.1*

TABLE M.1

Authority	Division/Agency	Permit/Requirement	Details
Moffat County		Moffat County Permits	• County Road Permits • Equipment Use permits
State of Colorado	CDPHE Water Quality Control Division	Water Discharge Permit	Permit for aquifer recharge
	CDPHE Air Pollution Control Division	Mining operations APEN	Form APCD-222
	Colorado Division of Water Resources	Water Rights and Usage	Secure water rights or usage permits, crucial in Colorado due to stringent water rights laws.
Federal-Level	EPA	Clean Air Act (CAA) Permits	Permit to extract water from the Little Snake River
	U.S. Army Corps of Engineers	-	(Text cut off) Likely related to operations impacting waters of the United States, including wetlands.
	-DOT	DOT Permits	TBD
	MSHA	MSHA Regulations/Permits	Compliance with safety and health standards for mines, including regular inspections and training requirements for mine workers.

END
EXHIBIT M

6.4.14 EXHIBIT N – Source of Legal Right to Enter

Coming soon

6.4.15 EXHIBIT O – Owner(s) of Record of Affected Land (Surface Area) and Owners of Substance to be Mined

The Colorado State Land Board is the sole owner of the property, both the surface and mineral estate, where the West Side Placer exists.

6.4.16 EXHIBIT P – Municipalities within Two Miles

There are no municipalities within two miles of the West Side Placer Project.

6.4.17 EXHIBIT Q – Proof of Mailing of Notices to Board of County Commissioners and Conservation Districttion District

Coming soon

6.4.18 EXHIBIT R – Proof of Filing with County Clerk and Recorder

Coming soon

6.4.19 EXHIBIT S – Permanent Man-made Structures

No permanent man-made structures currently exist, nor will they be permitted to be constructed, at the West Side Placer, ensuring the preservation of its natural state.

References

(1) "U.S. Geological Survey Releases 2022 List of Critical Minerals: U.S. Geological Survey." U.S. Geological Survey Releases 2022 List of Critical Minerals | U.S. Geological Survey, www.usgs.gov/news/national-news-release/us-geological-survey-releases-2022-list-critical-minerals. Accessed 24 Jan. 2024.

(2) Colorado Geological Survey. (2023, December 21). ON-010 Colorado Groundwater Atlas - Colorado Geological Survey. https://coloradogeologicalsurvey.org/water/colorado-groundwater-atlas/

(3) CPW All Species Activity Mapping Data." ArcGIS Hub, hub.arcgis.com/content/190573c5aba643a0bc058e6f7f0510b7/about. Accessed 26 Jan. 2024.

(4) Hawkins, J., Wick, E., & Jennings, D. (1993). Ichthyofauna of the Little Snake River, Colorado: 1993 Final Report. Contribution 91 of the Larval Fish Laboratory, Colorado State University.

(5) Colorado Parks and Wildlife. (n.d.). Colorado Parks and Wildlife. https://cpw.state.co.us/learn/Pages/SpeciesProfiles.aspx

(6) "U.S. Geological Survey Releases 2022 List of Critical Minerals: U.S. Geological Survey." U.S. Geological Survey Releases 2022 List of Critical Minerals | U.S. Geological Survey, www.usgs.gov/news/national-news-release/us-geological-survey-releases-2022-list-critical-minerals. Accessed 24 Jan. 2024.

(7) Custom Soil Resource Report for Carbon County Area, Wyoming, Moffat County Area, Colorado, and Sweetwater County Area, Wyoming - USDA 2024