

ENVIRONMENTAL ASSESSMENT
Magma Energy (U.S.) Corp.
Soda Lake Geothermal
Exploration Project

DOI-BLM-NV-C010-2010-0008-EA

U.S. Department of the Interior
Bureau of Land Management
Carson City District
Stillwater Field Office
5665 Morgan Mill Road
Carson City, NV 89701
775-885-6000

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It is the mission of the Bureau of Land Management to sustain the health, diversity, and productivity of the public lands for the use and enjoyment of present and future generations.

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LIST OF ACRONYMS & ABBREVIATIONS

AMSL	Above Mean Sea Level
ARPA	Archaeological Resources Protection Act of 1979
BLM	Bureau of Land Management
CRMP	Consolidated Resource Management Plan
EA	Environmental Assessment
EPMs	Environmental Protection Measures
FLPMA	Federal Land Policy and Management Act
Magma	Magma Energy (U.S.) Corp.
MBTA	Migratory Bird Treaty Act
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act of 1966
Reclamation	Bureau of Reclamation
ROW	Right-of-Way

**ENVIRONMENTAL ASSESSMENT
SODA LAKE GEOTHERMAL EXPLORATION PROJECT
MAGMA ENERGY (U.S.) CORP.**

1.0 INTRODUCTION/PURPOSE AND NEED

The Bureau of Land Management (BLM), Carson City District Office and the Bureau of Reclamation, Lahontan Basin Area Office (Reclamation) have jointly prepared this Environmental Assessment (EA) to analyze impacts to the human and natural environment resulting from exploratory drilling for geothermal resources within the Magma Energy (U.S.) Corp. (Magma) Soda Lake Production Area (project area) near Fallon, Nevada (Figure 1). The project area is located on public and private geothermal leases (Table 1) in the Soda Lake Geothermal Unit (NVN-013204X) (Figure 2), with Soda Lake Resources Partnership as Unit Operator, a wholly owned subsidiary of Magma Energy (U.S.) Corp. The BLM Carson City District, Stillwater Field Office manages the subsurface geothermal resources and Reclamation is the surface management agency (Figure 2). Access to drilling locations would be from Highway 50 through the existing road system to the project area.

Table 1 Soda Lake Geothermal Leases

Lease Number	Legal Description	Date of Lease Purchase
N-48022	Section 3, T19N, R28E, S2NE, Lots 1-2 Section 22, T20N, R28E, All	10/01/2008
N-11737	Section 4, T19N, R28E, S2NE, Lots 1-2 Section 28, T20N, R28E, N2 Section 34, T20N, R28E, All	10/01/2008
N-53371	Section 28, T20N, R28E, S2 Section 32, T20N, R28E, W2SW, SE	10/01/2008
N-53372	Section 32, T20N, R28E, NE	10/01/2008

Magma is seeking approval to drill slim wells, and drill and test slim wells and production/injection wells at up to nine specific drill pad locations. Table 2 shows the drill pad identification, well number, and location information for each proposed drill pad. Magma plans to drill nine production/injection wells and three temperature gradient wells at these locations. Up to two new production wells, up to one temperature gradient well, and up to one observation well would be drilled at each pad location. Wellbores may be drilled vertical or directionally depending on the orientation of the target, and multiple wells may be drilled from a single pad. Some directional drilling may result in the surface location being on a federal-lease or private-fee land and the bottom hole location being on the opposite type of property. The drilling permit request will reflect this situation where it is anticipated.

Table 2 Proposed Drill Pad and Geothermal Well Sites

Well Name (Kettleman Number)	Township/Range	Section Number	UTM Coordinates (NAD 83)	
			Easting (m)	Northing (m)
13-28	T20N/R28E	28	340650	4281947
33A-28	T20N/R28E	28	340946	4381802
62A-28	T20N/R28E	28	341495	4382083
53A-28	T20N/R28E	28	341336	4381795
18-28	T20N/R28E	28	340654	4380861
84-32	T20N/R28E	32	340325	4380047
44-34	T20N/R28E	34	342765	4380067
75-34	T20N/R28E	34	343364	4379844
58A-34	T20N/R28E	34	342911	4379232

Source: Magma Energy (U.S) Corp., 2009

The Department of the Interior, consistent with Section 2 of the Mining and Mineral Policy Act of 1970 and Sections 102(a) (7), (8), and (12) of the Federal Land Policy and Management Act of 1976 (FLPMA), encourages the development of mineral resources, including geothermal resources, on federal lands. The Geothermal Steam Act of 1970 (30 USC §1001 et seq.) and its implementing regulations (43 CFR Part 3200) provide regulatory guidance for geothermal leasing and operations by the BLM. These regulations identify four stages of geothermal resource development within a lease: (1) exploration, (2) development, (3) production, and (4) closeout. Each of the four stages under the lease requires separate BLM authorization and compliance with the National Environmental Policy Act of 1969 (NEPA) when ground-disturbing activities are proposed.

The geothermal leases involved in the Soda Lake Project Area were issued prior to the enactment of the Energy Act of 2005. Therefore, these geothermal leases provide terms that grant the lessee access to geothermal resources in the lease area for a period of 10 years with several options for extension. The terms of the lease require the lessee to show a certain level of diligence toward developing the geothermal resources within the lease area or the lease may be terminated. Once an area is developed for productive use of geothermal energy, the lease terms provide the lessee use of the resource for 40 years, with a right of renewal for another 40 years. Geothermal exploration and production on federal land conducted through leases is subject to terms and stipulations to comply with all applicable federal, state, and local laws and regulations pertaining to requirements such as operations, sanitation, water quality, wildlife, safety, and reclamation (Appendix A). Lease stipulations are derived from the resource management plan process. Site specific permit conditions of approval are developed through the environmental analysis process. This EA considers the potential environmental impacts of the Proposed Action and has been prepared in accordance with NEPA, the Council on Environmental Quality regulations implementing NEPA, and the FLPMA.

The project area has been in existence since 1977, and currently has two operating geothermal power production facilities on private lands. More than 80 temperature gradient, slim holes, and production wells have been drilled in the project area over the course of the nearly 30-year history of exploration and development, with depths ranging from 300 feet to more than 9,600 feet. Magma acquired the existing facilities, federal leases, and private leases in October 2008.

1.1 PURPOSE AND NEED

The need for the Proposed Action is to provide for additional exploration drilling to assess the power generation capability of the geothermal resources in the areas identified during initial exploration activities at the project area.

The Proposed Action is consistent with the National Energy Policy, which encourages the development of energy resources including geothermal resources on federally managed lands. Executive Order 13212, Actions to Expedite Energy-Related Projects, issued on May 18, 2001, states “the increased production and transmission of energy in a safe and environmentally sound manner is essential.” The proposed project is consistent with State of Nevada and Churchill County ordinances, policies, and plans, and the revised Secretarial Order 3285 dated February 22, 2010. In addition, Nevada law requires Nevada commercial power generators to produce 20 percent of power through renewable energy sources by 2015. Therefore, there is a need to increase the level of exploration, development, and production of renewable energy sources including geothermal resources.

1.2 LAND USE PLAN CONFORMANCE STATEMENT

The Proposed Action and alternatives described below are in conformance with the Carson City District Office Consolidated Resource Management Plan (CRMP). The desired outcome for minerals and energy management is to “encourage development of energy and mineral resources in a timely manner to meet national, regional, and local needs consistent with the objectives for other public land uses” (BLM, 2001). The CRMP minerals and energy management applies the following restriction on geothermal leasing: “no surface occupancy within 500 feet of any water” (BLM, 2001). The proposed drill sites are not included in any of the excluded areas in the land allocation for minerals and are not subject to the other restrictions.

1.3 PLANS, STATUTES, AND OTHER REGULATIONS

This action is consistent with federal laws and regulations; other plans, programs, and policies of affiliated Tribes; other federal agencies, state, and local government. Specific approvals, permits, and regulatory requirements would be required for constructing, testing, and maintaining the proposed geothermal exploratory wells. Table 3 lists federal, state, and local permits, policies, and actions that may be required as part of the Proposed Action.

Table 3 Potential Regulatory Responsibilities

Regulatory Agency	Authorizing Action
BLM	Temporary use permits for construction related activities
BLM	Geothermal Drilling Permit
Department of Conservation and Natural Resources, Nevada Division of Water Resources	Temporary consumptive water use permit
State of Nevada, Commission on Mineral Resources, Division of Minerals	Geothermal exploration and production well permit

2.0 PROPOSED ACTION AND ALTERNATIVE

Magma proposes to conduct exploration activities within the project area located approximately five miles west of Fallon, Nevada in Churchill County (Figure 1). This chapter describes the Proposed Action and the No Action Alternative being analyzed in this EA. This EA analyzes the proposed project pursuant to the Reclamation/BLM Interagency Agreement, December 1982.

2.1 PROPOSED ACTION

The Proposed Action consists of slim hole drilling, production/injection well drilling, and construction of access roads to the drill sites. Slim holes or production/injection wells are proposed on the nine drill pads to determine whether there are sufficient geothermal resources for increasing the current power production within the project area. The Proposed Action includes the eventual reclamation of these facilities. Figure 3 shows the location of the proposed drill pads in the project area and the proposed access roads, along with the existing facilities in the area. Magma plans to drill nine production/injection wells and three temperature gradient wells at these locations. Up to two new production wells, up to one temperature gradient well, and up to one observation well would be drilled at each pad location. Wellbores may be drilled vertical or directionally depending on the orientation of the target, and multiple wells may be drilled from a single pad. Some directional drilling may result in the surface location being on a federal-lease or private-fee land and the bottom hole location being on the opposite type of property. The drilling permit request will reflect this situation where it is anticipated.

The project area can be accessed by traveling west from Fallon, Nevada approximately three miles on Highway 50 then turning north on Soda Lake Road. The pavement ends approximately four miles north on Soda Lake Road at which point the road is gravel covered. The entrance to the existing power plant site is approximately one mile beyond the transition from pavement to gravel. The existing roads would serve as the main transportation corridors from Highway 50 to the proposed pad locations. Existing access roads would be improved where necessary to accommodate passage of equipment to the site and Magma would apply standard design criteria, per the Surface Operating Standards and Guidelines for Oil and Gas, The Gold Book (BLM, 2007), on a site-specific basis, which would reduce unnecessary impacts. The maximum running width of access roads would be 15 feet. Side roads to drill pads would be improved only where necessary to accommodate equipment passage. Overland travel would be used to the extent practical to avoid road building activities thus minimizing disturbance. Approximately 6,661 feet of roads would be created or upgraded as shown on Figure 3. Table 4 shows the expected ground disturbance associated with pad and road construction.

Table 4 Ground Disturbance

Site	Ground Disturbance per Site (acres) ¹	Length of New Road (feet)	Ground Disturbance per New Road (acres)	Total Area of Disturbance
13-28	2.06	1,482	0.51	2.57
33A-28	2.06	0	0.0	2.06
62A-28	2.06	0	0.0	2.06
53A-28	2.06	0	0.0	2.06
18-28	2.06	0	0.0	2.06
84-32	2.06	656	0.23	2.29
44-34	2.06	1,196	0.41	2.47
75-34	2.06	3,327	1.15	3.21
58A-34	2.06	0	0.0	2.06
Total	18.54	6,661	2.30	20.84

¹ Includes sump and pad disturbance

2.1.1 Exploratory Drilling and Testing

Exploratory drilling operations would be conducted on constructed drill pads with dimensions of approximately 300 feet by 300 feet at each drilling location. Figure 4 shows a typical drill pad layout for the drilling rig, reserve pits, pumps, office facilities, crew facilities, parking, storage, and other drilling fluid treatment apparatus. Minor adjustments to equipment placement may be made, based on site-specific considerations; however, the pad footprint would retain the same overall dimensions and occupy the same total acres. Diesel for use in equipment would be stored on-site in proper containment for use in mobile equipment.

The proposed well pads would be located on relatively flat terrain, but would require vegetation clearing and grading to allow access and placement of the drill rig and associated equipment needed to drill the wells. The pad would be constructed from local compacted soil materials and surfaced with gravel.

Nine drill pads, identified in Table 2 and shown on Figure 3, would be used to drill slim holes or production/injection wells. Therefore, some pads would be used to drill more than one well. Production wells may be drilled at locations where slim holes have intersected significant geothermal production zones.

Slim Holes

Slim holes are drilled to facilitate downhole measurements of temperature, pressure, and fluid characteristics. This type of hole is designed to enter the geothermal reservoir and to provide a relatively simple, inexpensive test of downhole conditions. Slim hole locations may be used for follow-up drilling of production/injection wells.

Slim holes can be drilled using truck-mounted rigs or small fixed drilling rigs depending on the target depth, which can range from 2,500 to 4,000 feet. The top of the derrick in most instances

would not exceed 70 feet and can be as short as 30 feet. The hole is generally initiated with a 17.5-inch diameter hole and 14-inch casing cemented to a depth of 50 to 60 feet. The holes are continued with a 12.5-inch bit to a depth of 200 to 250 feet and fitted with 9 5/8-inch diameter casing, which is cemented in place. The majority of the hole is drilled with an 8.75-inch bit to nominal depths ranging from 1,800 to 2,000 feet which is fitted with seven-inch casing cemented in place. The remainder of the hole is drilled with a 6.25-inch bit to the target depth. The hole is finished by hanging a four-inch diameter liner, which has a combination of blank and slotted intervals based on where flow can be expected.

Drilling fluids for slim holes would consist of standard non-hazardous bentonite clay-water-based, or polymer-water-based mud used for lubrication to cool the drill bit, and to remove drill cuttings from the hole. All holes would be cased in accordance with approved drilling permits to insure integrity of the wellbore and to isolate the wellbore from groundwater aquifers. Only non-hazardous additives would be used to prevent corrosion, adjust mud weight, or control lost circulation.

Production/Injection Wells

Production/injection type wells would be drilled with a standard rotary drill rig with ancillary equipment such as mud and water mixing tanks, diesel generators, pipe racks, and office trailers. All equipment would be brought to the site by tractor-trailer trucks. The mast on the rig would range in height from 70 to 180 feet in height, would be painted red and white, and would be equipped with flashing lights on top in accordance with Federal Aviation Administration requirements.

Drilling would be conducted 24-hours per day, seven days a week, and the drilling crew would consist of approximately 10 individuals. Drilling crews would stay in Fallon, Nevada, during non-working hours so no camp facilities would be necessary. Fuel used during drilling operations would be brought on-site in mobile fuel trucks, as necessary.

Production/injection wells would be drilled to depths ranging from 3,000 to 10,000 feet, beginning with a 30-inch diameter surface casing. Standard non-hazardous bentonite clay-water-based or polymer-water-based mud would be used for lubrication to cool the drill bit, and to remove drill cuttings from the hole. All holes would be cased in accordance with approved drilling permits to insure integrity of the wellbore and to isolate the wellbore from groundwater aquifers. Only non-hazardous additives would be used to prevent corrosion, adjust mud weight, or control lost circulation.

Wellbores may be drilled vertical or directionally depending on the orientation of the target, and multiple wells may be drilled from a single pad. Some directional drilling may result in the

surface location being on a federal lease or private fee land and the hole bottom location being on the opposite type of property. The drilling permit request would reflect this situation where it is anticipated.

2.1.2 Flow Testing

Slim, production, and injection wells may be flow tested once drilling has been completed, and the geothermal resource or target permeability has been located. With the drill rig still in place over the wellbore, a short-term flow test lasting from two to four hours may be conducted. Fluids would be flowed through a muffler to the reserve pit initially to clean out residual drilling fluids. Once clear fluids are produced, the well would continue to be flowed to assess the quality of the geothermal fluids. It may be necessary to stimulate flow by introducing liquid nitrogen through a coiled tubing apparatus, by applying increased pressure on the liquid column in the wellbore, or by other commonly used methods. Fluid temperatures, pressures, flow rates, and chemistry would be monitored during all flow tests. Discharge from flow tests would either go directly to the sump or to an existing injection well via a temporary pipeline laid along the access road. Necessary permits would be obtained from the Nevada Division of Environmental Protection for any reinjection of fluids using existing injection wells.

Depending on the outcome of the short-term flow test, a long-term flow test of five to 21 days duration may be conducted. Long-term testing could be conducted by allowing the well to flow naturally. Fluid produced from the well would be contained in the sump or in an injection well pending agency approval. An evaluation decision would be made regarding the commercial potential of each well upon completion of exploration drilling and testing whether a well would be used to produce geothermal fluids, used as an injection well, or is unsuitable for either purpose.

If wells are determined to be non-commercial, they may continue to be monitored for temperature and pressure to assist in understanding subsurface reservoir behavior or they may be abandoned. In the latter case, the wells would be treated in accordance with abandonment procedures of the BLM and the Nevada State Division of Minerals. Abandonment typically involves plugging the wellbore with sufficient cement, cutting off the casing at some specified depth below the surface, and welding a cap to the top of the casing string.

2.1.3 Water Use

As much as 5,000 to 10,000 gallons of water per day may be required during drilling of slim hole wells. As much as 20,000 gallons of water per day may be required during drilling of production and/or injection type wells. A smaller additional amount of water would be required on a daily basis for dust suppression during site preparation and operations. All water would be pumped from a Nevada Division of Water Resources permitted well (Permit numbers 60927 and 60928),

SW-1, located on private property associated with the existing Soda Lake facilities (Figure 3). Magma will obtain all necessary waivers and permits to comply with Nevada Division of Water Resources regulations. Water would be transported to the site by water truck from SW-1.

2.2 ENVIRONMENTAL PROTECTION MEASURES

Environmental Protection Measures (EPMs) and Magma's compliance with conditions of approval would reduce the impacts of the Proposed Action on the human and natural environment. The following EPMs would be implemented as part of the Proposed Action to reduce or eliminate impacts to the identified resources.

2.2.1 Air Quality

The following measures would be implemented by Magma to protect air quality:

- All applicable state and federal air quality standards would be met through the use of the best available technology to control emissions;
- Application of water on roads and pads when necessary to suppress dust;
- Prudent speed limits would be observed on unpaved roads throughout the project area in order to reduce dust emissions; and
- Access roads, project area roads, and other traffic areas would be maintained on a regular basis to minimize dust and provide for safe travel conditions.

2.2.2 Cultural Resources

The following cultural resource protection measures would be implemented by Magma:

- Magma would avoid known eligible and potentially eligible cultural resource sites through design, construction, and operation of the project;
- An approximately 30-meter buffer zone would be established and identified by placing flagging around eligible and potentially eligible cultural resource sites to help provide protection to the sites. Project equipment and facilities would not encroach into the established 30-meter buffer zone;
- The project facilities would be operated in a manner consistent with the engineered design to prevent problems associated with the run-off that could affect adjacent cultural sites. This includes the use of acceptable erosion control methods that are applicable to the site conditions;
- Magma would limit vehicle and equipment travel to previously-identified established roads and construction areas; and

- Any unplanned discovery of cultural resources, items of cultural patrimony, sacred objects or funerary items requires that all activity in the vicinity of the find ceases, and Terri Knutson, Field Manager, Stillwater Field Office, 5665 Morgan Mill Road Carson City, Nevada 89701, be notified immediately by phone (775-885-6000) with written confirmation to follow. The location of the find would not be publicly disclosed, and any human remains must be secured and preserved in the place until a Notice to Proceed is issued by the authorized officer.

2.2.3 Wildlife

Magma would implement the following measures to minimize potential impacts to wildlife in the project area:

- Trash and other waste products would be properly managed and Magma would control garbage that could attract wildlife. All trash would be removed from the sites and disposed of at an authorized landfill;
- Speed limits would be posted, and if necessary, speeds would be reduced, especially when wildlife is active near access and service roads;
- Employees and contractors are strictly prohibited from carrying firearms on the job site to discourage illegal hunting and harassment of wildlife; and
- Reclamation of the disturbed areas, as described in Section 2.4, would be completed in order to return these areas to a productive wildlife habitat.

2.2.4 Noxious Weeds, Invasive, and Non-Native Species

To minimize the introduction and establishment of noxious weeds, and invasive and non-native species in the disturbed areas, the following measures and the Noxious Weed Management Plan in Appendix B would be incorporated into the proposed project:

- Magma would use a certified weed-free seed mix during revegetation of disturbed areas;
- Magma would follow standards outlined in Surface Operating Standards and Guidelines for Oil and Gas Exploration and Development, The Gold Book (BLM, 2007) for well site reclamation;
- Magma would complete concurrent reclamation when feasible in order to minimize disturbed areas where weed species could establish;
- Magma would implement a weed management plan if noxious weeds are observed during reclamation monitoring (Appendix B);
- Magma would revegetate growth medium and overburden stockpiles with a weed-free seed mix as soon as possible following stockpile completion;

- Vehicle traffic would be restricted to defined roads or overland travel routes to reduce potential mechanical transport of noxious weed seeds; and
- When working in areas of established noxious weed populations, equipment would be washed prior to leaving the site.

2.2.5 Water Resources

EPMs that would be implemented for the protection of groundwater and surface water resources are as follows:

- Drilling activities would be kept to a minimum distance of 500 feet from any drainage, seep, or spring, unless approved by BLM and Reclamation;
- Any new proposed crossing of Newlands Project facilities would be reviewed and approved by Reclamation;
- Access across drainages, seeps, and springs would be avoided wherever possible. Culverts would be used if it is necessary to cross any large drainage; and
- Silt fences and/or straw bales would be used in areas requiring sediment control.

2.2.6 Public Safety, Fire Protection, and Sanitation

EPMs that would be implemented for sanitation, fire protection and public safety, are as follows:

- Portable sanitary facilities, serviced by a local contractor, would be located on-site for use by personnel during explorations activities.
- Noise suppression devices would be used on all compressors, and spark arresters would be used on all equipment that has the potential to emit sparks.

2.3 RECLAMATION

Magma would conduct concurrent reclamation to the extent practical. This would enhance revegetation success and reduce erosion and sedimentation from disturbed areas. An approved seed mix would be used to accomplish revegetation.

Reclamation activities would include ripping of pads to loosen compacted soils and incorporate gravel into native material. Surfaces would then be recontoured back to blend with the surrounding topography and seeded with an approved seed mix. Growth medium from graded and excavated areas would be stockpiled on location for use in final reclamation. When no longer needed, all excavations would be backfilled and compacted areas ripped. Growth medium would be spread evenly over areas from which it was originally removed. Proposed new roads would also be ripped to loosen compacted material and incorporate gravel into native material. Surfaces would then be recontoured to blend with the surrounding topography and

seeded with an approved seed mix. The seed mix and mulch, if applicable, used during reclamation would be certified as free of noxious weeds.

Federal and state regulations would be followed when abandoning wells in the project area.

2.4 NO ACTION ALTERNATIVES

Under the No Action Alternative, no exploration would occur and no additional geothermal resources would potentially be developed in the project area. Implementation of the No Action Alternative would not meet Magma's purpose and need for the project and would not meet national policy objectives to facilitate appropriate renewable energy development. Selection of the No Action Alternative may also impair geothermal lease development rights granted to Magma through the issuance of the federal geothermal leases.

3.0 AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

This section describes the affected environment in the vicinity of the Proposed Action and the potential impacts from implementation of the Proposed Action. The project area lies at the north end of the Lahontan Valley, southeast of the Hot Springs Mountains and northwest of Fallon in Churchill County, Nevada (Figures 1 and 2). It is situated northwest of the Highway 95 and Highway 50 intersection. The elevation varies between 3,955 and 3,990 feet above mean sea level (AMSL).

3.1 SCOPING AND ISSUES

During the internal scoping in September and October 2009, the BLM and Reclamation resource specialists identified the following resources as being present and potentially impacted by the Proposed Action:

- Cultural Resources;
- Invasive, Non-Native and Noxious Species;
- Migratory Birds;
- Native American Religious Concerns;
- Soils;
- Vegetation;
- Wildlife; and
- Newlands Project.

The BLM and Reclamation are coordinating agencies concerning geothermal projects proposed on Reclamation-managed lands. Reclamation is responsible for review of the surface resources brought forward through interagency scoping and coordination. This EA analyzes the proposed project pursuant to the Reclamation/BLM Interagency Agreement, December 1982. Reclamation is required to comply with any statutes, and executive orders listed in the Supplemental Authorities found in Table 5. However, they are not required to address state-listed species or BLM sensitive species. The determination of further analysis for each supplemental authority and other resources was made during internal scoping conducted by the BLM for the project.

Other resources of the human environment that have been considered for this EA are listed in Table 6. Elements that are present and may be affected are further described and analyzed in the EA. Rationale for those elements that would not be affected by the Proposed Action and alternative is listed in the tables below.

Table 5 Supplemental Authorities

Supplemental				
Air Quality	X			
Areas of Critical Environmental Concern	X			
Cultural Resources			X	Carried through EA.
Environmental Justice	X			
Farm Lands (prime or unique)	X			
Forests and rangelands (HFRA Projects Only)	X			Not Applicable.
Human Health and Safety (Herbicide Projects)	X			Not Applicable.
Floodplains		X		There is no proposed disturbance within the 100-year floodplain in the project area.
Invasive, Nonnative Species			X	Carried through EA.
Migratory Birds			X	Carried through EA.
Native American Religious Concerns			X	Carried through EA.
Threatened or Endangered Species	X			After consulting with the BLM wildlife biologist and the USFWS website for Nevada, there are no federally listed threatened or endangered species within the project area. See Appendix C. (http://ecos.fws.gov/tess_public/pub/stateListingAndOccurrenceIndividual.jsp?state=NV).
Wastes, Hazardous or Solid	X			
Water Quality (Surface/Ground)		X		No surface water is in areas proposed for disturbance. Groundwater necessary for drilling would be taken from an existing permitted well.
Wetlands/Riparian Zones	X			No riparian zones occur within the project area.
Wild and Scenic Rivers	X			
Wilderness	X			

*See H-1790 (January 2009) Appendix I Supplemental Authorities to be Considered

**Supplemental Authorities determined to be Not Present or Present/Not Affected need not be carried forward or discussed further in the document.

***Supplemental Authorities determined to be Present/May Be Affected must be carried forward in the document.

Table 6 Resources or Uses Other than Supplemental Authorities

Resource or Issue	Present/Not Affected*	Present/May Be Affected**	Rationale and/or Section Found
Soils		X	Carried through EA
Vegetation		X	Carried through EA
Wildlife		X	Carried through EA
Newlands Project		X	Carried through EA
Recreation	X		Numerous access roads in the vicinity allow for dispersed recreation to continue. Exploration drilling is temporary in nature; recreation access restrictions would only take place while drilling operations are in the immediate area.

*Resources or Issues determined to be Present/Not Affected need not be carried forward or discussed further in the document.

**Resources or Issues determined to be Present/May Be Affected must be carried forward in the document.

3.2 PROPOSED ACTION

This section includes a description of the affected environment for the Proposed Action and the potential impacts from implementation of the Proposed Action. Magma has incorporated EPMs into the Proposed Action to reduce or eliminate potential impacts to the environment. Proposed EPMs and planned reclamation activities are presented in Sections 2.2 and 2.3. The development of the potential impacts to the resources takes into account the implementation of the EPMs.

The Proposed Action consists of approximately 21 acres of proposed disturbance listed in Table 4.

3.2.1 Cultural Resources

Affected Environment

The National Historic Preservation Act of 1966 (NHPA), as amended, and the Archaeological Resources Protection Act of 1979 (ARPA) are the primary laws regulating preservation of cultural resources. Federal regulations obligate federal agencies to protect and manage cultural resource properties and prohibit the destruction of significant cultural sites and historic properties without first mitigating the adverse effect to the site.

The NHPA sets forth procedures for considering effects to historic properties and supports and encourages the preservation of prehistoric and historic resources. It directs federal agencies to consider the impacts of their actions on historic properties. Section 106 of the NHPA, as amended, requires federal agencies to take into account any action that may adversely affect any regulations, codified in 36 CFR 800, provide criteria to determine if a site is eligible. Beyond that, the regulations define how those properties or sites are to be dealt with by federal agencies

or other involved parties. These regulations apply to all federal undertakings and all cultural (archaeological, cultural, and historic) resources.

The ARPA sets a broad policy that archaeological resources are important to the nation, as well as locally and regionally, and should be protected. The purpose of the ARPA is to secure the protection of archaeological resources and sites that are on public lands and Native American lands. The law applies to any agency that receives information that a federally assisted activity could cause irreparable harm to prehistoric, historic, or archaeological data and provides criminal penalties for prohibited activities.

Cultural resources are the remains of past human activities, consisting of sites or locations where humans lived or conducted activity. Central Nevada has been inhabited by humans for at least 12,000 years. A Class III cultural resources inventory was conducted for the project area in April 2010. The survey included areas of proposed disturbances such as drill pads and proposed access roads.

Environmental Consequences

Magma would conduct all exploration activities in accordance with applicable federal regulations as administered by the BLM and Reclamation. All areas proposed for exploration disturbance have been inventoried to a Class III level. Magma's proposed activities would avoid all known eligible and unevaluated cultural resource sites identified within the project area. For drilling locations near cultural sites, Magma would establish a 30-meter flagged buffer around the sites, as determined by the BLM and Reclamation resource archaeologist. There would be no impacts to cultural resources from surface disturbance exploration activities.

3.2.2 Invasive, Non-Native and Noxious Species

Affected Environment

The BLM Carson City District and Reclamation recognizes the current noxious weed list designated by the State of Nevada Department of Agriculture statute (NDA, 2009). An invasive species is defined as a non-native or alien plant or animal that has entered into an ecosystem. Invasive species are likely to cause economic harm or harm to human health (Executive Order 13112). Noxious weeds, and invasive and non-native species are highly competitive, aggressive and easily spread.

One noxious weed species, saltcedar (*Tamarix* sp.), was identified within the project area. Saltcedar was observed growing in the project area in dry, low-lying basins. Saltcedar is listed as a Category C noxious weed with the State of Nevada. Category C weeds are species that are "currently established and generally widespread in many counties of the state; actively eradicated from nursery stock dealer premises; abatement at the discretion of the state quarantine officer"

Abatement of Category C weeds may be required at the discretion of the state quarantine officer (UNCE, 2008).

Invasive, non-native species found in the project area include Russian thistle (*Salsola kali*), halogeton (*Halogeton glomeratus*), and Russian olive (*Elaeagnus angustifolia*). Both Russian thistle and halogeton are dominant in previously disturbed areas in the south and southwest portions of the project area. Russian olive mainly occupies low-lying areas adjacent to playas in the southern half of the project area.

Environmental Consequences

The proposed exploration disturbance has the potential to create conditions favorable for invasive, non-native, and noxious species. Proposed disturbance would directly impact approximately 21 acres of salt desert scrub and salt, alkali flat vegetation, thus leaving these areas susceptible to invasive, non-native, and noxious species. Disturbed areas, especially in the south and southwest portions of the project area, contain large amounts of Russian thistle and would be susceptible to additional invasive, non-native weed establishment. In addition, potential transport of weed seeds to other proposed exploration sites could occur. The Proposed Action would not affect areas currently infested with saltcedar. With the implementation of the EPMs discussed in Section 2.2 and successful reclamation (as determined through the Nevada Guidelines for Successful Revegetation for the Nevada Division of Environmental Protection, the Bureau of Land Management and the U.S.D.A. Forest Service), impacts from invasive, non-native species, and noxious weeds is expected to be minimal.

3.2.3 Migratory Birds

Affected Environment

The Nevada Department of Wildlife's Wildlife Action Plan characterized Nevada's vegetative land cover into eight broad ecological system groups and linked those with key habitat types, which are further refined into ecological systems characterized by plant communities or associations that support various wildlife species (Wildlife Action Plan Team, 2006). The key habitat associated with this project is Cold Desert Scrub. Within this key habitat, the primary vegetative community (ecological system) encompassing the project area is described as Inter-mountain Basins Salt Desert Scrub with some areas of Inter-mountain Basins Playa (Salt and alkali flats). These habitats support low nesting densities and abundance.

Migratory birds are federally protected by the Migratory Bird Treaty Act (1918) and Executive Order 13186. Migratory bird species that would likely utilize these habitat types include the horned lark (*Eremophila alpestris*), black-throated sparrow (*Amphispiza bilineata*), sage sparrow (*Amphispiza belli*), and the loggerhead shrike (*Lanius ludovicianus*). Bird species observed in

the project area include the horned lark, American crow (*Corvus brachyrhynchos*), and burrowing owl (*Athene cunicularia*).

Environmental Consequences

A maximum of 21 acres of actual habitat would be removed during the life of the Proposed Action, although effective habitat loss from disturbance would encompass the entire lease area (5,233 acres). However, the migratory bird species supported by the plant communities found in the project area are generally low in density and abundance. The Stillwater Wildlife Refuge is approximately 15 miles away and its wetlands are surrounded by similar habitat and support the majority of migratory species that utilize the Lahontan Valley.

Additionally, there is over 15 million acres of Cold Desert Scrub habitat in the Great Basin ecoregion; therefore, while disturbance from this project, such as noise generated from drilling activities, may displace a few individuals, overall the impact to migratory populations would be minimal. Successful reclamation may further reduce long-term impacts stemming from habitat loss.

3.2.4 Native American Religious Concerns

Affected Environment

In accordance with the NHPA (P.L. 89-665), NEPA (P.L. 91-190), the Federal Land Policy and Management Act (P. L.94-579), the American Indian Religious Freedom Act (P.L. 95-341), the Native American Graves Protection and Repatriation Act (P.L. 101-601), and Executive Order 13007, the BLM must provide affected tribes an opportunity to comment and consult on the proposed project. BLM must attempt to identify locations having traditional/cultural importance and reduce or possibly eliminate any negative impacts to identified traditional, cultural, spiritual sites, activities, and/or resources. The BLM is conducting on-going consultation with tribes regarding the implementation of the Proposed Action. To date, there have been no known identified locations within the project area having traditional/cultural importance.

Environmental Consequences

Based upon on-going consultation with the tribes, no impacts to Native American Religious Concerns have been identified.

3.2.5 Soils

Affected Environment

The Soil Survey of the Fallon-Fernley Area, Parts of Churchill, Lyon, Storey and Washoe counties identifies seven main soils or soil complexes/associations within the project area (Figure 5). These are the Appian-Isolde complex; Parran silty clay; playas; Soda Lake gravelly loamy

sand, saline; Isolde-Parran-Appian association; and the Badland-Mazuma complex (NRCS, 2009). Details of these associations are discussed below.

Appian-Isolde Complex

The Appian-Isolde complex is the major soil complex within the project area (Figure 5) and is found from 3,900 to 4,180 feet AMSL. In the project area, this complex is found in higher elevations (dunes and terraces) containing slopes of 0 to 2 percent. Soils in this complex are well drained and have a surface texture of sandy loam, clay loam, gravelly coarse sand, and sand. Depth to bedrock is more than 80 inches.

Parran Silty Clay

The Parran silty clay soil type is located in a few lower-lying basins of the project area and occurs at elevations ranging from 3,870 to 4,100 feet AMSL. This soil type is somewhat poorly drained and has a surface texture of silty clay. Depth to bedrock is more than 80 inches.

Playas

Playas soils are found from 3,850 to 4,250 feet AMSL. In the project area, this soil type is found in lower basin bottoms with slopes of 0 to 1 percent. Playa is very poorly drained and has a surface texture of silty clay. This soil type experiences frequent ponding and has a layer that limits the transmittal of water.

Soda Lake Gravelly Loamy Sand, Saline

Soda Lake gravelly loamy sand, saline soils occur in elevations ranging from 3,970 to 4,030 feet AMSL. This soil type is found in the southwestern-most portion of the project area on slopes ranging from 0 to 2 percent. Soda Lake gravelly loamy sand, saline soils are somewhat excessively drained and have a surface texture of gravelly loamy sand. Depth to bedrock is more than 80 inches.

Isolde-Parran-Appian Association

The Isolde-Parran-Appian association formed from eolian deposits creating dune landforms that occur at elevations ranging from 3,870 to 4,150 feet AMSL. This association is found adjacent to playas in the project area on slopes from 0 to 4 percent. Soils in this association are excessively drained and have a surface texture of fine sand. Depth to bedrock is more than 80 inches.

Badland-Mazuma Complex

The Badland-Mazuma complex occurs at elevations from 3,900 to 4,230 feet AMSL. This complex is found adjacent to playas in the east-central project area on slopes of 2 to 8 percent.

Soils in this complex are well drained and have a surface texture of very cobbly fine sandy loam. Depth to bedrock is more than 80 inches.

Pelic-Turupah Complex

The Pelic-Turupah complex occurs at elevations from 3,870 to 4,080 feet AMSL. It is found in flood plains and occurs in the southwest portion of the project area. Soils in this complex are very poorly drained and have a surface texture of sand. Depth to bedrock is more than 80 inches.

Environmental Consequences

Disturbance to a maximum of 21 acres of surface soils would result from the implementation of the Proposed Action. The Appian-Isolde soil complex is the only soil disturbed by the Proposed Action. Available growth medium would be salvaged for use in reclamation activities when new drill pads and roads are constructed. In general, with removal of vegetation and surface soil disturbance, soils would experience increased wind and water erosion. Soils would be compacted by heavy equipment and gravel placement, and soil microbial activity and soil productivity would decrease in areas of soil disturbance. In locations where gravel has been placed on roads or pads, material would be mixed with the soil during reclamation changing the texture and structure of the soil.

The soil disturbance would be dispersed spatially as drill sites and roads are developed during exploration. Existing drill sites and roads would be used whenever possible to avoid additional disturbance. With the implementation of EPMS as discussed in Section 2.2 and successful reclamation, impacts from the Proposed Action to soil resources would be minimal.

3.2.6 Vegetation

Affected Environment

The vegetation community types within the project area include salt desert scrub and intermixed salt and alkali flat. The location of an individual vegetation community depends on several factors including elevation, soil type and depth, slope, aspect, and precipitation. The vegetation communities present in the project area are shown in Figure 6 and discussed below.

Salt Desert Scrub Community

The salt desert scrub vegetation community is found in the majority of the project area. Plant species observed in this community included greasewood (*Sarcobatus vermiculatus*), Bailey's greasewood (*Sarcobatus baileyi*), spiny hopsage (*Grayia spinosa*), fourwing saltbush (*Atriplex canescens*), rubber rabbitbrush (*Ericameria nauseosus*), and bud sagebrush (*Picrothamnus* sp.). The salt desert scrub community in the project area contains sparse understory vegetation comprised mainly of scattered Indian ricegrass (*Achnatherum hymenoides*) and annual invasive species Russian thistle.

Salt and Alkali Flat Community

Salt and alkali flat communities dominate lower-lying elevations of the survey area and tend to be devoid of vegetation. Vegetation observed in salt and alkali flat communities in the survey area includes saltgrass (*Distichlis* sp.), iodine bush (*Allenrolfea occidentalis*), saltcedar, and Russian olive.

Environmental Consequences

Direct impacts to vegetation would include the removal of a maximum 21 acres of salt desert scrub vegetation communities. Additional impacts to vegetation would be the potential for introduction of non-native species on the 21 acres of disturbed ground. This impact is discussed further in Section 3.1.2. With the implementation of the EPMs discussed in Section 2.2 and successful reclamation, impacts to vegetation would be minimal.

3.2.7 Wildlife

Affected Environment

The Nevada Department of Wildlife's Wildlife Action Plan characterized Nevada's vegetative land cover into eight broad ecological system groups and linked those with key habitat types, which are further refined into ecological systems characterized by plant communities or associations that support various wildlife species (Wildlife Action Plan Team, 2006). The Key Habitat associated with this project is Salt Desert Scrub. Within this key habitat, the primary vegetative community (ecological system) encompassing the project area is described as Inter-mountain Basins Salt Desert Scrub with some areas of Inter-mountain Basins Playa (Salt and alkali flats).

Wildlife or wildlife sign (burrows, scat, tracks) observed during the July 2009 survey include coyote (*Canis latrans*), black-tailed jackrabbit (*Lepus californicus*), white-tailed antelope squirrel (*Ammospermophilus leucurus*), desert kangaroo rat (*Dipodomys deserti*), desert horned lizard (*Phrynosoma platyrhinos*), western whiptail lizard (*Cnemidophorus tigris*), and the desert spiny lizard (*Sceloporus magister*), all of which are typical of these habitats.

Environmental Consequences

Direct impacts stem from approximately 21 acres of habitat that would be disturbed during the life of the Proposed Action, although effective habitat loss from disturbance and fragmentation would encompass the entire lease area (5,117 acres). Impacts would include potential wildlife avoidance of disturbed areas due to increase human activities and the operation of drilling equipment, direct loss of individual to less mobile wildlife species, and indirect impacts relating to competition for resources from displaced individuals moving to adjacent habitat. These impacts would occur as long as exploration activities are occurring.

However, there is over 15 million acres of Cold Desert Scrub habitat in the Great Basin ecoregion; therefore, while disturbance from this project may displace a few individuals, overall the impact to wildlife would be minimal. Additionally, successful reclamation in areas where development would not occur would reduce long-term impacts from direct habitat loss.

3.2.8 Newlands Project

Affected Environment

The Newlands Project in Nevada is one of the first Reclamation projects in the country, with construction beginning in 1903. It covers lands in the counties of Churchill, Lyon, Storey, and Washoe and provides water for about 57,000 acres of irrigated land in the Lahontan Valley near Fallon and bench lands near Fernley. Made up of two divisions, the Truckee Division and the Carson Division, the Newlands Project has features in both the Carson River and Truckee River basins with the Truckee Canal allowing interbasin diversions from the Truckee River to the Carson River. The major features of the Newlands Project include Lake Tahoe Dam, Derby Diversion Dam, Truckee Canal, Lahontan Dam, Lahontan Power Plant, Carson River Diversion Dam, and over 700 miles of canals, laterals, and drains for irrigation of approximately 57,000 acres of farmlands, wetlands and pasture.

Water for the Newlands Project comes from the Carson River and supplemental water is diverted from the Truckee River into the Truckee Canal at Derby Diversion Dam for conveyance to Lahontan Reservoir for storage. The water stored in Lahontan Reservoir or conveyed by the Truckee Canal is released into the Carson River and diverted into the ‘V’ and ‘T’ Canals at Carson Diversion Dam. Features of the Newlands Project with the project area include approximately 2.84 miles of canals.

Environmental Consequences

Direct impacts to the Newlands Project would not be realized through the implementation of the Proposed Action. The Proposed Action would use existing crossings of the canal, therefore creating no additional impact to the Newlands Project.

3.3 NO ACTION ALTERNATIVE

Affected Environment

The affected environment described for the Proposed Action would be the same for the No Action Alternative.

Environmental Consequences

The environmental consequences described above under each resource would not occur under the No Action Alternative.

4.0 CUMULATIVE EFFECTS

This section analyzes the potential cumulative impacts from past, present, and reasonably foreseeable future projects combined with the Proposed Action within the study area to the resources for which cumulative impacts may be anticipated. A cumulative impact has been defined as the impact, which results from the incremental impact of the action, decision, or project when added to other past, present, and reasonably foreseeable future actions, regardless of what agency (federal or non-federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.

The study area is defined by the project boundary and encompasses approximately 5,117 acres as shown in Figures 2 through 7. Of the 5,117 acres, approximately 2,479 acres are private with the remaining approximately 2,638 surface acres managed by the Reclamation. The cumulative effects analysis includes the next ten years. The following sections contain descriptions of activities that have occurred and may occur in the reasonably foreseeable future within the study area, and an analysis of the impacts of these activities within a regional context.

The primary activities from the past, present, and reasonably foreseeable future that would contribute to cumulative impacts from adding the impacts from the Proposed Action include: existing dirt and gravel roads, existing geothermal operations, continued exploration and development of geothermal resources within leases, continued use of existing Rights-of-Way (ROWs), livestock grazing, dispersed recreation, residential development, and the Newlands Project. The projects within the study area are described further below.

- Existing Dirt and Gravel Roads – There are approximately 20 miles of existing dirt and gravel roads within the study area. Assuming the roads are 15 feet wide, existing roads within the study area account for 58 acres of disturbance (46.8 acres public and 11.2 acres private). These roads are devoid of vegetation and do not provide productive soils and do not provide habitat for plant and wildlife species.
- Existing Geothermal Operations – There are two existing operating geothermal power plants, Soda Lake 1 and Soda Lake 2, within the study area. Disturbance from these operations include existing production and injection wells, power plant facilities, and piping associated with the existing facilities. Within the study area, there are approximately 30 acres of existing disturbance from these operations.
- Geothermal Leases – Past, present, and reasonably foreseeable future activities on the geothermal leases within the study area may include geophysical and drilling exploration and geothermal production throughout the area, in addition to the Proposed Action.

- Coast Guard Communication Site ROW – The Coast Guard has a communication site ROW located within the study area. This facility consists of an access road, fencing, a transmitter structure, and associated support features. Approximately 10 acres are encompassed by this disturbance.
- Grazing – Past, present, and future livestock grazing occurs within the study area. Two active grazing permits managed by Reclamation are located within the study area.
- Newlands Project – Past disturbance associated with the Newlands Project within the study area includes canals associated with transporting water for irrigation. There are 41 acres (2.84 miles at 120 feet wide of which 24 acres is on public and 17 acres on private) of canals associated with the Newlands Project within the study area.
- Dispersed Recreation – Past, present, and reasonably foreseeable future dispersed recreation takes place within the study area. Recreation activities consist of target shooting, ATV use, and casual recreation.

Within the study area, there is approximately 139 acres of existing disturbance. Including the disturbance associated with the Proposed Action, there would be approximately 160 acres of disturbance or three percent of the study area.

The following sections discuss the cumulative effects of the Proposed Action when combined with past, present, and reasonably foreseeable future projects identified discussed in Section 4.1. Impacts to the following resources are analyzed in the cumulative effects sections below:

- Cultural Resources;
- Invasive, Non-Native and Noxious Species;
- Migratory Birds;
- Native American Religious Concerns;
- Soils;
- Vegetation;
- Wildlife; and
- Newlands Project.

4.1 CULTURAL RESOURCES

The past, present, and reasonably foreseeable future projects have been or would be approved by the BLM and Reclamation prior to project initiation, thereby avoiding or mitigating adverse effects on identified cultural sites. Past, present, and reasonably foreseeable future activities would avoid or mitigate, to the extent possible, all known and discovered resources. No incremental cumulative effects would occur to cultural resources as a result of the Proposed Action.

4.2 INVASIVE, NON-NATIVE AND NOXIOUS WEED SPECIES

The combined past, present and reasonably foreseeable surface disturbance within the study area has the potential to create conditions favorable for the invasion of invasive, non-native, and noxious species. The use of suitable reclamation seed mixes with only certified and tested seed, combined with implementation of prompt and appropriate revegetation techniques would reduce the potential for invasive, non-native and noxious weed species invasion. There is the potential for the establishment of invasive, non-native and noxious weed species within the study area, especially on private lands where regulatory oversight is limited. With the implementation of the EPMs discussed in Section 2.3 for the Proposed Action and successful reclamation of past, present, and reasonable foreseeable projects, the cumulative impacts to invasive, non-native, and noxious species in the study area would be minimized.

4.3 MIGRATORY BIRDS

Habitat within the study area supports low abundance and nesting density for migratory birds. Disturbance from past, present, and reasonably foreseeable future actions (listed in Section 4.1), including the Proposed Action, may displace birds into adjacent habitat, of which there is an abundance; therefore impacts to species stemming from resource competition (food, forage, cover) should be minimal. Impacts to migratory birds from dispersed recreation within the study area, as well as in areas of the Proposed Action that do not realize further development, should be temporary. Future geothermal development may result in additional minimal habitat loss when compared to total habitat available in the area. Implementation of the environmental protection measures for the Proposed Action as discussed in Section 2.3 would also diminish impacts. Consequently, minimal incremental cumulative impacts would occur to migratory birds from the Proposed Action.

4.4 NATIVE AMERICAN RELIGIOUS CONCERNS

The Native American tribe that has cultural affiliation with the project area is the Fallon Paiute-Shoshone Tribe. Per 36 CFR Part 800 and 43 CFR Part 8100 (BLM), as amended, a consultation letter with a general summary of the proposed project, and map of the project location were sent to the Tribe on February 17, 2010. During various face to face meetings and phone calls in the past the Tribe shared information concerning project activities within their aboriginal territory. The Tribe has stated that any impacts to cultural resources should be avoided, however to date there are no Native American Religious concerns relative to this project.

In order to minimize the potential cumulative contribution of the Proposed Actions to impacts such as these, BLM Stillwater Field Office and the affected Tribal organizations need to maintain an open and honest dialog in managing public lands. All interested parties need to remain flexible in their approach on how to administer the multiple activities taking place on public lands. Through productive communications and understanding the needs of the other

parties, the decisions made on how to manage the land can reduce or eliminate potential impacts to any individual or Tribal interests on public lands.

4.5 SOIL

Soil disturbance within the study area from past, present, and reasonably foreseeable future activities would be the removal, compaction, relocation, and increased potential for erosion of soils. With the implementation of the EPMs for the Proposed Action as discussed in Section 2.3, cumulative impacts to soils from past, present, and reasonably foreseeable future projects within the study area would be minimized.

4.6 VEGETATION

The combined past, present and reasonably foreseeable projects within the study area have or would impact vegetation resources by the removal of vegetation. With the implementation of the EPMs for the Proposed Action as discussed in Section 2.3, cumulative impacts to vegetation from past, present, and reasonably foreseeable future projects within the study area would be minimized.

4.7 WILDLIFE

Wildlife have been or may be affected negatively by displacement or disruption of normal behavioral patterns due to construction, project operations and maintenance, and site rehabilitation from past, present, and reasonably foreseeable future actions (listed in Section 4.1), including the Proposed Action. Some of these projects and actions may increase traffic, conflicts with humans, and competition for habitat niches. Some of these actions may also minimally decrease forage quality, quantity, and composition. Overall, the Proposed Action would disturb a very small area separate from other projects in the study area, thus having a negligible contribution to cumulative effects.

4.8 NEWLANDS PROJECT

There are no impacts to the Newlands Project associated with the Proposed Action. In addition reasonably foreseeable future projects that would potentially impact the Newlands Project would be approved by Reclamation prior to project initiation, thereby avoiding or mitigating adverse effects. No incremental cumulative effects would occur to the Newlands Project as a result of the Proposed Action.

5.0 CONSULTATION AND COORDINATION

5.1 LIST OF PREPARERS

U.S. Bureau of Land Management

Linda Appel	Range Specialist
Jim DeLaureal	Soil Scientist
Carla James	Supervisory Geologist, Project Lead
Edward Klimmesauskas	Geologist
Susan McCabe	Archeologist
Erik Pignata	Realty Specialist
Gabriel Venegas	Hydrogeologist
John Wilson	Biologist
Jason Wright	Archeologist
Desna Young	Planning and Environmental Coordinator/Fluid Minerals

Bureau of Reclamation

Amy Barnes	Archeologist
Andrea Minor	Natural Resource Specialist
Peter Neugebauer	Water and Lands Specialist

JBR Environmental Consultants, Inc.

Dulcy Engelmeier	Administrative Assistant
Doug Koza	Senior Scientist
Kristi McKinnon	Project Manager
Kendra Olcott	Environmental Analyst
Joshua Vittori	Environmental Analyst
Richard Weber	Division Manager

5.2 PERSONS, GROUPS, OR AGENCIES CONSULTED

The following persons, groups, and agencies were contacted during the preparation of this document.

Magma Energy (U.S) Corp.

Cindy Hill	Legal and Permitting Coordinator
Richard Hoops	Manager, Environmental and Regulatory Affairs
Mary Ohren	Geologist

Nevada Natural Heritage Program

Eric S. Miskow	Biologist III/Data Manager
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Fallon Paiute-Shoshone Tribe

Richard Black	Environmental Department
Rochanne Downs	Vice-Chair
Alvin Moyle	Chairman

U.S. Fish and Wildlife Service

Robert D. Williams	Field Supervisor
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FIGURES

APPENDIX A

Lease Stipulations

APPENDIX B

Noxious Weed Management Plan

APPENDIX C

USFWS Threatened and Endangered Species Information