APPENDIX A

Department of Energy Concurrence with BLM Vibroseis EA

Note: The Section 508 amendment of the Rehabilitation Act of 1973 requires that the information in federal documents be accessible to individuals with disabilities. The Agency has made every effort to ensure that the information in the *Frontier Observatory for Research into Geothermal Energy (FORGE), Milford, Utah* is accessible. However, this appendix is not fully compliant with Section 508, and readers with disabilities are encouraged to contact *Pierina Fayish* at (412) 386-5428 or Pierina.Fayish@NETL.DOE.GOV if they would like access to the information.

United States Department of the Interior
Bureau of Land Management

Environmental Assessment UT-C010-2016-0042-EA
February 16, 2017

FORGE Milford Valley Vibroseis Survey
UTU-92273

Energy & Geoscience Institute of the University of Utah
and the Utah Geological Survey

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1. PURPOSE AND NEED

1.1. Introduction

The U.S. Department of Energy (DOE) is seeking a site in the United States where new technologies in harnessing geothermal energy can be developed and demonstrated. This initiative is known as Frontier Observatory for Research into Geothermal Energy (FORGE). The Utah FORGE site (FORGE area) is proposed by a team consisting of staff from the Energy & Geoscience Institute of the University of Utah (EGI-UU) and the Utah Geological Survey (UGS) (proponents).

The environmental assessment (EA) presented here has been prepared to disclose and analyze the environmental consequences of the FORGE Milford Valley vibroseis survey (project) as proposed by the proponents. The EA is a site-specific analysis of potential impacts that could result with the implementation of the project. The EA assists the Bureau of Land Management (BLM) in project planning and ensuring compliance with the National Environmental Policy Act (NEPA), and in making a determination as to whether any "significant" impacts could result from the analyzed actions. "Significance" is defined by NEPA and is found in regulation 40 Code of Federal Regulations (CFR) 1508.27. An EA provides evidence for determining whether to prepare an environmental impact statement (EIS) or a statement of finding of no significant impact (FONSI). If the decision maker determines that the project has "significant" impacts following the analysis in the EA, then an EIS would be prepared for the project. If not, a decision record (DR) may be signed for the EA approving the selected alternative, whether the proposed action or another alternative. A DR, including a FONSI statement, documents the reasons why implementation of the selected alternative would not result in "significant" environmental impacts (effects) beyond those already addressed in the *Cedar Beaver Garfield Antimony Record of Decision/Resource Management Plan* (BLM 1986).

1.2. Background

DOE is looking to develop and demonstrate new technologies in harnessing geothermal energy, with the purpose of developing methods for creating engineered geothermal systems (EGS) in areas with near-surface heat, but with insufficient permeability or water for natural geothermal reservoirs to have formed. This effort is known as the FORGE initiative. DOE has narrowed down potential sites to two locations: one in Nevada and one in Utah. The Utah FORGE team is currently working on conducting studies and surveys to determine if the Utah site has the characteristics required for FORGE. These required site characterization surveys include a vibroseis survey.

The EGI-UU and UGS are proposing to conduct a 3-D seismic reflection (vibroseis) survey in support of the Utah FORGE initiative. The proposed Utah FORGE area is approximately 10 miles northeast of Milford City, in Beaver County, Utah, on private land, State of Utah School and Institutional Trust Lands Administration land, and BLM lands in Sections 31 and 32, Township 26 South, Range 9 West, and Section 5, Township 27 South, Range 9 West (Figure 1.1). If approved, the vibroseis survey would be conducted during the first 2 weeks of September 2017.

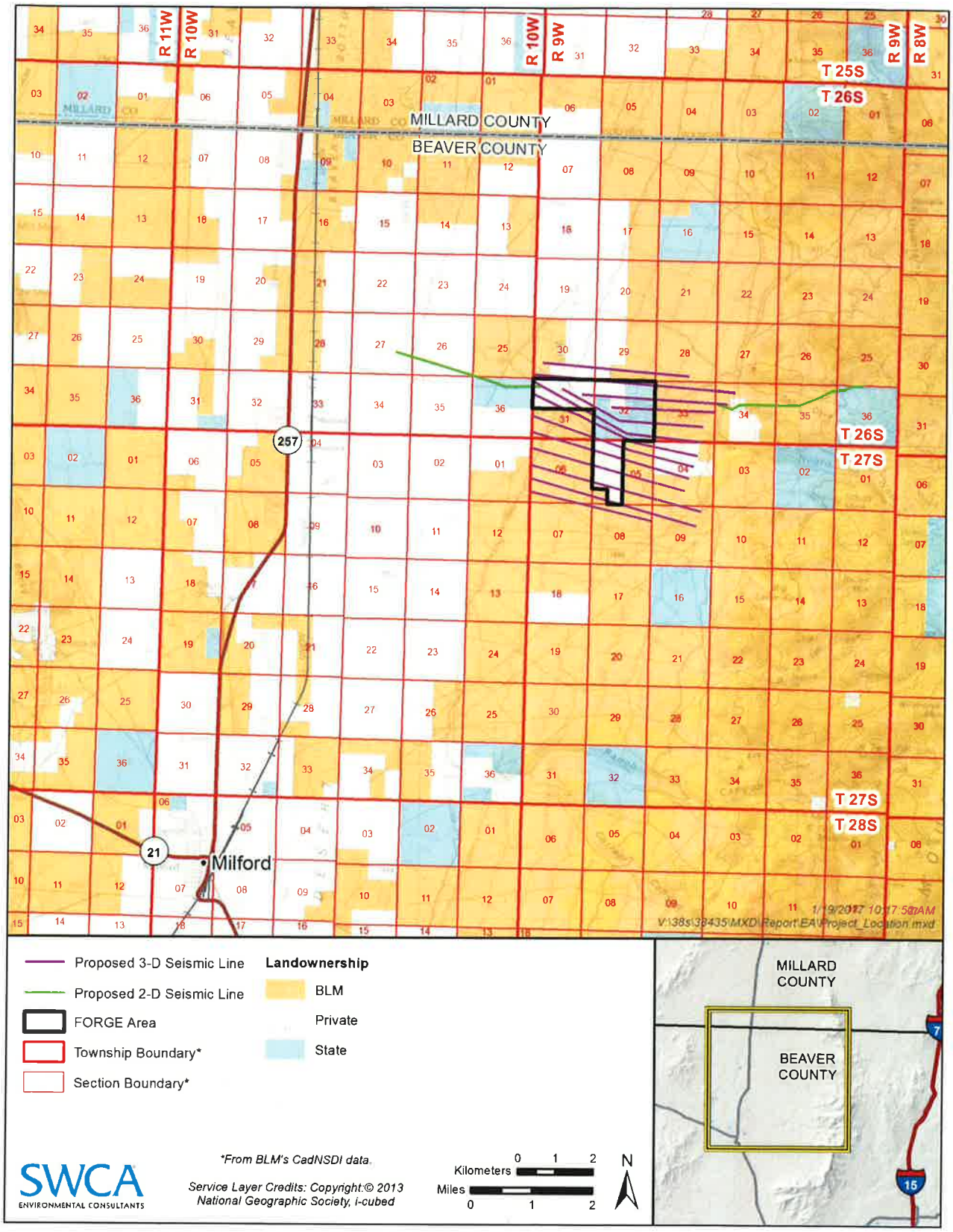

Figure 1.1. Project location showing the Utah FORGE area and the proposed vibroseis survey lines.

1.3. Purpose of and Need for the Proposed Action

The purpose of the Proposed Action is to provide EGI-UU and UGS access to federal lands administered by the BLM Cedar City Field Office to gather sufficient geophysical data through a vibroseis survey to characterize geothermal resources in the proposed Utah FORGE area. The need for the action is the BLM's regulatory duty under the Federal Land Policy and Management Act (FLPMA; 43 United States Code [USC] 1701 et seq.) to respond to the proponents' request for access. Approval of the Proposed Action would grant the proponents the right to conduct a vibroseis survey on federal lands in the Utah FORGE area.

1.4. Conformance with Bureau of Land Management Land Use Plans

The BLM's Cedar City Field Office manages lands based on decisions in the *Cedar Beaver Garfield Antimony Record of Decision/Resource Management Plan* (BLM 1986 as amended). The Proposed Action is consistent with the terms, conditions, and decisions in this plan. Specifically, it is consistent with Objective 1 described in the plan's lands section, as follows:

The objectives of the lands program are to provide more effective public land management and to improve land use, productivity and utility through: a) accommodation of community expansion and economic development needs; b) improved land ownership patterns; and c) providing for the authorization of legitimate uses of public lands by processing use authorization such as rights-of-way, leases, permits, and State land selections in response to demonstrated public needs. (BLM 1986)

1.5. Relationship to Statutes, Regulations, or Other Plans

The Proposed Action would support the potential development and demonstration of geothermal resources on federal, state, and private lands. Energy production by geothermal resources on BLM land is regulated by 43 CFR 3000, 3200, and 3280. These regulations also establish procedures for processing leases, right-of-way (ROW) agreements, geothermal unit agreements, and permits for activities relating to geothermal resource energy production. The Proposed Action is consistent with the Geothermal Steam Act of 1970 and with other federal laws and regulations, including the promotion of renewable energy under the Energy Policy Act of 2005 (42 USC 15801 et seq.).

The Proposed Action and its analysis in this document also conform with and meet the requirements of other statutes, regulations, plans, programs, and policies of affiliated tribes, other federal agencies, and state and local governments to the extent practicable. Those statutes, regulations, plans, programs, and policies that pertain to resources that may be affected by the Proposed Action include the following:

- 36 CFR 800 (Protection of Historic Properties)
- The American Indian Religious Freedom Act of 1978, as amended (42 USC 1996)
- Archaeological and Historic Preservation Act of 1974, as amended (16 USC 469 et seq.)
- The Archaeological Resources Protection Act of 1979, as amended (16 USC 470aa et seq.)
- Executive Order 13175 of November 6, 2000 (Consultation and Coordination With Indian Tribal Governments)
- FLPMA of 1976, as amended (43 USC 1701 et seq.)
- NEPA (43 USC 4321 et seq.)

- 54 USC 300101 et seq. National Park Service and Related Programs (formerly known as the National Historic Preservation Act (NHPA) of 1966)
- Native American Graves Protection and Repatriation Act of 1990, as amended (25 USC 3001 et seq.) and 43 CFR 10 (Native American Graves Protection and Repatriation Regulations)

1.6. Identification of Resources and Issues

Appendix A of the EA (the BLM Interdisciplinary Team Checklist) contains a checklist of all resources and issues considered, including some of the supplemental authorities that provide procedural or substantive responsibilities relevant to identifying issues for analysis in the NEPA process. As a result of the information and documentation contained in Appendix A, those resources or issues that are identified in the checklist as "Not Impacted" by the Proposed Action or "Not Present" in the Utah FORGE area are not discussed further in this EA. However, the following resources and issues are identified as "Potentially Impacted" in the checklist and require further analysis in the EA.

1.6.1. Cultural Resources and Native American Religious Concerns

- Would surface disturbances affect the cultural resources determined or recommended eligible for the National Register of Historic Places (NRHP)?
- Would there be an impact to any Native American religious concerns?

1.6.2. Rangeland Health Standards

- Would the amount of disturbance associated with drive and crush methods, particularly cross country, impact the BLM rangeland health standards?
- Would the use of tracks by off-highway vehicle (OHV) travel result in the establishment of new roads?

1.6.3. Soils

- What would the impacts to soils be as a result of OHV travel?
- Would the use of tracks by OHV travel result in the establishment of new roads?

1.6.4. Vegetation (excluding U.S. Forest Service–designated species)

- Would the use of tracks created by drive and crush methods result in the establishment of new roads?

1.7. Summary

This chapter presents the purpose and need of the proposed project, as well as the relevant resources and issues, i.e., those elements of the human environment that could be affected by the implementation of the proposed project. The Proposed Action and a No Action alternative are presented in Chapter 2, along with the mitigation measures and design features. Chapter 3 describes the existing conditions of the area potentially affected by the Proposed Action or No Action alternative by resource. The potential environmental impacts resulting from the implementation of each alternative are then analyzed in Chapter 4 for each of the identified resources and respective issues. Chapter 5 discusses the public and agency involvement process used to develop the EA.

2. PROPOSED ACTION AND ALTERNATIVES

2.1. Introduction

The EA analyzes the potential effects of implementing the Proposed Action and the No Action alternative. The No Action alternative is considered and analyzed to provide a baseline against which to compare the impacts of the Proposed Action. No other alternatives were brought forward for detailed analysis.

2.2. Alternative A: Proposed Action

The Proposed Action would consist of conducting a vibroseis survey over an area encompassing approximately 6.5 square miles of federal, state, and private surface lands, centered on the proposed Utah FORGE area.

The Proposed Action would consist of an array of 13 vibroseis 3-D source lines aligned approximately northwest to southeast, and an array of north-south detector (geophone) lines. Two vibroseis trucks (thumper trucks) would travel cross country along the vibroseis lines and would be spaced approximately 0.2 mile apart. Two 2.5-mile-long 2-D seismic reflection lines would also be recorded on existing roads west and east of the 3-D source line area (Figure 2.1).

The Proposed Action would begin with surveying the source and receiver points. The survey crew would walk down the source lines, using a global positioning system to locate the source and receiver points on foot. Pin flags and flagging would be used to indicate each source and receiver point.

The vibroseis trucks would access off-road vibroseis lines from roads or trails at an angle to prevent line-of-sight from vehicle traffic on BLM or county roads. In addition, vibroseis trucks would drive with a slight weaving pattern to further reduce the visibility of the tracks. The vibroseis trucks would drive predominately in-line with tracks from the preceding vibroseis truck. Support vehicles would be limited to driving on existing roads and trails. Only vibroseis trucks and an OHV would drive off-road. A vibroseis support vehicle might need to travel off-road if vibroseis equipment needs repair. Layout crews would walk down the geophone lines on foot and/or with the use of four-wheel-drive pickup trucks and OHVs and lay out the recording equipment by hand at receiver locations.

The vibroseis trucks would stop every 160 feet along the vibroseis lines to vibrate the ground beneath the trucks for approximately 1 minute. These stops are referred to as the source points. Each vibroseis truck weighs approximately 60,000 pounds and would be equipped with standard flotation tires that are approximately 36 inches wide. Surface contact pressures on the ground surface would be approximately 15 pounds per square inch for each tire.

Surface disturbance as a direct result of the seismic survey would occur on approximately 62.50 acres on federal, state, and private lands. A buffer is included in these surface-disturbance estimates to account for the slight weave driving pattern used by the equipment and for minor variations in general driving. Therefore, the actual surface disturbance may be less than the above estimate.

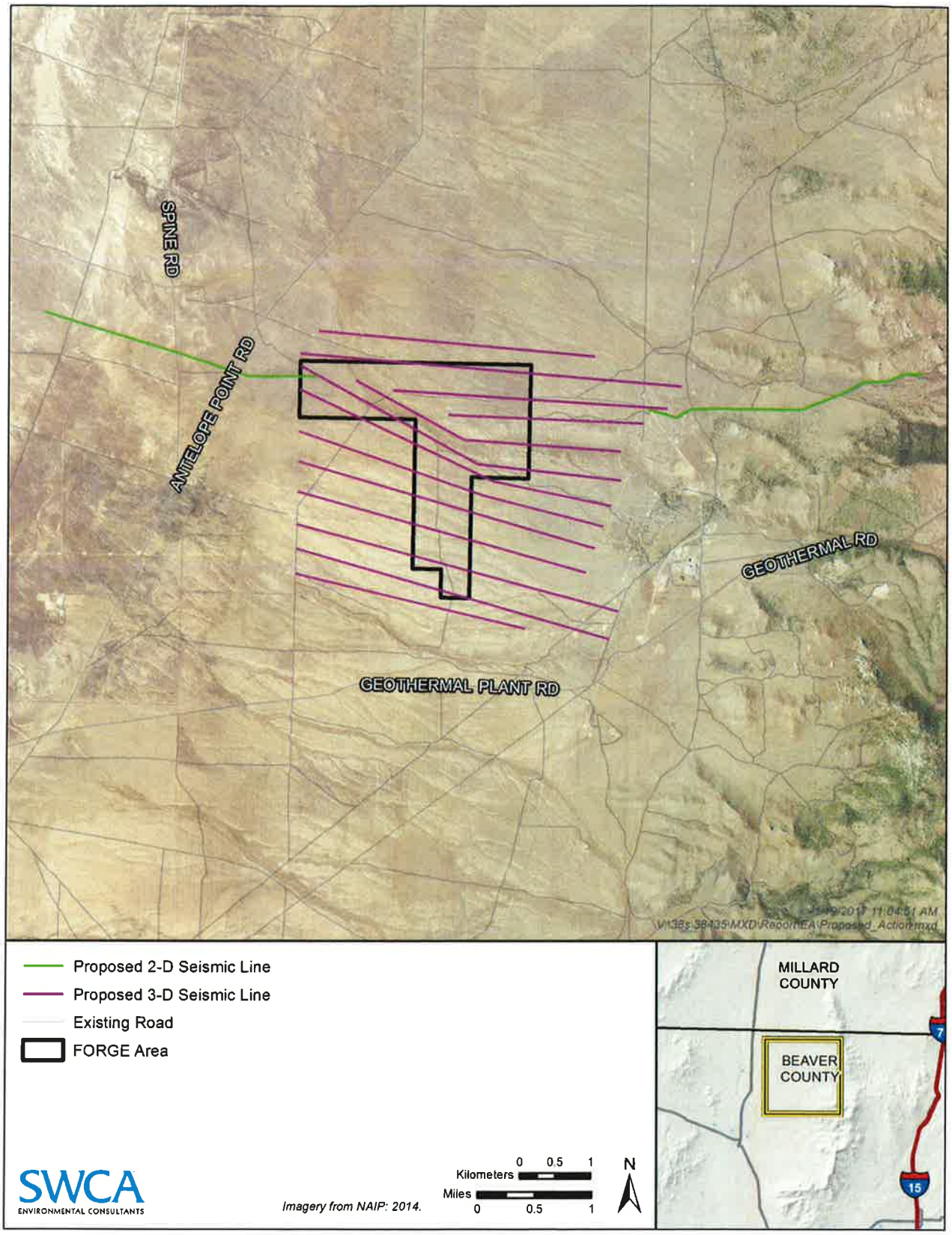

Figure 2.1. Proposed Action showing the Utah FORGE area and the seismic lines.

2.2.1. *Mitigation Measures and Design Features of the Proposed Action*

2.2.1.1. CULTURAL RESOURCES

- If unanticipated cultural resources are discovered during the vibroseis survey, operations and activity near the discovery would be suspended, and BLM or appropriate entity would be promptly notified.

2.2.1.2. FUELS AND FIRE MANAGEMENT

- The site would be maintained in an orderly manner during the vibroseis survey.
- Fire extinguishers would be available in vehicles.
- Spark arrestors would be present on all vehicles used off-road.
- No open flames would be used.

2.2.1.3. INVASIVE, NON-NATIVE SPECIES

- Project vehicles would be power washed before they arrive to the FORGE area to prevent the introduction of noxious weed species.
- If noxious weeds (specifically Scotch thistle [*Onopordum acanthium*]) are discovered, the area would be avoided, and the location would be provided to BLM.

2.2.1.4. MIGRATORY BIRDS

- The vibroseis survey would be conducted during the first 2 weeks of September 2017 to avoid migratory bird nesting season.

2.2.1.5. RANGELAND HEALTH STANDARDS

- Any disturbed areas in the FORGE area would be reclaimed using a BLM-approved seed mix.
- The number of intersections of off-road tracks with existing roads as well as repeat travel on OHV tracks would be minimized.
- Upon project completion, the intersections of off-road tracks with existing roads would be reclaimed by raking tracks and/or vertical mulching.
- A travel plan would be developed to minimize off-road travel.
- Any range improvement projects (fences, pipelines, cattle guards, etc.) impacted by the vibroseis survey would be replaced or restored. Any livestock fences cut for the vibroseis survey would be repaired immediately following the survey.

2.2.1.6. SOILS

- The vibroseis survey would be conducted in September 2017 to avoid early spring when the soil is soft and trucks and vehicles may cause ruts.
- The number of intersections of off-road tracks with existing roads would be minimized, and repeat travel on OHV tracks would be minimized.

- After the vibroseis survey, the intersections of off-road tracks with existing roads would be masked by raking tracks and/or using vertical mulch.

2.2.1.7. VEGETATION

- Disturbed areas would be reclaimed using a BLM-approved seed mix.

2.3. Alternative B: No Action

Under the No Action alternative, the proposed geophysical exploration project would not be authorized. None of the environmental impacts associated with the Proposed Action would occur. Geophysical characterization of the Utah FORGE area would not be realized, and the existing environment would remain unchanged.

2.4. Alternatives Considered but Eliminated from Further Analysis

No additional alternatives were identified during the scoping process to be considered at this level of analysis.

3. AFFECTED ENVIRONMENT

3.1. Introduction

This chapter presents the potentially affected existing environment (i.e., the physical, biological, social, and economic values and resources) of the Utah FORGE area as identified in the interdisciplinary checklist found in Appendix A and presented in Section 1.6. This chapter provides the baseline for comparison of the impacts and consequences described in Chapter 4.

3.2. General Setting

The FORGE area is located in Beaver County, Utah, approximately 10 miles northeast of the town of Milford. The area is in a valley called the Beaver Bottoms, along the west side of the Mineral Mountains, and on the alluvial fans and plain around Negro Mag Wash. Access to the FORGE area is via State Road 257 (Milford to Delta highway), turning east at Geothermal Plant Road, then taking Antelope Point Road to Salt Cove Road.

3.3. Resources Brought Forward for Analysis

3.3.1. Cultural Resources and Native American Religious Concerns

In 2016, an intensive-level Class III inventory of the Utah FORGE area was conducted, specifically in portions of the area that are outside of any previously surveyed areas. The inventory resulted in the assessment of six previously recorded sites and four newly identified sites (SWCA 2016).

Of the ten archeological sites assessed for the project, one is listed on the NRHP and a second is recommended eligible for the NRHP under Criterion D. Site 42BE52, also known as the Negro Mag and Wildhorse Canyon obsidian source, is the result of numerous, previously recorded archaeological sites being merged into one, and it has been listed on the NRHP because of the quality of its surface special integrity, as well as its likelihood to "have, or have had, information to contribute to our understanding of human history or prehistory" (36 CFR 1–199 [Parks, Forests, and Public Property]). The second site 42BE2198, is a historic road, identified on 1913 General Land Office maps as the road from "Milford to Roosevelt Hot Springs;" it is eligible for the NRHP under Criterion A for its contribution to the development of the Milford region or "community" (36 CFR 1–199 [Parks, Forests, and Public Property]). SWCA has recommended the remaining eight sites as ineligible for the NRHP because they do not meet any of the criteria for evaluation, pending BLM and State Historic Preservation Office concurrence.

The BLM Cedar City Field Office has determined that portions of the Proposed Action may have a potential impact to Native American religious concerns. Because of the types of cultural resources that would be impacted by the Proposed Action, the BLM Cedar City Field Office is conducting tribal consultation. BLM is consulting with a number of tribes to obtain specific tribal concerns and information about the locations of areas of particular importance to the tribes.

On May 11, 2016, the BLM Cedar City Field Office had a face-to-face meeting with the Paiute Indian Tribe of Utah. The tribe reviewed the project and did not voice any concerns. The tribe has no objection to the project moving forward, but would like to be informed of any changes or updates to the project.

3.3.2. Rangeland Health Standards

BLM developed rangeland health standards to protect and maintain functioning ecosystems by protecting watersheds, ecological processes, water quality, and habitats of threatened and endangered species. The Utah BLM developed rangeland health standards to protect and improve upland soils, riparian and wetland functions, desired native species, and water quality (BLM 1997).

The Utah FORGE area is located within the Hanson and Milford Bench grazing allotments. Table 3.1 provides the public, state, and private acres within these allotments.

Table 3.1. Landownership within Grazing Allotments

Grazing Allotment	Public (acres)	State (acres)	Private (acres)
Hanson	19,324	2,889	14,892
Milford Bench	9,452	1,593	976

In 2007, the Milford Flat Wildfire burned the entire Utah FORGE area. The total acres of each grazing allotment burned in Milford Flat Wildfire are provided in Table 3.2.

Table 3.2. Acres within Grazing Allotments Burned in Milford Flat Wildfire

Grazing Allotment	Public (acres)	State (acres)	Private (acres)
Hanson	12,992	1,834	6,374
Milford Bench	8,473	940	844

Note: Only a portion of these acres are within the Utah FORGE area.

Emergency stabilization and rehabilitation treatments were completed following the Milford Flat Wildfire. Seed mixes were determined based on factors such as elevation, precipitation, and soil types for the stabilization and rehabilitation of the area affected by the wildfire, and these mixes included several native species.

Through the evaluation of monitoring data, the BLM standards for rangeland health are being attained within the Hanson and Milford Bench grazing allotments. Nearly 90% of the Milford Bench allotment has been burned by wildfire and has been subsequently rehabilitated. A conversion from a shrub-dominated community to a perennial grass community has occurred within the allotment. Cheatgrass (*Bromus tectorum*) is present throughout the area as a result of the Milford Flat Wildfire; however, substantial perennial grasses and forbs are also present.

3.3.3. Soils

Soils in the Utah FORGE area are from the Sheeprock-Hiko Peak-Decca complex, as follows:

- The Sheeprock series consists of deep, gently sloping to steep, somewhat excessively drained soils that were formed in deep alluvial coarse sand and fine gravel. These soils have rapid or very rapid permeability, with medium and high surface runoff. These soils are on rolling hills and

scarp faces or terraces. Slopes range from 10 to 30 percent. The distribution of these soils is southwestern and northeastern Utah (NRCS 2007a). These soils are extremely erodible.

- The Hiko Peak series consists of very deep, well-drained soils that formed in alluvium and colluvium derived dominantly from basic igneous rocks, limestone, and quartzite. These soils have low to high surface runoff, and moderately high saturated hydraulic conductivity. Hiko Peak soils are found on alluvial fans, fan remnants, and hills. Slopes range from 0 to 60 percent. The distribution of these soils is extensive in western Utah (NRCS 2012). These soils are slightly erodible
- The Decca series consists of very deep, well-drained, moderately permeable soils. These soils have moderate permeability in the solum (surface and subsoil), moderately rapid to rapid permeability in the 2C horizon (deepest soil layer), and have slow to medium surface runoff. These soils formed in stratified mixed alluvium derived mainly from igneous rocks and quartzite on fan remnants, stream terraces, and rolling hills. Slopes range from 0 to 30 percent. The distribution of these soils is moderately extensive in southwestern and south-central Utah (NRCS 2007b). These soils are slightly erodible.

3.3.4. Vegetation

Vegetation in the Utah FORGE area predominantly consists of six Southwest Regional Gap Analysis Project (SWReGAP) land cover types: 1) Inter-Mountain Basins Big Sagebrush Shrubland, 2) Colorado Plateau Pinyon-Juniper Woodland, 3) Great Basin Xeric Mixed Sagebrush Shrubland, 4) Inter-Mountain Basins Mixed Salt Desert Scrub, 5) Inter Mountain Basins Semi-Desert Shrub Steppe, and 6) Invasive Annual Grasslands.

According to SWReGAP, most of the Utah FORGE area consists of shrublands dominated by Wyoming or basin big sagebrush (*Artemisia tridentata*). Scattered pinyon pine (*Pinus edulis*) and Utah juniper (*Juniperus osteosperma*), greasewood (*Sarcobatus vermiculatus*), and saltbush (*Atriplex* spp.) may be present in some areas. Rubber rabbitbrush (*Ericameria nauseosa*) and yellow rabbitbrush (*Chrysothamnus viscidiflorus*) may co-dominate areas of disturbance. Common grass species include Indian ricegrass (*Achnatherum hymenoides*), blue grama (*Bouteloua gracilis*), thickspike wheatgrass (*Elymus lanceolatus*), Idaho fescue (*Festuca idahoensis*), needle and thread (*Hesperostipa comata*), basin wildrye (*Leymus cinereus*), James' galleta (*Pleuraphis jamesii*), western wheatgrass (*Pascopyrum smithii*), Sandberg bluegrass (*Poa secunda*), or bluebunch wheatgrass (*Pseudoroegneria spicata*) (U.S. Geological Survey 2005).

Flats and alluvial fans are dominated by grasses with an open shrub layer. Grasses consist of Indian ricegrass, blue grama, saltgrass (*Distichlis spicata*), alkali sacaton (*Sporobolus airoides*), needle and thread, Sandberg bluegrass, and James' galleta. Shrubs and dwarf-shrubs typically include fourwing saltbush (*Atriplex canescens*), big sagebrush, yellow rabbitbrush, Greene's rabbitbrush (*Chrysothamnus greenei*), jointfir species (*Ephedra* spp.), rubber rabbitbrush, broom snakeweed (*Gutierrezia sarothrae*), and winterfat (*Krascheninnikovia lantata*) (U.S. Geological Survey 2005).

Saline basins and alluvial slopes and plains at lower elevations are generally composed of open-canopied shrublands with one or more saltbush species (*Atriplex* spp.) such as shadscale saltbush (*A. confertifolia*), fourwing saltbush, spinescale saltbush (*A. spinifera*), or cattle saltbush (*A. polycarpa*). Other shrubs present may include rubber rabbitbrush, yellow rabbitbrush, big sagebrush, Nevada jointfir (*Ephedra nevadensis*), spiny hopsage (*Grayia spinosa*), winterfat, bud sagebrush (*Picrothamnus desertorum*), desert-thorn species (*Lycium* spp.), or horsebrush species (*Tetradymia* spp.) (U.S. Geological Survey 2005).

The entire FORGE area was burned in the 2007 Milford Flat Wildfire. This high-intensity wildfire completely burned the vegetative community identified in the SWReGAP discussion. Post-fire, the area was reseeded through Emergency Stabilization and Rehabilitation efforts. A diverse seed mix was used and was chosen based on factors such as elevation, precipitation, and soil types. The current vegetative community comprises diverse native and nonnative species, including crested wheatgrass (*Agropyron cristatum*), intermediate wheatgrass (*Thinopyrum intermedium*), Indian ricegrass, squirreltail (*Elymus elymoides*), and Sandberg bluegrass. The dominant shrub that is present within the FORGE area is forage kochia (*Bassia prostrata*). Although Emergency Stabilization and Rehabilitation efforts were determined to be successful, cheatgrass is present throughout the understory.

4. ENVIRONMENTAL IMPACTS

4.1. Introduction

This chapter analyzes the environmental effects of the Proposed Action and No Action alternative on the resources and issues identified as potentially affected in the checklist found in Appendix A and presented in Chapters 1 and 3.

4.2. Direct and Indirect Impacts

4.2.1. Alternative A: Proposed Action

4.2.1.1. CULTURAL RESOURCES AND NATIVE AMERICAN RELIGIOUS CONCERNS

Issue: Would surface disturbances affect the cultural resources determined and recommended eligible for the NRHP?

Issue: Would there be an impact to any Native American religious concerns?

Implementation of the Proposed Action, including cross-country travel and ground vibroseis, would result in approximately 62.5 acres of ground disturbance, which has the potential to impact sensitive cultural resources. The 2016 Class III inventory of the area identified one NRHP-listed archaeological site and one NRHP-eligible archaeological site (SWCA 2016). The NRHP-listed site is an extremely large obsidian source with an associated artifact scatter. The NRHP-eligible site is a historic road. SWCA recommends that anticipated impacts to both of the sites would not impact the characteristics of the sites that make them eligible for the NRHP; therefore, the Proposed Action would not adversely affect sensitive cultural resources.

Potential impacts to Native American religious concerns could result if tribal interests or traditional cultural resources are located in the Utah FORGE area. Impacts could occur from vandalism; unauthorized collection from ancestral sites; alteration of cultural landscapes; noise; loss of tribal treaty rights; and interference with traditional religious or cultural practices such as resource gathering, use of sacred sites, or hunting. Any potential impacts would be minimized and avoided through ongoing consultation with Native American tribes.

4.2.1.2. RANGELAND HEALTH STANDARDS

Issue: Would the amount of disturbance associated with drive and crush methods, particularly cross country, impacts the BLM rangeland health standards?

Issue: Would the use of tracks by OHV travel result in the establishment of new roads?

Implementation of the Proposed Action would result in approximately 62.5 acres of disturbance, which has the potential to compact soils and crush native vegetation. The Proposed Action would result in tracks across the landscape as trucks and vehicles drive cross country. The disturbance from cross-country travel could result in a decline in rangeland health standards by reducing soil permeability and infiltration rates,

and potentially by reducing the level of desired native vegetation species appropriate for the site. Impacts to soils and vegetation would be minimized by having subsequent vehicles follow in the tracks of the first vehicle, and by limiting travel on each line to one pass. Disturbed areas would be reclaimed using a BLM-approved seed mix.

Cross-country travel would create tracks on the landscape. To the extent that these tracks may attract and be used by the public with OHVs, new roads could be created. To reduce the potential for public access and creation of new roads, the number of intersections of off-road tracks with existing roads would be minimized. Additionally, upon survey completion, these intersections would be masked by raking tracks or using vertical mulch.

4.2.1.3. SOILS

Issue: What would the impacts to soils be as a result of OHV travel?

Issue: Would the use of tracks by OHV travel result in the establishment of new roads?

The Proposed Action would result in the disturbance of approximately 62.5 acres of soils, which could result in compaction to soils, increased potential for soil erosion, and decreased soil permeability. To keep disturbance to a minimum, subsequent vehicles would follow in the tracks of the first vehicle. Disturbed areas would be reclaimed using a BLM-approved seed mix.

The tracks remaining from driving cross country could attract OHV travel and result in creation of new roads, which could further impact soils. To reduce impacts to soils as a result of use by OHVs, the number of intersections of off-road tracks with existing roads would be minimized. Additionally, upon survey completion, these intersections would be masked by raking tracks or using vertical mulch.

4.2.1.4. VEGETATION

Issue: Would the use of tracks created by drive and crush methods result in the establishment of new roads?

The Proposed Action would result in the disturbance of approximately 62.5 acres of vegetation, which could cause damage to or loss of individual plants, and could result in changes to the species composition and plant density on a localized basis. Areas of perennial grass would not be affected as much as those with shrubs. To keep disturbance to a minimum, subsequent vehicles would follow in the tracks of the first vehicle. Disturbed areas would be reclaimed using a BLM-approved seed mix.

The tracks remaining from driving cross country could attract OHV travel and result in the creation of new roads, which could further change the plant species composition. To reduce impacts to vegetation as a result of OHV use, the number of intersections of off-road tracks with existing roads would be minimized. Upon project completion, these intersections would be masked by raking tracks or using vertical mulch.

4.2.1.5. MITIGATION MEASURES

Mitigation measures were included in the design features of the Proposed Action (see Section 2.2.1). No additional mitigation measures have been identified.

4.2.1.6. MONITORING AND/OR COMPLIANCE

No monitoring needs have been identified for the Proposed Action.

4.2.2. Alternative B: No Action Alternative

Under the No Action alternative, BLM would not grant access to the proponents, and the seismic vibroseis survey would not occur on BLM-administered land; therefore, no impacts to cultural resources, Native American religious concerns, rangeland health standards, soils, or vegetation would occur.

4.3. Cumulative Impacts Analysis

As defined in 40 CFR 1508.7 (CEQ regulations for implementing NEPA), a *cumulative impact* is an impact on the environment that results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions, regardless of which agency (federal or non-federal) or person undertakes such actions. Cumulative impacts may result from individually minor but collectively significant actions occurring over a period of time. Cumulative impact analysis areas (CIAAs) have been developed for each resource and are listed in Table 4.1. A temporal boundary of 20 years was chosen for all resources because it is a reasonable timeframe within which to predict reasonably foreseeable future actions.

Table 4.1. Cumulative Impacts Analysis Areas by Resource

Resource	CIAA	Rationale	Total CIAA Acreage
Cultural resources and Native American religious concerns	Four hydrologic unit code 12 subwatersheds: 1. Beaver Bottoms-Beaver River 2. Wild Horse Canyon 3. Antelope Spring-Cove Creek 4. Negro Mag Wash	Much of human cultural and behavioral variation is conditioned by the natural environment. Accordingly, archaeological, historical, and cultural sites within a defined natural habitat are often the product of a singular settlement system. This CIAA was chosen because it is a defined natural habitat that contains the Forge area occurs, and impacts to cultural resources in one part of that habitat can affect a broader understanding of the interrelationships between sites in the habitat area as a whole.	100,703
Rangeland health standards		This CIAA was chosen because the FORGE area falls within these subwatersheds, and they provide clear topographical boundaries against which to measure cumulative impacts to rangeland health standards.	
Soils		This CIAA was chosen because the FORGE area falls within these subwatersheds, and they provide clear topographical boundaries against which to measure cumulative impacts to soils.	
Vegetation		This CIAA was chosen because the FORGE area falls within these subwatersheds, and they provide clear topographical boundaries against which to measure cumulative impacts to vegetation.	

4.3.1. Past and Present Actions

Existing development within the CIAAs includes roads, trails, geothermal facilities, the Sigurd to Red Butte power line and other transmission lines, agricultural fields, a wind farm, and small towns. Other past and present actions in the CIAAs on BLM land include wildfires, grazing, range improvements associated with grazing, vegetation treatments, the implementation of greater sage-grouse management direction, and recreational uses (e.g., OHV use).

4.3.2. Reasonably Foreseeable Future Actions

Reasonably foreseeable future actions are decisions, funding, or formal proposals that are either existing or are highly probable, based on known opportunities or trends. According to information from nearby landowners and the BLM's ePlanning website (BLM 2017), known reasonably foreseeable future actions include the Pinnacle Hog Farm on adjacent private land, and Sevier Playa Potash Project on BLM-managed land in the Fillmore Field Office. Other known reasonably foreseeable future actions on BLM lands include continued grazing, range improvement projects, vegetation treatments, and invasive species management. Renewal of grazing permits is ongoing; new permits focus on meeting standards and guides for rangeland health for the sustainability of natural resources and ecological processes. In general, specific acreages of reasonably foreseeable future actions are not known at this time.

4.3.3. Cumulative Impacts

4.3.3.1. CULTURAL RESOURCES AND NATIVE AMERICAN RELIGIOUS CONCERNS

Disturbances from vibroseis survey could uncover or destroy cultural resources. However, the design features and mitigation measures addressing cultural resources would limit the potential impacts. Known historic properties in the FORGE area would be mitigated for adverse effects or avoided. Known historic properties avoided by the Proposed Action that cannot be avoided by future projects could be mitigated for adverse effects through recovery of the data that contribute to the site's eligibility. The historic properties in the FORGE area do not have characteristics that would be sensitive to indirect effects from reasonably foreseeable projects in the CIAA. Therefore, there would be only a small incremental impact to cultural resources from the Proposed Action.

4.3.3.2. RANGELAND HEALTH STANDARDS

The Proposed Action would add cumulatively to surface disturbance from past, present, and reasonably foreseeable future actions within the CIAA. Surface disturbance from the Proposed Action would result in soil compaction and crushing of vegetation. The Proposed Action also has the potential for OHV use, which could create new roads in the FORGE area. This disturbance would add cumulatively to impacts in the CIAA resulting in decreased rangeland health standards by reducing soil permeability and infiltration rates and changing the level of desired native species.

4.3.3.3. SOILS

The Proposed Action would add cumulatively to the surface disturbance from past, present, and reasonably foreseeable future actions within the CIAA. Surface disturbance from the Proposed Action would result in soil compaction and increased erosion. The potential for OHV use creating new roads in the FORGE area would add to these impacts.

4.3.3.4. VEGETATION

The Proposed Action would add cumulatively to the surface disturbance from past, present, and reasonably foreseeable future actions. Surface disturbance from the Proposed Action would result in the temporary crushing of vegetation.

5. CONSULTATION AND COORDINATION

5.1. Introduction

Section 1.6 in Chapter 1 identifies the resources and issues that are analyzed in detail in Chapter 4. Appendix A provides the rationale for resources and issues that were considered but not analyzed further. The resources and issues were identified through the public and agency involvement process described in below in sections 5.2 and 5.3. Persons, agencies, and organizations consulted for the EA are provided in Table 5.1. Tables 5-2 and 5.3 provide lists of BLM and SWCA staff who prepared the EA. During preparation of the EA, BLM notified the public of the Proposed Action by posting on the BLM ePlanning webpage on March 14, 2016. No comments were received.

5.2. Persons, Agencies, and Organizations Consulted

Table 5.1. Persons, Agencies, and Organizations Consulted for this Environment Assessment

Name	Purpose and Authorities for Consultation or Coordination	Findings and Conclusions
Utah State Historic Preservation Office	Consultation for undertakings, as required by 54 USC 300101 et seq.	Consultation is completed.
Paiute Indian Tribe of Utah	Consultation as required by the American Indian Religious Freedom Act of 1978 (42 USC 1531) and 54 USC 300101 et seq.	On May 11, 2016, the Paiute Indian Tribe of Utah reviewed the project and have no objection to the project moving forward. They would like to be informed of any changes or updates to the project.

5.3. List of Preparers

Table 5.2. Bureau of Land Management Preparers of this Environment Assessment

Name	Title	Responsible for the Following Section(s) of the EA
Ed Ginouves		Project manager
R. Friese		Soils
Jamie Palmer		Cultural resources, Native American religious concerns
Dan Fletcher		Rangeland health standards, vegetation
Gina Ginouves		NEPA adequacy review

Table 5.3. SWCA Environmental Consultants Preparers of this Environment Assessment

Name	Title	Responsible for the Following Section(s) of the EA
Tom Hale	Senior NEPA project manager	NEPA oversight
Jenny Addy	Environmental specialist	All sections, except cultural resources and Native American religious concerns
Christine Michalczuk	Archaeologist	Cultural resources and Native American religious concerns

6. LITERATURE CITED

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APPENDIX A

Interdisciplinary Team Checklist

INTERDISCIPLINARY TEAM ANALYSIS RECORD CHECKLIST

Project Title: FORGE Milford Valley Vibroseis Survey

NEPA Log Number: UT-C010-2016-0042-EA

File/Serial Number:

Project Cat-Herder: Ed Ginouves

DETERMINATION OF STAFF: (Choose one of the following abbreviated options for the left column)

NP = not present in the area impacted by the proposed or alternative actions
NI = present, but not affected to a degree that detailed analysis is required
PI = present with potential for significant impact analyzed in detail in the EA; or identified in a DNA as requiring further analysis
NC = (DNAs only) actions and impacts not changed from those disclosed in the existing NEPA documents cited in Section C of the DNA form.

Determination	Resource	Rationale for Determination*	Signature	Date
RESOURCES AND ISSUES CONSIDERED (INCLUDES SUPPLEMENTAL AUTHORITIES APPENDIX 1 H-1790-1)				
NI	Air Quality	There will be dust and exhaust generated during the project activities. These impacts will be localized and short-lived. There is the potential for long term air quality impacts from dust if the project disturbance is not allowed to recover because of subsequent use of vehicle tracks by recreational users (road creation). The mitigation measures for air quality will be the same as those for soils.	R. Friese	3/31/16
NP	Areas of Critical Environmental Concern	None within the Cedar City Field Office boundaries.	D. Jacobson	3/14/16
NP	BLM Natural Areas	None within the Cedar City Field Office boundaries.	D. Jacobson	3/14/16
PI/NI	Cultural Resources	A Class I Literature Review was prepared in an effort to first identify previous archaeological investigations in the area and second, to determine the potential for undiscovered resources. The proposed project area contains numerous cultural resources that are eligible to the National Register of Historic Places. A Class III inventory of the Area of Potential Effects (APE) will need to take place prior to authorization. If historic properties are identified during this inventory, stipulations will be added to the plan of development to avoid or minimize any potential adverse effects. If no historic properties are identified or no adverse effects to historic properties are identified than this determination will be changed to a NI. Update 2/2/2017: A Class III inventory was completed in November 2016. The results of this inventory indicated two historic properties in the APE. The nature of the project is such that neither of these properties will be adversely affected. This determination is changed to an NI.	Jamie Palmer	3/21/16
NI	Greenhouse Gas Emissions	There will be greenhouse gas emissions from equipment during the project activities. These emissions will be minor, especially compared to the emissions from vehicles on the nearby I-15.	R. Friese	3/31/16

Determination	Resource	Rationale for Determination*	Signature	Date
NI	Environmental Justice	No minority or economically challenged populations would be disproportionately affected.	E. Ginouves	3/11/16
NI	Farmlands (Prime or Unique)	There are no prime or unique farmlands within the area.	D. Fletcher	3/31/16
NI	Fish and Wildlife Excluding Special Status Species	The project area is identified as crucial yearlong pronghorn habitat and portions occur in crucial mule deer winter range, but the transitory and superficial nature of the proposed project work makes any substantial impacts to these species unlikely. Ideally, the project work would avoid activities during the pronghorn fawning season of April 15 – June 15 and during the crucial winter season December 1 – April 1.	S. Whitfield	3/29/16
NI	Floodplains	There is probably a floodplain associated with the Negro Mag Wash in the project area. There are probably other narrow floodplain areas associated with other ephemeral/intermittent streams. However, the proposed activities should not affect overall floodplain function if mitigation measures are followed (see soils mitigation measures)	R. Friese	3/31/16
NI	Fuels/Fire Management	Project activities are being conducted in any area with low fire danger due to low fuel loadings. NI provided project work can be carried out with no open flames and spark arrestors on all vehicles used off road.	M. Mendenhall	3/31/16
NI	Geology / Mineral Resources/Energy Production	The entire project area is prospectively valuable for the occurrence of geothermal and oil and gas resources. The only known mineral resources coincident with the project area are surficial deposits of common variety mineral materials and geothermal heat resource in a buried granitic pluton at depth. The easternmost portion of the project overlaps geothermal leases associated with the Roosevelt Geothermal field. Geothermal authorizations are present in the proposed project area within the NW4 of sec. 34, T. 26 S., R. 9 W., and corresponding to the eastern-most end of proposed seismic lines S2 and S3. S2 overlaps a small portion of geothermal lease U27386, which poses no problems. S3 crosses U80899, a ROW for a geothermal fluid pipeline to injection well 82-33. The seismic line crosses the pipeline at a road crossing and, provided the seismic point was not coincident with the pipeline, this should not be an issue.	E. Ginouves	3/11/16
NI	Hydrologic Conditions	During precipitation events there will be decreased infiltration rates in the disturbed areas. The proposed action alone will not result in a significant impact to watershed function if mitigation measures are followed (see soils), but the cumulative impacts of increasing soil disturbance in the watershed can lead to more rapid and energetic runoff responses. Higher energy runoff events can cause higher rates of erosion, increased sediment loads in surface water runoff, and decreased groundwater recharge.	R. Friese	3/31/16

Determination	Resource	Rationale for Determination*	Signature	Date
PI/NI	Invasive, Non-native Species	The BLM coordinates with County and local governments to conduct an active program for control of invasive species. NI, if project vehicles are power-washed prior to arrival in the project area to guard against the introduction of noxious weed species.	E. Ginouves	3/11/16
NI	Lands/Access	Any pending or authorized lands and realty actions in the project area would not be substantially affected by the proposed action as long as measures are taken to assure all rights by grant, permit or lease holders are upheld. Prior to any surface disturbing activities in the vicinity of potential lands projects, the lands and realty staff should be notified to assist in locating existing or pending lands actions that may be impacted. The following authorizations are within the seismic lines: • UTU-51402 – Cooling Tower, Pipelines, Fence and Access Road • UTU-58158 – Infiltration Ponds, Pipelines and Fence for Blundell Geothermal Plant • UTU-68164 – Kern River Natural Gas Line • UTU-74908 – Fence Easement • UTU-77373 – Regeneration Site for FTV Fiber ROW • UTU-80899 – Water Well and Well Pad for Blundell Geothermal Plant • UTU-81494 – Water Observation Well and Well Pad • UTU-81495 – Water Observation Well and Well Pad • UTU-82050 – Water Observation Well and Well Pad • UTU-83067 – Sigurd-Red Butte #2 345 kV Transmission Line	M. Campeau	04/04/16
NI	Livestock Grazing	The project will occur within the Hanson and Milford Bench Allotments The livestock grazing season of use within the project area is from November 1st – May 15th. . It is anticipated that the majority of work would be completed in the summer of 2017, which would be outside the livestock grazing season of use. Range Improvement Project including fences, pipelines and cattle guards that would be impacted would be replaced or restored. It is expected that the survey would require that livestock fences would be cut to allow ingress/egress of heavy equipment; fence reconstruction would be required immediately following the completion of the surveys. In addition, any disturbed areas within the project area would be reclaimed utilizing a BLM approved seed mix.	D. Fletcher	3/31/16
PI/NI	Migratory Birds	If the work is carried out during the period of April 1 through August 31, it has the potential to impact ground-nesting migratory birds that could be present in the project area. NI provided that the project activities can be carried out outside of the migratory bird nesting season of April 1 – August 31.	S. Whitfield	3/29/16

Determination	Resource	Rationale for Determination*	Signature	Date
NI	Native American Religious Concerns	Native American consultation is needed because the types of cultural resources that will be impacted by this project. Also, this type of project is not covered the existing MOU. Update: On May 11, 2016, the Paiute Indian Tribe of Utah have reviewed the project and have no objection to the project moving forward. They would like to be informed of any changes or updates to the project. This determination has been changed from a PI to an NI.	Jamie Palmer	3/32/16
NI	Paleontology	The surficial geology of the project area consists of a Quaternary-age alluvial fan pediment. The fan is bisected by Negro Mag Wash. The surface formation would be classified as Class 2 (low potential for fossil resources), using the Bureau's Potential Fossil Yield Classification System. No paleontological resources are known to exist on proposed project area. The westernmost portions of the project lie just east of the projected maximal easternmost shoreline of ancestral Lake Bonneville, a Pleistocene-aged lake with known occurrences of mega-fauna vertebrate fossil skeletons adjacent to the lakeshore. The nearest known vertebrate fossil occurrence of this type to the project was discovered in 2010 during the excavation of wind turbine foundation WGT 7-21 in Phase 2 of the Milford Flat Wind farm. This locality lies about 6 miles to the northwest of the project in the SE4 sec. 3, T. 26 S., R. 10 W. The fossil find was a partial camel skeleton at a depth of 6 feet. While it is conceivable that Pleistocene-age fossil skeletons are present at some depth under the project area – most likely in the westernmost portion of the project area- the proposed vibroseis survey will not disturb the surface to any appreciable depth and so any vertebrate fossils that may coincide with the seismic line locations should not be adversely affected by the survey work. No fossil specific mitigation measures are necessary to attach to the proposed project work.	E. Ginouves	3/11/16
PI	Rangeland Health Standards	Dependent upon the amount of disturbance associated with the drive and crush survey; particularly cross country there may be an impact on the Rangeland Health Standards. SOPs including the following would limit the impact to the Rangeland Health Standards. Any disturbed areas within the project area would be reclaimed utilizing a BLM approved seed mix. Parameters for limiting public access following completion of the project along the survey lines would reduce the number of new roads within the area. These SOPs would limit the impacts to the Rangeland Health Standards.	D. Fletcher	3/31/16
NI	Recreation	Other than a minor amount of dispersed recreation, there are no existing recreation resources which would be affected as a result of this proposal.	D. Jacobson	3/11/16

Determination	Resource	Rationale for Determination*	Signature	Date
NI	Socio-economics	Minor increases in local service sector revenue could be expected from the temporary workforce involved in the seismic survey.	E. Ginouves	3/11/16
PI	Soils	There will be impacts to soils from off-road vehicle travel. These impacts are expected to be minor, unless the tracks are subsequently used for recreational OHV travel; resulting in the establishment of new roads. Recommend the following mitigation measures: Minimize the number of intersections of off-road tracks with existing roads. Upon project completion, mask the intersections of off-road tracks with existing roads by raking tracks and /or vertical mulching. Minimize repeat travel on off-road vehicle tracks. BLM resource specialists will inspect the area upon completion of the project, and the operators may be required to mask highly-visible tracks by additional raking and/or vertical mulching.	R. Friese	3/31/16
NI	Special Status Plant Species	No known Threatened, Endangered, Candidate or Sensitive Plant Species occur within the project area. (Refer to SS Plant Project Assessment Form).	Mitch Bayles	3/31/16
NI	Special Status Animal Species	NI - No TEC species occur within the project area. NI – Ferruginous hawk nest have been identified to occur in the area. The proponent has agreed to avoid the nesting season from April 1- August 31.	S. Whitfield	3/29/16
NP	Wastes (hazardous or solid)	No solid or hazardous wastes would be generated or utilized by the proposal.	E. Ginouves	3/11/16
NI	Water Resources/Quality (drinking/surface/ground)	During precipitation events there will be decreased infiltration rates in areas of disturbance. The proposed action alone will not result in a significant impact to water resources if mitigation measures are followed (see soils), but the cumulative impacts of increasing soil disturbance in the watershed can lead to more rapid and energetic runoff responses. Higher energy runoff events can cause higher rates of erosion, increased sediment loads in surface water runoff, and decreased groundwater recharge.	R. Friese	3/31/16
NP	Wetlands/Riparian Zones	There are no wetland/riparian zones within the project area.	A. Stephens	3/31/16
NP	Wild and Scenic Rivers	There are no designated or eligible segments of wild or scenic rivers in the Cedar City field office area	D. Jacobsen	3/11/16
NI	Wilderness/WSA	No designated wilderness or wilderness study areas are within or adjacent to the project area.	D. Jacobsen	3/11/16
NP	Woodland / Forestry	There are no woodland/forestry resources within the proposed project area.	C. Peterson	3/15/16

Determination	Resource	Rationale for Determination*	Signature	Date
PI	Vegetation excluding USFW designated species	It is expected that the heavy equipment will drive and crush vegetation along the survey lines. This may lead to the development of new roads dependent on the level of disturbance and the condition of the current vegetative community in areas that are surveyed where there is no current road access. It would be required that any disturbed areas within the project area would be reclaimed utilizing a BLM approved seed mix.	D. Fletcher	3/31/16
NI	Visual Resources	While no impact to visual resources is anticipated from the project work, the project activities occur on VRM Class III lands which allow for degradation of the existing visual character of the landscape.	D. Jacobsen	3/11/16
NI	Wild Horses and Burros	None present within the project area.	C. Hunter	3/11/16
NI	Lands with Wilderness characteristics	None present within the project area.	D. Jacobson	3/11/16

Reviewer Title	Signature	Date	Comments
NEPA/Environmental Coordinator		2/16/17	
Authorized Officer		2/16/17	

U.S. Department of the Interior
Bureau of Land Management

Finding of No Significant Impact and Decision Record
DOI-BLM-UT-C010-2016-0042-EA
February 16, 2017

FORGE Milford Valley Vibroseis Survey
UTU-92273

Proponent: Energy & Geoscience Institute of the University of Utah and the Utah Geological Survey

Location:

Upper Milford Valley
Beaver County, Utah

U.S. Department of the Interior
Bureau of Land Management
Cedar City Field Office
Phone: (435) 865-3000
Fax: (435) 865-3058

BLM

FINDING OF NO SIGNIFICANT IMPACT
Environmental Assessment
DOI-BLM-UT-C010-2016-0042-EA
FORGE Milford Valley Vibroseis Survey, UTU-92273

Based on the analysis of potential environmental impacts contained in the attached environmental assessment, and considering the significance criteria in 40 CFR 1508.27, I have determined that the FORGE Milford Valley Vibroseis Survey will not have a significant effect on the human environment. An environmental impact statement is therefore not required.

Keith Rigtrup
Acting Field Manager
Cedar City Field Office

2/16/17
Date

DECISION RECORD
Environmental Assessment
DOI-BLM-UT-C010-2016-0042-EA
FORGE Milford Valley Vibroseis Survey, UTU-92273

Authorities

The proposed action is consistent with the Geothermal Steam Act of 1970, the 43 CFR 3200 regulations promulgated under the Steam Act, and with the Energy Policy Act of 2005.

Compliance and Monitoring

The Bureau of Land Management (BLM) will monitor the exploration work to ensure compliance with the terms, conditions, and stipulations of the Application for Permit to Drill (APD). The monitoring will include inspecting construction, operation, and rehabilitation activities until the applicant completes rehabilitation of the site.

Under the proposed action, the operator would be required to notify the BLM prior to initiating work on federal lands. Notification to the BLM would also be required when the project work was completed and reclaimed. Qualified BLM personnel would inspect the exploration operations and any necessary reclamation work until any site disturbances were satisfactorily rehabilitated.

Terms / Conditions / Stipulations

All mitigation measures are included as design features in the proposed action.

Plan Conformancy and Consistency

The requested ROW is subject to the Cedar Beaver Garfield Antimony Resource Management Plan (RMP), as amended. The project is in conformance with Minerals Objective A.1 which states, "Provide maximum leasing opportunity for oil, gas, and geothermal exploration and development by utilizing the least restrictive leasing categories necessary to adequately protect sensitive resources." The Standards and Objectives for the RMP assessment also require that, for oil, gas, and geothermal management actions, "Maximum opportunity exists for exploration and development" (RMP, page 37).

Alternatives Considered

The No Action Alternative was considered as a baseline to compare impacts. No other alternatives were considered on public lands, as the project work is very site specific and cannot be re-located and still serve the purposes for which it is intended. No comments were received during the public scoping period and no further public comment period was offered.

Public Involvement

Public involvement was solicited for the attached EA by posting the action on the BLM E-planning webpage on March 14, 2016. No inquiries or comments were received on the proposed project and no additional comment period was provided for the final environmental assessment.

Decision

It is my decision to approve the FORGE Milford Valley Vibroseis Project work on BLM-managed lands contingent on the operator complying with the design features included in the proposed action of the attached EA.

Rationale for Decision

Approval of the FORGE Milford Valley Vibroseis Project meets the purpose and need of the EA and will not cause unnecessary and undue degradation of public land. This decision is based on the need for geothermal resource exploration in this country when balanced with the resource impacts anticipated from the proposed action.

The No Action Alternative was not chosen because it was determined that the environmental impacts anticipated from the proposed action would not be significant, nor at a level which would preclude the action as proposed.

Protest/Appeal

This decision shall take effect immediately upon the date it is signed by the Authorized Officer and shall remain in effect while any appeal is pending unless the Interior Board of Land Appeals issues a stay (43 CFR 3200.5(b)). Any appeal of this decision must follow the procedures set forth in 43 CFR Part 4. Within 30 days of the decision, a notice of appeal must be filed in the office of the Authorized Officer at the Cedar City Field Office, 176 East D.L. Sargent Drive Cedar City, UT 84721. If a statement of reasons for the appeal is not included with the notice, it must be filed with the Interior Board of Land Appeals, Office of Hearings and Appeals, U.S. Department of the Interior, 801 North Quincy St., Suite 300, Arlington, VA 22203 within 30 days after the notice of appeal is filed with the Authorized Officer.

If you wish to file a petition for stay pursuant to 43 CFR Part 4.21(b), the petition for stay should accompany your notice of appeal and shall show sufficient justification based on the following standards:

1. The relative harm to the parties if the stay is granted or denied;
2. The likelihood of the appellant's success on the merits;
3. The likelihood of irreparable harm to the appellant or resources if the stay is not granted; and
4. Whether the public interest favors granting the stay.

If a petition for stay is submitted with the notice of appeal, a copy of the notice of appeal and petition for stay must be served on each party named in the decision from which the appeal is taken, and with the IBLA at the same time it is filed with the Authorized Officer.

A copy of the notice of appeal, any statement of reasons and all pertinent documents must be served on each adversely effected party named in the decision from which the appeal is taken and on the Office of the Regional Solicitor, U.S. Department of the Interior, 6201 Federal Building, 125 South State Street, Salt Lake City, Utah 84138-1180, not later than 15 days after filing the document with the Authorized Officer and/or IBLA.

Keith Rigtrup

2/16/17

Keith Rigtrup
Acting Field Office Manager
Cedar City Field Office

Date

Attachments: DOI-BLM-UT-C010-2016-0042-EA

SEISMIC REFLECTION SURVEY

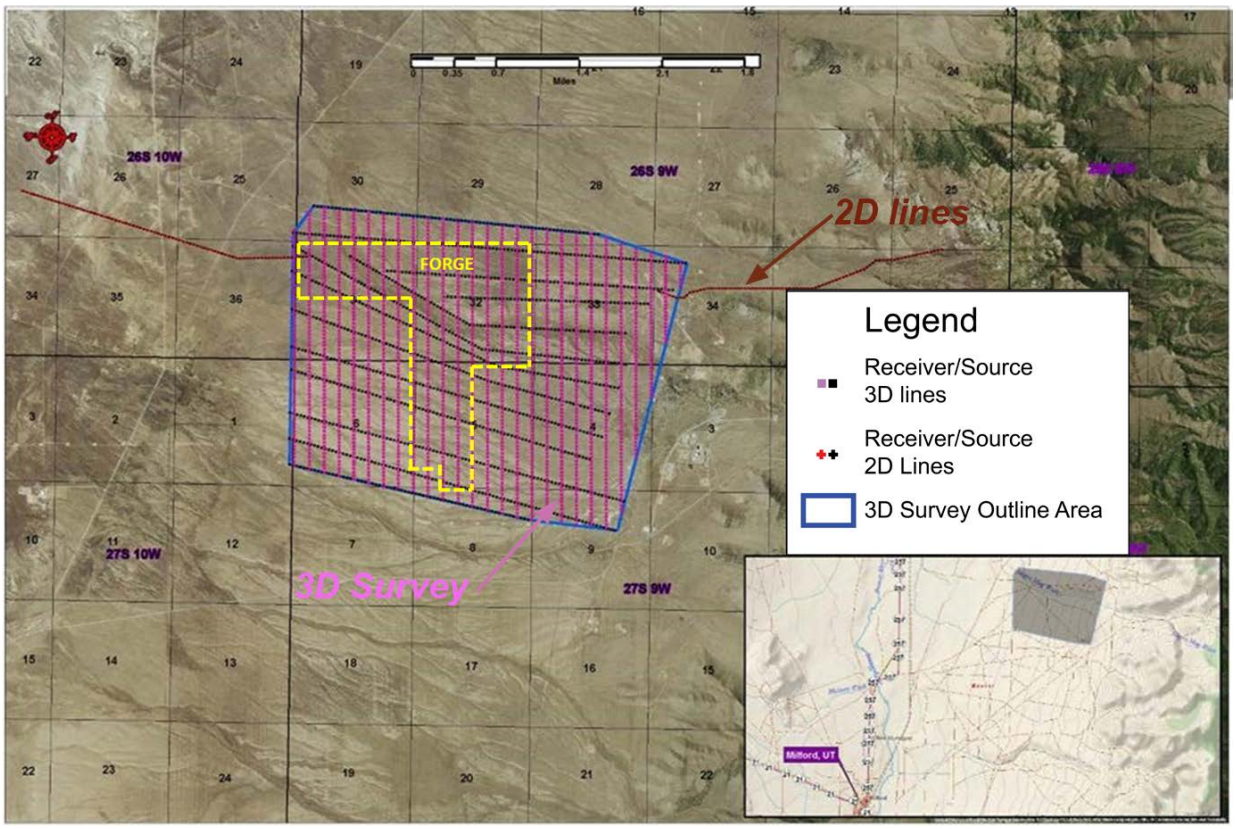
A three-dimensional (3D) seismic survey and two-dimensional (2D) seismic lines extending approximately east and west outside the 3D survey will be undertaken. This work will be combined with other geophysical surveys (magnetotellurics, gravity, and faults identified from LiDAR interpretation) to provide geologic constraints regarding structural characteristics of the FORGE drill site.

Data processing and interpretation of the data will be carried out by the seismic subcontractor. A representative of the FORGE team will approve processing parameters.

The seismic subcontractor will provide the following deliverables to the Awardee or FORGE Team:

1. SEG-Y digital unprocessed data with geometry loaded in the headers;
2. Digital copies of the source and receiver survey information;
3. SEG-Y data of field data after applying of geometry, statics, deconvolution and filtering;
4. Processed 2D lines and 3D volume in SEG-Y format, including unmigrated stack, migrated time and prestack depth migration;
5. Processing flows and parameters;
6. Velocity models used for processing 2D and 3D data in SEG-Y format.

The seismic subcontractor will also perform an interpretation of the surveys to identify horizons and faults.



Map of the layout of the 3D seismic survey 2D seismic lines. The 3D survey is contained within the blue lines covering ~18 km^2 (7 mi^2).

APPENDIX B

Categorical Exclusions
Prepared for Phases 1 and 2A

Note: The Section 508 amendment of the Rehabilitation Act of 1973 requires that the information in federal documents be accessible to individuals with disabilities. The Agency has made every effort to ensure that the information in the *Frontier Observatory for Research into Geothermal Energy (FORGE), Milford, Utah* is accessible. However, this appendix is not fully compliant with Section 508, and readers with disabilities are encouraged to contact *Pierina Fayish* at (412) 386-5428 or Pierina.Fayish@NETL.DOE.GOV if they would like access to the information.

NETL F 451.1-1/1
Revised: 11/24/2014
Reviewed: 11/24/2014
(Previous Editions Obsolete)

U.S. DEPARTMENT OF ENERGY - NETL

CATEGORICAL EXCLUSION (CX) DESIGNATION FORM

Project No.: DE-EE0007080 Recipient Name: University of Utah Project Location: Salt Lake City, UT

Sub-recipient(s) and Locations:

Barker, Windsor CA; Winkler, Pagosa Springs CO; HRM Services, Cedar City UT; Geothermal Resource Group, Palm Desert CA; Geothermal SS, Klamath Falls OR; Miller, Golden CO; SWCA, Salt Lake City UT; UGS, Salt Lake City UT

NETL Sponsoring Org.: FE/TDIC/OG/UOG Team NETL Contact: Adam Tew

Brief Title of Proposed Action: Milford Site for Frontier Observatory for Geothermal Energy (FORGE)

Brief Description of Activities:

Phase 2A activity consists of office and field work to provide baseline seismic monitoring at the proposed field site and to acquire needed permits & permissions for field activities in later phases.

THE PROPOSED ACTION FALLS WITHIN THE FOLLOWING CATEGORICAL EXCLUSION(S) FROM APPENDICES A AND B TO SUBPART D OF DOE NEPA IMPLEMENTING PROCEDURES (10 CFR 1021):

General Administration/Management
- ☒ A1 – Routine business actions
- ☒ A9 – Info gathering, analysis, documentation, dissemination, and training
- ☒ A11 – Technical advice and planning assistance

Facility Operations
- ☐ B1.3 – Routine maintenance and custodial services
- ☐ B1.7 – Communication system and data processing equipment acquisition, installation, operation, removal
- ☐ B1.15 – Support building or structure, non-waste storage, construction/ operation

Safety and Health
- ☐ B2.1 – Modifications to enhance workplace habitability
- ☐ B2.2 – Installation/improvement of building/equipment instrumentation
- ☐ B2.3 – Installation of equipment for personnel safety and health

General Research
- ☒ B3.1 – Site characterization/environmental monitoring
- ☐ B3.6 – R&D or pilot facility construction/operation/decommissioning
- ☐ B3.7 – New infill exploratory, experimental oil/gas/geothermal well construction and/or operation
- ☐ B3.9 – Certain CCT demonstration activities, emissions unchanged
- ☐ B3.11 – Outdoor tests, experiments on materials and equipment components

Electrical Power and Transmission
- ☐ B4.4 – Power management activities (storage, load shaping, and balancing)
- ☐ B4.6 – Transmission support addition/modifications at developed facility site
- ☐ B4.11 – Construction of power substations and interconnection facilities
- ☐ B4.13 – Upgrading and rebuilding existing power lines (< 20 miles)

Conservation, Fossil, and Renewable Energy Activities
- ☐ B5.1 – Actions to conserve energy, no indoor air quality degradation
- ☐ B5.3 – Modification/abandonment of wells
- ☐ B5.5 – Short crude oil/gas/steam/geothermal/carbon dioxide pipeline const/oper within an existing right-of-way (< 20 miles) between existing facilities
- ☐ B5.13 – Experimental wells for injection of small quantities of carbon dioxide (< 500,000 tons)
- ☐ B5.15 – Small scale renewable energy research/development/pilot projects
- ☐ B5.22 – Alternative fuel vehicle fueling stations
- ☐ B5.23 – Electric vehicle charging stations

Other
- ☐ Specify category:
- ☐ Specify category:
- ☐ Specify category:

This action (1) would not present any extraordinary circumstances such that the action might have a significant impact upon the human environment; (2) is not connected to other actions with potentially significant impacts; (3) is not related to other actions with cumulatively significant impacts; and (4) is not inconsistent with 10 CFR 1021.211 - Interim Actions or 40 CFR 1506.1 - Limitations during the NEPA process.

SELECT ONE OF THE FOLLOWING:
- ☐ This Categorical Exclusion includes all tasks and phases in the Statement of Work or Statement of Project Objectives for this project.
- ☒ This Categorical Exclusion is only valid for the following tasks/phases Phase 2A. The DOE initiator acknowledges the responsibility to obtain a NEPA determination prior to initiating any activities outside the scope of this Categorical Exclusion.

SELECT ONE OF THE FOLLOWING:
- ☒ This Categorical Exclusion includes all locations and activities for this project.
- ☐ Additional sites, sub-recipients, or activities cannot be identified at this time. The DOE initiator acknowledges the responsibility to obtain a NEPA determination prior to initiating any activities outside the scope of this Categorical Exclusion.

NOTE: ANY CHANGE(S) TO THE PROJECT SCOPE OR LOCATIONS MAY REQUIRE A NEW NEPA DETERMINATION.

DOE Initiator Signature: _____ Date: 9 / 15 / 2016 (month / day / year)

NEPA Compliance Officer: _____ Date: 09 / 20 / 2016 (month / day / year)

The following special condition is provided for the consideration of the Contracting Officer:

NETL F 451.1-1/1
Revised: 11/24/2014
Reviewed: 11/24/2014
(Previous Editions Obsolete)

U.S. DEPARTMENT OF ENERGY - NETL

CATEGORICAL EXCLUSION (CX) DESIGNATION FORM

Project No.: DE-EE0007080 Recipient Name: University of Utah Project Location: Salt Lake City, UT

Sub-recipient(s) and Locations:

SWCA & UGS-Salt Lake City,UT;GRG-Palm Desert,CA;GSS-Klamath Falls,OR;J Miller-Golden,CO;HRM-Cedar City,UT;Golder -Lakewood,CO;Optim-Reno,NV;INL-Idaho Falls,ID;MEA-Calgary,CAN;SMS-Houston,TX;SM-Energy-Pagosa Springs,CO;

NETL Sponsoring Org.: FE/TDIC/OG/UOG Team NETL Contact: Adam Tew

Brief Title of Proposed Action: Enhanced Geothermal System Testing & Development at the Milford, UT FORGE Site

Brief Description of Activities:

Phase 2B of FORGE includes drilling, coring, and stress testing of an on-site geothermal exploration well and vibroseismic survey among other tasks as outlined in the SOPO.

THE PROPOSED ACTION FALLS WITHIN THE FOLLOWING CATEGORICAL EXCLUSION(S) FROM APPENDICES A AND B TO SUBPART D OF DOE NEPA IMPLEMENTING PROCEDURES (10 CFR 1021):

General Administration/Management
- ☒ A1 – Routine business actions
- ☒ A9 – Info gathering, analysis, documentation, dissemination, and training
- ☒ A11 – Technical advice and planning assistance

Facility Operations
- ☐ B1.3 – Routine maintenance and custodial services
- ☐ B1.7 – Communication system and data processing equipment acquisition, installation, operation, removal
- ☐ B1.15 – Support building or structure, non-waste storage, construction/ operation

Safety and Health
- ☐ B2.1 – Modifications to enhance workplace habitability
- ☐ B2.2 – Installation/improvement of building/equipment instrumentation
- ☐ B2.3 – Installation of equipment for personnel safety and health

General Research
- ☒ B3.1 – Site characterization/environmental monitoring
- ☐ B3.6 – R&D or pilot facility construction/operation/decommissioning
- ☐ B3.7 – New infill exploratory, experimental oil/gas/geothermal well construction and/or operation
- ☐ B3.9 – Certain CCT demonstration activities, emissions unchanged
- ☐ B3.11 – Outdoor tests, experiments on materials and equipment components

Electrical Power and Transmission
- ☐ B4.4 – Power management activities (storage, load shaping, and balancing)
- ☐ B4.6 – Transmission support addition/modifications at developed facility site
- ☐ B4.11 – Construction of power substations and interconnection facilities
- ☐ B4.13 – Upgrading and rebuilding existing power lines (< 20 miles)

Conservation, Fossil, and Renewable Energy Activities
- ☐ B5.1 – Actions to conserve energy, no indoor air quality degradation
- ☒ B5.3 – Modification/abandonment of wells
- ☐ B5.5 – Short crude oil/gas/steam/geothermal/carbon dioxide pipeline const/oper within an existing right-of-way (< 20 miles) between existing facilities
- ☐ B5.13 – Experimental wells for injection of small quantities of carbon dioxide (< 500,000 tons)
- ☒ B5.15 – Small scale renewable energy research/development/pilot projects
- ☐ B5.22 – Alternative fuel vehicle fueling stations
- ☐ B5.23 – Electric vehicle charging stations

Other
- ☐ Specify category:
- ☐ Specify category:
- ☐ Specify category:

This action (1) would not present any extraordinary circumstances such that the action might have a significant impact upon the human environment; (2) is not connected to other actions with potentially significant impacts; (3) is not related to other actions with cumulatively significant impacts; and (4) is not inconsistent with 10 CFR 1021.211 - Interim Actions or 40 CFR 1506.1 - Limitations during the NEPA process.

SELECT ONE OF THE FOLLOWING:
- ☐ This Categorical Exclusion includes all tasks and phases in the Statement of Work or Statement of Project Objectives for this project.
- ☒ This Categorical Exclusion is only valid for the following tasks/phases Phase 2B (except 2B.7) . The DOE initiator acknowledges the responsibility to obtain a NEPA determination prior to initiating any activities outside the scope of this Categorical Exclusion.

SELECT ONE OF THE FOLLOWING:
- ☒ This Categorical Exclusion includes all locations and activities for this project.
- ☐ Additional sites, sub-recipients, or activities cannot be identified at this time. The DOE initiator acknowledges the responsibility to obtain a NEPA determination prior to initiating any activities outside the scope of this Categorical Exclusion.

NOTE: ANY CHANGE(S) TO THE PROJECT SCOPE OR LOCATIONS MAY REQUIRE A NEW NEPA DETERMINATION.

DOE Initiator Signature: _____ Date: 02 (month) / 23 (day) / 2017 (year)

NEPA Compliance Officer: _____ Date: 03 (month) / 03 (day) / 2017 (year)

The following special condition is provided for the consideration of the Contracting Officer:

Task 2B.7 is excluded from this CX and included in a separate NEPA document.

Additional sites: U of NM-Albuquerque,NM; U of OK-Norman,OK; B Barker-Windsor,CA; AMEC FW-Oakland,CA

APPENDIX C

State Historic Preservation Office Concurrence Letter

GARY R. HERBERT
Governor

SPENCER J. COX
Lieutenant Governor

Jill Remington Love
Executive Director
Department of
Heritage & Arts

Utah Division of
State History

Brad Westwood
Director

November 6, 2017

Pierina N. Fayish
National Energy Technology
Laboratory M/S 922-1W13(D)
P.O. Box 10940
Pittsburgh, PA 15236

RE: Addendum to the Class III Cultural Resources Inventory for the Milford FORGE Seismic Project, Beaver County, Utah U-17-St-0756

For future correspondence, please reference Case No. 17-0270

Dear M. Fayish:

The Utah State Historic Preservation Office received your request for our comment on the above-referenced undertaking. We concur with your determinations of eligibility and effect for this undertaking.

Beginning November 27, 2017, all consultation requests will be accepted through the UT-SHPO's new e106 system. Please visit www.community.utah.gov/e106 to learn more and create an account. If you need additional information or help access our e106 system, please contact me.

If you have any questions, please contact me at (801) 245-7241 or by email at ehora@utah.gov.

Sincerely,

Elizabeth Hora
Cultural Compliance Reviewer

APPENDIX D

U.S. Fish and Wildlife Service
Concurrence Letter

November 22, 2017

Larry Crist
U.S. Fish and Wildlife Service
2369 West Orton Circle, Suite 50
West Valley City, UT 84119-7603

Re: Determination of Effects for Utah Frontier Observatory for Research in Geothermal Energy (FORGE) Site in Beaver County, Utah

Dear Mr. Crist:

The U.S. Department of Energy (DOE) is preparing an Environmental Assessment (EA) for the proposed action of providing financial assistance to the Energy and Geoscience Institute (EGI) at the University of Utah and its partners for the proposed Utah Frontier Observatory for Research in Geothermal Energy (FORGE) site in Beaver County, Utah. The EA is being prepared to fulfill the DOE's obligations under the National Environmental Policy Act (NEPA), the Council on Environmental Quality's NEPA regulations, and the DOE's NEPA implementing procedures. The EA will evaluate the potential effects of construction and 5-year operation of this full-scale pilot test facility. The purpose of this letter is to initiate a consultation under the Endangered Species Act (ESA) regarding potential listed species that may occur within the project area and to submit a preliminary determination of effects for consideration.

For the proposed action, the DOE would provide the EGI with up to $29 million of financial assistance to construct and operate the proposed FORGE facility to conduct cutting-edge research on engineered geothermal systems (EGSs). The proposed FORGE site is approximately 10 miles northeast of Milford in Beaver County, Utah, on private, State of Utah, and U.S. Bureau of Land Management (BLM) lands (Figures 1 and 2).

The proposed project would consist of the following surface-disturbing elements as depicted on the attached figures:

- Office site
- Four main well pads, up to three well pads for groundwater wells, and the existing Accord-1 well pad
- Access roads connection
- Power line corridor
- Surface water line (within power line corridor)
- Fiber optic line
- 10 seismic monitoring drillholes (assume 50 × 50 feet of disturbance)
- 42 survey monument and tiltmeter sites (assume 20 × 20 feet of disturbance)

Federally listed endangered, threatened, and candidate species in Beaver and Millard Counties consist of California condor (*Gymnogyps californianus*), Frisco buckwheat (*Eriogonum soredium*), Frisco clover (*Trifolium friscanum*), Ostler's peppergrass (*Lepidium ostleri*), Utah prairie-dog (*Cynomys parvidens*), and yellow-billed cuckoo (*Coccyzus americanus*).

626 Cochrans Mill Road, P.O. Box 10940, Pittsburgh, PA 15236
pierina.fayish@netl.doe.gov@netl.doe.gov • Voice (412) 386-5428 • Fax (412) 386-4775 • www.netl.doe.gov

No potential habitat is present for these wildlife and plant species in the project area (Table 1). The project area is not located in a U.S. Fish and Wildlife Service (USFWS) Utah prairie dog recovery unit or within USFWS Utah prairie dog buffers. In addition, when the BLM Cedar City Field Office completed an EA for the 2D vibroseis survey for an earlier phase of the FORGE project, it was noted that no listed species occurred within the project area. Frisco clover is found in Beaver and Millard Counties on volcanic soils at a total of five sites statewide. All known sites are located west of the project area in the San Francisco Mountains, Tunnel Spring Mountains, Beaver Lake Mountains, or south of the project area at Blue Mountain. There are no known occurrences of Frisco clover in or near the project area. Frisco buckwheat and Ostler's peppergrass are known to occur in the San Francisco Mountains in north-central Beaver County. They are narrow endemics restricted to soils derived from Ordovician limestone outcrops. No such outcrops exist in the project area.

Based on this analysis, the DOE believes a "no effect" determination would be valid for the ESA experimental population, nonessential California condor, and the federally threatened Utah prairie dog and yellow-billed cuckoo. The DOE requests your review of the proposed project and concurrence with this "no effect" determination.

Table 1. Potential habitat and effects determinations for federally listed species

Species	Status	Habitat Present	Determination
California condor	ESA, experimental population, nonessential in Utah	No	No effect
Frisco buckwheat	Candidate	No	Not applicable
Frisco clover	Candidate	No	Not applicable
Ostler's peppergrass	Candidate	No	Not applicable
Utah prairie dog	Threatened	No*	No effect
Yellow-billed cuckoo	Threatened	No	No effect

* The analysis area is not located in a USFWS Utah prairie dog recovery unit or within USFWS Utah prairie dog buffers.

If you have any questions or comments, please contact Ms. Pierina Fayish at

National Energy Technology Laboratory M/S:922-1W13(D)
P.O. Box 10940
Pittsburgh, PA 15236-0940
Attention: Pierina Fayish
Pierina.Fayish@netl.doe.gov
(412) 386-5428

Thank you for your assistance in this matter.

Sincerely,

Pierina N. Fayish

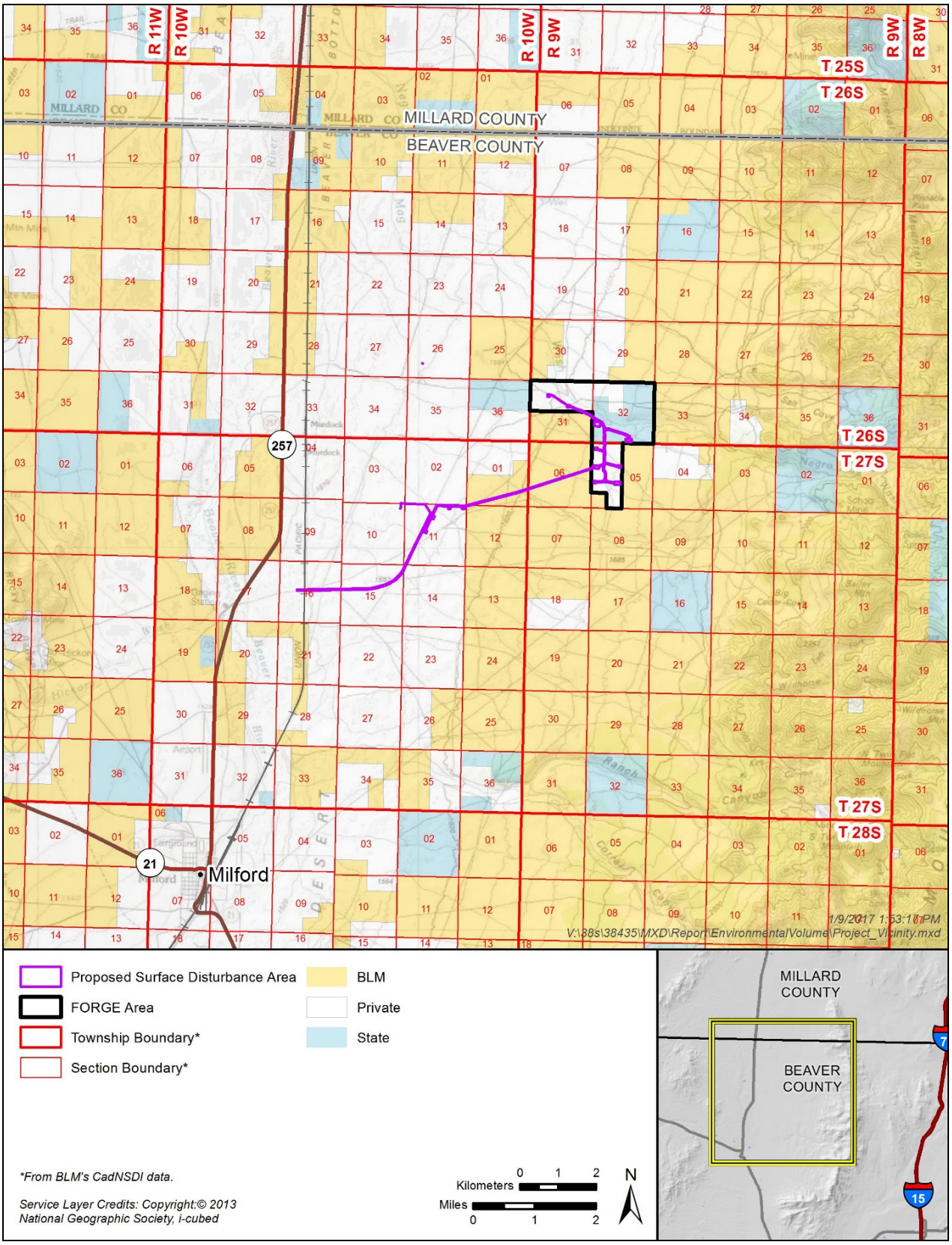


Figure 1. General project location.

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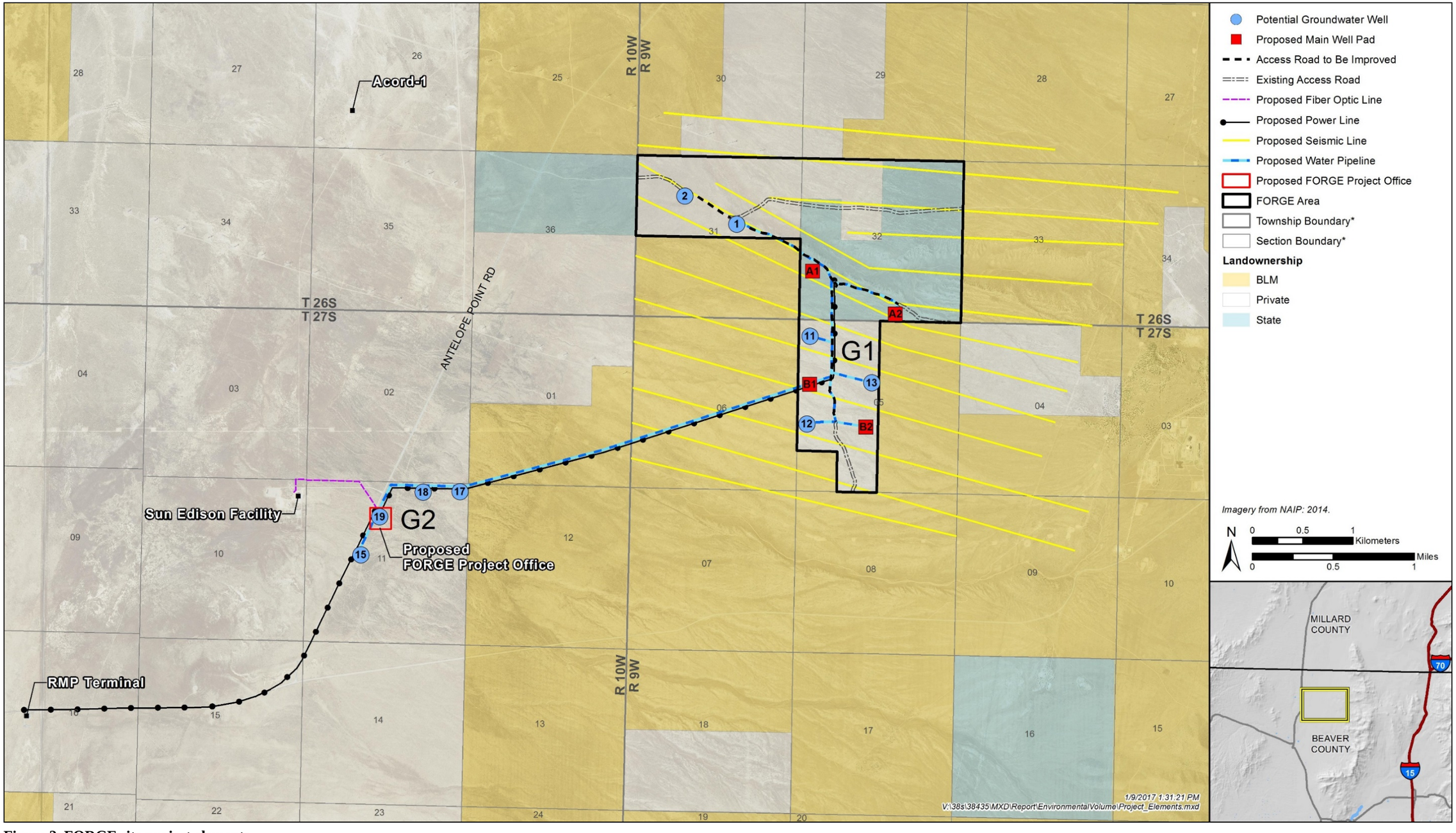

Figure 2. FORGE site project elements.

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APPENDIX E

Stakeholder List

GOVERNMENT AGENCIES

EPA Region 8 – CO, MT, ND, SD, UT, WY

www.epa.gov/nepa/national-environmental-policy-act-epa-region-8
Environmental Protection Agency, Region 8
1595 Wynkoop Street (8EPR-N)
Denver, CO 80202-1129

Mr. Philip Strobel
NEPA Program Director
303-312-6704
strobel.philip@epa.gov

and

Ms. Jennifer Schuller
NEPA Program Deputy Director
303-312-6334
schuller.jennifer@epa.gov

State of Utah

Ms. Sindy Smith
RDCC Coordinator
Office of the Governor
Public Lands Policy Coordination Office
State of Utah
5110 State Office Building
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sindysmith@utah.gov

Bureau of Land Management
Ed Ginouves
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BLM Cedar City Field Office
176 East DL Sargent Drive
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435-865-3040
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Fish & Wildlife Service

Larry Crist
U.S. Fish and Wildlife Service
2369 West Orton Circle, Suite 50
West Valley City, UT 84119-7603

Stephanie Graham
U.S. Fish and Wildlife Service
2369 West Orton Circle, Suite 50
West Valley City, UT 84119-7603

State Historic Preservation Office

Utah State Historic Preservation Office
Christopher W. Merritt, Ph.D.
Senior Preservation Specialist
Utah Division of State History
300 South Rio Grande Street
Salt Lake City, Utah 84101

GOVERNMENT ORGANIZATIONS

National Association of State Energy Officials

www.naseo.org
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Director of Contracts and Grants Administration
National Association of State Energy Officials
2107 Wilson Boulevard, Suite 850
Arlington, VA 22201
703-299-8800 (ext. 115)
sspencer@naseo.org

National Association of Tribal Historic Preservation Officers

www.nathpo.org
Ms. D. Bambi Kraus
President
National Association of Tribal Historic
Preservation Officers
PO Box 19189
Washington, DC 20036-9189
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bambi@nathpo.org

National Conference of State Historic Preservation Officers

www.ncshpo.org
Mr. Erik Hein
Executive Director
National Conference of State Historic
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444 North Capitol Street, NW, Suite 342
Washington, DC 20001
202-624-5465
hein@ncshpo.org

NON-GOVERNMENTAL ORGANIZATIONS

American Association of Blacks in Energy

www.aabe.org
Mr. Tracey Woods
Vice President, Operations
American Association of Blacks in Energy
1625 K Street, NW, #405
Washington, DC 20006
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twoods@aabe.org

American Bird Conservancy

www.abcbirds.org
Ms. EJ Williams
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American Bird Conservancy
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Earthjustice

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Environmental Defense Fund

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www.edf.org/email/node/350/field_email

Environmental Defense Institute

www.environmental-defense-institute.org
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Board President
Environmental Defense Institute
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edinst@tds.net

Friends of the Earth
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Eric Glitzenstein
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Gas Technology Institute
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Healthy Environment Alliance of Utah (HEAL Utah)
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Institute for Energy and Environmental Research
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National Congress of American Indians

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National Congress of American Indians
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Natural Resources Defense Council (NRDC)

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Co-Director, Energy & Transportation Program
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The Nature Conservancy

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Senior Policy Advisor for Energy
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Renewable Fuels Association

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Sierra Club

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Southwest Research and Information Center

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Southwest Research and Information Center
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Union of Concerned Scientists

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and

Mr. Stephen Young
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penny.anderson@westernresources.org

TRIBAL CONSULTATIONS

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James Williams, Superintendent
Southern Paiute Agency (BIA)
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St. George UT 84771

Antonio Pingree, Acting Superintendent
Uintah and Ouray Agency (BIA)
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Ft. Duchesne, UT 84026

Tribal Nations

Corrina Bow, Chairperson
Paiute Indian Tribe of Utah
440 N. Paiute Dr
Cedar City UT 84720

Shaun Chapoose, Chairman
Ute Indian Tribe of the Uintah and Ouray Reservation, Utah
P.O. Box 190
Ft. Duchesne UT 84026

Candace Bear, Chairperson
Skull Valley Band of Goshute Indians of Utah
P.O. Box 448
Grantsville UT 84029

Virgil Johnson, Chairman
Confederated Tribes of the Goshute Reservation, Nevada and Utah
P.O. Box 6104
Ibapah UT 84034