

Proposed Operations

The seismic survey would be conducted by Dawson Geophysical Company (Dawson) and would occur on private land and lands managed by the Bureau of Land Management (BLM) located in the Soda Lake area, Churchill County. The project site is situated approximately 10 miles northwest of the city of Fallon.

SURVEY GRID AND SURVEY METHODS

The proposed 3-D seismic surveys would involve the generation of ground vibration by "vibroseis" equipment along source points and the recording of reflected sound waves and patterns arising from the different underground geologic strata along receiver lines. The proposed source points are arranged into source lines that run northeast to southwest and are oriented perpendicular to the receiver lines, which run northwest to southeast within the boundary of the project area (Figure 1).

Survey Lines

Prior to project commencement, physical surveyors will mark the source and receiver lines and points to accurately define the extent and locations of project activities. A land survey crew will locate and place temporary pin flags at receiver and source points using a high-accuracy global positioning system (GPS). This work will be conducted on foot from existing access roads and trails. The survey crew will work with the cultural resource surveyors to position all receiver and source point stations to avoid all known and apparent cultural resources, and natural and existing land use features. Surveyors will also mark out lines that avoid drainage crossings that have a five-foot or more elevation change.

The source lines run parallel 770 feet apart, with vibroseis source points (shaking locations) spaced approximately 110 feet apart along each source line. There is a total of approximately 9,048 source points on the survey totaling approximately 188 miles of source lines. The pre-plotted source locations indicated in Figure 1 will be modified to accommodate any identified ground constraints. Approximately 6,333 receiver locations along 62 parallel lines, laid out in a northwest-southeast orientation, are planned for the survey. A total of approximately 264 miles of receiver lines is anticipated for the proposed project. The receiver lines are spaced about 550 feet apart.

Total surface disturbance was calculated by considering the total miles of source lines (188) multiplied by 4 feet for tire track disturbance. This calculates to 89.3 acres of disturbance. Vibrator plate size (32 square feet) was then multiplied by the number of source points, which calculates to 7.4 acres of additional disturbance resulting from plate compression. Finally, two 2-acre staging areas are expected. Total surface disturbance equals 100.7 acres. Approximately one third of this surface disturbance would occur on BLM administered land.

Source Points

Buggy vibrator trucks would generate the ground vibration for source points (Figure 2). Large acoustic vibrators mounted on trucks generate sound sources. Two sets of three vibrators are used on the survey. The vibrators work in two groups to help expedite the recording process. They do not cover the same ground but rather work on different ends of the source lines. The proposed project does not include drilling of holes (shot holes) or exploding charges.