

PROGRAMMATIC MEMORANDUM OF AGREEMENT  
BETWEEN  
THE COMMANDER, NAVAL WEAPONS CENTER,  
CALIFORNIA STATE HISTORIC PRESERVATION OFFICER  
ADVISORY COUNCIL ON HISTORIC PRESERVATION

**PURPOSE**

This proposal establishes a process for mutual agreement between the Commander, Naval Weapons Center, China Lake, California; the California State Historic Preservation Officer; and the Advisory Council on Historic Preservation in the preservation and protection of historic and cultural property that may be affected by the Navy Geothermal Development Program in the vicinity of Coso Hot Springs, Inyo County, California, which is located on the Naval Weapons Center.

Each of these entities is concerned with the protection of historic and cultural property located on the Naval Weapons Center in compliance with requirements set forth in statutes for the protection of cultural resources. Since the proposed undertaking could have an adverse effect on historic and cultural property, the parties to this Agreement concur that it would be in the best interest of such property and of expeditious geothermal development to coordinate the process for locating, identifying, evaluating, protecting and preserving historic and cultural property in advance of and from activities relating to the development of the Navy Coso Geothermal Development Program.

The proposed action is the award of a contract to develop geothermal power as an alternative to conventional power sources at the Naval Weapons Center (NWC), China Lake, California. The contractor will be responsible for implementing a Coso Geothermal Development Program on approximately 3 1/2 square miles of 4 1/2 square miles of Navy fee-acquired land within the Coso Known Geothermal Resource Area (Coso KGRA). Execution of the contract will be subject to constraints that will facilitate development of the geothermal resource and without interference with the Naval Weapons Center's national defense mission. Successful completion of this project will provide the Navy energy self-sufficiency at its NWC facility. Energy in excess of the NWC needs will be made available to other west coast Department of Defense activities thereby releasing to the civilian sector electrical power generating capacity now devoted to defense requirements.

The proposed program is to develop geothermal resources only on Navy fee-acquired land within the Coso KGRA. The Navy geothermal development program is distinct and totally separate from the leasing program for withdrawn and public land within the Coso KGRA being considered by the Bureau of Land Management (BLM). NWC and BLM executed a Memorandum of Understanding in 1977 permitting BLM to lease land in the Coso KGRA, withdrawn under Public Land Order 431, for geothermal development by private industry. BLM has initiated a separate environmental assessment to evaluate the impact of leasing both public and withdrawn land in the Coso KGRA for geothermal development.

Because the Navy geothermal development program is not based on a lease of the geothermal resource, the Navy conducted its environmental review in a manner that differs from the BLM. The Navy will prepare a tiered or phased series of environmental reviews as described in Paragraph 1502.20 of the recently proposed National Environmental Policy Act Regulations and as proposed in "Program Objectives of the Interagency Geothermal Streamlining Task Force." By doing so, Navy expects to avoid the problems inherent in making detailed speculative projections of potential effects on historic and cultural resources without specific knowledge of the geothermal resource and the geothermal reservoir.

The Navy Coso geothermal development program is based on processing of the Navy-owned geothermal resource by a contractor. The rights to the geothermal resource will not be conveyed to the contractor. The Navy will not commit the resource to full development at the time of contract award. This distinction will be made explicit in the contract by defining decision points between the various stages of development, for example, between field exploration and field development. Using the tiered concept, these decision points will allow detailed evaluation of specific effects of each operational stage on historic and cultural resources without duplicating previous reviews and without lengthy reviews of hypothetical effects.

The Navy obtained fee-simple title to approximately 4 1/2 square miles of land in the project area in 1947 as a result of civil condemnation (311-ND). In January 1978, approximately 1 square mile of the Navy's land was listed on the National Register of Historic Places. Due to the combination of an apparent lack of significant geothermal resource within the National Register site and the complexity inherent in conducting new activities within a registered site, only the 3 1/2 square miles of surface outside of this site will initially be made available for geothermal development under the proposed contract. The location of the 3 1/2 square miles selected for development is shown in Figure 1, a foldout on the last page of this Agreement. The project area consists of four separate parcels extending from the eastern edge of Rose Valley on the west to Coso Basin on the east.

The four discrete locations of fee-acquired lands discussed herein are assigned letter designations as follows and are identified in Figure 1.

Parcel A: The westernmost parcel located in Rose Valley contains a total of 640 acres.

Parcel B: The central and largest parcel consists of approximately 1,315 acres. This parcel contains the Coso Hot Springs NATIONAL REGISTER site.

Parcel C: The northernmost parcel contains 40 acres.

Parcel D: The southernmost parcel lying on the edge of the Coso Basin consists of 320 acres.

All proposed geothermal wells must be drilled on Navy fee-acquired land. The support, conveyance, and power generation facilities may be constructed on either fee-owned or adjacent withdrawn land within NWC boundaries, subject to Navy approval. At no time will ownership of the land or the geothermal resource be conveyed to the contractor.

Any production of by-products from the produced geothermal fluids must be specifically approved by the Navy. Distribution of any income derived will be subject to the law in existence at the time by-product production is proposed.

The electric generation system provided by the contractor will be integrated with the commercial power grid to the degree required to maintain a reliable and economic power supply to the activities served.

#### GEOTHERMAL DEVELOPMENT PROGRAM

The proposed contract will require the contractor to prepare a Geothermal Development Program to be implemented at his expense. The program must address how the following development phases will be conducted:

- (a) Field investigation and research .
- (b) Field exploration
- (c) Field development and power plant construction
- (d) Power production and field operation
- (e) Field closure

Before proceeding from one phase of development to the next, mutual agreement on the economic, technical, and environmental feasibility must be reached by the contractor and the Navy. Should the resource at Coso prove unsuitable for economic power generation at the then present state of the art, the contractor can withdraw. If the geothermal resource is suitable for power production, the contractor shall build, own, operate and maintain one or more geothermal plants and necessary power lines, power transformer substations and associated equipment and facilities to deliver initially the full electrical energy requirements of NWC and subsequently other Navy activities. The government will reserve the right to purchase all contractor-owned facilities and cancel the contract at any time for reasons of national security, national defense preparedness, or national emergency.

The above description illustrates the manner in which the project contract characteristics will provide the overall decision-making framework for future development of Navy-owned resources in the Coso KGRA. It is not a detailed development plan; it is a broad program with phases that cannot be defined in detail until each previous phase has been completed. Detailed evaluations of potential effects on historic and

cultural resources will be prepared for public review at each stage of the program and will be used to determine the feasibility of the next phase, as defined by the contractor. Evaluation of cumulative effects will be conducted at each review stage; modifications to original projections of cumulative effects will be made as new information indicates such changes are merited.

In order to project effects on historic and cultural resources resulting from geothermal development, it is necessary to characterize the most significant land uses associated with development of the geothermal resource. A Coso Geothermal Development Model describing the decision-making points has been developed for Navy fee-acquired lands at Coso. The model identifies the types of man-made actions required at each stage of development.

### Field Investigation Research

A substantial body of geologic and geophysical data has already been compiled regarding the geothermal resource at Coso. The contractor will use this information plus any additional data that is available to select exploratory drill site locations. It is anticipated that this phase of the operation will be limited in terms of time and in the amount of additional field data that will be required.

The typical activities conducted during this phase include airborne exploration; surface surveys; and subsurface investigations (seismic surveys and temperature gradient holes). The deep research hole, Coso Geothermal Exploratory Hole No. 1, (CGEH-1) drilled by the Department of Energy to evaluate the hot dry rock potential at Coso represents a specialized data gathering effort that will not be duplicated by the contractor in his investigation and research phase.

These activities involve small numbers of people and vehicles. The potential for permanently affecting historic or cultural resources during this phase is minimal. Drilling of seismic test and/or temperature gradient holes represents the most intensive land use. Small truck-mounted drill rigs can drill to the required depths for seismic and temperature gradient tests. Effects on historic or cultural resources are minor at this stage and can be readily mitigated.

All vehicular traffic and/or ground disturbing activities in the Field Investigation Research phase shall be limited to existing roads, trails or disturbed areas.

### Field Exploration

Given a favorable prognosis based on evaluation of research data, the contractor will design a program to drill exploratory geothermal wells at selected locations. Geothermal well drilling designed to penetrate the deep geothermal reservoir requires a portable, oil well type drilling rig, sufficient water for drilling, and an adequate power supply. Each drilling site requires sufficient area for a mud or waste fluid pit, the rig itself, and its support facilities.

The total size of the well pad can vary from 3 to 5 acres, depending on a variety of factors such as pit size, topography, and power supply. Air compressors are normally provided for this stage of drilling. Existing roads may require improvement and new access roads may have to be constructed.

Up to 1,000 barrels of water (42,000 gallons) are consumed per day in drilling a well depending on subsurface condition and drilling technique used.

Once completed, an exploratory well is tested (allowed to flow freely) to evaluate its productive capacity. During this period, which includes well clean-out and flow testing, the geothermal fluid (hot water) or vapor (steam) is allowed to flow into the waste discharge pit where it largely evaporates. The geothermal fluid can contain a variety of dissolved and suspended solids. The flow produces substantial noise levels requiring muffling, and is commonly accompanied by noncondensable gases. Flow testing will remove only small volumes of fluid from the reservoir, depending on the length of the flow test and the rate of flow. The total volume of fluid brought to the surface during a flow test will seldom exceed several acre feet.

Once the flow testing is completed, and depending on whether the resource is hot water or steam, an exploratory well can be permanently shut-in if it is not commercially productive, or it can be converted to a production well at a later date if the flow is adequate.

#### Field Development and Power Plant Construction

At the conclusion of the field exploration phase, the contractor will have collected enough information to decide whether the field will support commercial energy production. The field development phase consists of drilling wells and laying the steam gathering and related pipelines, power plant construction, and installation of transmission lines and disposal systems and constructing roads and pads.

Actual field development will take place over an extended period of time as new wells are drilled until the field is developed to its maximum sustainable capacity. During the development phase, construction activity and the size of the work force will be at its maximum.

Because the nature of the geothermal resource has not yet been defined, a description of the specific development activities and the amount of land and other resources required at Coso by these activities cannot be estimated with precision. Estimates for the amount of land by type of land use include the following:

<u>Land use</u>	<u>Approximate area affected</u>
Well pads . . . . .	3-5 acres per pad
Roads:	
temporary graded (12-foot wide)	1.5 acres per mile of road
permanent (24-foot wide). . . .	2.9 acres per mile of road
Pipeline corridors. . . . .	1.2 acres per mile of cor-
(10-foot wide). . . . .	ridor
Transmission line corridor. . . .	3 acres per mile of corri-
(100-foot wide, but 25 feet	dor
of disturbed area)	
Power generation. . . . .	5 acres for a 50-megawatt
plant	plant
Geothermal and power plant. . . .	2.5 square feet per square
support facilities	foot of structure

As the geothermal field is defined, the nature and character of the reservoir in combination with protection of the NWC mission capability will be the primary determining factor in the general location of well sites, pipelines, power plant, roads and transmission lines. Environmental factors such as topography, geologic hazards, and historic or cultural resources will determine the specific location of geothermal facilities.

Power Production and Field Operation

During this phase, the principal activity will consist of operation and maintenance of the existing facilities and the continuation of field development, including siting of additional power plants. Development and production and operation phases will continue to overlap until the geothermal resource is fully developed. As field development is completed, the work force will be reduced to plant and field operation and maintenance personnel. Power generation can be expected to continue for an indefinite period.

The most significant waste products are noncondensable gases, fluid remaining after flashing to provide steam and the condensate. At this

time, the volume and character of these wastes is undefined and the potential effects of their generation and disposal cannot be specifically projected.

A variety of disposal and pollution control techniques have been developed at other geothermal fields, which can be adapted to control or reduce waste discharge effects on the environment at Coso. Accumulated wastes must either be processed into valuable by-products or disposed of in appropriate disposal sites.

### Field Closure

The productive life of a geothermal field has not been determined because all the existing operating fields continue to produce energy. It is possible that geothermal reservoirs can be considered a resource which, if managed properly, can continue to produce energy indefinitely; however, if the resource at Coso should gradually become depleted, the field would have to be abandoned or converted to a lower grade energy use.

Land use activities associated with field closure would include removal of some or all facilities, abandonment and capping of wells as appropriate, and remedial actions to reclaim all disturbed areas. However, these facilities may prove to be of value to the Naval Weapons Center test range programs active at that time. Materials and facilities that can be recycled should be recovered and the remaining materials will have to be disposed of in appropriate disposal sites. Wells should be left in a safe condition for future use. Remedial surface rehabilitation activities will vary, according to NWC range use requirements.

As described above the proposed contract requires the contractor to complete detailed evaluations of potential effects on historic and cultural resources as well as all other environmental impacts for public review at each phase of the geothermal development program as well as an evaluation of cumulative effects. In this way last minute discoveries of any sites not previously identified can be protected, preserved, or data recovery operations can be performed as appropriate.

### HISTORIC AND CULTURAL RESOURCES MANAGEMENT PROGRAM

The objectives of the historic and cultural resources management program outlined herein are as follows:

A. To provide appropriate and expeditious execution of all identification, evaluation, preservation and where necessary data recovery operations at each phase of the geothermal development program.

B. To ensure the collection and dissemination of reliable and scientifically valid information about affected cultural properties within the Navy fee-acquired lands in the Coso KGRA.

## Authority

1. An Act for the Preservation of American Antiquities, 1906 (34 Stat L. 225)
2. National Historic Preservation Act of 1966 (80 Stat 925), as amended (90 Stat 1313)
3. Executive Order 11593 of 1971
4. Reservoir Salvage Act of 1960 (74 Stat 220, 221) as amended by the Archeological and Historic Preservation Act of 1974 (88 Stat 174)
5. Procedures for the Protection of Historic and Cultural Properties (36 CFR Part 800), and the Proposed amendments thereto published in the Federal Register Vol. 43, No. 210 of October 30, 1978.
6. Public Land Order 431 of 1947
7. 311-ND of 1947

## Definitions

1. Historic and Cultural property: remains of past human activity, occupation or endeavor as reflected in districts, sites, structures, buildings, objects, artifacts, ruins, works of art, architecture, and natural features that were important in human events. These properties consist of (1) physical remains, (2) areas where significant human events occurred--even though evidence of the event no longer remains, and (3) the environment surrounding the actual resource.
2. Mitigation: the lessening of possible adverse effects of an action upon a historic or cultural property by appropriate preservation, protection and/or data recovery measures.

## Historic and Cultural Property Management

The Commander, Naval Weapons Center, agrees that he will implement the proposed undertaking in accordance with the following process to avoid or satisfactorily mitigate any adverse effects on significant historic or cultural property.

1. The Navy geothermal development contractor will be required to allocate sufficient funds and time in advance of implementation of any element of the geothermal development progress to perform adequate historic and cultural surveys, to analyze recovered materials, to prepare and disseminate resultant reports, and to implement the historic and cultural property management program.
2. The historic and cultural property management program for Navy Coso Geothermal Development Program will cover the entire project and its

related facilities including all areas that would be directly or indirectly affected by the geothermal development program.

3. The Commander, Naval Weapons Center, will administer the historical and cultural property management program for the Navy Coso Geothermal Development Program to ensure quality control of all program elements, proper phasing of investigations with decision-making points, and procedural compliance with pertinent statutes and regulations.

4. The Commander, Naval Weapons Center, will ensure that the contractor performs the phased reviews and evaluations of historic and cultural resources in a competent professional manner in compliance with 36 CFR 61.5 and other pertinent regulations, Federal or State.

5. The historic and cultural property stipulations of this proposal will be incorporated into the programmatic environmental review process.

6. The Commander, Naval Weapons Center, will ensure that the following measures will be carried out at the appropriate development phase:

a. Prior to commencement of any project-related undertaking, locate, identify, and evaluate all historic and cultural property that has been included in, determined eligible for inclusion in, or that may be eligible for inclusion in the National Register of Historic Places through a complete surface field survey following an existing data study including, but not limited to, archival and literature research, ethnographic research, museum research, and oral history. Data produced by such investigations will become a part of the statewide survey of cultural resources maintained by the California State Historic Preservation Officer. These activities are to be carried out under valid Federal and State Antiquities Permits for investigation on Federal land.

b. Determinations of a property's potential eligibility for inclusion in the National Register of Historic Places and of the effects of the project on such properties, will be made by the Commander, Naval Weapons Center, in coordination with the California State Historic Preservation Officer. Documentation on all properties found to meet the criteria for inclusion in the National Register of Historic Places will be forwarded to the Office of Archaeology and Historic Preservation pursuant to 36 CFR Part 63.3. In situations where the Commander, Naval Weapons Center, and the California State Historic Preservation Officer disagree as to eligibility, a written request for a determination of eligibility will be sent to the Keeper of the National Register, Office of Archaeology and Historic Preservation, pursuant to 36 CFR Part 63.2

c. Avoid by project redesign or project relocation, where prudent and feasible, the historic and cultural properties included in or eligible for inclusion in the National Register of Historic Places.

d. Develop and implement, in consultation with the California State Historic Preservation Officer, appropriate means for protecting historic and cultural properties included in or eligible for inclusion in

the National Register of Historic Places. These means may include, but need not be limited to signing, patrolling, fencing, erosion control, preservation, relocation, salvage, and other physical or administrative measures.

When it is neither prudent nor feasible to avoid a cultural property, the Commander, Naval Weapons Center will provide a report documenting that fact to the California State Historic Preservation Officer.

e. The Commander, Naval Weapons Center, will establish baseline data on the seasonal activity of some 40 steam wells and boiling mud pits at Coso Hot Springs sufficient to permit systematic monitoring for any effect that may be caused over time by the geothermal development program. Additionally, at each tiering phase of the development program re-evaluation of the monitoring techniques and the surface activity of the hot springs will be conducted.

Prior to the installation of monitoring devices at the hot springs, the Commander, Naval Weapons Center, will consult with the Owens Valley Band of Paiute-Shoshone Indians to fully inform them of plans for monitoring and the expected benefits from monitoring the surface activity. A description of the monitoring program will be forwarded to the Board of Trustees for the Owens Valley Paiute-Shoshone Band of Indians and to the California State Historic Preservation Officer for review and comment.

Present knowledge of the hydrogeology of Coso Hot Springs indicates that the fluids at the springs are not interconnected with the deep geothermal reservoir; therefore the geothermal development program is not expected to affect their surface activity. Criteria shall be developed by the Navy to detect perceptible change to the surface activity of Coso Hot Springs which will be offered to the Board of Trustees for the Owens Valley Paiute Shoshone Band of Indians and to the California State Historic Preservation Officer for review and comment prior to implementation of the second phase (Field Exploration) of the geothermal development program. In the event a perceptible change to the surface activity of the hot springs were to occur over a period of time as a result of the geothermal development program the Navy will cease those actions on the part of the Navy and/or its agents which can reasonably be presumed to be causing this effect and will make every reasonable effort to determine what actions could be taken to mitigate this change. The Navy will request the comments of the Owens Valley Paiute-Shoshone Band of Indians, the California State Historic Preservation Officer and the Advisory Council on Historic Preservation. The Owens Valley Paiute-Shoshone Band of Indians will be afforded 30 working days to comment and the California State Historic Preservation Officer will be afforded 30 working days to comment, these times to run concurrently. If the California State Historic Preservation Officer, the Advisory Council on Historic Preservation and the Navy cannot agree on actions which would adequately mitigate these effects, the Navy will request consultation with the Advisory Council in accordance with Title 36 of the Code of Federal Regulations, Chapter VIII, prior to undertaking any actions which could reasonably be presumed to result in a further detrimental change in the Springs' activities.

Hot springs such as Coso which are located on geologically young faults and in highly seismic areas are not permanent features but are apt to be changed or eliminated by natural forces.

f. Consultation with the California State Historic Preservation Officer.

(1) If it is determined that the affected historical or cultural property is eligible for inclusion in the National Register of Historic Places primarily because it may be likely to yield information important in prehistory or history, and does ~~not~~ meet ~~any~~ the criteria as detailed in Part I of the "Guidelines for Making 'Adverse Effect' and 'No Adverse Effect' Determinations for Archeological Resources in Accordance with 36 CFT Part 800", the Commander, Naval Weapons Center, will ensure that the contractor institutes a data recovery program in consultation with the California State Historic Preservation Officer, in accordance with Part II of the Council's "Guidelines for Making 'Adverse Effect' and 'No Adverse Effect' Determinations for Archaeological Resources in Accordance with 36 CFR Part 800", without affording the Council further opportunity to review and comment.

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(2) If it is determined that the affected historic or cultural property is eligible for inclusion in the National Register of Historic Places primarily for any other reason, the Commander, Naval Weapons Center after determining the effect of the action on the property will obtain the comments of the California State Historic Preservation Officer on a preliminary case report including the following information:

-A general description of the proposed undertaking with explanatory material.

-A description of the properties included in or eligible for inclusion in the National Register of Historic Places affected by the undertaking, identifying the significant features of the properties.

-An evaluation of the effect of the undertaking upon the properties included in or eligible for inclusion in the National Register of Historic Places.

-A discussion of measures taken in considering the undertaking's effect on the properties included in or eligible for inclusion in the National Register of Historic Places, including an indication of the support or opposition of units of government, as well as public and private agencies and organizations and a review of alternatives that would avoid any adverse effects.

-A proposal for a course of action to be implemented that would mitigate the adverse effect.

(5) Upon completion of the preliminary case report it, with the comments of the California State Historic Preservation Officer, will be forwarded by the Commander, Naval Weapons Center to the Advisory Council on Historic Preservation, for comment as required by the "Proce-

dures for the Protection of Historic and Cultural Properties" (36 CFR 800). In the interim no action will be approved by the Navy that could result in an adverse effect on the subject cultural property.

d. In emergency situations, where the procedure outlined in "a" above does not apply, when the time to undertake adequate mitigation is short, where failure to act in a short time would result in project construction delays, and an agreement on an emergency mitigation plan has been reached by the Commander, Naval Weapons Center and the California State Historic Preservation Officer, the Commander, Naval Weapons Center will forward the preliminary case report with the proposed mitigation plan to the Advisory Council on Historic Preservation requesting an expeditious review and comment. Within 10 working days of receipt of such documentation the Executive Director will notify the Commander, Naval Weapons Center, that the proposed mitigation is sufficient and he is preparing the required Memorandum of Agreement, or that he notes an objection. If an objection is noted the Executive Director will work with the Commander, Naval Weapons Center and the California State Historic Preservation Officer in an attempt to satisfy his concerns, or request that the Chairman schedule a special meeting of the Council to consider the matter. If the Executive Director objects, until the objection is resolved, no action will be approved by the Commander Naval Weapons Center that could result in an adverse effect on the subject historic or cultural property.

7. The Commander, Naval Weapons Center, will within 5 working days bring to the attention of the California State Historic Preservation Office and the Owens Valley Paiute-Shoshone Band of Indians any cultural property discovered as a result of any action relating to the geothermal development program. The Commander, Naval Weapons Center, in coordination with the California State Historic Preservation Officer will protect and evaluate such discoveries and will determine within 5 working days what action will be taken with respect to such discoveries, including protection as provided for in Section 106 of the National Historic Preservation Act of 1966 and other relevant statutes.

8. Reports of progress at each developmental phase of the geothermal program, and a final program report on the results of all cultural property operations will be distributed by the Commander, Naval Weapons Center, to the California State Historic Preservation Officer, and to the Owens Valley Band of Paiute-Shoshone Indians. Report standards will be of appropriate professional quality.

9. Artifacts and other cultural materials recovered from Naval Weapons Center lands will, after analysis, be curated in accordance with professional practices and stored at a repository designated by the Smithsonian Institution.

10. One year from the date of ratification of this Agreement by the Chairman of the Council, and annually thereafter until the geothermal development program is completed, the Commander, Naval Weapons Center and the California State Historic Preservation Officer will review the program established by the Agreement and submit to the Council an assessment of

the program operation, with copies of the tiered review reports prepared by the contractor. Unless modified, this Agreement will continue in effect.

11. Should any party to this Agreement desire to amend or alter the provisions herein, all parties agree to make an effort to negotiate an acceptable amendment or alteration within thirty (30) days after written notification. In the event a mutually acceptable resolution cannot be reached by the signatories within thirty (30) days, the consultation process provided by Title 36 of the Code of Federal Regulations, Chapter VIII, Part 800, shall be initiated by the Naval Weapons Center.

12. This Memorandum of Agreement is executed in three (3) original copies, each of which contains the official text.

Kim M. Ellison  
STATE HISTORIC PRESERVATION OFFICER

William B. Haff  
COMMANDER, NAVAL WEAPONS CENTER

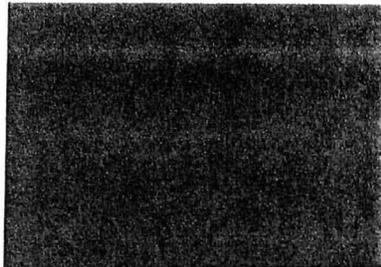
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CHAIRMAN, ADVISORY COUNCIL ON  
HISTORIC PRESERVATION

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DATE

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The Commander Naval Weapons Center acting for and on behalf of the U. S. Government and the Coso Ad Hoc Committee, Owens Valley Paiute-Shoshone Band of Indians, acting for and on behalf of the Indians represented by that group, as well as for certain Indian people in the Kern Valley Indian Community area, are desirous of entering into this agreement for the mutual benefit of both parties. The general subject of the agreement is access to and related matters concerning the area known as Coso Hot Springs, located within the Naval Weapons Center, China Lake, California.

The parties hereafter referred to as the Naval Weapons Center and the Native Americans respectively, hereby agree:

1. That the terms of this Memorandum of Agreement are based upon the primacy of the mission of the Naval Weapons Center and that any or all access provisions herein agreed to shall be premised on a not-to-interfere with that mission basis;

2. That both parties to this Memorandum of Agreement recognize the provisions of Public Law 95-341 "Native American Religious Freedom" and its mandate for an evaluation of existing laws and regulations. Therefore, the terms of this Memorandum of Agreement are subject to review at the request of either party following the Presidential submittal of the evaluation to the Congress;

3. That the requirements of the Historic Preservation Act of 1966 (Public Law 89-665) shall be scrupulously adhered to by both parties and that both parties agree to diligently pursue the formulation and acceptance of a preservation and management plan for the Coso Hot Springs National Register of Historic Places site;

4. That upon request a maximum of eight (8) scheduled weekend visits per year shall be reserved exclusively for members of the Owens Valley Paiute-Shoshone Band of Indians and/or the Kern Valley Indian Community. Such visits shall be limited to a maximum of twenty five (25) vehicles and one hundred (100) people on any given weekend. The duration of any one weekend visit shall be from sunrise Saturday to sunset Sunday. However, up to three (3) two-night visits may be scheduled on Federal holidays which fall on weekends;

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5. That unscheduled visits shall be considered on a case-by-case basis by the Commander, Naval Weapons Center, upon receipt of a written request by the Chairperson of the Coso Ad Hoc Committee describing the need for the visit, or a Committee member in the Chairperson's absence. In instances which the Chairperson considers a bona fide emergency, the request may be made by telephone and shall be followed with written confirmation;

6. That Native American groups other than the Owens Valley Paiute-Shoshone Band of Indians and those from the Kern Valley Indian Community are not covered by this agreement. However, medicine men who may be visiting the aforesaid groups may accompany these groups. Requests from other Native American groups shall be considered on a case-by-case basis;

7. That the boundaries of the visit area shall be the immediate vicinity of the Prayer Site, Coso Hot Springs, the old resort of the same name, and a designated overnight camping area. These areas are specified on a map accompanying this Memorandum of Agreement;

8. That appropriate sanitary facilities shall be provided by the Naval Weapons Center and installed in the camping area;

9. That the visiting Native Americans shall carry out all trash and garbage and shall police up their own camping area. On-site rubbish receptacles shall not be provided by the Naval Weapons Center;

10. That the Naval Weapons Center shall provide an escort for all visits; the escort shall be a person acceptable to the Ad Hoc Committee. During any ceremony, upon request, the escort shall withdraw to a discrete distance and shall not intrude on traditional rites;

11. That material or substantial alteration or permanent disturbance of the hot springs or the pond shall not be permitted. Both the Naval Weapons Center and the Native Americans pledge their mutual cooperative efforts to expeditiously develop a preservation and management plan acceptable to both parties and to the California State Office of Historic Preservation and approvable by the Advisory Council on Historic Preservation;

12. The Naval Weapons Center will provide Assumption of Risk forms to the Coso Ad Hoc Committee to be signed by each adult individual desiring to enter the Naval Weapons Center under provisions of this agreement. A designated Indian visit leader will be responsible for assembling all executed Assumption of Risk forms from each adult visitor for presentation to the Navy escort at time of entry. The Naval Weapons Center will maintain a permanent file of signed Assumption of Risk forms and repeat visitors will not be required to provide new forms for subsequent visits.

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13. That in the event the mission of the Naval Weapons Center requires use of its ranges, any or all visits shall be subject to cancellation without prior notice and under the same conditions are subject to immediate termination. The Coso Ad Hoc Committee shall be responsible for assisting the Naval Weapons Center, when and if necessary, in the event immediate evacuation of visitors from the area is required to conduct the mission of the Naval Weapons Center;

14. That the Naval Weapons Center reserves the right to prohibit future access if the terms of this Memorandum of Agreement are deliberately or materially violated by visiting Native Americans; and that the standards of conduct established for Naval Weapons Center personnel, federal, state or local agencies, and contractors while on the NWC ranges will be observed by visiting Native Americans.

*W-L. Harris*

For the Naval Weapons Center  
*Rear Admiral, U.S. Navy*

*Maddens Naylor*  
For the Coso Ad Hoc Committee

*Ruth Brown*  
For the Coso Ad Hoc Committee

*Elizabeth McClain*  
For the Coso Ad Hoc Committee

*Phyllis Hunter*  
For the Coso Ad Hoc Committee

*Gatti P. Ulmer*  
For the Coso Ad Hoc Committee

Date *June 28, 1979*

Date *July 25, 1979 9:15 a.m.*

Approved as to Form on behalf of  
the Owens Valley Paiute-Shoshone  
Band of Indians

*Arthur J. Mault*  
CALIFORNIA INDIAN LEGAL SERVICES

Date *June 25, 1979*



# United States Department of the Interior



FISH AND WILDLIFE SERVICE  
Ventura Fish and Wildlife Office  
2493 Portola Road, Suite B  
Ventura, California 93003

IN REPLY REFER TO:  
2008-F-0611

December 17, 2008

## Memorandum

To: Field Manager, Ridgecrest Field Office, Bureau of Land Management,  
Ridgecrest, California

From: *Carl Tracy* Assistant Field Supervisor, Ventura Fish and Wildlife Office, Ventura, California

Subject: Biological Opinion for a Right-of-Way Grant for the Coso Hay Ranch Pipeline,  
Inyo County, California (6840/2880(P) CACA-046289 CA-650.25) (1-8-08-F-42)

This document transmits the U.S. Fish and Wildlife Service's (Service) biological opinion regarding the potential effects of the Bureau of Land Management's (Bureau) issuance of a right-of-way grant for the Coso Hay Ranch pipeline on the federally threatened desert tortoise (*Gopherus agassizii*). This document was prepared in accordance with section 7(a)(2) of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 et seq.) (Endangered Species Act). Your request for formal consultation was dated September 16, 2008.

This biological opinion is based on information in the draft environmental impact report for the proposed action (County of Inyo 2008a). A complete administrative record of this consultation is on file at the Service's Ventura Fish and Wildlife Office.

## CONSULTATION HISTORY

On September 19, 2005, the Bureau requested our concurrence that issuance of the proposed right-of-way grant was not likely to adversely affect the desert tortoise. After discussions between staff of our offices and review of the County of Inyo's draft environmental impact report for the proposed project, the Bureau and Service determined that formal consultation was the appropriate means of complying with section 7(a)(2) of the Endangered Species Act. The Bureau withdrew its request for concurrence in its September 16, 2008, request for formal consultation.

The Bureau requested consultation on its proposal to issue a right-of-way grant to the Coso Operating Company; the conditions of the right-of-way grant would be applicable to public lands managed by the Bureau. Because the implementing regulations for section 7(a)(2) of the Endangered Species Act require us to consider all the effects of an action, this biological opinion will also evaluate the potential effects of the action on the Hay Ranch parcel, which is private land, and on lands managed by the U.S. Department of the Navy. We acknowledge, however,

that the Service and Navy have consulted on the effects of Navy activities on the desert tortoise within the Naval Air Weapons Station, China Lake (Service 1992). Given that consultation, the Navy may use the protective measures for the proposed action that are described in its 1992 biological opinion.

On December 2, 2008, we provided you with a draft biological opinion to review (Service 2008). By electronic mail dated December 16, 2008, Robert Parker of your staff provided the Bureau's comments on the draft biological opinion (Bureau 2008). We have incorporated those comments into this final biological opinion.

## BIOLOGICAL OPINION

### DESCRIPTION OF THE PROPOSED ACTION

We summarized the information in this section of the biological opinion from the draft environmental impact report for the proposed project (County of Inyo 2008a). The Coso Operating Company has submitted an application to the County of Inyo for a 30-year conditional use permit for the proposed project. The project includes the construction of a groundwater extraction and pipeline delivery system from the Coso Hay Ranch to the water injection system located at the Coso Geothermal Field at China Lake Naval Air Weapons Station. The Coso Operating Company has also submitted an application for a right-of-way grant to the Bureau for construction and operation of the pipeline.

#### *Proposed Project Facilities and Operations*

At the western terminus of the project, the Coso Operating Company proposes to construct facilities to pump groundwater within the Hay Ranch parcel. A water pipeline would connect these facilities to a 1,500,000-gallon water tank on the Naval Air Weapons Station. The pipeline would continue from this water tank to the point where water would be injected into the aquifer. The existing geothermal power plants are located approximately 1.5 to 2 miles from the point of injection. No construction would occur at the power plants as a result of the proposed action.

The draft environmental impact report (County of Inyo 2008a) contains detailed descriptions of the components of the proposed action. Several project facilities would be located on the Hay Ranch property. These facilities include the existing water wells, a new lift pump station, electrical substation, an unpaved parking area, and a 250,000-gallon water storage tank. An existing metal storage building and two dilapidated mobile homes located near the north well would be removed from the property using a bulldozer. The draft environmental impact report (County of Inyo 2008a) contains more detailed descriptions of these facilities and the associated construction activities and operations.

The water pipeline extending from the Hay Ranch property to the Naval Air Weapons Station would be 20 inches in diameter and approximately 9.3 miles in length. Figure 2.3-1 of the draft environmental impact report (County of Inyo 2008a) depicts the proposed location of the

pipeline. Generally, it would be installed approximately 50 feet from the edge of an existing road for most of its length. Combination air relief valves and vacuum valves would be installed at critical locations along the pipelines. The valves would be located in 18 pre-cast concrete vaults. The combination air relief and vacuum valve vent lines would be piped to a discharge point to receive the small discharge flows that may occur due to pressure transient conditions. The vent lines would be located directly above the pipe within the pipeline right-of-way and within a concrete vault with a cover at grade. Any discharge of water in upset or transient pressure conditions would result in a small discharge of water that would be contained within the vault and drain through the pea gravel at the bottom of the vault (Brock 2008a).

Low point locations would have drain valves to allow for complete draining of the line. These drains would be located at the Hay Ranch parcel and at the eastern terminus of the line. No intermediate low point drains would be provided on the pipeline (Brock 2008a).

The pipeline would be buried, where possible, but some portions would be above ground where volcanic rock outcrops make burying difficult. The minimum depth of cover over buried pipelines would be 3 feet.

The construction right-of-way would be 50 feet wide and would follow the proposed alignment shown in figure 2.3-1 of the draft environmental impact report (County of Inyo 2008a). Trenching equipment, cranes, welders, and earthmoving equipment would be used to install the pipeline. Grading would be minimized, particularly in the steeper areas near the high point tank, by constructing the right-of-way perpendicular to the contours. All cut and fill material would be balanced. The top 8 inches of topsoil and vegetation would be removed, inspected for noxious weeds, and stockpiled in a manner to minimize erosion or degradation of the plant medium and seeds.

At the completion of construction, the right-of-way would be restored by finish grading, installation of water bars, and application of erosion protection in accordance with Coso Operating Company's approved revegetation plan. A standard mixture of native plant seed would be applied at the rate of 25 pounds per acre. Straw would be applied as topping or mulch to minimize potential erosion to the reclaimed area.

The pipeline would have vents and standard leak detection equipment. Maintenance would include driving the access road along the pipeline quarterly for visual inspection; where the pipeline is not immediately adjacent to the road, the visual inspection would be conducted on foot (Brock 2008a). If maintenance is required on the pipeline, the majority of the water in the pipeline would be back drained into the tanks or the Hay Ranch wells. Low point water would be drained along sections of the pipeline at vaults by pumping the remaining water out of air release valves. Maintenance would be performed as needed. Small sections may need to be excavated and replaced over the course of the project. Methods of repair involving excavation would be similar to the initial installation.

The high point tank would be located in an existing developed area on the top of a small hill. The existing area would be enlarged to a total of approximately 0.75 acre to accommodate the 1.5-million-gallon tank.

The following table (modified from the draft environmental impact report [County of Inyo 2008a]) depicts the acreages of the proposed project's facilities.

Facility	Acreage	Location
Wells	Negligible	Hay Ranch property
Lift Pump Station	4.75 acres	Hay Ranch property
Pipeline (total)	53.5 acres	Hay Ranch property, Bureau lands, Naval Air Weapons Station
	4.5 acres	Hay Ranch property
	33.2 acres	Bureau lands
	15.8 acres	Naval Air Weapons Station
High Point Tank (1.5 million gallons)	0.75 acre	Naval Air Weapons Station
Substation and 12.4 kV Subtransmission Line	0.5 acre	Hay Ranch Property

The draft environmental impact report (County of Inyo 2008a) notes that two new monitoring well clusters would be installed on the Hay Ranch property and an additional well midway between Coso Junction and the Cinder Road Red Hill Well. Monitoring at these and numerous existing wells would also be conducted. See page C4-12 and figure C4-3 of appendix C4 of the draft environmental impact report for additional detail on activities and locations related to monitoring.

When the geothermal project is decommissioned, all project components that are on the surface of public land would be removed; any buried pipelines would be abandoned in place. Components located on the Hay Ranch parcel would generally be removed and stored for potential other uses in the future or recycled. The wells would be used for continued hydrologic monitoring.

The proposed project would take approximately 110 days to construct, with several areas being built concurrently. No more than 20 workers would be working in any single area or component at one time; however, as many as 40 workers may be working on the overall construction project at once.

The Bureau and Coso Operating Company have proposed numerous measures to protect desert tortoises and their habitat during construction and operation of the pipeline. These measures have been summarized from the draft environmental impact report (County of Inyo 2008a).

1. All project vehicles will be washed down daily at an approved wash down location. Wash-down areas will be lined to contain all wash-down water and will not be located within 100 feet of an existing water body. The wash-down water will be allowed to evaporate and the remaining condensate and liner will be properly disposed of in a landfill. Construction workers will be made aware of wash-down requirements for personal vehicles used along the construction corridor and of the designated wash down areas.
2. To prevent injury or mortality of desert tortoises, an authorized biologist will survey the project site prior to construction to identify individuals that may be within or very near project boundaries. Because adult desert tortoises are most likely to be active above ground from February 15 to November 15 and least likely from November 16 to February 14, preconstruction surveys will be conducted within 48 hours before construction from February 15 to November 15 and will be done within 2 weeks prior to construction between November 16 and February 14. All potential desert tortoise burrows in the construction zone, including those not recently used, will be excavated by an approved biologist at the time of the survey.
3. A fence to exclude desert tortoises will be constructed around the proposed project construction area, including lay down and stockpile sites in potential habitat. To further minimize loss of desert tortoise habitat, project boundaries will be staked and all activities would be restricted to the defined project site.
4. A qualified tortoise biologist will be on-site during all phases of construction to keep individual desert tortoises out of harm's way. Only desert tortoises within the construction right-of-way will be handled and only by the qualified biologist.
5. All construction workers will participate in a desert tortoise education program prior to construction. The program will include the following information about and desert tortoises and the proposed action: identification, basic biology, general behavior, local distribution, sensitivity to human activities, legal protection, penalties for violating State or Federal laws, impact avoidance methods, and reporting requirements. Construction personnel will be instructed not to handle desert tortoise.
6. If a recently dead or injured desert tortoise is found, the authorized biologist will immediately notify the Service and California Department of Fish and Game.
7. Construction personnel will look for desert tortoises under vehicles and equipment before they are moved. If a desert tortoise is present, the vehicle will not be moved until the desert tortoise has moved from under the vehicle and out of harm's way or the authorized biologist has relocated it.
8. Trash and food items will be contained in closed containers and regularly removed from the project site to reduce the attractiveness of the area to opportunistic predators such as

common ravens (*Corvus corax*), coyotes (*Canis latrans*), and feral dogs.

9. Pets will be prohibited from the construction site.
10. The top 8 inches of removed soil will be salvaged and stockpiled on site. Following construction the salvaged topsoil will be used as final cover over the pipeline and the pipeline corridor will be restored based on the existing approved restoration plan.
11. Driving off established roads will be prohibited unless required by construction activities.
12. Vehicle speeds will not exceed 25 miles per hour through desert tortoise habitat unless otherwise posted.

## STATUS OF THE DESERT TORTOISE

### Basic Ecology of the Desert Tortoise

The desert tortoise is a large, herbivorous reptile found in portions of the California, Arizona, Nevada, and Utah deserts. It also occurs in Sonora and Sinaloa, Mexico. In California, the desert tortoise occurs primarily within the creosote, shadscale, and Joshua tree series of Mojave desert scrub, and the lower Colorado River Valley subdivision of Sonoran desert scrub. Optimal habitat has been characterized as creosote bush scrub in which precipitation ranges from 2 to 8 inches, diversity of perennial plants is relatively high, and production of ephemerals is high (Luckenbach 1982, Turner and Brown 1982, Schamberger and Turner 1986). Soils must be friable enough for digging of burrows, but firm enough so that burrows do not collapse. In California, desert tortoises are typically associated with gravelly flats or sandy soils with some clay, but are occasionally found in windblown sand or in rocky terrain (Luckenbach 1982). Desert tortoises occur in the California desert from below sea level to an elevation of 7,300 feet, but the most favorable habitat occurs at elevations of approximately 1,000 to 3,000 feet (Luckenbach 1982, Schamberger and Turner 1986).

Desert tortoises may spend more time in washes than in flat areas outside of washes; Jennings (1997) notes that, between March 1 and April 30, desert tortoises "spent a disproportionately longer time within hill and washlet strata" and, from May 1 through May 31, hills, washlets, and washes "continued to be important." Jennings' paper does not differentiate between the time desert tortoises spent in hilly areas versus washes and washlets; however, he notes that, although washes and washlets comprised only 10.3 percent of the study area, more than 25 percent of the plant species on which desert tortoises fed were located in these areas. Luckenbach (1982) states that the "banks and berms of washes are preferred places for burrows;" he also recounts an incident in which 15 desert tortoises along 0.12 mile of wash were killed by a flash flood.

Desert tortoises are most active in California during the spring and early summer when annual plants are most common. Additional activity occurs during warmer fall months and occasionally after summer rain storms. Desert tortoises spend most of their time in the remainder of the year

in burrows, escaping the extreme conditions of the desert; however, recent work has demonstrated that they can be active at any time of the year. Further information on the range, biology, and ecology of the desert tortoise can be found in Burge (1978), Burge and Bradley (1976), Hovik and Hardenbrook (1989), Luckenbach (1982), Weinstein et al. (1987), and Service (1994c).

Food resources for desert tortoises are dependent on the availability and nutritional quality of annual and perennial vegetation, which is greatly influenced by climatic factors, such as the timing and amount of rainfall, temperatures, and wind (Beatley 1969, 1974, Congdon 1989, Karasov 1989, Polis 1991 in Avery 1998). In the Mojave Desert, these climatic factors are typically highly variable; this variability can limit the desert tortoise's food resources.

Desert tortoises will eat many species of plants. However, at any time, most of their diet often consists of a few species (Nagy and Medica 1986, Jennings 1993 in Avery 1998). Additionally, their preferences can change during the course of a season (Avery 1998) and over several seasons (Esque 1994 in Avery 1998). Possible reasons for desert tortoises to alter their preferences may include changes in nutrient concentrations in plant species, the availability of plants, and the nutrient requirements of individual animals (Avery 1998). In Avery's (1998) study in the Ivanpah Valley, desert tortoises consumed primarily green annual plants in spring; they ate cacti and herbaceous perennials once the winter annuals began to disappear. Medica et al. (1982 in Avery 1998) found that desert tortoises ate increased amounts of green perennial grass when winter annuals were sparse or unavailable; Avery (1998) found that desert tortoises rarely ate perennial grasses.

Desert tortoises can produce from one to three clutches of eggs per year. On rare occasions, clutches can contain up to 15 eggs; most clutches contain 3 to 7 eggs. Multi-decade studies of the Blanding's turtle (*Emydoidea blandingii*), which, like the desert tortoise, is long lived and matures late, indicate that approximately 70 percent of the young animals must survive each year until they reach adult size; after this time, annual survivorship exceeds 90 percent (Congdon et al. 1993). Research has indicated that 50 to 60 percent of young desert tortoises typically survive from year to year, even in the first and most vulnerable year of life. We do not have sufficient information on the demography of the desert tortoise to determine whether this rate is sufficient to maintain viable populations; however, it does indicate that maintaining favorable habitat conditions for small desert tortoises is crucial for the continued viability of the species.

Desert tortoises typically hatch from late August through early October. At the time of hatching, the desert tortoise has a substantial yolk sac; the yolk can sustain them through the fall and winter months until forage is available in the late winter or early spring. However, neonates will eat if food is available to them at the time of hatching; when food is available, they can reduce their reliance on the yolk sac to conserve this source of nutrition. Neonate desert tortoises use abandoned rodent burrows for daily and winter shelter; these burrows are often shallowly excavated and run parallel to the surface of the ground.

Neonate desert tortoises emerge from their winter burrows as early as late January to take

advantage of freshly germinating annual plants; if appropriate temperatures and rainfall are present, at least some plants will continue to germinate later in the spring. Freshly germinating plants and plant species that remain small throughout their phenological development are important to neonate desert tortoises because their size prohibits access to taller plants. As plants grow taller during the spring, some species become inaccessible to small desert tortoises.

Neonate and juvenile desert tortoises require approximately 12 to 16 percent protein content in their diet for proper growth. Desert tortoises, both juveniles and adults, seem to selectively forage for particular species of plants with favorable ratios of water, nitrogen (protein), and potassium. The potassium excretion potential model (Ofstedal 2001) predicts that, at favorable ratios, the water and nitrogen allow desert tortoises to excrete high concentrations of potentially toxic potassium, which is abundant in many desert plants. Ofstedal (2001) also reports that variation in rainfall and temperatures cause the potassium excretion potential index to change annually and during the course of a plant's growing season. Therefore, the changing nutritive quality of plants, combined with their increase in size, further limits the forage available to small desert tortoises to sustain their survival and growth.

In summary, the ecological requirements and behavior of neonate and juvenile desert tortoises are substantially different than those of subadults and adults. Smaller desert tortoises use abandoned rodent burrows, which are typically more fragile than the larger ones constructed by adults. They are active earlier in the season. Finally, small desert tortoises rely on smaller annual plants with greater protein content to be able to gain access to food and to grow, respectively.

### **Status of the Desert Tortoise**

The Mojave population of the desert tortoise includes those animals living north and west of the Colorado River in the Mojave Desert of California, Nevada, Arizona, southwestern Utah, and in the Colorado Desert in California. On August 4, 1989, the Service published an emergency rule listing the Mojave population of the desert tortoise as endangered (*54 Federal Register* 32326). In its final rule, dated April 2, 1990, the Service determined the Mojave population of the desert tortoise to be threatened (*55 Federal Register* 12178).

The desert tortoise was listed in response to loss and degradation of habitat caused by numerous human activities including urbanization, agricultural development, military training, recreational use, mining, and livestock grazing. The loss of individual desert tortoises to increased predation by common ravens, collection by humans for pets or consumption, collisions with vehicles on paved and unpaved roads, and mortality resulting from diseases also contributed to the Service's listing of this species.

The following paragraphs provide general information on the results of efforts to determine the status and trends of desert tortoise populations across a large portion of its range; we present information on the status of the desert tortoise within the action area in the Environmental Baseline section of this biological opinion. We have grouped these paragraphs by recovery unit

and critical habitat unit; we will describe these units in more detail later in this biological opinion.

Before entering into a discussion of the status and trends of desert tortoise populations across its range, a brief discussion of the methods of estimating the numbers of desert tortoises would be useful. Three primary methods have been widely used: permanent study plots, triangular transects, and line distance sampling.

Generally, permanent study plots are defined areas that are visited at roughly 4-year intervals to determine the numbers of desert tortoises present. Desert tortoises found on these plots during the spring surveys were registered; that is, they were marked so they could be identified individually during subsequent surveys. Between 1971 and 1980, 27 plots were established in California to study the desert tortoise; 15 of these plots were used by the Bureau to monitor desert tortoises on a long-term basis (Berry 1999). Range-wide, 49 plots have been used at one time or another to attempt to monitor desert tortoises (Tracy et al. 2004).

Triangular transects are used to detect sign (i.e., scat, burrows, footprints, etc.) of desert tortoises. The number of sign is then correlated with standard reference sites, such as permanent study plots, to allow the determination of density estimates.

Finally, line distance sampling involves walking transects while trying to detect live desert tortoises. Based on the distance of the desert tortoise from the centerline of the transect, the length of the transect, and a calculation of what percentage of the animals in the area were likely to have been above ground and visible to surveyors during the time the transect was walked, an estimation of the density can be made. Each of these methods has various strengths and weaknesses; the information we present on the density of desert tortoises across the range and in the action area is based on these methods of collecting data.

Note that, when reviewing the information presented in the following sections, determining the number of desert tortoises over large areas is extremely difficult. The report prepared by the Desert Tortoise Recovery Plan Assessment Committee (Tracy et al. 2004) acknowledges as much. Desert tortoises spend much of their lives underground or concealed under shrubs, are not very active in years of low rainfall, and are distributed over a wide area in several different types of habitat. Other factors, such as the inability to sample on private lands and rugged terrain, further complicate sampling efforts. Consequently, the topic of determining the best way to estimate the abundance of desert tortoises has generated many discussions over the years. As a result of this difficulty, we cannot provide concise estimations of the density of desert tortoises in each recovery unit or desert wildlife management area that have been made in a consistent manner.

Given the difficulty in determining the density of desert tortoises over large areas, the reader needs to understand fully that the differences in density estimates in the recovery plan and those derived from subsequent sampling efforts may not accurately reflect on-the-ground conditions.

Despite this statement, the reader should also be aware that the absence of live desert tortoises and the presence of carcasses over large areas of some desert wildlife management areas provide at least some evidence that desert tortoise populations seem to be in a downward trend in some regions.

#### Western Mojave Recovery Unit

Although desert tortoises were historically widespread in the western Mojave Desert, their distribution within this region was not uniform. For example, desert tortoises likely occurred at low densities in the juniper woodlands of the western Antelope Valley and in the sandier habitats in the Mojave River valley. They were also likely largely absent from the higher elevations of the Ord and Newberry mountains and from playas and the areas immediately surrounding these dry lakes. Several large areas of land that are not managed by the Bureau lie within the Western Mojave Recovery Unit; because of their size, these areas are not affected by the Bureau's management of public lands and are therefore not part of the action area for this consultation. These areas lie primarily on military bases, within Joshua Tree National Park, and in areas of private land.

Desert tortoises occur over large areas of Fort Irwin, which is managed by the Department of the Army (Army). At Fort Irwin, the Army conducts realistic, large-scale exercises with large numbers of wheeled and tracked vehicles. In areas where training has occurred for many decades, desert tortoises persist in relatively low numbers primarily on the steep, rugged slopes of the mountain ranges that occur throughout Fort Irwin. Through Public Law 107-107, approximately 118,600 acres were added to Fort Irwin along its southwestern and eastern boundaries in 2002. Approximately 97,860 acres of the Superior-Cronese Critical Habitat Unit lie along the original southern boundary of Fort Irwin and in the parcel to the southwest that was added in 2002 (Charis Professional Services Corporation 2003, Army 2004). Currently, the Army may conduct some low intensity training in these areas on occasion and some preparations for the onset of force-on-force training should begin soon. To date, these parcels have not been used for force-on-force training; within the next few years, the Army will begin to use a large portion of these lands for maneuvers with numerous wheeled and tracked vehicles. In our biological opinion regarding the effects of the use of these lands for training on the desert tortoise (Service 2004), we noted that approximately 1,299 to 1,349 adult desert tortoises may occur within the action area for that consultation. The Army established several conservation areas, totaling approximately 16,900 acres, just inside the boundaries of Fort Irwin where maneuvers would not occur. The Army calculated that approximately 152 desert tortoises may reside within these areas; these animals are unlikely to be affected by use of the new training lands. Additionally, because of other restrictions that the Army will follow during training, approximately 5,500 acres of critical habitat of the desert tortoise within the additional training lands will not be used for force-on-force training. These lands lie primarily on and around dry lakes, which generally do not support large numbers of desert tortoises, because the lake beds themselves do not provide suitable habitat and the areas immediately surrounding the playas usually support substrates composed of clays and silt that are not suitable for burrowing. Finally, in the Eastgate portion of Fort Irwin, approximately 288 desert tortoises may be exposed to

additional training; however, most of these animals are located in an area that is unlikely to receive much used by vehicles and are thus unlikely to be affected. The Army and Service have agreed that desert tortoises within new training areas that are likely to be killed by maneuvers will be translocated to newly acquired lands to the south of Fort Irwin; a plan for this translocation is currently under development.

The Navy has designated approximately 200,000 acres of the South Range at the Naval Air Weapons Station, China Lake as a management area for the desert tortoise (Service 1995). Through a consultation with the Service (1992), the Navy agreed to try to direct most ground-disturbing activities outside of this area, to use previously disturbed areas for these activities when possible, and to implement measures to reduce the effects of any action on desert tortoises. This area also encompasses the Superior Valley Tactical Bombing Range located in the southernmost portion of the Mojave B South land management unit of the Naval Air Weapons Station; it continues to be used as an active bombing range for military test and training operations by the Navy and Department of Defense. In the 3 years for which we had annual reports available, activities conducted by the Navy did not kill or injure any desert tortoises (Navy 1995, 2001, 2002). In general, desert tortoises occur in low densities on the North Range of the Naval Air Weapons Station; Kiva Biological Consulting and McClenahan and Hopkins Associates (in Service 1992) reported that approximately 136 square miles of the North Range supported densities of 20 or fewer desert tortoises per square mile. The South Range supported densities of 20 or fewer desert tortoises per square mile over an area of approximately 189 square miles and densities of greater than 20 per square mile on approximately 30 square miles. The higher elevations and latitude in this area may be responsible for these generally low densities (Weinstein 1989 in Bureau et al. 2005).

The Indian Wells Valley, which is located to the southwest of the Naval Air Weapons Station, likely supported desert tortoises at higher densities in the past. Urban, suburban, and agricultural development in this area is likely cause of the lower densities that are currently found in this area.

Edwards Air Force Base is used primarily to test aircraft and weapons systems used by the Department of Defense. Desert tortoises occur over approximately 220,800 acres of the installation. Approximately 80,640 acres of the base have been developed for military uses or are naturally unsuitable for use by desert tortoises, such as Rogers and Rosamond dry lakes. Based on surveys conducted between 1991 and 1994, approximately 160,640 acres of the base supported 20 or fewer desert tortoises per square mile. Approximately 55,040 acres supported densities between 21 and 50 desert tortoises per square mile; from 51 to 69 desert tortoises per square mile occurred on several smaller areas that totaled 5,120 acres (U.S. Air Force 2004). We expect that current densities are somewhat lower, given the regional declines in desert tortoise numbers elsewhere in the Western Mojave Recovery Unit.

Desert tortoises may have been more common in the past the area west of Highway 14 between the town of Mojave and Walker Pass; high levels of off-road vehicle use and extensive livestock grazing are potential causes for the current scarcity of desert tortoises in this area. Four

townships of private land east of the city of California City and south of the Rand Mountains supported large numbers of desert tortoises as late as the 1970s; high levels of off-road vehicle use, extensive grazing of sheep, scattered development, and possibly poaching have greatly reduced the density of desert tortoises in this area.

The direct and indirect effects of urban and suburban development extending from Lancaster in the west to Lucerne Valley in the east has largely eliminated desert tortoises from this area. A few desert tortoises remain on the northern slopes of the San Bernardino Mountains, south of Lucerne Valley; however, they seem to be largely absent from the portion of this area in Los Angeles County (Bureau et al. 2005).

The northern portion of Joshua Tree National Park is within the planning area for the West Mojave Plan. Given the general patterns of visitor use at Joshua Tree National Park, we expect that this area receives little use.

Private lands between the northern boundary of Joshua Tree National Park and the southern boundary of the Marine Corps Air Ground Combat Center continue to support desert tortoises; the primary threat to desert tortoises in this area is urbanization.

Desert tortoises occur within the Marine Corps Air Ground Combat Center in densities of greater than 50 per square mile in limited areas; most of the installation, however, supports from 0 to 5 animals per square mile (Jones and Stokes Associates 1998 in Natural Resources and Environmental Affairs Division 2001). The Marine Corps' integrated natural resource management plan also notes that the number of desert tortoises may have declined in the more heavily disturbed areas of the Marine Corps Air Ground Combat Center and that vehicles, common ravens, and dogs are responsible for mortalities. In general, the Marine Corps Air Ground Combat Center supports a wide variety of training exercises that include the use of tracked and wheeled vehicles and live fire.

The average density of desert tortoises in this recovery unit was 16.4 per square mile (Service 2006b). The line-distance sampling from which this density was derived was conducted from 2001 through 2005.

### **Recovery Plan for the Desert Tortoise**

The recovery plan for the desert tortoise is the basis and key strategy for recovery and delisting of the desert tortoise. The recovery plan divides the range of the desert tortoise into 6 distinct population segments or recovery units and recommends the establishment of 14 desert wildlife management areas throughout the recovery units. Within each desert wildlife management area, the recovery plan recommends implementation of reserve level protection of desert tortoise populations and habitat, while maintaining and protecting other sensitive species and ecosystem functions. The recovery plan also recommends that desert wildlife management areas be designed to follow the accepted concepts of reserve design and be managed to restrict human activities that negatively affect desert tortoises (Service 1994c). The delisting criteria established by the recovery plan are:

1. The population within a recovery unit must exhibit a statistically significant upward trend or remain stationary for at least 25 years;
2. Enough habitat must be protected within a recovery unit or the habitat and desert tortoises must be managed intensively enough to ensure long-term viability;
3. Populations of desert tortoises within each recovery unit must be managed so discrete population growth rates ( $\lambda$ ) are maintained at or above 1.0;
4. Regulatory mechanisms or land management commitments that provide for long-term protection of desert tortoises and their habitat must be implemented; and
5. The population of the recovery unit is unlikely to need protection under the Endangered Species Act in the foreseeable future.

The recovery plan based its descriptions of the six recovery units on differences in genetics, morphology, behavior, ecology, and habitat use over the range of the Mojave population of the desert tortoise. The recovery plan contains generalized descriptions of the variations in habitat parameters of the recovery units and the behavior and ecology of the desert tortoises that reside in these areas (pages 20 to 22 in Service 1994c). The recovery plan (pages 24 to 26 from Service 1994c) describes the characteristics of desert tortoises and variances in their habitat, foods, burrow sites, and phenotype across the range of the listed taxon. Consequently, to capture the full range of phenotypes, use of habitat, and range of behavior of the desert tortoise as a species, conservation of the species across its entire range is essential.

The Service is currently in the process of revising the recovery plan for the desert tortoise. A draft plan has been released for public review.

#### **Relationship of Recovery Units, Distinct Population Segments, Desert Wildlife Management Areas, and Critical Habitat Units**

The recovery plan (Service 1994c) recognized six recovery units or evolutionarily significant units across the range of the listed taxon, based on differences in genetics, morphology, behavior, ecology, and habitat use of the desert tortoises found in these areas. The boundaries between these areas are vaguely defined. In some cases, such as where the Western Mojave Recovery Unit borders the Eastern Mojave Recovery Unit, a long, low-lying, arid valley provides a fairly substantial separation of recovery units. In other areas, such as where the Eastern Mojave Recovery Unit borders the Northern Colorado Recovery Unit, little natural separation exists. Because of the vague boundaries, the acreage of these areas has not been quantified. Over the years, workers have commonly referred to the areas as "recovery units;" the term "distinct population segment" has not been in common use. As mentioned previously in the Assessment of the Recovery Plan section of this biological opinion, the Desert Tortoise Recovery Plan Assessment Committee suggests that five recovery units (or distinct population segments) would

more appropriately represent variation across the range of the desert tortoise rather than the six described in the recovery plan; because this concept is not yet universally accepted, we will continue to refer to the recovery units described in the recovery plan in this biological opinion.

The recovery plan recommended that land management agencies establish one or more desert wildlife management areas within each recovery unit. As mentioned previously in the Recovery Plan for the Desert Tortoise section of this biological opinion, the recovery plan recommended that these areas receive reserve-level management to remove or mitigate the effects of the human activities responsible for declines in the number of desert tortoises. As was the case for the recovery units, the recovery plan did not determine precise boundaries for the desert wildlife management areas; the recovery team intended for land management agencies to establish these boundaries, based on the site-specific needs of the desert tortoise. At this time, desert wildlife management areas have been established throughout the range of the desert tortoise, except in the Western Mojave Recovery Unit.

Based on the recommendations contained in the draft recovery plan for the desert tortoise (59 *Federal Register* 5820), the Service designated critical habitat units throughout the range of the desert tortoise. The 14 critical habitat units have defined boundaries and cover specific areas throughout the 6 recovery units.

The Bureau used the boundaries of the critical habitat units and other considerations, such as conflicts in management objectives and more current information, to propose and designate desert wildlife management areas through its land use planning processes. In California, the Bureau also classified these desert wildlife management areas as areas of critical environmental concern, which, as we mentioned in the Description of the Proposed Action section of this biological opinion, allows the Bureau to establish management goals for specific resources in defined areas. Through the land use planning process, the Bureau established firm boundaries for the desert wildlife management areas.

Finally, we note that the Department of Defense installations and National Park Service units in the California desert did not establish desert wildlife management areas on their lands. Where the military mission is compatible with management of desert tortoises and their habitat, the Department of Defense has worked with the Service to conserve desert tortoises and their habitat. Examples of such overlap include the bombing ranges on the Navy's Mojave B and the Chocolate Mountains Aerial Gunnery Ranges; although the target areas are heavily disturbed, most of the surrounding land remains undisturbed. Additionally, the Army has established several areas along the boundaries of Fort Irwin where training with vehicles is prohibited; desert tortoises persist in these areas, which are contiguous with lands off-base. We discussed the situation at Joshua Tree National Park in the Status of Critical Habitat section of this biological opinion. The National Park Service did not establish desert wildlife management areas within the Mojave National Preserve, because the entire preserve is managed at a level that is generally consistent with the spirit and intent of the recovery plan for the desert tortoise.

The following table depicts the relationship among recovery units, desert wildlife management

areas, and critical habitat units through the range of the desert tortoise.

Critical Habitat Unit	Desert Wildlife Management Area	Recovery Unit	State	Size of Critical Habitat Unit (acres)
Chemehuevi	Chemehuevi	Northern Colorado	CA	937,400
Chuckwalla	Chuckwalla	Eastern Colorado	CA	1,020,600
Fremont-Kramer	Fremont-Kramer	Western Mojave	CA	518,000
Ivanpah Valley	Ivanpah Valley	Eastern Mojave	CA	632,400
Pinto Mountain	Joshua Tree	Western Mojave/ Eastern Colorado	CA	171,700
Ord-Rodman	Ord-Rodman	Western Mojave	CA	253,200
Piute-Eldorado- CA	Fenner	Eastern Mojave	CA	453,800
Piute-Eldorado- NV	Piute-Eldorado	Northeastern Mojave/ Eastern Mojave	NV	516,800
Superior-Cronese	Superior-Cronese Lakes	Western Mojave	CA	766,900
Beaver Dam:		Northeastern Mojave (all)		
NV	Beaver Dam		NV	87,400
UT	Beaver Dam		UT	74,500
AZ	Beaver Dam		AZ	42,700
Gold Butte-Pakoon		Northeastern Mojave (all)		
NV	Gold Butte-Pakoon		NV	192,300
AZ	Gold Butte-Pakoon		AZ	296,000
Mormon Mesa	Mormon Mesa Coyote Spring	Northeastern Mojave	NV	427,900
Upper Virgin River	Upper Virgin River	Upper Virgin River	UT	54,600

### Recent Fires

Since December 2004, numerous wildfires have occurred in desert tortoise habitat across its range. Although we know that some desert tortoises were killed by the wildfires, mortality estimates are not available at this time. We estimate that approximately 500,000 acres of potential desert tortoise habitat burned in the Northeastern Mojave Recovery unit in 2005. This number includes areas of critical habitat that burned, which are noted in the following table. All data are from Clayton (2005).

Recovery Unit	Critical Habitat Unit	Acres Burned
Upper Virgin River	Upper Virgin River	10,446
Northeastern Mojave	Beaver Dam Slope	46,757
Northeastern Mojave	Gold Butte-Pakoon	62,466
Northeastern Mojave	Mormon Mesa	15,559
Eastern Mojave	Piute-Eldorado	154

Eastern Mojave	Ivanpah	1,065
Total		136,447

The 136,447 acres of critical habitat that burned represent approximately 2.1 percent of the total amount of critical habitat that was designated for the desert tortoise. Given the patchiness with which the primary constituent elements of critical habitat are distributed across the critical habitat units and the varying intensity of the wildfires, we cannot quantify precisely the extent to which these fires disrupted the function and value of the critical habitat.

**ENVIRONMENTAL BASELINE**

**Action Area**

The implementing regulations for section 7(a)(2) of the Endangered Species Act define the action area to be “all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action.” Figure 2.3-1 of the draft environmental impact report (County of Inyo 2008a) depicts the components of the proposed action. The action area for the proposed action comprises the Hay Ranch, the approximately 9-mile-long right-of-way for the pipeline, and the site of the high point water tank. We also consider Rose Valley to be part of the action area, because its underlying aquifer may be affected by the proposed action. The Hay Ranch parcel and the western portion of the pipeline right-of-way lie within Rose Valley.

The Hay Ranch parcel, which is the western terminus of the pipeline, is private land. The eastern terminus of the pipeline lies within the Naval Air Weapons Station, China Lake, and is managed by the U.S. Department of the Navy. Most of the pipeline would be located on lands managed by the Bureau.

**Habitat Characteristics of the Action Area**

The following information is from the draft environmental impact report (County of Inyo 2008a). The Hay Ranch has been farmed in the past. It is currently fallow, with some old structures on-site.

Creosote bush-white bursage scrub and allscale scrub comprise the native plant communities. The draft environmental impact report (County of Inyo 2008a) notes that the area north of Coso Junction Road has been “heavily grazed.” Portions of the action area support large areas of lava flows.

The area supported where the high point water tank would be installed has been disturbed by previous activity. Coso Junction Road parallels the pipeline right-of-way for a large portion of its route.

Rose Valley is bisected north to south by Highway 395 and contains other areas disturbed by

human activities. Most native habitat is desert scrublands. Several wetland and riparian areas also occur in Rose Valley.

### **Status of Desert Tortoises in the Action Area**

In general, Rose Valley supports low numbers of desert tortoises, most likely because the action area is near the northern edge of the species' distribution in this portion of its range. The draft environmental impact report (County of Inyo 2008a) notes that the status of the desert tortoise in the area was assessed by two surveys. The Hay Ranch lies at an elevation of approximately 3,400 feet; the highest point along the pipeline is approximately 4,100 feet. These elevations are generally above elevations where desert tortoises are commonly found.

UltraSystems (2005) surveyed the project area for desert tortoises and other species on May 11, 12, and 13, 2004; its report notes that no desert tortoises were observed but does not provide substantial information with regard to where sign was found. The draft environmental impact report (County of Inyo 2008a) notes that UltraSystems found sign of desert tortoises along the pipeline route.

The draft environmental impact report (County of Inyo 2008a) also notes that sign of desert tortoises was also found during surveys along Coso Road in 2007. Sign included 5 inactive burrows, 14 possible burrows, and one scat.

### **EFFECTS OF THE ACTION**

The proposed action contains three primary components that may affect desert tortoises. These actions are construction, operation, and decommissioning.

#### **Construction**

##### *Effects on Desert Tortoises*

Based on information in the draft environmental impact report (County of Inyo 2008a), desert tortoises may occur throughout the project area, albeit at low densities. Their densities are likely even lower at the higher elevations within the project area and in areas of extensive lava. Consequently, they may be vulnerable to being killed or injured by heavy equipment during construction activities on the Hay Ranch property, along the pipeline right-of-way, and at new monitoring wells, by vehicles traveling along access roads, and, in the case of smaller desert tortoises, by workers on foot. Desert tortoises may become entrapped in pipes that are left unattended or fall into trenches and holes that are left open. Coyotes and common ravens that are attracted to the human activities and trash may then prey on desert tortoises. Pet dogs brought to work areas by workers could also prey on desert tortoises. A more complete discussion of how human activities affect desert tortoises, both directly and indirectly, can be found in the "General Effects of Human Activities on the Desert Tortoise and its Critical

Habitat" section of Service's biological opinion for the California Desert Conservation Area (Service 2006).

The County of Inyo and Coso Operating Company have proposed many measures to attempt to reduce or avoid these adverse effects. For example, measures such as fencing work areas to exclude desert tortoises and surveying these areas to move any desert tortoises found within them, educating workers about desert tortoises, controlling trash, and restricting pets from the project site are likely to substantially reduce the likelihood that desert tortoises would be killed or injured during construction activities. Because of these measures and the low likelihood that desert tortoises will be encountered during construction, given the low density of desert tortoises in the area, few desert tortoises are likely to be killed or injured during construction.

Although the County of Inyo and Coso Operating Company have proposed numerous measures that should be effective in protecting desert tortoises, a few measures may leave desert tortoises at slightly greater risk because of their nature. First, the greatest risk to desert tortoises during construction is likely along access roads because desert tortoises, particularly smaller individuals, are difficult to detect and avoid when driving. The proposed speed limit of 25 miles per hour is likely too fast to detect all but the largest tortoises. Most access to the pipeline would be along a paved road with publicly posted speed limits; consequently, construction traffic is unlikely to affect desert tortoises to a degree that is distinguishable from routine vehicle use on this road.

Second, the draft environmental impact report (County of Inyo 2008a) notes that desert tortoise sign was found in areas of alluvial substrates. We caution that desert tortoises also occur in areas dominated by lava substrate, although they may be more difficult to detect because scat and burrows are not as obvious.

Third, the 48-hour window between surveys and construction may be inadequate under some circumstances. Using this time frame, desert tortoises may easily enter an area after a clearance survey is completed and before work starts when they are active. Also, the February 15 to November 15 window for the desert tortoise's active period is highly inclusive of their normal active periods; however, weather can affect their levels of activity at any time of the year. For example, a warm rain in the winter would likely prompt activity.

Finally, the installation of fencing to prevent entry of desert tortoises into work areas and the constant presence of a qualified biologist in such areas may be unnecessary, given the low density of desert tortoises in the area.

#### *Effects on Desert Tortoise Habitat*

Desert tortoise sign was not found on the Hay Ranch property. Consequently, because the habitat quality of the area has been degraded substantially by past agricultural activities, construction activities here would not result in additional permanent loss of habitat. The environmental impact report (County of Inyo 2008a) states that approximately 5.25 acres of

previously disturbed habitat at the Hay Ranch would be lost or further disturbed. This amount of disturbance and loss of previously disturbed habitat would not have a substantial effect on the desert tortoise because of the extensive amount of higher quality habitat remaining in the local area and regionally. The 0.75-acre of disturbed habitat that would be lost as a result of the construction of the high point water tank would not affect the desert tortoise's ability to reproduce, forage, or find shelter in any measurable manner.

Approximately 53.5 acres of habitat along the pipeline right-of-way would be temporarily disturbed by construction; a smaller area that would be covered by vaults and valves would be permanently lost. In general, this disturbance and loss of habitat would not affect the desert tortoise's ability to reproduce, forage, or find shelter in a substantial manner because most of the disturbance would be temporary in nature. Additionally, because the disturbance would be temporary, the proposed action would not fragment habitat of the desert tortoise. Finally, the area would be restored, at least to some degree, by measures proposed by the County of Inyo and the Coso Operating Company.

The draft environmental impact report did not specify the amount of habitat to be disturbed by the installation of new wells or whether these areas were within habitat of the desert tortoise. In general, we expect that the amount of disturbance would be relatively small in area.

Potentially, the spread of weeds along the construction right-of-way poses the greatest threat to desert tortoise habitat in the area because the weeds could spread from the work area into surrounding habitat. These non-native species, in turn, can compete with the native plant species (Lovich and Bainbridge 1999) that the desert tortoise requires for nutrients and shelter. Non-native plants can also increase the ability of the desert to carry wild fires (Lovich and Bainbridge 1999). The plant species upon which desert tortoises depend are not adapted to fire; consequently, fires could severely alter the plant community structure by removing species upon which the desert tortoise is dependent and facilitating the spread of fire-tolerant taxa. The proposal to wash vehicles down on a daily basis may assist in reducing the likelihood that construction activities will spread weeds through work areas.

## **Operation**

### *Effects on Desert Tortoises*

During operation of the pipeline, workers driving the right-of-way may strike desert tortoises with their vehicles. The risk would be greatest during times when desert tortoises are most active; smaller desert tortoises would be most vulnerable to being killed or injured by driving because they are more difficult to see.

The draft environmental impact report notes that sections of the pipeline may need occasional repair. During this work, desert tortoises would be at the same type of risk posed by construction but on a much smaller scale.

Flushing of potentially large amounts of water from the pipeline would only occur on the Hay Ranch property and at the eastern terminus of the pipeline in areas where the water would be contained (Brock 2008b); consequently, we do not expect that such flushing would affect habitat of the desert tortoise.

The draft environmental impact report (appendix C4, page C4-12 and figure C4-3; County of Inyo 2008a) indicates that extensive monitoring of groundwater levels would occur for the life of the project throughout Rose Valley. The potential exists that workers driving to and from well sites in Rose Valley could strike desert tortoises with their vehicles. The risks would be similar to those noted for driving along the pipeline right-of-way. If the vehicles associated with monitoring comprise a small portion of the total number of vehicles using roads to the wells, the effect of this traffic on desert tortoises would likely be difficult to measure.

#### *Effects on Desert Tortoise Habitat*

Driving the right-of-way and conducting repairs on the pipeline may spread non-native plant species, if they are traveling from outside the local area. Repairing the pipeline would likely disturb small areas of habitat on an infrequent basis. Because flushing of water from the pipeline would only occur in on the Hay Ranch property and at the eastern terminus of the pipeline in areas where the water would be contained, we do not expect that such flushing would affect habitat of the desert tortoise.

The potential lowering of the level of groundwater as a result of pumping water is not likely to affect habitat of the desert tortoise. The annual and perennial plants that the desert tortoise relies on for food and shelter are influenced by rainfall. Desert tortoises are infrequent users of the riparian and wetland communities that may be affected by groundwater pumping.

### **Decommissioning**

#### *Effects on Desert Tortoises*

We anticipate that decommissioning the proposed project would have the same potential effects on the desert tortoise as construction. Implementation of the same or similar protective measures would likely result in few desert tortoises, if any, being killed or injured during decommissioning.

#### *Effects on Desert Tortoise Habitat*

We also expect that the effects of decommissioning on habitat of the desert tortoise would be similar to those associated with construction. Depending on the level of restoration of disturbed areas, restored areas would likely provide habitat value to desert tortoises over a period of time. Many areas of the pipeline may have already regained a large portion of their habitat value. As during construction, the spread of weeds into native habitat during decommissioning activities could pose the greatest overall threat to habitat quality. Preventive measures, such as washing

vehicles, should be effective in reducing the likelihood this adverse effect may occur.

### Summary

In general, we expect that few desert tortoises are likely to be killed or injured by the proposed action because few desert tortoises occur in the action area; the relatively small scale of the proposed action and the numerous protective measures proposed by the County of Inyo and Coso Operating Company also contribute to this conclusion. We note, however, that the loss of even a few desert tortoises in an area that contains extremely dispersed individuals may have long-term consequences to the viability of the desert tortoises in the area.

Relatively little habitat would be lost or disturbed as a result of the proposed action. The potential that the pipeline construction and maintenance could result in the spread of non-native weedy plants into habitat of the desert tortoise constitutes the primary concern.

### CUMULATIVE EFFECTS

Cumulative effects include the effects of future State, tribal, local, or private actions that are reasonably certain to occur in the action area considered in this biological opinion. Future Federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the Act.

The draft environmental impact report (County of Inyo 2008a) mentions several actions that may occur in or near the action area considered in this biological opinion. They are:

South Haiwee Reservoir leakage recovery. The draft environmental impact report notes that this project would include installation of a 1,700-foot pipeline. The effects of pipeline installation would be similar to those described for the pipeline in this biological opinion. The area to be disturbed would likely be minor, given the length of the pipeline. We expect that few, if any, desert tortoises would be affected by this action.

Little Lake habitat restoration. The area affected by this action supports wetland and riparian habitats. Desert tortoises generally do not occur in such habitats; consequently, we do not anticipate any effects to desert tortoises.

Gill Station Coso Road improvements. Realignment and widening this road is likely to result in the loss of some desert tortoise habitat. Any improvements that increase the speed and number of vehicles along a road would increase the level of threat to desert tortoises.

Crystal Geysers plant. This proposed action is likely outside of the range of desert tortoises.

Deep Rose Geothermal. Based on our review of the map in the draft environmental impact report, we expect that this proposed action would be located on federal lands. Consequently, the Federal agency reviewing this action would comply with section 7(a)(2) of the Endangered

Species Act and this action would not be considered a cumulative effect to the Hay Ranch project.

U.S. Highway 395. The California Department of Transportation has been delegated authority by the Federal Highway Administration to consult with the Service under section 7(a)(2) of the Endangered Species Act. Consequently, any California Department of Transportation action would not be considered a cumulative effect to the Hay Ranch project.

In summary, the projects discussed above would have either no or relatively little effect on desert tortoises or would undergo separate consultation under section 7(a)(2) of the Endangered Species Act. We do not anticipate that the non-federal actions would result in an appreciable reduction in the desert tortoise's reproduction, numbers, or distribution.

## CONCLUSION

After reviewing its current status, the environmental baseline for the action area, the effects of the proposed action, and the cumulative effects, it is the Service's biological opinion that the Bureau's proposed issuance of a right-of-way grant to the Coso Operating Company for the Coso Hay Ranch pipeline project is not likely to jeopardize the continued existence of the desert tortoise. We reached this conclusion because the proposed action would likely kill or injure few desert tortoises; consequently, it would not appreciably reduce the ability of the species to survive and recover in the wild by affecting its numbers, distribution, or reproduction.

## INCIDENTAL TAKE STATEMENT

Section 9 of the Act and Federal regulation pursuant to section 4(d) of the Act prohibit the take of endangered and threatened species, respectively, without special exemption. Take is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. Harm is further defined by the Service to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering. Harass is defined by the Service as intentional or negligent actions that create the likelihood of injury to listed species by annoying it to such an extent as to significantly disrupt normal behavioral patterns which include, but are not limited to, breeding, feeding or sheltering. Incidental take is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered to be prohibited taking under the Act provided that such taking is in compliance with the terms and conditions of this incidental take statement.

The measures described in this incidental take statement are non-discretionary and must be undertaken by the Bureau or made binding conditions of any right-of-way grant provided to the Coso Operating Company for the Coso Hay Ranch pipeline project. The Bureau has a continuing duty to regulate the activities covered by this incidental take statement. If the Bureau

fails to assume and implement the terms and conditions of the incidental take statement or to make them enforceable terms of its right-of-way grant, the protective coverage of section 7(o)(2) may lapse. To monitor the impact of incidental take, the Bureau must report the progress of its action and its impact on the species to the Service as specified in the incidental take statement (50 *Code of Federal Regulations* 402.14(i)(3)).

We anticipate that few desert tortoises may be taken during construction, operation, and decommissioning of the Coso Hay Ranch pipeline project. Take may occur in the form of capture, if desert tortoises are moved from harm's way during project activities; take may also occur in the form of injury or mortality if desert tortoises are not detected and moved prior to project activities.

We cannot quantify the precise number of animals that may be captured, killed, or injured because of the uncertainty of how many desert tortoises would be encountered. We estimate that few would be encountered because desert tortoises are infrequently observed in Rose Valley and along the pipeline right-of-way; additionally, relatively little sign was detected during surveys in the area.

The exemption to the prohibition against take provided by this incidental take statement extends only to the action area described in this biological opinion.

#### REASONABLE AND PRUDENT MEASURES

The Service believes the following reasonable and prudent measures are necessary and appropriate to minimize take of the desert tortoise during construction, operation, and maintenance associated with the Coso Hay Ranch pipeline project:

1. The Bureau must ensure that only experienced biologists conduct clearance surveys for and remove desert tortoises during the Coso Hay Ranch pipeline project.
2. The Bureau must ensure that the level of incidental take anticipated in this biological opinion is commensurate with the analysis contained herein.
3. The Bureau must implement measures to reduce the number of desert tortoises that may be killed or injured during operation of the proposed project.

Our evaluation of the proposed action includes consideration of the protective measures proposed by the Bureau and Coso Operating Company in the request for consultation and reiterated in the Description of the Proposed Action section of this biological opinion. Consequently, any changes in these protective measures may constitute a modification of the proposed action that causes an effect to the desert tortoise that was not considered in the biological opinion and require re-initiation of consultation, pursuant to the implementing regulations of the section 7(a)(2) of the Act (50 *Code of Federal Regulations* 402.16). The following reasonable and prudent measures and terms and conditions are intended to compliment

and clarify the protective measures proposed by the Bureau and Coso Operating Company.

#### TERMS AND CONDITIONS

To be exempt from the prohibitions of section 9 of the Act, the Bureau must comply with or ensure that the Coso Operating Company complies with the following terms and conditions, which implement the reasonable and prudent measures described in the previous section, and the reporting and monitoring requirements. These conditions are non-discretionary.

1. The following term and condition implements reasonable and prudent measure 1:

The Bureau must ensure that only biologists authorized by the Service under the auspices of this biological opinion conduct clearance surveys for and move desert tortoises from harm's way during construction, maintenance, and decommissioning. The Bureau must provide us with the credentials of any authorized biologists whom it wishes to conduct these duties at least 30 days prior to the time they must be in the field.

The authorized biologist must have thorough and current knowledge of desert tortoise behavior, natural history, ecology, and physiology, and demonstrate substantial field experience and training to safely and successfully conduct their required duties. Authorized biologists are approved to monitor project activities within desert tortoise habitat and are responsible for locating desert tortoises and their sign (i.e., conduct clearance surveys). Authorized biologists must ensure proper implementation of protective measures, and make certain that the effects of the project on the desert tortoise and its habitat are minimized in accordance with a biological opinion or incidental take permit. All incidents of noncompliance in accordance with the biological opinion or permit must be recorded and reported to the Service. If additional desert tortoise monitors are needed for the project, the authorized biologists will serve as mentors to train monitors and approve monitors to conduct specific activities based on the monitor's demonstrated skills, knowledge and qualifications. Direct supervision is always required for clearance surveys; "direct supervision" means the authorized biologist has direct voice and sight contact with the monitor. An authorized biologist is responsible for the outcome of all desert tortoise related activities for which the project is approved.

2. The following terms and conditions implement reasonable and prudent measure 2:

- a. To ensure that the measures proposed by the Bureau are effective and are being properly implemented, the Bureau must contact the Service immediately if it becomes aware that a desert tortoise has been killed or injured by project activities. At that time, the Service and the Bureau must review the circumstances surrounding the incident to determine whether additional protective measures are required. Project activities may continue pending the outcome of the review, provided that the Bureau's proposed protective measures and any appropriate terms and conditions of this biological opinion have been and continue to be fully implemented.

- b. If more than 2 desert tortoises are killed or injured in any 12-month period by work associated with the Coso Hay Ranch pipeline project, the Bureau must re-initiate formal consultation with the Service, as required by 50 *Code of Federal Regulations* 402.16.
3. The following terms and conditions implement reasonable and prudent measure 3:
    - a. To reduce the potential that desert tortoises may be killed or injured during checking of the monitoring wells with during operation of the Coso Hay Ranch pipeline project, the Bureau must ensure that the authorized biologist trains all workers associated the monitoring program. Particular emphasis must be placed on watching for desert tortoises when driving in areas that may support desert tortoises and on checking beneath vehicles before moving them. The authorized biologist must train personnel on the monitoring staff on the appropriate methods of moving desert tortoises from harm's way while conducting monitoring activities. Desert tortoises may be moved from harm's way only when they cannot be reasonably avoided during monitoring activities.
    - b. This term and condition modifies the proposed protective measures related to pre-construction surveys and fencing. If fencing will be used to exclude desert tortoises from work areas, the fence must be installed prior to the onset of ground-disturbing activities with the authorized biologist ensuring that desert tortoises are not killed or injured during installation. Once the fence is installed, the authorized biologist must survey the fenced area and remove desert tortoises as described in Desert Tortoise Council (1999). After the fence is installed and the area cleared of desert tortoises by the authorized biologist, the authorized biologist need not be present, provided the fence remains intact; if the fence is breached, the authorized biologist must resurvey the fenced area prior to the resumption of work. The fence must be checked frequently enough to ensure its integrity; it must be checked immediately after any rainfall. Fencing must be installed as described at:  
[http://www.fws.gov/ventura/speciesinfo/protocols\\_guidelines/docs/dt/DT\\_Exclusion-Fence\\_2005.pdf](http://www.fws.gov/ventura/speciesinfo/protocols_guidelines/docs/dt/DT_Exclusion-Fence_2005.pdf).  
  
If the Bureau and Coso Operating Company choose not to fence work areas, an authorized monitor must survey the area and remove any desert tortoises immediately prior to the onset of ground-disturbing activities. Once the ground has been cleared, the authorized biologist need not be present; however, a desert tortoise monitor trained by the authorized biologist must be on site at all times work is in progress.
    - c. Desert tortoises found in harm's way must be moved to suitable habitat outside the work area and placed in a natural or artificial burrow or under a shrub, depending on time of day and year. If deemed necessary by the authorized biologist, the desert tortoise must be enclosed in a fence to temporarily restrain its movement; the fence around the desert tortoise must be removed after completion of work activities near the temporary fence.

- d. Open trenches, auger holes, or other excavations that may act as pit-fall traps must be inspected by an authorized biologist or desert tortoise monitor before back filling. Any desert tortoise found must be safely removed and relocated out of harm's way by an authorized biologist or desert tortoise monitor. For open trenches, earthen escape ramps must be maintained at intervals of no greater than 0.25 mile. The open trenches will be inspected three times per day throughout most of the year and four times per day during periods when desert tortoises are active, as determined by local observations by the authorized biologist; inspections must be by an authorized biologist or desert tortoise monitor. Other excavations that remain open overnight must be covered to prevent them from becoming traps.
- e. All handling of desert tortoises must be according to the protocols described in Desert Tortoise Council (1999).

#### REPORTING REQUIREMENTS

Given the extended life of the proposed action, the Bureau is responsible for providing reports to the Service within 60 days of the completion of the construction activities, annually (by January 31), and within 60 days of completion of decommissioning activities. The Bureau must provide detailed information on the effects of the action on the desert tortoise. Specifically, the report must include information on any instances when desert tortoises were killed, injured, or handled; the circumstances of such incidents; and any actions undertaken to prevent similar instances from re-occurring. We recommend that the Bureau provide us with any recommendations that would facilitate the implementation of the protective measures while maintaining protection of the desert tortoise.

#### DISPOSITION OF DEAD OR INJURED DESERT TORTOISES

Within 3 days of locating any dead or injured desert tortoises, you must notify the Service's Division of Law Enforcement (370 Amapola Avenue, Suite 114, Torrance, California 90501) and the Ventura Fish and Wildlife Office by telephone (805 644-1766) and by facsimile (805 644-3958). The report must include the date, time, location of the carcass, a photograph, cause of death, if known, and any other pertinent information.

Injured desert tortoises must be taken to a qualified veterinarian for treatment. If any injured desert tortoises survive, the Service must be contacted regarding their final disposition.

Care must be taken in handling dead specimens to preserve biological material in the best possible state for later analysis. The remains of desert tortoises must be placed with the U.S. Geological Survey (Contact: Kristin Berry, U.S. Geological Survey, 22835 Calle San Juan De Los Lagos, Moreno Valley, California 92553, (951-697-5361); if the U.S. Geological Survey does not want the carcass because the damage is too extensive, the carcass must be disposed of in an appropriate manner. We recommend that the Bureau maintain a standing arrangement with the U.S. Geological Survey regarding proper disposition of carcasses and ensure that its offices

are well aware this and other procedures regarding the disposition of dead or injured desert tortoises.

#### CONSERVATION RECOMMENDATIONS

Section 7(a)(1) of the Act directs Federal agencies to use their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities to minimize or avoid adverse effects of a proposed action on listed species or critical habitat, to help implement recovery plans, or to develop information. We have no conservation recommendations to offer at this time.

#### REINITIATION NOTICE

This concludes formal consultation on the Bureau's proposed issuance of a right-of-way grant to the Coso Operating Company. Reinitiation of formal consultation is required where discretionary federal involvement or control over the action has been retained or is authorized by law and: (a) if the amount or extent of taking specified in the incidental take statement is exceeded; (b) if new information reveals effects of the action that may affect listed species or critical habitat in a manner or to an extent not previously considered; (c) if the identified action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in the biological opinion; or (d) if a new species is listed or critical habitat designated that may be affected by the identified action.

If you have any questions regarding this biological opinion, please contact Ray Bransfield of my staff at (805) 644-1766, extension 317.

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**DEPARTMENT OF THE ARMY**  
U.S. ARMY CORPS OF ENGINEERS, LOS ANGELES DISTRICT  
VENTURA REGULATORY FIELD OFFICE  
2151 ALESSANDRO DRIVE, SUITE 110  
VENTURA, CA 93001

August 11, 2008

REPLY TO  
ATTENTION OF

Office of the Chief  
Regulatory Division

Coso Operating Company, LLC  
Attn: Colleen Brock  
P.O. Box 1690  
Inyokern, California 93527-1690

Dear Ms. Brock:

Reference is made to your request (Corps File No. SPL-2008-00726-BAH) dated July 14, 2009 regarding U.S. Army Corps of Engineers jurisdiction pursuant to Section 404 of the Clean Water Act to pump water from two existing wells (Hay Ranch North Well and Hay Ranch South Well) at Coso Operating Company's Hay Ranch property in Rose Valley, Inyo County, California for transport by pipeline and injection into the Company's geothermal field located within the nearby China Lake Naval Air Weapons Center. As part of the permit evaluation process, we have made the jurisdictional determination below.

Based on the information furnished in your letter and the *Coso Operating Company Hay Ranch Water Extraction and Delivery System Draft Environmental Impact Report* dated July 2008, we have determined that the proposed project would not discharge dredged or fill material into a water of the United States or an adjacent wetland. Furthermore, we have determined that the project entails an activity (pumping groundwater and conveyance by pipeline) that is not subject to Corps regulation. Therefore, the project is not subject to our jurisdiction under Section 404 of the Clean Water Act and a Section 404 permit would not be required from our office.

This letter contains an approved jurisdictional determination for the Coso Hay Ranch water extraction and reinjection project. If you object to this decision, you may request an administrative appeal under Corps regulations at 33 CFR Part 331. Enclosed you will find a Notification of Appeal Process (NAP) fact sheet (Appendix A) and Request for Appeal (RFA) form. If you request to appeal this decision you must submit a completed RFA form to the Corps South Pacific Division Office at the following address:

Tom Cavanaugh  
Administrative Appeal Review Officer  
U.S. Army Corps of Engineers  
South Pacific Division, CESPDPDS-O, 2042B  
1455 Market Street, San Francisco, California 94103-1399

In order for an RFA to be accepted by the Corps, the Corps must determine that it is complete, that it meets the criteria for appeal under 33 C.F.R. Part 331.5, and that it has been received by the Division Office within 60 days of the date on the NAP. Should you decide to submit an RFA form, it must be received at the above address by October 6, 2008. It is not necessary to submit an RFA form to the Division office if you do not object to the decision in this letter.

This verification is valid for five years from the date of this letter, unless new information warrants revision of the determination before the expiration date. If you wish to submit new information regarding the approved jurisdictional determination for this site, please submit this information to Bruce Henderson at the letterhead address by October 6, 2008. The Corps will consider any new information so submitted and respond within 60 days by either revising the prior determination, if appropriate, or reissuing the prior determination. A revised or reissued jurisdictional determination can be appealed as described above.

If you have any questions, please contact me at 805-858-2145 or via e-mail at [Bruce.A.Henderson@usace.army.mil](mailto:Bruce.A.Henderson@usace.army.mil).

Please be advised that you can now comment on your experience with Regulatory Division by accessing the Corps web-based customer survey form at:  
<http://per2.nwp.usace.army.mil/survey.html>.

Sincerely,



Bruce Henderson  
Sr. Project Manager  
North Coast Branch  
Regulatory Division

Enclosures

Applicant: Colleen Brock, Coso Operating Company, LLC

File Number: SPL-2008-00726-BAH

Date: 08/11/2008

Attached is:

See Section below

	INITIAL PROFFERED PERMIT (Standard Permit or Letter of permission)	A
	PROFFERED PERMIT (Standard Permit or Letter of permission)	B
	PERMIT DENIAL	C
X	APPROVED JURISDICTIONAL DETERMINATION	D
	PRELIMINARY JURISDICTIONAL DETERMINATION	E

**SECTION I:** The following defines your rights and options regarding an administrative appeal of the above decision. Additional information may be found at <http://www.dwr.ca.gov/permits/interfunctions/cy/cosw/reg> or Corps regulations at 33 CFR Part 331.

**A: INITIAL PROFFERED PERMIT:** You may accept or object to the permit.

- **ACCEPT:** If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.
- **OBJECT:** If you object to the permit (Standard or LOP) because of certain terms and conditions therein, you may request that the permit be modified accordingly. You must complete Section II of this form and return the form to the district engineer. Your objections must be received by the district engineer within 60 days of the date of this notice, or you will forfeit your right to appeal the permit in the future. Upon receipt of your letter, the district engineer will evaluate your objections and may: (a) modify the permit to address all of your concerns, (b) modify the permit to address some of your objections, or (c) not modify the permit having determined that the permit should be issued as previously written. After evaluating your objections, the district engineer will send you a proffered permit for your reconsideration, as indicated in Section B below.

**B: PROFFERED PERMIT:** You may accept or appeal the permit.

- **ACCEPT:** If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.
- **APPEAL:** If you choose to decline the proffered permit (Standard or LOP) because of certain terms and conditions therein, you may appeal the declined permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

**C: PERMIT DENIAL:** You may appeal the denial of a permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

**D: APPROVED JURISDICTIONAL DETERMINATION:** You may accept or appeal the approved JD or provide new information.

- **ACCEPT:** You do not need to notify the Corps to accept an approved JD. Failure to notify the Corps within 60 days of the date of this notice means that you accept the approved JD in its entirety, and waive all rights to appeal the approved JD.
- **APPEAL:** If you disagree with the approved JD, you may appeal the approved JD under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

**E: PRELIMINARY JURISDICTIONAL DETERMINATION:** You do not need to respond to the Corps regarding the preliminary JD. The Preliminary JD is not appealable. If you wish, you may request an approved JD (which may be appealed), by contacting the Corps district for further instruction. Also you may provide new information for further consideration by the Corps to reevaluate the JD.

**SECTION II. REASONS FOR APPEAL OR OBJECTIONS TO AN INITIAL PROFFERED PERMIT**

REASONS FOR APPEAL OR OBJECTIONS: (Describe your reasons for appealing the decision or your objections to an initial proffered permit in clear concise statements. You may attach additional information to this form to clarify where your reasons or objections are addressed in the administrative record.)

ADDITIONAL INFORMATION: The appeal is limited to a review of the administrative record, the Corps memorandum for the record of the appeal conference or meeting, and any supplemental information that the review officer has determined is needed to clarify the administrative record. Neither the appellant nor the Corps may add new information or analyses to the record. However, you may provide additional information to clarify the location of information that is already in the administrative record.

**POINT OF CONTACT FOR QUESTIONS OR INFORMATION**

If you have questions regarding this decision and/or the appeal process you may contact:

DISTRICT ENGINEER  
Los Angeles District, Corps of Engineers  
ATTN: Chief, Regulatory Division  
P.O. Box 532711  
Los Angeles, CA 90053-2325  
Tel. (213) 452-3425

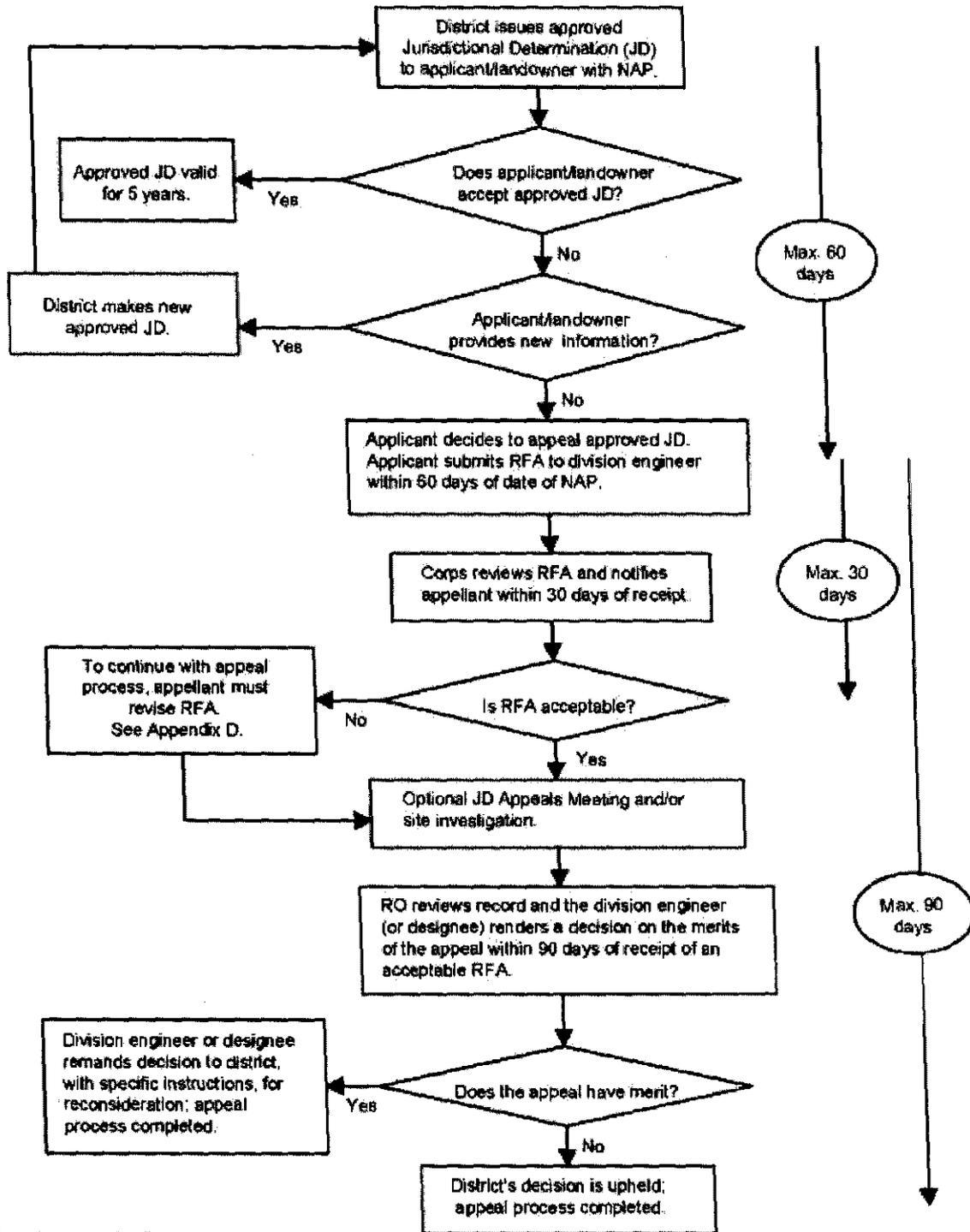
If you only have questions regarding the appeal process you may also contact:

DIVISION ENGINEER  
South Pacific Division, Corps of Engineers  
ATTN: Tom Cavanaugh  
Administrative Appeal Review Officer  
South Pacific Division, CESPDPDS-O, 2042B  
1455 Market Street, San Francisco, California 94103-1399  
Tel. (415) 503-6574

RIGHT OF ENTRY: Your signature below grants the right of entry to Corps of Engineers personnel, and any government consultants, to conduct investigations of the project site during the course of the appeal process. You will be provided a 15 day notice of any site investigation, and will have the opportunity to participate in all site investigations.

_____ Signature of appellant or agent.	Date:	Telephone number:
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## Administrative Appeal Process for Approved Jurisdictional Determinations



Appendix C

-----Original Message-----

From: Patrice Copeland [<mailto:PCopeland@waterboards.ca.gov>]

Sent: Friday, February 13, 2009 4:32 PM

To: Colleen Brock

Cc: Cindi Mitton; Doug Feay; Mike Plaziak

Subject: Re: Coso Checking In

Colleen -

Thank you for your patience. I had Doug Feay evaluate the project, based on the materials you submitted during our recent meeting and our discussion. Doug has determined that although the pipeline will cross up to 30 or so small dry washes/ephemeral streams, we do not believe that the project will need any other permits from the Lahontan Water Board. Doug has requested that you follow your SWPPP and stated that we'd like to conduct an inspection of the project when it is under construction. Please keep us notified about your construction schedule and we will coordinate w/you in the event that we will be inspecting.

Thank you for your continued interest in protecting water quality.

Patrice

Patrice J. Copeland, PG

Senior Engineering Geologist

Lahontan Regional Water Quality Control Board 14440 Civic Drive, Suite 200 Victorville, CA  
92392-2306

Direct: 760.241.7404

Fax: 760.241.7308

Blackberry: 760.713.1380

[pcopeland@waterboards.ca.gov](mailto:pcopeland@waterboards.ca.gov)