

Seismic Survey Description for

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Coyote Canyon Geothermal Exploration and Development

Prepared for

TGP Dixie Development Company, LLC

Submitted to

Bureau of Land Management,

Stillwater Field Office

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Proposed Action
Coyote Canyon Geothermal Exploration
TGP Dixie Development Company, LLC

Introduction

TGP is proposing to conduct a 2-D Seismic Reflection Survey to assist in the resource characterization in the Coyote Canyon geothermal resource lease area. The general location for conducting this survey is T24N R36E Sections 1, 2, 9, 10, 11, 12, 13, 14, 15, 16, 17, 22, 23, and 24 (see Figure 1). TGP holds geothermal leases N-17282, N-60688, N-62956, N-17283A, N-60687, N-61707, N-61705, and N-8394 for this area. TGP is seeking approval by the BLM under a categorical exclusion prior to the start of the seismic survey scheduled for late July 2009 (outside of the migratory bird nesting season between March 15 and July 15). The survey is anticipated to be completed by the end of October 2009 depending on the contractor's schedule.

The proposed action conforms to the Land Use Plans for the area, the Ft. Churchill/Clan Alpine MFP (1975) and the Carson City Consolidated RMP (2001) and as well as the Programmatic Environmental Impact Statement for Geothermal Leasing in Western U.S. 2008.

There is currently no existing environmental documentation for this area or proposed action. Based on CX Provision: 516 DM 11.9 (B) "Approval of notices of intent to conduct geophysical exploration of oil, gas, or geothermal pursuant to 43 CFR 3150 or 3250 when no temporary or new road construction is proposed" and our review of the Extraordinary Circumstances provided to the BLM with the TGP May 26, 2009 submittal of the general Project Description, none is expected to be required. Additional environmental consideration is addressed below.

Proposed Action

The general methodology proposed by TGP for the survey includes:

- TGP will adhere to BLM Standard Terms and Conditions for geophysical exploration as outlined in H-3150-1-Onshore Oil and Gas Geophysical Exploration Surface Management Requirements.
- There will be no scraping blading or grading of existing topography; vehicles will stay on existing roads whenever possible and single tracks where no roads exist. Roads will not be constructed for this project.
- Ground disturbance impacts will be avoided or minimized to the extent practicable. Sites where disturbance will take place will be restored to prior site conditions.
- TGP will conduct seismic surveys outside of the migratory bird season (between March 15 and July 15).

The seismic survey will involve pre-mobilization geophone standardization and equipment calibrations, GPS surveying, equipment placement, and seismic data acquisition using above ground equipment.

Methodology and description of work for conducting seismic-reflection surveys:

- Geophones/receptor probes (similar to a tent stake) are buried up to 1 foot deep into the ground using hand tools (See Figure 2).
- Approximately six geophones are positioned in an array centered on a flag adjacent to each seismic line (See Figure 1).
- Arrays will be located at up to 200 foot intervals.

- Geophones will be connected by lightweight, above ground wires that will transmit data to a truck-mounted data logger.
- Non-intrusive, environmentally low impact vibrators (truck) will be used as the energy source. The truck will be equipped with balloon tires to minimize impacts (See Figure 2). Up to three vibrator trucks may be driven down the seismic line.
- Vibrator trucks run in series spaced up to 100 feet, along the seismic line (parallel to the geophones).
- The seismic energy is generated using a plate attached to the vibrator truck that is lowered to the ground, vibrating for about 30 seconds approximately every 30 feet. The plate may leave a temporary ¼ inch depression in the earth.

A field crew of up to 25 people (generally fewer) working ten hour days will be required to conduct the survey. Support vehicles including 4 wheel drive trucks and/or ATVs will be used to transport equipment and personnel. From site mobilization, the survey is expected to take about four weeks to complete during which time the field personnel will camp in the area in self-contained recreation vehicles or stay in offsite lodging. All wastes will be hauled out of the area for proper disposal.

Needed Coordination/Consultation

To determine whether geophysical site evaluations are actions consistent with the previously mentioned Categorical Exclusions, an environmental review was undertaken to determine whether any of the extraordinary circumstances/exceptions (516 DM 2, Appendix 2) exist that would preclude consideration of the seismic survey as a categorically excluded activity. This review was provided to the BLM with the TGP May 26, 2009 submittal of the general Project Description. No impacts were identified in the evaluation.

TGP will work with the BLM to avoid and minimize impacts to sensitive or particularly important resources. It is envisioned that prior to entering the area for exploration activity, BLM would issue a "notice to proceed" by email or by regular mail.

The seismic exploration activity is not proposed to occur within the Migratory bird nesting season between March 15 and July 15. Therefore, a nesting survey is not proposed as part of this action.

Bond Coverage

TGP holds geothermal leases N-17282, N-60688, N-62956, N-17283A, N-60687, N-61707, N-61705, and N-8394 for this area. The attached Geothermal Nationwide Bond NV0577 in the amount of \$150,000 covers lease numbers N-62956, N-17283A, N-61707, N-61705, and N-8394 and the attached Dixie Valley Ltd., L.P. with Rider in the amount of \$100,000 covers lease numbers N-17282, N-60688, and N-60687.