ENVIRONMENTAL ASSESSMENT COVER SHEET

Project Title: Hay Ranch Water Extraction and Delivery System

Project Type: Water Extraction and Delivery System

Project Proponent: Coso Operating Company LLC
2 Gill Station Road, Coso Junction
Little Lake, California 93542
Contact: Chris Ellis, Site Manager

Project Location: The Project (Proposed Action) would occur within the U.S. Geological Survey (USGS) 7.5-minute Series Coso Junction and Cactus Peak Topographic quadrangles, Section 25, 26, 35, and 36 of Township 21 South and Range 37 East; Section 31, 32, 33, and 34 of Township 21 South and Range 38 East; and Section 1, 2, and 3 of Township 22 South and Range 38 East. The Project site lies immediately east of U.S. Highway 395. The entire Project includes approximately 9 linear miles of pipeline and the associated electric power substation, pumping equipment, and holding tanks. Less than 1.00 mile (5.63 acres) of the Project is on private land largely in Rose Valley and 5.32 miles (32.24 acres) of the Project lies within Bureau of Land Management (BLM)-managed lands then extends 2.67 miles (16.18 acres) onto the China Lake Naval Air Weapons Station (CLNAWS). The entire Project, including pipeline, tanks, and substation will be located within approximately 55.00 acres of land.

EA Number: CA-650-2005-100

Case File No.: CACA-046289

Date: Revised December 2008

Summary: Environmental review of each phase of the development for the Coso geothermal projects has been extensive. The mitigation measures required under existing documents were implemented by the Coso Operator facility-wide. The incorporation of the Hay Ranch Water Extraction and Delivery System into the existing Coso geothermal projects will allow greater latitude in development of the geothermal resource while resulting in no additional significant impacts.

Prepared for: Bureau of Land Management
Ridgecrest Field Office
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TABLE OF CONTENTS

Section **Page No.**

Acronyms and Abbreviations iv

1. Introduction 1

1.1 Purpose and Need for the Proposed Action 1
1.2 Conformance with Land Use Plans 2
1.2.1 Federal 2
1.2.2 Local Land Use Planning Considerations 3
1.3 Federal Statutes and Regulations 4
1.3.1 Federal Land Policy and Management Act 4
1.3.2 Water Quality Protection 5
1.3.3 Air Quality Protection 5
1.3.4 Protection of Wildlife 5
1.3.5 The California Desert Protection Act 6
1.3.6 Plant Protection 8
1.3.7 Protection of Cultural Resources 9
1.4 Related Activities and Prior Environmental Review 10

2. Proposed Action and Alternatives 12

2.1 Proposed Action 13
2.2 Alternatives to the Proposed Action 16
2.2.1 No Action Alternative 17
2.2.2 Other Alternatives Considered but Eliminated from Detailed Analysis 17

3. Affected Resources 21

3.1 Air Quality 21
3.2 Soils 25
3.3 Vegetation 25
3.3.1 Creosote–White Bursage Scrub 27
3.3.2 Allscale Scrub 27
3.3.3 Agricultural Land 27
3.3.4 Invasive Species 27
3.4 Hydrology 28
3.4.1 Surface Water 28
3.4.2 Groundwater 28
3.5 Wildlife Habitat 30
3.5.1 Special-Status Wildlife Species 30
3.5.2 Other Special-Status Species 32
3.6 Cultural Resources 34
3.6.1 Native American Values 36
3.7 Visual Resources 36
3.8 Outdoor Recreation and Open Space 37
3.9 Social and Economic Value 38

4. Environmental Consequences of the Proposed Action 40
4.1 Air Quality 43
4.1.1 Impacts 43
4.1.2 Cumulative Impacts 47
4.1.3 Mitigation 47
4.2 Soils 48
4.2.1 Impacts 48
4.2.2 Cumulative Impacts 48
4.2.3 Mitigation 48
4.3 Vegetation 49
4.3.1 Impacts 49
4.3.2 Cumulative Impacts 49
4.3.3 Mitigation 49
4.4 Surface Water 50
4.4.1 Impacts 50
4.4.2 Cumulative Impacts 50
4.4.3 Mitigation 50
4.5 Groundwater 50
4.5.1 Impacts 51
4.5.2 Cumulative Impacts 52
4.5.3 Mitigation 52
4.6 Wildlife 53
4.6.1 Impacts 53
4.6.2 Cumulative Impacts 54
4.6.3 Mitigation 54
4.7 Cultural Resources 55
4.7.1 Impacts 55
4.7.2 Cumulative Impacts 55
4.7.3 Mitigation 55
4.8 Native American Values 55
4.8.1 Impacts 55
4.8.2 Cumulative Impacts 56
4.8.3 Mitigation 56
4.9 Visual Resources 57
4.9.1 Impacts 57
4.9.2 Cumulative Impacts 58
4.9.3 Mitigation 58
4.10 Outdoor Recreation and Open Space 58
4.10.1 Impacts 58
4.10.2 Cumulative Impacts 58
4.10.3 Mitigation 58
4.11 Social and Economic Values 59
4.11.1 Impacts 59
4.11.2 Cumulative Impacts 59
4.11.3 Mitigation 59

5. Persons and Agencies Consulted 61
5.1 Organizations and Persons Consulted.....61
5.2 Preparers and Contributors to the Environmental Assessment.....62
References Cited..... 64
Personal Communication 67

LIST OF FIGURES

Figure 1 Pipeline and Related Infrastructure..... 14
Figure 2 Regional Vicinity..... 18
Figure 3 Local Vicinity 19
Figure 4 Project Site..... 20
Figure 5 Groundwater Contours 29

LIST OF TABLES

Table 1.4-1 Major NEPA and CEQA Documents within Coso KGRA 10
Table 3.1-1 National and State Ambient Air Quality Standards 22
Table 3.1-2 Air Quality Data at Project Area 24
Table 3.3-1 Plant Species Observed on the Project Site..... 26
Table 3.6-1 Summary of Sites Identified within the Project APE..... 35
Table 4.1-1 Estimated Maximum Daily Construction Emissions..... 44
Table 4.1-2 Ambient Air Quality Modeling Results 47

APPENDICES

A. BLM/NAWS Memorandum of Understanding (1979)
B. BLM to USFWS Sec. 7 Letter
C. 1988 Mohave Ground Squirrel Stipulation and Mitigation Plan
D. Programmatic Agreement (2008)
E. Alternatives Analysis, Section 5 of Draft EIR
F. Air Quality Tables
G. Revegetation Plan
H. Hydrology and Water Quality, Section 3.2 and Appendix C of Draft EIR
I. UltraSystems Biological Survey

ACRONYMS AND ABBREVIATIONS

AAM	Annual arithmetic mean
ACHP	Advisory Council on Historic Preservation
amsl	above mean sea level
APCD	Air Pollution Control District
APE	Area of Potential Effects
AQMD	Air Quality Management District
AQMP	Air Quality Management Plan
BLM	Bureau of Land Management
CAA	Clean Air Act
CAAQS	California Ambient Air Quality Standards
CALTRANS	California Department of Transportation
CARB	California Air Resources Board
CDCA Plan	California Desert Conservation Area Plan
CDFG	California Department of Fish and Game
CDPA	California Desert Protection Act
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CLNAWS	China Lake Naval Air Weapons Station
CNPS	California Native Plant Society
CO	carbon monoxide
COC	Coso Operating Company
CWA	Clean Water Act
DWMA	Desert Wildlife Management Area
EA	Environmental Assessment
EIR	environmental impact report
EIS	environmental impact statement
EPA	environmental protection agency
ESA	Endangered Species Act
FLPMA	Federal Land Policy and Management Act
gpm	gallons per minute
GBUAPCD	Great Basin Unified Air Pollution Control District
HMMP	Hydrologic Monitoring and Mitigation Plan
KGRA	Known Geothermal Resource Area
kw	kilowatt
LADWP	Los Angeles Department of Water and Power
LLR	Little Lake Ranch
MEER	mechanical-electrical equipment room
MOU	Memorandum of Understanding
mph	miles per hour
MW	megawatt
NAAQS	National Ambient Air Quality Standards
NAWS	Naval Air Weapons Station
NEPA	National Environmental Policy Act

NHPA	National Historic Preservation Act
NO	nitric oxide
NO_2	nitrogen dioxide
NRHP	National Register of Historic Places
NWC	Naval Weapons Center
O_3	ozone
Pb	lead
PM_{10}	Respirable particulate matter (up to 10 microns in diameter)
$PM_{2.5}$	Fine particulate matter (2.5 microns or less in diameter)
ppm	Parts per million
ROG	Reactive organic gas
SCE	Southern California Edison
SHPO	State Historic Preservation Officer
SO_2	Sulfur dioxide
SRRA	safety roadside rest area
TDS	total dissolved solids
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
VRM	Visual Resource Management

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1. INTRODUCTION

The National Environmental Policy Act (NEPA) requires that the Bureau of Land Management (BLM) consider and document environmental impacts prior to making certain decisions. A critical portion of this Project lies within Navy-withdrawn lands that are part of the China Lake Naval Weapons Station (CLNAWS); therefore, the Navy also has an independent review role and discretionary approval authority under the 1979 BLM/NAWS Memorandum of Understanding (MOU) and the 1980 MOU amendment (Appendix A).

The Coso Operating Company LLC (COC or Project Proponent) has submitted a plan of operations for the Hay Ranch Water Extraction and Delivery System Project, which includes the proposed construction of a groundwater extraction and pipeline delivery system from the Coso Hay Ranch to the water distribution station and injection system located at the Coso Geothermal Field (the Project or Proposed Action). BLM and the Navy must each review and decide whether or not to grant approval of this Project, and have cooperated in the preparation of this Environmental Assessment (EA) to provide sufficient evidence and analysis for each independently to determine whether to prepare an environmental impact statement (EIS) or a finding of no significant impact with respect to the Project under NEPA. This document analyzes the environmental impacts and mitigation of impacts associated with the Proposed Action. It also determines whether significant impacts would result if the Proposed Action or alternatives were implemented.

1.1 Purpose and Need for the Proposed Action

The need for the Proposed Action is for the BLM to respond to the right-of-way request for the construction of an approximately 9-mile pipeline in a 50-foot-wide easement. The purpose is to provide access to allow for this Project.

The pipeline is intended to convey water from the Coso Hay Ranch to the existing Coso Geothermal Project on land administered as part of the CLNAWS. The Proposed Action is needed to supply supplemental injection water to replace geothermal fluid that is evaporating from the geothermal project's cooling tower during the summer months. The loss of the geothermal fluid has resulted in the decline in the reservoir, creating a reduction of megawatt production from the geothermal power plants. The water transported by the proposed pipeline will replace the evaporated geothermal fluid, resulting in minimization of the decline of the reservoir. Geothermal resources are an alternative to fossil fuels for the generation of electrical power.

1.2 Conformance with Land Use Plans

1.2.1 Federal

California Desert Conservation Area Plan

This Proposed Action is subject to the California Desert Conservation Area Plan (CDCA Plan), approved in 1980 and last amended in 2006 by the West Mojave Plan, which applies to the West Mojave Desert. The desert encompasses 9.3 million acres in Kern, Los Angeles, Inyo and San Bernardino counties. The BLM administers 3.3 million acres of the West Mojave Plan area. The West Mojave Plan requires that any project within the plan area adhere to any of its applicable environmental guidelines. The proposed Project area is not within a Desert Wildlife Management Area (DWMA).

The CDCA Plan designates 16 major Energy Production and Utility Corridors (CDCA Plan 1993) as a guide to consolidate compatible rights-of-way, avoid sensitive resources wherever possible, complete the delivery-systems network, consider ongoing projects for which decisions have been made, and to consider corridor networks that take into account power needs and alternative fuel resources. The scope of the CDCA Plan allows the designation of corridors that address the following types of utility facilities: (1) New electrical transmission towers and cables of 161 kV or above; (2) All pipelines with diameters greater than 12 inches, coaxial cables for interstate communications; and (3) Major aqueducts or canals for inter-basin transfers. The plan calls for these corridors to be designed to provide a 2-mile standard for separation of existing facilities and to accommodate flexibility in the selection of alternative routes for a right-of-way.

Under the BLM's Multiple-Use Class M (Moderate Use) designation, "New distribution facilities may be allowed and shall be placed within existing rights-of-way where they are reasonably available." The Proposed Action is covered by the Multiple-Use Class M designation under the 1980 CDCA Plan, as amended. Impacts associated with the Proposed Action on the 32 acres (5.32 miles) of BLM-managed lands would be confined to an area classified for Multiple-Use Class M.

In 1984, the CDCA Plan was amended to establish a 1-mile-wide, 5-mile-long corridor to connect the Coso Known Geothermal Resource Area (KGRA) with Utility Corridor A, which runs north and south along the existing power lines on the east side and adjacent to U.S. Highway 395. A 115 kV transmission line and a buried telephone cable line right-of-way (CA-13510 and CA-18885) previously authorized to California Energy Company, and subsequently assigned to Coso Power Developers, Coso Finance Partners, and Coso Energy Developers, basically follow the same route as the Proposed Action.

The majority of the proposed 20-inch pipeline to be located on public land is within the amended corridor. The remaining portion, located in section 36, T. 21 S., R. 37 E., deviates north of the amended corridor but is within the 2-mile width of Corridor A. Therefore, the proposed water distribution pipeline is consistent with the CDCA Plan.

1.2.2 Local Land Use Planning Considerations

5.63 acres of the Proposed Action area is on private land included within the Coso Hay Ranch property owned by the Project Proponent. This private land is designated as "unrestricted" in the 2001 Inyo County General Plan Update approved by the Inyo County Board of Supervisors on December 11, 2001 (Land Use Diagrams 1 and 22 of the general plan update). This general plan update includes provisions "to ensure the protection of the County's water resources from over utilization, export, and degradation" as part of the Conservation/Open Space Element. Policy WR-3.2 addresses the management of groundwater withdrawals, described as follows:

Policy WR-3.2 Sustainable Groundwater Withdrawal

Inyo County shall manage groundwater resources within the county through ordinances, project approvals, and agreements to ensure an adequate, safe, and economically viable groundwater supply for existing and future development within the county, shall protect existing groundwater users, maintain and enhance the natural environment, protect the overall economy of the county, and shall protect groundwater and surface water quality and quantity (Conservation & OS Element - B. - Modified Policy 4).

The groundwater source for water associated with the Project is subject to regulation under the Inyo County Groundwater Ordinance. The Project Proponent has applied for the issuance of a conditional use permit pursuant to that ordinance, and as a condition of its issuance, the Inyo County Planning Commission, based on recommendations from the Inyo County Water Commission, shall "approve and incorporate, as appropriate, a monitoring, groundwater management and/or reporting program into each conditional use permit of such scope and extent as the commission finds to be necessary to ensure that the proposed water transfer will not unreasonably affect the overall economy or the environment of the county" (Inyo County Groundwater Ordinance Section 18.77.035).

The Inyo County Planning Commission is evaluating the Project under the California Environmental Quality Act (CEQA) in connection with its action on the Project Proponent's application for a conditional use permit for the Project under the Inyo County Groundwater Ordinance. This regulatory process will ensure that the Project is conducted in a manner consistent with the Inyo County General Plan.

1.3 Federal Statutes and Regulations

1.3.1 Federal Land Policy and Management Act

In 1976, Congress passed the Federal Land Policy and Management Act (FLPMA), Public Law 94-57, 43 U.S.C. §§ 1701–1785, to direct the management of the public lands of the United States. In Section 601 of FLPMA, Congress required the preparation of the CDCA Plan. It is the purpose of this plan to establish guidance for the management of the public lands of the California desert by the BLM in clear accordance with the intent of Congress and the people of the U.S., as expressed in the law.

Section 601 of FLPMA requires that BLM develop a plan to "provide for the immediate and future protection and administration of the public lands in the California desert within the framework of a program of multiple use and sustained yield, and the maintenance of environmental quality." Section 103 of FLPMA defines the terms "multiple use" and "sustained yield" as follows.

The term "multiple use" means the management of the public lands and their various resource values so that they are utilized in the combination that will best meet the present and future needs of the American people; making the most judicious use of the land for some or all of these resources or related services over areas large enough to produce sufficient latitude for periodic adjustments in use to conform to changing needs and conditions; the use of some land for less than all of the resources; a combination of balanced and diverse resource use that takes into account the long-term needs of future generations for renewable and nonrenewable resources, including but not limited to recreation, range, timber, minerals, watershed, wildlife and fish, and natural scenic, scientific, and historical values; and harmonious and coordinated management of the various resources without permanent impairment of the productivity of the land and the quality of the environment with consideration being given to the relative values of the resources and not necessarily to the combination of uses that will give the greatest economic return or the greatest unit output.

The term "sustained yield" means the achievement and maintenance in perpetuity of a high-level annual or regular periodic output of the various renewable resources of the public lands consistent with multiple use.

Remarkable resources exist within the Project area, including important mineral and energy resources. The CDCA Plan mapped areas that may have potential for energy resources, including geothermal. The Proposed Action is located within the Coso KGRA.

1.3.2 Water Quality Protection

The federal Water Pollution Prevention and Control Act, 33 U.S.C. §§ 1251–1387, delegates to states the authority to regulate certain activities that may affect waters of the United States. California implements its delegated authority under the Clean Water Act (CWA) through the State Water Resources Control Board and the Regional Water Quality Control Boards. The Lahontan Regional Water Quality Control Board administers the Project area.

1.3.3 Air Quality Protection

The federal Clean Air Act (CAA), 42 U.S.C. §§ 7401–7671q, delegates to states the authority to regulate certain activities that may affect air quality. California implements its delegated authority under the CAA through 35 air districts, including 21 Air Pollution Control Districts (APCDs) and 14 Air Quality Management Districts (AQMDs). The Project area is located in Inyo County within the Great Basin Valleys Air Basin, managed by the Great Basin Unified Air Pollution Control District (GBUAPCD).

1.3.4 Protection of Wildlife

There are several categories of wildlife protection at both federal and state levels, depending on the magnitude of threat to continued existence and the existing knowledge of population levels. Special-status species include species that are listed as threatened or endangered either by the U.S. Fish and Wildlife Service (USFWS) or by the California Department of Fish and Game (CDFG). Special-status species are native species that have been accorded special legal or management protection because of concern for their continued existence.

The USFWS administers the Federal Endangered Species Act (Federal ESA), 16 U.S.C. §§ 1531–1599. The Federal ESA provides a process for listing species as either threatened or endangered and methods of protecting listed species. The Federal ESA defines “endangered” as any plant or animal species that is in danger of extinction throughout all or through a significant portion of its range. A “threatened” species is a species that is likely to become endangered in the foreseeable future. A “proposed” species is one that has been officially proposed by USFWS for addition to the federal threatened and endangered species list.

Section 9 of the Federal ESA prohibits “take” of threatened or endangered species. The term “take” means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in such conduct. Under the regulations of the Federal ESA, the USFWS may authorize “take” when it is incidental to, but not the purpose of, an otherwise lawful act.

Pursuant to Section 7 of the Federal ESA, BLM has initiated consultation with USFWS regarding the potential effects of the Project on the desert tortoise and its habitat (Appendix B, BLM letter to USFWS). CDFG administers the California ESA, Cal. Fish and Game Code §§

2050–2863. The State of California considers an endangered species one whose prospects of survival and reproduction are in immediate jeopardy; a threatened species is one present in such small numbers throughout its range that it is likely to become an endangered species in the near future in the absence of special protection or management. A rare species is defined as one present in such small numbers throughout its range that it may become endangered if its present environment worsens. The term rare species applies to California native plants. State-listed threatened and endangered species are fully protected against take, as previously defined. Species of Special Concern is an informal designation used by CDFG for some declining wildlife species that are not state candidates. This designation does not provide legal protection, but signifies that these species are recognized as special status by CDFG.

In support of the approval by the California Energy Commission (CEC) of the Small Power Plant Exemption for the Coso Navy 2 Geothermal Project, in 1988, BLM, CLNAWS, and CDFG entered into a Stipulation for Mitigation of Impacts to the Mohave Ground Squirrel at the Coso KGRA, which includes an Approved Mohave Ground Squirrel Mitigation Plan (Appendix C). The Mitigation Plan required the establishment of a 43,448.5-acre Coso Grazing Exclosure Mitigation Program, which includes Mohave ground squirrel trapping within the exclosure and evaluations every 5 years for the life of the Project. CDFG recognizes that the 1988 Stipulation is "grandfathered in" under the provisions of Cal. Fish and Game Code Section 2081, and, therefore, that no additional incidental taking authorization or habitat compensation will be required with respect to the potential impacts on the Mohave ground squirrel resulting from the Hay Ranch Project on the federal lands covered by the 1988 Stipulation and Mitigation Plan. Coso has submitted an application for a 2081 Incidental Take Permit with respect to the Mohave ground squirrel in relation to the Project activities to be conducted on private land.

1.3.5 The California Desert Protection Act

The California Desert Protection Act (CDPA), Public Law 103–433, protects 6.37 million acres managed by the BLM.

Sections of the CDPA that are pertinent to the Proposed Action include the following:

<u>Section 803. Withdrawals</u>

(a) CHINA LAKE

(1) Subject to valid existing rights and except as otherwise provided in this title, the federal lands referred to in paragraph (2), and all other areas within the boundary of such lands as depicted on the map specified in such paragraph which may become subject to the operation of the public land laws, are hereby withdrawn from all forms of appropriation under the public land laws (including the mining laws and the mineral leasing laws). Such lands are reserved for use by the Secretary of the Navy for:

(A) Use as a research, development, test, and evaluation laboratory;

(B) Use as a range for air warfare weapons and weapon systems;

(C) Use as a high hazard training area for aerial gunnery, rocketry, electronic warfare and countermeasures, tactical maneuvering, and air support;

(D) Geothermal leasing and development and related power production activities; and

(E) Subject to the requirements of Section 804(f) of this title, other defense-related purposes consistent with the purposes specified in this paragraph.

(2) The lands referred to in paragraph (1) are the federal lands located within the boundaries of the China Lake Naval Air Weapons Station (CLNAWS); comprising approximately 1,100,000 acres in Inyo, Kern, and San Bernardino counties, California, as generally depicted on a map entitled, China Lake Naval Air Weapons Station Withdrawal—Proposed, dated January 1985.

Section 805. Management of Withdrawn Lands

(g) MANAGEMENT OF CHINA LAKE

(1) The Secretary of the Interior may assign the management responsibility for the lands withdrawn under Section 802(a) of this title to the Secretary of the Navy who shall manage such lands, and issue leases, easements, rights-of-way, and other authorizations, in accordance with this title and cooperative management arrangements between the Secretary and the Secretary of the Navy *provided* that nothing in this subsection shall affect geothermal leases issued by the Secretary of the Interior prior to the date of enactment of this title, or the responsibility of the Secretary to administer and manage such leases, consistent with the provisions of this section. In the case that the Secretary assigns such management responsibility to the Secretary of the Navy before the development of the management plan under subsection (c), the Secretary of the Navy (after consultation with the Secretary) shall develop such management plan.

(2) The Secretary shall be responsible for the issuance of any lease, easement, right-of-way, and other authorization with respect to any activity, which involves both the lands withdrawn under Section 802(a) of this title and any other lands. Any such authorization shall be issued only with the consent of the Secretary of the Navy and, to the extent that such activity involves lands withdrawn under Section 802(a), shall be subject to such conditions as the Secretary of the Navy may prescribe.

(3) The Secretary of the Navy shall prepare and submit to the Secretary an annual report on the status of the natural and cultural resources and values of the lands withdrawn under Section 802(a). The Secretary shall transmit such report to the Committee on Energy and Natural Resources of the United States Senate and the Committee on Natural Resources of the United States House of Representatives.

(4) The Secretary of the Navy shall be responsible for the management of wild horses and burros located on the lands withdrawn under Section 802(a) of this title and may utilize helicopters and motorized vehicles for such purposes. Such management shall be in accordance with laws applicable to such management on public lands and with an appropriate memorandum of understanding between the Secretary and the Secretary of the Navy.

(5) Neither this title nor any other provision of law shall be construed to prohibit the Secretary from issuing and administering any lease for the development and utilization of geothermal steam and associated geothermal resources on the lands withdrawn under Section 802(a) of this title pursuant to the Geothermal Steam Act of 1970 (30 U.S.C. 1001 et seq.) and other applicable law, but no such lease shall be issued without the concurrence of the Secretary of the Navy.

(6) This title shall not affect the geothermal exploration and development authority of the Secretary of the Navy under Section 2689 of title 10, United States Code, except that the Secretary of the Navy shall obtain the concurrence of the Secretary before taking action under that section with respect to the lands withdrawn under Section 802(a).

(7) Upon the expiration of the withdrawal or relinquishment of China Lake, Navy contracts for the development of geothermal resources at China Lake then in effect (as amended or renewed by the Navy after the date of enactment of this title) shall remain in effect *provided* that the Secretary, with the consent of the Secretary of the Navy, may offer to substitute a standard geothermal lease for any such contract.

In general, the BLM is the lead agency and the CLNAWS is a cooperating agency on this Project. The 1980 amended MOU between the CLNAWS and the BLM will be in place to ensure that the CLNAWS' requirements on safety, security, and mission are recognized and constraints are understood. On the 2.67 miles (16.18 acres) of Navy-withdrawn lands outlined in this EA, the CLNAWS retains surface management and the BLM retains subsurface management. On BLM-managed lands, the BLM maintains both subsurface and surface management.

1.3.6 Plant Protection

As noted previously in Section 1.3.4, the Federal ESA provides a process for listing species as either threatened or endangered, and methods of protecting listed species. The Federal ESA defines "endangered" as any plant or animal species that is in danger of extinction throughout all or a significant portion of its range. A "threatened" species is a species that is likely to become endangered in the foreseeable future. A "proposed" species is one that has been officially proposed by the USFWS for addition to the federal threatened and endangered species list.

The California Native Plant Society (CNPS) has developed an inventory of California's special-status plant species (Skinner and Pavlik 1994). This inventory summarizes information on the distribution, rarity, and endangerment of California's vascular plants. The inventory is divided into four lists based on the rarity of the species. In addition, the CNPS provides an inventory of plant communities that are considered special status by the state and federal resource agencies, academic institutions, and various conservation groups. Determination of the level of a plant's sensitivity is based on the number and size of remaining occurrences as well as recognized threats.

Sensitive habitats are natural communities that support concentrations of special-status plant or wildlife species, are of relatively limited distribution, or are of particular value to wildlife.

It is BLM's policy to carry out management, consistent with the principals of multiple use, for the conservation of special-status plant species and their habitats and will ensure that actions authorized, funded, or carried out do not contribute to the need to federally list any of the species as threatened or endangered.

1.3.7 Protection of Cultural Resources

Several laws require consideration of cultural resources and Native American concerns. The National Historic Preservation Act (NHPA) Public Law 69–665, as amended, requires that federal agencies consider the effects of all actions on certain cultural resources and that those adverse effects to protected cultural resources be mitigated. It also requires that federal agencies consult with the relevant State Historic Preservation Officer (SHPO) and consider the views of Native Americans who may be affected. The NHPA also includes provisions for consulting with Native Americans on the effects of the Proposed Action to archaeological sites or areas of traditional use or concern. The American Indian Religious Freedom Act states that it is the policy of the United States "to protect and preserve for American Indians their inherent right of freedom to believe, express, and exercise the traditional religions of the American Indian, including but not limited to, access to sites." The Religious Freedom Restoration Act requires that federal agencies ensure that their decisions do not substantially burden the free exercise of religion by Native Americans. FLPMA and NEPA also have provisions for providing tribal officials with the opportunity to comment on planning and on NEPA documents. In connection with its evaluation of the Proposed Action, BLM has entered into a Programmatic Agreement (included as Appendix D of this EA) with the SHPO and the Advisory Council on Historic Preservation (ACHP).

1.4 Related Activities and Prior Environmental Review

Environmental aspects of geothermal exploration and development at the Coso geothermal project sites have been addressed in numerous documents. Beginning in 1979 and 1980, the Navy and BLM, respectively, issued EISs for the Navy-contract lands and BLM leases, evaluating development of the contract and lease lands. These initial EISs incorporated baseline technical reports for air quality, geology, hydrology, soils, field ecology, noise, and cultural resources. These documents also set the criteria under which future development would be considered.

Since 1980, various Plans of Operations have been filed with the Navy and BLM, as required under the Geothermal Resources Operational Orders, to address each stage of development on the Coso projects. Each of these plans was subject to environmental review under NEPA and CEQA. Listed in Table 1.4-1 are major NEPA and CEQA documents that have been prepared and approved for projects within the Coso KGRA.

The possibility of the use of groundwater from Rose Valley for power plant cooling was considered in prior environmental documentation (NWC 1979; BLM 1980a). The analyses in these earlier reviews, however, did not set forth a specific development and pipeline transportation proposal. The evaluations documented herein are tiered from those earlier environmental documents and their associated approvals. This includes the prior development and operation of the Coso Geothermal Development and the development of other projects in the area.

Table 1.4-1 Major NEPA and CEQA Documents within Coso KGRA

ISSUED BY	DOCUMENT
Naval Weapons Center (NWC) 1979	Final Environmental Impact Statement for the Navy Coso Geothermal Development Program, China Lake, California, Volumes 1 and 2
BLM 1980	Proposed Leasing within the Coso Known Geothermal Resource Area (KGRA): Final Environmental Impact Statement
NWC 1981	Environmental Impact Statement for Navy Coso Geothermal Development Program, Volume 3, Supplemental EIS for Exploratory Drilling and Testing (Tier 3)
NWC 1983	Environmental Assessment for Proposed Exploration and Development within the Coso KGRA
NWC 1984	Preliminary Environmental Assessment for Additional Surface Disturbance for Construction of the 25 MWe Geothermal Power Plant Site and Definition of Pipeline Corridors
BLM 1984	Environmental Assessment for the LADWP Coso KGRA Exploratory Drilling Project
NWC 1985	Environmental Assessment of the Proposed China Lake Joint Venture well 63-18, Coso KGRA, Inyo County, California

Table 1.4-1 Major NEPA and CEQA Documents within Coso KGRA	
ISSUED BY	DOCUMENT
BLM 1985	Environmental Assessment of the Proposed Plan of Exploration, Federal Lease CA-11402, Coso KGRA, Inyo County, California
NWC 1986a	Environmental Impact Statement for Navy Coso Geothermal Development, Tier 4, Field Development
NWC 1986b	Environmental Assessment of the Proposed China Lake Joint Venture (CLJV) 28.5 Mile Devil's Kitchen to Inyokern High Voltage Transmission Line
NWC 1987a	Environmental Assessment of the Proposed CLJV Nine Well Pad Exploratory Drilling Program on Navy 2 Lands
NWC 1987b	Preliminary Environmental Assessment for Production Well Pads on Navy 1 Contract Lands, Coso KGRA
NWC 1987c	Preliminary Environmental Assessment of Four Production Wells and One Exploratory Core Hole on Navy/CLJV Contract Lands, Coso KGRA
NWC 1988a	Environmental Assessment/Initial Study of the CLJV Proposed Plan of Development on Navy Contract Lands
NWC 1988b	Environmental Assessment/Initial Study of the Proposed CLJV Navy 2 Geothermal Development and Utilization
BLM 1988	Environmental Assessment/Environmental Impact Report for the CalEnergy Plans of Utilization, Development and Disposal For Geothermal Development on BLM Geothermal Lease CA-11402
BLM 1989	Categorical Exclusion for Plan of Development for Federal Lease CA-11401
GBUAPCD 1995	Initial Study of Revision to Rule 424, Geothermal Emissions Standard
GBUAPCD/BLM 1999	GBUAPCD Initial Study and Negative Declaration and BLM finding of Categorical Exclusion for Plan of Operations for Federal Lease 11402 amendment which allows federal leases, CA-11383, 11384, and 11385 to be incorporated into the existing POO and subject to mitigation requirements of the 1988 EA/EIR for POU, development and disposal

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2. PROPOSED ACTION AND ALTERNATIVES

2.1 Proposed Action

The Project site encompasses an approximately 9-mile-long corridor with a 50-foot right-of-way. The Project site encompasses approximately 55 acres, which includes 5.63 acres of private land included within the Coso Hay Ranch, 32.24 acres on public lands managed by BLM, and 16.18 acres within the CLNAWS.

Private: Sections 25, 26, T. 21 S., R. 37 E., MDM, affecting 5.63 acres.

BLM: Sections 35 and 36, T. 21 S., R. 37 E., and Sections 31 through 34, and T. 21 S., R. 38 E., MDM, affecting 32.24 acres.

CLNAWS: Sections 1 through 3, T. 22 S., R. 38 E., MDM, affecting 16.18 acres.

The two existing wells, North Well and South Well, at the Coso Hay Ranch will be the source of the supplemental water. Groundwater is proposed to be pumped at a maximum rate of 4,000 gallons per minute (gpm) and at an average rate of 3,000 gpm (4,800 acre-feet per year). Pumping will be limited to off-peak periods to minimize the electrical power costs of operations.

A 12-inch pipeline is proposed for installation from the North Well past the South Well to a pump station located adjacent to the existing South Well, and would be located entirely on the Hay Ranch. At the pump station, a 250,000-gallon collection tank surrounded by a perimeter chain link fence would be constructed. From this collection tank, a 20-inch pipeline is proposed for construction along an existing access road, generally rising in elevation to Gill Station Road. The proposed pipeline alignment would cross Gill Station Road and proceed east adjacent to the road along the southern and western edges, approximately 50 feet from the edge of the road, until just east of the CLNAWS boundary gate. The 20-inch pipeline would then cross Gill Station Road just south of the CLNAWS gate and proceed easterly for approximately 1 mile on the eastern edge of the road. The pipeline would then cross back over the road to a 1.5-million gallon holding tank located at the high point within CLNAWS. The pipeline will mostly be buried, except for where volcanic outcrops would make it difficult; at those locations the pipeline would be constructed above the ground with pipe supports where needed (see Figure 1, Pipeline and Related Infrastructure). Water from the holding tank would be piped to the existing Coso Geothermal Project to the east with a 20-inch pipe proceeding underground approximately 50 feet from the road southeasterly to the injection system.

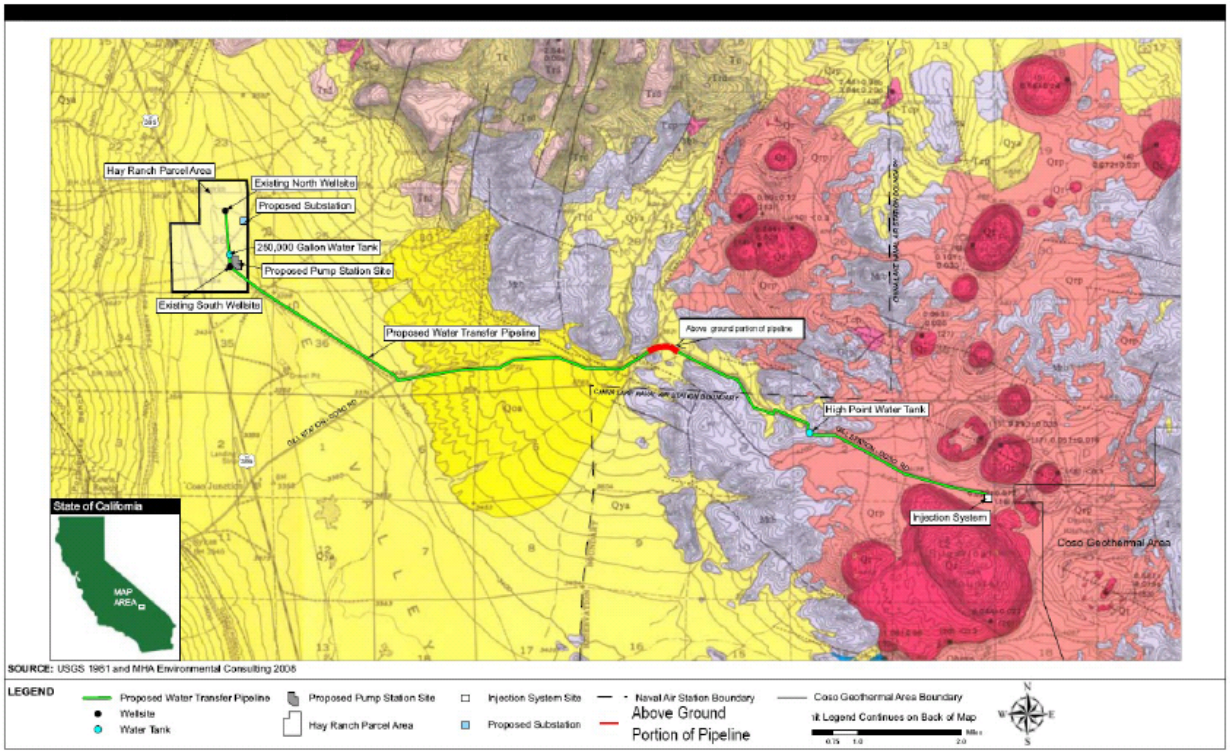

Figure 1. Pipeline and Related Infrastructure

The total power requirement for the downhole pumps, booster pump station, area lighting, and instrumentation is expected to be up to 2.5 megawatts (MWs). Power requirements will be at 4,160 volts (V) for the booster pump station, 480 V for the downhole pumps, and 120 V/240 V for area lighting and minor house loads. As a result, there will be at least four transformers required for the electrical installation, depending on the supply voltage from the local utility.

Power for the Project is proposed to be supplied by a new substation to be constructed by Southern California Edison (SCE) at a location immediately adjacent to the proposed location of the Project pumping equipment. The new substation will be tied into SCE's main transmission line, which runs past the Hay Ranch, using overhead transmission cables run on pole structures. The substation capacity will be approximately 3 MW to serve the Proposed Action load and an existing SCE customer load of less than 1 MW that SCE currently serves from the Los Angeles Department of Water and Power (LADWP) Haley substation.

The SCE substation is planned to be an unmanned, 115-12 kV, 28 MVA, SAS Automated Station constructed on a plot approximately 180 by 208 feet located within the Hay Ranch property. The substation site will contain a 115 kV low-profile switchrack with four bays; two 14 MVA transformers with isolating disconnects; surge arresters and neutral CTs; a 12 kV low-profile switchrack consisting of three positions, with provision to expand to four additional positions; and a prefabricated metal building.

It is anticipated that the substation may not be constructed in time for the initial pumping schedule. Two generators may be used for up to 12 months to power the electrical pumps prior to completion of the substation. These 1,500-kilowatt (KW) diesel powered generators will be used up to 18 hours per day, seven days per week.

Mechanical-Electrical Equipment Room

A prefabricated 16-foot by 10-foot mechanical-electrical equipment room (MEER) will be constructed and equipped with air conditioning and all standard equipment. It will contain control and relay panels, battery and battery chargers, AC and DC power distribution panels, HMI cabinet, communication equipment, telephone and fiber-optic communication, and local alarms.

Surfacing

The substation will be surfaced with three-quarter inch crusher-run untreated rock, 4 inches thick, and will be at the same level as the surrounding area.

Yard Lighting

The proposed substation will have both security and maintenance lighting. The security lights will be low-intensity lights integrated into the landscape and architectural aspects of the station. The security lights will be photo sensor controlled. Normal security light operation will be from dusk until dawn.

Maintenance lighting will consist of high-pressure sodium lights located in the switchracks, around the transformer banks, and in areas of the yard where maintenance activities may have to take place during nighttime hours. Maintenance lights will be controlled by a manual switch and will normally be turned off.

Grounding

All equipment and structures will be grounded per current SCE standards. Ground grid calculations will be based on soil resistivity measurements.

Landscaping

Landscaping around the proposed substation will be designed to filter views from residential and commercial areas. The landscaping plan will be prepared by a certified landscape architect. The landscape plan will include an 8-foot-high, chain link fence surrounding the proposed substation with security barbed wire mounted on the substation side of the fence. The existing metal storage building and mobile home will be removed from the properties.

2.2 Alternatives to the Proposed Action

Alternatives considered to accomplish the purpose of the Proposed Action for this Project were identified and considered by the BLM. In accordance with Title 40 CFR 1502.14 (a), reasonable alternative methods are limited by physical and land use/environmental factors. Physical factors include the geothermal well sites, the water pipeline and tanks, and access roads to the well field. Land use/environmental factors are those that limit such activities in undisturbed areas because of either specific land use designations and restrictions (e.g., multiple-use class designation, critical habitat/wilderness), or additional new negative significant environmental impacts that could occur when compared to using existing disturbed corridors/routes. Also considered was whether the alternative meets the purpose, need, and objectives of the Proposed Action; whether the alternative conflicts with a specific provision of the land use plan (CDCA Plan, including the Western Mojave Plan); whether the alternative directly conflicts with federal, state, and local laws and regulations; and whether the alternatives are technically and economically feasible.

2.2.1 No Action Alternative

The BLM would not issue a right-of-way for construction of a pipeline. Implementation of the No Action Alternative would result in no pipeline being constructed within land administered by the BLM or the CLNAWS. On a practical basis, the No Action Alternative would preclude the development and transport of supplemental water to the Coso Geothermal Project because there would be no alignment that would not pass through lands administered by the BLM and the CLNAWS. Implementation of the No Action Alternative would eliminate all of the impacts associated with construction of the pipeline. Additionally, implementation of the No Action Alternative would eliminate any direct or indirect impacts associated with groundwater pumping.

The No Action Alternative is included even though it does not meet the Project need because it is required by NEPA for consideration.

2.2.2 Other Alternatives Considered but Eliminated from Detailed Analysis

The Draft Environmental Impact Report (Draft EIR) for the Project (MHA 2008) identifies and analyzes a reasonable range of alternatives:

- Increasing power generation output through power plant enhancements;
- Alternative sources of injection waters, including groundwater wells on CLNAWS, groundwater wells in the Coso Basin, and marginal geothermal wells in the Coso Range;
- Reducing the duration of the proposed pumping;
- Pumping Hay Ranch wells at maximum rate sustainable for the 30-year project life without reaching trigger levels; and
- Pumping Hay Ranch wells at lower rates.

The BLM independently considered the analysis of these alternatives presented in the Draft EIR and incorporates that analysis by reference into this Environmental Assessment (EA) (Appendix E). Ultimately, the BLM has concluded that none of these alternatives is preferable to the proposed Project, considering the purpose and objectives of the Project and the comparative potential environmental effects of the Project and its alternatives. The reader is encouraged to refer to the alternatives analysis in Section 5 of the Draft EIR (presented in Appendix E of this EA for reference) for more detailed analysis of the alternatives considered.

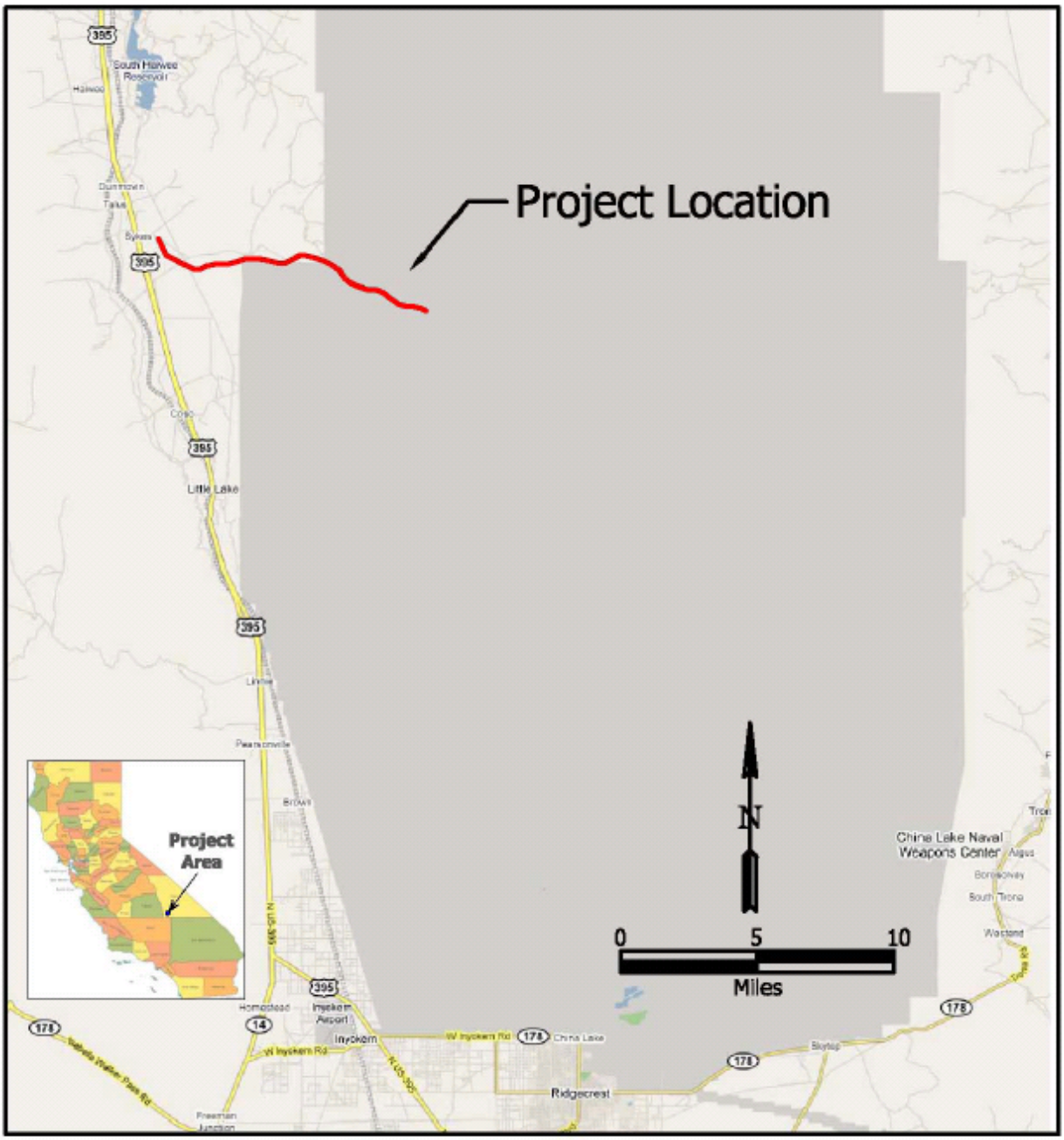

Figure 2. Regional Vicinity

Figure 3. Local Vicinity

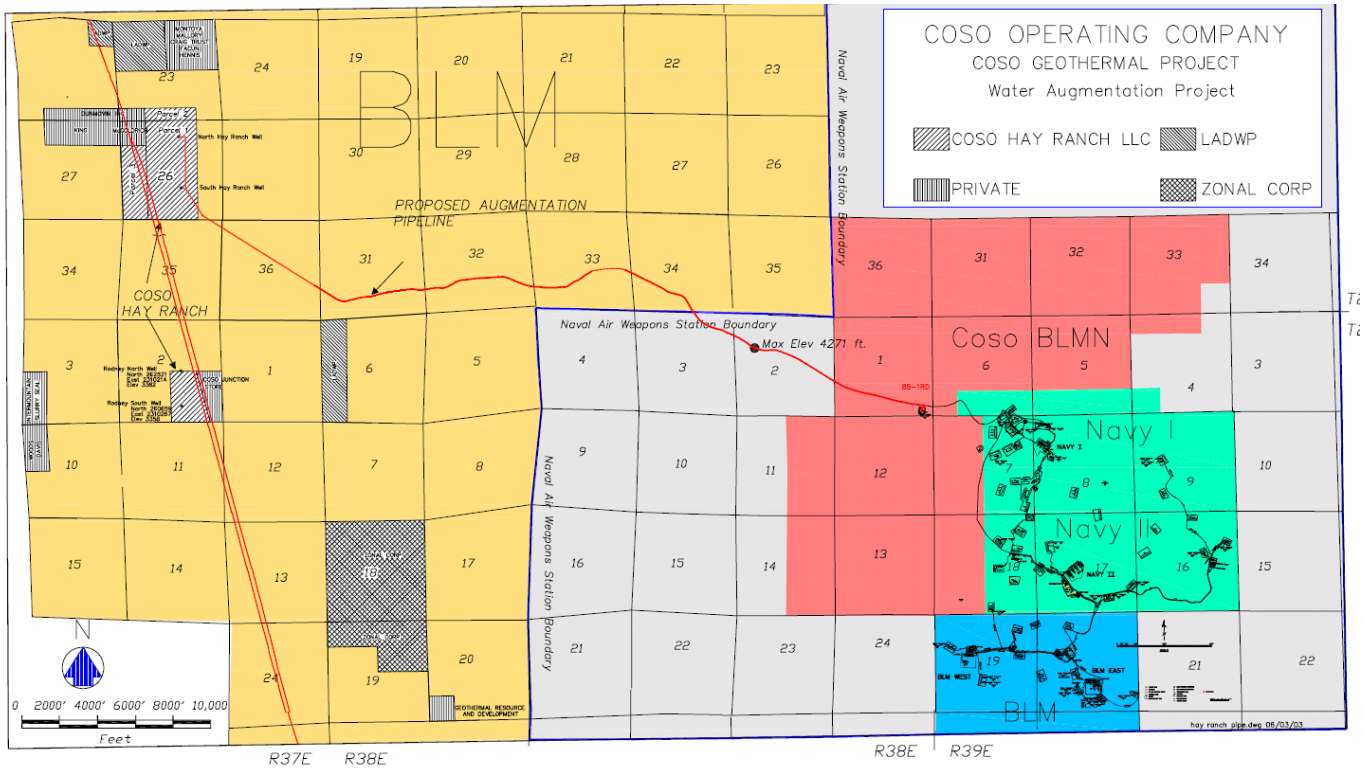

Figure 4. Project Site

3. AFFECTED RESOURCES

The Project is located in the Mojave Desert region of California. Environmental resources in the Project area are described in the *California Desert Conservation Area Plan Environmental Impact Statement (EIS)* (BLM 1980b) and the West Mojave Plan.

BLM has considered the following resources and finds that they are not affected by the Project, and are therefore excluded from this analysis: (1) Prime or Unique Farmlands, (2) Floodplains, (3) Forestry, (4) Fire Management Objectives, (5) Paleontology, (6) Range, (7) Hazardous or Solid Wastes, (8) Wetlands and Riparian, (9) Wilderness, (10) Wild and Scenic Rivers.

3.1 Air Quality

The Project area is located in Inyo County within the Great Basin Valleys Air Basin and is under the regulatory jurisdiction of the GBUAPCD. The basin is bounded by the Mojave Desert Air Basin to the south, the San Joaquin Valley and Mountain Counties Air Basins to the west, Lake Tahoe Air Basin to the north, and the State of Nevada to the east. The basin includes all of Alpine, Inyo, and Mono counties.

Air Quality Standards

Federal and state ambient air quality standards have been established for "criteria pollutants." These pollutants include ozone (O_3), carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), respirable particulate matter (PM_{10}), fine particulate matter ($PM_{2.5}$), and lead (Pb). In general, the California Ambient Air Quality Standards (CAAQS) are more stringent than the corresponding National Ambient Air Quality Standards (NAAQS). The state has also established ambient air quality standards for sulfates, hydrogen sulfide, vinyl chloride, and particulate matter. Table 3.1-1, National and State Ambient Air Quality Standards, lists the current NAAQS and CAAQS for each pollutant.

Table 3.1-1
National and State Ambient Air Quality Standards

Air Pollutant	Averaging Time	California Standard	National Standard	
			Primary	Secondary
Ozone (O_3)	8 Hour 1 Hour	0.070 ppm 0.09 ppm	0.075 ppm —	— —
Carbon Monoxide (CO)	8 Hour 1 Hour	9.0 ppm 20 ppm	9 ppm 35 ppm	9 ppm 35 ppm
Nitrogen Dioxide (NO_2)	Annual Average 1 Hour	0.030 ppm 0.18 ppm	0.053 ppm	0.053 ppm
Sulfur Dioxide (SO_2)	Annual Average 24 Hour 3 Hour 1 Hour	— 0.04 ppm — 0.25 ppm	0.030 ppm 0.14 ppm — —	— — 0.5 ppm —
Particulate Matter < 2.5 microns ($PM_{2.5}$)	Annual Average 24 Hour	12 µg/m^3, AAM —	15 µg/m^3, AAM 35 µg/m^3	— —
Particulate Matter < 10 microns (PM_{10})	Annual Average 24 Hour	20 µg/m^3, AAM 50 µg/m^3	— 150 µg/m^3	— 150 µg/m^3
Sulfates	24 Hour	25 µg/m^3	—	—
Lead (Pb)	30 Day Calendar Quarter	1.5 µg/m^3	— 1.5 µg/m^3	— 1.5 µg/m^3
Hydrogen Sulfide	1 Hour	0.03 ppm	—	—
Vinyl Chloride (Chloroethene)	24 Hour	0.01 ppm	—	—
Visibility Reducing Particles	1 Observation	Extinction coefficient of 0.23 per kilometer due to particles when relative humidity < 70%, 8-hr. avg. (9 a.m.–5 p.m.)	—	—

Notes: ppm = parts per million; µg/m^3 = micrograms per cubic meter;
AAM = Annual Arithmetic Mean; "—" = no data.
Source: California Air Resources Board 2008.

Existing Air Quality Condition

The Project lies in Inyo County, a portion of the air basin administered by the GBUAPCD. Air quality in the area is generally good. The area is classified as being in attainment, or unclassified due to lack of data, for all NAAQS, and in attainment or unclassified for all CAAQS, except PM_{10}. The area is classified as nonattainment for PM_{10}. Major sources of PM_{10} are wind erosion of crustal material; dust from vehicular traffic on roads; and other sources, such as mining activities.

Federal Conformity*:* A federal conformity analysis is required for any federal action within any federal nonattainment or maintenance area. The proposed Project is located in an area that is classified as nonattainment for $PM_{10.}$

Levels of ambient air contaminants are measured at the California Air Resources Board (CARB) air monitoring stations located throughout the state. Monitoring stations in Inyo County mainly monitor PM_{10} levels. The nearest station to the Project site, Coso Junction–U.S. Highway 395 Rest Area Station, is approximately 2 miles from the Project location, and monitors PM_{10} only. Air quality trends with respect to PM_{10} developed from data collected at that station for the past 4 recorded years are presented in Table 3.1-2 (Air Quality Data at Project Area). Table 3.1-2 indicates that the national PM_{10} standard was exceeded in the last 2 years, and the state 24-hour PM_{10} standard was exceeded every year between 3 to 13 days during the last 4 years.

Table 3.1-2
Air Quality Data at Project Area

Pollutant	California Standard	Federal Standard	Year	Maximum Level (ppm)	State Standard Exceeded (Days)
Particulates, PM_{10} (24-hour)	50 μg/ m^3	150 μg/m^3	2007	N/A	N/A
			2006	77/73	N/A
			2005	99/91	6.1
			2004	66/63	6.1
Particulates, PM_{10} (Annual)	20 μg/m^3 (AGM)	50 μg/m^3 (AAM)	2007	19.4/N/A	No
			2006	14.3/N/A	No
			2005	18.9/16.4	No
			2004	15.1/13.4	No

Notes:
Levels shown for annual PM_{10} are AAM. Maximum levels for PM_{10} shown in μg/ m^3. First value shown is based on federal monitoring method; second value is based on state monitoring method.
N/A = insufficient (or no) data available to determine the value.

Source: Pollutants data were obtained from the following CARB Air Monitoring Station,
PM_{10}: Coso Junction–Highway 395 Rest Area (Inyo) (CARB 2008).

3.2 Soils

Soils in the Project area are generally coarse and rocky. They are derived from either the bedrock substrate or basement rocks in the Coso Range that consist of granitic rocks of Mesozoic age with older metasedimentary and metavolcanic rocks. The Sugarloaf Mountain area, just south of the pipeline alignment, exhibits overlapping volcanic domes and flows with extensive obsidian outcrops. The types of soils found in the Project area include the following (BLM 1980; MHA 2008):

Dunmovin: Somewhat excessively drained, deep, sandy soils formed in alluvium. They are subject to water and wind erosion.

Dunmovin-Lavic-Wasco Variant: Sandy and loamy soils, excessively to well drained, very deep, and formed in alluvium. They have a high potential for wind erosion and are susceptible to water erosion.

Alko Variant-Joshua Variant-Nebona Variant: Shallow to deep, generally sandy and loamy with some clay lenses and silica-cemented hardpans. These soils are well drained and susceptible to wind and water erosion.

Maynard Lake-Stumble: Sandy soils formed in alluvial plains from rhyolite tuff and volcanic ash deposits. These soils are highly porous and drain rapidly. They are subject to moderate water erosion and high wind erosion.

Cosos-Rock Outcrop: Shallow to very shallow units formed in granite outcrops. These soils are stony and loamy and are excessively drained due to rapid runoff. They are highly susceptible to water and wind erosion.

3.3 Vegetation

According to the Department of the Army, U.S. Army Corps of Engineers, and based on surveys conducted by Kleinfelder (2007), no jurisdictional wetlands or other waters of the United States were identified within the project area or along the pipeline corridor.

Three plant communities (as defined by the California Natural Diversity Database (CNDD, CDFG 2003a) and Sawyer Keeler-Wolf (1995)) occur in the Project site: creosote–white bursage scrub; allscale scrub; and agricultural land. Invasive non-native species also occur in the Project site.

A plant survey was conducted on the Project site and found the species identified in Table 3.3-1. No plant species of special concern were identified within the proposed pipeline corridor or elsewhere within the Project site.

Table 3.3-1
Plant Species Observed on the Project Site

Scientific Name	Common Name
Acacia greggii	Catclaw acacia
Ambrosia dumosa	White bursage
Amsinckia tessellata	Bristly fiddleneck
Artemisia spinescens	Bud sage, budsage
Atriplex canescens	Shadscale
Atriplex confertifolia	Spiny saltbush
Atriplex parryi	Parry's saltbush
Atriplex polycarpa	Allscale
Atriplex spinifera	Spinescale
Chrysothamnus teretifolius	Green rabbit brush
Echinocactus polycephalus var. *polycephalus*	Clustered barrel cactus
Ephedra californica	Ephedra
Erigeron compositus	Cut leaf daisy
Eriogonum brachyanthum	Short-flowered buckwheat
Eriogonum inflatum	Desert trumpet
Eriogonum mohavense	Western Mojave buckwheat
Eriogonum nidularium	Birdnest buckwheat
Erodium botrys	Storksbill
Hymenoclea salsola	Cheesebush
Isomeris arborea	Bladderpod
Langoisia schottii	Schott's calico
Larrea tridentata	Creosote
Nama demissum	Purple mat
Opuntia basilaris	Beavertail
Opuntia bigelovii	Teddy bear cholla
Oryzopsis hymenoides	Indian ricegrass
Phacelia bicolor var. *bicolor*	Trumpet phacelia
Phacelia inyoensis CNPS species	Inyo phacelia
Physalis crassifolia	Thick-leaved ground cherry
Ranunculus glaberrimus	Sagebrush buttercup
Salvia carduacea	Sage thistle
Salvia columbariae	Chia
Sphaeralcea ambigua	Desert mallow
Suaeda calceoliformis	Pursh's seepweed
Yucca brevifolia	Joshua tree

3.3.1 Creosote–White Bursage Scrub

Creosote–white bursage scrub is a series within Mojave creosote bush scrub. In creosote–white bursage scrub, creosote bush and white bursage are equally important, and brittlebush can be a third common species. Mojave creosote bush scrub is the most extensive cover type in the Mojave Desert region, covering 57% of the land's surface (BLM 2003). Perennial shrubs are generally widely spaced in creosote bush scrub, usually with bare ground between them. Plant growth occurs during spring and is prevented by winter cold and seasonal drought. Many species of ephemeral herbs may flower in late March and April if the winter rains are sufficient.

Creosote–white bursage scrub on the Project site contains widely spaced creosote bushes (*Larrea tridentata*) with white bursage shrubs (*Ambrosia dumosa*) as co-dominants. Creosote–white bursage scrub also contains teddy bear cholla (*Opuntia bigelovii*), beavertail cactus (*Opuntia basilaris*), and scattered Joshua trees (*Yucca brevifolia*).

3.3.2 Allscale Scrub

Allscale scrub is often considered part of the saltbush scrub series with allscale (*Atriplex polycarpa*) as a dominant species. Saltbush scrub is an assemblage of low, grayish shrubs, 1 to 4 feet tall, with some succulent species. Allscale series occurs with different associates regionally, as suggested by CNDDB categories. Total ground cover is often low, with bare ground between perennial plants.

Allscale scrub on the Project site is generally undisturbed with a developed understory. It contains bristly fiddleneck (*Amsinckia tessellata*), shadscale (*Atriplex canescens*), green rabbit brush (*Chrysothamnus teretifolius*), ephedra (*Ephedra californica*), desert trumpet (*Eriogonum inflatum*), cheesebush (*Hymenoclea salsola*), and numerous other plant species as shown in Table 3.3-1, Plant Species Observed on the Project Site.

3.3.3 Agricultural Land

The western portion of the Project site is agricultural land that is currently fallow. The agricultural land was used until the late 1980s to grow alfalfa (*Medicago sativa*), and possibly other crops, using an estimated 3,000 acre-feet of groundwater per year to irrigate approximately 511 acres (6 feet per acre per day) (G. Harris, pers. comm. 2008).

3.3.4 Invasive Species

Invasive species have been identified by the BLM. These species are non-native, undesirable species that are aggressive and are overly competitive with more desirable native species. In

2005, the BLM established an integrated non-native vegetation management program to address these species in their Programmatic EIS.

Inventory work conducted over the last several years has detected more than 20 species of noxious/invasive weeds on or adjacent to public lands within the Ridgecrest Field Office's area of jurisdiction. Several of those species occur on or adjacent to the Project area; however, this analysis did not identify any noxious species directly on the proposed alignment.

3.4 Hydrology

This section is summarized in part from the Hydrology and Water Quality section prepared by Inyo County in their Draft EIR for the Conditional Use Permit (CUP 2007-003) (MHA 2008).

3.4.1 Surface Water

There are no perennial watercourses within the Project area or surrounding region. All streams and areas of standing water are intermittent (flow occurring only as a result of seasonal runoff) to ephemeral (flow occurring only during and immediately after a precipitation event). During heavy runoff events, water carries sand, gravel, cobbles, and occasionally boulder-sized rocks down slope in washes as part of the bed load transport. Deposition of this bed load material across areas of less steep terrain has resulted in the formation of alluvial fans, which are common in portions of the Project area.

Major surface water resources within the vicinity that may relate to the Proposed Action include South Haiwee Reservoir (9.4 miles north of the Proposed Action site); Little Lake and its associated springs (approximately 9 miles south of the Hay Ranch site); and several springs in Rose Valley, including Rose Valley, Tunawee Canyon, Davis, Little Lake Fault, and Coso springs.

3.4.2 Groundwater

The groundwater table in Rose Valley ranges from 140 to 340 feet below ground surface in the northern and central parts of the valley to approximately 49 feet below ground surface in the southern end of the valley at Little Lake Ranch. Figure 5, Groundwater Contours, provides a depth to groundwater contour map developed from depth to groundwater measurements made on November 19, 2007.

Groundwater generally flows to the southwest in the valley. Because the ground surface slopes more steeply to the south of Rose Valley than the groundwater table, the groundwater surfaces from springs beneath Little Lake, sustaining the lake and the surface water, and discharges across the Little Lake weir.

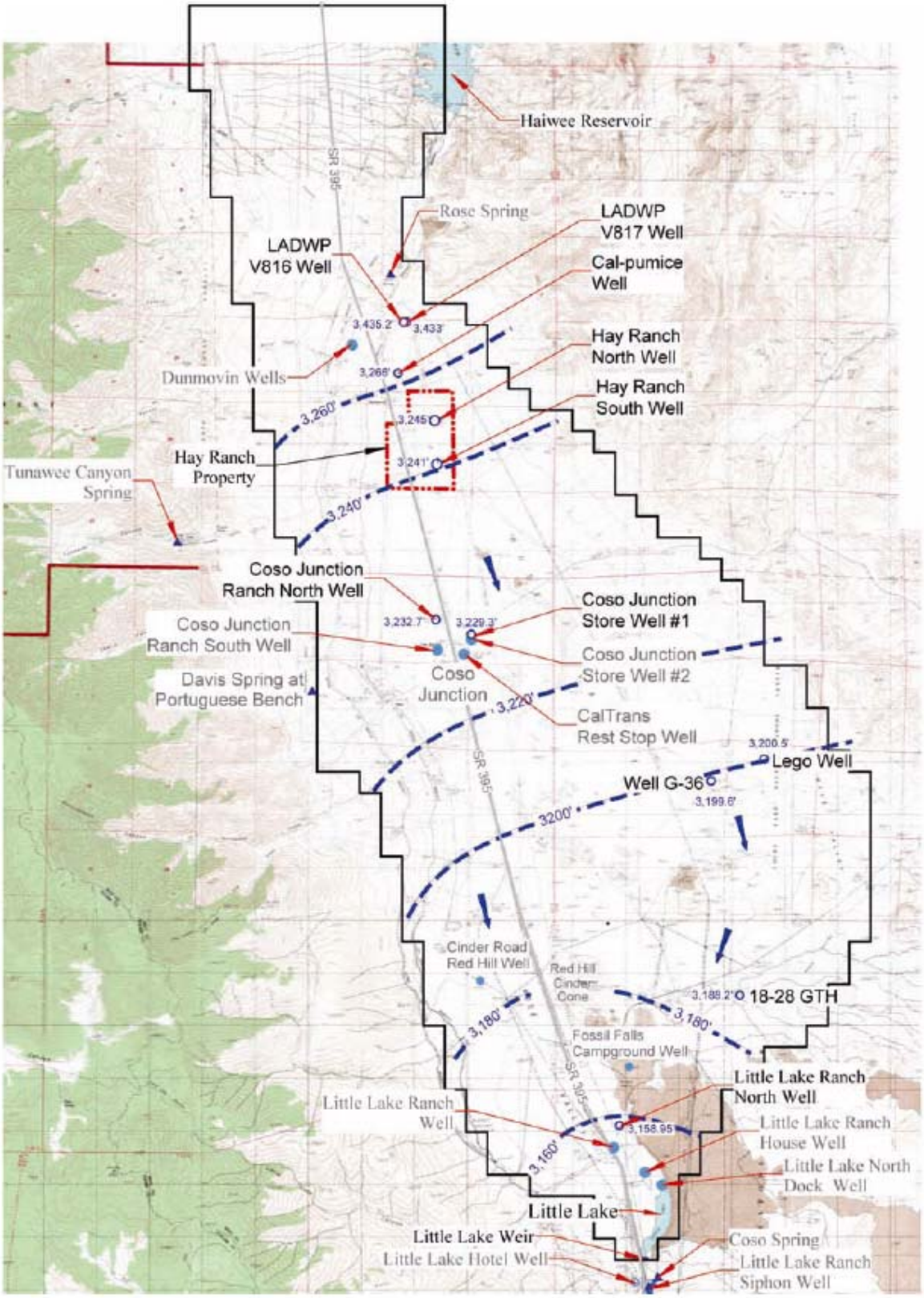

Figure 5. Groundwater Contours

Source: MHA, 2008

Groundwater quality in Rose Valley near the Hay Ranch is characterized by total dissolved solids (TDS) between 800 and 900 mg/L. TDS within the southern Rose Valley is from 500 to 700 mg/L.

3.5 Wildlife Habitat

Complex plant communities with numerous vegetation layers and a variety of plant species create a viable habitat for many wildlife species. These communities provide the wildlife with nesting and denning sites, escape cover, and protection from adverse weather.

The creosote bush scrub and plant communities in the Proposed Action area are expected to support many common desert species. These species include a wide variety of reptiles, mammals, and birds.

3.5.1 Special-Status Wildlife Species

A review of current literature identified potential special-status plants, wildlife, or sensitive communities known within the vicinity of the Project site. The review included the California Native Plant Society's (CNPS's) Electronic Inventory of Rare and Endangered Vascular Plants of California (2001), CalFlora Database (2000), compendia of special-status species published by CDFG (2003b, 2003c), and the CDFG CNDDB (2004) for the Coso Junction and Cactus Peak 7.5-minute series topographic quadrangles, and surrounding quadrangles (Haiwee Pass, Haiwee Reservoirs, Upper Centennial Flat, Coso Peak, Long Canyon, Petroglyph Canyon, Sacatar Canyon, Little Lake, Volcano Peak, and Airport Lake).

Special-status species include the following:

1. Species listed as Threatened or Endangered under the Federal Endangered Species Act (Federal ESA);

2. Species proposed for listing as Threatened or Endangered under the Federal ESA;

3. Species listed by the State of California as Threatened, Endangered, or Rare under the California Endangered Species Act (CESA);

4. Species proposed for listing as Threatened or Endangered under the CESA;

5. Fully protected animals in California (CDFG Code, Sections 3511 (birds), 4700 (mammals), and 5050 (reptiles and amphibians)); and

6. BLM Sensitive Species.

From the database reviews, eight special-status wildlife species were identified with the potential to occur on or in the immediate vicinity of the Project site: pale big-eared bat *(Corynorhinus townsendii pallescens)*, Mohave ground squirrel *(Spermophilus mohavensis)*, desert tortoise *(Gopherus agassizii)*, Kern plateau slender salamander *(Batrachoseps robustus* sp.*)*, Owens Valley vole *(Microtus californicus vallicola)*, and Wong's springsnail *(Pyrgulopsis wongi)*.

A 50-foot-wide temporary construction corridor along the proposed pipeline alignment (approximately 9 miles) was surveyed for signs of special-status species with a focus on desert tortoise and Mohave ground squirrel. Surveys were conducted on foot by two qualified biologists, Miller and Laberteaux, by meandering and intersecting transects. An additional 50 feet (25 feet on each perimeter) were surveyed by random meandering transect by one qualified biologist (Laberteaux). The pipeline alignment survey corridor was searched for signs of desert tortoise, including scat, palettes, and old carapaces (i.e., tortoise shells). Wildlife and any signs were identified and catalogued.

On the basis of the pedestrian surveys, only the desert tortoise and the Mohave ground squirrel are considered to potentially occur on the Project site. The pale big-eared bat may forage over the site; however, because of the absence of suitable roost sites, the pale big-eared bat is not expected to roost on the Project site. The Kern plateau slender salamander, the Owens Valley vole, and Wong's springsnail are not expected to occur on site due to the absence of suitable habitat.

Mohave Ground Squirrel (California Threatened Species)

Mohave ground squirrels were not observed during the field surveys. No trapping was conducted. Burrows of appropriate size for Mohave ground squirrel were found during the surveys.

The Mohave ground squirrel is known to occur within the CLNAWS boundary (Leitner 2007) and is expected to occur on the Project site in creosote–white bursage scrub and desert saltbush scrub habitats.

Desert Tortoise (Federal and California Threatened Species)

Desert tortoises were not observed during the field surveys conducted in 2005 by UltraSystems. Burrows ranging in size from approximately 5 to 12 inches in diameter, consistent with that known for desert tortoise, were flagged and examined along the proposed pipeline route approximately 50 meters from the existing road. The flagged potential burrows were of poor quality and found to be partially collapsed or not in active use. A survey for the proposed Coso Road Improvement project was conducted in 2007. This survey produced 20 signs of desert tortoise, including one tortoise scat that was considered less than 1 year old. Although no

tortoises were found, this survey indicated that the area is suitable desert tortoise habitat presumably supporting very low numbers of tortoises. With the new information, BLM has requested formal consultation from the USFWS regarding the desert tortoise within the Project area (Appendix B of this EA).

3.5.2 Other Special-Status Species

Charlotte's Phacelia (BLM Special Status; CNPS Sensitive)

At lower elevations, Charlotte's phacelia is found in Mojave Desert scrub with creosote bush, beavertail cactus, and burrobush.

Charlotte's phacelia may occur on the Project site but was not found during the surveys.

Darwin Mesa Milk-Vetch (BLM Special Status; CNPS Sensitive)

Darwin mesa milk-vetch is found in desert mountains (north and west of Panamint Valley, Inyo County) and occurs at elevations of 4,288 to 7,408 feet above mean sea level (amsl). It is found in a variety of habitats including pinion pine, pinion–juniper woodland, sagebrush scrub, and Joshua tree woodland and is usually found on volcanic clay or gravelly substrates.

Darwin mesa milk-vetch is not expected to occur on the Project site since the Project area does not contain its habitat. It was not found during the surveys.

Sanicle Cymopterus (CNPS Sensitive)

Sanicle cymopterus is a small perennial herb from a buried root crown. It grows in loose soils that can be sandy to gravelly, often somewhat alkaline, on volcanic tuff deposits and mixed valley alluvium. It typically inhabits small drainage-ways, in the blackbrush, mixed-shrub, sagebrush, and lower pinion-juniper zones. It has been observed at elevations of 3,150 to 6,720 feet amsl.

Sanicle Cymopterus may occur on the Project site but was not found during the surveys.

Inyo Hulsea (BLM Special Status; CNPS Sensitive Species)

Inyo hulsea occurs between elevations of 4,600 and 7,300 feet amsl. It is found on steep, unstable, sandy or rocky slopes and sometimes in washes in high desert shrublands and pinion woodlands. Associated species include big sagebrush, saltbush, rabbitbrush, single-needle pinion, and antelope brush.

This species may occur within the Project boundaries at the higher elevations but was not found during the surveys.

Pinion Rock Cress (CNPS Sensitive Species)

Pinion rock cress can be found in Joshua tree woodland, pinion-juniper woodland, Mojave Desert scrub, and creosote brush scrub. It occurs in Inyo, Mono, San Bernardino, and Tulare counties. It is found at elevations of 3,940 to 7,870 feet amsl in habitats that have granitic, gravelly slopes and mesas. Pinion rock cress is often found under desert shrubs, which support it as it grows.

Pinion rock cress may occur on the Project site in the higher elevations of creosote–white bursage scrub, but was not found during the surveys.

Creamy Blazing Star (CNPS Sensitive Species)

Creamy blazing star is found in central Mojave Desert scrub, specifically creosote bush scrub at elevations of 2,300 to 3,800 feet amsl.

Creamy blazing star may occur on the Project site, but was not found during the surveys.

Crown Mullia (CNPS Sensitive)

This species has a high potential to occur in the Project area. Only three plants were observed in the surveys; those were located outside the proposed pipeline corridor.

Death Valley Birdgrass (CNPS Sensitive)

This species has potential to occur within the washes of the Project area.

Pale Big-Eared Bat (California Species of Concern)

The pale big-eared bat may forage over the site. However, because of the absence of suitable roost sites, the pale big-eared bat is not expected to roost on the Project site.

Owens Valley Vole (California Species of Concern)

The Owens Valley vole, a subspecies of the California vole, is found in the Owens Valley and areas to the south (CDFG 2004). Voles breed throughout the year and reach population peaks if food and cover are abundant. Voles forage on the ground, feeding on leafy parts of grasses, sedges, and herbs. They clip grasses and forbs at the base, which form a network of runways around their burrows. The Owens Valley vole is found in wetlands and dense grass habitats in the Owens Valley (CDFG 2004). The CNDDB documents there were 12 occurrences of the Owens Valley vole, ranging from the Bishop area in the north to Little Lake in the south.

Although the site is within the historic range of the Owens Valley vole, the vole is not expected to occur in the Project area due to the absence of suitable habitat.

3.6 Cultural Resources

An extensive cultural resources study was conducted of the Project's APE during May 2004 by ASM Affiliates of Carlsbad, California. Mark S. Becker, PhD. and Brian F. Byrd, PhD. served as principal investigators. Mr. Drew Pallette, of ASM Affiliates, served as a crew member and Mr. Richard Stewart of Big Pine, California served as a representative for the Fort Independence Reservation and participated in the survey. Their report, *Cultural Resources Inventory for the Hay Ranch Water Extraction and Delivery System, Coso Geothermal Project, Inyo County, California*, was submitted in May 2005. After providing an introduction to the Proposed Action, the report presents background data on the prehistory, history, and Native American inhabitants of the area, followed by a summary of pre-field research findings, and descriptions of what the field work discovered.

The APE for their intensive level (transect intervals of 5 meters) field coverage was defined as a corridor 50 feet wide (15 meters), centered on the centerline of the proposed pipeline route. The length of the survey was 8 miles (13 kilometers) from the North Well, located near U.S. Highway 395 in the Rose Valley, to injection well 88-1 located on the CLNAWS.

As a result of the field reconnaissance of the APE by ASM Affiliates, six archaeological sites and seven isolates were recorded. These include four previously known sites (designated as CA-INY-1863, CA-INY-2125, CA-INY-3406, and CA-INY-4413) and two newly discovered sites (designated as CGP-1 and CGP-2). These six sites represent one historic and five prehistoric use areas. Two sites, CA-INY-2125 and CA-INY-4413, occur within the CLNAWS and are contributing elements to the proposed Sugarloaf Archaeological National Register District, while four sites (CA-INY-1863, CA-INY-3406, CGP-1, and CGP-2) occur on BLM public land, and as allowed by the October 2007 State Programmatic Agreement (Paragraph V.E.4.) between BLM, SHPO, and the ACHP, are being treated as if they are eligible for the National Register of Historic Places (NRHP).

The seven isolates recorded include six on BLM land and one on the CLNAWS. In addition, it was conclusively established that three previously recorded sites, CA-INY-4412 (within the CLNAWS), CA- INY-2248, and CA-INY-3002 do not extend into the Project's APE.

The two sites on the CLNAWS (CA-INY-2125 and CA-INY-4413) were previously subjected to limited test excavations and were recommended as eligible for the NRHP. Subsequently, they were included as contributing properties of the proposed Sugarloaf Archaeological National Register District. One site on BLM land, CA-INY-1863, was recommended as eligible for the

NRHP by ASM Affiliates, while the other three sites (CA-INY-3406, CGP-1, and CGP-2) were not evaluated by the consultant.

The extent, character, and portion of each site that falls within the Project's APE varies considerably. Table 3.6-1, Summary of Sites Identified within the Project APE, is based upon Table 6.1 of ASM Affiliates' report (page 50), and summarizes the sites and the eligibility status of each for the NRHP.

Table 3.6-1
Summary of Sites Identified within the Project APE

Site Number	Description	Size of Portion within APE	Eligibility Status
CLNAWS-Managed Lands			
INY-2125	Prehistoric lithic scatter	656.2 ft x 49.2 ft (32,285.0 ft^2)	Contributing property to the Sugarloaf Archaeological District
INY-4413	Prehistoric lithic scatter with metals	492.1 ft x 49.2 ft (24,211.3 ft^2)	Contributing property to the Sugarloaf Archaeological District
BLM-Managed Lands			
INY-1863	Prehistoric scatter with midden, metals, and bedrock mortars	656.2 ft x 49.2 ft (32,285.0 ft^2)	Recommended eligible by consultant
INY-3406	Prehistoric flake and lithic tool scatter with milling slick	75.5 ft x 16.4 ft (1,238.2 ft^2)	Not evaluated by consultant
CGP-1	Historic site with features and trash concentrations	328.1 ft x 49.2 ft (16,142.5 ft^2)	Not evaluated by consultant
CGP-2	Prehistoric flake scatter	419.9 ft x 147.6 ft (78,119.8 ft^2)	Not evaluated by consultant

SOURCE: MHA 2007; ASM 2005.

Additionally, site CA-INY-3002, which is outside the Project APE, was the subject of test investigations as part of the study by ASM Affiliates. The site, which was originally thought to occur within the Project APE, was found instead to lay outside the APE as a result of the test investigations conducted by Far Western Anthropological Research Group, Inc., during January 2005.

While this EA was being prepared by BLM, during the summer of 2007, the Inyo County Department of Public Works contracted with the Reno branch office of ASM Affiliates to conduct a field reconnaissance of Gill Station Road from its junction with U.S. Highway 395 and the CLNAWS boundary line. The purpose of this study was part of Inyo County's planning efforts to improve the physical condition of the road. The width of this second survey was over 200 feet (60 meters) and centered on the centerline of Gill Station Road. This is much wider than

the width of the 2004 survey of the proposed Hay Ranch Project pipeline corridor, which was 50 feet (15 meters).

This second survey by ASM Affiliates recorded 11 new archaeological sites, and relocated and updated site records for four previously known sites, including one of the six sites recorded by the 2004 ASM Affiliates study. However, none of the 11 newly discovered archaeological sites, and only one of the three re-recorded sites occur within the APE for the Hay Ranch Project pipeline. The boundary line for site CA-INY-1863 though was expanded by the 2007 ASM Affiliates survey.

3.6.1 Native American Values

The Eastern Sierra and Mojave Desert regions have been the home of many distinct and diverse groups of Native Americans for over 10,000 years. Tribal communities are currently located at Bishop, Big Pine, Fort Independence, Lone Pine, and Furnace Creek in Death Valley. In spite of 175 years of interaction with the larger American society, these communities still maintain their tribal identity and culture fairly intact. Part of their culture is religious values often tied to particular geographic landmarks and locations. One such area of special religious and spiritual affinity is Coso Hot Springs, which is listed on the NRHP, and since 1945 has been located within the CLNAWS and is part of the APE for this Project.

3.7 Visual Resources

The proposed alignment is located within an area containing a low-growing desert scrub area that contains some roadways and power lines. The hills serve as a background for the area.

While the CDCA Plan states that projects such as this do not impact visual quality of Class M lands, the BLM chose to use its Visual Resource Management (VRM) guidelines to evaluate visual resources and assess the potential impacts of constructing and operating a water delivery project. Data collected to perform this analysis included USGS quadrangle maps, aerial photographs, surface photographs, and project maps. The BLM guidelines have four factors to consider in evaluating a view: scenic quality rating, sensitivity level, distance zones, and visual resource classes and objectives.

- **Scenic Quality Evaluation** measures the visual appeal of a tract of land. In the visual resource inventory process, lands are given an A, B, or C rating based on the apparent scenic quality, which is determined using seven key factors: landform, vegetation, water, color, adjacent scenery, scarcity (common or rare), and cultural modifications. The rating system assumes that areas with the most variety and the most harmonious composition have the greatest scenic value. The system also assumes that features of the human environment do not necessarily detract from the scenic value of the landscape. The rating totals are used to

classify the scenic quality as: Class A, outstanding; Class B, a combination of outstanding and common; Class C, fairly common to the physiographic region.

- **Sensitivity Level Analysis** takes into consideration the frequency of use of an area and the user's perceived degree of concern about proposed changes in scenic quality. Each area is rated as having high, medium, or low sensitivity. Sensitivity level analysis is used as an estimate of public concern for scenic quality. Six factors are used to evaluate sensitivity: types of users, amount of use, public interest, adjacent land uses, special land use areas, and other factors (e.g., research or studies indicating visual sensitivity). Each factor is assigned a rating of high, medium, or low, then an overall rating is given based on the ratings for the six factors.

- **Distance Zones** are based on the level of visibility of the proposed corridor within the landscape from major viewing routes and observation points. Distance zones allow the consideration of the proximity of the observer to the project features. A particular scene is assigned one of three ratings. Foreground/middle ground includes areas seen from highways, rivers, or other viewing locations to a distance of 3 to 5 miles. Background includes areas beyond the foreground/middle ground but usually less than 15 miles away. Seldom seen areas are those that are normally hidden from view.

- **Visual Resource Classes and Objectives** are assigned four categories, or classes (I through IV). The categories are assigned through two tools, including an inventory tool that portrays the relative value of the visual resources and a management tool that portrays the visual management objectives. There are four classes; Class I is for complete preservation of the exiting landscape and Class IV is for areas that could be altered to provide for BLM management activities.

3.8 Outdoor Recreation and Open Space

The California desert provides the resources necessary for a variety of recreational experiences. The BLM is committed to providing opportunities for the visitor to obtain various types of outdoor recreational experiences and benefits dependent upon a combination of: (1) the kind of activity desired, (2) the physical or regional setting, and (3) the level of experiences (psychological and/or physiological). BLM considered a variety of recreational opportunities along a continuum of opportunities ranging from intensive motorized-vehicle-oriented activities to resource-oriented activities.

Open Space Areas – The Proposed Action serves as open space for the residents in the general area.

Recreational Activities – The California desert's natural value provides many avenues for people to explore their recreational interests.

There is a wealth of geological areas to lure the rockhound and hobby prospector. Hunters find the desert a challenge for game species from quail to mule deer.

Sightseers, painters, and photographers have long known the recreational delights of spectacular spring wildflower displays and year-round birdwatching.

Motorized vehicle travel is used as a recreational pursuit, itself, and to provide access to pursue other recreational opportunities.

Regardless of the methods available to participate in desert recreation, provisions to ensure that these opportunities will continue must be a constant concern of both management and desert users.

3.9 Social and Economic Value

Inyo County's economy is primarily driven by two economic sectors: tourism, and resource extraction and management. Each sector is summarized below:

Tourism. The county budget derives 7% of its total revenues from tourism-related taxes, including sales, occupancy, and use taxes. Tourism is the most important component of Inyo County's economy. Visitor spending (i.e., dollars brought into the county from outside and spent here) boosts local business income and personal income in addition to tax revenues. Tourists contribute 70% of all retail and lodging purchases in the county and are the most important economic resource in the county's economy.

Resource Extraction and Management. A significant portion of Inyo County's economy includes agriculture, grazing, and mining activities, as well as water transportation and management. These activities are expected to continue long term, and are expected to remain stable into the future.

Mining activities in the county extract common minerals such as sand, gravel, clay, borates, and perlite. Public agencies, such as Caltrans and Inyo County, are the largest users of these minerals, and the related employment contributes both to the county's economy and to local infrastructure. Future mineral price fluctuations and international political events will continue to affect the mining industry in Inyo County.

Inyo County Communities in the Vicinity of the Proposed Action

Inyo County communities located closest to the Proposed Action include the following:

Coso Junction. Coso Junction, located approximately 2 miles south of the South Well on the hay ranch parcel. It includes a small highway commercial development, mobile home park, and a fallow hay ranch. It operates as a safety rest area along U.S. Highway 395 and has a population of less than forty.

Dunmovin. Dunmovin is a rural community located approximately 0.5 miles northwest of the Hay Ranch parcel. It consists of unused commercial buildings and a ten-parcel subdivision. The community has a population of five.

Little Lake. Little Lake is located approximately 9 miles south of the Hay Ranch. It is a rural commercial area that contains a few scattered residential units. The population of Little Lake is less than ten (Inyo County 2001).

Haiwee. Haiwee is a widely dispersed residential community located 7 miles north of the Hay Ranch and covers 2,100 acres. It has a population of 20 (MHA 2008).

Olancha. Olancha is a rual community located at the intersection of U.S. Highway 395 and State Route 190. The community includes a clay processing mill, Crystal Geyser water bottling plant, and other light industrial facilities. The area surrounding Olancha is used for cattle grazing and alfalfa crops. It has a population estimated at 530.

Inyo County General Plan Consistency

The Economic Development Element of the Inyo County General Plan created policies to support the county's long-term efforts to improve economic conditions for all county residents.

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4. ENVIRONMENTAL CONSEQUENCES OF THE PROPOSED ACTION

This section describes the potential environmental impacts of the Proposed Action, including the direct, indirect, and cumulative impacts. Mitigation measures are identified for any potentially significant impact. These mitigation measures are expected to reduce the potentially significant impacts to less than significant levels.

For purposes of the cumulative impact analysis included in the evaluation of the potential environmental consequences of the Proposed Action, the following potential projects were considered in addition to the Proposed Action.

Los Angeles Department of Water and Power Haiwee Reservoir Seepage Recovery

The LADWP's North and South Haiwee Reservoirs are unlined and may leak water that infiltrates to the groundwater table. The amount of leakage is unknown. LADWP reportedly estimated the leakage rate to be approximately 900 acre-feet per year, based on the model calibration effort conducted for the 2006 numerical groundwater flow model. LADWP has stated that it will propose a future seepage recovery project that would pump the groundwater from an existing LADWP well (V817 or V816) just north of Hay Ranch through a 1,700-foot-long pipeline to the Los Angeles Aqueduct to the west. The well would be pumped at approximately 1.2 cubic feet per second (870 acre-feet per year). South Haiwee Reservoir's southern extent is located approximately 4 miles north of Hay Ranch; the LADWP's existing wells are located approximately 2.5 miles south of the reservoir and roughly 1 mile north of Hay Ranch.

Little Lake Habitat Restoration Project

Little Lake Ranch, Incorporated (LLR), a privately owned duck hunting club, started a habitat restoration project over 7 years ago at its Little Lake property, located approximately 9 miles south of the Hay Ranch property. The project has created 90 acres of lacustrine[1] habitat (open water), 10 acres of palustrine[2] emergent wetlands, and about 6 acres of palustrine forested habitat (along a 1.6-mile-long creek corridor). The project also enhanced about 220 acres of wetlands-associated uplands and LLR acquired 1 acre of palustrine emergent wetland and associated upland habitats.

The habitat restoration project included installation of a small weir to provide better water management capabilities, removed sediment and non-native vegetation, established native riparian habitat, reconstructed certain basins and stream capabilities, established native food and cover for upland species, and restored wetlands habitat.

[1] Lacustrine is a term used to describe a lake environment.
[2] Palustrine is a wetland classification that includes all non-tidal wetlands, inland wetlands lacking flowing water, or wetlands containing ocean salts in low concentrations.

BLM has approximately 10 acres of public lands surrounding and extending into the middle of Little Lake. This area has a scenic area lookout above the lake that can be accessed by way of Fossil Falls.

Gill Station Road Improvements

Inyo County Department of Public Works proposes to make improvements along a 5.5-mile section of Gill Station Road, from U.S. Highway 395 at Coso Junction to the entry gate for CLNAWS, in southern Inyo County. The project would include realigning, widening, and repaving Gill Station Road.

Crystal Geyser Plant

A new water pumping and water bottling plant is proposed for construction by Crystal Geyser and would be located 3 miles south of Olancha (approximately 11 miles north of Hay Ranch). Construction of the plant is expected to occur late in 2008. Operation of the plant would involve pumping approximately 106 acre-feet per year of groundwater.

Deep Rose Geothermal

Deep Rose, LLC is conducting exploration for geothermal resources in southern Inyo County. If a resource is located, Deep Rose, LLC would apply for permits for geothermal development. The area of exploration is located in the southern McCloud Flat region within Section 16, Township 21 South, Range 38 East, Mount Diablo Base and Meridian. This is located 5.75 miles northeast of Hay Ranch.

U.S. Highway 395

Caltrans has various improvement projects located along or on U.S. Highway 395. Most applicable in this analysis is the safety roadside rest area (SRRA) at Coso Junction. The SRRA rehabilitation project at Coso Junction, located approximately 2 miles south of Hay Ranch, was scheduled to commence construction in November 2007 and was completed in October 2008.

4.1 Air Quality

4.1.1 Impacts

Emissions from the Proposed Action would come from both direct and indirect sources. Direct emissions would come from vehicle use on the access roads, heavy equipment operation, and material handling in the form of PM_{10} emissions. The operation of engines to power the operation would generate particulate and other combustion emissions. Indirect emissions would occur in the form of increased fugitive dust during windstorms due to the soil disturbance as a result of the Proposed Action. All of these activities would be short term and of low intensity. As a result, the overall emissions from the Proposed Action will be minimal; however, there could be local short-term violations of the GBUAPCD rules for fugitive dust if control measures are not applied. No significant off-site impacts are anticipated.

Consistency with the Applicable Air Quality Plan

A project is deemed inconsistent with an air quality plan if it would result in population and/or employment growth that exceed growth estimates included in the applicable air quality plan.

The project would include installation of a nine-mile underground pipeline and water collection tanks. The two existing North and South Water wells at the Coso Hay Ranch will be the sources of the water. The southern well will be tied into the pipeline. Water from the collection tank would be piped to the existing Coso Geothermal Project to the east. The Proposed Action will not result in either an increase in the general population or in the number of employees and staff in the area.

Therefore, the Proposed Action would be consistent with the local general plan and the Regional Growth Management Plan; it is not of regional interest and would be consistent with the 2003 Air Quality Management Plan (AQMP). Hence, no impact would result from Project implementation.

Violation of Air Quality Standard or Contribution to an Existing Air Quality Violation

Air quality impacts are usually divided into perceived short-term and long-term impacts. Short-term impacts are usually the result of construction or grading operations. Long-term impacts are associated with the build-out condition of the Proposed Action.

Short-Term Construction Impact

Construction emissions associated with the Project would be generated for a period of three to five months. Construction emissions can be distinguished as either on or off site. On-site air pollutant emissions during construction would principally consist of exhaust emissions from heavy-duty construction equipment, such as excavators and graders, as well as fugitive particulate matter from soil disturbed during activities such as trenching and grading operations.

Estimates of emissions associated with construction and operation of the Project were calculated using the URBEMIS 2007 Air Quality Model (Version 9.2.4). URBEMIS 2007 estimates maximum daily emissions during four construction periods ranging from 20 to 50 days in duration. Emissions resulting from the operation of two diesel-powered portable generators are discussed in the Long-Term Operational Impacts section of this EA.

Model inputs were modified to reflect construction details provided in the proposed Project description. Data input applied in the URBEMIS 2007 air quality modeling were obtained from the proposed Project application materials that detailed construction equipment information, specifying types and hours per day of operation, as well as timelines for construction phases. Where information was not available, URBEMIS model default assumptions were used. These results are identified in Table 4.1-1, Estimated Maximum Daily Construction Emissions.

Table 4.1-1
Estimated Maximum Daily Construction Emissions

	Unmitigated Emissions (lbs/day)					
	ROG*	NO_x	CO	SO_2	Total PM_{10}	Total $PM_{2.5}$
Construction Period 1 (50 days)	7.05	58.85	23.41	0.00	2.86	2.63
Construction Period 2 (20 days)	2.59	22.60	9.06	0.00	1.05	0.97
Construction Period 3 (50 days)	4.17	35.89	13.56	0.00	1.69	1.55
Construction Period 4 (30 days)	6.81	55.02	25.06	0.00	2.77	2.55

SOURCE: URBEMIS 2007 version 9.2.4.
NOTES: * ROG = Reactive Organic Gas.
See Appendix F, Air Quality Tables, for calculations.

Equipment Exhaust Emissions

Construction equipment, on-road heavy-duty trucks, and construction worker commute vehicles would generate air pollutant emissions. Short-term generation of criteria pollutants would result from the employment of heavy-duty trucks, dozers, trenchers, loaders, and welders that would be used to develop the proposed pipeline and water tanks. The URBEMIS model was customized to reflect operation of specific construction equipment, as illustrated in the detailed model results presented in Appendix F of this EA. Emissions from construction worker commute trips would be minor compared to the emissions generated by construction equipment. The GBUAPCD considers short-term construction exhaust emissions to be less than significant. Because this impact is less than significant according to the criteria presented above, mitigation measures to mitigate construction equipment exhaust emissions are not required.

Fugitive Dust (PM_{10}) Emissions

Fugitive dust emissions in the form of PM_{10} (particulate matter up to 10 microns in diameter) would be a factor during clearing, grading, trenching, and other ground-disturbing construction activities. Quantitative values could vary significantly depending on soil moisture, silt content, wind speed, construction density, and other factors. Construction of the proposed Project would entail the application of water to exposed soil to reduce fugitive dust generation. The use of 4,000-gallon water trucks during each construction phase is represented in Table 4.1-1, Estimated Maximum Daily Construction Emissions. Additionally, the operation of construction equipment would produce combustive emissions of PM_{10} and $PM_{2.5}$ (particulate matter 2.5 microns or less in diameter). However, air quality impacts from construction would be temporary and, pursuant to GBUAPCD policy, fugitive dust emissions from construction activities do not need to be quantified to make a significance determination. Instead, the district maintains that all fugitive dust emissions from construction activities represent a potentially significant, but mitigatable impact (see criteria presented previously). With the implementation of the identified mitigation measures, dust emissions from the Project will not result in any significant impacts.

In addition to the implementation of standard GBUAPCD construction mitigation measures, particulate emissions from construction activities will be minimized by the use of good engineering practices in earthwork, and by the continuous use of water trucks. Compliance with the posted speed limits will be required. Therefore, with implementation of mitigation measures for fugitive emissions, as documented in Section 4.1.3, Mitigation, of this EA, the GBUAPCD requirements would be met and the construction emissions would not contribute significantly to any air quality threshold.

Long-Term Operational Impacts

Except for the first year of operation, long-term operational impacts would not increase the air emissions in the area since no additional activity would be generated. During the first year of operation (up to 12 months), electrical power to operate the downhole pumps, booster pump station, area lighting, and instrumentation would be provided by two 1,500-kilowatt diesel-powered portable generators, each operated at up to 75% of rated capacity for up to 18 hours per day. The generators would be obtained from an equipment rental company, would meet at least Tier 1 state and federal emission standards, and would be registered under CARB's Statewide Portable Equipment Registration Program.[3] The emissions from the two portable generators were estimated using the URBEMIS 2007 program (see previous Equipment Exhaust Emissions section of this EA).

[3] Under the CARB Statewide Portable Equipment Registration Program, portable equipment may operate for up to 12 months at one location without obtaining a permit to operate from the governing air district. If the engine generators were to remain for more than 12 months, they would have to obtain authorization to construct and permits to operate from the GBUAPCD. Accordingly, they would be subject to the GBUAPCD's new source review requirements including the use of best available control technology, such as diesel particulate filters.

The GBUAPCD has not published guidelines for air quality assessments under CEQA; nor does it recommend numerical, mass-emission-based thresholds for operational emissions. Instead, the GBUAPCD recommended that the impact on ambient levels of NO_2 be evaluated to determine whether the emissions would cause an exceedance of the 1-hour and annual CAAQS (D. Ono, pers. comm. 2008).

An ambient air quality impact analysis was conducted for the NO_X emissions from two diesel-powered generators. For this analysis, it was assumed that two "container"-type engine-generator sets would be operated near the western end of the water pipeline. To perform the ambient air quality assessment, stack characteristics were obtained for a Multiquip 40-foot container[4] housing a Cummins-brand 1,500-kilowatt engine-generator set driven by a Cummins KTA50G9 diesel engine.[5] The stack characteristics used in the modeling are as follows:

Stack Height: 13.5 feet
Stack Diameter: 12 inches
Exhaust Flow Rate: 8,950 actual cubic feet per minute
Exhaust Temperature: 865°F
Emission Rates:
Maximum Hour: 18.37 pounds per hour (2.32 grams per second) per engine
Annual Average: 13.78 pounds per hour (1.74 grams per second) per engine
Dimensions of Container (for downwash calculations)
Height: 13.5 feet
Length: 40 feet
Width: 8 feet

All of the NO_X emissions were assumed to be NO_2. This approach is conservative because only about 5% to 10% of the exhaust gas would be NO_2, with the balance being nitric oxide (NO). The NO will convert to NO_2 over time and distance. Thus, this assumption would overstate the potential impact.

The dispersion modeling was performed using the Environmental Protection Agency (EPA)-approved model SCREEN3.[6] The engines were assumed to be located in the center of the northern-most Coso Hay Ranch property in Section 26, Township 21S, Range 37E. The distance to the nearest publicly accessible property line is approximately 4,100 feet (1,250 meters). SCREEN3 was run for potential receptor distances from 4,100 to 32,808 feet (1,250 to 10,000 meters). The point of maximum impact was approximately 3,000 feet (914 meters) from the assumed location of the engines. Because SCREEN3 estimates only 1-hour impacts, the results

[4] http://www.mqpower.com/pages-products/container/EGC1500C.html
[5] http://www.cumminspower.com/www/common/templatehtml/technicaldocument/EmissionDataSheets/na/eds-163.pdf
[6] Lakes Environmental, SCREENView, Version 2.5.0.

from the model run using the annual average emission rate were multiplied by 0.1 to estimate the annual impacts as described in the EPA guidance (EPA 1992). The modeling results were added to the background concentration as shown in Table 4.1-2, Ambient Air Quality Modeling Results. As indicated in Table 4.1-2, the NO_2 concentrations would not cause or contribute to an exceedance of the CAAQS, and the impact would be less than significant.

Table 4.1-2
Ambient Air Quality Modeling Results

Averaging Period	Background Concentration (ppm)	Modeled Impact		Impact plus Background (ppm)	CAAQS (ppm)
		µg/m^3	ppm		
1-Hour	0.055	112.42	0.06	0.12	0.18
Annual	0.005	8.43	0.004	0.009	0.030

Notes: Background concentration are highest values for 2005–2007, Trona monitoring station. NO_X impact modeled for a single engine-generator. The modeled impacts at the point of maximum impact (3,000 feet from the source) were doubled for two units operating concurrently.

The engines would also emit diesel particulate matter, which is designated as a toxic air contaminant and a carcinogen by CARB. However, the engines would operate for up to 1 year only and no off-site receptors are located within 800 meters (2,625 feet) of the Project site. Thus, significant long-term health impacts would not occur.

Therefore, there are no long-term emissions associated with the Proposed Action, and no Project-specific significant impacts to air quality would result from the implementation of the Proposed Action.

4.1.2 Cumulative Impacts

The cumulative effect area for air resources is the Coso Junction PM^{10} Planning Area. There are few sources of emissions in the area. The overwhelming majority of the emissions are transported into the area from Owens Lake in the adjacent air planning area. The GBUAPCD considers most other sources as minor. They identify the control of emissions from Owens Lake as the only necessity to achieve the National Ambient Air Quality for the Coso Junction PM^{10} Planning area. The expected emission levels associated with the proposed Project are not likely to result in or contribute to exceedances of the NAAQS since the emissions will be short term in nature.

4.1.3 Mitigation

The following mitigation measures shall be implemented during construction of the Project to reduce potentially significant impacts associated with fugitive dust (including visibility impacts) to less than significant levels:

- Water all active construction areas, including unpaved access roads (if applicable), at least twice daily or more often if winds exceed 15 miles per hour (mph) or fugitive dust is observed leaving the construction site boundary.

- Enclose, cover, water twice daily, or apply (non-toxic) soil binders to exposed stockpiles (e.g., dirt and sand).

- Limit construction traffic speeds on unpaved roads to 15 mph. All contractors and Project applicant staff who will use unpaved roads during construction of the Project shall be informed of the 15 mph speed limit.

4.2 Soils

4.2.1 Impacts

Implementation of the Proposed Action has the potential to create soil erosion due to removal of vegetation and disruption or compaction of the desert surface. This impact will be reduced to less than significant impacts through implementation of mitigation measures outlined in Section 4.2.3, Mitigation, of this EA.

4.2.2 Cumulative Impacts

The potential cumulative impacts associated with the Proposed Action would also create potential erosion impacts. This may include potential sedimentation and windblown soil. The mitigation measures in Section 4.2.3 that would be implemented for each project would reduce the impacts to less than significant levels. Implementation of the mitigation measures in Section 4.2.3 would reduce these cumulative impacts.

4.2.3 Mitigation

- Application of erosion protection in accordance with the revegetation plan (see Appendix G of this EA) will consist of applying straw over the standard revegetation seed mixture and/or redistributed topsoil, to prevent erosion.

- Construction vehicles will be confined to designated roads and parking areas to prevent compaction of outlying areas.

4.3 Vegetation

4.3.1 Impacts

Implementation of the Proposed Action would result in the loss of desert vegetation, including the creosote–white bursage scrub and allscale scrub communities, as a result of the removal of vegetation during pipeline construction. The construction of the Proposed Action in and near existing roadways and trails will minimize this loss.

Disruption of the soil and the use of equipment from other locations create the potential to further introduce invasive and noxious weeds into the area. This impact is considered potentially significant without mitigation.

As discussed in Section 3.3, Vegetation, of this EA, there is a potential that several special-status plant species may occur along the pipeline alignment. This could constitute a significant impact without mitigation.

4.3.2 Cumulative Impacts

The other cumulative projects have a potential to impact special-status plant species and to introduce invasive and noxious weeds to the area. This would also include impacts to the creosote–white bursage scrub and allscale scrub communities. These impacts can be mitigated through the implementation of the mitigation measures in Section 4.3.3 of this EA.

4.3.3 Mitigation

- COC shall crop or crush, not blade, vegetation underneath and along the pipeline corridor, except in any areas required for above ground supports (see Figure 1, Pipeline and Related Infrastructure), which shall be cleared.

- The pipeline corridor shall be revegetated according to the revegetation plan provided in Appendix G of this EA.

- COC shall gain and maintain access to the pipeline by pruning, not by destruction of existing vegetation through clearing or blading.

- Construction equipment and vehicles shall be cleaned to remove dirt and any vegetative material prior to accessing the site. This will reduce the potential for introduction of invasive or noxious species.

- Prior to construction, monitoring shall occur to determine the presence of noxious or invasive species on or adjacent to the pipeline corridor. Any removal program must be approved by the BLM in advance of its implementation.

- The pipeline corridor shall be monitored for 5 years after completion of construction. Any noxious or invasive species found will be reported to the BLM and control measures will be developed and implemented only after review and approval by the BLM.

- During construction, the pipeline corridor shall be monitored for special-status plant species. Any populations of special-status species shall be identified and avoided through rerouting of the pipeline within the surveyed corridor.

4.4 Surface Water

4.4.1 Impacts

Implementation of the Proposed Action may create short-term erosion impacts associated with pipeline construction. Because the trench surface will be regraded and the soil stabilized, no significant impacts are anticipated. The construction of the Proposed Action will not increase flooding potential within the Project area.

4.4.2 Cumulative Impacts

The cumulative projects may also create similar impacts as the Proposed Action. This will include potential erosion associated with grading for the projects. It is assumed that erosion controls will be implemented for each project and the impacts will be mitigated through this action.

4.4.3 Mitigation

No mitigation measures are required.

4.5 Groundwater

This section is summarized from the Hydrology and Water Quality section of the Inyo County Conditional Use Permit (CUP 2007-003) Draft Environmental Impact Report (DEIR) prepared by MHA/RMT in 2008. Because the Project is considered to involve the transfer of groundwater out of its basin of origin, the Project is subject to the requirements of Chapter 18.77 of the Inyo County Code for review by the Inyo County Water Commission, which makes recommendations to the Inyo County Planning Commission as to the potential hydrologic and environmental impacts of proposed groundwater export projects. The DEIR prepared to support that review sets

forth a comprehensive and detailed review of potential impacts to groundwater resources in Rose Valley from the Project and different operating scenarios, based on hydrologic modeling. The DEIR also includes a detailed Hydrologic Monitoring and Mitigation Plan (HMMP) designed to provide detection of changes in groundwater levels and corresponding requirements for the reduction or curtailment of pumping rates, in response to specified "trigger levels," in time to avoid any significant effects on the groundwater resource and other environmental resources supported by groundwater. The BLM has independently considered the analysis of potential hydrologic and water quality impacts set forth in the Draft EIR (Section 3.2), and the monitoring and mitigation requirements of the HMMP, and has incorporated them by reference in this EA as Appendix H. The following is a very limited summary of those materials; the reader is encouraged to refer to Appendix H of this EA for the corresponding details.

4.5.1 Impacts

This section addresses the groundwater impacts associated with construction of the Proposed Action, impacts to water users in the Rose Valley and Indian Wells Valley, as well as impacts to Little Lake and Coso Hot Springs.

Groundwater Impacts Associated with Pipeline Construction

Implementation of the Proposed Action would include the construction of down-hole pumps, new well heads, storage tanks, and a pipeline. It is estimated that this would require 4,500 gallons per day during the construction period. This is expected to result in only a minimal change in groundwater levels and will not create a significant impact.

Impact to Rose Valley Water Users

Operation of the Proposed Action would result in drawdown of the water table in Rose Valley. Based on hydrologic modeling, the groundwater is predicted to decline from 25 to 55 feet for the wells in Dunmovin, approximately 1.5 miles north, from 20 to 50 feet at Coso Junction, from 7 to 20 feet at Cinder Road/Red Hill West, and from 4 to 11 feet for Little Lake Ranch North. These declines would occur in the 30-year timeframe with the decline increasing over time to that level. This predicted lowering of the groundwater table in the vicinity of groundwater users, which would potentially inhibit access to groundwater, is considered significant. Due to the predicted low level of drawdown in the southern portion of the valley, water supply wells in this location may not need any equipment changes. For wells in the Dunmovin area and in Coso Junction, existing wells may be impacted through the decline in water levels, making the current well equipment unable to produce the volume of water currently produced. This impact will be mitigated by the applicant monitoring the wells in accordance with the HMMP and modifying the wells or equipment as necessary to allow these wells to function at current levels, at the Project Proponent's expense.

Impact to Water Users in the Indian Wells Valley

Groundwater modeling indicates that impact to the Indian Wells Valley water users would be less than significant with the reduction in flows less than 3% of total recharge estimated.

Impact to Little Lake

The potential impacts to Little Lake water levels predicted by the groundwater modeling are considered significant. The springs that feed the lake may be dependent upon groundwater levels. Groundwater modeling has indicted that there will be a reduction in groundwater levels and reduction in spring flows at Little Lake. The monitoring and mitigation measures in the HMPP are designed to avoid these potential significant impacts. The trigger levels for the reduction or cessation of pumping to protect the groundwater levels and any dependent environmental resources at Little Lake have been conservatively set. The Project Proponent will bear the risk that it will be unable to pump as much groundwater as planned for the Project.

Impact to Coso Hot Springs

No adverse impact to Coso Hot Springs is expected. The extensive monitoring of these springs during the 20+ years of geothermal resource development and utilization in the Coso KGRA has not demonstrated a direct connection between the springs and the geothermal reservoir. BLM has entered into a Programmatic Agreement with the SHPO and the ACHP (Appendix D) to provide a continuing framework for monitoring and addressing potential impacts to Coso Hot Springs from the Proposed Action.

4.5.2 Cumulative Impacts

The potential impacts to groundwater resources in Rose Valley from the Proposed Action may be increased by the Crystal Geysers project and LADWP Haiwee Reservoir seepage recovery project, if either or both of those projects proceed. The HMMP addresses this possibility.

4.5.3 Mitigation

The following mitigation measures are expected to reduce potentially significant impacts to less than significant levels:

- The Project Proponent shall implement the HMMP (see Appendix H) as approved by Inyo County.

4.6 Wildlife

4.6.1 Impacts

Implementation of the Proposed Action has the potential to impact wildlife species in general and special-status species in particular. In general, the potential impact will be short term in nature during the construction period. Once the pipeline is in place and the site is revegetated, the remaining potential impacts to wildlife habitat would be minimal.

The proposed Project is located in an area that is considered the north-westernmost limit of the range of the desert tortoise. Rose Valley is potential habitat for the desert tortoise. Surveys for the tortoises along the pipeline alignment by UltraSystems in March of 2005 (Appendix I of this EA) and by EREMICO Biological Sciences in August of 2007 for the Gill Station Road Improvement and then in April 2008 for the DEIR, did not identify any tortoises on the proposed alignment. Burrows and other signs were noted. Therefore, at most, the area could contain low densities of tortoises. Based on these findings, impacts to this species are not anticipated. BLM has initiated formal consultation with the USFWS on effects to the desert tortoise. The avoidance requirements included in the mitigation measures are intended to avoid the need for incidental taking authorization with respect to the desert tortoise.

The Project area is within the range of the Mohave ground squirrel. Surveys in the area including the proposed pipeline alignment did not result in observation of ground squirrels. Because they are difficult to observe, there is a potential that the species could occur in the area. Mitigation measures for the species are provided in Section 4.6.3, Mitigation, of this EA. In support of the approval by the CEC of Small Power Plant Exemption for the Coso Navy 2 Geothermal Project, in 1988, BLM, CLNAWS, and CDFG entered into a Stipulation for Mitigation of Impacts to the Mohave Ground Squirrel at the Coso Known Geothermal Resource Area (Stipulation and Mitigation Plan, included as Appendix C of this EA), an Approved Mohave Ground Squirrel Mitigation Plan. The Stipulation and Mitigation Plan required the establishment of a 43,448.5-acre Coso Grazing Exclosure Mitigation Program, which includes Mohave ground squirrel trapping within the exclosure and evaluations every 5 years for the life of the Project. The Stipulation and Mitigation Plan allows surface land disturbance within the Coso KGRA of up to 2,193 acres on the federal lands covered by the plan. To date, only 474.69 acres of this allowance has been used. The surface disturbance calculations are reported annually to the CEC.

The CDFG recognizes that the 1988 Stipulation and Mitigation Plan is “grandfathered in” under the provisions of Cal. Fish and Game Code Section 2081, and therefore, that no additional incidental taking authorization or habitat compensation will be required with respect to the potential impacts on the Mohave ground squirrel resulting from the Hay Ranch Project on the federal lands covered by the Stipulation and Mitigation Plan. COC has submitted an application to CDFG for a 2081 Incidental Take Permit with respect to the Mohave ground squirrel in relation to Project activities to be conducted on private land.

4.6.2 Cumulative Impacts

It is unlikely that the other projects would impact desert tortoise due to the low densities of the species in the area. Other activities and developments in the Project area that have the potential to compound the impacts of the Proposed Action on wildlife in general, and the Mohave ground squirrel in particular, include the Deep Rose Project and existing pumice mine. Although the amount of acreage leased for geothermal and mining uses are reasonably known, the amount of existing disturbance to soils and specific wildlife habitat types has not yet been identified for these projects. However, the Proposed Action's incremental effect on the Mohave ground squirrel would not be cumulatively significant. The mitigation measures in Section 4.6.3 of this EA would also apply to those projects.

4.6.3 Mitigation

The following mitigation measures are proposed:

- The pipeline corridor shall be revegetated according to the revegetation plan for the proposed Project (Appendix G).

- Preconstruction biological monitoring shall be conducted prior to construction to identify any possible tortoises or ground nesting birds within the pipeline alignment. Any potential tortoise, Mohave ground squirrel burrows or ground nesting sites in the alignment shall be examined prior to construction to assure their avoidance.

- A tortoise-proof exclusion fence shall be installed around the proposed Project construction area including staging areas and laydown sites; the fencing shall be maintained throughout construction and all work shall be conducted within the fenced areas.

- A qualified biological monitor shall be on site during all phases of construction. The biological monitor shall ensure that the tortoise fencing remains in place and that all work occurs in place within the fenced areas.

- All construction workers shall be briefed as to measures to avoid impacts to desert tortoise and other special-status species; these measures shall include proper disposal of solid waste, no driving in areas outside of the tortoise enclosures, and the exclusion of pets and firearms from the Project site.

- The Project Proponent shall debit 48.42 acres from its remaining acreage credit allowance under the approved Mohave Ground Squirrel Mitigation Plan.

- The Project Proponent shall obtain an incidental taking permit with respect to the Mohave ground squirrel to authorize incidental takings that may occur on private land in connection with the Project, and shall satisfy all habitat compensation requirements of the CDFG as a condition of that authorization.

4.7 Cultural Resources

4.7.1 Impacts

Existing archaeological sites registered in the NRHP were found within the Project APE. However, impacts to these sites due to the Proposed Action can be minimized through adoption of mitigation measures outlined in Section 4.7.3 of this EA. No residual impacts to cultural resources are anticipated after the implementation of the mitigation measures described here.

4.7.2 Cumulative Impacts

The other projects in the cumulative baseline may impact cultural resources. Each of these projects would be required to follow similar mitigation measures as described in Section 4.7.3 of this EA.

4.7.3 Mitigation

All sites found in the Project APE will be avoided during construction by shifting that portion of the APE for the proposed pipeline to within the paved or gravel roadway (Gill Station Road). This avoidance includes a 30-meter (98-foot) buffer zone around large sites (INY-1863, INY-2125, INY-4413, and CGP-2), and a 10-meter (33-foot) buffer zone around small ones (INY-3406 and CGP-1). A cultural monitor is required during any construction activities within any avoidance area, along with the temporary placement of orange environmental fencing to protect the sites.

4.8 Native American Values

4.8.1 Impacts

Impacts to Native American resources from the Proposed Action are addressed through the Programmatic Agreement (PA) (Appendix D of this EA) signed with the BLM, SHPO, and ACHP. With mitigation, no significant impact regarding Native American values would result from implementation of the Project.

4.8.2 Cumulative Impacts

No cumulative impacts to Native American values are anticipated. Each of the projects in the cumulative baseline will be mitigated as described in Section 4.8.3, Mitigation, of this EA.

4.8.3 Mitigation

As a result of consultation among the five tribes of the Owens Valley region (Bishop, Big Pine, Fort Independence, Lone Pine, and Timbisha Shoshone of Death Valley), BLM has included the Coso Hot Springs within the APE for this Project. Further consultation between these tribes and BLM led to the completion of a Programmatic Agreement (PA) that will allow BLM to take into account the effects of the undertaking on both Coso Hot Springs and the archaeological sites within the proposed pipeline corridor. This PA was signed by BLM, SHPO, and the ACHP in Washington, D.C. during the summer of 2008 (included as Appendix D of this EA).

The major provisions of the PA require that BLM will assume all archaeological sites within the APE as eligible for the NRHP.

- BLM will ensure that the pipeline route and construction avoids the six archaeological sites located within the APE.
- A qualified archeologist and Native American monitor will be present during construction activities.
- CLNAWS has been monitoring the geophysical state of the Coso Hot Springs on a monthly basis since 1979 as a provision of an earlier PA related to the construction of the initial geothermal facility, and an annual report that tallies these monthly observations will be distributed to the signatory and concurring parties to the PA.
- CLNAWS has been coordinating the visitation and use of Coso Hot Springs by Native Americans and Traditional Practitioners since 1979 (Appendix A) as a provision of an MOU between the Coso Ad Hoc Committee, composed of acknowledged individuals from the Owens Valley tribes and Kern County Indian Community, and an annual summary of Native American use of the Coso Hot Springs will be provided to the signatories and concurring parties to the PA.
- If changes in use patterns by the Traditional Practitioners resulting from the implementation of the undertaking are identified, BLM and CLNAWS will initiate consultation among the signatory and concurring parties regarding the observed changes.

In order to minimize impacts to Native Americans traveling to the Coso Hot Springs, vehicle traffic (within a reasonable distance of the religious activity) will be halted or kept to a minimum

during ceremonial and religious observances related to the visitation. CLNAWS will notify the Project Proponent of Native American visits to the designated prayer sites and Coso Hot Springs so that activities such as construction can be scheduled to minimize or eliminate interference with these ceremonial activities.

4.9 Visual Resources

4.9.1 Impacts

Scenic Quality: The water delivery Project can be divided into two parts: the portion on the western end of the alignment, from the North Well to the South Well and proposed pump station, to Gill Station Road; and the portion that is adjacent to the existing roadway.

The portion on the western end of the alignment is most visible to the general public, as the South Well is located approximately 2,000 feet east of U.S. Highway 395. However, the view to the east of U.S. Highway 395 has a scenic quality of Class C, as the North and South Wells are existing facilities. According to the BLM VRM guidelines, Class C is described as fairly common to the physiographic region. The SCE 115 kV transmission line is located behind the wells, with the Gorge Rinaldi 500 kV SCE/DWP transmission line in the foreground. The water pipeline between the North Well and the South Well is proposed to be underground. The proposed pump station will be located behind the South Well and will include a 250,000-gallon collection tank that will be protected with a perimeter fence.

The water pipeline, adjacent to the roadway, is proposed to be underground for almost the entire length up to the injection system near the Coso geothermal area. There is a small section of pipeline that will be aboveground (approximately 500 feet in length). This is located just outside of the CLNAWS boundary. The other aboveground structure will be the holding tank (at the High Point Tank Site), located inside the CLNAWS boundary. Due to the presence of the roadway, this portion of the Project also has a scenic quality of Class C (see Figure 1, Pipeline and Related Infrastructure)

Sensitivity Level: Because of the presence of the water wells and electrical transmission lines along the western end of the alignment, and an existing roadway along the remainder of the alignment (to the water line route), the sensitivity level for changes in the scenic quality is low. The water line will be buried underground for a large majority of the length and this would minimize the likelihood of adverse impacts to scenic quality.

Distance Zones: The distance zone of the western end of the alignment would be located in the foreground/middleground of the landscape, with the underground water pipeline and proposed pump station located in the vicinity of U.S. Highway 395. The proposed water pipeline route adjacent to the roadway would be in the background, or in seldom-seen areas, as the roadway

proceeds through an unpopulated area. The roadway provides access to an active mining operation and the Coso KGRA; these are not areas of high interest to tourists.

There are no impacts to visual resources due to the Proposed Action. The structures in the Proposed Action are only located within Hay Ranch, the facilities will be buried and construction will occur in or near existing disturbed areas such as roads.

4.9.2 Cumulative Impacts

Each of the projects in the cumulative impact baseline has the potential to create visual impacts. None of these impacts are expected to be significant in that they are not impacting scenic areas.

4.9.3 Mitigation

Since no impacts to visual resources are expected as a result of the Proposed Action, no mitigation measures are required.

4.10 Outdoor Recreation and Open Space

4.10.1 Impacts

The Proposed Action will not adversely impact any National Scenic Trails or National Historic Trails. After construction of the Proposed Action, it is expected that the area will appear much as it does presently. The water pipeline is proposed to be installed underground for all but small portions at the locations shown on Figure 1, Pipeline and Infrastructure. The water pipeline will predominantly be located adjacent to an existing road.

4.10.2 Cumulative Impacts

None of the projects considered in the cumulative baseline are anticipated to produce significant environmental impacts to recreation. This is because the projects are not occurring in areas used for high levels of recreation.

4.10.3 Mitigation

No mitigation measures are required.

4.11 Social and Economic Values

4.11.1 Impacts

There would be no impact on the two major economic sectors (Tourism and Resource Extraction) of the regional economy due to the Proposed Action. No significant impacts regarding social and economic values would result from implementation of the Project.

4.11.2 Cumulative Impacts

It is anticipated that the Proposed Action combined with the other cumulative projects in the baseline will increase the economic activity in the region, resulting in a beneficial cumulative impact.

4.11.3 Mitigation

Since the Proposed Action would have no significant impact on social and economic values, no mitigation measures are required.

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Duane Ono. 2008. Deputy Air Pollution Control Officer, Great Basin Unified Air Pollution Control District, personal communication with David Deckman, Dudek, September 9.

Glenn Harris. 2008. Natural Resources Specialist, Bureau of Land Management, personal communication with Colleen Brock, Coso Operating Company, October

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