

4.12 Mineral Resources

This section describes the mineral resources in the area of the IC Project Alignment, as well as the potential impacts resulting from construction and operation of the IC Project and its Alternatives.

According to the United States Geological Survey (USGS), a mineral resource is defined as a concentration of naturally occurring solid, liquid, or gaseous materials in or on the earth's crust in such a form and quantity, and of such a grade or quality, that it has reasonable prospects for economic extraction, either currently or in the future. Mineral resources include oil, natural gas, and metallic and non-metallic deposits. Mineral resources data were obtained from the following resources:

- USGS
- California Department of Conservation (DOC)
- California Geological Survey (CGS)
- Kern County General Plan
- Inyo County General Plan
- San Bernardino County General Plan
- City of Barstow General Plan

The locations of mining operations were obtained by querying the California Department of Conservation, Division of Mine Reclamation's Mines Online mapping utility. Aerial photographs were also used to analyze mineral resources in the vicinity of the IC Project Alignment.

4.12.1 Environmental Setting

The sections below describe the mineral resources extant along the IC Project Alignment. These discussions are divided by geopolitical boundaries. The locations of active mines within two miles of the IC Project Alignment are presented in Figureset 4.12-1.

4.12.1.1 Mineral Resources in Inyo County

Inyo County is located within the Basin and Range Geomorphic Province, with this region historically producing substantial amounts of mineral resources such as base and precious metals (e.g., gold, silver and copper). The County includes extensive occurrences of known and potential mineral resources, along with associated past and current mineral production.

The occurrence of mineral resources was an important factor in much of the early settlement within the County, and mining operations remain a substantial, albeit declining, local industry. Currently, aggregate resources (e.g., sand, gravel, clay and stone) represent the predominant mining activity in the County, although development of other mineral resources such as base and precious metals, borates, volcanic materials (e.g., pumice, perlite and cinders) and geothermal resources are occurring in various locations. A number of studies on mineral resource occurrences and potential have been conducted for areas within the County, including efforts by the USGS, BLM, CGS, and South Coast Geological Society. (Inyo County 2001)

The IC Project Alignment does not cross, nor is proximate to, any areas designated as an MRZ. (California Department of Conservation 2018) No locally important mineral resource recovery sites are delineated in the Inyo County General Plan or associated specific plans or other land use plans. The IC Project Alignment crosses, and is located in close proximity to, active mining sites in Inyo County (Figureset 4.12-1). These mines produce decomposed granite, clay, sand and gravel, rock, and fill dirt. (California Department of Conservation 2018)

4.12.1.2 Mineral Resources in Kern County

Mineral resource and petroleum extraction are basic to Kern County’s economy. Borax, cement production, and construction aggregates constitute major economic mineral resources. (Kern County 2009) The State Geologist has classified more than 2,970 square miles of land in Kern County as Mineral Resource Zones (MRZs) of varying significance. (Koehler 1999) The project alignment does not cross, nor is proximate to, any areas designated as an MRZ. (Kern County 2018)

No locally-important mineral resource recovery sites are delineated in the Kern County General Plan or associated specific plans or other land use plans. The IC Project Alignment does not cross, and is not located in close proximity to, any active mining sites in Kern County (California Department of Conservation 2018).

4.12.1.3 Mineral Resources in San Bernardino County

The State Mineralogist in 1893 said that “No portion of California has more diversified mineral wealth than the County of San Bernardino... In its rugged mountains and desert [expanse], are found a wide range of geological formations from Paleozoic to Tertiary, and a great variety of rocks of igneous origin... The mines are scattered all over its thousands of square miles of territory, and have already added millions of dollars to the wealth of the state and the world.” (San Bernardino County 2018)

Mineral resources are an integral part of development and the economic well-being of the County. The conservation, extraction and processing of those mineral resources is essential to meeting the needs of society. In San Bernardino County minerals are a foremost natural resource, with the Desert Planning Area—in which the Project alignment is located—accounting for over 90 percent of all County mining activities. (San Bernardino County 2007)

Approximately 95 active mines are located in San Bernardino County; these mines produce a variety of products including aggregates, clays, gold, silver, limestone, saline compounds, borates, talc, gypsum, and iron, among others. There are several large calcium carbonate mining operations in San Bernardino County. The County is home to the largest cement producer in the state. It also has the largest rare earth mine in North America. Extensive aggregate mining is also a major component of the mining industry within the County. The IC Project Alignment is located proximate to active and former mines, crosses areas designated as mineral resource zones (MRZs) in reports published by the California Department of Conservation’s Division of Mines and Geology and the California Geological Survey, and crosses “High Potential Mineral Areas” delineated in Appendix D to the BLM DRECP LUPA. The County has not delineated any mineral resource recovery sites in its general plan, specific plan or other land use plan.

4.12.1.4 Mineral Resources in the City of Barstow

The project alignment is not located on, or adjacent to, any mineral extraction operation or site within the City of Barstow.

4.12.2 Regulatory Setting

Federal, state, and local regulations were reviewed for applicability to the IC Project.

4.12.2.1 Federal

4.12.2.1.1 Surface Mining Control and Reclamation Act of 1977

This Act (30 U.S.C. §§ 1201-1328) establishes a program for regulating surface coal mining and reclamation activities. It establishes mandatory uniform standards for these activities on state and federal

lands, including a requirement that adverse impacts on fish, wildlife, and related environmental values be minimized. The Act creates an Abandoned Mine Reclamation Fund for use in reclaiming and restoring land and water resources adversely affected by mining practices.

4.12.2.2 State

4.12.2.2.1 California Surface Mining and Reclamation Act

The protection of regionally significant mineral resource deposits is one of the main emphases of the Surface Mining and Reclamation Act (SMARA) (Public Resources Code § 2710 et seq.). The law specifically mandates a two-phased process, commonly referred to as classification and designation, for mineral resources. The California Geological Survey is responsible under SMARA for carrying out the classification phase of the process. The California Mining and Geology Board is responsible for the second phase, which allows the Board to identify areas within a production-consumption region that contain significant deposits of certain mineral resources that may be needed to meet the region’s future demand.

SMARA requires the State Geologist to classify lands into Mineral Resource Zones (MRZs) based on the known or inferred mineral resource potential of that land. The classification process is based solely on geology, without regard to land use or ownership. The primary goal of mineral land classification is to help ensure that the mineral resource potential of land is recognized and considered in the land use planning process. MRZ definitions are provided in Table 4.12-1, Mineral Resource Zone Definitions.

Table 4.12-1: Mineral Resource Zone Definitions

MRZ-1	Areas where available geologic information indicates there is little likelihood for the presence of mineral resources.
MRZ-2a	Areas that contain significant measured or indicated reserves.
MRZ-2b	Areas where geologic information indicates that significant inferred resources or demonstrated subeconomic resources are present.
MRZ-3a	Areas likely to contain undiscovered mineral deposits similar to known deposits in the same producing district or region (hypothetical resources).
MRZ-3b	Areas judged to be favorable geologic environments for mineral resource occurrence, but where mineral discoveries have not been made in the region (speculative resources).
MRZ-4	Areas where geologic information does not rule out either the presence or absence of mineral resources.
ARA-6	Area with aggregate resources rated as highly significant.

Source: California Department of Conservation, Division of Mines and Geology

4.12.2.3 Local

The California Public Utilities Commission (CPUC) has sole and exclusive state jurisdiction over the siting and design of the IC Project. Pursuant to CPUC General Order 131-D (GO 131-D), Section XIV.B, “Local jurisdictions acting pursuant to local authority are preempted from regulating electric power line projects, distribution lines, substations, or electric facilities constructed by public utilities subject to the CPUC’s jurisdiction. However, in locating such projects, the public utilities shall consult with local agencies regarding land use matters.” Consequently, public utilities are directed to consider local regulations and consult with local agencies, but the counties’ and cities’ regulations are not applicable as the counties and cities do not have jurisdiction over the IC Project. Accordingly, the following discussion of local land use regulations is provided for informational purposes only.

4.12.2.3.1 Inyo County General Plan, Conservation and Open Space Element

Section 6.3, Mineral & Energy Resources, includes the following goals, policies, and implementation measures:

GOAL MER-1: Protect the current and future extraction of mineral resources that are important to the County's economy while minimizing impacts of this use on the public and the environment.

Policy MER-1.5: Maintain Accessibility: Ensure that extractive resource areas are protected from incompatible development that could interfere with extractive operations, now or in the future.

Implementation Measure 7.0: Discourage incompatible development on lands identified as containing significant mineral resources. Support uses that will not preclude future mining activities.

4.12.2.3.2 Kern County General Plan: Land Use, Open Space, and Conservation Element

The policies, goals, and implementation measures in the Kern County General Plan for mineral resources are contained in Section 1.9, Resources, and provided below:

Goal 2. To protect areas of important mineral, petroleum, and agricultural resource potential for future use.

Policy 17. Lands classified as MRZ-2, as designated by the State of California, should be protected from encroachment of incompatible land uses.

Policy 25. Discourage incompatible land use adjacent to Map Code 8.4 (Mineral and Petroleum) areas.

Implementation Measure H. Use the California Geological Survey's latest maps to locate mineral deposits until the regional and statewide importance mineral deposits map has been completed, as required by the Surface Mining and Reclamation Act.

4.12.2.3.3 San Bernardino County General Plan

The Land Use Element of the County of San Bernardino 2007 General Plan contains the following policy that is relevant to the IC Project:

Policy LU 7.1: Ensure that land use developments within the state-delineated Mineral Resource Zones (MRZs) are in accordance with the adopted mineral resources management policies of the County.

The Conservation Element of the County of San Bernardino 2007 General Plan contains the following policy that is relevant to the IC Project:

Policy CO 7.2: Implement the state Mineral Resource Zone (MRZ) designations to establish a system that identifies mineral potential and economically viable reserves.

4.12.3 Significance Criteria

The significance criteria for assessing the impacts to mineral resources come from the California Environmental Quality Act (CEQA) Environmental Checklist. According to the CEQA Checklist, a project causes a potentially significant impact if it would:

- Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state
- Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan

4.12.4 Impact Analysis

4.12.4.1 Would the project result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?

4.12.4.1.1 Construction

No Impact. The IC Project Alignment crosses lands with known or inferred mineral resource that are of value to the region and the residents of the State; however, the IC Project would not result in the loss of availability of any of these known mineral resources. The IC Project involves the reconstruction and reconductoring of existing subtransmission facilities within or immediately proximate to the existing alignment. The existing infrastructure has been in place for more than 60 years; in that time and to the knowledge of SCE, the presence of the subtransmission infrastructure has not resulted in the loss of availability of any mineral resource. Because replacement subtransmission structures would be located proximate to existing subtransmission structures, mineral resources located within or proximate to the existing rights-of-way and easements that can be and are currently available to be safely extracted (i.e., that are available or that are actively mined) would continue to be available. Therefore, there would be no impact under this criterion.

4.12.4.1.2 Operations

No Impact. As presented in Chapter 3, SCE is currently performing operation and maintenance (O&M) activities, including inspections, along the subtransmission lines that would be rebuilt and reconductored under the IC Project. No material changes in O&M activities or the locations of these activities are anticipated with implementation of the IC Project, and therefore no impacts would be realized under this criterion during operations and maintenance.

4.12.4.2 Would the project result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?

4.12.4.2.1 Construction

No Impact. No mineral resource recovery sites are delineated in a General Plan, in a specific plan, or in any other land use plan prepared by Kern County, Inyo County, San Bernardino County, or the City of Barstow. Therefore, there would be no impacts under this criterion.

4.12.4.2.2 Operations

No Impact. No mineral resource recovery sites are delineated in a General Plan, in a specific plan, or in any other land use plan prepared by Kern County, Inyo County, San Bernardino County, or the City of Barstow. Therefore, there would be no impacts under this criterion.

4.12.5 Applicant Proposed Measures

Because no significant impacts to mineral resources would occur as a result of the IC Project, no avoidance and minimization measures are proposed.

4.12.6 Alternatives

Alternatives to the IC Project are addressed in Section 5.2, Description of Project Alternatives and Impact Analysis.

4.12.7 References

California Department of Conservation. 2018. Mines Online. Division of Mine Reclamation. Online resource available at <https://maps.conservation.ca.gov/mol/index.html>

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City of Barstow. 2015-2020 General Plan. Available at <http://www.barstowca.org/city-hall/city-departments/community-development-department/planning/draft-general-plan-and-master-environmental-impact-report>

Kern County. 2009. General Plan. Available at <https://kernplanning.com/planning/planning-documents/general-plans-elements/>

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San Bernardino County. 2018. Surface Mining and Reclamation. [website] Available at <http://cms.sbcounty.gov/lus/Mining/MiningHome.aspx>

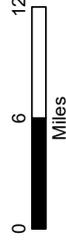
San Bernardino County. 2007. 2007 General Plan. Available at <http://www.sbcounty.gov/Uploads/lus/GeneralPlan/FINALGP.pdf>

San Bernardino County. 2007. 2006 General Plan Program: Final Environmental Impact Report and Appendices. Available at <http://www.sbcounty.gov/Uploads/lus/GeneralPlan/FinalEIR2007.pdf>



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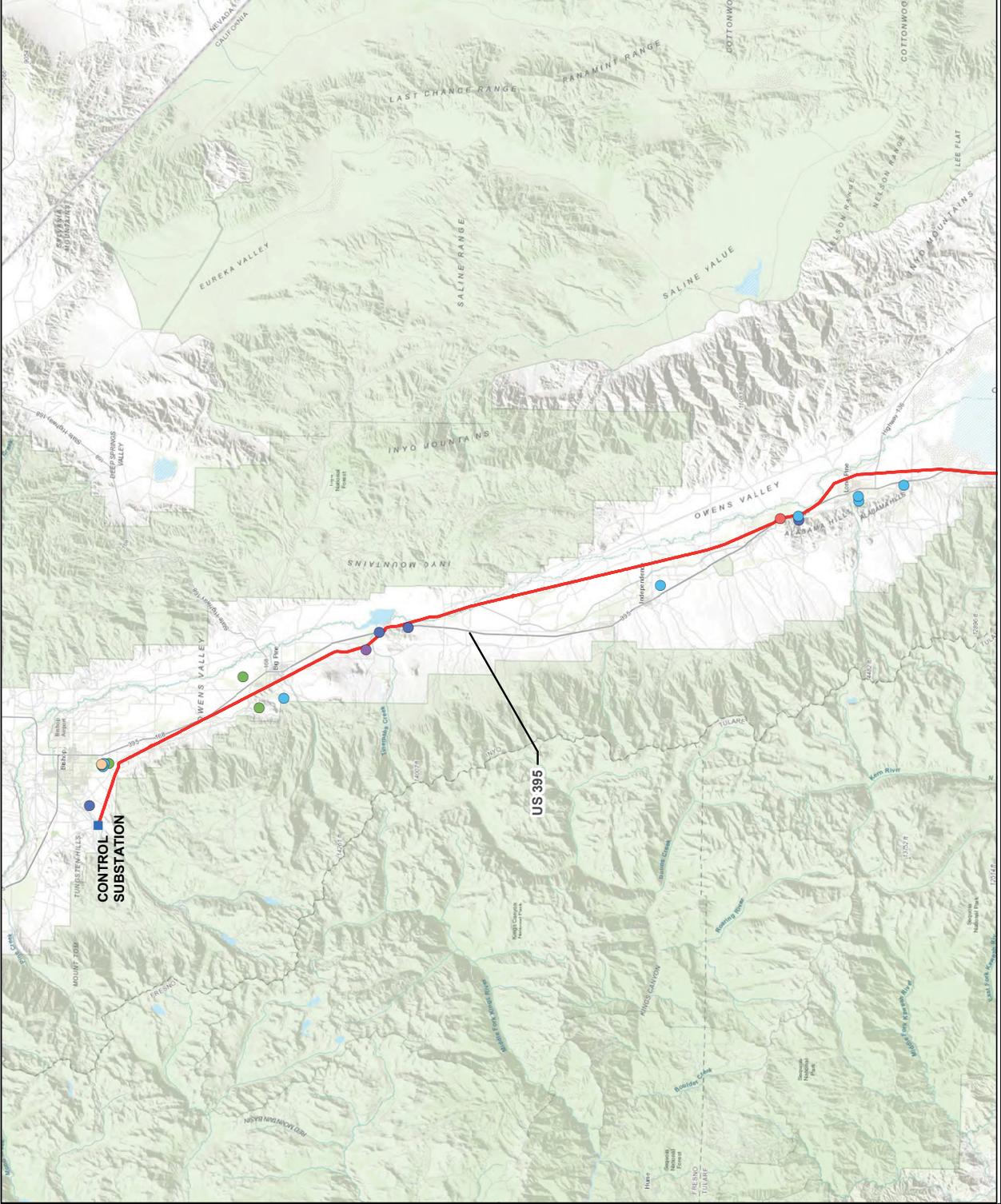
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- SEGMENT 1
- MINES: PRIMARY PRODUCT**
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- CLAY
- DECOMPOSED GRANITE
- FILL DIRT
- SAND AND GRAVEL
- OTHER



IMAGERY SOURCE: ESRI ONLINE NATIONAL GEOGRAPHIC AND WORLD IMAGERY 2015

IVANPAH-CONTROL PROJECT

**MINES IN VICINITY OF IC
PROJECT ALIGNMENT**





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- SUBSTATION
- SEGMENT 1
- SEGMENT 2

MINES: PRIMARY PRODUCT

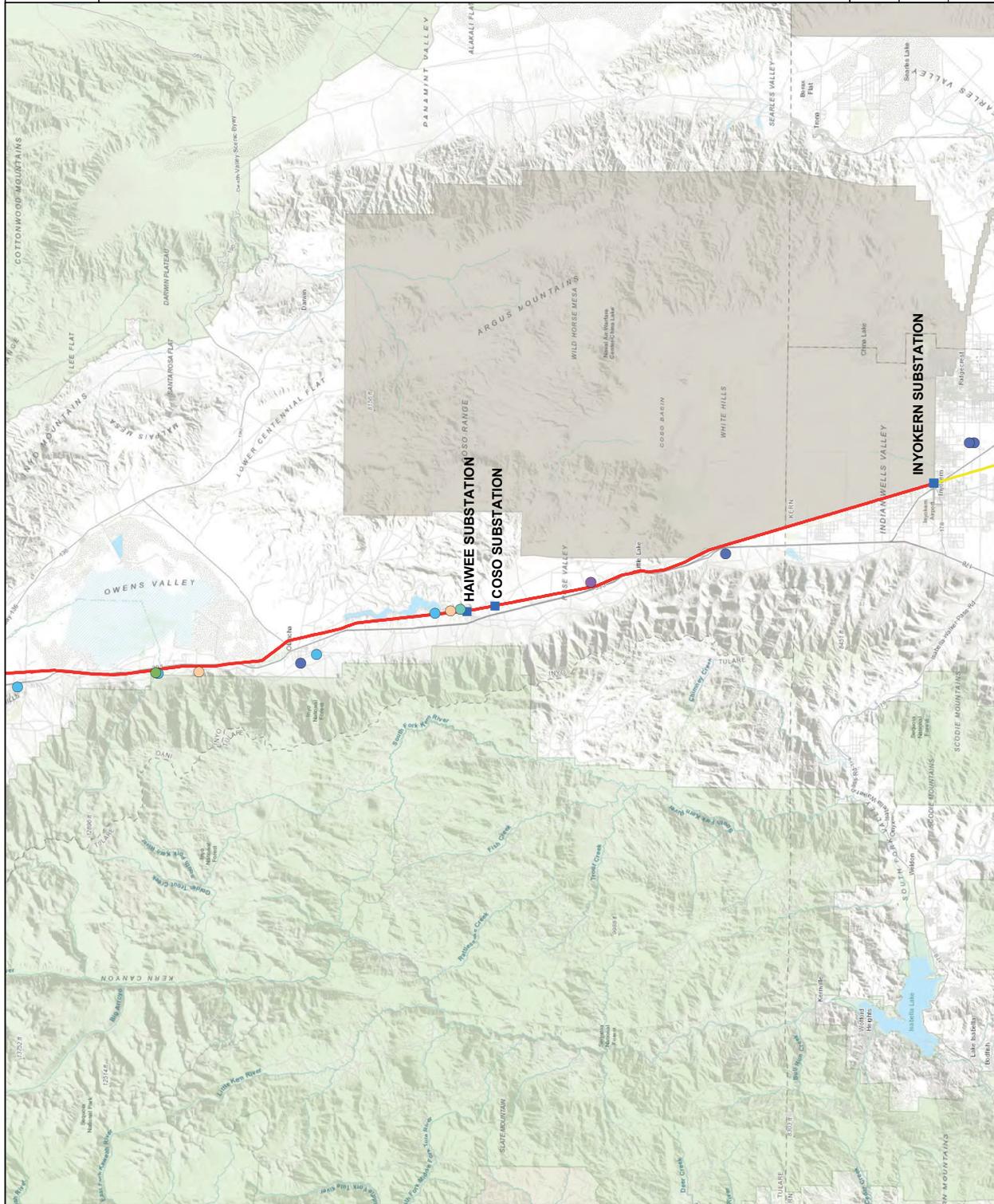
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- ROCK
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- OTHER

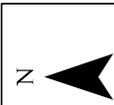


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IVANPAH-CONTROL PROJECT

MINES IN VICINITY OF IC PROJECT ALIGNMENT



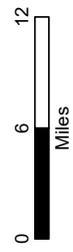
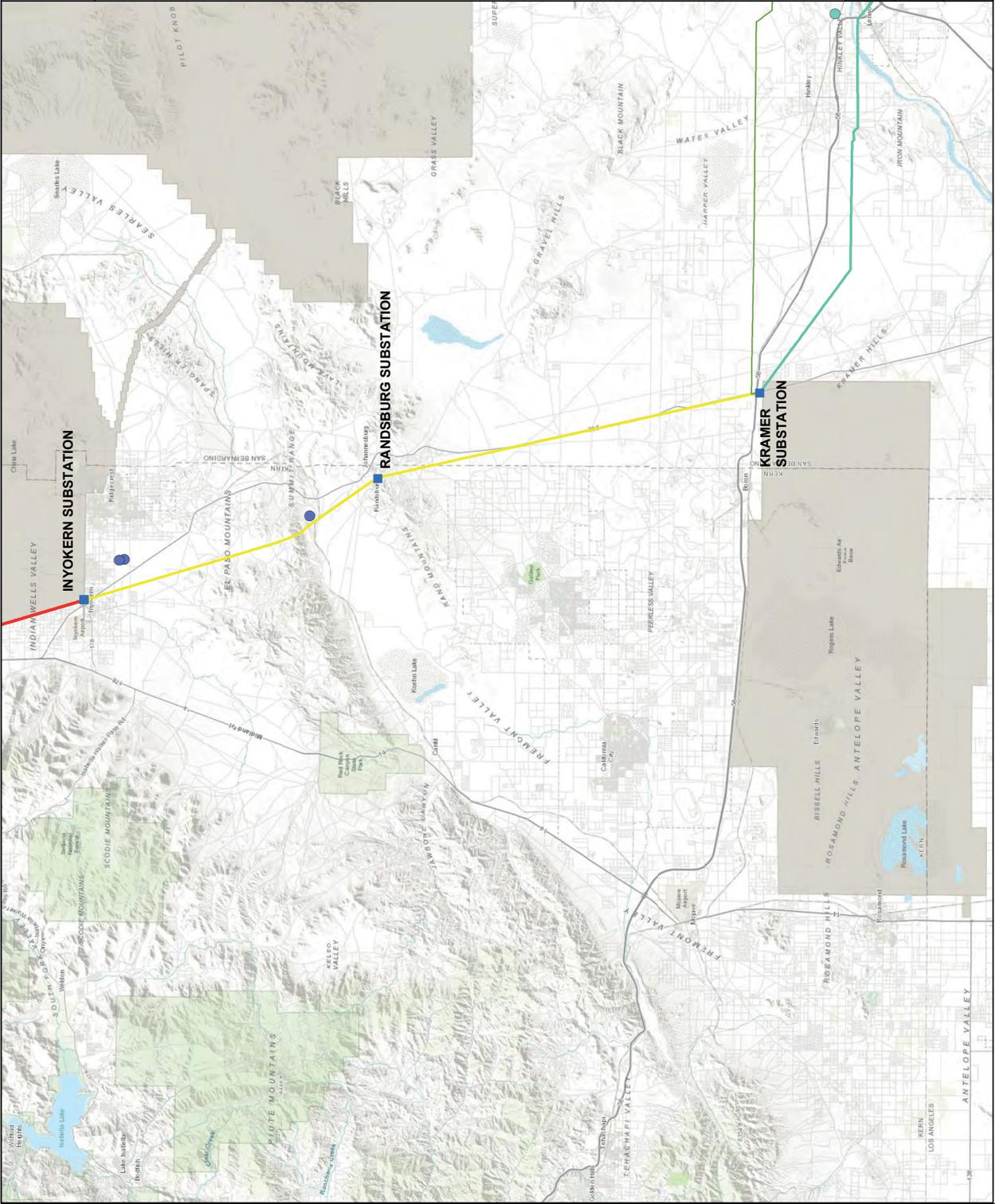


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- SUBSTATION
- SEGMENT 1
- SEGMENT 2
- SEGMENT 3S

MINES: PRIMARY PRODUCT

- ROCK
- SAND AND GRAVEL



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IVANPAH-CONTROL PROJECT

MINES IN VICINITY OF IC PROJECT ALIGNMENT

Coordinate System: NAD 1983 UTM Zone 11N
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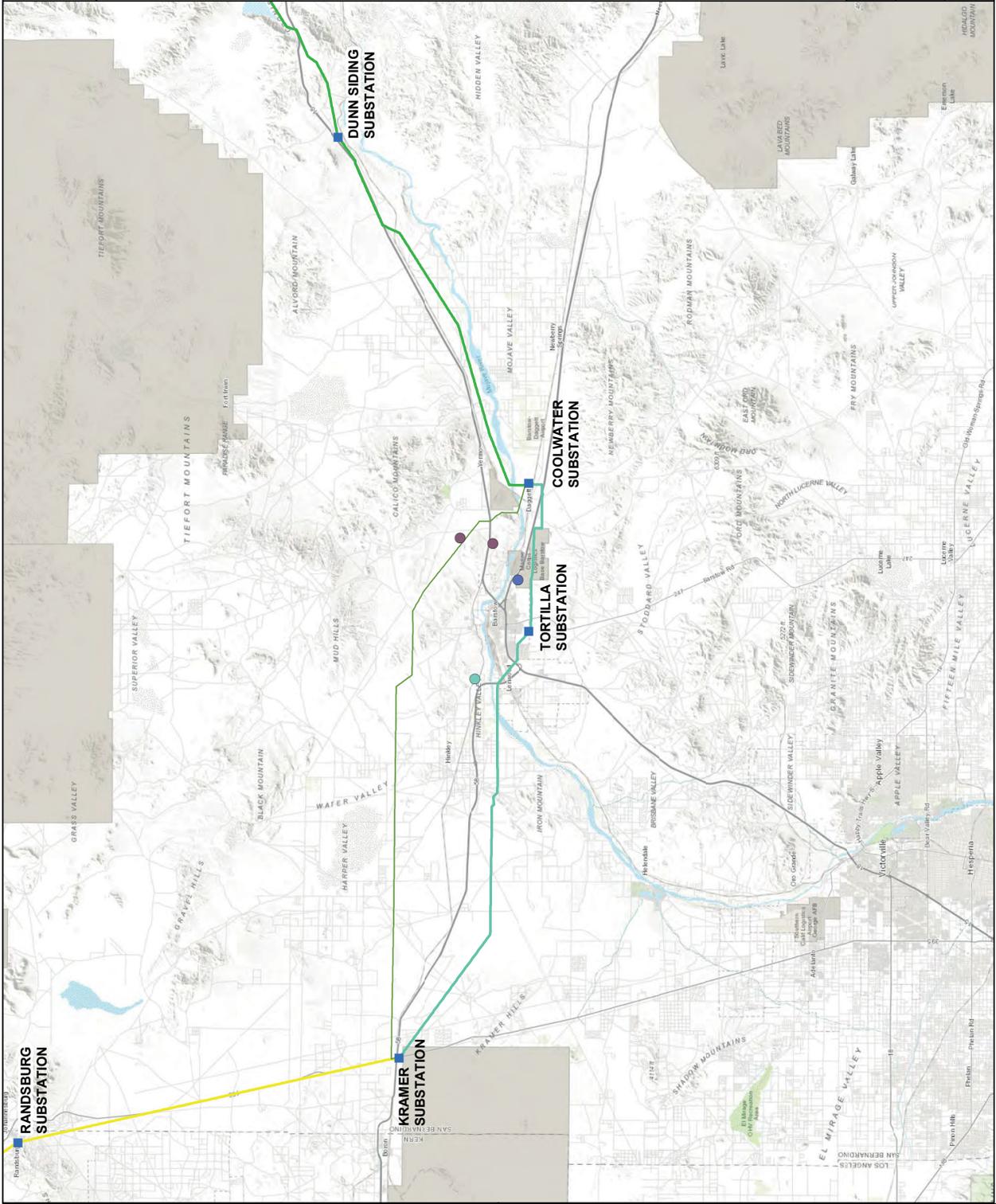
- SUBSTATION
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 - SEGMENT 3S
 - SEGMENT 4
- MINES: PRIMARY PRODUCT**
- DECORATIVE ROCK
 - ROCK
 - SAND AND GRAVEL



IMAGERY SOURCE: ESRI ONLINE NATIONAL GEOGRAPHIC AND WORLD IMAGERY 2015

IVANPAH-CONTROL PROJECT

MINES IN VICINITY OF IC PROJECT ALIGNMENT



Coordinate System: NAD 1983 UTM Zone 11N
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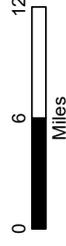
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MINES: PRIMARY PRODUCT

● SAND AND GRAVEL

Page 5 of 5



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IVANPAH-CONTROL PROJECT

MINES IN VICINITY OF IC
PROJECT ALIGNMENT

