3.12 MINERALS

This section addresses potential impacts to mineral resources from the Proposed Route and Route Alternatives during construction, operations, and decommissioning. The primary reason to define impacts to minerals is to reduce, minimize, or mitigate effects to minerals from Project construction and operations. This section analyzes the potential impacts on exploitable mineral resources including oil, gas, geothermal, coal, trona, precious and semiprecious stones, metals, salt, sand, gravel, and clay. Related geological-type sections include Section 3.13 – Paleontological Resources, Section 3.14 – Geologic Hazards, and Section 3.15 – Soils.

3.12.1 Affected Environment

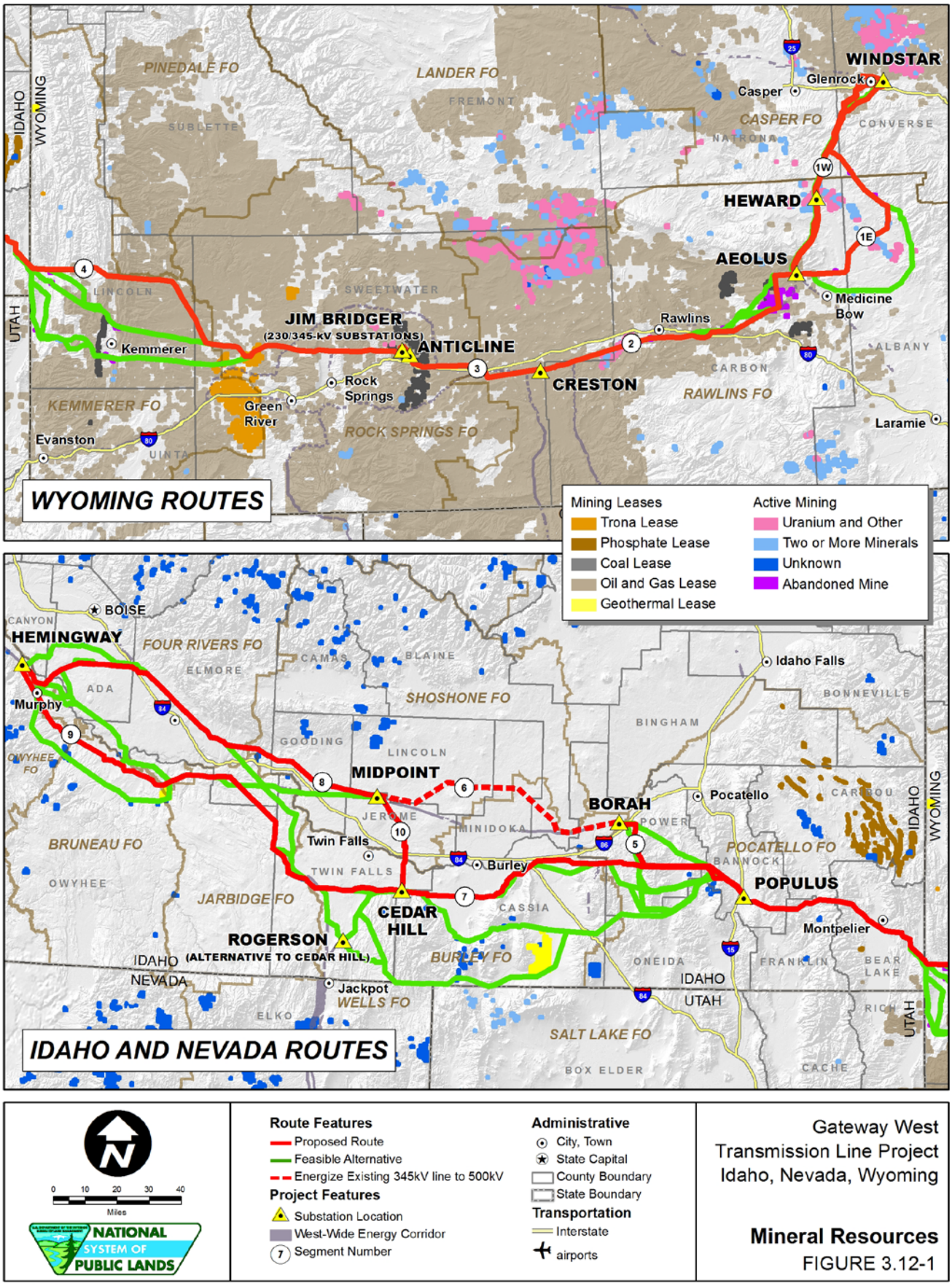
This section discusses those aspects of the geologic environment that could be impacted by the Project. It starts with a discussion of the Analysis Area considered, identifies the issues that have driven the analysis, and characterizes the existing conditions across the Proposed Action in Wyoming and Idaho.

3.12.1.1 Analysis Area

The Analysis Area includes the geologic formations crossed by the Proposed and Alternative Routes, substations, and temporary construction areas, in Wyoming, Idaho, and Nevada. The geology of southern Wyoming (Segments 1 through 4) includes large expanses of sedimentary deposits that contain economical deposits of coal, trona, phosphate, uranium, and other locatable, leasable, and saleable minerals. The state has an extensive history of mining, including many currently active mines. In addition, Wyoming currently contains extensive oil and gas wells and leases. Figure 3.12-1 shows mineral resources in Wyoming and Idaho.

Southern Idaho and the small part of the Analysis Area in northern Nevada lack the significant mineral resources found in southern Wyoming. Several phosphate mines in Caribou County, located north of the Analysis Area, are the only large-scale mining operations in southern Idaho. Phosphate and vanadium resources are currently being explored in the mountains west of Paris, Idaho, in Bear Lake County near Segment 4 but no active mining is occurring. Other mining claims exist for locatable minerals in the mountains of southern Idaho, and development of future mining projects is possible. These include current gold mining exploration in southern Cassia County within the Alternative 7I Analysis Area. The area south of Oakley, Idaho, near Alternative 7H also contains several decorative stone enterprises. Oakley Stone, a micaceous quartzite that breaks into blocks or flat stones, is a regionally recognized popular building stone. Otherwise, there are currently no active locatable mining projects within the Idaho and Nevada portions of the Analysis Area.

As the routes progress west into the Snake River Valley of southern Idaho (Segments 5 through 10), basalt bedrock predominates. The predominant mineral resources here consist of saleable (also known as industrial) minerals, such as sand and gravel, road base, fill, or building stones. The basalt does not contain economic quantities of metallic or energy-related mineral deposits.


WYOMING ROUTES
IDAHO AND NEVADA ROUTES
WINDSTAR
Glenrock
Casper
CASPER FO
CONVERSE
NATRONA
HEWARD
AEOLUS
Medicine Bow
Rawlins
ALBANY
CARBON
RAWLINS FO
Laramie
CRESTON
ANTICLINE
JIM BRIDGER
(230/345-kV SUBSTATIONS)
Rock Springs
Green River
ROCK SPRINGS FO
Kemmerer
KEMMERER FO
Evanston
UINTA
LINCOLN
SWEETWATER
PINEDALE FO
LANDER FO
FREMONT
SUBLETTE
IDAHO
WYOMING
UTAH
Mining Leases
Trona Lease
Phosphate Lease
Coal Lease
Oil and Gas Lease
Geothermal Lease
Active Mining
Uranium and Other
Two or More Minerals
Unknown
Abandoned Mine
BOISE
HEMINGWAY
CANYON
FOUR RIVERS FO
ELMORE
ADA
Murphy
OWYHEE FO
BRUNEAU FO
OWYHEE
JARBIDGE FO
CAMAS
BLAINE
SHOSHONE FO
GOODING
LINCOLN
MIDPOINT
JEROME
MINIDOKA
Twin Falls
TWIN FALLS
Burley
CEDAR HILL
ROGERSON
(ALTERNATIVE TO CEDAR HILL)
IDAHO
NEVADA
Jackpot
WELLS FO
ELKO
BURLEY FO
CASSIA
BORAH
POWER
Pocatello
BANNOCK
POCATELLO FO
POPULUS
Idaho Falls
BONNEVILLE
BINGHAM
CARIBOU
Montpelier
ONEIDA
FRANKLIN
BEAR LAKE
RICH
UTAH
SALT LAKE FO
BOX ELDER
CACHE
Route Features
Proposed Route
Feasible Alternative
Energize Existing 345kV line to 500kV
Project Features
Substation Location
West-Wide Energy Corridor
Segment Number
Administrative
City, Town
State Capital
County Boundary
State Boundary
Transportation
Interstate
airports
0 10 20 30 40
Miles
NATIONAL SYSTEM OF PUBLIC LANDS
Gateway West
Transmission Line Project
Idaho, Nevada, Wyoming
Mineral Resources
FIGURE 3.12-1

Most of southern Idaho contains the potential for geothermal resources within the deep aquifers (DOE 2003a). U.S. Geothermal operates a 10 MW geothermal power plant on private and leased land within the Segment 7 Analysis Area in southern Cassia County (U.S. Geothermal 2007). IDWR lists over 1,000 geothermal wells in southern Idaho, many of which are used for building heating, greenhouses, and aquaculture (IDWR 2009).

The Analysis Area for minerals was defined in a GIS file by buffering the centerlines of the Proposed Route and Route Alternatives out 0.5 mile on either side of the centerlines. This distance was used because the 0.5 mile distance would incorporate most disturbances associated with the Project and these disturbances could affect mineral exploration or mining operations.

3.12.1.2 Issues to be Analyzed

The following mineral-related comments were offered by the public during public scoping (Tetra Tech 2009a), raised by federal and state agencies during scoping and agency discussions, or are issues that must be considered as stipulated in law or regulation:

- The effect that underground mining could have on possible subsidence-related hazards for the transmission line (this issue is discussed in Section 3.14 – Geologic Hazards);
- The effect the Project could have on the ability to explore or extract mineral deposits or affect mineral leases;
- The effect the Project could have on oil and natural gas wells and leases; and
- The effect the Project could have on geothermal resources.

3.12.1.3 Regulatory Framework

On federal land, BLM serves as the primary land management agency. The BLM classifies mineral products as locatable, leaseable, or saleable, and each category is administered by different programs. Locatable minerals include both metallic minerals (e.g., gold, silver, lead, copper, zinc, and nickel), nonmetallic minerals (e.g., fluorspar, mica, certain limestones, uranium, gypsum, clay, heavy minerals in placer form, and gemstones), and certain uncommon variety minerals. It is difficult to prepare a complete list of locatable minerals because the history of the law has resulted in a definition of minerals that includes economics. Mining of locatable minerals on public land is a right protected by the General Mining Act of 1872. The Act specifies that all citizens of the United States 18 years or over have the right to locate a lode or placer mining claim on federal lands open to mineral entry. Potential locatable mineral deposits may be claimed by filing a mining claim with the BLM, the federal land management agency.

Since 1920, the BLM has leased certain minerals, such as oil and gas, oil shale, geothermal resources, potash, sodium, native asphalt, solid and semisolid bitumen, bituminous rock, phosphate, and coal, on public and other federal lands. These lands include areas managed by the BLM and the Forest Service. BLM can also lease these

minerals on certain private lands, provided that the mineral rights are owned by the federal government. Most of the minerals leased under this program are used to make fertilizer, as feed stock, or for energy development. In some areas where the federal government has acquired the land, BLM leases base and precious metals under this program. The regulations that govern mineral leasing are found in 43 CFR Parts 3000 to 3590.

Saleable minerals include some of the most basic natural resources, such as sand, gravel, soil, rock, and building stone, used for common construction uses. Since July 23, 1955, common varieties of saleable minerals were removed from the General Mining Law and placed under the Materials Act of 1947, as amended. BLM sells mineral materials to the public at fair market value but gives them free to states, counties, or other government entities for public projects. Disposals of saleable minerals from BLM-managed lands are regulated by 43 CFR Part 3600. Mineral activities must comply with NEPA, ESA, and other laws.

Mineral management on NFS land is governed under 36 CFR 228 and FSM 2810. Mineral development on NFS land requires consistency with the management objectives set out in the applicable Forest Plan. Forest Plan direction provides a framework for mineral operations using BMPs. Areas may be withdrawn from mineral activity if the activity might conflict with other management objectives.

The State Board of Land Commissioners through the Idaho Department of Lands (IDL) administers mineral leases on approximately 3 million acres of state land, as well as the beds of navigable waters, which were granted to the state in trust at statehood in 1890. The state leases minerals to generate revenue for the owning endowment fund, such as Public Schools, or for the general fund when public trust lands are involved. Leases are issued for metals and other mineral commodities, oil and gas and geothermal resources on both land and navigable waters. In Wyoming, the Land Quality Division administers and enforces all statutes and regulations on land disturbances dealing with mining and reclamation within the State of Wyoming. The Land Quality Division has the authority to require permitting and licensing of all operator actions of surface and underground mine facilities. The Land Quality Division's authority derives from the Federal Surface Mining Reclamation and Control Act and the Wyoming Environmental Quality Act.

The environmental requirements for mining, including environmental permitting for mine operation and post-mining reclamation are administered through state and federal programs via the EPA, Idaho Department of Environmental Quality (IDEQ), and WDEQ.

3.12.1.4 Methods

Data for mineral resources were obtained from the GeoCommunicator database, a website sponsored by the BLM and Forest Service. The GeoCommunicator database contains available information on the location of mineral claims and leases for locatable, leasable, and saleable minerals. The locations of individual active oil and gas wells were obtained from a database maintained by the Wyoming Oil and Gas Commission.

In February 2011, the GeoCommunicator database was taken offline for updating. Minerals information for the newest alternatives (7J, 8E, 9G, 9G, and 9H) was evaluated

using BLM's LR-2000 database, which contains the same mineral information as GeoCommunicator. It differs in not being a GIS-supported database. No mineral claims or leases were identified for the new alternatives. The effects analysis was conducted using readily available data and GIS files derived from preliminary centerline and component design for the proposed and alternative routes including ROW, access roads, staging areas, and fly yards (see Section 3.1 for details on development of these files). In all cases, after analysis of impacts was complete and where impacts were identified, Proponent-proposed measures to reduce impacts were reviewed for sufficiency. Where those measures were determined to be insufficient, additional measures were identified.

To assess the impacts to mineral claims and leases, the centerlines of the Proposed Route and Route Alternatives in each segment were overlaid on the GeoCommunicator GIS data file and the area (in acres) was determined and expressed as a percentage of the Analysis Area for the segment. To disclose overall impacts by segment, the area containing mineral claims, leases, or saleable mineral permits was identified along the Proposed Route, as well as where Route Alternatives were proposed. The area of mineral impacts was then compared for each segment by alternative. BLM's LR-2000 database was also checked for individual mining claims to see whether the mineral product could be identified.

To assess the impacts to active oil and gas wells, the centerlines of the Proposed Route and Route Alternatives in each segment were overlaid on the Wyoming Oil and Gas Commission GIS data file and the number of wells within the Analysis Area was noted by segment. To compare the number of wells within a segment, the number of wells was counted by alternative.

Aerial photographs and USGS topographic maps of the Proposed Route and Route Alternatives were reviewed for all of the segments. Mining-related features were noted within 1,000 feet on either side of the route centerlines. The mining features were described according to route segment milepost and the number of feet in distance perpendicular to the centerline. Based on the locations of mineral resources obtained from the GIS databases and map reconnaissance, some of the larger mine operators were also consulted on whether specific route locations would affect mining operations or whether mining operations would affect the transmission line.

3.12.1.5 Existing Conditions

Based on the methods described in Section 3.12.1.4, Table 3.12-1 was developed. It presents the number of oil and gas wells and the total acreage of mineral claims, leases, or saleable mineral permits within the Analysis Area. Table 3.12-2 shows the mineral facilities observed in the aerial photograph and USGS topographic map reconnaissance.

<u>Coal</u>

Wyoming is the top producer of coal in the United States. In 2008, Wyoming coal mines produced approximately 468 million tons of coal, which accounted for nearly 39 percent of the coal produced in the United States (WGS 2010a). In southern Wyoming, coal occurs in generally north-south-trending formations and is mined from open pits and underground; however, coal leases occupy a very small percentage of the Analysis

Table 3.12-1. Mineral Resources Within the Analysis Area (percent of area)

Segment Number	Total Analysis Area (Acres)[1/]	Active Oil and Gas Wells (Number)	Oil and Gas Leases (percent)	Trona Leases (percent)	Coal Leases (percent)	Geothermal Leases (percent)	Uranium and Other Leases (percent)	Unknown Mineral Claims [2/] (percent)	Two or More Minerals Claims [3/] (percent)	Saleable Minerals [4/] (percent)
1	177,572	51	2	–	–	–	2	–	5	<1
2	90,043	74	20	–	1	–	4	–	2	–
3	35,635	95	33	–	10	–	–	–	–	–
4	262,621	155	21	1	1	–	–	–	1	<1
5	101,596	–	–	–	–	–	–	–	–	–
6	1,304	–	–	–	–	–	–	–	–	–
7	292,396	–	–	–	–	<1	–	1	–	<1
8	159,253	–	–	–	–	–	–	<1	–	<1
9	229,434	–	–	–	–	1	–	1	–	<1
10	21,877	–	–	–	–	–	–	–	–	<1

1/ Numbers are rounded to the nearest acre.
2/ Unknown Mineral Claim is a locatable mineral claim where the target mineral was not identified.
3/ Two or More Mineral Claims are for locatable minerals where more than one target mineral is identified.
4/ Saleable Minerals as defined in Section 3.12.1.3 are common construction materials (sand and gravel, fill, etc.).

Table 3.12-2. Mining Activities Within 1,000 Feet of Transmission Line Routes, Observed From Aerial Photograph Reconnaissance and Topographic Maps

Segment Number	Alternative (status)	Milepost Location	Land Use/Feature Type	Mineral Product	Location
1E	Proposed – Total Length	47.1-48.6	Active Mining Claim	Unknown	Crossed
	Proposed – Total Length	54.2-55.6	Active Mining Claim	Unknown	Crossed
	Proposed – Total Length	80.6	Oil Springs Oil/Gas Well	Oil/Gas	400 feet S
	Alternative 1E-A	2.6-4.9	Former Oil Tank Farm	Oil	Crossed
	Alternative 1E-A	43.8	Gravel Pit	Gravel	740 feet E
1W(a)	Proposed – Total Length	2.1	Gravel Pit	Gravel	Crossed
	Proposed – Total Length	7.3	Glenrock South Oil/Gas Well	Oil/Gas	200 feet N
	Proposed – Total Length	21.2-21.8	Active Mining Claim	Unknown	Crossed
	Proposed – Total Length	40.6-42.0	Active Mining Claim	Unknown	Crossed
	Proposed – Total Length	43.8-46.3	Active Mining Claim	Unknown	Crossed
1W(c)	Proposed – Total Length	19.9-20.5	Active Mining Claim	Unknown	Crossed
	Proposed – Total Length	39.2-41.4	Active Mining Claim	Unknown	Crossed
	Proposed – Total Length	42.4-45.0	Active Mining Claims	Unknown	Crossed
2	Proposed – Total Length	5.8	WC Oil/Gas Well	Oil/Gas	Crossed
	Proposed – Total Length	10.2-11.2	Active Coal Lease	Coal	Crossed
	Proposed – Total Length	12.4-14.5	Strip Mine	Unknown	Crossed
	Proposed – Total Length	40.4-40.8	Gravel Pit	Gravel	Crossed
	Proposed – Total Length	41.1-41.6	Mining/Gravel Pits	Gravel	Crossed
	Proposed – Total Length	65.7-66.3	Active Mining Claim	Unknown	Crossed
	Proposed – Total Length	67.2-68.3	Active Mining Claim	Unknown	Crossed
	Proposed – Total Length	68.8-69.1	Active Mining Claim	Unknown	Crossed
	Proposed – Total Length	70.0-71.1	Active Mining Claim	Unknown	Crossed
	Proposed – Total Length	82.6-95.4	Oil/Gas Wells	Oil/Gas	Crossed
	Proposed – Total Length	85.1	Echo Springs Oil/Gas Well	Oil/Gas	250 feet N
	Proposed – Total Length	86.7	Echo Springs Oil/Gas Well	Oil/Gas	470 feet N
	Proposed – Total Length	88.1	Echo Springs Oil/Gas Well	Oil/Gas	316 feet N
	Proposed – Total Length	88.7	Echo Springs Oil/Gas Well	Oil/Gas	550 feet S

Table 3.12-2. Mining Activities Within 1,000 Feet of Transmission Line Routes, Observed From Aerial Photograph Reconnaissance and Topographic Maps (continued)

Segment Number	Alternative (status)	Milepost Location	Land Use/Feature Type	Mineral Product	Location
2 (cont.)	Proposed – Total Length	89.2	Echo Springs Oil/Gas Well	Oil/Gas	450 feet S
	Proposed – Total Length	89.7	Echo Springs Oil/Gas Well	Oil/Gas	210 feet N
	Proposed – Total Length	90.2	Echo Springs Oil/Gas Well	Oil/Gas	420 feet S
	Proposed – Total Length	90.5	Echo Springs Oil/Gas Well	Oil/Gas	370 feet N
	Proposed – Total Length	90.9	Echo Springs Oil/Gas Well	Oil/Gas	280 feet S
	Proposed – Total Length	91.3	Echo Springs Oil/Gas Well	Oil/Gas	340 feet N
	Proposed – Total Length	92.8	Echo Springs Oil/Gas Well	Oil/Gas	300 feet S
	Proposed – Total Length	94.5	Tierney Oil/Gas Well	Oil/Gas	280 feet S
	Proposed – Total Length	95.4	Tierney Oil/Gas Well	Oil/Gas	300 feet S
	Alternative 2A	21.4-21.6	Gravel Pit	Gravel	987 feet S
	Alternative 2B	1.8	Gravel Pit	Gravel	250 feet SE
	Alternative 2C	3.0-8.3	Seminole II Mine	Coal	Crossed
	Alternative 2C	3.0-3.2	Active Coal Lease	Coal	Crossed
	Alternative 2C	3.7-4.5	Mining Surface Reclamation	Coal	Crossed
	Alternative 2C	4.5-4.8	Active Coal Lease	Coal	Crossed
	Alternative 2C	10.3-10.6	Mining Surface Reclamation	Coal	Crossed
3	Segment 3 (Proposed)	1.5	Tierney Oil/Gas Well	Oil/Gas	360 feet S
	Segment 3 (Proposed)	1.6	Wamsutter Oil/Gas Well	Oil/Gas	530 feet N
	Segment 3 (Proposed)	2.8	Frewen Oil/Gas Well	Oil/Gas	200 feet S
	Segment 3 (Proposed)	4.1	Frewen Oil/Gas Well	Oil/Gas	520 feet S
	Segment 3 (Proposed)	5.1-5.2	Oil/Gas Well Buildings	Oil/Gas	Crossed
	Segment 3 (Proposed)	5.7	Frewen Oil/Gas Well	Oil/Gas	250 feet N
	Segment 3 (Proposed)	7.6	Desert Springs Oil/Gas Well	Oil/Gas	260 feet S
	Segment 3 (Proposed)	27.7	Arch Oil Oil/Gas Well	Oil/Gas	375 feet S
	Segment 3 (Proposed)	30.4	Table Rock Oil/Gas Well	Oil/Gas	360 feet S
	Segment 3 (Proposed)	32.1	Patrick Draw Oil Field	Oil/Gas	Crossed
	Segment 3 (Proposed)	35.1	Desert Springs Oil/Gas Well	Oil/Gas	270 feet S
	Segment 3 (Proposed)	40.9-41.4	Active Coal Lease	Coal	Crossed
	Segment 3 (Proposed)	42.0-43.1	Active Coal Lease	Coal	Crossed
4	Proposed – Total Length	3.9-4.4	Active Coal Lease	Coal	Crossed
	Proposed – Total Length	10.1	Gravel Pit	Gravel	1,000 feet S

Table 3.12-2. Mining Activities Within 1,000 Feet of Transmission Line Routes, Observed From Aerial Photograph Reconnaissance and Topographic Maps (continued)

Segment Number	Alternative (status)	Milepost Location	Land Use/Feature Type	Mineral Product	Location
4 (cont.)	Proposed – Total Length	47.3-48.6	Elkol Strip Mine	Coal	Crossed
	Proposed – Total Length	71.4-81.2	Oil/Gas Wells	Oil/Gas	340 feet N
	Proposed – Total Length	73	Whiskey Butte Oil/Gas Well	Oil/Gas	550 fee N
	Proposed – Total Length	74	Whiskey Butte Oil/Gas Well	Oil/Gas	500 feet N
	Proposed – Total Length	74	Whiskey Butte Oil/Gas Well	Oil/Gas	450 feet S
	Proposed – Total Length	75	Whiskey Butte Oil/Gas Well	Oil/Gas	350 feet N
	Proposed – Total Length	75	Whiskey Butte Oil/Gas Well	Oil/Gas	400 feet S
	Proposed – Total Length	76	Whiskey Butte Oil/Gas Well	Oil/Gas	470 feet S
	Proposed – Total Length	76	Whiskey Butte Oil/Gas Well	Oil/Gas	375 feet N
	Proposed – Total Length	76	Whiskey Butte Oil/Gas Well	Oil/Gas	350 feet N
	Proposed – Total Length	77	Whiskey Butte Oil/Gas Well	Oil/Gas	515 feet S
	Proposed – Total Length	76	Whiskey Butte Oil/Gas Well	Oil/Gas	440 feet S
	Proposed – Total Length	81	Cow Hollow Oil/Gas Well	Oil/Gas	300 feet S
	Proposed – Total Length	81	Cow Hollow Oil/Gas Well	Oil/Gas	430 feet S
	Proposed – Total Length	150-150.5	Gravel Pit	Gravel	500 feet N
	Proposed – Total Length	159.9	Gravel Pit	Gravel	125 feet E
	Proposed – Total Length	160.6	Gravel Pit	Gravel	950 feet E
	Proposed – Total Length	179.8	Mining/Excavation Area	Unknown	Crossed
	Alternative 4A	19.3-29.1	Oil/Gas Wells	Oil/Gas	340 feet N
	Alternative 4A	21	Whiskey Butte Oil/Gas Well	Oil/Gas	550 feet N
	Alternative 4A	22	Whiskey Butte Oil/Gas Well	Oil/Gas	500 feet N
	Alternative 4A	22	Whiskey Butte Oil/Gas Well	Oil/Gas	450 feet S
	Alternative 4A	22	Whiskey Butte Oil/Gas Well	Oil/Gas	350 feet N
	Alternative 4A	23	Whiskey Butte Oil/Gas Well	Oil/Gas	400 feet S
	Alternative 4A	23	Whiskey Butte Oil/Gas Well	Oil/Gas	470 feet S
	Alternative 4A	24	Whiskey Butte Oil/Gas Well	Oil/Gas	375 feet N
	Alternative 4A	24	Whiskey Butte Oil/Gas Well	Oil/Gas	350 feet N
	Alternative 4A	24	Whiskey Butte Oil/Gas Well	Oil/Gas	440 feet S
	Alternative 4A	25	Whiskey Butte Oil/Gas Well	Oil/Gas	515 feet S
	Alternative 4A	29	Cow Hollow Oil/Gas Well	Oil/Gas	300 feet N
	Alternative 4A	29	Cow Hollow Oil/Gas Well	Oil/Gas	430 feet S

Table 3.12-2. Mining Activities Within 1,000 Feet of Transmission Line Routes, Observed From Aerial Photograph Reconnaissance and Topographic Maps (continued)

Segment Number	Alternative (status)	Milepost Location	Land Use/Feature Type	Mineral Product	Location
4 (cont.)	Alternative 4A/4F	48.6	Active Coal Lease	Coal	430 feet W
	Alternative 4B	15.6	Bruff Oil/Gas Well	Oil/Gas	520 feet N
	Alternative 4B	16	Fabian Ditch Oil/Gas Well	Oil/Gas	Crossed
	Alternative 4B	16.8	Fabian Ditch Oil/Gas Well	Oil/Gas	440 feet N
	Alternative 4B	17	Fabian Ditch Oil/Gas Well	Oil/Gas	390 feet S
	Alternative 4B	17.4	Fabian Ditch Oil/Gas Well	Oil/Gas	335 feet N
	Alternative 4B	17.6	Fabian Ditch Oil/Gas Well	Oil/Gas	330 feet S
	Alternative 4B	18.9	Fabian Ditch Oil/Gas Well	Oil/Gas	25 feet S
	Alternative 4B	18.2	Bruff Oil/Gas Well	Oil/Gas	520 feet N
	Alternative 4B	21.2	Wilson Ranch Oil/Gas Well	Oil/Gas	450 feet N
	Alternative 4B	21.6	Wilson Ranch Oil/Gas Well	Oil/Gas	150 feet S
	Alternative 4B	22.6	WC Oil/Gas Well	Oil/Gas	370 feet S
	Alternative 4B	47.4	Mine	Unknown	1,000 feet S
	Alternative 4B	47.9-48.7	Active Coal Lease	Coal	Crossed
	Alternative 4B	63.0-64.7	Active Mining Claim	Unknown	Crossed
	Alternative 4C	15.6	Bruff Oil/Gas Well	Oil/Gas	520 feet N
	Alternative 4C	16	Fabian Ditch Oil/Gas Well	Oil/Gas	Crossed
	Alternative 4C	16.8	Fabian Ditch Oil/Gas Well	Oil/Gas	440 feet N
	Alternative 4C	17	Fabian Ditch Oil/Gas Well	Oil/Gas	390 feet S
	Alternative 4C	17.4	Fabian Ditch Oil/Gas Well	Oil/Gas	335 feet N
	Alternative 4C	17.6	Fabian Ditch Oil/Gas Well	Oil/Gas	330 feet S
	Alternative 4C	18.9	Fabian Ditch Oil/Gas Well	Oil/Gas	25 feet S
	Alternative 4C	18.2	Bruff Oil/Gas Well	Oil/Gas	520 feet N
	Alternative 4C	21.2	Wilson Ranch Oil/Gas Well	Oil/Gas	450 feet N
	Alternative 4C	21.6	Wilson Ranch Oil/Gas Well	Oil/Gas	150 feet S
	Alternative 4C	22.6	WC Oil/Gas Well	Oil/Gas	370 feet S
	Alternative 4C	47.4	Mine	Unknown	1,000 feet S
	Alternative 4C	63.0-64.7	Active Mining Claim	Unknown	Crossed
	Alternative 4C	78.3	Gravel Pit	Gravel	Crossed
	Alternative 4D	15.6	Bruff Oil/Gas Well	Oil/Gas	520 feet N
	Alternative 4D	16	Fabian Ditch Oil/Gas Well	Oil/Gas	Crossed

Table 3.12-2. Mining Activities Within 1,000 Feet of Transmission Line Routes, Observed From Aerial Photograph Reconnaissance and Topographic Maps (continued)

Segment Number	Alternative (status)	Milepost Location	Land Use/Feature Type	Mineral Product	Location
4 (cont.)	Alternative 4D	16.8	Fabian Ditch Oil/Gas Well	Oil/Gas	440 feet N
	Alternative 4D	17	Fabian Ditch Oil/Gas Well	Oil/Gas	390 feet S
	Alternative 4D	17.4	Fabian Ditch Oil/Gas Well	Oil/Gas	335 feet N
	Alternative 4D	17.6	Fabian Ditch Oil/Gas Well	Oil/Gas	330 feet S
	Alternative 4D	18.9	Fabian Ditch Oil/Gas Well	Oil/Gas	25 feet S
	Alternative 4D	18.2	Bruff Oil/Gas Well	Oil/Gas	470 feet N
	Alternative 4D	21.2	Wilson Ranch Oil/Gas Well	Oil/Gas	450 feet N
	Alternative 4D	21.6	Wilson Ranch Oil/Gas Well	Oil/Gas	150 feet S
	Alternative 4D	22.6	WC Oil/Gas Well	Oil/Gas	370 feet S
	Alternative 4D	47.4	Mine	Unknown	1,000 feet S
	Alternative 4D	56.3	Mine	Unknown	Crossed
	Alternative 4D	63.6-65.3	Active Mining Claim	Unknown	Crossed
	Alternative 4E	15.6	Bruff Oil/Gas Well	Oil/Gas	520 feet N
	Alternative 4E	16	Fabian Ditch Oil/Gas Well	Oil/Gas	Crossed
	Alternative 4E	16.8	Fabian Ditch Oil/Gas Well	Oil/Gas	440 feet N
	Alternative 4E	17	Fabian Ditch Oil/Gas Well	Oil/Gas	390 feet S
	Alternative 4E	17.4	Fabian Ditch Oil/Gas Well	Oil/Gas	335 feet N
	Alternative 4E	17.6	Fabian Ditch Oil/Gas Well	Oil/Gas	330 feet S
	Alternative 4E	18.9	Fabian Ditch Oil/Gas Well	Oil/Gas	25 feet S
	Alternative 4E	18.2	Bruff Oil/Gas Well	Oil/Gas	470 feet N
	Alternative 4E	21.2	Wilson Ranch Oil/Gas Well	Oil/Gas	450 feet N
	Alternative 4E	21.6	Wilson Ranch Oil/Gas Well	Oil/Gas	150 feet S
	Alternative 4E	22.6	WC Oil/Gas Well	Oil/Gas	370 feet S
	Alternative 4E	47.4	Mine	Unknown	1,000 feet S
	Alternative 4E	56.3	Mine	Unknown	Crossed
	Alternative 4E	63.6-65.3	Active Mining Claim	Unknown	Crossed
	Alternative 4E	78.9	Gravel Pits	Gravel	Crossed
5	Proposed – Total Length	51.4	Borrow Pits	Sand/Gravel	300 feet W
8	Proposed – Total Length	21.9-22.0	Gravel Pit	Gravel	250 feet S
	Proposed – Total Length	106.6-107.1	Active Mining Claim	Unknown	Crossed
	Proposed – Total Length	114.4-114.7	Gravel Pit	Gravel	200 feet S

Table 3.12-2. Mining Activities Within 1,000 Feet of Transmission Line Routes, Observed From Aerial Photograph Reconnaissance and Topographic Maps (continued)

Segment Number	Alternative (status)	Milepost Location	Land Use/Feature Type	Mineral Product	Location
8 (cont.)	Proposed – Total Length	120.1-120.3	Gravel Pit	Gravel	Crossed
9	Proposed – Total Length	4.4-4.7	Gravel Pit	Gravel	450 feet S
	Proposed – Total Length	14.6-14.8	Gravel Pits	Gravel	Crossed
	Proposed – Total Length	33.1-33.3	Active Mining Claim	Unknown	Crossed
	Proposed – Total Length	112.1	Gravel Pit	Gravel	Crossed
	Proposed – Total Length	144.0-145.1	Active Mining Claim	Unknown	200 feet W
	Alternative 9A	32.4	Gravel Pit	Gravel	400 feet S

1/ Some or all alternatives in Segments 5, 6, 7, 8, 9, and 10 do not contain mining activities. Alternatives without mining activities do not appear in this table.

Area in Segments 2, 3, and 4 (1 to 3 percent). Figure 3.12-1 presents the location of coal and trona mineral leases within the Project area.

Trona

Southwest Wyoming contains one of the largest deposits of trona in the world. WGS (2010a) indicates that the Green River Basin of southwest Wyoming produces approximately 11 million tons per year, which is 95 percent of the U.S. output. The Analysis Area contains trona leases of more than 3,300 acres in Segment 4, which represents about 1 percent of the Segment 4 Analysis Area.

Geothermal

The potential for geothermal development exists across southern Idaho (Segments 5 through 10) (IDWR 2009). The Analysis Area contains land leased for geothermal energy exploration or development in Segments 7 and 9. The amount of the Analysis Area leased for geothermal development in these segments is less than 1 percent. Figure 3.12-1 shows the location of the geothermal leases.

Oil and Natural Gas

According to the Wyoming Oil and Gas Commission (2009), in 2009 operators extracted 51.4 million barrels of oil and 2.54 trillion cubic feet of natural gas. Exploration is being conducted over large portions of Wyoming. Known oil and gas fields are present in Segments 1 through 4. There are 355 active oil and gas wells on nearly 100,000 acres of leased land in the Segments 1 through 4 Analysis Areas. The locations of oil and gas leases are shown on Figure 3.12-1.

Uranium

WGS (2010a) indicates that Wyoming has been the leading source of uranium mining in the United States since 1995, and contains the nation's largest reserves. Uranium is extracted using mainly in situ leaching methods. A total of 6 percent of the Segment 1 Analysis Area and 16 percent of Segment 2 is located within land claimed for uranium mining.

Locatable Minerals

The GeoCommunicator database includes locatable mineral claims. The claims are not always attributed to a specific mineral.

There are thousands of acres of unspecified mineral claims or leases in the Analysis Areas of Segments 1, 2, 4, 7, 8, and 9, including 15 percent of Segment 1, 7 percent of Segment 2, and 9 percent of Segment 7. Locatable mineral claims in Segments 4, 8, and 9 represent 2 percent or less of the Analysis Areas. Information from BLM's LR-2000 mining database indicated that all of the claims in Segments 1 and 2 were by companies associated with uranium production. The claims in Segment 7 were for gold exploration. The target minerals for claims in Segments 4, 8, and 9 could not be determined. The locations of mining claims (including uranium) are shown on Figure 3.12-1.

Saleable Minerals

Saleable minerals are common minerals or earth deposits that are purchased from federal agencies, usually on a per ton basis. Saleable minerals presented in the GeoCommunicator database within the Analysis Area include clay, pumice or cinders, gravel, sand and gravel, shale, fill material, crushed stone, riprap, and specialty stone. The Wyoming Geological Survey website (WGS 2010b) indicates that over 16 million tons of construction aggregate was produced in Wyoming in 2008. The Idaho Geological Survey indicates mining revenues of about $1.1 billion for 2009, with about 9 percent of that amount (slightly less than $100 million) for saleable minerals (IGS 2010). Although saleable minerals were identified in Segments 1, 4, 7, 8, 9, and 10, they represent less than 1 percent of any segment Analysis Area.

3.12.2 Direct and Indirect Effects

This section is organized to present effects to mineral resources from construction, then operations, followed by decommissioning activities for the proposed Project. Route Alternatives are analyzed in detail in Section 3.12.2.3. There is a Design Variation involving use of two single-circuit structures proposed by the Proponent for Segments 2, 3, and 4 (see Section 2.2 for details), which is analyzed in Section 3.12.2.4 and a Structure Variation that is analyzed in Section 3.12.2.5. The Proponents have also proposed a Schedule Variation, analyzed in Section 3.12.2.6, in which one of the two single circuits to be constructed in Segments 2, 3, and 4 and a portion of Segment 1W would be built on an extended schedule with construction beginning approximately 2.5 years after completion of the initial construction.

Mitigation measures or EPMs are presented in detail within this section only if it is the first time they have been discussed in Chapter 3; all other measures are referenced or summarized. A comprehensive list of all Proponent-proposed EPMs and Agency-required mitigation measures can be found in Table 2.7-1 of Chapter 2.

Plan Amendments

Proposed amendments are summarized in Table 2.2-1 of Chapter 2 and detailed in Appendices F and G. Amendments are needed to permit the Project to cross various areas of BLM-managed and NFS lands. Effects described for areas requiring an amendment in order for the Project to be built would only occur if the amendment were approved. Amendments that alter land management designations could change future use of these areas. No amendments specific to minerals are proposed for the Project and no impacts to minerals resulting from approving the amendments beyond the impacts of the Project are anticipated.

3.12.2.1 No Action Alternative

Under the No Action Alternative, the proposed Project would not be constructed or operated. No Project-related impacts to mineral resources would occur.

3.12.2.2 Effects Common to All Action Alternatives

Construction

The presence of existing mineral claims and leases could interfere with plans to construct the Gateway West Project. As part of the pre-construction process, the Proponents would have to identify mineral claims and leases and either negotiate permission to use the land surface in these areas or re-locate the transmission line to avoid existing claims and leases. Where access to mineral resources may be restricted, the Proponents would provide compensation for damage, access rights, and easements with mine owners, claimants, and lease holders. If necessary, the Proponents would provide mine operators with mine access across the Project area during construction.

The construction of the Gateway West Project could restrict exploration of mineral resources during the 2-year construction period. Construction activities could also restrict mining companies' ability to access land for mining or exploration. Construction of the Project would result in the need for saleable minerals, including fill material for grade changes, sand and gravel for concrete production, gravel for road beds, and similar uses. The use of saleable minerals would provide an economic benefit to local mineral providers but would also result in consumption of materials that would not be available for other uses.

The Project would cross areas in southern Wyoming that are assumed to contain unknown abandoned mines. Construction blasting in areas of shallow bedrock could cause subsidence in mined areas or damage to mine features, including water wells. Previously mined areas could have contaminated soil or groundwater. In coal-mining areas, methane may accumulate in abandoned mines. Depending on bedrock fracturing, bedding planes, and similar open pathways, methane could migrate into other voids in bedrock, which could pose a problem with blasting in those areas. The effects of blasting are assessed in Section 3.14 – Geologic Hazards. In Segments 2, 3, and 4 where abandoned underground mines are known to occur, the Agencies have identified the following mitigation measure to minimize possible deleterious impacts on the project from abandoned mines during construction:

MN-1 A geotechnical investigation will be conducted by the Proponents in areas where abandoned underground mines are known to occur to determine the presence of methane and the likelihood of subsidence.

The Agencies have identified the following mitigation measure as a means to substantially reduce impact to mining facilities. The Agencies suggest that the Proponents incorporate this measure into their EPMs and apply it Project-wide.

MN-2 An accounting of damages will be conducted by the Proponents to current operators to determine the potential loss of mineral resources. There may be mining claims under the 1872 Mining Law that would have precedence over the Project. Similarly, federal and state mineral lease agreements provide rights to lessees that could interfere with the Gateway West Project. The Proponents will resolve mineral claim and lease agreements prior to Project initiation, as with site access agreements on private property.

Active oil and gas wells are present in the Analysis Area. As part of the siting process, the Wyoming Oil and Gas Commission GIS database was reviewed for location of active oil or gas wells. A 250-foot buffer was drawn around every active oil and gas well and the route centerline was located to avoid the 250-foot buffers. Prior to construction, the Proponents would call each state's utility locating services so that buried utilities, including oil and gas gathering lines and pipelines, could be avoided.

Operations

During the operations period, the Project could restrict mining companies from obtaining new mining claims or leases within the transmission line ROW. The operations area is smaller than the construction disturbance area but the time interval is much longer: 50 years for operations compared to about 2 years for construction. The Scoping Report (Tetra Tech 2009a) indicated concern that the high-voltage transmission lines would restrict access to drill rigs conducting exploration or repair of oil or gas wells. Project operations would remove acreage that would not be available for mining for the life of the Project. However, the Project would only impact a small fraction of the total resource area available.

Decommissioning

Project decommissioning would disturb an area roughly equivalent to the construction disturbance area and the time of disturbance would be approximately 2 to 3 years, including the time to remove Project structures, plus another growing season for reclamation. Loss of access could occur to mineral claims or leases adjacent to the decommissioning disturbance area. However, when decommissioning is complete, mineral access due to Project activities would return to the pre-Project conditions not considering changes to land ownership or land use that may have occurred during the life of the Project.

3.12.2.3 Proposed Route and Alternatives by Segment

This section evaluates the Proposed Route and details the differences between the Proposed Route and the Route Alternatives with respect to impacts to mineral claims and leases. Tables 3.12-3 and 3.12-4 present the mineral claims and leases present within the Project construction and operations disturbance areas. Table 3.12-5 presents the number of active oil or gas wells within the construction and operations disturbance areas.

Segment 1E

Segment 1E, as proposed, would link the Windstar and Aeolus Substations in south-central Wyoming with a 100.6-mile 230-kV single-circuit transmission line. Twenty acres of the expansion of Windstar and Aeolus Substations and 0.5 acre for one regeneration site are attributed to Segment 1E. Alternative 1E-A is a 16.1-mile alternative along the north end of Segment 1E, which was the Proponents' initial proposal before moving the Proposed Route at the suggestion of local landowners to avoid the more settled area around Glenrock. Alternative 1E-B is 21.4 miles longer than the Proposed Route but is being considered by the Proponents because it would avoid a Wyoming-designated sage-grouse core area to the east. The BLM has required the consideration of Alternative 1E-C, which parallels the Segment 1W 230-kV lines into the Aeolus Substation (see Appendix A, Figure A-2).

Table 3.12-3. Acres of Active Claims, Leases, or Saleable Mineral Areas within Construction Disturbance Areas

Segment Number[1/]	Alternative (status)	Total Acreage[2/]	Oil and Gas Lease	Coal Lease	Trona	Geothermal	Saleable Minerals	Mineral Not Specified	Uranium and Other	Two or More Minerals	Total Mineral Acreage[3/]
1E[4/]	Proposed – Total Length	1,096	31	–	–	–	–	–	133	67	60
	Proposed – Comparison Portion for Alternative 1E-A	213	16	–	–	–	–	–	–	–	16
	Alternative 1E-A	124	12	–	–	–	–	–	–	–	12
	Proposed – Comparison Portion for Alternative 1E-B	393	6	–	–	–	–	–	132	51	30
	Alternative 1E-B	729	5	–	–	–	–	–	1	–	5
	Proposed – Comparison Portion for Alternative 1E-C	832	16	–	–	–	–	–	133	51	40
	Alternative 1E-C	311	21	–	–	–	–	–	50	22	34
1W(a)[4/]	Proposed – Total Length	623	60	–	–	–	–	–	15	142	86
	Proposed – Comparison Portion for Alternative 1W-A	210	28	–	–	–	–	–	–	–	28
	Alternative 1W-A	136	6	–	–	–	–	–	–	–	6
1W(c)[4/]	Proposed – Total Length	817	35	–	–	–	–	–	64	371	85
2	Proposed – Total Length	1,544	373	11	–	–	2	–	355	133	396
	Proposed – Comparison Portion for Alternative 2A	398	83	–	–	–	–	–	–	–	83
	Alternative 2A	446	92	–	–	–	–	–	–	–	92
	Proposed – Comparison Portion for Alternative 2B	104	54	–	–	–	–	–	–	–	54
	Alternative 2B	80	34	–	–	–	–	–	–	–	34
	Proposed – Comparison Portion for Alternative 2C	369	46	11	–	–	–	–	–	–	57
	Alternative 2C	322	61	8	–	–	–	–	–	–	63
3	Segment 3 (Proposed)	863	317	15	–	–	–	–	–	–	317

Table 3.12-3. Acres of Active Claims, Leases, or Saleable Mineral Areas within Construction Disturbance Areas (continued)

Segment Number	Alternative (status)	Total Acreage[1/]	Oil and Gas Lease	Coal Lease	Trona	Geothermal	Saleable Minerals	Mineral Not Specified	Uranium and Other	Two or More Minerals	Total Mineral Acreage
4	Proposed – Total Length	2,846	472	15	33	–	3	–	–	–	502
	Proposed – Comparison Portion for Alternatives 4A, B, C, D, E, F	1,234	300	–	3	–	<1	–	–	–	303
	Alternative 4A	1,250	250	–	4	–	2	–	–	–	254
	Alternative 4B	1,484	473	11	37	–	<1	–	–	20	516
	Alternative 4C	1,478	395	11	37	–	<1	–	–	20	438
	Alternative 4D	1,505	520	11	37	–	<1	–	–	20	564
	Alternative 4E	1,495	448	11	37	–	<1	–	–	20	492
	Alternative 4F	1,260	229	–	5	–	2	–	–	–	234
7	Alternative 7H	2,118	–	–	–	–	8	11	–	–	22
	Alternative 7I	2,735	–	–	–	32	<1	406	–	–	95
	Alternative 7J	3,180	–	–	–	32	<1	406	–	–	95
	Proposed – Comparison Portion for Alt. 7J[5/]	2,231	–	–	–	–	3	–	–	–	3
8	Alternative 8B	779	–	–	–	–	2	–	–	–	2
	Alternative 8E	286	–	–	–	–	–	–	–	–	–
9	Proposed – Total Length	2,670	–	–	–	–	4	2	–	–	10
	Proposed – Comparison Portion for Alternative 9B	825	–	–	–	–	–	2	–	–	2
	Alternative 9B	816	–	–	–	–	–	1	–	–	3
	Proposed – Comparison Portion for Alternative 9C	239	–	–	–	–	–	2	–	–	2
	Alternative 9C	279	–	–	–	–	–	2	–	–	2
	Alternative 9D	815	–	–	–	–	4	–	–	–	4
	Alternative 9E	1,004	–	–	–	51	–	84	–	–	135

Table 3.12-3. Acres of Active Claims, Leases, or Saleable Mineral Areas within Construction Disturbance Areas (continued)

Segment Number	Alternative (status)	Total Acreage[1/]	Oil and Gas Lease	Coal Lease	Trona	Geothermal	Saleable Minerals	Mineral Not Specified	Uranium and Other	Two or More Minerals	Total Mineral Acreage
9	Alternative 9F	971	–	–	–	–	4	–	–	–	4
	Alternative 9G	848	–	–	–	–	4	–	–	–	4
	Alternative 9H	979	–	–	–	–	4	–	–	–	4

1/ Some or all alternatives in Segments 5, 7, 8, 9, and 10 do not contain minerals. Alternatives without minerals do not appear in this table. (No active claims, leases, or saleabl area were found for Segments 5, 6 and 10.)
2/ Numbers in table are rounded to nearest acre; columns or rows may not sum exactly due to rounding.
3/ Due to multiple claim owners or leases, and overlapping mineral interests, the total area of all claims and leases can be much less than the sum of the individual categories. provides the most realistic estimate of the actual affected acreage.
4/ The difference between total mineral acreage for Segments 1E, 1W(a), and 1W(c) is because all impacts from construction support such as laydown, staging, and fly yards ar against 1W(c) and not double-counted against Segments 1E or 1W(a).
5/ Alternative 7J connects with Segment 9 approximately 25.8 miles west of the proposed Cedar Hill Substation, which is the western terminus of Segment 7 and the beginning Segment 9. The table above compares 7J (202 miles) with the corresponding portion of Segment 7/9 (118.1 miles of Segment 7 and 25.8 miles of Segment 9, for a total of 1 miles). All other Segment 7 alternatives are compared to Segment 7 of the Proposed Route (118.1 miles) only.

Table 3.12-4. Acres of Active Claims, Leases, or Saleable Mineral Areas within Operations Disturbance Areas

Segment Number[1/]	Alternative (status)	Total Acreage[2/]	Oil and Gas Lease	Coal Lease	Trona	Geothermal	Saleable Minerals	Mineral Not Specified	Uranium and Other	Two or More Minerals	Total Mineral Acreage
1E	Proposed – Total Length	283	6	–	–	–	–	–	12	16	12
	Proposed – Comparison Portion for Alternative 1E-A	51	5	–	–	–	–	–	–	–	5
	Alternative 1E-A	39	7	–	–	–	–	–	–	–	7
	Proposed – Comparison Portion for Alternative 1E-B	91	1	–	–	–	–	–	12	11	5
	Alternative 1E-B	164	1	–	–	–	–	–	<1	–	1
	Proposed – Comparison Portion for Alternative 1E-C	218	2	–	–	–	–	–	12	11	6
	Alternative 1E-C	92	4	–	–	–	–	–	15	10	8
1W(a)	Proposed – Total Length	182	20	–	–	–	–	–	4	39	27
	Proposed – Comparison Portion for Alternative 1W-A	47	6	–	–	–	–	–	–	–	6
	Alternative 1W-A	40	2	–	–	–	–	–	–	–	2
1W(c)	Proposed – Total Length	144	5	–	–	–	–	–	14	104	19
2	Proposed – Total Length	401	95	3	–	–	1	–	112	41	102
	Proposed – Comparison Portion for Alternative 2A	74	16	–	–	–	–	–	–	–	16
	Alternative 2A	90	21	–	–	–	–	–	–	–	21
	Proposed – Comparison Portion for Alternative 2B	16	9	–	–	–	–	–	–	–	9
	Alternative 2B	18	7	–	–	–	–	–	–	–	7
	Proposed – Comparison Portion for Alternative 2C	77	10	3	–	–	–	–	–	–	13
	Alternative 2C	52	12	1	–	–	–	–	–	–	13
3	Proposed – Total Length	219	77	4	–	–	–	–	–	–	77

Table 3.12-4. Acres of Active Claims, Leases, or Saleable Mineral Areas within Operations Disturbance Areas (continued)

Segment Number	Alternative (status)	Total Acreage[2/]	Oil and Gas Lease	Coal Lease	Trona	Geothermal	Saleable Minerals	Mineral Not Specified	Uranium and Other	Two or More Minerals	Total Mineral Acreage[3/]
4	Proposed – Total Length	651	100	3	6	–	1	–	–	–	105
	Proposed – Comparison Portion for Alternatives 4A, B, C, D, E, F	262	63	–	1	–	<1	–	–	–	64
	Alternative 4A	277	56	–	1	–	1	–	–	–	58
	Alternative 4B	348	116	4	10	–	<1	–	–	6	128
	Alternative 4C	341	96	4	10	–	<1	–	–	6	108
	Alternative 4D	355	131	4	10	–	<1	–	–	6	144
	Alternative 4E	345	110	4	10	–	<1	–	–	6	122
	Alternative 4F	280	53	–	2	–	1	–	–	–	54
7	Alternative 7H	340	–	–	–	–	<1	1	–	–	1
	Alternative 7I	451	–	–	–	4	<1	60	–	–	12
	Alternative 7J[4/]	512	–	–	–	4	<1	60	–	–	12
	Proposed – Comparison Portion for Alt. 7J[4/]	294	–	–	–	–	1	–	–	–	1
8	Alternative 8B	69	–	–	–	–	<1	–	–	–	<1
	Alternative 8E	27	–	–	–	–	–	–	–	–	–
9	Proposed – Total Length	359	–	–	–	–	1	<1	–	–	2
	Proposed – Comparison Portion for Alternative 9B	121	–	–	–	–	–	<1	–	–	<1
	Alternative 9B	85	–	–	–	–	–	<1	–	–	<1
	Proposed – Comparison Portion for Alternative 9C	26	–	–	–	–	–	<1	–	–	<1
	Alternative 9C	31	–	–	–	–	–	<1	–	–	<1
	Alternative 9D	80	–	–	–	–	<1	–	–	–	<1
	Alternative 9E	135	–	–	–	13	–	–	–	–	13

Table 3.12-4. Acres of Active Claims, Leases, or Saleable Mineral Areas within Operations Disturbance Areas (continued)

Segment Number	Alternative (status)	Total Acreage[2/]	Oil and Gas Lease	Coal Lease	Trona	Geothermal	Saleable Minerals	Mineral Not Specified	Uranium and Other	Two or More Minerals	Total Mineral Acreage[3/]
9	Alternative 9F	93	–	–	–	–	<1	–	–	–	<1
	Alternative 9G	93	–	–	–	–	<1	–	–	–	<1
	Alternative 9H	93	–	–	–	–	<1	–	–	–	<1

1/ Some or all alternatives in Segments 5, 6, 7, 8, 9, and 10 do not contain minerals. Alternatives without minerals do not appear in this table.
2/ Numbers in table are rounded to nearest acre; columns or rows may not sum exactly due to rounding.
3/ Due to multiple claim owners or leases, and overlapping mineral interests, the total area of all claims and leases can be much less than the sum of the individual categories provides the most realistic estimate of the actual affected acreage.
4/ Alternative 7J connects with Segment 9 approximately 25.8 miles west of the proposed Cedar Hill Substation, which is the western terminus of Segment 7 and the beginnin Segment 9. The table above compares 7J (202 miles) with the corresponding portion of Segment 7/9 (118.1 miles of Segment 7 and 25.8 miles of Segment 9, for a total of miles). All other Segment 7 alternatives are compared to Segment 7 of the Proposed Route (118.1 miles) only.

Table 3.12-5. Number of Active Oil and Gas Wells within the Analysis Area, Construction Disturbance Area, and Operations Disturbance Area

Segment Number[1/]	Alternative (status)	Wells in Analysis Area	Wells in Construction Area	Wells in Operations Area	Wells in Two-Circuit Design Variation
1E	Proposed – Total Length	33	–	–	–
	Proposed – Comparison Portion for Alternative 1E-A	32	–	–	–
	Alternative 1E-A	2	–	–	–
	Proposed – Comparison Portion for Alternative 1E-B	1	–	–	–
	Alternative 1E-B	5	–	–	–
	Proposed – Comparison Portion for Alternative 1E-C	1	–	–	–
	Alternative 1E-C	–	–	–	–
1W(a)	Proposed – Total Length	13	–	–	–
	Proposed – Comparison Portion for Alternative 1W-A	13	–	–	–
	Alternative 1W-A	13	–	–	–
1W(c)	Proposed – Total Length	–	–	–	–
2	Proposed – Total Length	72	4	1	6
	Proposed – Comparison Portion for Alternative 2A	–	–	–	–
	Alternative 2A	–	–	–	–
	Proposed – Comparison Portion for Alternative 2B	–	–	–	–
	Alternative 2B	–	–	–	–
	Proposed – Comparison Portion for Alternative 2C	–	–	–	–
	Alternative 2C	–	–	–	–
3	Proposed	62	–	–	–
4	Proposed – Total Length	36	–	–	–
	Proposed – Comparison Portion for Alternatives 4A, B, C, D, E, F	28	–	–	–
	Alternative 4A	82	–	–	1
	Alternative 4B	48	1	–	1
	Alternative 4C	48	1	–	1
	Alternative 4D	47	1	–	1
	Alternative 4E	47	1	–	1
	Alternative 4F	81	–	–	1

1/ There are no known active oil and gas wells within the Analysis Areas of Segments 5 through 10.

About 60 acres of mineral leases or claims (5 percent of route) would be located within the construction disturbance area. The BLM LR-2000 mining database indicates the claims are for uranium. Oil and gas leases would also be present. However, no active oil or gas wells would be located within the construction or operations disturbance areas. Agreements would be required with existing leaseholders and mining and exploration could be restricted during construction of the transmission lines. During decommissioning, the disturbance area is assumed to be similar while transmission line structures are removed. During operations, the affected area would be reduced to approximately 12 acres; however, the time that resources are not available would be longer. This applies to all segments. Alternative 1E-A on balance between construction and operations would be similar to the comparison portion of the Proposed Route.[1]

Alternative 1E-B would offer an advantage from a mineral perspective as it would avoid all except 5 acres (construction) and 1 acre (operations) of uranium, oil, and gas leases. Alternative 1E-C would follow the same route as the southern half of the Proposed Route for Segment 1W and have similar affected areas during construction and operations. It would have more impact to minerals than the comparison portion of the Proposed Route. The alignment with the least impact would be the comparison portion of the Proposed Route for Segment 1E in combination with Alternative 1E-B. Note that the effects of decommissioning would be similar to construction because the same area is required for decommissioning as during construction. This, as noted in Section 3.12.2.2, is common to all segments and alternatives.

Segment 1W

Segment 1W is composed of two parts, Segment 1W(a) and 1W(c), both of which would consist of a new 230-kV line for part of their length and a reconstruction of an existing 230-kV line for the remaining part. Segment 1W(a) would be about 76.5 miles long, and would extend from the Windstar Substation to the Aeolus Substation. Segment 1W(c) would be about 70.6 miles long, and would extend from the Dave Johnston Power Plant to the Aeolus Substation. Alternative 1W-A is a 16.2-mile alternative located near the town of Glenrock, which was the Proponents' initial proposal before moving the Proposed Route at the suggestion of local landowners in order to avoid the more settled area around Glenrock. Twenty acres of the proposed expansion at the Windstar and Aeolus Substations are attributed to Segment 1W(a) and 3 acres of the expansion at the Heward Substation and 17 acres of the expansion at the Windstar and Aeolus Substations are attributed to Segment 1W(c). There are no Route Alternatives proposed south of that point (see Appendix A, Figure A-2).

The mineral effects in Segment 1W(a) would be slightly more than those seen in Segment 1E, 27 acres within the construction area and 63 acres in the operations area. However, as noted in Table 3.12-3, Segment 1W(c) would contain much more affected mineral acreage than Segment 1E. This is because the mineral effects in all of the staging, laydown, and fly yards associated with these parallel lines are counted only with Segment 1W(c) to avoid double-counting. The predominant minerals affected

[1] The "comparison portion of the Proposed Route" refers to the portion of the Proposed Route that starts and ends at the same nodes as a Route Alternative.

would be uranium claims and oil and gas leases. No active oil or gas wells would be located within construction or operations disturbance areas. Alternative 1W-A would have somewhat less effect on minerals than the comparison portion of the Proposed Route.

Segment 2

Segment 2, as proposed, would link the Aeolus and Creston Substations in southeast Wyoming with two 500-kV circuits on one structure. One circuit would be operated at 230 kV during the initial phase of the Project. Its total proposed length is 96.7 miles. Fifty-two acres of the expansion of the Aeolus Substation and the construction of the Creston Substation and 0.5 acre for one regeneration site are attributed to Segment 2. There are three Route Alternatives, two of which are near the community of Fort Fred Steele. Alternative 2A at 28.4 miles long is being considered by the BLM because it remains in the WWE corridor nearer the town and the state historic site, and Alternative 2B, at 6.2 miles, is closer to the community than the comparison portion of the Proposed Route and was the initially proposed route before the Proponents responded to local suggestions and relocated the Proposed Route farther to the south. Alternative 2C is a 24.4-mile alternative located north of Hanna, Wyoming. It is being evaluated at the recommendation of the Wyoming Governor's office to follow a utility corridor approved by that office for minimizing effects to sage-grouse (see Appendix A, Figure A-3).

Segment 2 would affect oil and gas, two or more minerals (uranium and coal), and one saleable mineral deposit. Approximately 396 acres would be affected during construction and decommissioning (26 percent of route). Four existing oil or gas wells would be present within the construction disturbance acreage. One existing oil or gas well would be also located within the operations disturbance area. It would be located approximately 6 miles west of Aeolus Substation and about 450 feet north of the transmission line. The affected acreage during operations would be about 102 acres. Alternative 2B would have slightly less effect on minerals than the comparison portion of the Proposed Route. The effects would be slightly greater for Alternatives 2A and 2C. Alternative 2A would affect 9 acres (construction) and 5 acres (operations) more than the comparison portion of the Proposed Route. For Alternative 2B, the effects would be less by 20 acres and 2 acres, respectively. Alternative 2C would affect 6 more construction acres than the comparison portion of the Proposed Route; however, the affected acreage would be equal for operations. Overall, the Proposed Route for Segment 2 in combination with Alternative 2B would have the least potential impact on minerals.

Segment 3

Segment 3, as proposed, would link the Creston and Anticline Substations in southeast Wyoming with two 500-kV circuits on one structure. One circuit would be operated at 230 kV during the initial phase of the Project. Its total proposed length between those two substations is 46.7 miles. Sixty-nine acres of the construction of the Anticline and Creston Substations are attributed to Segment 3. Segment 3 would also link the Anticline and Jim Bridger Substations with a 4.3-mile 230-kV line and a 5.5-mile 345-kV

line and includes the 10-acre expansion of the Jim Bridger 345-kV Substation. There are no alternatives proposed along this segment (see Appendix A, Figure A-4).

A total of 317 acres of mineral interests would be affected in the Segment 3 construction disturbance area. The affected area would consist almost entirely of oil and gas leases, with only about 15 acres of coal leases. The operations area would contain 77 acres of affected area. Despite the high percentage of oil and gas leases, no oil or gas wells would be located within the disturbance areas.

Segment 4

Segment 4, as proposed, would link the Anticline Substation near the Jim Bridger Power Plant in southwestern Wyoming with the Populus Substation in Idaho with two 500-kV circuits on one structure. Its total proposed length is 203 miles. Eighty-nine acres of the construction of the Anticline Substation and the expansion of the Populus Substation and 1.5 acres for three regeneration sites are attributed to Segment 4. It has six Route Alternatives in the middle portion of its route but the first 52 miles to the east and the last 61 miles to the west (in Idaho) do not have any Route Alternatives. The middle section of the Proposed Route is 90.2 miles long, and its Route Alternatives vary from 85 to 102 miles long. These alternatives were proposed by the Wyoming Governor's office (4A, paralleling the existing 345-kV lines throughout); by the BLM Kemmerer FO (4B through 4E, including edits from various cooperating agencies), with the intent to avoid impacts to cultural resources to the extent practical; and by the Proponents (4F, attempting to avoid impacts to cultural resources while still remaining north of the existing lines) (see Appendix A, Figures A-5 and A-6).

The construction-related affected area containing minerals in Segment 4 would be 502 acres. Minerals would consist mainly of oil and gas, but also trona, coal, and saleable minerals. The operations effects would comprise 105 acres. Alternatives 4A and 4F would have less mineral effect than the comparison portion of the Proposed Route. Alternative 4A would contain 47 acres (construction) and 6 acres (operations) less affected area than the comparison portion of the Proposed Route. For Alternative 4F, the areas would be 69 acres and 10 acres less, respectively. On the other hand, Alternatives 4B, 4C, 4D, and 4E would contain greater mineral impacts than their respective comparison portions. In construction areas, the Route Alternatives would contain from 135 to 261 acres more affected area than the Proposed Route; for operations, there would be 44 to 80 acres more. One active oil or gas well would be located within the construction disturbance area for Segment 4. One well, affecting Alternatives 4B through 4E, would be located on the footprint of a proposed new road. No oil or gas wells would be located within the operations disturbance area of the Proposed Route. Overall, the Proposed Route for Segment 4 in combination with Alternative 4F would have the least potential impact on minerals.

Segment 5

Segment 5, as proposed, would link the Populus and Borah Substations with a 54.6-mile single-circuit 500-kV line. Forty-four acres of the expansion of the Populus and Borah Substations are attributed to Segment 5. There are five Route Alternatives including two proposed by the BLM to avoid the Deep Creek Mountains (5A and 5B; 8 miles and 19 miles longer than the comparison portion of the Proposed Route), one

preferred by Power County that crosses the Fort Hall Indian Reservation (5C; 6 miles shorter than the comparison portion of the Proposed Route), one originally proposed by the Proponents (5D; 2 miles shorter than the comparison portion of the Proposed Route but located within more agricultural lands), and one proposed by Power County as an alternative approach to the Borah Substation (5E) (see Appendix A, Figure A-7).

As stated in the Section 3.12.1.5 (Existing Conditions), most of the minerals in the Project area would be located in Segments 1 through 4 in southern Wyoming. Therefore, Segments 5 through 10 in southern Idaho would contain much fewer mineral impacts. No mineral claims or leases were detected in Segment 5 or alternatives.

Segment 6

Segment 6 is an existing transmission line linking the Borah and Midpoint Substations; it is now operated at 345 kV but would be changed to operate at 500 kV. This segment has no Route Alternatives. Existing support structures would be used and impacts would be limited to within approximately 0.25 mile from each substation to allow for moving the entry point into the substation to the new 500-kV bay. Thirty-one acres of the expansion of the Borah and Midpoint Substations are attributed to Segment 6. Changes in the two substations would allow it to be operated at 500 kV (see Appendix A, Figure A-8).

Segment 7

Segment 7, as proposed, would link the Populus and Cedar Hill Substations with a 118.1-mile single-circuit 500-kV line. Forty-two acres of the expansion of the Populus and the construction of the Cedar Hill Substations and 1 acre for two regeneration sites are attributed to Segment 7. In addition to the Proposed Route, which is principally on private lands, Route Alternatives have been proposed by the BLM to avoid the Deep Creek Mountains (7A and 7B; which are 5 miles and 11 miles longer than the comparison portion of the Proposed Route), by local landowners (7C, 7D, 7E, 7F, and 7G, which all represent minor adjustments proposed to address local issues), by local landowners to avoid private agricultural lands (7I or the State Line Route, which is 55 miles longer than the Proposed Route and would require 0.5 acre for an additional regeneration site), and by the Proponents to avoid the State Line Route (7H, which is 10 miles longer than the Proposed Route). Alternative 7J, which is a variant of the State Line Route also proposed by local landowners, would not terminate at the Cedar Hill Substation. This alternative, referred to as the Rogerson Alternative, would require a different substation be constructed near a 345-kV existing transmission line (approximately 24 miles southwest of the Cedar Hill Substation; see Appendix A, Figure A-9). The discussion in this document compares 7J (202 miles) with the corresponding portion of Segment 7/9 (118.1 miles of Segment 7 and 25.8 miles of Segment 9, for a total of 143.9 miles). All other Segment 7 alternatives are compared to Segment 7 of the Proposed Route (118.1 miles) only.

The mineral effects from Segment 7 would be low. The Proposed Route for Segment 7 would not affect minerals. Alternative 7H contains 22 acres with mineral resources within the construction area and 1 acre in the operations area. These consist of unknown mineral claims and saleable commodities. Known mineral resources near Alternative 7H include Oakley Stone, a popular building stone. Alternatives 7I and 7J

would contain 95 acres of mineral claims in the construction disturbance area and 12 acres in the operations area. Otis Capital Resources has multiple claims in this area for a gold deposit they are exploring. Alternatives 7I and 7J would also pass through 32 acres (construction) and 4 acres (operations) of U.S. Geothermal's geothermal lease area in the Raft River Valley. Based on the mineral claims and leases, Alternatives 7H, 7I, and 7J would have a greater effect on minerals than the comparison portion of the Proposed Route, with Alternative 7I having the most potential impact on minerals. Alternative 7J would be coincident to 7I along much of its route and the mineral impacts would be the same. There would be no additional impacts to minerals in the new portion of the route.

Segment 8

Segment 8, as proposed, would link the Midpoint and Hemingway Substations. This 131-mile single-circuit 500-kV transmission line would stay north of the Snake River until crossing through the SRBOP parallel to an existing 500-kV transmission line before ending at the Hemingway Substation. Thirteen acres of the expansion of the Midpoint Substation and 0.5 acre for a regeneration site are attributed to Segment 8. There are five Route Alternatives: 8A, which follows the WWE corridor but crosses the Snake River and I-84 twice (while the Proposed Route would stay north of this area); 8B and 8C, which represent the old routes originally proposed by the Proponents but that have now been changed to avoid the cities of Kuna and Mayfield, respectively; 8D, which represents a small revision involving a rebuild of the existing transmission line to move both away from the National Guard Maneuver Area; and 8E, which was proposed by the BLM in order to avoid crossing the Halverson Bar non-motorized portion of the Guffey Butte-Black Butte Archaeological District (see Appendix A, Figure A-10).

The potential mineral effects in Segment 8 would be low. The only mineral locally identified consisted of a cinder pit in Alternative 8B, with 2 affected acres in the construction disturbance area and less than 1 acre in the operations area. There would also be several mining claims of unknown minerals within 0.5 mile of Alternative 8B (outside of disturbance areas). Therefore, avoiding Alternative 8B would avoid potential conflicts with known minerals or mineral leases.

Segment 9

Segment 9, as proposed, would link the Cedar Hill and Hemingway Substations with a 161.7 mile single-circuit 500-kV transmission line which skirts the Jarbidge and Owyhee Military Operating Areas to the north, then follows the WWE corridor just north of the Saylor Creek Air Force Range, passing through Owyhee County before entering into the Hemingway Substation. Fifteen acres of the construction of the Cedar Hill Substation and 1 acre for two regeneration sites are attributed to Segment 9. There are eight Route Alternatives proposed, including 9A, which was the Proponents' Proposed Route until moving to avoid the Hollister area; 9B, which is being considered by the BLM because it follows the WWE corridor and parallels existing utility corridors; 9C, which was the Proponents' Proposed Route until moving to avoid the Castleford area; and 9D and 9E, proposed by the Owyhee County taskforce, that cross more public lands north and south of the Proposed Route, respectively, than the Proposed Route. Most of Alternative 9D would be within the SRBOP. Alternatives 9F, 9G, and 9H were proposed

to avoid crossing the nonmotorized area south of C.J. Strike Reservoir. Alternatives 9G and 9H provide an alternate route location south of Alternative 8E (see Appendix A, Figure A-11).

The Proposed Route for Segment 9 would contain approximately 10 acres of mineral effects in the construction area and approximately 2 acres in the operations area, consisting of unknown mineral claims and commodities. The Segment 9 alternatives would all have similar acreages to the Proposed Route except Alternative 9E, which would affect claims or leases on 135 acres (construction) and 13 acres (operations). Minerals would consist of several unknown mineral claims in the Owyhee Mountains and a geothermal lease located on the east end of the alternative. Therefore, avoiding Alternative 9E would greatly reduce the potential conflicts with minerals. The Proposed Route and the other alternatives would have much less impact and be similar to each other, so a distinction is not warranted based on mineral impacts.

Segment 10

Segment 10, as proposed, would link the Cedar Hill and Midpoint Substations with a 33.6-mile single-circuit 500-kV line, following a WWE corridor for most of its distance. Twenty-eight acres of the expansion of the Midpoint Substation and of the construction of the Cedar Hill Substation are attributed to Segment 10. There are no Route Alternatives proposed along this segment (see Appendix A, Figure A-12).

No mineral effects were identified in Segment 10.

3.12.2.4 Design Variation

A Design Variation is being considered that would consist of constructing two single-circuit lines in Segments 2 through 4 instead of a single double-circuit line (which is the design assessed above). The disturbance footprint of the two single-circuit towers is greater than that of the double-circuit tower, in part because the requested ROW would be wider, but also because helicopter-assisted construction could be implemented in these areas due to the lighter weight of the towers, which would require additional fly yards. The additional ROW space and the fly yards would cause additional temporary disturbance during construction. Across Segments 2, 3, and 4, the additional disturbance of the single-circuit tower alternative ranges from 25 to 30 percent greater than the comparable portions of the double-circuit tower disturbance under the proposed design. The two single circuits require more ground disturbance, but would be designed and constructed to the same standards as the Proposed Action.

Table 3.12-6 presents the disturbance acreage for the two single-circuit lines. Although the effects are greater, the relative advantages and disadvantages of the alternatives remain the same as described in Section 3.12.3.3 for the respective Proposed Routes and Route Alternatives. Notably, Alternatives 4B, 4C, 4D, and 4E contain more potential mineral effects than the Proposed Route for Segment 4, and Alternatives 4A and 4F contain less. Alternative 4F would have the lowest overall impact relative to the Design Variation.

Table 3.12-6 Acres of Active Claims, Commodities, or Mineral Leases within Two Single Circuit Design Variation (Construction)

Segment Number	Alternative (status)	Total Acreage[1/]	Oil and Gas Lease	Coal Lease	Trona	Geothermal	Saleable Minerals	Mineral Not Specified	Uranium and Other	Two or More Minerals	Total Mineral Acreage[2,3/]
2	Proposed – Total Length	1,096	462	12	–	–	2	–	446	271	500
	Proposed – Comparison Portion for Alternative 2A	520	94	–	–	–	–	–	–	–	94
	Alternative 2A	570	102	–	–	–	–	–	–	–	102
	Proposed – Comparison Portion for Alternative 2B	144	61	–	–	–	–	–	–	–	61
	Alternative 2B	114	38	–	–	–	–	–	–	–	38
	Proposed – Comparison Portion for Alternative 2C	489	52	12	–	–	–	–	–	–	64
	Alternative 2C	417	69	11	–	–	–	–	–	–	74
3	Proposed – Total Length	1,081	401	17	–	–	–	–	–	–	401
4	Proposed – Total Length	3,706	569	17	50	–	4	–	–	–	613
	Proposed – Comparison Portion for Alternatives 4A,B,C,D,E,F	1,601	348	–	16	–	<1	–	–	–	364
	Alternative 4A	1,634	305	–	17	–	2	–	–	–	322
	Alternative 4B	1,935	597	12	53	–	–	–	–	22	656
	Alternative 4C	1,931	508	12	53	–	–	–	–	22	567
	Alternative 4D	1,946	660	12	54	–	<1	–	–	22	720
	Alternative 4E	1,937	579	12	54	–	<1	–	–	22	639
	Alternative 4F	1,946	269	–	18	–	2	–	–	–	286

1/ Compares to total acreage shown on Table 3.12-3. Note that numbers in table are rounded to nearest acre; therefore, rows or columns may not sum exactly due to rounding.
2/ Compares to total mineral acreage shown on Table 3.12-3.
3/ Due to multiple claim owners or leases and overlapping mineral interests, the total area of all claims and leases can be much less than the sum of the individual categories. The total provides the most realistic estimate of the actual affected acreage.

3.12.2.5 Structure Variation

The proposed guyed Structure Variation would add four guy wires about 140 feet long from a point about 100 feet up in each tower to four guy anchors spaced in a square around the tower (Appendix B, Figure B-6). This would not change the amount of disturbance during construction or operations appreciably. The use of guyed structures for part of the single-circuit 500-kV segments would not change impacts on minerals.

3.12.2.6 Schedule Variation

The Schedule Variation uses the two single-circuit Design Variation described above but extends construction over a longer timeframe. Initially only one of the eventual two single-circuit lines would be constructed with the second to be constructed at a later date. The Schedule Variation proposes that the first single-circuit transmission line in Segments 2, 3, and 4 would be built as soon as a ROW grant is issued, but that the second line would not begin construction until late 2018. This would mean nearly 2 years between the end of construction for the first line and beginning of construction for the second line. Any staging areas and fly yards that had been used for the first stage would have been revegetated after construction was complete and would have to be cleared again. There would be two sets of construction disturbances adding movement, noise, and dust to the area of construction in two instances in any given area.

In the short term, the potential for mineral effects would be reduced when compared to the Proposed Action and Design Variation due to the fewer number of structures erected. However, in the future any short-term reduction in mineral effects would be lost with construction of the second line and the total impact would be greater as noted in Section 3.12.2.

3.12.3 Mitigation Measures

The following mitigation measures identified by the Agencies are required on federally managed lands. The Agencies recommend that the Proponents incorporate the measures into their EPMs and apply them Project-wide.

MN-1 A geotechnical investigation will be conducted by the Proponents in areas where abandoned underground mines are known to occur to determine the presence of methane and the likelihood of subsidence.

MN-2 An accounting of damages will be conducted by the Proponents to current operators to determine the potential loss of mineral resources. There may be mining claims under the 1872 Mining Law that would have precedence over the Project. Similarly, federal and state mineral lease agreements provide rights to lessees that could interfere with the Gateway West Project. The Proponents will resolve mineral claim and lease agreements prior to Project initiation, as with site access agreements on private property.