

# CHAPTER 1

## INTRODUCTION/PURPOSE AND NEED

---

### 1.1 INTRODUCTION

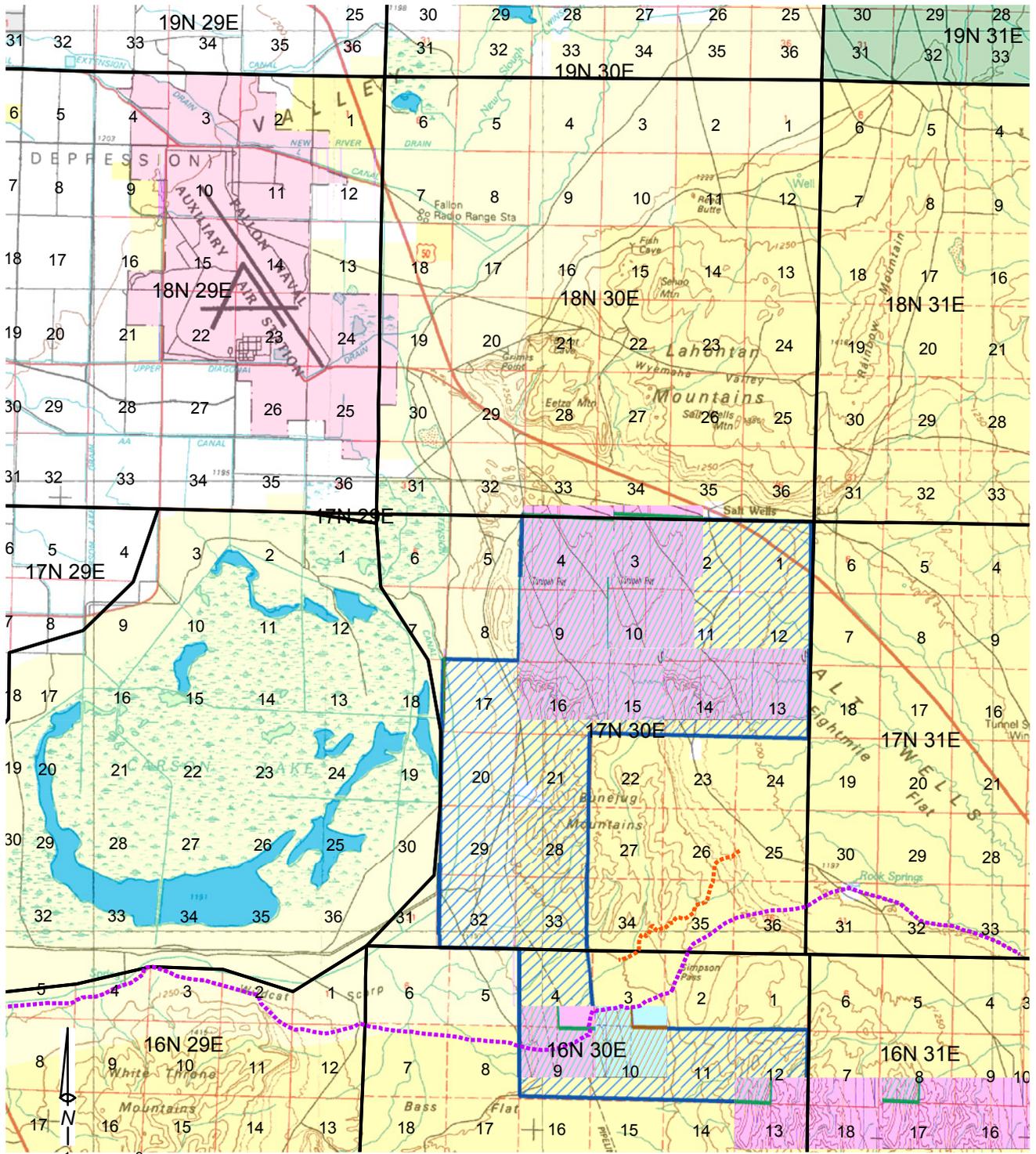
The Bureau of Land Management (BLM), Carson City District Office (CCDO), has prepared this environmental assessment (EA) to analyze impacts to the human and natural environment resulting from additional exploratory drilling for geothermal resources in the Carson Lake Basin Project LLC (Vulcan Power) Salt Wells lease area (project area), near Fallon, Nevada.

In July 2002, the BLM Carson City Field Office (CCFO) completed an EA for leasing of geothermal resources (BLM 2002). The Finding of No Significant Impacts (FONSI) for the geothermal leasing EA was signed on September 6, 2002. An addendum to the FONSI was signed on March 6, 2003 following tribal consultation on the Salt Wells Geothermal leasing area. After the amended FONSI was signed, the BLM issued geothermal resource leases to Vulcan Power for seven parcels in the Salt Wells geothermal leasing area located ten miles east of Fallon, Nevada and five miles south of US Highway 50. The project area encompasses 15,354 acres of BLM and US Bureau of Reclamation (BOR) land (Figure 1-1).

In February 2007, the BLM Carson Field Office completed an EA (EA-NV-030-07-05) for exploratory drilling of ten wells in the project area at locations now identified as Pads 1, 2, 3, 4, 5, 6, 7, 8, 9, and 13 (see Figure 1). The FONSI was signed February 6, 2007. Since then, Vulcan has constructed 2.8-acre pads at these locations and graveled the main access roads from Highway 50 through the lease to these pads. Vulcan drilled two temperature gradient holes (86-15 O on Pad 1 and 17-16 O on Pad 3); conducted seismic, gravity and magnetotelluric surveys; and drilled deep exploration wells at Pads 6 and 8 and binary wells at Pads 1, 2, 4, and 7 in the summer and fall of 2008.

Vulcan is seeking BLM approval to drill and test exploration wells at ten new locations (Pads 10, 11, 12, 14a, 15, 16, 17, 18, 19 and 20), identified from the initial exploratory activity. Access to these drilling locations would be from US Highway 50 through the existing road system on the Vulcan Salt Wells leases. Table 1-1, shows the lease parcels, pad numbers, and proposed well numbers for the new drilling locations. If exploration is successful, Vulcan would drill production wells at these locations.

R:\NEW\19039\GIS\Layouts\Site\_Location.mxd - 11/22/06 - YE



Source: BLM 2004

# Site Location Map

Carson City District Office, Nevada

- Land Status**
- Bureau of Land Management
  - Bureau of Reclamation
  - Department of Defense
  - Fish and Wildlife Service
  - Private Lands
  - Water
- Fort Churchill Toll Road
- Pony Express Route Trail
- Vulcan Lease Area

Figure 1-1

**Table 1-1 Proposed Drill Pad and Geothermal Well Sites**

| <b>Lease Parcel ID</b> | <b>Pad Number</b> | <b>Proposed Well Number</b> |
|------------------------|-------------------|-----------------------------|
| NV079666               | 10                | 76-9                        |
| NV079310               | 11                | 71-15                       |
| NV079665               | 12                | 84-16                       |
| NV079668               | 14a               | 14-1                        |
| NV079666               | 15                | 11-12                       |
| NV079665               | 16                | 55-17                       |
| NV079663               | 17                | 54-20                       |
| NV079663               | 18                | 51-29                       |
| NV079663               | 19                | 67-29                       |
| NV079664               | 20                | 65-32                       |

Source: Vulcan Power 2008

Geothermal resources are underground reservoirs of hot water or steam created by heat from the earth. In some locations, geothermal steam and hot water can reach the surface of the earth in the form of hot springs, geysers, mud pots, or steam vents. In other areas, the geothermal resources remain underground, and are reached by drilling wells. The heat energy can be used for generating electricity or for other direct uses, such as heating greenhouses and aquaculture operations and/or for dehydrating vegetables.

The Department of the Interior, consistent with Section 2 of the Mining and Mineral Policy Act (MMPA) of 1970 and Sections 102(a)(7), (8), and (12) of the Federal Land Policy and Management Act (FLPMA) of 1976, encourages the development of mineral resources, including geothermal resources, on federal lands. The Geothermal Steam Act of 1970 (30 USC §1001 et seq.) and its implementing regulations (43 CFR Part 3200) provide regulatory guidance for geothermal leasing by the Bureau of Land Management (BLM).

These regulations identify four stages of geothermal resource development within a lease: (1) exploration, (2) development, (3) production, and (4) closeout. Each of the four stages under the lease requires separate BLM authorization and compliance with the National Environmental Policy Act of 1969 (NEPA) when ground-disturbing activities are proposed.

A geothermal lease typically grants the lessee access to geothermal resources in the lease area for a period of 10 years. The terms of the lease require the lessee to show a certain level of diligence toward developing the geothermal resources within the lease area or the lease may be terminated. Once an area is developed for productive use of geothermal energy, the lease allows the lessee use of the resource for 40 years, with a right of renewal for another 40 years. Geothermal exploration and production on federal land conducted through leases is subject to terms and stipulations to comply with all applicable federal and state laws pertaining to sanitation, water quality, wildlife, safety, and reclamation. Lease stipulations may be site-specific and are derived from the environmental analysis process.

This EA considers the potential environmental impacts of the proposed action and has been prepared in accordance with the NEPA, the Council on Environmental Quality regulations implementing NEPA, and the FLPMA.

## 1.2 PURPOSE AND NEED

The purpose of the proposed action is to provide for additional drilling to assess the power generation capability of the geothermal areas identified during initial exploration activities at the Salt Wells lease area. A Finding of No Significant Impact (FONSI) for the Salt Wells Geothermal Exploratory Drilling EA would allow Vulcan to drill and test exploration wells at ten additional well pad locations.

Demand for energy in the United States has increased dramatically in a relatively short time; therefore, there is a need to increase the level of exploration, development, and production of geothermal resources. EO 13212, Actions to Expedite Energy-Related Projects, issued on May 18, 2001, states “the increased production and transmission of energy in a safe and environmentally sound manner is essential.”

## 1.3 LAND USE PLAN CONFORMANCE STATEMENT

The proposed action and alternatives described below are in conformance with the Carson City Field Office (CCFO) Consolidated Resource Management Plan (CRMP), page MIN1, Decision 1: the desired outcome for minerals and energy management is to “encourage development of energy and mineral resources in a timely manner to meet national, regional, and local needs consistent with the objectives for other public land uses” (BLM 2001a).

The CRMP Minerals land allocation Decision 10a applies the following restriction on geothermal leasing: “no surface occupancy (NSO) within 500 feet of any water.” The project area is not included in any of the excluded areas in the land allocation for minerals and is not subject to the other restrictions in Decision 10.

## 1.4 RELATIONSHIPS TO STATUTES, REGULATIONS AND OTHER PLANS

This action is consistent with federal laws and regulations; other plans, programs, and policies of affiliated Tribes; other federal agencies, state, and local government, to the extent practical within federal law, regulation, and policy. Specific approvals, permits, and regulatory requirements would be required for constructing, operating, and maintaining the proposed geothermal exploratory wells. Table 1-2 lists federal, state, and local permits, policies, and actions that may be required as part of the Proposed Action. In addition, some actions may be required that are not listed in the table.

**Table 1-2 Potential Regulatory Responsibilities**

| <b>Regulatory Agency</b>   | <b>Authorizing Action</b>  |
|--|--|
| BLM  | Temporary use permits for construction related activities          |
| BLM  | Geothermal Drilling Permit   |
| BLM, Nevada Division of Historic Preservation & Archaeology                          | Section 106 compliance with the National Historic Preservation Act |
| US Fish and Wildlife Service (USFWS)   | Endangered Species Act   |
| Department of Conservation and Natural Resources, Nevada Division of Water Resources | Temporary consumptive water use permit                             |
| State of Nevada, Commission on Mineral Resources, Division of Minerals               | Geothermal exploration and production well permit                  |